

First Train for the Internet

Click the icons to jump to tour services menus
Click the word descriptions for a brief introduction
to each of the sections



Orientation



Insurance
and medical



Passports
and visas



Laws and
customs



Pre-trip
shape-up



Travelogues



What
to pack



Local
dialects



Meet your
engineer

Please check in here first. This section describes the main features of First Train for the Internet, shows you how to get around, and introduces you to some of the concepts used. It's useful material you'll find handy when you start to use the Internet. Remember...the key to success in Internet travel isn't having all the answers...it's knowing where to find the answers you don't have.

Most journeys to exotic destinations require a physical exam, and because you don't always know what's coming, a little insurance is also in order. This section is designed to make sure your computer is as fit as it can be for the adventure ahead, and that you understand the risks involved and how to protect yourself. Despite what you may have heard and read, the Internet is actually quite safe...but what you don't know most definitely *can* hurt you.

It's a painful truth...before you can get into a new country, you have to deal with the local officials. Here's some information on what to look for in an Internet service provider, and what you can and can't expect from your Internet account. It really does pay to "know the right people" on this journey.

The Internet really is a culture unto itself, with its own codes of ethics, standards of behavior and rhythms. It is also the most wide-open frontier in human history.

You may feel more comfortable knowing what's expected of you in the way of manners and etiquette...and what kinds of helpful and "innocent" behavior can get you into hot water. You should also know a little about how the local money system operates, who you can and cannot trust, and how to protect yourself against some of the less desirable elements of the culture.

This section also contains information on shopping for souvenirs and haggling with the local merchants.

This part of First Train will help you learn more about the activities you'll be participating in on the Internet. At present this section is limited to descriptions of the services themselves, although even longtime users have found material of interest here. Help for specific programs and walk-throughs of the services themselves are contained in **First Train Help** (First Class/Tourist Class only).

A well-packed traveller is a contented traveller. We've taken this trip many, many times, and it's our pleasure to point you to the best software finds we've come across. And the best news of all is that you don't need to pack much...most of what you'll want is on the Internet waiting for you, and a surprising amount of it is free! Your hosts' hospitality is unlikely to last, though, so take advantage of it while you can.

While they don't speak a foreign language where you'll be travelling, they do speak a strange dialect of English, and it can be surprisingly rich and colorful. You'll need to be familiar with at least some of the local words and phrases, and we've provided interpreters galore to help you learn as you travel. And if you plan on setting down roots on the net, or even immigrating at some time in the future, it will definitely pay to be well-versed in the language.

A few elementary skills for working with Windows and your computer can make all the difference between enjoying your tour and finding it a difficult and hazardous journey. Here are some easy-to-follow walk-throughs of the skills you'll need most often as a Windows Internet adventurer.

A little information about your engineers and tourist agents, just in case you wanted to know.

Welcome aboard!

Please note that not all features are enabled in this freeware Day Excursion version of First Train for the Internet. For more information, consult the catalog by clicking the **Order** button.

If this topic popped up in the main window, click the **Back** button to return to the previous topic. If this topic popped up over top of the main window, click anywhere to close the pop-up.



This complementary ticket is only valid for the Day Excursion services offered on the First Train. Sorry...click anywhere on the ticket to jump to a random location on First Train or click anywhere else on your screen to return to the previous topic.

The particular feature you have selected is not available in the shareware version of First Train for the Internet. You will probably see several such errors as you wind your way through the train. Check the [catalog](#) for more information.

There are two tips that might make working with First Train Day Excursion a lot easier.

The first is that this version includes a right-click pop-up menu designed to take you to each of the nine main menus. To see it, click the right mouse button over the white section of the window in any First Train topic. (Unfortunately, due to limitations in Windows **Help** we were unable to expand these menus to include the sub-menus for each section. You will need to order the registered Day Excursion or the First Class or Tourist Class packages to take advantage of this feature.)

The second feature you'll find handy is bookmarking. You can maintain a set of bookmarks for First Train which will quickly take you to any topic or submenu you like at the click of a menu item. Try it...it will make finding a lot of useful points much easier once you begin to work seriously with the Internet.



Your engineer and travel agents

Here's a little information about the people who helped bring this software to you.



[A word from your chief engineer](#)



[Acknowledgements](#)



[Did we violate your copyright?](#)



A word from your chief engineer

An act of vengeance and reform

{ewl ew256bmp.dll,ew256bmp,cub.bmp}I'm going to break with the tradition of talking in glowing terms about how much fun it was to do this and how much support I had in creating it and be brutally frank. You're embarking on an adventure with more surprises ahead of you, both pleasant and unpleasant, than you can imagine, and you deserve nothing less than the whole truth.

This work began as a simple set of instructions for handling software found on the Internet and evolved into the package you have now. It was a gruelling, difficult and painful birth, and I will personally be feeling the fallout for some time to come.

A little history



I had zero experience with Internet in November of 1994. By July of 1995 this product was in shape and ready to ship in its original form. Virtually every step of the way I faced difficulty and opposition. Learning basic Internet skills was a chore. Developing the programming skills necessary to put this package together was no easier. Despite the fact that for a full four months there wasn't a single competitive product on the market, I was met with disinterest by virtually everyone I approached who was in a position to bring the information and help offered by this software to you.

It's a telling fact that I approached no fewer than twenty Internet service providers with the opportunity to make use of this software their clients, to be the first not just in the city of Vancouver, where I lived while writing this, but the first in the *industry* to be able to truthfully advertise "full online training in all Internet services" at a cost to them of just one dollar per subscriber. Not one was willing to accept the idea.

In fact, the only real encouragement I received from decision-makers was to give the product away for free. While I can support that in principle, I cannot accept that kind of response from people who charge money for what *they* do, and if you ever "push the panic button", you'll understand why.

What I had to go on was the emotional support of a small group of people who had actually seen and used the software and believed, as I did, that it not only had a place, but that it was good enough to be used and appreciated by others.

A sense of responsibility



I'm single, approaching middle age and feeling a strong sense of parental responsibility. I'll be damned, literally and figuratively, if I let this go. But I can't exact revenge on those who ignored me.

What I *can* do is try to make sure that the users of First Train don't have to endure what I endured in the process of learning the Internet, developing the skills needed to offer that learning to others, and getting that information out to the public. If I exact any vengeance here, it comes in the form of explaining why Internet, and computing in general, has to be viewed as

an adventure and not as a pleasure cruise.

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 [First Train staff](#)

Credit where credit is due



Personal bouquets are extended to the following individuals for their help in creating this package:

Deb Jones, who offered tangible support when it was most desperately needed and was willing to risk her own dreamstake to see my own dream fly

Graham Blake, for unflagging encouragement and emotional support

Don McPhee, for being a colleague, supporter, springboard and source of ideas and resources (and for surprising me repeatedly with his insights and achievements)

Nathen Valecourt for arriving at a critical moment

Treetoad, Damascena, Alex_McC, Zane (or is that **Xaen...Xane?**), **karma_kid, booda, Depayne, LessThan(boolean integer)** and the rest of the wacked-out locals on Internet Relay Chat's **#pagan_tea_house** channel for being virtually my only social circle during the development of the product

Michael Gandolfo, an artist from Southern California, who created the illustration used to grace the panic-button page and allowed us to publish his work royalty-free until the money came in.

My sister, **Anita Shrier**, once again for tangible support at a crucial moment

Mike Shields, for providing the concept for this new, improved interface

The Computer Paper, and in particular editor **David Tanaka** for reaffirming my right to write

Laurel Cowie, who taught me how difficult adult computer training really is

Paul Arnote, BaDge, Michael Cessna, Jon Noring, Stephen Pruitt, Paul Neshamkin, Ron Loewy, "Wally", and the many other codependents needing treatment on the *WINHLP-L* listserv (apologies for not mentioning all of you) for turning me onto programming in a way no one else had before and helping me to turn Windows (yawn) Help into a truly useful -- and *fun* -- tool

The many freeware and shareware authors without whose generosity I would not have had the funds nor the tools to do this work; and finally to my service and consulting clients of 1994-95, whose pain and frustration over their own computers was the inspiration for the project in the first place, and prompted me to pay attention to the smallest details

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Did we violate your copyright?

Dynamic Living made use of a large number of sources in assembling the content of this software. It was never our intent to violate copyright and a significant expense went into insuring that this did not occur.

However it is possible that we have erred in our selection of graphical and text content. If we have inadvertently violated your copyright, contact Cub Lea at cublea@cyberstore.ca in regard to compensation or other appropriate action. We take our responsibility seriously and have no intention of using licensed material without permission.

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The Panic Page: Why Adult Computer Training Hurts So Much

If you got here by pressing the  button, you can go back to where you were at any time by clicking the **Last Topic** button.

This is a long article, and it's not necessary to read all of it at one sitting. If you like, you can print this article by selecting **Print** from the **File** menu. This is meant primarily as a means of helping you come to grips with why you might be having problems and assisting you in determining why those problems occur and where your responsibility for those problems begins and ends. ([Click here](#) to jump to the summary at the end of the article.)

Original artwork by Michael Gandolfo

**{ewl ew256bmp.dll,ew256bmp,child.bmp}Even if it's
your fault, it probably isn't**

**The computer industry has a stake in making you feel stupid, and it's
time you got mad about it.**

Disclaimer

The opinions and beliefs expressed in this article are those of its author, Cub Lea, and do not necessarily reflect those of the publisher, distributor, or provider of this software.

A case of chronic frustration



I love teaching adult novices to use a computer for the first time. There are few more rewarding experiences than passing on a trick I've just learned myself to a student who is just as excited about it as I am.

Unfortunately it doesn't happen very often. Most of my billed time is spent assisting users to learn skills they could have been taught more easily, more cheaply and more effectively, by the software itself.

Despite the appearance of dramatic improvement in recent years, we are falling derelict in the quest to balance the affordable high-tech of personal computers with an equally-affordable high-touch approach to using them.

This is not what we were led to expect for 1994. Interfaces were supposed to be intuitive by now. Operating systems were supposed to be user-friendly. I remember reading about how I could sit my 80-year-old grandmother behind the keyboard and have her computing in five minutes. If she needed help, the manual would be in plain English, and built into the computer rather than printed on paper.

So why did I feel the need to spend three months of my life writing a piece of software designed to teach novices how to copy, delete, identify, read and execute files? We have the technology, so why haven't things improved at a more rapid pace?

Push for change...and the industry pushes right back



The resistance to change comes in the form of an industry-wide epidemic of Peter Pan syndrome. Everyone from the designers and developers down to the salespeople on the retail floor are big kids too busy playing with their big toys to care about the needs of those who pay for their dinner.

What do children care about the needs of an adult? A child wants you to like what they like, to play the way they play. Walk into almost any computer store and pretend you have money to spend, and you'll likely be offered a good-sized glass of this immature vintage. Actually purchase a computer and you'll receive a case of it to take home with you.

Most tutors hate dealing with novices. Few things will take you back to your computing roots as quickly as talking to new users and helping them with their problems. But there's an emotional gap as well. Most tutors I've spoken with tell me it feels more like a parent-child relationship than student-teacher. What makes it doubly difficult for the student is that the tutor plays the child's role.

Tutors and consultants are usually overgrown kids who make their living coaching others on the baddest toy ever invented. And coaches don't usually enjoy coaching awkward players. The tragic truth is that there are also many tutors who have grown so disillusioned with teaching novices that they speak of their students with a not-really-joking contempt when in the company of another professional. They seem to have been brainwashed into passing blame to the student for problems which originate with the hardware and software.

...and an adult child shall lead us...



As if that wasn't bad enough, the playing field -- the computer's operating system -- was designed by overgrown kids who know better than to waste their time messing with no-talents.

Everyone marvels at how quickly kids learn to use computers. They shouldn't, really. It's simple biophysics. There's more cranial space for the new information, less pressure in the learning process, and the neural pathways haven't been choked by decades of accumulated stress.

It's hard enough to learn any new skill once you reach adulthood. Young minds can soak up information without much concern about what it means, but by the time we reach adulthood our brains are so convoluted -- some say polluted -- that even the meaning of `c:\` has to be filed in triplicate in seventeen different neural storage sites and cross-referenced with miles per hour, third grade recess, the smell of fresh asphalt on a spring afternoon, and the real crippler...life and death. Make no mistake, with every passing day our society links computing skills more closely with survival. It's not a relaxed position from which to learn.

A realistic view of adult learning



In my experience, adult computer training is best approached from the same perspective as teaching learning-disabled children. There's not enough practical difference between the two to be important.

Unmanaged stress, pressure to perform and overly-convoluted thought processes are hallmarks of learning disability. Learning problems are always marked by a communication problem, either between teacher and student or student and student's body.

I've discovered that every adult novice I work with has a learning disorder. I didn't really believe it until I realized that the students with whom I communicated easily had the same disorders I have, so we made perfect sense to each other.

Effective teaching often boils down to discovering which disorder is in play on a given day and speaking to the person at that level. Depending upon the moon phase, last night's ball scores and how much sleep I got, I could find myself on any given day with dysnomia (mixing numbers), dyslexia (mixing everything), attention deficit or a mild case of narcolepsy. Fortunately, I know my stuff...and I'm relatively familiar with my "junk". The key to my job is finding a way to communicate through any perceptual wall that may exist within my student. It's a bear of a job when I have walls of my own. It's impossible when you don't know you have these walls, and most computer professionals of my acquaintance are either blind or just dimly aware of theirs.

The computer tutor's job was once made difficult by the wide gap between the needs of the software and the language the user already knew. Until recently, learning to use a computer had always been more like learning a new language than learning to drive a car. It's a tough slog for any adult. What makes it worse is the emotional baggage that comes with owning a computer.

The industry seems to be telling us that if we want their goodies, we had better have respect for those who provided them. Simply put, the industry shames us into docility by making us believe we're too stupid to use the product unless we spend a requisite number of hours with our heads buried in the manuals. They had to do it, so why shouldn't we?

Our first reaction is disbelief. Weren't we told that these machines were easy to use? Salespeople and developers seldom have a satisfactory easy answer to that one, and the more deeply truthful the answer, the more painful it is to give. It's easier to hide behind technobabble and double-talk than admit the truth: that the industry is going through serious growing pains and the consumer is expected to be a patient parent. The double-talk and technobabble is simply a way of avoiding responsibility, but it's gotten to the point where even those in the industry believe their own lies. This is brainwashing, pure and simple, and it is murder on the self-esteem of users and the souls of people working in the industry.

Rebuilding a user's self-esteem is not a job for which I enjoy taking money. I spend no small amount of time with students either justifying my fees or massaging their shame over their feelings of stupidity. Neither is useful or necessary.

The simple fact is that there isn't an operating system in existence, or -- to my knowledge -- even on the drawing board, that fits together and functions in a way that meshes with the training the average Western (or Eastern) has already accumulated over decades of cultural training.

(A quick explanation to Mac users who think this doesn't apply to them: you haven't witnessed pain until you've watched a novice with poor hand-eye coordination attempt to make the connection between mouse movements and the screen cursor; and the concept and process of modifying system settings and configuring desk accessories confounds more people than you might think. The Mac only seems intuitive once you understand how **Finder** is structured)

Emotional role reversal



Identifying and dealing with emotional role reversal -- the way that the industry plays child to the

consumer "parent" -- is in my opinion the cornerstone to creating truly user-friendly software. Sadly, I expect it to take at least another decade for the industry to arrive at the same conclusion.

In the meantime we have "idiot guides", videos, classes and tutoring to fill the gaps left by convoluted manuals and online help that doesn't.

Sorry, but in my books anything referred to as an "idiot guide" carries too much emotional baggage to be an effective teaching tool for any adult with an ounce of sensitivity. The mass-market training videos I've seen generally neglect the fact that the best teaching approaches to any subject only work effectively for about one-tenth of the population. Most reports I've heard from those attending computer classes sound more like high school whines about summer school than excited testimonials from empowerment seminars. Reports about private tutors have only been marginally better.

As a private tutor and independent consultant, one of the most important -- and difficult -- parts of my job is salving the wounds of people who failed the idiot guides or were left twisting in the wind by an irresponsible or insensitive consultant. On the flip side, one of the most loathsome tasks I face is dealing with people who, in the words of a more experienced tutor, "have learned a few buzzwords and think they know it all."

Both groups are victims



Both groups are victims. The latter group just doesn't know it yet.

Did Apple ever consider the difficulties a perceptually-impaired adult faces? Probably not. All they knew was that they needed something that demanded less technical precision and memory-based learning than major competitors MS-DOS and CP/M. All CP/M and UNIX's developers seemed to be concerned about was creating something that worked, and if it required a programmer's skill and knowledge base just to be a competent end user, well, that was the price to be paid for being among the technological avant-garde.

(For those who care, CP/M is now a dinosaur; UNIX is alive and well in its various forms. It has its own graphical overlay, X-Windows, which functions comparably to the way Windows works at a deep level: as a graphical overlay for DOS.)

Microsoft found a happy medium between the exacting demands of command-line interfaces and the pretty-but-superficial Macintosh **Finder** when they finally developed Windows into a usable product, but they neglected to consider the problem of language at a deep enough level.

Did Microsoft's programmers consider for more than a moment whether first-time Windows users might prefer not to learn a new language before they could use the software? Or that DOS' online help, which even Windows-only users still need, might be more useful if it resembled something other than a recipe card for technojoys? Probably not. Despite their enormous market-testing budget, Microsoft's novice-level pre-release beta-testing program appears to consist of releasing the software and working around the complaints. Novices tend to overload pre-release bug report files with "obvious" and "unrelated" problems. (To be fair, their beta program is much more involved than this, but the fact remains that this is how ineffective it appears to the end user.)



There's another, more insidious problem that needs to be addressed in the programs

themselves and the way they handle errors. When something goes wrong in a program, there's seldom advance warning, a helpful post-mortem or a dialog box that says "it wasn't your fault". Only a handful of programs let you configure error messages so that they'll tell you "Your fault and here's why" or "Not your fault and sorry for the inconvenience". When this level of communication doesn't exist, there is an implication that the user is responsible for errors. Garbage in, garbage out, they say. What about the "garbage in" from the programmers who wrote the software in the first place?

More than any other consumer product, computers tend to blame the owner for problems which the product itself was intended to solve. The industry prefers it that way.

Catering to the extremes



Computers are supposed to be easy to learn for people who think normally. "Normal" in this context means linear and rational. But this is only half of the human mental process. Graphic interfaces address the creative, emotional mind, but I have yet to see an operating system which adequately addresses the emotional needs of adult students, which takes into account that by age 35 almost everyone is tired of being blamed for problems they didn't cause, told they should know things they were never taught, and generally has enough bad learning experience to make any challenge at this level a serious chore.

It's easy to free up your creativity and absorb new knowledge on a sunny day in the countryside. But try mastering directory structure on the day before a major deadline. This is how most adults approach learning computers, and the industry simply is not offering enough of a helping hand. Again, what does a child know about an adult's needs?

The roots of the problem run far deeper than simple role reversal, and they're firmly entrenched in the soil. There is an enormous communication gap between provider and end-user that has existed practically since the birth of computers themselves.



The stereotype of the computer nerd in thick glasses and lab coat hasn't really changed, not where it counts. The major differences are that today's nerds earn enough to sport thick Carrera glasses, and they are in real demand now, not simply working in the only field which will tolerate them.

These nerds (and regardless of what disguise they wear, they -- and I -- are nerds) have been dictating what a computer should look and feel like, and how it should behave, since day one. As a result, the behavior of a computer directly reflects the intellectual prowess, linear thinking skills and emotional maturity of the programmers. Remember that the next time someone hands you the "garbage in, garbage out" line.

Virtually the entire industry is geared toward serving two minorities at extreme ends of the scale: the highly logical and the easily teachable. Logical people don't need to fight with each other; logic settles the arguments, and principles -- not personalities -- rule the behavior of the participants. Brains don't usually fight with artists either. It's too much work to find middle ground. But when the extreme meets the middle, where most of us live, all hell breaks loose. There's power at the extremes, and people don't normally let go of power until it's taken from them.



Developers often appear to forget that strength in one area is weakness in another. Linear thinkers can just as easily be called "unimaginative" thinkers. Creative people can also be termed "illogical". By the same token, computerphobia could translate as cautiousness, reduced attention span as efficiency-oriented, and a "slow learner" as a "thorough study". It's all a matter of perspective. The problem is the developers' lack of awareness that in a free market economy, it's the customer's perspective that matters.

Most of us lie between the linear and the creative. The difference between respectful and disrespectful treatment by the industry and is the difference between being a "novice" or "neophyte" and a "dummy". It's telling that "dummy" is now so common a description of the adult novice that we're supposed to laugh at it, the way we once chuckled as we described wives as "the ball and chain" and children as "rug rats". Words are just words, after all, but where did that word come from and why is that particular word used to describe *you*?

Children won't mind being called rug rats...until they discover that rats do a lot more than squeal, scurry across rooms and eat a lot. They also carry disease and create all kinds of irritations. Any adult using this term to describe a child knows that "rat" carries all this extra baggage. If you really believe "dummy" is a term of endearment, consider the fact that once the "dummy books" became trademarked, the industry responded with a new name for third-party computer manuals: "idiot guides".

What's really frightening is that people have become so accepting of the term that by early 1996 the "Dummies" series will have sold 10 *million* copies. And make no mistake, they are not the only game in town. It took the Dummies series to get the ball rolling, but excellent beginner-level manuals by third-party publishers are becoming much more common.

We're all learning disabled



I haven't taught an adult yet who didn't have at least one mental block which didn't qualify as an actual learning disorder. On any given day, depending on my stress level, I might suffer from any of four recognized learning dysfunctions. And while online help for programs themselves is improving dramatically, operating systems -- even graphical interfaces -- aren't even close to an appropriate level of user-friendliness.

If you doubt for one second the depth of hostility felt by the industry toward the adult novice, consider this point. It wouldn't take more than a small fraction of Microsoft's or IBM's resources to address the needs of adult novices with intuitive, multileveled, highly-detailed, menued, online help from the word GO that can even determine where your mental blocks might be on a given day and speak to you in language you can really understand.

(In fact, I believe that "type GO and press ENTER" is the only written instruction any user should require to install and use a program at a basic level. The extra instructions included with First Train are due to limitations in the operating system, not to weaknesses in the software itself.)



This degree of user-friendliness requires massive amounts of program code, which in turn chews up development time and disk space. I've been quoted as saying that developers won't

go to these depths because consumers won't pay for the extra development and product cost.

That's not even close to the real reason why developers don't create first-rate training materials. The helpfile is usually the least time-consuming part of product development, and lesson files can be deleted once lessons have been mastered. There are few users who wouldn't pay an extra five to ten dollars for a \$150 program for the extra disks and programming required for effective training materials, particularly when this investment will save them at least several hours of manual-diving, and at best hundreds of dollars in third-party training.

Understanding and adapting to adult learning dysfunction won't require years of research to implement in software, either. Useful prototypes of user-friendly online help already exist.

We have the technology...



The unfortunate part is that the training stopped with Program Manager. Eventually users must wade through the manual, attend classes, or pay a tutor from \$25 to \$75 an hour to learn how to install new programs, back up data and understand filing systems. These are elementary skills which could easily be taught by the operating system itself, and they should have been.

Not many people learn how to install new programs, find files on the hard disk or use the included applications without several hours of hitting the books or being shown by someone else. Windows 3.1 should have been a twelve-disk set, not six. The other six disks should have contained walk-throughs for its other features. For the next while we're going to have to resign ourselves to learning a lot of our computing tasks by memory and repetition. Here's hoping long-term memory lapses or attention deficit don't happen to strike you on the day you need to learn these skills.

Windows 95 does not include the level of help I'm suggesting as necessary, and I wasn't the least bit surprised. Microsoft had nearly three years to release a Windows 3.2 with just those features. And it never did appear.



Adding these extras to Windows itself would have boosted the retail price all of \$10. If they were scared of losing customers to the price, they could have released a stripped-down Windows Lite or Windows Expert for a few dollars less. These are simple marketing solutions. That they weren't implemented is just about inexcusable, but as I'll demonstrate in a moment, entirely understandable, given the dynamics of the industry, of which Microsoft is only the most visible example.

Learning to use an operating system is one thing. Maintaining it is quite another. Like cars, computers need maintenance from time to time, but the days when users could reasonably be expected to act as their own technicians are over. Operating systems have grown far too complex for the average user to maintain.

When you buy a car, the owner's manual says "refer to qualified personnel for service" for jobs as simple as oil changes. You can do the job yourself if you want to learn how, but the point is that you're not expected to know much more than how to steer the thing.

Not so with computers. Owner's manuals for cars are usually less than a hundred pages. The IBM-compatible user is confronted with nearly a thousand pages on the operating system alone. The industry seems to be telling us "if you want to own the product, we expect you to know how to take care of it." In my circle this is known as passive-aggressive behavior. I'm ashamed to say that I've been guilty of this behavior myself. I still fall into it from time to

time.

Part of this stems from brainwashing I've absorbed myself. As a general troubleshooter, there's no way I should be expected to know every piece of software I'll come up against. Yet I find myself expecting to perform to this level of perfection. And despite all I know I still have a very difficult time defending myself against a prospective client who expects it from me.

← Last topic

I forget that I'm being called in because of problems the user can't solve on their own. I forget that when I can provide information from memory or prior experience, it's a bonus. I forget that computers are like cars only insofar as the hardware does what it was designed to do. I forget that working with software is much more like working with another human being than working with a machine.

I forget that what I'm really paid for is not having all the answers, but rather knowing where to find the answers I don't have and being responsible enough to find help in situations where I can't solve the problem.

Heaven help you if you meet me on a day when I expect myself to be perfect. I can't do it, and when I fail I'll be frustrated. Someone -- or preferably something -- is going to get it. I've known this for years about myself and had a damnably difficult time dealing with it. Many, perhaps even most of my colleagues, don't see this in themselves. And when this expectation of perfection becomes so internalized that they forget they even have it, they begin to lose touch with humanity and magic and worship with heart and soul at the altar of cause-and-effect mathematics.



That's not the frightening part. What's really scary is that once you do suppress this knowledge of your need to be perfect, you find yourself able to perform machine functions at a much higher level. Athletes do this consciously. Computer geeks tend to do it unconsciously. Ultimately they forget that users and software are not nuts and bolts to be bent until they fit into place. They forget that computers were meant to make life easier and more interesting, not to replace life itself.

...but not the will

← Last topic

Aren't computers supposed to be providers and storehouses of information? The whole notion that we should require a printed manual to use them makes about as much sense as a having to start your car's motor with a bumper-mounted steam engine.

Even if the average user does still require a minimum level of maintenance skill, the industry is doing a horrendous job of providing it. Need to check your hard disk for random file errors and fix them? Eventually everyone does. Why can't you type FIX, SERVICE or MAINTAIN at the command prompt and get a menu of choices with optional help on what they mean?

We have teaching methods which allow functional illiterates to become excellent auto mechanics. There is a huge market of adults with Grade 6 or lower reading levels who could whiz through Windows and master Macintosh Finder quite easily if they had a manual written and illustrated simply enough to be understood, or online help that responded to the way adults ask questions.

But they don't.

We have the technology, but not the will. Creating these materials is not difficult when you have the resources of an Apple, a Microsoft or an IBM. But it's a bear of a job when the act of creating them entails a tacit admission of your former insensitivity. And that's where the real resistance lies.



Many people are ready to point fingers at others and discuss the traditions which led to this sorry state of affairs, but very few people in positions of power in the industry are willing to admit that they bear a degree of responsibility. The simple fact that I spent over sixty hours writing this article instead of spending those hours working on my own problems demonstrates just how difficult this shift in perceptions can be for those in the industry.

Let's go back to the "idiot guides" for a moment. They're reasonably good replacements for the manuals which come with most software and operating systems. But they only serve to reduce the level of complexity from ridiculous to tolerable. They're still only a partial solution. There are few more heart-rending and angering experiences for a computing professional than teaching someone whose self-esteem was shattered by their inability to comprehend a "dummies" book. I encounter so many victims that I'm in danger of becoming numb to them.

Money Will Make The Difference...



Change isn't likely to come from the developers and programmers. It will not be triggered by any sense of goodwill on the part of the industry. Pardon my cynicism, but it will probably start in the boardrooms and be driven by a growing market of novice users of average and below-average intelligence. If these people can't learn to use the operating system, everyone loses money from manufacturers to publishers to retailers, all the way down to the service sector.

This is going to take time, and even with grass-roots market demand it won't come without one hell of a fight. Before it can, the industry has to come to terms with its hostility toward adult novices. One of the best-kept secrets in the industry is that a sizable percentage of the computing power elite doesn't want you to own computers...not unless you're willing to pay blood compensation for the old injuries which turned these people into geeks and nerds in the first place.

This next statement is going to sound pious and sanctimonious, but that doesn't detract from its truth. This secret desire for vengeance is so well-kept that only a handful of people in the industry even acknowledge that it's true, let alone consider it an important issue.

I've spent far too much of my time apologizing for my industry, my "family". The reason why you can't fix hard disk errors simply and easily isn't because the industry is "young" and hasn't caught up with the needs of users yet, but because it is caught in the same trap of irresponsible use of technology suffered by virtually every major industry in this century. There's no glamour, no kick in writing user-sensitive training materials, not for a "real programmer".



It's far less painful to reach for the next rung on the ladder, to build bigger-better-faster, than it is to stop and examine the legacy you've left behind and correct your mistakes before moving on. It's human nature, and there's precious little we can do to change this without genetically re-engineering the entire human race. The best we can hope to do is come to an understanding.

Money buys insulation from reality, and the opportunity to postpone responsibility, but ultimately this insulation wears out or becomes ineffective. Eventually you run out of new thrills

and have to face your past. Whether you come to face your past depends upon how creative you are at finding new thrills. Our legacy of war is proof of how conquest becomes the source of comfort and thrills when money can no longer buy pleasure. How readily you'll face your past depends upon its quality. The quality of that past determines whether you look forward to retirement or a rest, or dread it.

The relatively passive nature of computers makes them highly attractive to people who have an unpleasant social history. The present generation of computing's power elite comes from a group of kids who didn't generally find much satisfaction with their peers. The computer geek stereotype came into being only because there were enough real computer geeks to support the concept.



Like most computer geeks, I learned to accept computers as a substitute for more "normal" pursuits such as romantic/sexual relationships, competition and social interaction. I've been alive for 35 years, but I haven't "had a life" in terms that most of the world accepts and understands. I know how it feels to prefer not to ask for dates because your "geekiness" has resulted in a perfect, 100% "no" record and one more rejection would be one too many, to give up on sports and outdoor activities rather than have sand kicked in your face one more time, to collect welfare and avoid job interviews rather than be fired every month or two for being "antisocial". I've even had counselling professionals look me straight in the eye and tell me in real disgust that my life was a joke and I *ought* to feel suicidal.

Mine is not an isolated case. These experiences are shared, to a greater or lesser degree and in various forms, by a very large percentage of the computing elite. We've been denied a lot of what we wanted, and we've been ridiculed for the strengths we've acquired to deal with our losses.

People who have been denied a past will reclaim it with a vengeance if given the power. Make no mistake about it; the stupidity you feel when your computer doesn't work as expected is the nerds' revenge.

...or will it?



Microsoft CEO Bill Gates is perhaps the most visible public icon of subversive geek vengeance. His is a hostility buried so deep that it makes him look like a magician instead of a manipulator. It's not always easy to spot this trait until it gets acted out. Orson Welles' fictional character Charles Foster Kane in *Citizen Kane* was the classic example, and a historical lesson. As a newspaper editor he prided himself on championing the little guy; later in life he became an apologist for Hitler.

Remember how Kane's rise to power started? By being wrenched in one of the most traumatic fashions imaginable from his home and family. Welles and co-author Herman Mankiewicz both had a strong understanding of how the past reverberates into the future, and the effects it can have on corrupting humanity, as have all the great writers through history. Gates' early life has been largely glossed over, but his actions in the present make it clear to anyone with even the barest understanding of developmental psychology that his must have been an extremely difficult past. Gates denies this for the most part, which is typical of powerful figures acting out old battles on the world stage.



Ethics get so grey at his altitude that it's easy to mistake irrationality for the real magic of power and charisma. It might sound marvelously new-age that Gates is unafraid to leave his briefcase unattended in an airport because he considers theft too inconsistent with reality to be possible. But he also dates by video link-up. Is it because he emanates so much love that his possessions are sacred even to thieves? Or does it have more to do with an aura of fear of real human contact?

Gates could have been known more for his statements about the role he wants Microsoft to play in making information technology a tool for peace. Instead he's known for spending \$12 million for the rights to attach a Rolling Stones song to Windows 95 and for his stated desire to see that Microsoft has a hand in virtually every aspect of computing, and a product in the hands of every consumer able to afford it. Bill Gates is powerful enough not to have to care about his public image, and the tragic truth is that he is only stating out loud what much of the industry can only think. He is only doing what many -- perhaps most -- of the power brokers in the industry would be doing if they were in his shoes.

Beware the gold-plated geeks



I've sacrificed my street-level reality to the Silicon God often enough to know dangerous naiveté when I see it. And when I hear about a generation of programmers unwilling to talk about, or even test, their new products for fear that they'll be bought out for peanuts or have their concepts stolen, loud alarms fire in my head. Hitler also believed in magic, had strange sexual/romantic ideas and held power by fear. Hitler also gathered around him the disaffected genius of his generation. Hitler also scared the daylights out of the more sensitive genius' of his day.

I've also seen enough hollow philanthropy that when Gates claims he'll donate his millions-cum-billions to charity in a few years, I have serious doubts about whether there'll be anything left to donate. Giants fall hard, and Microsoft is currently the biggest.

I'm not alone in my concern. Some of the most respected voices in computing have echoed a call for the break-up of Microsoft under the US' Combines Investigation Act, and I expect to see action taken by the US government in the next year or two to accomplish exactly that. Heaven help us if they don't.

I want to make very clear that I do not see Bill Gates as the reincarnation of Adolph Hitler. But when one of the most powerful people in the world demonstrates sociopathic behavior that affects the decisions of those under them, it is cause for serious concern, and awareness of the existence of a threat is the first line of defense against it. Gates' behavior has met those criteria on a number of occasions (let's not forget that sociopathy is not usually a condition with 24-hour-a-day symptoms).

← Last topic

Al Capone cried at the opera and gave large sums to children's charities in particular; even he had humanity in him at some level. But the ruthlessness in business that took Capone to the top of his field inspired others to emulate his behavior. He's not much different in the shower from most computing professionals of my acquaintance. But several years ago, the personality traits which distinguish people like those I mention here were seen as something you had to put up with in order to be in step with modern technology.

Scratch the surface of many -- perhaps most -- of the Silicon Valley power brokers and you'll probably find tendencies just as alarming lying dormant within them, held in check by social pressures and fears which men in positions like Gates' don't feel. Power corrupts, and

the more damage, loss and neglect you've experienced, the more damage, loss and neglect you'll inflict when power lifts the weight of social responsibility from your shoulders.

At the risk of sounding alarmist, I've studied enough history to feel very threatened by the current state of the industry. (It's a tough line to walk, because that same fear also feels at times like excitement...you mean that I could be a powerful person in this new high-tech environment?) If the Geek Guard entrenches itself in the boardrooms of enough high-tech firms, we can kiss goodbye any chance of seeing computers fulfill their promise as a great tool for peace and equality for at least two generations. The "sins of the fathers" are met upon the sons and it usually takes a full two generations to undo the damage.

Coming clean



I'm guilty of many of the same sins I attribute to the gold-plated geeks. I have made sly accusations to clients that it was their fault for buying the products they purchased, rather than the fault of the manufacturer for not providing them in a usable form. I've looked back at some of my own writing in horror as I realized that it cleverly set the reader up to feel like a complete idiot, when the fault lay with me for not knowing what I was talking about. Without consciously intending to, I've encouraged people to be dependent upon my "wizardry". I've refused to apologize for mistakes rather than endure the shame of being human and prone to errors my computer can't make. And I've distanced myself from the people I am paid to serve because -- and this is not a word of exaggeration -- people have never given me the satisfaction my computer has.

The worst part isn't that I've done these things. It's that I've had many colleagues whom I respected as among the more conscientious computer professionals tell me that I had done nothing that everyone else in the industry wasn't doing, and I had no reason to feel ashamed or even to change my ways. If it's true that everyone is doing these things, then there is something very, very wrong with the industry.

Oh, what might have been!



Cowardly geek that I still am, I'm only singling out Gates and Microsoft because of they are the most visible and obvious example of the industry's Peter Pan syndrome. Granted, Bill Gates doesn't personally dictate what we buy and what we can use, but Microsoft employees who do make these decisions generally adopt his worldview as a corporate survival reaction. Microsoft does dictate to a very large degree what we can and can't buy, and high-level employees usually get to those high levels by emulating the beliefs and behaviors of those at the top.

That's not to say that the men at the top aren't sometimes personally responsible for major gaffes which eventually hurt everyone. I've been accused of being overly-loyal to Atari, but having lived and worked on both sides of the tracks I still believe that one of the most unfortunate episodes in the history of personal computing is the fall of Atari.

In 1985, this company which was previously best-known as a manufacturer of video games, released the ST line of home computers. It was -- and still is -- the easiest, most sensible, most cost-effective graphically-based personal computer system ever released. It never got the respect it deserved from the industry, who considered the company a joke; or consumers, who couldn't accept that a games manufacturer might make a reasonable PC. Next to the Commodore 64, it was the closest we've come to a Volkswagen computer: something that combined versatility, ease of use, low maintenance requirements, power,

reliability and low cost.

Atari President Jack Tramiel started out by developing the desktop calculator and eventually building Victor Comptometer into the one-time industry giant Commodore.



After selling out his Commodore stock and shifting his interest to Atari, he apparently became bored with PC's after his Commodore 64 experience and chose to leave the personal computer division of Atari in what many insiders feel were the less-than-ready hands of sons and nephews. In just a few years the Atari line turned from a serious contender with a superb product and the most loyal user base in computing into a dinosaur.

I was one of the last to jump ship. I still remember the discussions on a large international online service, which had several high-level Atari employees contributing, and the increasing bitterness and disillusionment as everyone's hopes for the product seemed to evaporate before our eyes. Even those of us who had no idea how to work a cash register knew that Atari was making disastrous decisions. We as users were being left twisting in the wind, and there was no small amount of teeth-grinding over the fact that this wonderful device had no future.

If Atari had challenged IBM and Apple as aggressively and intelligently in America as they did in Europe, where the ST series was a huge hit for several years, the average user would have benefited regardless of which computer they bought.

Imagine the marketing execs at Microsoft having to vie for market share with an operating system which nearly anyone could master -- and maintain on their own -- in just a few weeks. (It took me two months to become an "expert user" on the Atari; the same feat took me eighteen months on the IBM-compatible.) They would have had little choice but to acknowledge the consumer demand for a simple, solid, easy-to-maintain product, and Windows 3.1 would probably have looked a lot different. Instead we have operating systems that only a professional can troubleshoot.



This is the price of having one company responsible for about 80 percent of the operating system market in North America. Microsoft has parlayed its success as OS market leaders into development and marketing of applications such as Word, Works, Excel, Access and Visual Basic, products so undeniably good that Microsoft are arguably the best applications developers in North America as well. They're into hardware, selling mice and keyboards; and on at least one occasion a Microsoft executive has publicly admitted disappointment that Microsoft can't actually sell computers without violating anti-trust legislation.

Things are working marvelously in Microsoft's favor right now. But then no one can deny that Hitler, Lenin and Mao worked wonders with their economies as well in their first years in power. There are precious few mountains left for Microsoft to climb. As any industry watcher who doesn't fear a lawsuit will tell you, the urge for conquest which lies latent in all great powers has already begun to surface at Microsoft. (For better or worse, my anger has overwhelmed my fear, and I no longer care whether stating my beliefs and observations lands me in court.) They've already been caught in the act of perpetrating Orwellian doublespeak and propaganda tactics in their dealings with the public, and not just once but several times.

And the real tragedy is that it's unlikely things would be much different had Atari, IBM, Apple or anyone else cornered a share of the computing market the way Microsoft has.

Revenge of the computer nerds



Let's face it...nerds are made by abuse and neglect. They all have axes to grind, most of them justly so. But if the industry owns up to its hostile attitudes and passive-aggressive behavior, it will lose considerably more than face. Our society has very little patience left for offenders of any kind, even repentant ones with skinny legs who wouldn't know love if it gave them a heart attack.

The Peter Pan's of the industry and their emotional perspective still largely determine what we can buy, how it will behave and who will be permitted to master its power. I have met few honest vendors and a support pro's who didn't confess that sprinkling their technological fairy dust on a novice was a painful experience they'd prefer to avoid. It calls up too many ghosts. The sad part is that many of those who make a sincere effort to be compassionate eventually wind up "leaking" their frustration in other aspects of their behavior. You can't run from what you are; eventually it catches up to you.

Microsoft is a perfect example of this dynamic in action. Their Wizards technology bends over backwards to make data manipulation easy for novices. People who didn't know desktop publishing from scrap paper could -- and did -- turn out exceptional-looking documents on their first or second try. The wealth of wizards in Windows 95 has been a blessing for first-time owners on par with having an uncle who's a programmer.

Their Windows 3.1 tutor, which demonstrated the basic features of the Windows environment, was another exceptional piece of training software. It received a lot of kudos, and justly so. In fact I still use it as a standard against which I measure other tutorial software. It was exceptionally well done for its time, and many hoped it was indicative of how Microsoft intended to treat its customer base. The thing is, Microsoft did those jobs right. When they haven't produced their best, their responses have not met the standards that **WINTUTOR.EXE** and Wizards technology have led consumers to expect.



When a weakness in DoubleSpace -- an integral part of the MS-DOS operating system beginning with version 6.0 -- wrecked millions of files, they released the bug fix as a paid "step-up" option. I still meet people who believe they are at fault for data loss caused by the faulty DoubleSpace software. I myself didn't discover until months after its release that the upgrade files had been available at no charge from Microsoft's bulletin board. In the meantime Microsoft sold millions of step-up disks through retailers at \$10 to \$18 apiece.

Orwellian doublespeak

← Last topic

Imagine that every GM product produced for the last two years had faulty brakes and GM offered to "improve" your brakes for a nominal fee. This gives you a pretty accurate picture of what Microsoft pulled off with MS-DOS 6.2.

What really makes me ashamed is that as much as I thought I took a sensitive and responsible approach to my work, it took an angry client to point out this injustice.

Not long after this fiasco, they were successfully sued by Stac Electronics. DoubleSpace itself was proven to have "borrowed" Stac's technology. Developers throughout the industry were ecstatic, and I still remember seeing colleagues' eyes light up as they talked about it. Perhaps losing a relatively public court battle would prompt Microsoft to change their tactics, because they had been reputed for years to be one of the dirtiest technology traders in

the industry. If you developed a useful utility, it was almost an industry joke that you dare not test it publicly for fear of Microsoft either buying you out at bargain-basement prices or copying your work outright if you refused their deal.

Time will tell whether Microsoft's attitude toward their industry changes. (If anything it seems to have gotten worse with allegations of such alarming features in Windows 95 as subliminal images in the startup screen.) Their attitude toward the public doesn't appear to have changed for anything but the worse. When Stac won their suit, Microsoft stopped putting drive compression of any type into their MS-DOS package for a time, instead promising to provide it later. In the summer of 1994 they released MS-DOS 6.22 with their new, legal DriveSpace compression. They went to the poisoned well again, releasing an MS-DOS 6.22 update disk set for users who wanted the latest disk update. Once again, it was available as a free update on bulletin boards and Microsoft's Internet sites, and Microsoft didn't sell nearly as many "step-up" disks as they did with 6.2. But they did sell some, which is a shame in itself.

Last topic

What makes this even more insidious than their MS-DOS 6.2 shenanigans is that in this case, the "step-up" was released not because they made mistakes with the software, but *because they got caught in the act of infringing on copyright*. There were a few minor fixes and updates included on the disk, but Microsoft had offered all kinds of fixes previously and had never released them as on-disk, feeable updates. They had always been made available from Microsoft's FTP sites and bulletin boards. Profits earned from sales of the step-up disks may be a drop in Microsoft's ocean, but the revenues from this meta-product, revenues which came out of the pockets of those who believed they needed the update, at least partially paid their bill to Stac Electronics. It's reasonable to say that most of those who bought the step-up disks were swallowing at least part of the blame for Microsoft's offense.

Microsoft justified this new marketing tactic as a change in consumer policy, and actually painted it as an improvement, since the fixes and updates had been made available for the first time to the average consumer who might not have access to their FTP sites and bulletin boards.

Call it creative marketing if you like. Many industry watchers, myself included, would label it subversion. It takes a lot of time, isolation and plotting to carry out an act of geek vengeance this slick and pretty. Whether these motivations and machinations were conscious or not, actions such as these indicate contempt for the consumer. And Microsoft is far from being the only firm doing these things. I've seen it happen in my own circles and dealt with it myself on several occasions. Once real money and power enter the picture, you can almost hear the teeth being ground off of people's ethical gears.

Last topic

It's less frightening to me that this is happening (power corrupts, and by the time we reach Grade 8 we should all have learned a high degree of cynicism) than the fact that we accept this behavior. I've told bald-faced lies to clients, advised a few on purchases I wish I had the money to take back now (if they know about it they haven't told me yet and I'm not saint enough to tell them), and fudged on more questions than I can count. And I've almost always gotten away with it.

Yet I've been told hundreds of times that my facial expression always seems to betray my dishonesties. The simple fact that I was able to get away with dishonesty about computers when I can't seem to get away with it in any other area of my life speaks volumes about what has already happened to people's rational judgment when it comes to computers. In fact, my clients, not my colleagues, have even told me on more than a dozen different occasions that I take ethics too far.

They're right...but not in the way they think.

← Last topic

I never wanted to pull the wool over anyone's eyes; I just wanted to earn an honest living, and when honesty got in the way of living, I settled for earning money any way I could. And I was supported in doing so by colleagues I depended upon to help me with ethical dilemmas, people who were struggling like I was, who seemed to care about others and act on that concern, and who hiked in the mountains on weekends and slow days for the good of their spirits. They look like good people. And they believe they are doing nothing wrong.

Make no mistake about it...this is an epidemic from the top down, and I expect it to get worse before it gets better. Maybe a lot worse.

The bottom line

← Last topic

Any adult who approaches computing for the first time with anything less than a child's innocence, openness and capacity for absorption is fighting the flow, and eventually they're going to get hurt. Everything from the hardware on down to the interfaces was designed, built, tested and marketed by and for overgrown kids. Intended or not, desirable or not, the whole industry is working through a serious case of Peter Pan syndrome, and it's not going to be a quick cure. We have a long way to go before computers fulfill their promise as an equalizer. Let's hope the worst is behind us, but for heaven's sake, let's keep our eyes open in case it isn't. If some of the more disturbing rumors about what's going on in the boardrooms of the biggest high-tech firms are even partly accurate, we've only seen the tip of the iceberg.

In the meantime, don't ever forget that there's a good chance that the people you rely upon to help you with your computing problems, from what to buy to how to use it to what to do when it doesn't work, may be relying upon the gold-plated geeks as models for behavior without even realizing what they're doing.

If these people are causing harm to others, eventually they've got to be awakened to that fact, but the time to do it is not when you're most in need of help yourself. We're talking about brainwashing here, and you can't deprogram a cult member as long as they believe they are living in God's good graces. The only confrontation they are ever likely to respond to is the one they have never experienced: being treated with understanding when the tables are turned and they become the potential victims once again.

As long as the Geek Guard does have power, we can't fight back. All we can do is defend ourselves. The only sane approach is to abandon them to their silicon god and find some safer place to raise the children. Once they've had a taste of power, it's almost impossible to break the addiction, and few of those who taste it ever even want to.

Put yourself in their shoes...*my* shoes. Would *you*?

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Insurance and medical



Before you embark for points unknown, you'll have to decide how adventurous you plan to be. If you intend to play it safe and do little but sightsee, you won't need most of this section. But if you intend to have more fun than that, we offer a warning: your computer could probably use a physical exam and a vaccination. And if you've been "letting it go", you might find that a lot of testing and preventive maintenance is in order to prepare it for the exotic fare served by the locals.



Much of what you'll find here can be left to paid servicepeople if you can afford it and would rather not do the work yourself. But since Internet travel is so inexpensive, First Train riders have appreciated this opportunity to learn how to save the cost of these service fees for more important things.

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 [Tuning the tools: is your computer Internet-fit?](#)

 [Virus infections: what every traveller should know](#)

 [The PC Owner's Survival Guide](#)

[← Last topic](#) [Disaster prevention for Windows: uninstallers and emergency backup](#)

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 [Insurance & medical](#)

Tuning the tools

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It's a shameful fact of computing life: there are millions of overweight, out-of-shape computers in homes and offices around the world. Internet travel is one of the most demanding activities for a PC, and an unfit computer can put a real damper on your fun. This section is designed to walk you step-by-step through some simple diagnostic procedures which will help insure that your computer is fit as it can be for the adventure ahead.

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Introduction: Tuning the Tools



Not more than a year or two ago, going online meant having a computer, a modem, and the numbers of a few local bulletin board systems (BBS') or an account with a commercial online service. You could find at least one BBS in virtually every small town in North America, and from there you could usually get access to mail and message areas similar to the email and newsgroup services available on the Internet.

Even Internet access was low-tech until very recently. If your online service provided it, you could access the net simply by selecting TELNET from their menus and learning a handful of commands that would connect you with the Internet service you wanted.

Meeting the demands of Web-tech



The World Wide Web changed everything. In the past year, the Web has turned from the world's largest hypertext helpfile into a full-fledged multimedia circus, with audio, video, interactive communication and more color than the Las Vegas Strip.

All this glitz is wonderful for making new users feel at home and adventurous, but it also places tremendous demands on personal computers, demands that many systems can't meet. This can be enormously frustrating for people whose expectations of the Internet are based on in-store demonstrations, television programs and magazine articles.

This section is designed to help you make sure your system has what it takes to get the most out of the Internet in general and the World Wide Web in particular. And if it doesn't have what it takes, we'll help you make it work more effectively with what it does have.

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Making the most of your memory



This section includes information on memory, what it can and can't do to improve your system, and provide you with tips for making the most of the memory you do have with a simple diagnostic test and an exercise you can do yourself. Click either of the two titles below for more help or return to one of the previous menus using the bars at the bottom.

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[Important information about speed and memory](#)

 [Last topic](#)

[A quick and easy memory tune-up](#)

{ewc embh.dll,ARROW,A100} **NOTE:** The memory tune-up is only for Windows 3.1/Windows for Workgroups. It will not work with Windows 95, and we do not recommend hand-tuning Windows 95's virtual memory.

 **Tuning the tools**

 **Memory tips**

Memory and your PC

"My computer's too slow.

What's the cheapest, easiest way to make it run faster?"



Talk to a dozen consultants at random, and chances are good that at least ten will give the same answer. Forget about popping in a new processor chip...the best thing you can do for almost any Windows-based PC to add more memory. There are two ways you can do this. The best way is to buy more memory modules for your computer. But if the expense of a four or eight-megabyte memory upgrade isn't an option for you, you can always try to make better use of the memory you already have.



To learn more about the difference between computer memory and computer storage, which most new users get confused, click the help button.

Underpowered when it left the shop?



When you bought your computer, it probably came with 4Mb or 8Mb of RAM memory, just enough to run most programs at bare minimum performance levels. You're usually so busy getting used to the interface and software in your first month or two that you won't notice all the seconds and split-seconds you spend waiting for your computer as it accesses your hard disk instead of using much faster memory chips for the same job.

Once you become comfortable with your PC, these small waits -- they can add up to several hours a week if you use a computer in your job -- can become a serious headache. These waits are caused by Windows running out of RAM or chip memory. When that happens, Windows uses your hard disk, which is many times slower than your memory chips, as a form of temporary memory.

Eight megs or less is a drag on your browser...



If you don't use a Web browser very often, memory may never be a serious problem when using the Internet. But if you're like most users and spend most of your Internet connect time on the Web, memory will eventually become your biggest limitation. Some graphics-intensive Web pages -- even some of the graphics-intensive beginner-level training and setup pages on the First Train -- consume so much memory that they will slow a four-megabyte machine to a crawl. Many of the best Web gadgets won't even be usable on an eight-meg computer because of the delays caused by their memory consumption!

...and it's murder on Windows 95



In case you haven't heard yet, Windows 95 makes enormous demands on computer memory.

Applications that ran comfortably under Windows 3.1 with eight megabytes of memory will seem to crawl under Windows 95 with less than twelve megs. Most of the experts recommend sixteen megs for Win95, and we agree.



However, it's not mandatory to upgrade. Due to the way Windows 95 manages memory, you don't *need* to upgrade unless you feel your system being slowed by too little memory. And if you're in your first six months of computing, chances are you won't notice it that much. You'll be too busy getting used to the way the system works. And because memory prices should be coming down over time, it's always wisest to buy *when* you need the memory, not in advance of need.

Good news and bad news

The good news is that memory prices have dropped over the last year or two. The bad news is that even 8Mb machines can feel dreadfully slow. And as the Web gets better, memory problems will get worse.



It is recommended that you have a minimum of six megabytes -- eight is better and twelve is comfortable -- if you want to stay current with what's already on the Web and not be frustrated with developments in the next six months to a year. Your computer may only be able to accept upgrades to 5Mb, 8Mb and 16Mb, so you'll have to decide how far you want to go and how much you want to spend.

What's eating all that memory?



It isn't text like this that eats up all your memory. You can browse the Web using a line mode browser on eight-year-old PCs with black-and-white monitors. No, it's the sound and graphics that need the memory...especially the graphics. And it doesn't matter that these are not moving pictures. Your computer can move frames of video data in and out of memory as it needs to, so an amount of memory considered reasonable for still graphics is pretty much the same amount of memory you need for full-motion video.

Most of the graphics on the Web are very small files. This paper clip, for example, is only 211 bytes long. But this graphic has been made small using data compression technology. Your computer must uncompress these files in order to display them properly, and the actual amount of memory used to display this paper clip is closer to 600 bytes.

When you display a lot of graphics -- large or small -- on a Web page, your browser chews up enormous amounts of memory as it holds them in reserve for you to look at when you reach the section of the page where the graphics are found. And unless you choose a browser with exceptional memory handling (we don't know of any browser we could call exceptional at handling memory), there isn't a thing you can do about it.

More memory or a new computer?



You might wonder whether spending several hundred dollars on more memory is worth the expense with an old computer...or even a relatively new one. Here's what one Vancouver computer consultant and writer had to say about it:

"In general, I tell people that if it's just one component of the system that needs to be upgraded -- for example a bigger hard disk or more memory -- that they should upgrade what they have. But when you get to the point where you need two new components, such as a video card and a memory upgrade, it usually makes a lot more sense to dump what you have and buy a whole new system. Because when you figure the higher price you'll pay for the individual parts, plus the labor for installation, plus the fact that the upgrade won't add that much to the computer's resale value, it's time you stopped looking at computers like component stereo systems and started looking at them like automobiles. You don't change engines when you need more power from your car...you buy a bigger car. Generally speaking, the same goes for personal computers."

It's also important to remember that this is a general rule. If you're a hotshot mechanic, you'll replace your existing engine, and do it yourself, because it's more effective for you and because it's fun. But most people are not hotshot mechanics or computer technicians.



So the question you have to ask yourself is this: do you want to be a user or a hacker? If you want to be a user, get used to the idea that you'll probably be ready to trade up your computer every two years or so.

What can you do with the memory you have?



There is a way to make the memory you have work harder for you. The trick is to make it spend less time on slower activities by optimizing the swapfile.

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If you have no idea what this means, click the help button. In five minutes, you'll not only understand it, but you may very well have improved your computer's performance. (Windows 3.1/Windows for Workgroups only)

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Are you seeing the Web's true colors?



Hopefully you are. Until about mid-1994, most Windows 3.1 and 3.11-equipped computers came preconfigured with 16-color graphics. You seem to see more than 16 colors on your screen because of some fancy tricks done by the graphics-handling section of Windows' internal software. But these tricks won't work with a large and growing percentage of the graphics you'll find on the Internet. In fact, they'll look simply awful with 16 colors. The video standard for still pictures and animation on the Web is 256 colors, and if your computer isn't configured to handle that many colors you'll feel like you're looking at a lot of its best sights on a broken monitor.

Click the title for the section you want to browse. We recommend going through each in order.

{ewc
ew256bmp.dll,ew2
56bmp,palette.bm
p}

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[Internet video fitness](#)

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[Diagnosing](#)

[your current video display](#)

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[Can you have](#)

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{ewl ew256bmp.dll,ew256bmp,world.bmp} This test picture will tell you instantly whether you have 16 colors or more available on your computer if you don't know for sure. In order for it to work properly, you should not be running any other programs, and your desktop color scheme should be **Windows Default** (Windows 3.1/3.11) or **Windows Standard** (Windows 95). In order to make sure you get a proper reading, you will have to close this helpfile and reopen it if you have other programs running which you want to close first.

If the colors look fine (or at least reasonably good...it's not an ideal picture), your system should need no additional video tuning.

If the Pacific Ocean look spotty and distorted, you probably need a tune-up to see the Web's true colors. In fact, many parts of First Train are also done in 256-color graphics, and they too will have a distorted look. The question you'll have to answer for yourself is whether you can tune up Windows to display these colors yourself or whether you'll need to invest \$50-\$100 in a new video adapter card capable of handling the colors.

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[Video tips](#)

Video diagnosis: what do you have now?



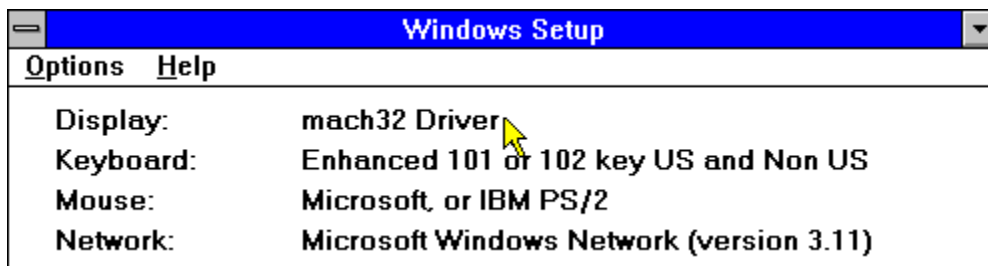
If you don't know what color resolution you have and the test picture did not look good to you, there is a simple, but not always foolproof, way to find out. This exercise might also tell you if you have *too* much color on your system. (Yes, as you'll discover, you can have too much color.)



To find out what video resolution you have, you can either switch now to **Program Manager** and run **Windows Setup** or click this icon to automatically run the **Windows Setup** program.

{ewc embh.dll,ARROW,A100} **Important note:** This icon won't always work, because the program is called **SETUP .EXE** and there may be several programs on your system with the same name. If this runs a setup program that looks different from the box shown below, you'll have to run **Windows Setup** manually. You'll find the **Windows Setup** icon in the **Main** program group window.

When you double-click the icon, a box will pop up that looks something like this:



{bml toolz\colors2.bmp} The **Display:** setting, marked with the arrow, tells you what kind of video driver you have installed right now. Usually it will also say what size your screen is and how many colors it can display. If it doesn't use the word **colors**, the third number will be the number of colors displayed. For example, 640X480X16 tells us that your system is displaying video 640 pixels wide and 480 pixels high (the standard configuration) in sixteen colors. If there is no number at all, try the test

If the **Display:** line looks like the one shown above and doesn't use numbers at all, you probably have a video driver that doesn't need any special setup procedure. Many newer video cards come with their own easy-to-use programs for changing color depth and screen resolution. Check the manual for your video card to find out the name of that program and how to configure the driver for 256 colors. If you did not get a manual for the video card itself, you may find this information in the manual for the computer. There might also be a video configuration icon in **Control Panel**, a program found in your **Main** program group.

If you *do* have a video card that can be changed from its own Windows program, you will still have to exit Windows and restart completely to get the new color settings.

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[Video tips](#)

Video diagnosis: making a change



If the **Display:** line of **Windows Setup** reports that you have any of the following four display types:

VGA

VGA (Version 3.0)

XGA (640x480, 16 colors)

Super VGA (800x600, 16 colors)

...you can simply select the 256 colors option that corresponds with your video type (VGA, XGA or Super VGA) and follow the instructions Windows gives you for changing the driver. As long as you have your original Windows installation disks, follow the directions on your screen. It will take three minutes at most to complete the job...but *please* observe this warning.

An important warning about changing your video driver

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Before you change any video driver that is not directly configurable from a Program Manager icon, browse the Disaster Prevention page linked to this help button first! It contains critical information regarding your system that could save you a serious headache if your system refuses to accept the 256-color video display you select. This page will also give you helpful insurance tips against problems installing almost any new program you find on the Web. The information it contains has saved many, many people the time and expense of a service call. Even if you don't want to change video drivers, this page will be worth a look.

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[📺 Video tips](#)

Can you have too much color?

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In a word, yes. There is a feeling among some of the more talented and experienced programmers on the Web that it is time to go one step beyond 256-color graphics to 65,000(65k)-color graphics. There are already many Web pages designed to take advantage of this level of graphic resolution, and they don't look pretty if all you have are 256 colors.

A standard whose time has not come



Dynamic Living believes that the time is not yet right for 65k color graphics as a standard on the Web. In fact, we'd like to see the Web remain oriented toward 256-color graphics for at least another two years. Why? Because quite frankly, 65k color is not good for the Internet. 65k hi-color graphics are usually quite acceptable in 256 colors, but they take up substantially more disk space and take longer to transmit over network lines...particularly your phone line, which is the slowest link in the chain. Web pages load slowly enough at 256 colors, and we have reduced more than 80 percent of our graphics to 16 colors to save you disk space, memory and time.

Money and speed



When the majority of users have high-speed, direct digital links to the net, then it will be time to make 65k or even 16M color graphics the standard...but not until then. This level of graphics resolution as a standard burdens everyone, and most of the best graphic designers on the Web are trying to avoid it at this time. It's fine to reserve sections of the Web for 65k-color (65k and 32k also called high-color in some circles) or 16M color (true color) graphics for people who want the best. But it is not fair to punish or exclude large portions of the population because they can't afford -- and probably don't even need -- expensive graphics hardware by turning large parts of the Web into true-color-only elite sections.

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Screen flicker at high color resolutions



There's another reason for not having 65k colors, and this may be more important than the first reason. It concerns your eyes and your well-being.

More than your monitor or video card can handle?

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Most computer graphics cards are not capable of handling more than 256 colors without producing a dramatic increase in screen flicker. There is a complete description of flicker and how it affects vision and stress contained in the **Ergonomics Report**, included with this kit. Clicking on its name will take you to the table of contents; the specific section devoted to flicker can be read by clicking [here](#).

To put it very simply, screen flicker is not good. Many ergonomics experts feel it is downright harmful. Most graphics are quite acceptable at 256 colors with a good video card. If you need 65k colors for a photographic or computer art hobby or for serious graphic design work, then it's fine to have your Windows video set to 65k or 16M colors. But boosting your video resolution to 65k colors for the sole purpose of browsing the Web is like jabbing yourself with a fork so you don't fall asleep during the late show.

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You might wonder how 65,000 colors can even exist.

We generally think in terms of only seven or eight colors in the rainbow, but there are an infinite number of variations on those colors. In fact, people who develop an artist's eye for color eventually find that they're not happy with anything less than access to 16 million (16M) colors -- *sixteen million* variations and shades of color -- for their graphics!

How is this possible? You do the math. Each shade of red, green and blue (the three primary colors for building other colors from light) has 256 possible degrees of brilliance. Multiply them together and the number of possible colors on most modern computers comes out to around 16 million.

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Sound and music on the Internet



The Internet is getting noisier by the day. It began with a few sound samples available via FTP and has evolved to the point where you can obtain CD-quality full-length songs directly from the artists who created them, sometimes mere hours after they've been recorded. There are voice samples everywhere, everything from movie and album clips to live performance poetry, available for download. Thanks to new audio compression software there are even radio stations offering round-the-clock "surf" music. The IBM-compatible is about ten years behind the rest of the computing world when it comes to audio, but CD-ROM and the Web are forcing it to catch up.

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If you already have digital sound on your computer, you probably won't care about this section, but if you don't, this section of **Tuning the Tools** will help you find out what your system has and help you decide whether you want to take the plunge or make the investment. Click the topic titles for the subjects that interest you.

{ewc
ew256b
mp.dll,e
w256bm
p,guitar.
bmp}

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[MIDI on the Web:
your computer as a player-piano](#)

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[Special software
for certain types of sounds](#)

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not needed, but patience might be](#)

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MIDI on the Web...or not?



Unless you have an older card or a card designed primarily for speech synthesis, your sound card also came with a built-in digital orchestra for playing MIDI music files. MIDI has been the standard for computerized music for nearly a decade, and more and more pages on the Web are providing MIDI soundtracks for your viewing pleasure.

Does your MIDI work at all...



A large number of sound cards seem to function perfectly well but for some reason they refuse to play MIDI. We have just such a system in our office. If you have such a problem, you may need an expert with sound cards to help you get your MIDI working, and if your first visit to a MIDified home page is a quiet one, you'll have to decide whether or not troubleshooting your sound card's MIDI drivers is worth the music you'll get.

If you own a genuine Sound Blaster product, it might be worth two or three dollars of long-distance time to have their experts walk you through the process of getting MIDI to work properly. It's often no more than a single line of text in your WIN.INI file that needs to be changed (not a job for absolute beginners) and the wealth of music and music creation software available free and for free trial on the net might make it worth your while.

...or do you even care?



Most Sound Blaster or AdLib compatible MIDI is fun to listen to, but it sounds...well...synthetic. If you play games that run from DOS and heard tinny background soundtracks that went on for hours while you played, you know what the digital orchestra in your sound card sounds like.

If real sound is more of a priority with you than MIDI, troubleshooting your MIDI driver might be money better spent elsewhere...perhaps on higher-quality speakers for the CD-quality songs which are out there. And if MIDI *is* a priority, we recommend looking at the newer models of Sound Blaster with genuine PCM instrument samples or competing products from Turtle Beach, Gravis, Ensoniq, Roland and others.

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 [Sound & music](#)

Software for certain types of sounds



When this software was first created in June of 1995 there were more than a dozen different types of sound files available on the Web, and that number was expected to double by the end of the year. Most of the sound files you'll run across are fairly common formats, and if you have Netscape version 1.1 or higher, Netscape will have its own player for handling most of the common formats.

But there are several other players you might want to investigate for handling near-CD-quality MPEG-2 and high-speed, real-time RealAudio sound file formats. If you have, or expect to get, a recent copy of Netscape Navigator, it comes with its own digital sound player which will handle the most popular sound file formats. Microsoft's Internet Explorer, designed for Windows 95, comes with a RealAudio player. But no browser we've seen covers every type of sound.



Many sites on the Internet with sound available for playing or downloading to your computer will also direct you to sources for the software needed to play the sounds. But many won't. If you're a Tourist Class or Business Class traveller, you already have the tools needed to get these programs with very little muss and fuss. But if not, don't get anxious about purchasing software to play sounds from the net. In many cases you already have the software you need, and in most other cases you can find player software for free if you know where to look.

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How do you know if you have a sound card?



If you have external speakers connected to your computer, or speakers built into your monitor, you have a sound card.

If you have heard a tinny orchestral "*ta-daa!*" sound coming from your PC when Windows starts, you have a sound card.

If you have a CD-ROM player that says Creative on the front, you almost certainly have a sound card...it was included with your CD-ROM kit. (Creative Labs makes the sound card and puts their name on other people's CD players, and those CD players must plug into the sound card.)

→ If you still don't know, look on the back of your computer for a row of three or more sockets of the type that fit a pair of Walkman-type headphones. (One of them will probably accept your Walkman headphones.) If you see these sockets, and you do not see telephone jacks in the same line of sockets, you have a sound card. If you see these sockets and telephone jacks too, you may have a combination modem and sound card.

And if you're still in doubt, contact your retailer and ask. You have a right to know what's in your computer.

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A sound card might not be needed

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If you don't have a sound card, all is not totally lost. You can still get up and running with sound from the Internet. But before you decide whether to set up Windows for sound without a sound card, read these next two sections.

Digital sound from your PC speaker



The speaker you already have in your computer can handle the digital audio from any of the popular programs available on the Internet if you can't justify a real sound card, but you will need some patience. With no sound card to share the workload, your computer's processing chip will have to work overtime to process digital sound from the net, and you'll experience hiccups as this happens on older 386 systems and some 486's. You'll also be listening to sound on a thin, fifty-cent speaker designed to handle nothing but beeps.

{ewc embh.dll,ARROW,A100} **Important note:** if you've never heard a beep from your computer, or the system beeps are so quiet that you can barely hear them, this driver will either be useless to you or a waste of your time.

What you can and can't hear without a sound card

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First and foremost, at this time you won't hear anything but beeps if you have Windows 95. There is special software available for free on the Internet for hearing digital sound without a sound card, but sadly there was no such software available for Windows 95 at this writing. The software we recommend for this job is for Windows 3.1 and Windows for Workgroups exclusively.

Fortunately, all the best sounds and songs on the Web will be playable through your PC's speaker. But you will not be able to use the real-time audio provided by RealAudio and TrueSpeech without serious loss of sound quality. Music recorded with RealAudio sounds awful to begin with, but on the cheap speakers built into most PC's it is almost intolerable. You will also be unable to listen to MIDI music files, because they require a special synthesizer chip which you only get with a sound card.

If you're still game, let's get you audio-ready

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This help button takes you to a section which will walk you through the installation of a digital sound driver for your PC's speaker that works with Windows. It should take ten to fifteen minutes to read through the instructions and set up a sound driver if you need one. Remember to bookmark this section so you can find it later, since you'll have to restart Windows to test your handiwork. **Note:** the **Next topic** bar leads to the PC maintenance section; click the **Help** button if you want to install the speaker driver software.

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The PC Owner's Survival Guide



This section is entirely optional, but it contains a great deal of information on computer maintenance and support which many First Train passengers have found useful when stranded in the wilderness and attempting to navigate strange marketplaces and medical customs. There are three submenus here to choose from.

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[Part 1: Support](#)

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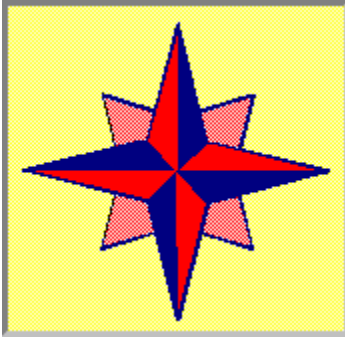
[Part 2: Maintenance](#)

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[Part 3: Ergonomics](#)

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Orientation



This pre-trip session will help you become familiar with how First Train for the Internet works, where everything is, and how to make the best use of its resources. There's a *lot* to this package, and at times you might have trouble keeping track of it all. Here are answers to the most common questions people have when first stepping aboard the First Train. Click the section of interest to you for more information, and *please* check in with the hospitality desk at your earliest convenience.

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[The Hospitality Desk \(please check in here first\)](#)

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[Skills you will need for the Day Excursion](#)

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[How this software works \(your manual-on-disk\)](#)

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[Two sections: online and offline](#)

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How this software works


We hope you like to read...

{ewl ew256bmp.dll,ew256bmp,vlibrary.bmp}As you've already noticed, this software is like a point-and-click manual-on-disk, but it's actually more than that. Working with this software will also acquaint you with the concept of *hypertext*, which is how information is made available on the World Wide Web. Most people find that the World Wide Web is their most-used Internet service, so getting used to this and other Windows help tools will actually make you more comfortable with the Internet.

One thing you'll discover very quickly about the Internet is that the reading never stops. If it's not an introduction to a service that needs your attention, it's a manual for a new piece of software, email or news. If you *don't* like to read, and you've never found anything interesting enough to *make* you enjoy it, you might find your Internet experience very limited in both scope and reward for the next year or two while the infrastructure gears up for a full 3-D interface with voice and video. For now, it's primarily text and graphics.

There is also a *ton* of reading in First Train, so much that it takes most users weeks to get through everything. We hope it's clear to you that the point isn't to read through all of it from point A to point Z, but to refer to it *as you need it*.

This is mainly the fault of technology that marches forward without considering the needs of the end user, and we'll be talking a lot more about that as we go along. But in the meantime, resign yourself to the fact that there is a lot of reading here, and if you have the patience for it, you should find it very rewarding.

 **The key is to learn to read selectively.** Focus on what *you* want to know. The depth of detail we provide is only for those who like that sort of thing. It's not mandatory, and you can grasp the general idea of any concept presented here in the first paragraph or two.

...but it's not all text

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Don't get the wrong idea...there is a lot more than just text information here. There are Internet simulations that will walk you through the process of working with Internet services. There are utilities for managing your computer so you can take full advantage of the mountain of software on the net without fear or uncertainty. We've even tucked a few toys away in various corners of the train.

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Two sections: online and offline

Online and offline support



This package is divided into two distinct sections: online and offline. Right now you're using the offline section, which is designed to help you when both before you get connected to the Internet and when you need help with Windows and Internet software *after* you get an Internet account.

The online section, included with the First Class and Tourist Class versions only, includes additional resources for working with Internet software as well as the latest, most up-to-date links to resources located on the Internet related to subjects discussed in First Train.

The two sections operate independently in the Day Excursion package and First Class and Tourist Class passengers will have the option of automatically starting an online session directly from this offline section.

Utilities



The offline section also includes utilities which will be of use to Internet users (and *all* computer users, for that matter) which can be accessed through either the icons in your First Train **Program Manager** group or, for Windows 95 users, the First Train items in your **Start** menu. These are all designed to link together as a whole, providing you with quick and easy access to the Internet tools and tips you need when you need them.

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What's included in your ticket price

Three different passenger classes



There are three basic excursion packages available with First Train for the Internet, and what you receive with your package depends upon which class of ticket you purchased.

Day excursion

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The Day Excursion package includes the basic First Train offline help module which you are browsing now with few extras. We have several different Day Excursion packages available, some of them promotional in nature, each with a different set of extras. Check the **Extras** menu to see what your version contains.

If the Day Excursion package pops up with information about obtaining a license for the Day Excursion package, you have a shareware version of the software which requires a small license fee. We'll keep track of this fee and if you decide later to upgrade to Tourist Class or First Class, we will reduce the cost of your package by the amount you paid for the ticket.

We strongly recommend upgrading to Tourist Class, as it provides an integrated way to work with all of the tools, and represents one of the best Internet travel values anywhere.

(One quick note: we provide links to shareware products in our package only when links to quality free software can't be found. We are fanatics for free software...we ought to be; we give away enough of our own...and when we say we've found the best, you'd better believe you'll have a hard time finding better!)

Tourist Class and First Class



The Tourist Class package is the full First Train excursion package, and includes this offline module, the online module with resources linked directly to the Internet. First Class is the Tourist Class package plus a year's worth of updates. Both packages include a host of additional features including:

{ewc embh.dll,BULLET,A001} free point-and-click utility software for making your trip smoother, including **Faros Uninstaller** (with our own specially-prepared new-user help guide), Aladdin Systems' **StuffIt Expander**, **F-A-S-T Emergency Windows Backup**, and much more.

{ewc embh.dll,BULLET,A101} a much more visually pleasing graphical appearance, with illustrations galore and, coming in early 1996, cartoons from David Middleton and full-color original artwork from, among others, digital watercolor wizard Michael Gandolfo.

{ewc embh.dll,BULLET,A011} full-text search for Windows 3.1/3.11, allowing you to jump to any section of First Train's offline resources simply by typing part of a word and clicking on the topic you want which contains that word.

{ewc embh.dll,BULLET,A110} the *PC/Internet Lexicon* (definitions for 3,000-plus terms and acronyms relating to all facets of computing and the Internet) integrated right into First

Train's offline tools. Just click on any computing or Internet term you don't understand and its definition pops up instantly.

{ewc embh.dll,BULLET,A100} *Easy Windows 95 Internet Setup* (our own guide to setting up and troubleshooting the new Windows 95 Internet connection software, plus point-and-click links to our picks of the hottest free and shareware toys for Windows 95 and Win95 Internet.

{ewc embh.dll,BULLET,A010} point-and-click links to free (mostly) and free-trial Internet software and quality utilities and applications for everyday computing

{ewc embh.dll,BULLET,A001} point-and-click links for downloading and our own special walk-through help for setting up and configuring all the best free and shareware Internet software, including Eudora email, Free Agent newsreader, mIRC and more. Travellers love the way this extra fills the holes in the online help provided with these programs.

{ewc embh.dll,BULLET,A001} one complete, free update any time within 90 days of purchase (Tourist Class), unlimited updates for a full year (First Class). We intend to stay on top of Internet happenings of interest to Windows users, and we'll be presenting the best of what we find in regular, easy-installing updates to the First Train package. This is also your insurance that First Train is never out of date, because even if your Tourist Class package has been sitting on a shop shelf for six months, you can get the most recent update instantly by clicking the appropriate link on First Train's **Welcome** page once you have an Internet account.

Where to get some of the extras if you're a Day Excursion passenger



A few of the extras included with First Train Tourist Class and First Class have been released free to the computing public, both as our way of saying "thanks" for the help we've received along the way and also to make sure that no one gets left out of what we feel are the most important resources simply because they can't afford the software. Click **Extras** from the top menu bar and select **Catalog** to learn more about these programs and where you can find them.

PC/Internet Lexicon is a separate product from First Train, but we've released free versions of *PC Lexicon* and *Internet Lexicon* and many popular Internet FTP archives carry these programs. You can find

If you'd like some extra help and some interesting tools for working with Windows 95 Internet connections, we've released *Easy Windows 95 Internet Setup* as a shareware product and it can be found in most of the same locations as *Internet Lexicon*.

The *PC Survival Guide* is also available as a separate shareware product from First Train, and it can be found in most of the same locations as *PC Lexicon*. You'll find parts of it linked to First Train Day Excursion; the missing sections will produce harmless errors.

F-A-S-T Emergency Windows Backup is available as a free product, and we encourage you to share it with others.

Details on where to find these and other programs included with First Train are available from the **Catalog** item under First Train's **Extras** menu.

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How to get the most from this software

Set your own pace and style



The first thing we'd like you to do is set your own pace and style for navigating through this material.

The second thing we'd like you to do is get an Internet account. The cost of Internet connection is so inexpensive (\$1.50 per hour and under in most areas) that it might not make sense to "dry-land" train when you can get your feet wet so inexpensively. The **Passports and visas** section will show you what to look for in an Internet service provider and what you need to get connected, and once you're on the net you'll have a much clearer picture of just what you need in the way of help and what First Train can do for you. There's only so far we can take you until you're actually connected to the net.

Take this all very, very lightly



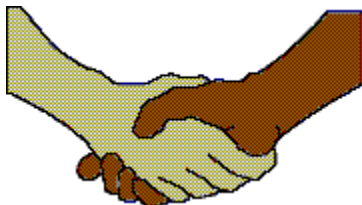
You can knock yourself out trying to master the net in a week. We know. It's our job to stay on top of the Internet and it is becoming a nearly impossible task with the incredible pace of change

We're not going to answer that question. You're going to answer it. The Internet is a chaotic, point-and-click mess...a glorious mess. And we hope it stays that way.

If you're the type who likes a structured approach to learning, then we recommend browsing each section of the program in turn until you've seen it all. It's certainly not necessary, but the more comfortable you are, the more you'll get out of your Internet experience.

If you're the type who likes to dive right in, then we're going to ask you to avoid the online help until you need it. You'll often wind up doing a lot of backtracking and hunting for information when you hit a snag or a situation you don't understand, but that's precisely what should happen. That's the way the Internet works.

If you don't like it plain, try a stew instead



If you want this to be a learning experience first and foremost, then you might find a combination of the two approaches will work best for you. As you take your seat on the First Train and become more comfortable with what's offered here, you'll discover that we try to cater equally to both extremes. (Whether we succeed at that is something you'll have to decide for yourself.)

So pick your own pace and style, sit back and above all, do it your way and have fun. Because when all is said and done, you have as much say about the future and shape of the Internet as anyone else. If you eventually discover that the time and effort you spend here has

not been worthwhile for you, then it is the Internet which has failed, not you.

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First Train services

What it all does



There are three main sections of the tour: this pre-travel section which is designed to familiarize you with the Internet and help you prepare in the best possible fashion; the tour itself, in which you're on the net but still able to access First Train services any time you need them, and our tour support services, which are available to full-package Tourist Class and Business Class travellers. Click the title for information on each of the main First Train features.

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Pre-travel services

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Tour services

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Tour support services

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All of the pre-travel services can be accessed through this program. Many of them will be important once you're on the Internet, so we've given you the option to use them both from here and when you're online. That's the reason why there are so many choices in First Train's program group.

Because you'll always be journeying from the comfort of your own home, office or school, you'll also be able to jump straight from the pre-trip services right onto the Internet, which is where you'll need these resources most. We want you to know what's available, because while Internet travel may be the biggest bargain in the history of the industry, your time is valuable. We'd like to see you spend it well

 **Orientation**

 **Services**

Tour services

This guide is only part of the tour



Online is where you'll really see the value of First Train. We can only take you so far in learning Internet services such as email, TELNET and FTP from this type of interface. But once you have an Internet account, you'll be able to use First Train in two ways. You can still return to these resources, but many of them are also integrated into the online resources designed to interface directly with the Internet. When you're clicking away here, you're working on your own computer. But when you get an account, you'll be accessing data on computers that may be thousands of miles away...and doing it just as if that information was on your own computer.

Among the services included as part of your tour are complete walk-through guides for setting up and using email, FTP, TELNET, World Wide Web browser, IRC and newsreader software. These guides can save you anywhere from a few hours to a few *dozen* hours of hassling and figuring things out for yourself. Take advantage of them...they're part of your tour.

Help before, during and after your adventure



We also provide you with help for managing your own affairs while you're away, and making the most of souvenirs and "duty-free" purchases. There is a wealth of software and useful, entertaining data on the net that astonishes almost everyone who tries to comprehend it, but it's of no use to you if you don't know how to manage it. The locals aren't always the best at explaining things, so we've tried to bridge the gap and provide you with the help you'll need, step by step, for accessing and using this data, and you'll also learn more about how it's created and managed by your computer.

 **Last topic**

If you are a full-package Tourist Class or Business Class traveller, you also have access to our tour support services, which include advice and help with Internet-related problems by email. Check the date on your ticket (your purchase receipt or email acknowledgment) to see how long you will have access to this support. We won't be able to solve all of your problems, but you might be surprised at how many we *can* solve. We'll also show you how to access resources for helping yourself, and you might find that these resources put you in touch with fellow travellers you would never have met otherwise.

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What the icons do

Your First Train program group includes several items, and while we tried to insure that they are pretty much self-explanatory, their functions might not be immediately obvious to you. Click each of the icons below for a brief explanation of the programs they start and their functions.



[First Train cleanup](#)



[First Train \(offline section\)](#)



[First Train Help](#)



[The Internet Lexicon](#)

[← Last topic](#)

First Train Cleanup

Included with all tours.

This is a program designed to help you keep your copy of First Train up to date by erasing files which are no longer needed. When you receive an update, this program is updated too and will automatically remove files which the update has made obsolete (First Class/Tourist Class).

This program will also completely remove First Train from your hard disk if you no longer want it (all versions).

the First Train

Included with all tours.

This is the icon for the program you are using right now. It's a menu and interface to all the main First Train services. It will likely be your first and most frequent stop.

First Train Help

The main help program and troubleshooting guide for First Train. This file will be much more detailed if you are a Tourist Class or Business Class traveller, so if you have updated from the Day Excursion, please be sure to take a glance at this so you know its features.

Tiny Perfect Menu

Not included with the package, but available to anyone who wants it from our Internet site at **<http://www.revenue.com/first>**.

This package is DOS training software for those who would like to learn more about what's "under the hood". It works for both Windows 3.1/Windows for Workgroups and for Windows 95, and it includes the F-A-S-T Emergency Windows Backup you'll be hearing about later.

The Internet Lexicon

Not included with Day Excursion, although it can be obtained from our Web site and many other Internet sites free of charge.

The Internet Lexicon is a stripped-down version of our full PC/Internet Lexicon containing only the Internet and network-related terms. Day Excursion and Tourist Class passengers receive the Internet Lexicon, while Business Class passengers receive the complete PC/Internet Lexicon.

There is also a free copy of the PC Lexicon available separately from many locations. If you do not have a copy of it and would like one, drop by our World Wide Web site at **<http://www.revenue.com/first>** when you're on the net and you can pick one up there.

This is a guide to over 1,500 Internet terms, phrases, expressions and other facts and trivia, and something you'll find yourself consulting over and over again in your travels. Here's where you can learn the "local dialects".

"So where is the Internet?"

If you're this eager to get on with it, you might want to move straight to the **Passports and visas** section to learn about how to get connected. Unfortunately, we can't connect you from here. Click the **Passports** bar below to move straight to this section, or click anywhere else to return to orientation.

 **Last topic**

By the way, if you were expecting to become skilled and knowledgeable about the Internet in a week or two, you might as well drop that notion right away. If all you want to do is play around, then a week or so might be enough. But if you truly plan to make productive use of the net, it will take weeks or months to truly master the skills you'll need.

Access to the Internet is like a driver's license for your brain. How long did it take you to learn how to drive? And how long did it take before you knew you were a *capable* driver? You can probably expect your Internet skills to develop at about the same rate.

 **Passports & visas**

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How to get the most out of your trip



There are few rules where you'll be going, but what rules there are should be understood by everyone who wants to get the most out of their time and effort, and most people actually *like* these rules! Here's a brief list of things to keep in mind:

Be prepared to keep learning...but know your limits.



The Internet is constantly growing and changing, and in order to keep up with this change you'll have to change with it. It's not essential, since many of the most basic services probably won't change fundamentally for years. Five years from now email will still be email and FTP will still be FTP. There are features and services available now that make the Internet of just a couple of years ago look like a dinosaur, and it will keep changing at this pace.

You'll overwhelm yourself if you try to keep pace with this level of change, so we ask you to keep in mind what *you* want out of the net, and to act with those goals in mind until the goals themselves change. And once you see what's available, your goals most definitely *will* change.

If it doesn't work the way you expect it to, it is highly unlikely that it's your fault.



The net is new, and like any newly-discovered destination, it isn't ready for the crush of the crowds. The accommodations (services) can sometimes be slow or even disappear without warning. Your transportation (software) won't always be reliable, and there will always be more repairs and extras to be added. There are literally tens of thousands of people working as you read this to make your trip more enjoyable and productive, and things will improve at a very rapid rate. But for the time being, get used to the fact that things aren't perfect and that your hosts are constantly experimenting with new ideas and new services, and this is bound to cause problems.

Above all, when things don't go right, don't panic, don't blame the travel agents for problems they didn't cause, and ***don't take it personally!*** The beauty of the Internet is that there is so much to see, do and learn that it shouldn't matter if one of the services is closed on the day you happen to roll into town.

Please remember that as a first-time traveller, you're a guest in a foreign land.



People are people wherever you go, but the Internet is a land of many passions and passionate people. You'll be forgiven by most for not knowing the local customs, but there will always be a few who will give you problems. We tolerate these loudmouths, and we urge you to develop a

thick skin to criticism. If you keep your eyes open, you should find *at least* as much support as obstruction.

However, we also recommend that you become at least passingly familiar with the local laws, customs and restrictions. (Yes, even the Internet has *some* restrictions.) A little "guest courtesy" goes a long way where you're travelling.

You won't have much fun here if you don't take a few risks.

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Any time you take a risk you open yourself up to criticism...and force yourself to learn! Take things at your own pace. You don't need to know everything (no one on the net does...although some claim otherwise). But it does help to know where to find it.

What many of us hope the Internet accomplishes is the opening of a new freedom of exploration, self-expression and social gathering. Regardless of what interests you, you'll find something to satisfy that interest -- and others to share it with -- somewhere on the net. So although you may need the net primarily for business or school, please remember that above all, ***the Internet should be fun!***

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What First Train can and can't do



Regrettably there is no way we can be all things to all people. First Train is not a be-all and end-all help package for the Internet, and anyone who offers such a thing is either lying or naïve. We're here to help you with all the items shown on the main menu, and if you're a Tourist Class or Business Class traveller, with all the subjects shown on your Tour Itinerary page. Click the titles for a brief explanation of each of these issues.

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[Finding and troubleshooting software resources](#)

[← Last topic](#)

[Configuring and using Internet services](#)

[← Last topic](#)

[Shopping for Internet providers](#)

[← Last topic](#)

[Our teaching methods](#)

[← Last topic](#)

[Ongoing support](#)

[← Last topic](#)

[If you need more help](#)

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We *can* help you find the software and resources you need and get your computer Internet-ready. We *can't* help you get a stable connection with your Internet provider...although we've tried to offer some help, especially if you have Windows 95. Nor can we promise that you will always have the latest versions of the software or that First Train will always be able to provide you with help for the versions of the software you have...although we do try to stay current and keep this software up-to-date.

We *can* show you the basic services available on the Internet. We *can't* show you all of them. In the first place, there are new services springing up every day, and while we do our best to keep this software up-to-date, we can't be completely current on everything. In the second place, once you learn how to use the basic services (email, FTP, TELNET, newsgroups, the World Wide Web and IRC), you'll discover services on your own that appeal to you. Presenting fifty different services to you at once would be understandably overwhelming!

We *can* help you learn what to look for in an Internet service provider...that's what the **Passports and visas** section is all about. We *can't* help you pick one in particular. If you're in an isolated location, you may have only one or two choices available without long-distance charges being applied. If you're in a large center, your options will be simply overwhelming.

Expect to see a lot of repetition here. In fact, expect to get quite fed up with the number of times you see "click here" or running across the same explanation of what FTP and USENET are for the third or fourth time. It's not something that we expect to change, and it's something you'll see a lot on the net, so if this bothers you, we strongly recommend you learn how to skim or to read selectively.

We use this much repetition for some very important reasons. Firstly, most newcomers are justly overwhelmed by the Internet when they first learn about what it is and what it can offer. Most of the information they receive is forgotten just as quickly as it is learned. Many of the most important points are repeated time and time again so that they'll eventually sink in and so that users will not have to constantly backtrack to fill the gaps in their knowledge.

Most of the more compassionate writers for newcomers to the Internet do the same thing...they repeat important points so that eventually the information sinks in. Paced repetition makes the learning process virtually effortless.

We *can* show you how to support yourself by learning how to use the many search engines and help resources already on the Internet, and our aim is to help you break through the invisible "geek wall" that stands between you and the next level of understanding. We *can't* be a source of new information for you or a provider of all your Internet activities. We offer suggestions; to offer more than that would be pushy and manipulative.

If you need more help than First Train can offer (and almost everyone does at some point...we rely on our own sources for help on a daily basis), almost every town and city has an Internet specialist available to do in-home setup and training. Check your local newspaper or your area's computing magazines for more details. And if you're a Tourist Class or Business Class traveller, of course you have our own experts at your email beckon and call for the duration of your tour.

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A pre-trip shape-up plan



This section of First Train is designed specifically to help you get the most out of your adventure by making sure you have the skills to cope with the many new experiences to come. You may only need one or two of the tips offered here, but if you're a new computer user you might need all of them. We've done everything we can to make this material as sensible, relevant and as easy to follow as possible, but if you find that it's *not* easy to follow, it's *our* fault for missing the mark with you, not your fault for not "getting it". Click the blue title text to jump to the lessons you need.

Windows 3.1 and Windows 95:

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[Copying and pasting information between programs](#)

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[Managing your data with File Manager](#)

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[How to install new software found on the Internet](#)

Windows 3.1:

[← Last topic](#)

[How to switch back and forth between two running programs](#)

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[How to install new or lost Program Manager icons](#)

[← Last topic](#)

[Useful tips for navigating Windows Help tools](#)

Windows 95

[← Last topic](#)

[How to switch back and forth between two running programs](#)

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[Useful tips for navigating Windows Help tools](#)

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What to pack for the trip

A well-packed traveller spends more time enjoying the trip and less time hassling over their daily routine. This section of First Train is designed to help insure your computer has all the toiletries, first aid and other essentials it needs to cope with almost any eventuality, and to introduce you to some of the applications you'll be using on your trip.

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[Basic Internet access tools](#)

[← Last topic](#)

[Critical tools for Windows](#)

{ewc ew256bmp.dll,ew256bmp,pack.bmp}

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[What to pack](#)

Critical tools for Windows

There are a few tools in addition to the software you use to interface with the Internet which will make your trip a lot smoother and more trouble-free. If you're a Day Excursion passenger, you won't find this software included with your package although we will try to help you track it down elsewhere. This software is all included in the Tourist Class and First Class packages.

```
{ewc  
ew256bmp.dll,ew25  
6bmp,luggage.bmp  
}
```

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[Stuffit](#)

[Expander: for dealing with
software found on the net](#)

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[Essential](#)

[files left out of many software
packages](#)

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[Faros](#)

[Uninstaller: keeping a clean and
trouble-free system](#)

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[Antivirus](#)

[software](#)

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[What to pack](#)

Software for the basic Internet services

{ewl ew256bmp.dll,ew256bmp,suitcase.bmp}There are several basic Internet services you will want to access. The first two will probably be email and the World Wide Web, and after you get a feel for these two you will probably want to venture further into newsgroups, IRC, TELNET and other services.

This section gives you an idea of what the software requirements are for these services and a few tips on what to look for. A little preparation here will save you a *ton* of extra work and headaches later. We do not tell you how to obtain this software here; Tourist Class and First Class passengers will find this information on the **Software Resources Page**.

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[Internet suites versus a modular setup](#)

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[Web browsers](#)

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[TELNET clients](#)

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[Other essential software](#)

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[Software you won't need](#)



Internet suites versus a modular setup

This is a long section. Buttons have been supplied at the end of each sub-topic so you can return to this index, but we recommend reading this entire topic from beginning to end.

Last topic	<u>Flexibility, power and price do not always go hand in hand</u>
Last topic	<u>Changing horses in mid-stream</u>
Last topic	<u>Our hedge against obsolescence</u>
Last topic	<u>Suites: ease of use at an obvious price</u>
Last topic	<u>You might be "stuck" with a suite</u>
Last topic	<u>Modular Internet access: power at a hidden price</u>
Last topic	<u>Our recommendation: start from what you know</u>
Last topic	<u>Following the pack</u>
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Flexibility, power and price do not always go hand in hand



Before you begin your adventure, you have a somewhat difficult choice ahead of you. You must select the software you intend to use to manage your Internet affairs. This is not a simple job, and it's made more difficult by the fact that at this time in history, it is not going to be an easy task to change your mind at a later date.

If you choose an integrated suite of Internet access software, such as Netcom's NetCruiser or Internet-in-a-Box, you are going to discover that many sections of the software will not be compatible with stand-alone programs designed for the same job. You may not be able to import your email databases into your word processor or database program, or even a different email program. Configuration files set up for one TELNET program or Web browser are likely to be incompatible with other similar programs. This means it will be worth your while to make the right choice *before* you start.



Changing horses in mid-stream



It doesn't matter what you get at this point. It will be obsolete in less than 18 months...guaranteed. If you purchase a suite, a well-known publisher such as Spry & O'Reilly, Netscape, Quarterdeck or Delrina will have an upgraded product you can purchase. If you use modules, you will probably have to purchase the upgraded versions of the individual modules since most of the free Internet software being offered today will likely be pay-for-play

by mid-1995. And regardless of which way you go, you will have weeks, months or years' worth of data which you may find virtually impossible to take with you into another program.

The fact is that Eudora postcardware version is the most common email program in use for Windows Internet email, yet after nearly two years at the top of the charts we haven't seen a single suite or program which allows you to import your Eudora email database into their own email database.



Our hedge against obsolescence

bml terms\envelope.bmp}By the time you read this there may be several programs which will allow you to import your Eudora email. In fact, a major suite developer would be foolish *not* to allow this capability. The same is true of data created with any enormously popular specific-service Internet access software. And the most popular programs are virtually all free.

This is why we recommend starting with the best of the freeware Internet modules instead of an Internet suite. While there are no guarantees, it is far more likely that your 1996 Internet access program of choice will accept data created by the most common freeware programs than data created by a suite that wasn't purchased by many people or a product that only lasted a few months in the marketplace.



Plan ahead. Nearly all Internet travellers are frequent riders, and even if you decide to stay off the net for a few months you're almost sure to come back to it in the future.



Suites: ease of use at an obvious price



We recommend Internet suites only as a last resort or for absolute beginners at Internet communications, and be aware that our recommendations may be completely outdated within a month or two...new software and standards can emerge that quickly.

Using a suite will limit the amount of learning involved to access many different services, but it is also likely to place rather severe limits on the flexibility of individual programs. Suites are also rather costly compared to the modular alternative.

The problem with Internet suites is that they are usually weak in one or more areas. For example, Netcom's NetCruiser is weak in its browser, IRC and TELNET sections. Netscape Navigator, which in its most recent incarnations has become a full suite, has had problems with IRC and will be limiting for those interested in newsgroups and FTP. Delrina's Cyberjack for Windows 95 is a superb package, but it requires 16Mb of memory to run at a reasonable speed on most computers. The list goes on.

None of these limitations will matter to you if you are in your first year or two of computing, because you'll be so busy mastering the interface that weaknesses in the individual software components will take time to show themselves to you.



You might be locked into a suite



You may be offered a suite as part of your Internet access subscription. Many providers have arrangements with publishers to make their software available at a special price when you get your first Internet account. The advantage here is that you often save money over the cost of the same package in the store, and your provider's technical support staff should be thoroughly familiar with this software and able to help you with most basic problems. The disadvantage is that you are tied to the limitations of the suite's individual applications, and you will probably want to add certain modules later in any case to extend your capabilities when accessing your most-used net services.

And in some cases, you might *have* to use the suite provided to get any help at all from your Internet provider. Netcom is the US' largest Internet-only online service provider, and they supply their own suite, NetCruiser, as part of your subscription package. It's nice to have all of the Internet's services available from a single interface, but NetCruiser has some truly horrendous limitations with specific Internet services. Netcom also requires that you use NetCruiser to make your connection to the Internet, and the only way to avoid this is to do a fair bit of hacking with other connection software or to find someone who already knows how to connect to your local Netcom provider using other software.

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Modular Internet access: power at a hidden price



Modular setups allow you several benefits. For starters, individual programs to access specific Internet services allow you to make a clear distinction in your mind between these services. The most obvious benefit you will notice as time goes on is the increased attention to detail given to programs designed to access specific Internet services. While all this detail can be overwhelming at first, many "I'll never use that" options become indispensable to you once you learn what a specific service has to offer.

It might come as a surprise to learn that modular Internet setups can be assembled for next to no cost. There are high-quality free or "almost-free" programs for accessing virtually every major Internet service available from a number of locations. The newness of the Internet has forced many publishers to release their entry-level products for free to acquaint users with their features and flexibility. In most cases, the entry-level version is all you'll ever need, but virtually every high-quality Internet service module for Windows can be upgraded to a more powerful version at a fairly reasonable cost. However, upgrading *all* your modules to their high-powered equivalents will set you back more than the cost of even the best Internet suite.

Most small and medium-volume Internet access providers will supply you with a disk or two containing several of these free applications when you first sign up. (You might be disappointed in the flexibility and ease of use of these individual free modules, but be aware that you are probably receiving only very basic versions of these programs. In most cases, newer and better versions of all modules supplied as part of your Internet sign-up package can be found on the Internet itself.)

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Our recommendation: start from what you know

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If you like the idea of working with a suite, then get a suite. If you are more interested in having access to technical support which can help you with the software you'll be using, then start with the software supplied by your Internet access provider whether it's a suite or a collection of

modules and evaluate commercial products based on what you like and don't like about these starter modules. If you have Windows 95 and want to avoid adding any unnecessary software to your computer, then learn how to use the limited but useable Internet access programs supplied with Windows 95.

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Following the pack

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Most first-time Internet travellers use a modular setup consisting of an email program, a Web browser, a newsreader program, an Internet Relay Chat program, an FTP client and TELNET terminal software. Since we cannot provide help for all of the many suites available on the market at this time, First Train's help is devoted to what we feel are the best free and almost-free modular programs for Internet services. These are programs we can not merely show you how to use, but we can also show you how to get them at no cost other than your regular Internet connection charges.

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Web browsers

Your most critical Internet access program

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The one program virtually every first-time Internet traveller will use more than any other is their Web browser. This is the tool that gives you access to all the gorgeous graphics, sights and sounds of the Internet, and the one tool you've probably seen most often on TV and in magazines when the Internet is discussed. The World Wide Web is more than just glitz though as you have probably gathered by now. It brings almost all Internet services together into one tight, neat package.

What this means to you is that the right choice of browser can make the difference between finding the Internet to be a crashing bore or a difficult chore and turning it into an unending delight.

Web browsers are very often the most complex single pieces of software on a computer, combining the ability to call other programs, display many different types of text and graphics, play sounds and sometimes video as well, and access many different Internet services. Fortunately, when NCSA first released Mosaic, the original standard for browsers for Windows and Mac, they did a superb job of defining what a browser could and should do. This means that while there is some learning involved in getting the hang of your browser, it's a pretty simple process compared to what it might have been had NCSA not set such a high standard.

Dozens of browsers, few real choices



There are literally dozens of Web browser programs available for Windows at this time, but when you get right down to it most of them are so specialized, or compare so clearly with the industry standards, that there are few real choices for the average consumer. There was a standard line in the industry in 1995 that said "you haven't seen the Web until you've seen it with Netscape", but that's no longer true. Netscape now has several major competitors. Fortunately, the versions of Netscape available for free download on the Internet have unusual licensing terms, and you can essentially "evaluate them for the purpose of deciding whether to purchase the product" for a virtually unlimited period of time.

We believe that's just what you ought to do.

There are two other major choices to look at: NCSA's Mosaic and Microsoft's Internet Explorer. Internet Explorer is a Windows 95-only program, but it is fast, friendly and while it lacks some of the features Netscape has to offer, it is surprisingly robust and complete for such a new product.

If you're a Windows 3.1 user or find that the graphics in Netscape and Internet Explorer are not up to your expectations, you might want to take a close look at NCSA's Mosaic. It is widely considered the second-best browser available directly from the Internet, features excellent graphics rendering, and a host of features. It lacks some of the visual flash of Netscape, Internet Explorer and the newer store-bought browsers, demands a lot of your Windows 3.1 resources and is all but useless with less than 8Mb of memory, but as we said, its graphics rendering is matchless.

A few general guidelines

1. If you're already a Windows 95 expert, we recommend Microsoft Internet Explorer as your Web browser. It links seamlessly with Windows 95 and Microsoft Exchange, it's free if you own Win95, and it supports virtually all of the features you'll want in your Web browser. Microsoft is putting a fair bit of work into their browser, so what features it *doesn't* support, it *will* support soon.

2. If you simply *must* be on the cutting edge of Web technology and have access to all the newest goodies, Netscape Navigator is the way to go right now. Netscape Communications has done more to define how the Web looks than any single organization since NCSA released the first full-featured browser for Windows and Macintosh back in 1993. Netscape has both Windows 3.1/Windows for Workgroups and Windows 95 versions available at all times, and their license permits you to use the versions available on the Internet for a virtually unlimited period of time without cost.

3. If you have less than 8Mb of memory on your computer, we recommend an older version of Netscape Navigator (version 1.0 if possible). This might be difficult to find since Netscape removed this version from circulation, but if you ask around you'll find that many people still have copies, and it too is free for a virtually unlimited period of time without cost.

4. If you are concerned about access to technical support after you begin using the product, we recommend any of the many flavors of Mosaic available (Mosaic is a generic term given to browsers developed by NCSA and licensed through Spyglass to many different publishers) or Netscape Navigator Personal Edition. Both are widely available from software vendors.

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Email software

If in doubt, there is only one choice



There are now nearly as many options for email software as there are browsers for Windows. But in nearly all cases, the only program which will be worth a look to you is Eudora, and here's why.

Eudora's publishers have offered extremely generous license terms to Internet service providers wishing to provide it to their clients, and as an end user you can obtain full rights to use the program simply by sending its author a postcard from your hometown.

Eudora is exceptionally easy to use, and offers a number of preconfigured options that make it easier not only on Internet newcomers but on service providers as well. It lacks some of the more sophisticated features provided by higher-end email packages such as Pronto and another free product called Pegasus but it is far and away the clear choice at this time.

Lacking in features, but do you care?



What Eudora lacks is the ability to provide something long-time Internet users take for granted: filtering. This feature allows you to set up mailboxes for specific types of incoming and outgoing mail, automatically respond to certain types of mail, and instantly reject some types of unwanted mail. Fortunately Qualcomm offers Eudora Pro, a relatively inexpensive upgrade to Eudora which does offer these features. Filtering will be a must if you start subscribing to mailing lists that generate a lot of traffic.

The other thing Eudora lacks is a helpfile. That's something you get when you purchase the Pro version, but most users discover they don't really need it. There are ways to obtain help documents for the postcardware version in non-helpfile format if you need them, and Tourist Class and First Class passengers will find links to these documents on the **Software Resources Page**.

Perhaps the biggest plus over the long term for Eudora users is its popularity. Anyone designing a new email program will almost have to create software designed to import existing Eudora email databases. Many less popular programs aren't likely to be as readily supported.

The only real competition: Pegasus

For nearly 18 months, Eudora's only real Windows competition was a program called Pegasus, an absolutely free program designed for both Internet and regular network email. Pegasus was the choice of those wanting more control over their email, but this flexibility demanded some understanding of how to set up filters and organize mailboxes. Pegasus is regularly updated, and for those needing sophisticated control over their email at the lowest possible cost it is the only alternative

Keeping an eye on the market



Many new email programs have emerged over the last few months, and many more are slated to appear in the near future. Virtually all of them will be trying to do Eudora one better, and it might be worth looking at some of the newer programs *provided* you don't already have too much time and effort invested in the email you have collected with Eudora.

Microsoft Mail and Exchange



The other option you may want to consider is using email software you already have. If you have Microsoft Mail already connected to a network, configuring it for Internet access is a natural progression. The same goes for Microsoft Exchange in Windows 95. It configures *relatively* easily for use as your email program for Internet access (meaning that you probably shouldn't try this on your own unless you have done it before or have a touch of hacker blood in you), and will allow you to use **WordPad** or your favorite word processor for creating your email.

One potential problem you may run into with MS Mail or Exchange relates to the program you use to create your email. While it might sound appetizing to add color, fancy fonts and graphics to your email, don't forget that most users are still stuck with text-only email software such as Eudora and will need to be taught how to view documents created with **Word** or **WordPad**. While 1996 will see a major evolution of Internet email, it is text-only at this time with no special formatting or graphics.

A caution about browsers and email



Many Web browsers include built-in facilities for sending email directly from the browser. You can either click on an email-related hotspot to call up the message editor or use the message editor on its own. Be aware that if you want records of your mail -- and you *should* keep such records -- your browser probably won't store your sent email for later, nor will most browsers allow you to fetch mail from your Internet email account.

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USENET newsreaders

Another clear winner



Without intending to sound like paid endorsees (which we are most definitely not), there is a clear leader in this field. Unless you have 4Mb of memory or less on your computer, only one real choice for a quality newsreader. The program is called Free Agent, and it's a promotional version of a newsreader called Agent, by Forte, that became the "darling of USENET" in 1995.

Agent has many competitors, but the same advantages Eudora's postcardware license has given it have made Free Agent the newsreader of choice for anyone who is thinking about making use of USENET services.

Most Internet setup bundles provided by Internet service providers include either the Trumpet newsreader, which is not recommended due to its lack of features; or WinVN, which is currently the most-used newsreader program for Windows but lacks the flexibility of Free Agent.

Where to start



We recommend starting out on newsgroups with your Web browser. Most better Web browsers include facilities for browsing and posting to USENET newsgroups, although their databasing facilities are somewhat limited. It will take anywhere from a week to several weeks to get a feel for what you want from your newsreader software.

In fact, if all you want to do is browse articles, your Web browser may be all you'll ever need, and we recommend this approach over using Trumpet's newsreader if it was supplied with your Internet setup bundle. Internet Explorer, Mosaic, Netscape and NetCruiser all have usable news browsing facilities.

Thinking ahead

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Many people find WinVN quite sufficient, but we recommend learning more about USENET before selecting WinVN over Free Agent. Most users like to keep an ongoing database of articles and messages from USENET newsgroups, and to our knowledge you cannot import WinVN's databases (or Free Agent's for that matter) into any of the most popular newsreaders or Internet suites at this time.

Another factor to consider is the learning curve. If mastering skills such as basic word processing using Windows **Write** was difficult for you, it will be important to find a newsreader you can grow with to avoid having to relearn tasks when you upgrade.

USENET binaries



One more point to consider is whether you'll want to take advantage of the software available from USENET. Many newsgroups carry messages which are formatted in the form of encoded binaries, either MIME or uucode. Among the goodies you can find are audio and video clips

and graphics, screen savers, utility programs, games, photo graphics and Internet-related gadgets.

First Train can guide *you* through the handling of these file types, but first you'll need *software* that can handle these files. Neither Trumpet's newsreader nor most Web browsers can do that. Both WinVN and Free Agent can handle uuencoded binaries, but you'll need something more sophisticated -- or some extra software -- to manage MIME attachments in USENET postings. Free Agent can be upgraded to the commercial version, Agent, for about US\$50.00, allowing you to import your Eudora or Pegasus mail and use Agent as a full email and news manager with a spelling checker and MIME attachment handling. WinVN does not provide an upgrade path.

News Xpress is another newsreader getting a lot of attention these days. It looks and feels a lot like Free Agent but lacks a number of Free Agent's features...in particular it lacks a useful helpfile. Free Agent's is not much better, but you can find a lot of help for working with it right on the Internet and in First Train Tourist Class and First Class.

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FTP software

Not essential, but nice to have



This is software you may never need or use. But if your first glimpse of the Internet has convinced you that you *must* have your own Web site some day, you'll definitely want a separate FTP program -- and a good one -- to handle the job and get your feet wet. Your Web browser is more than capable of handling FTP file transfers *to* your computer, but hosting your own Web site or sending files to other Internet sites is a little more complicated. And if you're a real bug for free and free-trial software, you'll find the one-file-at-a-time method used by Web browsers to be a real drain on your patience.

So it's up to you. Your Internet setup bundle will probably come with a program called WinFTP, a small, free FTP program that can handle most basic chores, but if you want to get off on the right foot, we recommend John Junod's excellent -- and free -- FTP program WSFTP. There are versions for both Windows 3.1/Windows for Workgroups and Windows 95, and Tourist Class/First Class passengers will find point-and-click download links to the latest versions of both on the **Software Resources Page**. There is also walk-through help available for setting up and using WSFTP in the online section.

Thinking about Netcom?

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This is a special note to those thinking about using Netcom. While it is possible to use software other than NetCruiser with a Netcom account, you might have your hands full with it for a while. And when you decide you're ready to try out some of the better Internet access software around, such as Netscape and Free Agent, you might be in for a nasty surprise.

As of this writing, NetCruiser had an unforgivable habit of choking, in some cases even crashing Windows, when you attempt to transfer files larger than a certain size. In our tests, the size limit ranged from as low as 400Kb to about 1Mb, the latter on a 16Mb computer. This means you can forget about fetching a new copy of Netscape directly from the Internet...and you'll miss out on a lot more besides. Like audio and video clips, new games, and some of the superb freebies such as the complete version of Microsoft Money that was given away on the net to early buyers of Windows 95. In other words, until this problem is fixed Netcom users *need* an FTP program to fill this hole in NetCruiser.

Netcom may have fixed this problem by the time you read this, but from reports we've heard, we suggest you get a *written* promise that it has been fixed before accepting any such assurance from a Netcom service representative.

WSFTP: Not the best, just the best of the freebies



WSFTP was *it* for Windows FTP software through most of 1994 and 1995, but several solid competitors have emerged. Norton Navigator's included file manager (Windows 95 only) will let you FTP from the Web as if you were working on your own hard disk. CuteFTP is another program worth looking into, and you'll probably find it easier to work with at first than WSFTP,

but it will require payment if you continue using it. And Windows 95 comes with its own mini-FTP program that works from a DOS window. Unfortunately it will require that you have certain DOS skills and an understanding of some UNIX commands.

Changing to another FTP program

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Unlike newsreaders, browsers and email software, there is not usually much data created specifically by the FTP program, meaning that you can easily switch from one program to the other and lose next to no data or additional setup time. First Train's help is geared toward WSFTP, so that's what we recommend as a starter program, but don't ever feel locked into it.

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Internet Relay Chat

Not for everyone



It's not everyone's cup of tea, but it's something you'll probably want to try. Real-time interactive voice chat is still a few months away from being an affordable reality and interactive videoconferencing on the net will require hardware most computer owners don't have and may not be able to afford. In the meantime, there's Internet Relay Chat. This real-time interactive type-chat service can be used for any number of things, from meeting new friends and picking up pointers with your computer to online self-help support groups and social clubs to scheduled company meetings. If it falls within IRC's guidelines, which are pretty broad, it's fair game.

Some people become positively addicted to IRC. It's just about the safest imaginable way to develop a social network on the Internet, and the fastest and most inexpensive way to get help (as long as you're willing to return the favor when it's your turn) and communicate with someone over the net without expensive hardware.

Two clear choices



Most Internet setup bundles given to new users by Internet service providers are small and horribly ineffective programs for the job. IRC uses a lot of typed commands, and programs that replace these commands with clickable buttons and forms or mouse-driven menus are almost essential for neophytes.

Two clear leaders have emerged on the Windows platform: mIRC (pronounced "My-RC") and WSIRC. First Class and Tourist Class versions of First Train offer extended setup and new-user help for both programs, since each one appeals to a different type of user.

mIRC rules, but WSIRC is stable transportation



mIRC is by far the superior program, and its author has been adding new features at an incredible rate throughout 1995. It's probably the best-supported "unsupported software" on the Internet as of this writing, and best of all it's free. WSIRC comes in a package with two versions: a free version you can use indefinitely and a more functional shareware version which you can only use for 30 days before the author requires payment.

mIRC is relatively simple to use. You can be online and active in less than half an hour, and when in doubt you can even consult the local "experts" on mIRC's own IRC channel (#mirc, of course) for help. mIRC has become so full-featured that it can literally take months to truly master it, and most users never use more than a handful of its hundreds of features.

mIRC is mainly text-driven, whereas WSIRC relies on a button bar. Most new users like the button bar approach, since the meaning of the commands represented by the buttons is displayed in the status bar at the bottom of the window. This can be a tremendous advantage in your first few weeks on the net, since you'll have your hands full learning the ins and outs of all the other services as well.

Our recommendation



We recommend taking a peek at the online help supplied for mIRC before making a decision about which to choose. If the instructions make sense to you, we recommend bypassing WSIRC altogether. If it's more than you think you can handle, then go with WSIRC until you gain some experience, but try to make the switch to mIRC as soon as possible. Khaled Mardam-Bey has done a marvelous job with this program, and it has set the standard for what a Windows IRC program should be.

A promising newcomer: Netscape's IRC client



Netscape Communications has recently entered the picture with their own IRC client. We found it difficult to deal with in our limited trials and heard too many bug reports from users to make it worth our recommendation. However, if Netscape gets some of these bugs worked out, we would be more than willing to recommend it over both mIRC and WSIRC as *the* choice for new users building a modular setup. It's fast, simple, comes with solid online help, and makes an excellent first choice.

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As a sidelight, the simplest and most user-friendly IRC interface we've seen yet is the IRC software included as part of Delrina's Cyberjack suite for Windows 95.

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TELNET clients

A dinosaur or an antique?



Sometimes we have trouble deciding just what TELNET will mean to the average Windows Internet user. Considering the fact that most Internet services formerly accessed through TELNET are now fully integrated into the World Wide Web or are outright obsolete, it looks like a dinosaur of a service. On the other hand, there are literally thousands of public and privately-owned bulletin board systems, once accessible only via direct telephone dial-up, which are or soon will be part of the Internet. Many of these newcomers will offer specialized information and services available nowhere else on the net.

Generally speaking, we feel that it's wise to avoid TELNET for your first week or two unless you specifically want net access for services that require TELNET. Learning TELNET and its many services can be a complex, demanding job that can place a strain on your patience while you're getting used to everything else associated with your Internet account.

Old-fashioned terminal software



If you're an old hand at the local BBS scene, one of the nice surprises ahead for you is that most of the TELNET services you might want to access can be managed through software that generally behaves like an ordinary terminal program. The only difference is that TELNET terminal software for Windows communicates to your Internet connection software rather than directly to your modem.

Windows 95 users can use **HyperTerminal** to access TELNET sites, and we feel it's just about the best choice of starter software for the job. Windows 3.1 users will need a specialized TELNET program for the job, and here again you will probably find the TELNET program included in your Internet setup bundle woefully inadequate, and Windows **Terminal** is not the right choice for the job.

Our choice for Windows 3.1: Ewan



Two things any reasonable TELNET program needs to be able to do are save the locations of the sites you access and allow you to save the screens of information transmitted in the form of a text file. **HyperTerminal** will allow Windows 95 users to do just that, but Windows 3.1/Windows for Workgroups users will need something better than what they probably have.

The program we support for Windows TELNET for non-95 users is Ewan. It's simple but flexible enough for most jobs. It can be linked directly to your Web browser to allow point-and-click connections between the World Wide Web and TELNET sites. You'll find setup and basic usage help for Ewan in the online section if you have a Tourist Class or First Class ticket.

Commercial choices abound

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TELNET is a service loved by hackers and adventurers, so it makes sense that a lot of shareware and commercial TELNET programs have been developed. The list is so long, in fact, that we're not even going to suggest a few here. If you find you get a kick out of using some TELNET services, ask around about specialized software for MUDs, MUSHs and MUSEs, and talk to other TELNET users to find out the pros and cons of the latest batch of shareware TELNET programs. You're almost sure to find something that will serve you well for US\$30.00 or less.

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Other essential software

A constantly shifting landscape



The net is changing and growing so rapidly that it is virtually impossible to predict what will be "essential software" a year from now. Who would have guessed two years ago that a TELNET client, then the most important single piece of software needed by the average Internet user, would be almost pointless to the average newcomer today?

There are some trends emerging though, and it would be a good idea to keep your eyes open for software for these services if you plan on keeping abreast of what's on the net.

VRML: 3D interaction with the Web



If your budget supports a 486-DX33 or faster with 12Mb or more of memory, think about looking at a VRML client. Many of these programs allow you to literally "walk through" Internet sites as though they were 3D landscapes. The technology is still rather primitive, but it sure beats the static graphics of the Web. There are now at least five different VRML browsers or add-ons for existing browsers, and the updates are coming so fast on this software that we can't recommend any one of them at this time.

Java: the evolution of the Internet



Java is a programming language designed by Sun Microsystems which will literally revolutionize the Internet. Instead of the Web looking like a giant picture book on your screen, it will sing, dance and feel like an interactive exhibition through something called *distributed code*. Java allows programmers to write their own unique programs which are runnable on Java-equipped browsers on any computer platform. When you access the site, you are sent the code for the program and it runs on your computer as the author's Web page is displayed on your screen. Today it's considered almost *de rigueur* to have your own Web site; in another year or so your own Java program will be almost as socially important to your Internet status.

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Most browsers don't support Java...yet...and there are only a few thousand Java programs around right now, most of them small demonstrations. That is changing in a big hurry. We expect some amazing changes to the Web as Java gains in popularity and the hundreds of thousands of amateur programmers experimenting with it begin to get a feel for what it can do.

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Be aware that Java-equipped browsers tend to eat a lot of memory, meaning that you'll feel rather limited with less than 8Mb.

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Software you won't need

A few myths busted

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It's amazing what some Internet service providers will put in their setup bundles of supposedly essential Internet software. Most of these extraneous extras are now either integrated into other software or downright obsolete.

Finger

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Finger is a program used to locate individuals on the Internet and get certain information about them. The problem is, most SLIP/PPP users can't provide you with an adequate response to a finger request. Not of much interest, and you'll find finger either in your IRC software or in Web search engines.

Archie



This is a dinosaur. While a dedicated archie client is handy for hardcore net searchers, it's pretty meaningless to the average net user. Archie search forms are available all over the World Wide Web, and an archie search form is included on the **Fact Finder Page** of your Tourist Class/First Class online section.

Gopher



Another dinosaur. Those who need gopher for specific activities might benefit from the databasing services of a dedicated gopher client, but casual and recreational Internet users don't need the hassle. Gopher is integrated almost completely into the World Wide Web now.

Ping

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This small program is designed to send a brief message to a remote location to find out firstly if that location is alive and secondly how much time elapses between sending the signal and receiving the reply. Sadly, we have discovered that many Internet providers who charge you by the hour automatically install a ping program into your Internet connection software. The reason? So that if you get involved in something on the Internet and don't actively send or receive data, or if you get called away from your computer, your software doesn't disconnect you.

They may call it a convenience to their customers, and while you might agree, since it prevents you from having to reconnect if you go idle for more than a few minutes, we think it's just a way to squeeze more money out of you. Internet access providers who do not charge by the hour will not auto-install ping programs as part of their setup bundles.

Image viewers



The earliest Web browsers didn't allow you to view text and some types of graphics in the same window. You had to configure an image viewer to automatically load the graphic when you encountered a page that contained certain types of images.

There is no browser worth speaking of today that does not allow you to view the most common graphics formats used on the World Wide Web as part of the page. In fact, your browser will almost always function as a stand-alone image viewer. You can drag the file's name directly from **File Manager** or **Explorer** to the browser's window to view it. There's no reason we can see for providing new users with image viewers when the disk space would be better devoted to an improved TELNET or IRC program. And if you really *want* an image viewer, you'll find them linked in literally hundreds of locations around the World Wide Web, and most of the ones you'll find will be better than the one included with your Web browser.

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About Stuffit Expander

Because you still have to know how to handle compressed archives



A lot of the programs you'll find discussed on the **Software Resources Page** (online section) are gadgets, but some will be extremely useful. Some are so important that we'd like you to have them as soon as possible after you get an Internet account. We recommend obtaining these four important software packages right away.

The problem is that you'll need to know how to manage the software in the form it is most usually offered on the Internet.

We've managed to make special arrangements with Aladdin Systems, developers of the Macintosh standard Stuffit Deluxe archiving and compression software to bring you their **Stuffit Expander** program for making short work of your Internet archive-handling chores. **Stuffit Expander** does a *lot* more than just handle compressed archive files, but this is the one job you'll need it for right away.

If you already have **Winzip** or PKZIP, you can come back to this section later when you need to deal with strange beasts such as uuencoded binaries and MIME attachments, but if the terms "compressed archive" and "ZIP file" strike fear into you, it would be a good idea to get your feet wet with **Stuffit Expander** right away.

A copy of the **Stuffit Expander** program is included as part of the Tourist Class and First Class packages, and is available on the Internet from several locations including links on the First Train home page.



This icon will take you to the section of First Train where you'll be walked through the installation and configuration of Stuffit Expander specifically for use with software you'll find on the Internet.

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This help button will take you to the section of First Train where you'll learn about why Stuffit Expander is so important. It discusses the process of unpacking, installing and troubleshooting new software received over the Internet.

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 Critical tools

Essential files left out of many software packages

An interesting dilemma

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If you enjoy trying out new software, you'll soon discover that the Internet is the biggest, best toy box you could ever imagine. But you will also discover that some of the toys come with a "some assembly required" label. In other words, they don't include all the parts you may need to use them.

Here's the scoop. There are literally thousands of amateur programmers making their work available on the net, often for free. Many of these programmers work with inexpensive tool kits and do not have the rights to distribute all parts of the software you may need. They also realize that the omitted files are widely available, and that if they don't include them there are probably hundreds of programs that do.

Others are veteran programmers who realize that there are thousands of packages out there all of which use the same shared resource files -- some of them rather large files -- and they leave these resources out assuming that you either have them already or know where to find them. It's a move designed to save you time and trouble obtaining and setting up these packages.

Uncertainty

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That leaves you in the uncomfortable position of never knowing when you get a new software package if you'll be able to run it right away. If you've ever started a new program from a bulletin board, online system or Internet site and seen Windows' "File not found" error message, you have already experienced this.

Fortunately, there are only a handful of these files which programmers leave out of their software, and chances are good that you already have at least one or two of them already. We have created a special disk containing copies of eight of the most-often omitted files which you can install and leave on your system. They'll take up a little over 1.5 megabytes of space, but once installed you should be able to run nearly 90 percent of all programs that come without certain resource files. It's just a little bit of insurance, and it will work with both Windows 3.1 and Windows 3.11.

If you received an **Essential files** disk with your copy of First Train, you already have these files on your system. If you haven't installed it yet, now might be a good time to do it.

1. Switch to Program Manager
2. Click **File** from the top menu bar and select **Run** from the drop-down menu.
3. In the **Command line:** box that pops up, type A:\INSTALL if your 3-1/2" floppy drive is Drive A, or B:\INSTALL if your floppy drive is Drive B, and click **OK**.
4. Follow the installation procedure. It will not create any icons, since these files are for use by programs that need them and they are not actual programs themselves.

That's all there is to it. Once these files have been installed, you're ready to use nearly every software package you find on the net, even if it comes with a "some assembly required"

label.

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Keeping a clean and trouble-free system

Faros Uninstaller 3 PLUS



The third is an uninstaller utility. You might have heard of this type of software before, and you may even have an uninstall program on your computer already. If so, you can skip this section. But if not, this is one utility you will find extremely useful in keeping your system clean and trouble-free. This software keeps track of the new programs you put onto your computer, so that you can erase programs you don't need quickly, easily, and without leaving messes behind that fill up your hard disk with useless data.

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This help button leads to a section that discusses the use and importance of uninstall software for Windows. You might want to bookmark your position here before jumping to this topic since there is no button in this section to return you to the **What to pack** section.

The uninstaller supported by First Train is **Faros Uninstaller 3 PLUS**. We chose this particular program firstly because the author released it free for all to use, secondly because it is one of the simplest tools of its kind for new users, and thirdly because we found it so effective for both Windows 3.1/Windows for Workgroups *and* Windows 95 that we actually wrote the helpfile for it so that others could benefit from it. We encourage all users who have a copy of this software to share it with others.

If you do not have a copy of this software on disk as part of First Train, you can find links to it on First Train's Internet site and on CompuServe. It may have been pre-installed as part of your Tourist Class or First Class package, and if so you'll find its icon in your First Train program group or submenu.

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We strongly recommend having a working uninstaller on your system and using it regularly as part of your Internet explorations. This help button leads to a topic that tells you why we feel it's so important.

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Emergency backup for Windows

Because Windows doesn't come with life-preservers



The next essential item to pack for your trip is emergency Windows backup software. If you use a tool such as Safety Net, First Aid or another Windows utility that backs up your most important DOS and Windows files, you won't need this software. But if you *don't* have emergency backup software, sooner or later you're in for an unpleasant surprise. It's the rare Windows user who doesn't get locked out of their system due to a botched installation, a crash at a critical moment that corrupts a Windows or DOS file, a virus infection or something as unpredictable as a stray gamma ray from the Sun damaging a critical spot on your hard disk.

The bad news is that Windows and DOS don't come with emergency backup software, and the tool Microsoft makes available on the Windows 95 upgrade CD has proven to be less than satisfactory in our tests. The good news is that we have included click-and-go emergency Windows backup software with First Train for the Internet as a no-cost extra. It's so important that we believe every computer user ought to have it and use it, and we're making this software freely available to all for just that reason.

Our own F-A-S-T Emergency Windows Backup



This utility is a special backup routine that will copy the most important files from your system to a floppy disk. Once this disk has been made, you'll need to keep it updated regularly, which usually takes less than a minute each time you do it. This disk will help you effortlessly recover from about 90 percent of the most serious software emergencies you might have, and possibly save you an enormous amount of time and money spent troubleshooting a faulty installation.

We specialize in writing training and support software. We're not programmers. So be aware that this software is a bit of a hack-together job. But it works, and it has been tested and has already saved its users thousands of dollars in troubleshooting and service calls they would otherwise have needed. If you ever get locked out of Windows, **F-A-S-T Emergency Windows Backup** will get you up and running again almost instantly. You just have to remember to use it.

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This button will start the **F-A-S-T Windows Emergency Backup** now if you want to take a look right away (First Class and Tourist Class only).

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Antivirus software

A cure for Internet "turista"



Viruses in software available on the Internet are rare, a lot scarcer in fact than many people might guess. However, there is always the chance that you might stop in for some software at some out-of-the-way cafe and accidentally take a bug with you that you hadn't expected.

Good backup habits will insure that if this ever happens to you, it is nothing more than an irritation. An emergency system backup disk for DOS and Windows will usually make extra-short work of these nasties. But for the ultimate in protection there's nothing like good antivirus software.

We can't provide antivirus software with First Train, but we *can* help you obtain it from the many locations around the Internet where quality free and free-trial antivirus packages are kept.

Offline information

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This help button will take you to a section of the Insurance and Medical section which discusses our three top picks of antivirus software widely available on the Internet. You may wish to bookmark your position before jumping to this section, as there is no button there to return you to the **What to pack** section.

For First Class and Tourist Class passengers

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You might want to make an antivirus package one of the first items on your Internet "shopping list", and we provide point-and-click links to the latest versions of our top picks from the **Software Resources Page** of First Train's online section.

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If you've never downloaded from the Internet before

A message for Day Excursion passengers

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If you're a Tourist Class or First Class passenger, everything except for antivirus software was included with your package. Antivirus is one thing you should get yourself from the Internet, since it must be kept up-to-date in order to be useful to you.

But if you're a Day Excursion passenger, you'll have to obtain this software yourself either from your favorite online service or from the links supplied on our Internet site.

Before you get these core files, it would be a good idea to make sure you're familiar with the process of installing software found on the Internet. This will take between a half-hour and an hour to learn, and if you've never transferred a file over your modem before, it is a skill you are almost certain to find extremely useful.

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This help button will take you to the installation help page now, but bookmark this page first so you can easily return and get the rest of the four critical software packages.

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Laws and customs: a few rules of the road

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Travel to exotic destinations can be a risky proposition when you don't know the local laws and customs. Fortunately the penalties for not knowing these laws customs are generally pretty small on the Internet. In fact, you might even say that you haven't really been baptized to the Internet until you've had your first brush with one of the unofficial, self-appointed "Net.Cops" who seem to enjoy pouncing on newcomers' mistakes. What you *do* want to avoid are the local spies, pickpockets and "trollers". Here are a few tips to help smooth diplomatic relationships and keep you from feeling *too* much like a stranger in a strange land.

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A few guidelines for first-time travellers



The locals are justifiably proud of their culture and achievements. This is a land where courtesy works so well that the rule of law generally isn't needed, and net citizens would like to keep it that way. The cops and military are generally needed only to deal with crises affecting the net itself.

The local tourist boards would like you to be aware of a few issues of common courtesy which are well-known to the locals but might not seem obvious to you. Acquainting yourself with these often unspoken rules of courtesy will help insure that the Internet continues to function and grow without the need for cumbersome laws and regulations.

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Getting in and out of trouble

Just what kind of trouble can a new user cause?



Think about this rationally. According to some estimates, the population here is growing here at

the rate of 10 percent per month. Just how long do you think the net would last if it wasn't "newbie-proofed"? About as long as you've taken to read this paragraph.

There's not much trouble you can get into, not really. If someone accuses you of "breaking" something, the simple fact is that they didn't take enough care to prevent problems when they created it. There is almost no mistake that you can make which an expert user can't also make on an off day.

The *worst* you can do is accidentally send the wrong information to the wrong person, or access forbidden information from a site that wasn't made secure enough to keep you out. Hopefully you won't be sending personal or sensitive information over the Internet until you know what you're doing, so no harm done. And if you manage to "break into" someone's Internet site without trying, that speaks volumes about what a real hacker could do if they *were* trying

The worst you can do is what you do to yourself

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You can get lost. You can get frustrated to the point where you simply log off and hang up your connection. But unless you deliberately set out to do so, or hit a one-chance-in-fifty-trillion combination of keys at just the right time, there's no way you can break anything, or break *into* anything, unless someone wanted it that way.

Your biggest worries should be the daunting task of making sense of all the services available and finding your niche in the Internet community. And that's where you can become your own worst enemy. There is so much to see and do, so much to sample and test, and so much to learn and explore, that many (if not most) new Internet users forget why they got net accounts in the first place. Eventually you may find yourself trying to "shape up and get to work" on the net while deep inside you're still dying to do more exploring.

Do what you *want* to do, what feels right to you, whatever that might be. This is *virtual* reality after all, not a life-and-death struggle, and while hurt feelings are an everyday occurrence for a lot of net users, all you're really responsible for is making sure that the net works for you, whether your role is that of an active participant or an appreciative spectator. If you peel back the skins of a few Net.Cops who make life painful for new users, eventually you'll discover that most of them have fallen into the trap of believing

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Timing and courtesy

Prime time is busy time

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The Internet is like the telephone system. It has its peak hours and its off-peak hours. Most service providers don't charge any more for daytime usage than they do for evening usage. In fact, most commercial providers are busiest during the evening prime time hours. You are free to use the Internet any time you like, but there are a couple of points regarding timing that you should know. They will help you not only make more efficient use of the Internet, but help out many of the non-profit sites that make their resources available to you.

Remember that most home Internet users log onto the net during the times when they normally watch television...in the evenings and on weekends. Unless you are paying more for prime-time access (usually 6:00 p.m. to midnight) than for regular off-peak access, most providers prefer that you schedule as many of your Internet activities as possible during non-prime-time hours.

Courtesy and convenience go hand in hand



If you use the net for recreation, of course you don't want to do that, and don't think you have to compromise your enjoyment for the sake of the people you pay to access the net. But if you have regular daily activities such as mail and newsgroup checks or file transfers, these can be automated and scheduled to start at any time. Many experienced modem users schedule regular activities for 3:00 a.m. and use automation software to perform daily chores at this time.

Scheduling regular activities for off-peak hours will also help to prevent frustration. It's in the best interests of every provider to try to insure that everyone who wants to use their service can access it at any time, but the demand for new telephone lines is so high that providers can't always keep up even if they want to. Sometimes it can take weeks or months to get new phone lines installed after a rush of new subscribers. It's not necessarily because the provider is slow or didn't plan far enough in advance. Usually it's because the telephone company can't or won't get the work done when it needs to be done. It's a problem that most Internet service providers have run into at one time or another.

The six o'clock slowdown



Finally, keep in mind that prime time on the Internet is like Christmas Day on the telephone system. The Internet is always busiest between the hours of 6:00 p.m. and 2:00 a.m. Eastern Time. During this period, many most popular sites will either be very slow or impossible to access. If you find a lot of your favorite sites slow or busy during the times you want to use them, make a note to try them at different times of the day or on weekends.

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Using public-access Internet sites

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Courtesy comes into play when you use public-access services made available by universities and other non-profit institutions. In most cases, the computers they provide for your use via the Internet are the same computers needed by students and staff in the daytime. Every time someone accesses their computers in the daytime, it reduces the system's efficiency for those using the computer at the other end.

When using public-access sites for accessing anything more than a page or two of information, try to make an educated guess about the time of day at the host's computer site, and see if you can schedule your use of their facilities for times other than normal business hours of 8:00 a.m. to 6:00 p.m. their time. Many excellent Internet sites at universities and colleges have already closed their doors to the public because of the load placed on their computers by people accessing them during work and school hours.

Use commercial sites any time you like

 **Last topic**

Commercial sites open to the public, such as sites maintained by publishers and manufacturers, can generally be considered fair game at any time of day. The sponsor of that site is probably using it to promote their business in some way, so there's no reason why you should feel the need to restrict your use of their sites to off-peak hours. If their computers become overloaded, they can either improve their access or reduce the size or appeal of the site.

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Anonymity and privacy of information on the net

You may be concerned about the security of the information you access on the Internet, and whether others will be able to access your email, private chat conversations or comings and goings.

 **Last topic**

This subject is so important that we devoted an entire section of First Train to issues concerning privacy and anonymity. You can access it now by clicking the help button.

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Afraid of becoming a net junkie?

It had to happen...



The concept of Internet addiction is no joke. There are already 12-step support groups in many major centers for Internet addicts, people whose lives have been so severely upset by their overuse of the net that they need support to remain stable and healthy. It's easy to understand why. The net provides many, many opportunities for connecting with other people and finding sources of amusement that present low emotional and physical risk.

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Many people use the net to remake themselves...literally. Some use it as a stepping-stone, to try out new things as a way to see if they fit their real life personality, turning their Internet experience into a tool for growth. Others use it as a place to project an artificial self they could never live up to in real life.

But regardless of how you use the net, it has a tremendous equalizing effect many people find highly addictive. It doesn't matter if you live in the dingiest hotel room on skid row; if you have a computer, a modem and a color monitor, you have just about the same access to the net's wealth as the wealthiest, most famous people in the world...and the same appearance.

Crossing the line



It's extremely difficult to know for sure when you've crossed the line between using the net to get more out of your life and making it a substitute for life, mainly because it's so hard to know for sure whether the things in your life which the net replaces are worse for you or not. This is a particular problem for people with addictive personalities and people who have a habit of overdoing every new thing. There's no easy solution to this dilemma except to take it easy and try to remember that you are yourself first and part of the Internet second.

One of the absolute best ways to avoid becoming a net junkie is to pick and choose times to use the net and stick with them. If you allow yourself an hour a day for the Internet, be a little flexible -- perhaps by blocking off an hour with the option to extend it to an hour and a half (especially during your first few weeks on the net when you'll spend a good portion of your time just learning how to do things). But try to stick with your own quota. This way, if you suddenly discover you've turned that hour into two hours for several days in a row, you'll know something is going on that you might want to look at. If you have no quotas, it might be all too easy to spend six hours a day on the net without giving a thought to what else you might be able to do with that time.

Keep your priorities in order



Keep your priorities straight, though. If you've missed a favorite TV show for three straight weeks because you've been on the net, perhaps it's because the Internet is giving you more back than your television. In that case, the net might well be better for you than what you left behind.

We had hoped to provide information about an online support group for Internet addicts which appeared earlier in 1995, but it appears to have disappeared from public view. If you find yourself needing this sort of help at some point, you may need to make a few discreet inquiries.

[!\[\]\(35e4f762fc1cfea5610d92e2d225d5b4_img.jpg\) Last topic](#)

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Local customs and etiquette

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Even though the locals are generally happy to help you find your way around, you'll find them to be much more hospitable, and your stay to be that much more enjoyable, if you observe a few basic rules of conduct and learn to abide by some of the written and unwritten rules of the net. The natives tend to be a passionate and forgiving people, but they do appreciate it when you try to fit in.

This section is the complete transcript of Arlene Rinaldi's **The Net User Guidelines and Etiquette**, one of the best introductions anywhere to codes of behavior on the Internet.

{ewc embh.dll,ARROW,A100} **Important note:** This document was prepared primarily for those who access the Internet over a network using a command-line interface, and much of the information here does not apply to Windows Internet users. Ms. Rinaldi has requested that her work be presented in whole, and while we are glad to honor that request, we have added strategically-placed red "bullets" {ewc EMBH.DLL,BULLET,A100} where the information may not be applicable to your situation. Click these bullets for information on the topic which is specifically related to Windows Internet users.

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The Net: User Guidelines And Netiquette Preface


**By: Arlene H. Rinaldi
Academic/Institutional Support Services
Florida Atlantic University
July, 1994**

The formulation of this guide was motivated by a need to develop guidelines for all Internet protocols to ensure that users at Florida Atlantic University realize the Internet capabilities as a resource available, with the provision that they are responsible in how they access or transmit information through the Internet (The Net).

{ewc EMBH.DLL,BULLET,A100} It is assumed that the reader has some familiarization with the terms and protocols that are referenced in this document.



Permission to duplicate or distribute this document is granted with the provision that the document remains intact or if used in pieces, that the original document source be referenced.

 For additions, comments, suggestions and requests for revisions, please send Email to RINALDI@ACC.FAU.EDU.

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Many of the terms alluded to here are highlighted and linked to the Internet Lexicon. Clicking them will pop up their definitions.

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 [Netiquette](#)

Introduction

It is essential for each user on the network to recognize his/her responsibility in having access to vast services, sites, systems and people. The user is ultimately responsible for his/her actions in accessing network services.

The "Internet" or "The Net", is not a single network; rather, it is a group of thousands of individual networks which have chosen to allow traffic to pass among them. The traffic sent out to the Internet may actually traverse several different networks before it reaches its destination. Therefore, users involved in this internetworking must be aware of the load placed on other participating networks.

As a user of the network, you may be allowed to access other networks (and/or the computer systems attached to those networks). Each network or system has its own set of policies and procedures. Actions which are routinely allowed on one network/system may be controlled, or even forbidden, on other networks. It is the users responsibility to abide by the policies and procedures of these other networks/systems. Remember, the fact that a user *can* perform a particular action does not imply that they *should* take that action.

The use of the network is a privilege, not a right, which may temporarily be revoked at any time for abusive conduct. Such conduct would include, the placing of unlawful information on a system, the use of abusive or otherwise objectionable language in either public or private messages, the sending of messages that are likely to result in the loss of recipients' work or systems, the sending of "Chain letters," or "broadcast" messages to lists or individuals, and any other types of use which would cause congestion of the networks or otherwise interfere with the work of others.

{ewc EMBH.DLL,BULLET,A100} Permanent revocations can result from disciplinary actions taken by a panel judiciary board called upon to investigate network abuses.

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Make no mistake...while these guidelines were prepared for institutional users, they apply just as much to you as a paid user of the net. Your Internet provider can and will discontinue your account, perhaps without notice, if you behave in a disruptive fashion, although you will usually be given a warning. There's no judiciary board...the provider has to earn a living, and if your conduct threatens that ability, your business will no longer be wanted.

While it's true that you *can* "burn down" providers one at a time, breaking rules of conduct with each and simply finding a new provider each time your account is terminated, be aware that providers do keep lists and tend to be a chummy bunch. If you persist in behaving in a disruptive fashion, eventually you'll run out of providers who will accept your business.

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Electronic Mail And Files: User Responsibility

(Editor's note: Windows users should click the red bullets for information that applies to their situation.)

Electronic mail

{ewc EMBH.DLL,BULLET,A100} The content and maintenance of a user's electronic mailbox is the users responsibility.

{ewc EMBH.DLL,BULLET,A100} Check Email daily and remain within your limited disk quota.

{ewc EMBH.DLL,BULLET,A100} Delete unwanted messages immediately since they take up disk storage.

{ewc EMBH.DLL,BULLET,A100} Keep messages remaining in your electronic mailbox to a minimum.

{ewc EMBH.DLL,BULLET,A100} Mail messages can be downloaded or extracted to files then to disks for future reference.

{ewc EMBH.DLL,BULLET,A100} Never assume that your Email can be read by no one except yourself; others may be able to read or access your mail. Never send or keep anything that you would not mind seeing on the evening news.

Files

{ewc EMBH.DLL,BULLET,A100} The content and maintenance of a user's disk storage area is the users responsibility:

{ewc EMBH.DLL,BULLET,A100} Keep files to a minimum. Files should be downloaded to your personal computer's hard drive or to disks.

{ewc EMBH.DLL,BULLET,A100} Routinely and frequently virus scan your system, especially when receiving or downloading files from other systems to prevent the spread of a virus.

{ewc EMBH.DLL,BULLET,A100} Your files may be accessible by persons with system privileges, so do not maintain anything private in your disk storage area.

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Although this is true in principle, it's generally a process which is automated by your email and not something you'll have to worry about unless something goes wrong. If something *should* go wrong, your provider is probably quite experienced with guiding new users through the proper procedures, although be aware that many providers charge "helpdesk fees" for help with problems with user accounts which they themselves did not cause.

This isn't strictly necessary unless you're getting a *lot* of mail, or receive software via email on a regular basis. Most providers will give you 5Mb of space on one of their hard disks to store email, which will be deleted when you retrieve it provided your email software is properly configured. Five "megs" is a *lot* of space for most users, and your mail should not be deleted even if you wait two weeks or more to retrieve it.

This job should be done by your email software automatically. Don't worry about this unless you suddenly discover that you are not receiving mail and don't understand why. In most cases your provider will help you configure your email software so that it *does* erase old mail, and if you are a First Class or Tourist Class passenger, the section on **Configuring Eudora** will help you make sure your Eudora email software is set up to do this from the start.

Normally you'll launch your email software and get all mail in your mailbox each time you log into your provider, so this won't normally apply to you as a Windows user. Outgoing mail is automatically sent from your mailbox, so you should never have to worry about having too much outgoing mail...unless you want to send files totalling more than the usual 5Mb space allotment.

Be aware that a 5Mb allotment doesn't mean you can send a 5Mb file! Because of the way files attached to email are encoded, it's probably wise to limit any outgoing mail to no more than 3.5Mb of actual data at one time, although you should check with your provider to determine exactly how much data you can send.

This won't normally apply to you as a Windows SLIP/PPP user. Virtually all email software automatically downloads your mail, whether it's plain text or files.

Most providers are sticklers for security. After all, their own mail comes through the same system theirs does. Commercial providers will *not* make a habit of reading their customers' mail, and there are actions you can take through legal channels if you discover that they have done so without a court order. But the fact remains that Internet security is far from perfect, and the crackers continue to stay a step ahead of the game. Never assume your email is perfectly secure unless you use very strong encryption software.

You won't normally have a disk storage area on your provider's computer unless you have a shell account with your provider. Since you will probably be getting a SLIP/PPP account, which is a very different animal, this is not something you will normally have to worry about.

This is simple common sense, and something you'll see discussed more frequently in the **What to pack** and **Insurance and medical** sections.

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 [Netiquette](#)

TELNET Protocol

(Editor's note: Windows users should click the red bullets for information that applies to their situation.)

{ewc EMBH.DLL,BULLET,A100} Many TELNETable services have documentation files available online (or via ftp). Download and review instructions locally as opposed to tying up ports trying to figure out the system.

{ewc EMBH.DLL,BULLET,A100} Be courteous to other users wishing to seek information or the institution might revoke TELNET access; remain only on the system long enough to get your information, then exit off of the system.

{ewc EMBH.DLL,BULLET,A100} Screen captured data or information should be downloaded to your personal computer's hard disk or to disks.

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Since you can use Windows to capture, save or print screen data if you need to, this does not apply to you as a Windows Internet user.

This definitely *does* apply to you as a Windows Internet user, since the sites you will be accessing via TELNET will only be able to allow a limited number of users at one time.

You may not be able to download instructions via TELNET with your SLIP/PPP account, so try to limit your TELNET activities to those sites where you can understand the instructions and operations of the system.

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Anonymous Ftp: File Transfer Protocol

(Editor's note: Windows users should click the red bullets for information that applies to their situation.)

{ewc EMBH.DLL,BULLET,A100} Users should respond to the **PASSWORD** prompt with their Email address, so if that site chooses, it can track the level of FTP usage. If your Email address causes an error, enter **GUEST** for the next **PASSWORD** prompt.

{ewc EMBH.DLL,BULLET,A100} When possible limit downloads, especially large downloads (1 Meg+), for after normal business hours locally and for the remote ftp host; preferably late in the evening.

Adhere to time restrictions as requested by archive sites. Think in terms of the current time at the site that's being visited, not of local time.

{ewc EMBH.DLL,BULLET,A100} Copy downloaded files to your personal computer hard drive or disks to remain within disk quota.

{ewc EMBH.DLL,BULLET,A100} When possible, inquiries to Archie should be in mail form.

It's the user's responsibility when downloading programs, to check for copyright or licensing agreements. If the program is beneficial to your use, pay any authors registration fee. If there is any doubt, don't copy it; there have been many occasions on which copyrighted software has found its way into ftp archives. Support for any downloaded programs should be requested from the originator of the application.

{ewc EMBH.DLL,BULLET,A100} Remove unwanted programs from your systems.

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Since you'll probably be using your own computer, and not computers owned by an institution, this is of course entirely up to you.

Archie is not a service you're likely to use much anyway, with all the other software search tools available on the net, but when you *do* use it, whether from our **Fact Finder** World Wide Web interface or from a dedicated Archie program, remember that it is operated on public access sites usually located on universities where the computers and connections are often needed by staff and students during the daytime.

Not applicable with Windows SLIP/PPP accounts; your FTP software does this automatically.

If you know the site you are accessing is commercial, such as an FTP site set up by a software publisher to allow users to get updated software or samples of software, you can safely ignore this rule, although it is very important that you observe it when using FTP sites at public or government institutions.

Since you'll probably be using automated FTP software which will save your email-address password for use with most systems you contact in this fashion, you should only need to enter it once into the program.

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Electronic Communications

(Email, Listserv Groups, Mailing Lists, And Usenet)

(Editor's note: Windows users should click the red bullets for information that applies to their situation.)

{ewc EMBH.DLL,BULLET,A100} Keep paragraphs and messages short and to the point.

Focus on one subject per message and always include a pertinent subject title for the message, that way the user can locate the message quickly.

{ewc EMBH.DLL,BULLET,A100} Don't use the academic networks for commercial or proprietary work.

{ewc EMBH.DLL,BULLET,A100} Include your signature at the bottom of Email messages. Your signature footer should include your name, position, affiliation and Internet and/or BITNET addresses and should not exceed more than 4 lines. Optional information could include your address and phone number.

Capitalize words only to highlight an important point or to distinguish a title or heading. *Asterisks* surrounding a word also can be used to make a stronger point. Capitalizing whole words that are not titles is generally termed as SHOUTING!

{ewc EMBH.DLL,BULLET,A100} Limit line length and avoid control characters.

Follow chain of command procedures for corresponding with superiors. For example, don't send a complaint via Email directly to the "top" just because you can.

Be professional and careful what you say about others. Email is easily forwarded.

Cite all quotes, references and sources and respect copyright and license agreements.

It is considered extremely rude to forward personal email to mailing lists or Usenet without the original author's permission.

{ewc EMBH.DLL,BULLET,A100} Be careful when using sarcasm and humor. Without face to face communications your joke may be viewed as criticism.

Acronyms can be used to abbreviate when possible, however messages that are filled with acronyms can be confusing and annoying to the reader.

Examples: IMHO= in my humble/honest opinion

FYI = for your information

BTW = by the way

Flame = antagonistic criticism

:-) = happy face for humor

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Although the author later asks you to keep smileys and acronyms to a minimum, it is considered good form to make all humorous references clear to the party you are communicating with. For example, a "winkie" ;-) generally means "I'm not being serious", while a normal smiley can mean either the same thing, or that the writer thinks it's funny whether it's meant seriously or not. Here are two examples:

In fact, as a new user, you'd be best to stick to pen and paper and avoid email altogether. :-)
(We think this is funny, but we also mean what we said.)

In fact as a new user, you'd be best to stick to pen and paper and avoid email altogether. ;-)
(we're only joking)

See what we mean? Make yourself clear to avoid hurt feelings and keep lines of communications open.

This is something your email software will probably take care of automatically.

Since you will probably represent yourself, and not a business or institution, what you choose to place in your signature is entirely up to you. For reasons of personal security it is not advisable to place your phone number in your "sig" unless it is a business number.

This is something you'll have to play by ear. In general it's best to check out a week's worth of traffic on a newsgroup or mailing list to see if someone else has promoted or advertised, and what the responses might have been to the action. If in doubt, ask one of the more frequent contributors or find the FAQ for mailing list or newsgroup which will outline exactly what is and is not tolerated by that group.

Any guidelines offered here are entirely up to you when communicating with personal acquaintances.

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Listservs/Mailing Lists/Discussion Groups

(Editor's note: this section applies to USENET newsgroups as well.)

{ewc EMBH.DLL,BULLET,A100} Some mailing lists have low rates of traffic, others can flood your mailbox with several hundred mail messages per day. Numerous incoming messages from various listservers or mailing lists by multiple users, requires extensive system processing which can tie up valuable resources. Subscription to Interest Groups or Discussion Lists should be kept to a minimum and should not exceed what your disk quota can handle, or you for that matter.

When you join a list, monitor the messages for a few days to get a feel for what common questions are asked, and what topics are deemed off-limits. This is commonly referred to as lurking. When you feel comfortable with the group, then start posting.

See if there is a FAQ (Frequently Asked Questions) for a group that you are interested in joining. Veteran members get annoyed when they see the same questions every few weeks, or at the start of each semester.

Follow any and all guidelines that the listowner has posted; the listowner establishes the local "netiquette" standards for her/his list.

Keep in mind that some discussion lists or Usenet groups have members from many countries. Don't assume that they will understand a reference to TV, movies, pop culture, or current events in your country. If you must use the reference, please explain it.

{ewc EMBH.DLL,BULLET,A100} **Don't join a list just to post inflammatory messages.** This upsets most system administrators and you could lose access to the net ("mail bombing").

Keep your questions and comments relevant to the focus of the discussion group.

If another person posts a comment or question that is off the subject, do *not* reply to the list and keep the off-subject conversation going publicly.

When someone posts an off-subject note, and someone else criticizes that posting, you should *not* submit a gratuitous note saying "well, I liked it and lots of people probably did as well and you guys ought to lighten up and not tell us to stick to the subject".

{ewc EMBH.DLL,BULLET,A100} When going away for more than a week, unsubscribe or suspend mail from any mailing lists or LISTSERV services.

If you can respond to someone else's question, do so through email. Twenty people answering the same question on a large list can fill your mailbox (and those of everyone else on the list) quickly.

When quoting another person, edit out whatever isn't directly applicable to your reply. Don't let your mailing or Usenet software automatically quote the entire body of messages you are replying to when it's not necessary. Take the time to edit any quotations down to the minimum necessary to provide context for your reply. Nobody likes long message in quotes for the third or fourth time, only to be followed by a one line response: "Yeah, me too."

Use discretion when forwarding a long mail message to group addresses or distribution lists. It's preferable to reference the source of a document and provide instructions on how to

obtain a copy. If you must post a long message, warn the readers with a statement at the top of the mail message. Example: WARNING: LONG MESSAGE

If you crosspost messages to multiple groups, include the name of the groups at the top of the mail message with an apology for any duplication.

Resist the temptation to "flame" others on the list. Remember that these discussions are "public" and meant for constructive exchanges. Treat the others on the list as you would want them to treat you.

When posting a question to the discussion group, request that responses be directed to you personally. Post a summary or answer to your question to the group.

When replying to a message posted to a discussion group, check the address to be certain it's going to the intended location (person or group). It can be very embarrassing if they reply incorrectly and post a personal message to the entire discussion group that was intended for an individual.

{ewc EMBH.DLL,BULLET,A100} When signing up for a group it is important to save your subscription confirmation letter for reference. That way if you go on vacation you will have the subscription address for suspending mail.

Use your own personal Email account, don't subscribe using a shared office account.

Occasionally subscribers to the list who are not familiar with proper netiquette will submit requests to **SUBSCRIBE** or **UNSUBSCRIBE** directly to the list itself. Be tolerant of this activity, and possibly provide some useful advice as opposed to being critical.

Other people on the list are not interested in your desire to be added or deleted. Any requests regarding administrative tasks such as being added or removed from a list should be made to the appropriate area, not the list itself. {ewc EMBH.DLL,BULLET,A100} Mail for these types of requests should be sent to the following respectively:

LISTSERV GROUPS- LISTSERV@host

MAILING LISTS - listname-REQUEST@host or listname-OWNER@host

For either Mailing Lists or LISTSERV groups, to subscribe or unsubscribe, in the body of the message include:

SUBSCRIBE listname yourfirstname yourlastname (To be added to the subscription) or...

UNSUBSCRIBE listname (To be removed from the subscription)

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Do not expect these guidelines to apply to every mailing list. Some of them use unusual commands, making it doubly important that you keep the "welcome" message you receive when you first sign on.

Important isn't a strong enough word. It's *critical*. You'll find out how critical when you begin to see the number of messages from users begging for help because they don't know how to get themselves removed from a mailing list.

Naturally this depends on how much traffic the list generates. If you only receive 50 or so messages a week from a given list, you can safely assume that it will not jam your mailbox if you take a two-week vacation. If you *do* need to unsubscribe for a time, you can usually catch up with the action by sending commands to the software used to manage the mailing list to have it send you an archive of recent messages upon your return.

There are many USENET newsgroups and mailing lists set up specifically for the purpose of spleen-venting. If this is something you feel a need to do, seek out these groups.

Mailing lists can become so unmanageable that you should never join more than two a week. The first two days' traffic may not be a true indication of how much mail it generates, and it might take that long for the list to register you as a user. You might suddenly be flooded with several hundred messages you can't handle, and risk erasing a valuable personal message when you try to clean up the in-box of your email software.

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The Ten Commandments For Computer Ethics

(from the Computer Ethics Institute)

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not use or copy software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the program you write.
10. Thou shalt use a computer in ways that show consideration and respect.

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"Exploring Internet Training Series, Module 2- Mail-based Information Delivery: Alamanac and Listservs". by Deborah Shaffer, ES-USDA, CIT and Pennsylvania State University; Henry DeVries, Extension Electronic Technology Group, Cornell University; Gregory Parham, ES-USDA, CIT.

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10 Big Myths about copyright explained

By Brad Templeton

Original-author: brad@clari.net (Brad Templeton)

Archive-name: law/Copyright-FAQ/myths/part1

Last-change: 28 Apr 1995 by brad@clari.net (Brad Templeton)

Changes-posted-to: news.misc,news.answers

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[Foreword by the editors of First Train](#)

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[copyrighted."](#)

[1\) "If it doesn't have a copyright notice, it's not](#)

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[2\) "If I don't charge for it, it's not a violation."](#)

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[3\) "If it's posted to Usenet it's in the public domain."](#)

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 [10 Big Myths](#)

"If it doesn't have a copyright notice, it's not copyrighted."

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This was true in the past, but today almost all major nations follow the Berne copyright convention. For example, in the USA, almost everything created privately after April 1, 1989 is copyrighted and protected whether it has a notice or not. The default you should assume for other people's works is that they are copyrighted and may not be copied unless you *know* otherwise. There are some old works that lost protection without notice, but frankly you should not risk it unless you know for sure.

It is true that a notice strengthens the protection, by warning people, and by allowing one to get more and different damages, but it is not necessary. If it looks copyrighted, you should assume it is. This applies to pictures, too. You may not scan pictures from magazines and post them to the net, and if you come upon something unknown, you shouldn't post that either.

The correct form for a notice is: "Copyright <dates> by <author/owner>" You can use C in a circle instead of "Copyright" but "(C)" has never been given legal force. The phrase "All Rights Reserved" used to be required in some nations but is now not needed.

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False. Whether you charge can affect the damages awarded in court, but that's essentially the only difference. It's still a violation if you give it away -- and there can still be heavy damages if you hurt the commercial value of the property.

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"If it's posted to Usenet it's in the public domain."

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False. Nothing is in the public domain anymore unless the owner explicitly puts it in the public domain*. *Explicitly*, as in you have a note from the author/owner saying, "I grant this to the public domain." Those exact words or words very much like them.

Some argue that posting to Usenet implicitly grants permission to everybody to copy the posting within fairly wide bounds, and others feel that Usenet is an automatic store and forward network where all the thousands of copies made are done at the command (rather than the consent) of the poster. This is a matter of some debate, but even if the former is true (and in this writer's opinion we should all pray it isn't true) it simply would suggest posters are implicitly granting permissions "for the sort of copying one might expect when one posts to Usenet" and in no case is this a placement of material into the public domain. Furthermore it is very difficult for an implicit licence to supersede an explicitly stated licence that the copier was aware of.

Note that all this assumes the poster had the right to post the item in the first place. If the poster didn't, then all the copies are pirate, and no implied licence or theoretical reduction of the copyright can take place.

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* Copyrights can expire after a long time, putting something into the public domain, and there are some fine points on this issue regarding older copyright law versions. However, none of this applies to an original article posted to USENET.

Note that granting something to the public domain is a complete abandonment of all rights. You can't make something "PD for non-commercial use." If your work is PD, other people can even modify one byte and put their name on it.

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"My posting was just fair use!"

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See other notes on fair use for a detailed answer, but bear the following in mind:

The "fair use" exemption to copyright law was created to allow things such as commentary, parody, news reporting, research and education about copyrighted works without the permission of the author. Intent, and damage to the commercial value of the work are important considerations. Are you reproducing an article from the New York Times because you needed to in order to criticise the quality of the New York Times, or because you couldn't find time to write your own story, or didn't want your readers to have to pay to log onto the online services with the story or buy a copy of the paper? The former is probably fair use, the latter probably aren't.

Fair use is almost always a short excerpt and almost always attributed. (One should not use more of the work than is necessary to make the commentary.) It should not harm the commercial value of the work (which is another reason why reproduction of the entire work is generally forbidden.)

Note that most inclusion of text in Usenet followups is for commentary and reply, and it doesn't damage the commercial value of the original posting (if it has any) and as such it is fair use. Fair use isn't an exact doctrine, either. The court decides if the right to comment overrides the copyright on an individual basis in each case. There have been cases that go beyond the bounds of what I say above, but in general they don't apply to the typical net misclaim of fair use. It's a risky defence to attempt.

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False. Copyright is effectively never lost these days, unless explicitly given away. You may be thinking of trade marks, which can be weakened or lost if not defended.

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You can't "copyright a name," or anything short like that. Titles usually don't qualify -- but I doubt you may write a song entitled "Everybody's got something to hide except for me and my monkey." (*J.Lennon/P.McCartney*)

You can't copyright words, but you can trademark them, generally by using them to refer to your brand of a generic type of product or service. Like an "Apple" computer. Apple Computer "owns" that word applied to computers, even though it is also an ordinary word. Apple Records owns it when applied to music. Neither owns the word on its own, only in context, and owning a mark doesn't mean complete control -- see a more detailed treatise on this law for details.

You can't use somebody else's trademark in a way that would unfairly hurt the value of the mark, or in a way that might make people confuse you with the real owner of the mark, or which might allow you to profit from the mark's good name. For example, if I were giving advice on music videos, I would be very wary of trying to label my works with a name like "mtv." :-)

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Copyright law is mostly civil law. If you violate copyright you would usually get sued, not charged with a crime. "Innocent until proven guilty" is a principle of criminal law, as is "proof beyond a reasonable doubt." Sorry, but in copyright suits, these don't apply the same way or at all. It's mostly which side and set of evidence the judge or jury accepts or believes more, though the rules vary based on the type of infringement. In civil cases you can even be made to testify against your own interests.

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Actually, recently in the USA commercial copyright violation involving more than 10 copies and value over \$2500 was made a felony. So watch out. (At least you get the protections of criminal law.) On the other hand, don't think you're going to get people thrown in jail for posting your E-mail. The courts have much better things to do than that. This is a fairly new, untested statute.

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It's up to the owner to decide if they want the free ads or not. If they want them, they will be sure to contact you. Don't rationalize whether it hurts the owner or not, *ask* them. Usually that's not too hard to do. Time past, ClariNet published the very funny Dave Barry column to a large and appreciative Usenet audience for a fee, but some person didn't ask, and forwarded it to a mailing list, got caught, and the newspaper chain that employs Dave Barry pulled the column from the net, pissing off everybody who enjoyed it. Even if you can't think of how the author or owner gets hurt, think about the fact that piracy on the net hurts everybody who wants a chance to use this wonderful new technology to do more than read other people's flamewars.

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To have a copy is not to have the copyright. All the E-mail you write is copyrighted. However, E-mail is not, unless previously agreed, secret. So you can certainly *report* on what E-mail you are sent, and reveal what it says. You can even quote parts of it to demonstrate. Frankly, somebody who sues over an ordinary message might well get no damages, because the message has no commercial value, but if you want to stay strictly in the law, you should ask first. On the other hand, don't go nuts if somebody posts your E-mail. If it was an ordinary non-secret personal letter of minimal commercial value with no copyright notice (like 99.9% of all E-mail), you probably won't get any damages if you sue them.

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In Summary

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These days, almost all things are copyrighted the moment they are written, and no copyright notice is required.

Copyright is still violated whether you charged money or not, only damages are affected by that.

Postings to the net are not granted to the public domain, and don't grant you any permission to do further copying except *perhaps* the sort of copying the poster might have expected in the ordinary flow of the net.

Fair use is a complex doctrine meant to allow certain valuable social purposes. Ask yourself why you are republishing what you are posting and why you couldn't have just rewritten it in your own words.

Copyright is not lost because you don't defend it; that's a concept from trademark law. The ownership of names is also from trademark law, so don't say somebody has a name copyrighted.

Copyright law is mostly civil law where the special rights of criminal defendants you hear so much about don't apply. Watch out, however, as new laws are moving copyright violation into the criminal realm.

Don't rationalize that you are helping the copyright holder; often it's not that hard to ask permission.

Posting E-mail is technically a violation, but revealing facts from E-mail isn't, and for almost all typical E-mail, nobody could wring any damages from you for posting it.

Permission is granted to freely copy this document in electronic form, or to print for personal use. If you had not seen a notice like this on the document, you would have to assume you did not have permission to copy it. This document is still protected by you-know-what even though it has no copyright notice.

{ewl ew256bmp.dll, ew256bmp, bitmaps.bmp} It should be noted that the author, as publisher of an electronic newspaper on the net, makes his living by publishing copyrighted material in electronic form and has the associated biases. However, **DO NOT E-MAIL HIM FOR LEGAL ADVICE**; for that use other resources or consult a lawyer. Also note that while most of these principles are universal in Berne copyright signatory nations, some are derived from Canadian and U.S. law. This document is provided to clear up some common misconceptions about intellectual property law that are often seen on the net. It is not intended to be a complete treatise on all the nuances of the subject. A more detailed copyright FAQ, covering other issues including compilation copyright and more intricacies of fair use is available in the same places you found this note, or for FTP on [rtfm.mit.edu](ftp://rtfm.mit.edu/pub/usenet-by-group/comp.answers/law/Copyright-FAQ) in [pub/usenet-by-group/comp.answers/law/Copyright-FAQ](ftp://pub/usenet-by-group/comp.answers/law/Copyright-FAQ).

Also consider [gopher://marvel.loc.gov/11/copyright](http://marvel.loc.gov/11/copyright) for actual statutes. Another useful document is <http://www.eff.org/pub/CAF/law/ip-primer>

This FAQ can be found at <http://www.clari.net/brad/copymyths.html>

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A note from the editors of First Train:

This is one of the best everyman's myth-buster articles on copyright which we've ever seen, and we encourage all current or prospective Internet users to read it through completely. It contains information which will be relevant to almost every Internet user.

← Last topic

This work is provided by the author as a public service, and he asks that both his copyright and privacy be respected. Specifically, you may share electronic versions via email or on disk (such as the freely-copyable versions of this help tool), but you *may not* share printed versions.

At the end of the document you will find information on where to find the most recent versions of this FAQ if you have an Internet account.

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Anonymity and Security on the Internet



Protecting your identity, security and data is one of the stickiest issues on the Internet right now. Privacy on networks in general has always been a serious issue, but the sheer openness of the net makes anonymity and security an ongoing battle. Your Internet provider -- in fact, *all* Internet service providers -- would like you to know more about these issues as a way of protecting yourself, your data, and others on the Internet. Your awareness of these issues helps all of us.

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Privacy protection and net addresses



While it might not be an issue to you now, and in most cases it is *never* an issue, there are situations where you may find it appropriate to travel incognito. Here are some hints for determining whether you might benefit from a false nose and eyeglasses and where to find them if you need them.

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Security and legal issues



As any experienced traveller can tell you, people are people the world over and no corner of the earth is free of spies, thieves, unjust laws and other unpleasantness. The more you know about these things, the better you can protect yourself.

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Protecting yourself



Privacy is a matter you can take care of quite easily between yourself and your Internet provider. Security, on the other hand, should be your own concern since once data starts travelling outside of your provider's computers, it's out of their control. Fortunately there are some steps you can take to help yourself.

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 **Internet security**

 **Privacy**

Introduction: privacy and net addresses

You're on the list

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Your email address is your Internet identity. Like your credit history, the more time you spend on the net, the more databases your email address is liable to wind up in.

When you transfer files via anonymous FTP, it's likely that the site offering the files keeps a record of your name and email address. This one of the few ways they have to protect themselves against abusers of the system.



More and more Web sites, particularly commercial ones, ask for your email address before they will let you access their services. They could use this information for any number of purposes, from tracking the locations of people use their site to compiling mailing lists for sale to other marketers.

Everyone wants to know who you are; few really care

 **Last topic**

Every post you make to USENET newsgroups and every email message you send will carry your email address. Unless you use an anonymous remailer, someone on the system will be able to trace your posts even if you change your posting address.

 **Last topic**

Nowhere are you more vulnerable than on Internet Relay Chat, where literally anyone can find out your email address...and your real name too if your IRC software is configured to display it...in a couple of seconds. All they have to do is ask using an IRC command, and you can't generally hide this information. Most IRC host computers will flat refuse to allow you onto IRC unless your email address matches up with their "trace" of your location.

Fortunately this need not be a concern, as you'll see in just a moment. Most people don't care who you are. They care about *what* you are, or how you represent yourself in your chat, email and postings to USENET. It's the ones who *do* care that you have to worry about, but unless you have something to hide your risks are very small indeed.

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The best protection: change your Internet identity



The best way to protect your identity, if you want it protected, is to make arrangements with your provider to have your email address changed. If you explain the reasons for this request, you should be allowed to make this change, but be aware that there may be a fee charged for converting your account to a new ID. Unfortunately, unless your provider is configured to handle virtual domains for email -- and few are at this time -- all you will be able to change is your email name. People will still be able to trace you as far as your Internet provider.



Your second line of defense is to avoid using your real name if you don't want it known, even when personalizing software on your own computer. Any program designed for use on the Internet which asks for your name when you first set it up might give that name to other users or sites on the net without your knowledge.

 **Last topic**

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Places you can hide



Sometimes it's not enough to disassociate your email address from your real name. Because of your interest in an unusual topic, or an unusual style of writing, you might be concerned about being identified by your provider's domain, which can easily be traced to a specific municipal area. Perhaps you want to contribute anonymously to a particularly sensitive newsgroup, or interact on IRC without the risk of harassment or unwanted email. Fortunately there are a few places on the net where you can hide your identity completely.

Anonymous mail servers

 **Last topic**

Anonymous mail servers, also known as anonymous remailers, allow you to completely protect your privacy by stripping all identifying information from your email or newsgroup posts except the subject. Your post is then rewritten using the remailer's address and a special email codename chosen either by you or the operator of the remailing service. If the operator is trustworthy (most are) and the remailer is located in a different city, or even a different country, your anonymity should be completely protected. Most remailing services do not even charge private individuals for their use.

There are two USENET newsgroups where anonymous remailers and remailing systems are discussed regularly: `alt.privacy.anon-server` and `alt.anonymous`. Click the highlighted text to browse either of these newsgroups now. These groups are where you can find or request information on how and where to send anonymous email, post anonymously to newsgroups and find TELNET sites that permit secure, anonymous login.

There is a pseudonym-based anonymous remailer at **anon.penet.fi**. For information on this remailer, send email to `help@anon.penet.fi` using your email program. This server tends to be heavily used, and is a favorite of people who post to self-help newsgroups which discuss sensitive personal issues.

The anonymous remailer at **twells.com** is also popular for USENET posters. For information on this system, email `anon-help@twells.com` by clicking the help button.

 **Last topic**

Be aware that you may be asked to outline your reasons for wanting to use an anonymous remailing service when you apply for access. Be warned also that there may be severe consequences for abusing these services if you are reported for activities which bother other Internet users or violate state or federal statutes which directly affect the operation of the host site.

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Email security

Who can get at your email? Who would want to?

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It is possible for your email to be intercepted and viewed by anyone on the Internet who has the desire and the tools to do it. The same is true of almost any Internet service. There is also a growing fear that large-scale Internet providers may be able to track every move you make on the net as a means of gathering market information and personal profiles about you.

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Anyone with access to your Internet service provider's computers can find out what news you've been reading, how many email messages you sent and where they went, even what they contained. All it takes is a few programming skills, the right software and a little patience. The question you have to ask yourself is this: with all the tempting corporate and government secrets that crackers could go after, and with all the *real* crime occurring in plain view on the net, who's going to care about *your* email? Only someone with a vested interest in knowing about you, and by the sheer force of numbers that makes the average Internet user quite safe. But make no mistake, security *is* an issue.

It's in your provider's interest to care about your privacy

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The kind of monitoring we just hinted at is an invasion of privacy, whether it's covered by existing laws or not. No respectable Internet service provider wants any part of this. The top priority of every provider is insuring that your time online is productive and enjoyable, and as long as you're abiding by local and federal laws, it shouldn't matter what you do or say, or where you go.

Ethical providers (and the vast majority *are* ethical) do not have staff who check email messages for certain words or phrases. They do not count the number of times you access certain sites on the Web. The only logs routinely kept by providers are your use of their computers, which is done for billing purposes and to make sure their system can handle the load placed on it by their subscribers.

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If you discover or suspect that any user, employee, or someone from outside the site, has been gaining access to any information about you that you think they shouldn't have, *contact your provider's support staff immediately*. All Internet service providers are honor-bound to take every precaution to insure the privacy of their subscribers, but new methods of hacking into systems emerge every day.

Keeping up with the demands of Internet security is an ongoing battle for everyone on the net with something to lose. Internet service providers can *try* to stay one step ahead of the crackers and make sure no illegal activity by their clientele places them at legal risk, but they can't know everything that's happening on their computers.

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Internet service providers and the law

Lawbreaking in plain sight

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There are activities taking place on the Internet in full public view which are violations of laws which both you and your provider must abide by. If the authorities contact your provider in regard to suspected illegal behavior taking place on their system by one or more of their subscribers, they may have no choice but to allow the proper authorities access to their computers, and to your records.

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The hard and frightening facts are these: the laws as they are written and currently enforced allow police in most jurisdictions to seize computer equipment if it is believed to contain information related to a criminal case. This will completely shut down any Internet service provider if they do not cooperate. You as a client might suffer some inconvenience, but if the case drags on more than two weeks, your provider will probably be forced to go out of business.

All providers are required by law to abide by any search warrants issued on records and data kept in their machines. And they are all aware of what is at risk.

Your Internet activities are generally quite safe

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You can generally consider anything you do on the Internet to be your business and yours alone. The simple fact is that the volume of data traffic on the net is so high that it is almost impossible to keep tabs on what its individual users are doing. Unless you've been specifically targeted for investigation or monitoring by law enforcement officials who have obtained the legal right to do so, it is highly unlikely that anything you say or do is being watched.

You might have heard of something called a firewall. This is a piece of software that acts as a security shield between your computer and the rest of the network to which you are connected. Firewalls are of no value on the Internet for the most part, because once you send information out, it can be intercepted by anyone. All a firewall will do is prevent you from being identified as the sender, and keep others from getting into your computer and poking around where they shouldn't.

However, if you want to act as an information provider, not just as a consumer, it will pay you to learn more about firewalls. Unfortunately, most of the resources we have found on the Web regarding firewalls are fairly technical. Firewalls are discussed in more depth in the section on **Protecting Yourself**.

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Unless you're using a program specifically designed to allow other people to use certain areas of your computer, such as a program that makes your computer act like a World Wide Web or FTP site, no one can get into your system while you're online. All they can do is monitor your activities. Programs that access your computer directly are rare on the World Wide Web right now, but they are becoming more common -- and more useful -- all the time.

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Data encryption

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There are many ways to insure the privacy of your communications on the Internet. The most common method is through the use of data encryption software. This software allows you to code a message in such a way that only someone who has the corresponding key can view it. Data can be encrypted in real time, meaning that you can have secure video and voice communications; and it can be encoded for storage.

This is a long section, so for the sake of clarity it has been broken up into four sub-topics. Buttons at the end of each topic will return you to this index.

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Two popular data encryption programs



Two of the most popular programs for encrypting data for transmission over the Internet are **PGP** (Pretty Good Privacy), a program developed at the Massachusetts Institute of Technology for no-cost use by the general public; and **PKZIP**, the popular data compression program. PKZIP permits data encryption only with the commercial version of the product which can be ordered directly from PKWARE Inc.

Both programs offer extremely high degrees of data security. In fact, the "military grade" security in PGP is so solid that it might cost thousands of dollars worth of time on the fastest computers in existence in order to crack a PGP-encrypted message. Both programs also have one important restriction: they may not be exported outside the United States due to some encryption code which is protected under US law.

Just recently there have been versions of PGP created which *can* be exported, and many copies have gotten out of the country to sites where the US government has no control over its distribution. If you want it badly enough, you can get it...but if you wish to communicate in and out of the US using PGP, you had better be aware that you will be in violation of federal statutes, and the sender or recipient within the US could be placed at considerable legal risk if this is discovered.

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We know of no cases where the use of PGP by an otherwise law-abiding US citizen resulted in federal government action against that person, but do keep in mind that if it *had* happened, it would be in the government's best interests to keep it quiet. Our advice? Keep your eyes and ears open, and make an informed decision. All the fear-mongering could be just that, but it has been our experience that whenever anyone cries "wolf" on the Internet there might not be a wolf, but there is almost always *some* sort of threat.

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Do you really need data encryption?



It's a question worth asking. Are your email transactions so important to you that you must have this kind of protection? Naturally if you're a professional sending client data to another professional as part of your job, the answer will be yes. If you're engaged in "grey" activities -- activities prohibited by law but which do not cause measurable harm -- activities such as activism, recreational drug use, hacking, software piracy or social causes which some authorities might take an interest in, the answer might not be as clear as you think.

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There is some question in hacker circles whether the use of PGP by itself doesn't draw attention to the user, although it is not just cause for investigating you under current statutes. But considering the rash of abuses even in law enforcement, this might be a risk worth considering. Many hackers are trying to get *everyone* to use encryption in their email to make those who actually need it less vulnerable, and you can probably expect to see some forms of encryption become widely used in email software for just this purpose by the end of the century.

Heavy as a safe

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While encryption has its uses, it is also cumbersome to use in its most common present forms. Some programs, such as the encryption software in Norton Utilities, is point-and-click easy. PGP is not a simple program for novices to understand, and the actual encryption is still done by DOS software. There are now many programs designed to automate its use of PGP, but even expert computer users may still find that it takes more than an hour just to install Pretty Good Privacy and create a single personal encryption sequence. Learning to use the software takes even longer.

Then there's the extra time involved in encrypting your messages for posting as email, a task which is not yet easily automated on all but a few select programs. So while the software does work, it's still about as cumbersome as carrying a small safe around to hold your wallet. That will change dramatically in the next couple of years -- the sheer size of the market needing encryption all but guarantees that -- but for now, be prepared to get a hacking lesson, especially if you plan on getting into PGP encryption.

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Other options



If simple, effective data encryption is all you need, for example for securing confidential client or patient documents for transmission via email, we suggest looking into a commonly-available utility package with data encryption such as Norton Utilities. There are many shareware and freeware programs designed for quickly encrypting files. But unless the end user also has access to the same encryption software at their end, it can be far less effective and convenient than using a commonly-available commercial product such as the encryption included with Norton Utilities.

Another option is live, point-to-point transmission. Internet Relay Chat offers the ability to meet and talk with anyone at any time on a private, secure channel visible only to network

operators, and the opportunity to transfer files back and forth from one computer to the other "on the fly" in near-complete security. Other programs such as teleconferencing software that works via the Internet, allow the transmission of data on secure, private channels. Keep in mind that these are only viable options if the sending and receiving party are online live at the same time.

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Where to find out more about PGP



If you want to learn more about Pretty Good Privacy, try a search using one of the many Web search engines on the words **PGP ENCRYPTION**. There are several pages on the Web devoted to this program, and many sites on the Internet which support PGP and provide places where PGP users can post the encryption strings others will need to read encrypted mail.

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Firewalls

Hard software



In a general sense, *firewall* means any protective software designed to prevent the user from doing any damage to the system they're using. Delete protection is a firewall. So is a menu system that keeps you from having to use the base functions of an operating system such as DOS.

In this age, hackers at all levels -- from hobbyists who just like to see what they can do to anarchists bent on destroying any structured system -- can gain access to the most advanced security-cracking software and tools. Firewalls have become essential to virtually any network with alterable data in protecting against the deliberate damage caused by crackers, accidental damage from hackers, and of course the mistakes non-computer-literate users might make in the course of their work.

If you intend to be an information provider, not just a consumer; and you'd like to insure the safety of your data and the security of the locations where you intend to provide information; then firewalls are something you might want to look into.

Not of much use for recreational Internet



If you're a casual user of the Internet with a home page and perhaps your own FTP directory, you won't have much need for a firewall. As long as a copy of the data you store on your provider's computer is also on your own system or on a disk in your possession, there's not a lot that can happen to affect you. As long as you are acting in good faith and within the laws in your area and the guidelines set forth by your provider, it is highly unlikely that you will be held responsible should someone alter your data without your authorization.

In other words, unless you have a direct, leased connection to the Internet or operate a regular part-time or full-time server through your Internet service provider's computers, you don't need to worry about firewalls...not for the time being. And if you need the help offered in First Train, none of these things are likely to apply to you yet.

What about the firewall in my winsock program?



Trumpet Winsock, the most common program in North America for connecting to the Internet, comes with its own ability to create a firewall. There may come a point in the next year or two when you'll need it. As the Web in particular becomes more interactive, many of its most exciting features -- such as the ability to control parts of your computer or devices attached to it from a remote location -- also become its most dangerous. If a program can get into your computer to start another program, so can an individual. Unless your system is set up to know the difference between the two, you're vulnerable. The firewall in your winsock can help to protect you against that.

Unfortunately, once you implement a firewall, you discover that it does a lot more than

just protect you from the outside. It also prevents you from using many Internet services. Anonymous FTP, for example, becomes difficult because most free-access FTP sites insist on the right to identify you as a means of protecting themselves against abuses.

Many Web sites, IRC servers, mailing lists and newsgroups also insist on this right of access before granting you right of use. Configuring a firewall that work effectively without preventing your access to needed services can be a difficult and time-consuming chore. In fact, some firewalls designed for business networks are so sophisticated that they can cost upwards of US\$10,000.

If in doubt, wait



Our advice? Wait. If there really is a security threat on the Internet to the casual home or business user, you can bet that the media will have a field day with it and within a couple of weeks a handful of low-cost programs will appear to fill the need. When virus panic hit several years back, the market exploded with antivirus software. The lack of free and shareware firewalls for average SLIP/PPP users says a great deal about the lack of real need for protection. But that could change within weeks.

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Net Nanny and other "net filters"

What's really at risk?

{ewl ew256bmp.dll,ew256bmp,bandaid.bmp}Recently here has been a rash of new programs designed to protect against unwanted information being accessed on the Internet. One of them is available free on the net. The authors of First Train hold strong opinions on the subject of Internet filtering software, and these opinions will not necessarily reflect those of your Internet provider.

Philosophical issues

These programs may be effective in preventing unwanted information from going out, such as your email address, home address or the names and ages of your children. But they can actually make children more vulnerable to the very things they are designed to protect them against if they are not used carefully. These filters can isolate children from virtually any aspect of the Internet you wish to hide from them.

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This is a recipe for serious conflict. Inevitably children find out that they have been restricted not because of dangers on the net, but because of their parents' inability to handle their own children's curiosity.

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Net filters can have another unwanted side effect. Because they can also be configured to protect against specific words and phrases, it is possible for a parent to unintentionally block the child from information that has nothing to do with the type of material that was the original cause for concern. For example, shutting down the connection or censoring the word "sex" can block the child from accessing sites in large areas of Britain and many news areas (Sussex and Middlesex for example would be censored). It would also prevent them from even participating in role-playing games, where of course the first thing they must select is the sex of their character.

If you follow a fundamentalist faith, or place your beliefs above all else, none of this will matter to you. But if your children matter more to you, then let's face facts. It's a violent, erotic, perverse world, and there's nothing any one or even a hundred of us can do to change that. It takes change on a mass scale to solve widespread problems.

Naturally, that violence, eroticism and perversion is played out in various ways on the Internet. But the net is one of the safest places imaginable to expose oneself to these things either accidentally or deliberately, and a superb social training ground not just for children, but for everyone.

Censorship always has a backlash effect

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If this software is used to postpone exposing your children to certain things until *you* are ready to handle them, that's one thing...provided your children know that the problem lies with your insecurity and not in themselves. But we feel that to use it to protect children from what they might discover on their own is counterproductive. Eventually they *will* be exposed to dark

secrets about humanity, and the less knowledge and experience they have, the more vulnerable they will be to being hurt by them. Lack of knowledge and experience is always a recipe for pain and suffering.

Ultimately, the authors of First Train feel that it's far less important what your children are exposed to than how they see their parents -- the people they rely upon for guidance in dealing with this world -- reacting to what *they* see. If violence, open sexuality and perversion frighten you, your children certainly won't know how to defend themselves, not now and probably not even at a later time. What matters is how well you can support their reactions; and if you can't support them, how courageous you can be in admitting your own emotional limitations.

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If this sounds naive and insensitive, consider this thought. The reactions of most children on first being exposed to something horrifying or dangerous is shock and fear. But when they discover that they are not being personally affected by what they see, their next reaction is usually to find out what they can do to make the situation better for everyone. Who in a calm and collected frame of mind would want to stifle such a noble and beautiful response?

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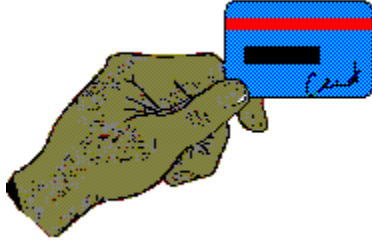
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Additional information on anonymity, security and the Internet can be obtained through the links provided in the online version of **Anonymity and Security on the Internet** (First Class and Tourist Class only).

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Hard facts about shopping on the net



Get used to it...in another year or two, buying something from a Web page will probably be just as comfortable as buying from a catalog. Here's some myth-busting and eye-opening advice on what's available and just how safe it is to shop on the net.

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How secure commerce works

A long way in a short time

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Secure commerce is a catch-all phrase for the way commercial transactions are conducted over the Internet. It's usually done using data encryption, or the scrambling of data at your end and descrambling it at the other end where the transaction is made.

Essentially the process goes like this. You "point" your Web browser toward an Internet site offering goods or services for sale. When you connect with that site, a secure link is established which your browser will tell you about. All data travelling to and from that site is encrypted until the connection is closed.

Secure Internet commerce has advanced a long way in the relatively short time it has been in existence. The whole industry is currently reeling from recent bad publicity and confusion over the wide range of services available (not to mention the problem of making Internet payment easy for the customer), and by Christmas 1996 you can expect it to be an enormously popular way to do business. By summer of 1996, we expect mail order product advertising to include URLs along side the usual post box addresses and 1-800 numbers.

Make no mistake, Internet commerce is coming, and when it finally arrives as something consumers find as comfortable as infomercials and mail-in coupon ads, it will be part of our culture.

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What's available

The fastest-growing sector of the retail market

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If you want to talk in terms of percentage growth, as opposed to actual dollars, the Internet is -- and will continue to be -- the fastest growing method of marketing in the world. And like any other form of marketing, it follows a trend.

The trend basically goes like this. Those marketing to the industry itself and those who feed off of the desperate are usually the first to try a new marketing method...and the first to succeed. In 1994/95 the most successful Internet marketers were software developers and Internet-related services, religious organizations, illegal pyramid scheme operators and sex-related vendors.

Later in 1995, marketers who traditionally used mail order channels discovered that they too could succeed with Internet marketing. That success has opened the floodgates, and now everyone's getting into the action.

If it's not available now, wait a month

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We won't say specifically *who* is marketing on the net, but we *will* say that just about every major marketer you can think of will either have a presence on the World Wide Web if not actual order-taking facilities by the middle of 1996.

What can you get on the Internet? That depends on what you want. If it's not available now, wait a month. It will be.

One of the most feverish growth areas on the Internet in the coming year will be services. Anything that lends itself to 1-900 number marketing will soon find its way onto the net. Once live audio and videoconferencing become a viable, affordable reality for the average computer owner, you can expect to see a wide range of talk-oriented one-on-one services, from counselling to legal help to

An unprecedented opportunity for test-marketing

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One of the more interesting things you'll see on the net in the near future is a mountain of test-marketing. Software companies are already heavily engaged in this. You might see a given product offered at a price of \$9.95 on Monday, come back Thursday to see it offered at \$14.95, and on Saturday see it down to \$7.95. The following week it might rise to \$11.95 and stay there.

This is because the net moves so fast, and response to certain advertising campaigns can be gauged so quickly -- and more cheaply than using radio and TV -- that marketers can determine price points in days where it once took weeks or months. We've already heard about marketers panicking because their order counts were down for a given hour on a given day, the kind of reaction you'd only expect from someone like a stockbroker.

Trivia: through the crystal ball

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Gazing through our crystal ball, we foresee this creating total panic in the marketplace for a while, and eventually sealing the fate of small industries trying to compete with large ones. On a playing field as level as the Internet, where a creative one-man enterprise can look as slick and deep as a multinational corporation, the large companies will almost always win when it comes down to price.

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Who can you trust?

As always, let the buyer beware

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Generally speaking, you should look upon Internet commerce as being just a variation on 1-800 ordering and mail order marketing. Pretty much the same rules apply. Some of the most professional-looking direct marketers on TV have turned out to be sleazy operators who sold credit card information to organized crime, and some of the sleaziest-looking operators have turned out to be fine folk you'd trust as godparents to your children.

Your luck will usually be better with established, nationally-known marketers offering reputable products and services, and of course the fast-buck artists are usually the first in any given area of marketing and the first to be driven out. There are also problems at many levels with tracking orders and payment over the net, so for the next while the convenience of online ordering will come at the risk of potentially poor service while the bugs get worked out of the infrastructure.

Whether you can accept this kind of risk and inconvenience is up to you, but keep this in mind. The large marketers do their homework, and they're not going to enter the picture until they know they can make a decent dollar from their efforts *and* provide service good enough to make sure their customers will come back for more. Once the Sharper Image's, Sears' and Macy's start selling on the Web, you'll know the infrastructure is strong enough to make net shopping worth your while.

Looks can be deceiving

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Looks can be deceiving. It's in the best interest of every Internet marketer to put their best foot forward, and it's not just possible but actually quite easy to make a one-man operation look like a multinational corporation.

Considering the problems faced by marketers at all levels, and the risks faced by consumers with virtually every marketer from a Sears Roebuck down to John and Jane Sears in the apartment down the hall are such that it shouldn't much matter who you're dealing with. What's important is the product itself and whether you'll get what you pay for. And while most of the larger retailers try to provide good service, you're not much more at risk buying from the Sears' down the hall as you are from Sears Roebuck, at least not at this time.

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How secure is secure commerce?

Fear of flying

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Ordering online using a credit card is not much different from using your credit card for mail order purchases. And it might even be safer. The general consensus among providers and marketers we've met is that the fear of credit information being monitored on the Internet is just as illogical as fear of flying. The risks just aren't supported by the facts.

Most small direct marketers, the ones most likely to be fraudulent, obtain their Internet access through another provider rather than setting up their own Internet gateways. An Internet provider who provides commerce services to Internet direct marketers will be much more willing to provide information on the people receiving your order, and much more interested in making sure their clientele is on the on the level, than the post office. After all, these are uncharted legal waters, and any lawsuits against a marketer will probably involve the provider as well.

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No one wants that. The laws are poorly structured and provide no protection to Internet providers whose clients break the law. Traditionally when a legal action is taken against an Internet user, the first thing the police take are the computers, and that puts the provider out of business...usually *permanently* since it is virtually impossible to recover from this kind of disruption to your clients' services.

How security is compromised

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Now consider what has to happen for someone to get your credit information. They must first trace your behavior on the Internet, which requires one set of skills. Next they must dissect that information and separate the encrypted data, and do it properly or they simply won't be able to decode your transaction. This requires a second set of skills. Actually decoding your data is the simplest part. All you need is a fast computer and time. Lots of time. In most cases the only way to decode this information is by brute force, by going through every possible combination until you find the right one. It's a bear of a job that might take weeks on the average PC, and something that at this writing would only be profitable for a fairly well-financed organization or a cracker with more time than sense.

Consider the amount of work involved in cracking secure commerce transactions to gain access to unknown credit card information that will probably yield less than \$1,000 of available credit. Would *you* bother if *you* were a crook? We monitor some of the hacker newsgroups, and we've seen some of the anonymous chat about this subject. It's simply not something a lot of people care about. If people really wanted credit information for fraudulent purposes, there are much easier ways to get it than by cracking secure commerce.

Why the hype then?

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The interesting aspect to this is that the hype was brought on by the industry itself. Having

seen the bad publicity that resulted when Intel and Microsoft tried to cover up bugs in their products, Netscape Communications went public in a big way when they discovered that their security system could be compromised.

Instead of taking on the story as it was presented and meeting the issue head on, the media pounced on only one aspect of it and panicked the public, most of whom never heard the whole story. As a consequence, most of those firms who depend on business generated by the Internet have had to create backup ordering systems such as 1-800 service, adding to the cost and complexity at every stage, and costing everyone. The media may not be the demons we'd like to think, but we believe they really blew this one.

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By the way, these bugs were resolved within a week after the story broke, and even before the discovery there was very little talk of people having broken secure commerce for fraudulent purposes. In fact, while we're sure *someone* must have done it, we don't know of a single case where it has been done by anyone but a hacker who just wanted to see if it *could* be done.

If you're still unsure, ask yourself this. How many consumer advocates have you heard caution against making purchases directly over the Internet site? We've heard none. It only makes sense that if this was a serious threat, the media would have gotten a lot of mileage out of this angle.

Secure commerce will never be truly secure

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It's probably fair to say that if you insist on secure commerce, you probably shouldn't own a credit card period. You're more at risk of being mugged in a small city than you are of having your credit card information stolen on the Internet.

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But you should also know that these sorts of problems will be ongoing, and it's unlikely there will never be any such thing as "secure commerce". Hackers and crackers can adapt to virtually any protection scheme that comes along (given enough time, of course), and while the industry will always try to stay one step ahead of the game, every "unbreakable" code which has been developed for this sort of use has eventually been broken. *There is no such thing as complete security.* And that doesn't include just the Internet.

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Windows sound without a sound card

Warning

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If you attempt to install this driver on a system which already has a sound card, it will disable your sound card! If this happens and you do not have an emergency Windows backup disk you will have to reinstall your sound card's software, which is a much more complex operation than the procedure described here. You are not encouraged to use this page as an exercise in learning how to install new drivers. **Install the software only if you have Windows 3.1 or Windows for Workgroups and you do not already have a sound card.** Click the title of the topic you want to browse.

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[Our own three-minute installation guide](#)

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[Microsoft's installation and troubleshooting guide](#)

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[Troubleshooting the installation](#)



Speaker driver installation

By using the following Windows 3.1 Driver Library (the "Software"), you are hereby agreeing to the included license agreement. Please review the file **LICENSE.TXT**. The PC Speaker driver may not produce high quality sound on all computer systems. The performance of the PC Speaker driver is largely dependent upon the hardware itself. Microsoft does not guarantee that the speaker driver will work with all computer systems.

Installing an Audio Driver

Follow the instructions given in "Installing a Driver Not Supplied with Windows," in Chapter 5, "Control Panel," in the "Microsoft Windows User's Guide." When you are requested to insert the disk containing the setup information, insert the disk you made during the downloading procedure, or type the path of the directory where you downloaded the driver.

Note: If you are using the IBM M-Audio Sound Driver and would like the most recent version of the MIDIMAP.CFG file, do the following:

1. Change to the disk or directory to which you downloaded.
2. At the MS-DOS prompt, type: copy midimap.ibm <path>midimap.cfg where <path> is the drive and directory containing your existing MIDIMAP.CFG file.

This overwrites your existing MIDIMAP.CFG file. Any changes you have made will be lost.

"Enable interrupts during playback" Setup Option

By default, the PC Speaker driver disables all interrupts while playing sounds for optimal sound quality. As a result, you will notice that the mouse cursor, keyboard or other processes will not respond while sounds are being played through the PC Speaker. You can set PC Speaker to enable interrupts for serial port activity and mouse movements in the PC Speaker setup dialog, at the expense of sound quality.

To set this option:

- Run **Control Panel**
- Open the **Drivers** icon
- Select the **Sound Driver for PC Speaker** from the list of **Installed Drivers**
- Choose **Setup**
- Select or clear the **Enable interrupts during playback** check box.

Note: It may be necessary to select option when running some communication applications.

Using the PC Speaker driver with AST systems

If you experience problems using the PC Speaker driver on an AST system, you should contact AST Technical Support at 1-800-727-1278.

Using Media Player with the PC Speaker driver

The version of **Media Player** provided with Windows 3.1 does not play *.WAV files with the PC Speaker driver. To play *.WAV files, you should use **Sound Recorder**. Windows 3.1 will install the **Sound Recorder** icon in your **Program Manager's Accessories** group.

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 **Sound & music**

 **Speaker driver**

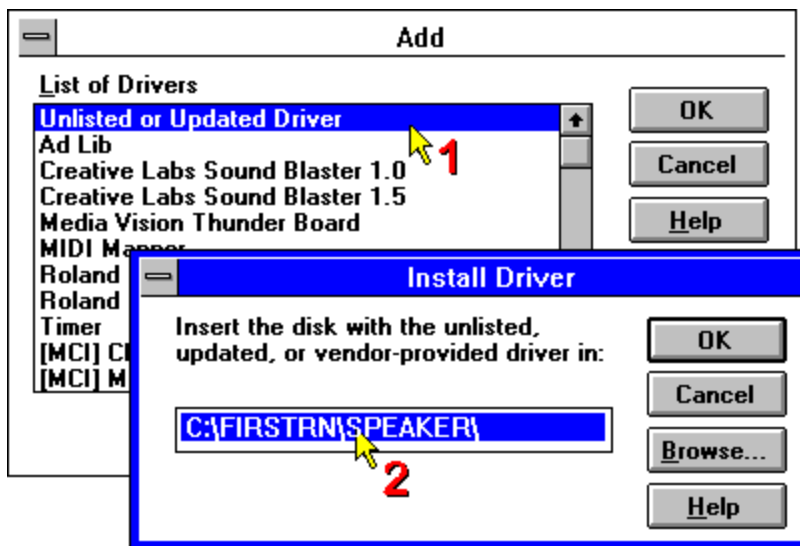
Getting and installing the driver software

 **Last topic**

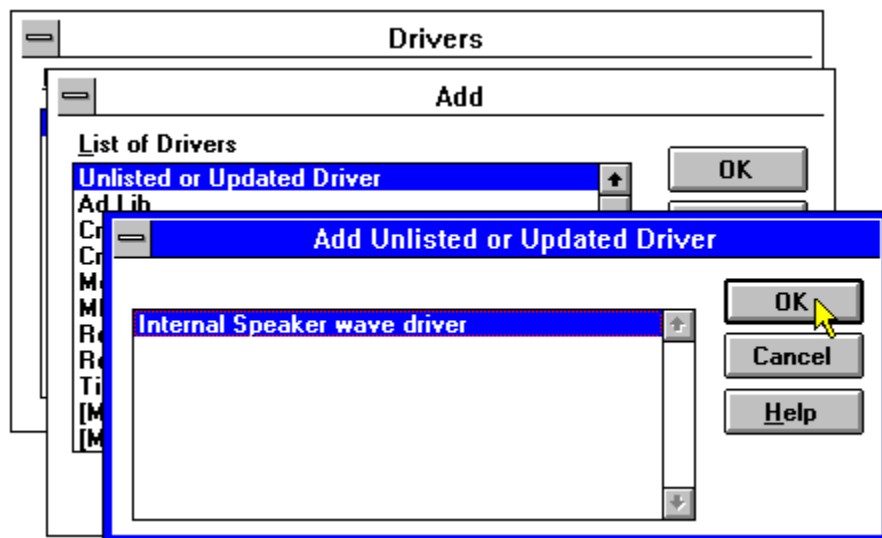
Before you begin, you're going to need the speaker driver software for the job. Some copies of the Windows installation disks contain this software. Many more do not. This software takes up so little space that we included it for those who need it.



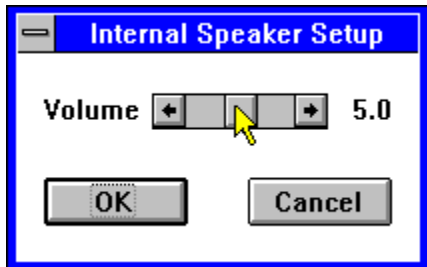
Clicking this icon will start **Control Panel** and automatically bring up the **Drivers** window for installation.



When you run the **Drivers** "applet", you'll see a list of the drivers you have and a set of buttons on the right. What you want to do is **Add...** a driver to the current list of Windows drivers, so click the **Add...** button, and a second box will pop up that looks like this one:



Double-click on the top line, **Unlisted or Updated Driver (1)**. Yet another box, **Install Driver**, will pop up and your screen will look something like this one. Delete or backspace out whatever shows up on that line and type in **C:\FIRSTRN\SPEAKER (2)**, or -- for experts -- the path where First Train was installed appended by **SPEAKER**, and click **OK**. If you correctly typed the drive and directory path, you'll see **Internal Speaker wave driver** pop up on the next screen. Click **OK** and the installation will begin. It should be done in less than fifteen seconds.



When the driver has been installed, this small box will pop up to allow you to set the volume of your PC's speaker. If the beeps you've heard from your speaker have been too quiet, set the volume at around 8. If you're happy with the volume of the sound you hear when your computer beeps at you, leave it where it is and click **OK**.

Finally you'll be told that you have to restart Windows before you can actually get sound. If you are reading this while connected to your Internet service provider, you'll have to close the connection and quit Netscape. It's your choice whether you reboot Windows or not; the speaker driver will be fully installed the next time Windows starts and you will be ready for digital sound from the Internet. Return to this page later for troubleshooting if you need to, but you should be finished.





Troubleshooting the installation

Adjusting the volume of the speaker driver



If sounds are too quiet or too distorted, you can change the volume by running **Control Panel**, running the **Drivers** applet again by double-clicking it, and double-clicking on **Internal Speaker wave driver** to call up the volume control. Unfortunately, most PC's do not have a built in volume knob for the speaker.

What if it doesn't work?



We usually have several quick-fix answers for this question. Unfortunately, if you've followed instructions and the speaker driver still doesn't seem to work, either your speaker is not connected properly or the driver does not like something else you have on your system. Unfortunately, neither of these are likely to be a quick fix.

It won't hurt anything to leave it as it is. If you want to remove it from your system, you can start the **Drivers** applet, select **Internal Speaker Wave Driver** and click the **Remove** button. The next time you start Windows, the driver will be completely removed from Windows. All that will be left is a very small file in your **WINDOWS\SYSTEM** directory.



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Improve performance with a permanent swapfile



Windows has special software that actually allows it to use many times more memory than you actually have installed on your computer. When it runs out of RAM memory, it pretends your hard disk is RAM and uses it for memory instead. This is called virtual memory, virtual because the extra memory you get this way isn't really RAM memory in the normal sense. The section of your hard disk used to store this memory is called a swapfile, and tweaking this aspect of Windows can have a noticeable effect on your Windows performance.

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[An introduction to virtual memory](#)

[← Last topic](#)

[Checking and changing your swapfile settings \(Win3.1\)](#)

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[What if it doesn't work?](#)

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An introduction to virtual memory

In order to be of any practical use, your computer must use the ultra-fast memory chips attached to your main system board for computations. Computations that use your hard disk for memory take several hundred times longer to complete than they do on chips designed for the job.

A last resort when Windows runs out of room

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Windows sets up virtual memory as a chunk of your hard disk which it will use only if it can't find any space left on your memory chips to do its work. This chunk of hard disk is called a *swapfile*, because Windows swaps back and forth between this file and the memory chips as the need arises.

Most casual users never notice this swapping. And if you only ever run one program at a time, you might never observe your system slowing down as it dips into swapfile as memory. But every time it does, the whole system slows down. And the more Windows needs that swapfile, the slower everything gets.

Windows 95 almost lives on swapfile



Windows 3.1 can be a real memory hog. Windows 95, in comparison, is insatiable. Even if you have eight megabytes of memory, a careful look at Windows' memory usage may reveal that you have used up all your RAM memory and started using swapfile memory *before you run a single program!*

Without this swapfile, even 16 megabytes of memory is dangerously low to Windows 95. So when you consider the amount of time Windows spends visiting this area of your hard disk, it only makes sense to make those visits as brief as possible.

Internet software is just as greedy



Here's the bad news if you plan on using the World Wide Web, and the Web practically *is* the Internet for most people. After anywhere from ten to thirty minutes on the Web, depending on the pages you browse and the speed at which you browse them, your Windows Web browser software will be spending a lot of time reading and writing to that swapfile. If you have eight megabytes of memory or less on your computer, you may already have noticed how your system seems to slow down noticeably after you've been online for a while.

Optimizing your swapfile



There is not a lot you can do to prevent this problem without physically adding more memory modules to your computer. But there is a way to make sure that when Windows does need to use your hard disk as extra memory that it spends as little time there as possible.

Windows uses two methods of creating a swapfile, one of which is significantly slower

than the other. Unless you tell it otherwise when you first install Windows 3.1 or Windows 95, it creates a temporary swapfile that changes locations every time you turn on your computer. Ideally, the swapfile should be permanent so that any disk access that needs to be done by Windows is always done in the same fixed block of space on your hard disk.

Windows 95 can't use a Windows 3.1 swapfile, so when you upgrade, you're back at square one again: with a temporary swapfile that gets slower each time you use it.

And if you're using disk compression software such as Stacker, DoubleSpace or DriveSpace, Windows will be even slower at accessing the swapfile, because the data compression and expansion done by these programs to create extra space on your hard disk takes time to compute.

Plan ahead for peak performance

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The answer to this problem is to create a permanent swapfile that takes a fixed amount of space on the disk, isn't broken up into chunks that require more time to access, and is large enough to accommodate the kinds of programs you want to run.

It also helps if you create this permanent hard disk as soon as possible after setting up a new computer, because the closer this file is to the outside edge of the hard disk's surface, the less time Windows will spend moving the drive heads back and forth to access it.

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📖 Swapfile tuning

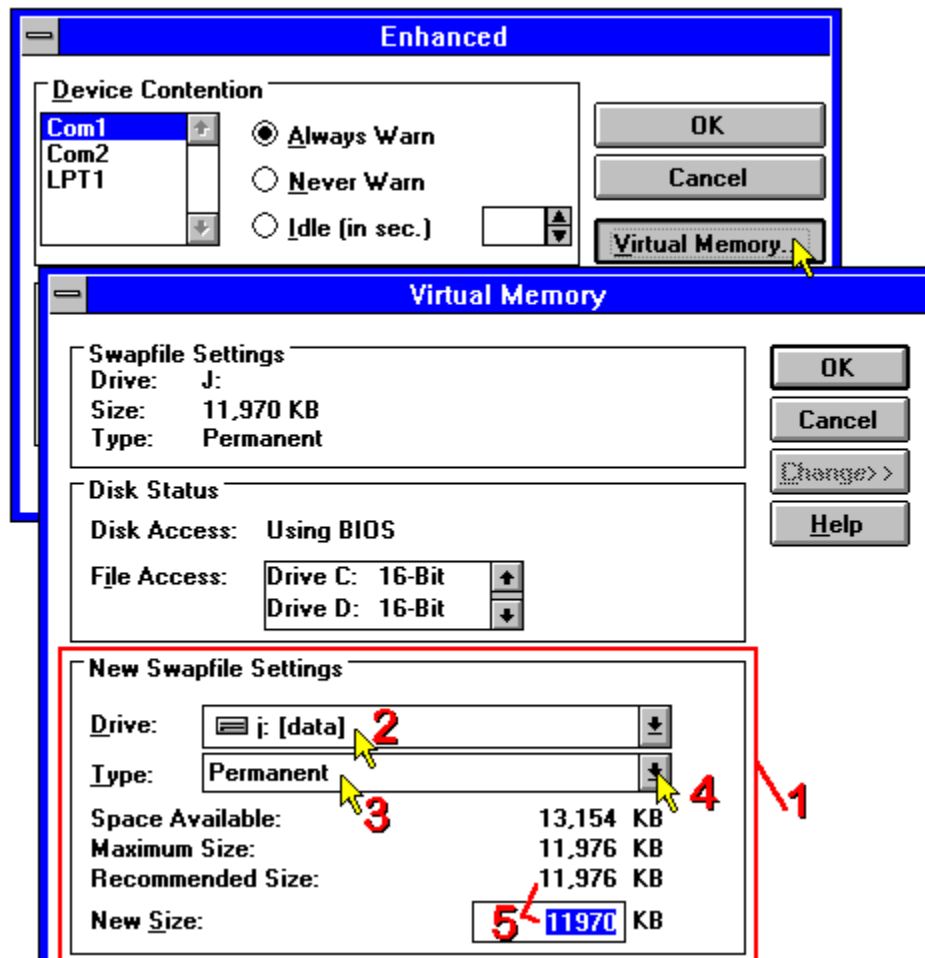
Checking and changing swapfile settings

If you're not sure whether you have a temporary or permanent swapfile, or whether your swapfile is being slowed down by disk compression software, let's find out now.



This icon will automatically launch the **Control Panel** "applet" that controls your virtual memory. Click it now if you'd like to take a peek.

When the **386 Enhanced** applet launches, you'll see a window that looks something like the one tucked in back of this illustration. Click the **Virtual Memory** button on the right-hand side of the window and you'll get a screen that shows you what your current **Swapfile Settings** are. This figure contains embedded instructions for each step of the process. Click on the red numbers, 1 through 5, for information on each aspect of this screen and what to do.



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Before you do anything else, *write down your current settings!* There is a slight chance that your computer will not take well to any changes you might make here. If you have the current settings written down (the drive letter, swapfile type and size), you can restore your system to normal in just a moment or two by following the same steps given here.

This lower half of the **Virtual Memory:** screen contains your Windows 3.1/3.11 swapfile settings, and is where you'll do your work. You have to click the **Change>>** button **(1)** in order to see this. The upper half only tells you what you have in the way of swapfile now.

The **Drive:** letter in the top half of the window isn't important at this point. **Size:** is usually automatically set by Windows to its optimum level regardless of which type of swapfile you have. The **Type:** is what's important here. If your swapfile type is **Permanent**, that's good...*providing* the swapfile is on a drive which does not use disk compression. If it's not permanent, we'll fix that in a second.

The next thing you need to know is what kind of drive your swapfile is on, and make sure it's an uncompressed drive. If your swapfile is permanent and the **Drive:** name [in brackets] **(3)** in the bottom half of the window does *not* include anything that resembles DriveSpace, DoubleSpace, SuperStor, stacvol or Stacker, you are already running at top speed and there's nothing else here you need to check. Close all windows, close **Control Panel** and return to the First Train.

If the swapfile is *not* permanent, or it is on a compressed drive, it would be a good idea to try to change it. This sample screen shows a permanent swapfile. Even if it takes a little extra work, a permanent swapfile will save you several hours a year of waiting on your hard disk and could actually prolong the hard disk's life, although modern hard disks lose value so quickly that this shouldn't be an important consideration.

Select **Permanent** from the **Type:** box by clicking the down arrow **(4)** and selecting it from the list. Windows shows how much space you have available on the drive you selected, and recommends a size for the new swapfile. The swapfile should be twice the size of your total RAM memory, so if you have 8Mb of RAM on your computer, a 16Mb swapfile is not too much. You can often get away with less, but anything less than 8Mb, even on a 4Mb machine, is really pushing your luck.

Sometimes you can't create a permanent swapfile large enough to meet these requirements on the drive you select. There are two things you can do to fix this problem. The first is to exit to DOS and create the longest possible block of free space on your hard disk by running **DEFRAG** from DOS on all your drives.

Even after doing that, you might still not be able to get enough free space because of a compressed drive. Fortunately, DoubleSpace and DriveSpace allow you to shrink the size of your compressed drive. **Note:** if you *do* have to shrink a compressed drive, make sure there is *twice as much* free space on your *uncompressed* drive as you need for the swapfile. So if you want 16Mb for the swapfile, you should leave 32Mb of uncompressed space on one drive. After you make your swapfile, you can go back into DriveSpace or DoubleSpace and resize the compressed drive to get back the space Windows isn't using. Yes, it's a dumb way to work, but that's life with Windows.

If Windows will not let you create a permanent swapfile with a **New Size:** of at least 5,000kb, leave your swapfile the way it is unless you have no swapfile at all.

Once you have your swapfile **Type:** and **Drive:** set, and you are happy with the file size Windows is suggesting (remember...try for double the amount of memory on your system), click **OK** to close the window.

Windows will then ask you if you want to restart your computer, but unless you are ready to quit now, click the **Continue** button. You don't have to reboot right away, and if you click **Continue**, Windows will make the changes for you automatically the next time you start it.

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 [Swapfile tuning](#)

What if it doesn't work?

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This is usually a foolproof operation, but there are some circumstances where optimizing your swapfile either isn't possible or doesn't produce the results you expect. Click the title for an explanation and possible fix for each of these problems.

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[Not enough room for a permanent swapfile of 5Mb or more on an uncompressed drive](#)

[← Last topic](#)

[Windows reports an error when it starts after changing the swapfile](#)

[← Last topic](#)

[There was no swapfile before, and Windows won't allow one](#)

[← Last topic](#)

[Windows is running slower now than it did before I changed the swapfile](#)

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There are some instances where you may not be able to put a swapfile on an uncompressed drive because it doesn't have enough space to hold it. In this case, you have two choices. You can try putting a temporary swapfile on an uncompressed drive, or you can put a permanent swapfile on a compressed drive, which you may have had before you started this exercise.

If your computer runs out of memory or crashes on you after you try one of these two options, try the other option instead. Only go back to a temporary swapfile on a compressed drive if no other choice is working for you.

In many cases, this error is just Windows getting ready to accept your changes. But if it really is an error, it will almost certainly be a harmless one. Windows defaults back to the best swapfile method it can find if it doesn't like the choice you make for it. You can generally ignore these error messages and they should disappear the next time you start Windows. If the error message is bothering you, change your swapfile settings back to what you had before, but try to do it as soon after making the change as possible.

Your computer is somewhat different from most, and it will not allow Windows to create a swapfile in the normal manner. This might not be fixable, but if you can afford it or your computer is under warranty, you might want to contact your dealer about a fix for this particular situation. There are too many possible reasons and fixes for this problem for us to list them all here.

You might have two hard disks on your system, and one might be older and slower than the other. You just might have created a new, "faster" permanent swapfile on an older, slower hard disk!

You might also have accidentally put the swapfile on a compressed drive instead of an uncompressed drive. (We listed most of the common drive labels used by compressed drives, but drive labels can be changed. You might not be able to tell by its name or description whether or not it is compressed.)

In either case, the fix is the same. Restore the swapfile to its original settings or try another drive.

Due to the way Windows 95 handles virtual memory, altering swapfile settings for Windows 95 is not recommended to anyone but serious hackers. Permanent swapfiles in Windows 95 should not be created before a complete defragmentation of the disk on which the swapfile is to be located, and incorrect selection of maximum and minimum sizes can degrade performance.

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The Computer Virus Myths File

(10th Edition: October 4, 1993)

by Rob Rosenberger with Ross M. Greenberg



This document, included here as part of your pre-travel medical package, is one of the finest myth-busting articles we've ever seen. With the kind permission of the authors, we present it to you in its entirety.

{ewc embh.dll,ARROW,A100} Note: Some of this material addresses rather technical myths held by computer enthusiasts who have more buzzwords than experience. You'll find this section much easier reading if you stick with the specific concerns *you* have about viruses. Click the topics in order to view the sections of this article.

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Computer Virus Myths

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Now you know the differences between a bug and a Trojan horse and a virus. Let's get into some of the myths. Click the title for an explanation of each of these myths:

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[All purposely destructive code spreads like a virus.](#)

[← Last topic](#)

Viruses and Trojan horses are a recent phenomenon.

[← Last topic](#)

Viruses are written by teenage hackers.

[← Last topic](#)

Viruses infect 25% of all IBM PCs every month.

[← Last topic](#)

Only 500 different viruses? But most experts talk about them in the thousands.

[← Last topic](#)

A virus could destroy all the files on my disks.

[← Last topic](#)

[Viruses have been documented on over 300,000 computers \(1988\).](#)

[← Last topic](#)

Viruses can hide inside a data file.

[← Last topic](#)

Some viruses can completely hide themselves from all antivirus software, making them truly undetectable.

[← Last topic](#)

[BBSs and shareware programs spread viruses.](#)

[← Last topic](#)

[My computer could be infected if I call an infected BBS.](#)

[← Last topic](#)

So-called 'boot sector' viruses travel primarily in software downloaded from BBSs.

[← Last topic](#)

My files are damaged, so it must have been a virus attack.

[← Last topic](#)

Donald Burleson was convicted of releasing a virus.

[← Last topic](#)

[Robert Morris Jr. released a benign virus on a defense network.](#)

[← Last topic](#)

[The U.S. government planted a virus in Iraqi military computers during the Gulf War.](#)

[← Last topic](#)

Viruses can spread to all sorts of computers.

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My backups will be worthless if I back up a virus.

[← Last topic](#)

Antivirus software will protect me from viruses.

[← Last topic](#)

Read-only files are safe from virus infections.

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Viruses can infect files on write-protected floppy disks.

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A number of myths have surfaced about the threat of computer viruses. There are myths about how widespread they are, how dangerous they are, and even myths about what a computer virus really is. We want you to know the facts.

The first thing you need to learn is that a computer virus falls in the realm of malicious programming techniques known as Trojan horses. All viruses are Trojan horses, but relatively few Trojan horses can be called a virus.

That having been said, it's time to go over the terminology we use when we lecture.

Wrong. Remember, Trojan horse describes purposely destructive code in general. Very few Trojan horses actually qualify as viruses. Newspaper magazine reporters tend to call almost anything a virus because they often have no real understanding of computer crime.

Trojan horses have existed since the first days of the computer; hackers toyed with viruses in the early 1960s as a form of amusement. Many different Trojan horse techniques have emerged over the decades to embezzle money, destroy data, fool investors, etc. The general public really didn't know of this problem until the IBM PC revolution brought it into the spotlight. Banks still hush up computerized embezzlements to this day because they believe customers will lose faith in them if word gets out.

Yes, hackers have unleashed viruses - but so has a computer magazine publisher. And according to one trusted military publication, the U.S. Defense Department creates computer viruses for use as weapons. Trojan horses for many decades sprang from the minds of middle-aged men; computer prices have only recently dropped to a level where teenagers could get into the act. We call people wormers when they abuse their knowledge of computers.

You shouldn't fear hackers just because some of them know how to write viruses. This whole thing boils down to an ethics issue, not a technology issue. Hackers know a lot about computers; wormers abuse their knowledge. Hackers as a whole got a bum rap when the mass media corrupted the term.

If 25% suffer an infection every month, then 100% would have a virus every four months -- in other words, every IBM PC would suffer an infection three times per year. This mythical estimate surfaced in the media after researcher Peter Tippett wrote a complex thesis on how viruses might spread in the future.

Computer viruses exist all over the planet, yes -- but they won't take over the world. Only about 500 different viruses exist at this time; many of them have never existed in the wild and some have since been completely eliminated from the wild. You can easily reduce your exposure to viruses with a few simple precautions. Yes, it's still safe to turn on your computer!

The virus experts who claim much larger numbers usually work for antivirus companies. They count even the most insignificant variations for advertising purposes. When the Marijuana virus first appeared, for example, it contained the word legalise, but a miscreant later modified it to read legalize. Any program which can detect the original virus can detect the version with one letter changed -- but antivirus companies count them as two viruses. These obscure differentiations quickly add up.

And take note: the majority of new computer viruses discovered these days are only minor variations on well-known viruses.

Yes, and a spilled cup of coffee could do the same thing. You can recover from any virus or coffee problem if you have adequate backups of your data. Backups mean the difference between a nuisance and a disaster. You can safely presume there has been more accidental loss of data than loss by all viruses and Trojan horses.

"Viruses have been documented on over 300,000 computers (1988)."

Viruses have been documented on over 400,000 computers (1989)."

The Michelangelo virus alone was estimated to be on over 5,000,000 computers (1992)."



These numbers originated from John McAfee, a self-styled virus fighter who craves attention and media recognition. If we assume it took him a mere five minutes to adequately document each viral infection, it would have taken four man-years of effort to document a problem only two years old by 1989. We further assume McAfee's statements included every floppy disk ever infected up to that time by a virus, as well as every computer involved in the Christmas and Internet worm attacks. (Worms cannot be included in virus infection statistics.)

McAfee prefers to estimate his totals these days and was widely quoted during the Michelangelo virus hysteria in early 1992. Let's do some estimating ourselves by assuming about 80 million IBM PC-compatible computers around the world. McAfee's estimate meant one out of every 16 of those computers not only had a virus of some type, it specifically had the Michelangelo virus. Many other virus experts considered it an astronomical estimate based on the empirical evidence.

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Data files can't wreak havoc on your computer -- only an executable program file can do that (including the one that runs every time you turn on or reboot a computer). If a virus infected a data file, it would be a wasted effort. But let's be realistic: what you think is data may actually be an executable program file. For example, a batch file on an IBM PC contains only text, yet DOS treats it just like an executable program.

This myth ironically surfaced when certain antivirus companies publicized how they could detect so-called Mutation Engine viruses. The myth gained national exposure in early 1993 when the Associated Press printed excerpts from a new book about viruses. Most viruses have a character-based signature which identifies it both to the virus (so it doesn't infect a program too many times) and to antivirus software (which uses the signature to detect the virus). A Mutation Engine virus employs an algorithm signature rather than a character-based signature -- but it still has a unique, readily identifiable signature.

The technique of using algorithm signatures really doesn't make it any harder to detect a virus. You just have to do some calculations to know the correct signature -- no big deal for an antivirus program.

BBSs and shareware programs spread viruses.

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Here's another scary myth, this one spouted as gospel by many experts who claim to know how viruses spread. The truth, says PC Magazine publisher Bill Machrone, is that all major viruses to date were transmitted by (retail) packages and private mail systems, often in universities. (PC Magazine, October 11, 1988.) What Machrone said back then still applies today. Over 50 retail companies have admitted spreading infected master disks to tens of thousands of customers since 1988 -- compared to only nine shareware authors who have spread viruses on master disks to less than 300 customers since 1990.

Machrone goes on to say bulletin boards and shareware authors work extraordinarily hard at policing themselves to keep viruses out. Reputable sysops check every file for Trojan horses; nationwide sysop networks help spread the word about dangerous files. Yes, you should beware of the software you get from BBSs and shareware authors, but you should also beware of retail software found on store shelves.

By the way, many stores now routinely re-shrinkwrap returned software and put it on the shelf again. Do you know for sure only you ever touched those master disks?

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BBSs can't write information on your disks -- the communications software you use performs this task. You can only transfer a dangerous file to your computer if you let your software do it. And there is no 300bps subcarrier by which a virus can slip through a modem. A joker who called himself Mike RoChenle (micro channel, get it?) started this myth after leaving a techy-joke message on a public network. Unfortunately, some highly respected journalists got taken in by the joke.

This common myth -- touted as gospel even by experts -- expounds on the supposed role bulletin boards play in spreading infections. Boot sector viruses spread only if you directly copy an infected floppy disk, or if you try to boot a computer from an infected disk, or if you use a floppy in an infected computer. BBSs deal exclusively with program files and don't pass along copies of boot sectors. Bulletin board users thus have a natural immunity to boot-sector viruses in downloaded software. (And since the clear majority of infections stem from boot sector viruses, this fact alone exonerates the BBS community as the so-called primary source for the spread of viruses.)

We should make a special note about dropper programs developed by virus researchers as an easy way to transfer boot sector viruses among themselves. Since they don't replicate, dropper programs don't qualify as viruses. These programs have never appeared on BBSs to date and have no real use other than to transfer infected boot sectors.

It also could have happened because of a power flux, or static electricity, or a fingerprint on a floppy disk, or a bug in your software, or perhaps a simple error on your part. Power failures, spilled cups of coffee, and user errors have destroyed more data than all viruses combined.

Newspapers all over the country hailed a 1989 Texas computer crime trial as a virus trial. The defendant, Donald Burleson, had released a destructive Trojan horse on his employer's mainframe computer. The software in question couldn't spread to other computers, and prosecuting attorney Davis McCown claimed he never brought up the word virus during Burleson's trial. So why did the media call it one?

David Kinney, an expert witness testifying for the defense, claimed Burleson had unleashed a virus. The prosecuting attorney didn't argue the point and we don't blame him -- Kinney's claim may have actually swayed the jury to convict Burleson.

McCown gave reporters the facts behind the case and let them come up with their own definitions. The Associated Press and USA Today, among others, used such vague definitions that any program would have qualified as a virus. If we applied their definitions to the medical world, we could safely label penicillin as a biological virus (which is, of course, absurd).

Robert Morris Jr. released a benign virus on a defense network.



It supposedly may have been benign, but it wasn't a virus. Morris, the son of a chief computer scientist at the U.S. National Security Agency, decided one day to take advantage of bugs in the software which controls Internet, a network the Defense Department often uses. These tiny bugs let Morris send a worm throughout the network. Among other things, the Internet worm sent copies of itself to other computers -- and clogged the entire network in a matter of hours due to bugs in the worm module itself. The press called it a virus, like it called the 1987 Christmas worm a virus, because it spread to other computers. Yet Morris's work didn't infect any computers.

A few notes:

- ☞ Reporters finally started calling it a worm a year after the fact, but only because lawyers on both sides of the case constantly referred to it as a worm.
- ☞ The worm operated only on Sun-3 VAX computers which employ the UNIX operating system and which were specifically linked into Internet at the time of the attack.
- ☞ The 6,200 affected computers cannot be counted in virus infection statistics (they weren't infected).
- ☞ It cost way less than \$98 million to clean up the attack. An official Cornell University report claims John McAfee, the man behind this wild estimate, was probably serving (him)self in an effort to drum up business. People familiar with the case estimated the final figure at slightly under \$1 million.
- ☞ Yes, Morris could easily have added some infection code to make it both a worm and a virus if he'd had the urge.
- ☞ Internet gurus have since fixed the bugs Morris exploited in the attack.

Morris went on trial for launching the worm and received a federal conviction. The Supreme Court refused to hear his case, so the conviction stands.

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The U.S. government planted a virus in Iraqi military computers during the Gulf War.

⬅ Last topic

U.S. News World Report in early 1992 claimed the National Security Agency had replaced a computer chip in a printer bound for Iraq just before the Gulf War with a secret computer chip containing a virus. The magazine cited two unidentified senior U.S. officials as their source, saying once the virus was in the (Iraqi computer) system, ...each time an Iraqi technician opened a 'window' on his computer screen to access information, the contents of the screen simply vanished.

Yet the USNWR story shows amazing similarities to a 1991 April Fool's joke published by InfoWorld magazine. Most computer experts dismiss the USNWR story as a hoax -- an urban legend innocently created by the InfoWorld joke.

Some notes:

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USNWR continues to stand by its story, but did publish a clarification stating it could not be confirmed that the (virus) was ultimately successful. The editors broke with tradition by declining to print any letters readers had submitted about it.

⬅ Last topic

Ted Koppel, a well-known American news anchor, opened one of his Nightline broadcasts with a report on the alleged virus. Koppel's staff politely refers people to talk with USNWR about the story's validity.

⬅ Last topic

InfoWorld didn't label their story as fiction, but the last paragraph identified it as an April Fool's joke.

⬅ Last topic

The design of all Trojan horses limits them to a family of computers, something especially true for viruses. A virus written for IBM PCs cannot infect an IBM 4300 series mainframe, nor can it infect a Commodore C64, nor can it infect an Apple Macintosh.

But take note: some computers can now run software written for other types of computers. An Apple Macintosh, with the right products, can run IBM PC software for example. If one type of computer can run software written for another type of computer, then it can also catch viruses written for the other type of computer.

No, they won't. Let's suppose a virus does get backed up with your files. You can restore important documents and databases and spreadsheets -- your valuable data -- without restoring an infected program. You just reinstall the programs from master disks. It's tedious work, but not as hard as some people claim.

There is no such thing as a foolproof antivirus program. Viruses and other Trojan horses can be (and have been) designed to bypass them. Antivirus products also can be tricky to use at times and they occasionally have bugs. Always use a good set of backups as your first line of defense; rely on antivirus software only as a second line of defense.

This common myth among IBM PC users has appeared even in some computer magazines. Supposedly, you can protect yourself by using the **ATTRIB** command to set the read-only attribute on program files. Yet **ATTRIB** is software -- what it can do, a virus can undo. The **ATTRIB** command cannot halt the spread of most viruses.

Another common IBM PC myth. If viruses can modify read-only files, people assume they can also modify files on write-protected disks. However, the disk drive itself knows when a floppy has a write-protect tab and refuses to write to the disk. You can't override an IBM PC drive's write-protect sensor with a software command.

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How to protect yourself

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We hope this dispels the many computer virus myths. Viruses do exist, they are out there, they *want* to spread to other computers, and they can cause you problems. But you can defend yourself with a cool head and a good set of backups.

The following guidelines can shield you from viruses and other Trojan horses. They will lower your chances of getting infected and raise your chances of recovering from an attack.

Be religious about backups



Implement a procedure to regularly back up your files and follow it religiously. We can't emphasize this enough! Consider purchasing a user-friendly program or a tape backup device to take the drudgery out of this task. You'll find plenty of inexpensive programs and tape backup hardware to choose from.

Rotate between backups



Rotate between at least two sets of backups for better security (use set #1, then set #2, then set #1...). The more sets you use, the better protection you have. Many people take a master backup of their entire hard disk, then take a number of incremental backups of files which have changed since the last time they backed up. Incremental backups might only require five minutes of your time each day.

Set your BIOS to bypass floppy drive seek at boot

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Many IBM PC computers now have a BIOS option to ignore floppy drives during the bootup process. Consult your computer's documentation to see if you can set this option. It will greatly reduce your exposure to boot sector viruses (the most common type of computer virus).

Watch where your software comes from

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Download files only from reputable BBSs where the sysop checks every program for Trojan horses. If you're still afraid, consider getting programs from a BBS or disk vendor company which obtains files direct from the authors.

Let a newly uploaded file mature on a BBS for one or two weeks before you download it (others will put it through its paces).

Use UP-TO-DATE antivirus software

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Consider using a program that searches (scans) for known viruses. Almost all infections involve viruses known to antivirus companies. A recent version (no more than four months old)

of any scanning program will in all probability identify a virus before it can infect your computer. But remember: there is no perfect antivirus defense.

Consider using a program that creates a unique signature of all the programs on your computer. Run this software once in awhile to see if any of your program files have been modified -- either by a virus or perhaps just by a stray gamma ray.

Don't panic!

 **Last topic**

Don't panic if your computer starts acting weird. You might have a virus, but then again you might not. Immediately turn off all power to your computer and disconnect it from any local area networks. Reboot from a write-protected copy of your master DOS disk. Don't run any programs on a regular disk -- you might activate a Trojan horse. If you don't have adequate backups, try to bring them up-to-date. (Yes, you might back up a virus as well, but it can't hurt you if you don't use your normal programs.) Set your backups off to the side. Only then can you safely hunt for problems.

If you can't figure out the problem and you don't know what to do next, just turn off your computer and call for help. Consider calling a local computer group before you call for an expert. If you need a professional, consider a regular computer consultant first. (Some virus removal experts charge prices far beyond their actual value.)

If you discover a new virus or trojan, tell the world



We'd appreciate it if you would mail us a copy of any Trojan horse or virus you discover. (Be careful you don't damage the data on your disks while trying to do this!) Include as much information as you can and put a label on the disk saying it contains a malicious program. Send it to Ross M. Greenberg, Software Concepts Design, Virus Acres, New Kingston, NY 12459. Thank you.

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About the authors

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Ross M. Greenberg writes both shareware and retail virus detection removal programs. (Products aren't mentioned by name because this treatise isn't the place for advertisements.) He serves as a sysop for the Virus Security RoundTable on GENie and is also currently working on a number of other products having nothing to do with computer viruses.

Rob Rosenberger serves as lead sysop for CompuServe's SHAREWARE forum. He has researched computer virus myths hoaxes since 1988. His research on the cause of the Michelangelo virus scare of 1992 has been reprinted in ISPNews (a computer security industry newsletter); and he has consulted on computer virus data security books written by Janet Endrijonas, Pamela Kane, and Richard B. Levin.

These men communicated entirely by modem while writing this treatise.

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You may give copies of this treatise to anyone if you pass it along unmodified and in its entirety. We especially encourage antivirus vendors and book authors to bundle it with their products as a public service.

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Virus Myths: Definitions

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BBS (Bulletin Board System)

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Bug

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Hacker

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Shareware

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Trojan horse

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Worm

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Wormers

If you have a modem, you can call a BBS and leave messages, transfer computer files back forth, and learn a lot about computers. (What you're reading right now, for example, most likely came to you from a BBS.)

An accidental flaw in the logic of a program which makes it do things it shouldn't be doing.
Programmers don't mean to put bugs in their programs, but they always creep in.
Programmers often spend more time debugging programs than they do writing them in the first place. Inadvertent bugs have caused more data loss than all viruses combined.

Someone who really loves computers and who wants to push them to the limit. hackers have a healthy sense of curiosity: they try doorknobs just to see if they're locked, for example. They also love to tinker with a piece of equipment until it's just right. The entire computer revolution itself is largely a result of hackers.

A distribution method for quality software available on a try before you buy basis. You must pay for it if you continue using it after the trial period. Shareware authors let you download their programs from BBSs and encourage you to give evaluation copies to friends. Many shareware applications rival their retail-shelf counterparts at a fraction of the price. (You must pay for the shareware you continue to use -- otherwise you're stealing software.)

A generic term describing a set of computer instructions purposely hidden inside a program. Trojan horses tell programs to do things you don't expect them to do. The term comes from the legendary battle in which the ancient city of Troy received a large wooden horse to commemorate a fierce battle. The gift secretly held enemy soldiers in its belly and, when the Trojans rolled it into their fortified city, well, you know the story.

A term for a very specialized Trojan horse which spreads to other computers by secretly infecting programs with a copy of itself. A virus is the only type of Trojan horse which is contagious, much like the common cold. If a Trojan horse doesn't meet this definition, then it isn't a virus.

A term similar to a Trojan horse, but there is no gift involved. If the Trojans had left that wooden horse outside the city, they wouldn't have been attacked from inside the city. Worms, on the other hand, can bypass your defenses without having to deceive you into dropping your guard. An example would be a program designed to spread itself by exploiting bugs in a network software package. Worms usually come from someone who has legitimate access to the computer or network.

What we call people who unleash Trojan horses onto an unsuspecting public. Let's face it, these people aren't angels. What they do hurts us. They deserve our disrespect.

Viruses, like all Trojan horses, purposely make a program do things you don't expect it to do. Some viruses will just annoy you, perhaps only displaying a Peace on earth greeting. The viruses we worry about will try to erase your data (the most valuable asset of your computer!) and waste your valuable time in recovering from an attack.

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The Virus Awareness Kit

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Before continuing with this section, we strongly recommend reading two other sections. The first is our short explanations of the exact meanings of virus and trojan, and the second is a close look at Computer Virus Myths, recommended if this is a subject that really worries you.

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Flat tires and broken fanbelts

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We like to think of viruses and trojans as the flat tires and broken fanbelts on the Information Highway. They can put a fast end to your fun with almost no warning. But in most cases, the problems they cause are completely preventable with a little common sense and preparation. All you need are good, up-to-date antivirus software and a regular habit of making thorough backups of your most important data. Most veteran computer enthusiasts don't fear infections at all, although they do respect the threat.

It's true that a virus can destroy every bit of data on your system, wiping out months or years' worth of work. But it's also true that a flat tire can kill you...if it happens at the wrong time and in the wrong place. A little common sense and prevention will go a long way toward insuring that, just like a flat tire, even the most destructive viruses will never cause you more than a minor inconvenience.

Yes, you read that correctly. Even the most destructive viruses need never cause you more than a minor inconvenience. The root of all fear is ignorance, and in the case of virus panic, this ignorance has been perpetuated far too long and hurt far too many people.

Virus panic

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Virus panic has scared literally thousands of people away from the online world. In fact, the effects of the panic can be worse than the infection itself. Steve Winter, one of the authors of this software, became so concerned at the discovery of his first infection that he erased several dozen good floppy disks in an attempt to stamp it out. He only discovered later that it was just one disk which was infected, and some of the erased software was never recovered.

Virus panic is a damnable shame, because it simply doesn't have to happen. Period. If you're ready to learn the facts about viruses and trojans, put virus panic behind you once and for all, and enjoy the mountain of free and free-trial software on the Internet, we have two prescriptions which should cure you for good if you've been afflicted with this dreaded illness.

The first prescription for sanity

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First we recommend browsing the [Computer Virus Myths](#) section by clicking this highlighted hotspot. This piece, created by two experts on viruses and released to the computing world as a public service, is one of the sanest and most informative introductions to computer viruses and virus panic that we've ever seen. It contains a lot of information you might not care about, so feel free to browse only the sections of interest to you.

The second prescription

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Secondly, pay close attention to the sections on backups and antivirus software. They are your best line of defense against *all* kinds of damage to your data.

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How safe is the Internet?

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The average Internet user will be lucky (or unlucky, depending on your point of view) if they ever see a virus. You can't get viruses from email, and any trojan contained in an email will look like garbage to you and be trashed instantly anyhow. You can't get viruses from the Web, so Netscape, Mosaic and other such programs are quite safe. You can't get viruses from USENET newsgroups unless you are actively taking software from these newsgroups. In other words, nearly all of the sights, sounds and especially the text documents are as close to being completely safe as you could ever expect.

But that's not to say that nasty things can't be stowed away in pictures, sounds and text. The reason these things are so safe is because anyone spotting this nastiness is likely to go well out of their way to stamp it out in a big hurry. Trojans spread using text, sound and pictures have been rare and generally confined to very small groups.

The real risk comes with obtaining programs from the Internet, because a program is by far the easiest thing for a virus to infect. Even then, if you're even moderately cautious, you might spend every hour of every day for a year surfing the net and never stumble upon a single virus.

Play safe, play sensibly

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As with all things in life, you're as safe as you make yourself. It's just that simple. If you take care of your body, you won't get sick nearly as often. If you take care of your software, it won't get sick as often either. But just as you can't completely protect yourself against colds and flu, you can't completely protect against viruses and trojans. It's possible -- extremely unlikely, but possible -- that every copy of Windows ever created contains a trojan planted by a disgruntled ex-Microsoft programmer which will destroy data on every hard disk where it is installed on August 24, 1998 at 12:00 p.m., and no one might know about it.

It's also possible that you could be hit by a meteorite as you sit and read this. The choice is yours: you can play safe and sensibly, use preventative measures and endure the relatively low risk for the enormous potential rewards of the net, or you can hide.

The ultimate fun-killer



Nothing takes the fun out of getting new software goodies from the Internet like the fear of a virus infection. Fortunately, your risk of infection from popular sites on the net is very small. How often have you heard of major infections from the Internet lately? Not often, we'll bet. If this was a common occurrence and a lot of people were being hurt by it, you'd better believe that the media would never shut up about it. You might remember the media hubbub over Michelangelo and the Internet worm. A serious destructive virus outbreak would have the tabloid news programs talking about it for weeks.

In fact, this is precisely what happened with the infamous Michelangelo virus, which was designed to activate on a specific date. Tens of thousands of computers suffered data loss

because the virus was only discovered a few -- too few -- days before it was set to go off. Servicepeople still get calls every year on the date when it "goes off" from distressed users who have lost the use of their computers.

But it's not news any more. Virus outbreaks on the Internet are a headline writer's dream. If it was a serious problem, you'd know about it. Instead, all most people have to go on is hearsay and rumor.

Viruses and trojans: no more than a minor annoyance

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The risk of being infectedd by new DOS and Windows programs you find on the net is nothing more than a minor annoyance if you take the precaution of making regular backups of your important data. You can access the guide to backups from the **Virus Awareness Kit** main menu, and if you're still worried after browsing it, we strongly recommended that you read the **Computer Virus Myths** section if you have not already done so. The sober statements made there by Messrs. Rosenberger and Greenberg should calm most of your fears.

Never underestimate the cleverness of virus writers

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On the other hand, never forget that virus programmers are smart people. They will test every antivirus program on the market to make sure that their new creation won't get noticed. No one, and we mean no one, can honestly promise 100 percent protection from viruses and trojans. Viruses have appeared in shrink-wrapped packages containing some of the most popular programs in the world. Even the major publishers get embarrassed from time to time.

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This point gets a double growl. It's not well-known to most intermediate-level users that one of the most common methods of spreading viruses is to *infect an antivirus program*. Fortunately, all sites mentioned on First Train as sources for antivirus software are rigorously checked by the administrators.

Non-UNIX users are well-protected from Internet viruses and trojans

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As a Windows/DOS user, you are protected from most of the serious destructive programs spread over the net. When virus programmers spread their destruction on the net, their target is usually the UNIX-based systems that do most of the Internet's grunt labor.

There has never been a known UNIX virus which could harm an IBM-compatible that was running DOS and/or Windows.

So a virus that infects your Internet provider is unlikely to cause you any more harm than a day or two of lost email and a short wait while they clean up their own mess.

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 **Virus awareness**

Trojans: a greater worry than viruses

A much higher rate of destructiveness

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Trojans are actually a much greater concern than viruses. A trojan horse is a piece of destructive program code that hides out in an otherwise harmless-looking file. Trojans don't usually spread themselves (they depend on you and I to spread them around), so they have a very short lifespan in the computing world. But unlike viruses, which can be relatively harmless, trojans are almost always highly destructive.

A trojan horse can be anything from a small utility that reformats your hard disk instead of tuning it as promised to something so clever and sophisticated that it might paint obscene messages on your computer-generated artwork. Trojans are much easier to create than viruses (we could create a trojan in ten seconds from a standing start, but we have no idea how to program a virus) and often escape the detection of antivirus programs until they are reported to the antivirus' author.

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The best protection against trojans is the exact same protection you use against viruses: backups and common sense.

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 **Virus awareness**

Steps you can take to minimize the risk

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This is war -- guerrilla war -- and no war can be easily won without a battle plan. Here are the steps we recommend to protect yourself against possible infection not just on the Internet, but in all your computing.

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[A seven-point battle plan](#)

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[An important primer on backups](#)

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[Antivirus software: which to choose?](#)

Virus awareness

Reducing the risk

A seven-point battle plan

Last topic

1. Have the latest version of a virus-checking program, such as McAfee's **SCAN.EXE** or F-Prot's **VIRSTOP.EXE** running on your machine at all times by adding its name and path to your **AUTOEXEC.BAT** or **CONFIG.SYS** file so that it runs every time you start your computer. Good antivirus software is widely available on the Internet, and some of it is free for personal non-commercial use. Tourist Class and Business Class travellers will find point-and-click links to the latest antivirus software from First Train's **Software Resources Page**.

Last topic

2. Exercise extreme caution when attempting to use new software posted to the *alt.binaries* newsgroups. This software often cannot be checked before it is cleared for public consumption, and viruses and trojans are quite common. If you don't trust your virus protection software, we recommend waiting 48 hours before running any new program found in one of these newsgroups, and then checking the newsgroup to find out about any virus warnings. If someone was infected by a publicly-posted binary file, you can be sure you'll see a message about it.

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3. Stay away from "pirate" newsgroups. Any newsgroup with **warez** in its name is...believe it or not...specifically set up for the illegal exchange of software, and your provider might have these newsgroups available on their server. These groups are known for sloppiness and dirty tricks tactics, and viruses and trojans are very common there. Experienced users of these newsgroups consider this risk to be part of the price they pay for access to free commercial software. In fact, we know of one pirates' newsgroup where you can expect to find at least one infected file every week.

Last topic

4. Never ever run any program that looks "too good to be true" without having it checked out by an expert first, or at least waiting for an expert's opinion. A prime example occurred in mid-July 1995 when a program was posted to several *alt.binaries* newsgroups which was supposed to allow older 80486 microprocessors to emulate the functions of the newer, faster Pentium. In reality this was a program that formatted your hard disk without asking.

Last topic

5. If you haven't already done so, create a "rescue disk". If you have Norton Utilities, PCTools or another full-featured disk utility package, one of the programs included will probably be able to back up critical information about your hard disk and system which could be corrupted by one of the more common viruses. If you don't have such a package, you can make a rescue disk using the ThunderByte antivirus package described in the section on antivirus software, but be sure to follow the instructions for creating this disk carefully.

Last topic

6. Have your virus scanner check every new program you install on your computer that does not come from a location you can trust. People's personal home pages might offer links to software located on obscure FTP sites where software is not checked for safety before it is made available to you.

The point-and-click links provided with the Tourist Class and Business Class versions are all connected either directly to the publisher or to educational or commercial FTP sites where safety is a prime concern.

It is *extremely* unlikely any program you obtain from a link on the First Train will be

infected. Someone would have already found out about it and removed it from public view. Nearly all popular FTP sites perform their own routine virus-checking on every new file on their systems, and only the newest viruses are likely to slip through the safety net.

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7. Never FTP files from a site's **incoming** directory. These files have not been cleared by the site's administrator and could contain anything, from something as harmless as a damaged file to a trojan that damages your video card.

Click the bar to return to the menu and continue with backup or antivirus software help.

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Before browsing the topic on backups, you might want to create a bookmark for this section so you can easily find your way back. The backups section is fairly long and linked to several other topics, so there is no easy way to get you back to the **Virus Awareness Kit**.

Click the bar below when you're ready to browse the section on backups.



 **Virus awareness**

 **Risk reduction**

Antivirus software

 **Last topic**

Good antivirus software is just as important, and it's critical that you know exactly what your antivirus software can and can't do. In most cases, people who think they're safe don't have nearly the protection they think they have. Here's how to insure that your protection ranks with that of the most knowledgeable users.

 **Last topic**

[Problems with antivirus software](#)

 **Last topic**

[Our picks of the best: all available free or for free trial](#)

 **Last topic**

[The importance of being new and improved](#)

 **Risk reduction**

 **Antivirus software**

Problems with antivirus software

Chinks in the armor

 **Last topic**

Antivirus software has been spotty since it first appeared on the market. It's no secret among veteran computer enthusiasts that antivirus programs all seem to have holes in them. They just plain miss some viruses.

 **Last topic**

Others scare people to death by reporting false positive readings (reports of potential virus activity where there is no virus infection). Some report so many false positives or "potential viruses" that are actually safe files that one consultant we know used five different antivirus programs and made it a habit of ruling out virus infection unless two or more gave a positive diagnosis. Problems with your hard disk, a missing file or stray byte of information, an old virus scanner, and even installing a clean update to a good piece of software can all produce false positive readings in some programs.

False negative readings: another serious problem

 **Last topic**

Unfortunately, false negative readings are equally common, and they ought to concern you. There's nothing worse than being told you are safe and later discovering you were on the verge of disaster.

The most common cause of false negative readings is old virus protection software. The antivirus that came with your Norton Utilities or DOS package was obsolete months or even years ago and won't detect the newer strains. It's nice to have this program as a second-rank diagnostic tool, but we don't recommend relying on it as your main antivirus program.

What to look for in antivirus software

 **Last topic**

We don't recommend any virus software that can't be regularly updated by the user. If you plan on sharing programs and files with others on the net, or participating in the binaries newsgroups, it's important to a) keep your virus software up-to-date, and b) if you can possibly arrange it, to keep two different virus programs active in your system at all times.

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 [Risk reduction](#)

 [Antivirus software](#)

Three free or low-cost antivirus packages

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It seems everyone has their favorite virus program, and new contenders appear in the market every few months. Our favorites are the ThunderByte and F-Prot programs. (We're suckers for ease of use.) McAfee, Norton and Central Point are also good choices...provided you have the latest updates. ThunderByte, F-Prot and McAfee are all widely available on the net, and F-Prot is free for non-commercial users. If you have an active Internet account and the Tourist Class or Business Class version of First Train, you'll find point-and-click links where you can instantly obtain up-to-date versions of all three packages in the **Utilities** section of the **Software Resources Page**.

F-Prot

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Our first choice for antivirus is a program called F-Prot, developed in Iceland by Fridrik Skulason. It is one of the easiest to use and also one of the most thorough programs of its kind. It's a DOS program that can be run from Windows, and best of all it's free to private non-commercial users. It's also very cheap for commercial users, with licenses as low as one dollar per computer, and free updates four times a year.

It's not quite as easy to use as the antivirus included with your DOS, but this version will be more recent and worth the time to learn if you plan on downloading files from USENET newsgroups or using FTP a lot.

ThunderByte

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Our second choice is ThunderByte, an antivirus program from the Netherlands which is exceptionally fast and versatile. Unfortunately it will take a little more time to learn this program than it will to learn F-Prot. The five links below are each connected to the latest version of the software. This too is a DOS program. TBAV (*tee-bav*), as it's known to the online world, also has a Windows interface if you'd prefer a simpler, more familiar layout, which is available from the second set of buttons. The two do not come in the same package. ThunderByte is shareware.

McAfee Scan and Clean

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Our third choice is McAfee's excellent set of virus utilities. These have been considered the standard in North America for several years now. You should find TBAV and F-Prot to be quite sufficient for most needs, but McAfee comes with its own built-in Windows shell program. These four links all connect with the most recent version of McAfee's Scan and Clean programs for Windows.

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The Day Excursion does not contain links to the programs themselves. First Class and Tourist Class passengers will find links to the newest, most up-to-date versions of these programs from the **Software Resources Page** in the online section of First Train.

 **Risk reduction**

 **Antivirus software**

The importance of being new and improved

Antivirus software: less valuable with age

 **Last topic**

It's critical for your own safety that you keep your antivirus software constantly updated with the latest software designed to recognize new viruses. Your antivirus programs should tell you when they are outdated. At this time we know of only one program which can reliably identify viruses which have not yet been creative, and sure enough, some adventurous cracker will eventually break through its protection. The latest software truly is your best line of defense.

When you get a message from the software warning you to upgrade, return to this page and use these same links to get the newest version of the software. These links are usually updated within 48 hours of the release of the latest versions of antivirus programs, so you should never need to worry about losing touch with the latest versions as long as you are receiving your First Train subscription updates. Antivirus updates are so important that they are also routinely posted for IBM-compatible users on or about the day of release to the *comp.binaries.ibm.pc* newsgroup as uuencoded binaries. Just so you know, the moderators of this group are ruthless about checking for viruses on software posted here.

Updating NAV, CPAV, MSAV, IBM Antivirus and others

 **Last topic**

If you have the full commercial version (not a version that was included with another program) of Norton Antivirus, Central Point Antivirus, Microsoft Antivirus, IBM Antivirus, or any other popular antivirus, the price you paid for the software probably includes free access to updates for at least a year. If you look in the manual, you should find FTP locations or URLs for acquiring the latest copies of the **signature file** for your antivirus program. This file needs to be kept updated as new viruses are created and unleashed on the public. Every popular antivirus publisher has a site on the Internet where you can obtain the latest version of their program or signature file, or information on how to obtain it if these updates require advance payment.

 **Last topic**

Note: If the antivirus you have been using was included with your computer or with your DOS or Windows program, you are probably not entitled to receive free updates.

Don't change your clock as protection from viruses

 **Last topic**

A very common -- and very effective -- trick for avoiding problems with some destructive viruses set to "go off" on a certain day, is to set your system date back a week or two. But if you plan on being a participant on the net and not just a consumer, don't do it! Not unless you can remember to set your clock properly every time you log onto the net.

Once you're on the net, your email and newsgroup postings are usually dated and timed according to the time and date on your computer's system clock. If it's set a week behind, your newsgroup posts may not be allowed by the server. Even if they are, they may wind up buried so deeply in the newsgroup that no one ever reads them. Don't allow your system clock to get more than a few hours out of sync with the correct local time, or you may have problems you

never bargained for.

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Disaster prevention for Windows

This section contains important information about *preventing* problems with Windows and Windows 95 through the use of two simple utilities. One of them tracks the complex arrangement of files installed on your computer when you install a new file into Windows and allows you to erase most, if not all, of an installation with the click of a button, preventing system conflicts and freeing up valuable disk space taken by unneeded software. The other utility makes sure that your most valuable Windows information -- your start-up files and personal configurations -- are secure and backed up in case you ever lose this information as the result of a botched installation or damaged files.

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Uninstallers

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What you need to know about uninstallers

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What you need to know about emergency system backup

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Working with F-A-S-T Emergency Windows Backup

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What you need to know about uninstallers

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}If you're already using an uninstall utility most of this material will be old hat to you. We still recommend browsing the last two topics. They contain important information every user should know.

If you've never used such a utility, we recommend taking the full tour of this section. You'll find it enlightening, and if you have any sense of adventure in your spirit you are almost certain to find it very useful as you wander the net.

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Windows' simple look is deceptive

Not the easy job it once was

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Removing DOS programs is rarely more difficult than erasing all the files in one directory. If you know how to do that, in most cases you can confidently maintain your hard disk and keep it clean. It's a skill most DOS users had to pick up in their first couple of months of use in order to competently maintain their machines.

Even if you have good DOS and file management skills, do not assume that you are skilled enough to erase unneeded Windows programs. About half the time, erasing the obvious files -- those in the directory containing the main program -- won't completely remove the software. About one time in ten, depending on what kind of software you choose, erasing all or part of a program will have unwanted effects on other important programs on your system. DOS may be messy, but Windows sweeps its dust under the rug so you can't see it.

Conflicts galore...part of life with Windows

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Even more disturbing, some Windows programs install themselves in such a way that they make other programs impossible to use until they are removed from your hard disk. This includes some very popular and useful programs recommended to First Train travellers. This sort of problem happens with DOS as well, but not nearly as often as it does with Windows.

Finally there's economics. Windows software takes up enormous amounts of space on your hard disk. If you get serious about using your computer, chances are excellent that you'll eventually run out of space to store new data. You'll either need to clean house or add another hard disk. This will happen much *less* quickly if you keep your system clean by removing data and programs that you don't want or need any more.



 **Disaster prevention**

 **Uninstallers**

Windows 3.1 won't make it easy for you

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Windows 3.1/3.11 and Windows for Workgroups do not make it easy for you to determine what is and is not useful data. Uninstaller utilities keep track of what you have, where the components are kept on your hard disk, and what changes were made to your system when the program installed itself. It can use this information to hunt down and eliminate all traces of an unwanted program.

Why you need an uninstaller

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}If you buy new programs, subscribe to magazines with disks or CD's which include software, or plan to get software from the Internet on any kind of regular or semi-regular basis, eventually you will wish you had an uninstall utility.

If you want to try new programs and can't afford to keep adding new hard disks (most newer computers can have up to four of them, older units will allow only two) each time you run out of space, eventually you will wish you had used an uninstall utility when you had the chance.

And if you have ever installed a program and discovered that another favorite program stopped working the second you restarted your computer, you *already* wish you had an uninstall utility.

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What about the Windows 95 uninstaller?

It's just not enough

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Windows 95 comes with its own built-in installation tracking utility. Like many things Microsoft, it demands that things be done *its* way and has some serious limitations that many users will never know about until it's too late.

The **Add/Remove Programs** wizard *will* track installations of Windows 95 programs...provided the author has included the appropriate file that the wizard needs to track the process. It will *not* track Windows 95 programs that do not include this file, and what's worse, if you try to install these programs using the wizard, *it will not even warn you that the installation has not been tracked.*

This wizard will track installation of drivers and operating system components too...*provided* you install them using the wizard. If you do not see the wizard during the installation, the software has not been tracked.

It will track *some* 16-bit Windows programs designed to run on both old and new versions of Windows, but *only* if these programs include the file needed by the wizard to track the installation.

Interestingly, while most Windows 3.1/3.11 uninstallers will leave traces of the old program behind when they uninstall (usually traces you won't mind or notice anyhow), they are every bit as effective for most programs than a dedicated Windows 95 uninstaller.

Useless with programs which have already been installed

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}The wizard *will* help you remove programs you install after upgrading to Windows 95. It will be of *no* use to you with software you already have on your system. It will only work with components of Windows 95's operating system and accessories, and with programs you have not yet installed.

Now that you've seen the facts, you have a choice. You can live without an uninstaller and either pay someone to clean your hard disk of useless files every few months, or you can start using an uninstaller, keep your system free of clutter, and start enjoying the mountain of software available on the Internet without worrying where to put it all...or how to clean up after programs that just don't cut it.





How do uninstallers for Windows work?

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Uninstallers range from the ridiculously simple to the unbelievably complex. But they all work in one of two different ways.

After-the-fact uninstallers

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}The more complex after-the-fact uninstallers check every file on your system against every other file, find out which files are strays or associated with particular programs, and give you choices about whether or not to erase them. They can also check inside the files themselves for clues about what program or programs they are designed to be used with. These programs can work with software already on your system.

This type of uninstaller also demands a lot of knowledge about your system...either that or a lot of reading in order to *get* that knowledge.

Installation trackers

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}The simpler installation-tracking type of uninstaller -- the type we recommend -- works only with software which have not yet been installed. You run this type of uninstaller before installing any new software. First it takes a reading of every file in every critical area where Windows software can install itself. The program is left running while you install your new software. When the job is done you click a button on the uninstall utility which starts a second reading. This second reading is compared against the first and the uninstaller creates a record of all changes made to your system.

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}This second method allows the uninstaller to keep a very accurate record of what went where during the installation procedure, and is smart enough to undo virtually anything that was done to your configuration, erase every single file associated with the software and every bit of configuration information added to your system during the installation process.

These simpler, install-tracking uninstallers aren't always as thorough as the expensive, sophisticated commercial models (for example, they won't find and remove unneeded duplicate files left behind by previous installations) but they are much easier to use and understand.





Two types...which to choose?

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Some people prefer to have one of each kind of uninstaller on their system, but the fact is that any quality uninstaller used as directed will do a pretty fair job of keeping your system clean. Still, you should have an idea of what you're getting into before you start working with any of these tools, because as mentioned previously, any software designed for the purpose of erasing data from your system can produce unwanted side effects if it isn't used carefully. If you can match the pros and cons of each type of uninstaller to your particular computing style, then you should be able to choose wisely between these two types.

Pros and cons of after-the-fact uninstallers

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Can you use an uninstaller for programs already on your system? Yes. Should you? In most cases, our answer is no...but this depends on the uninstaller program you use and the software you want to remove.

There are many commercial programs, most in the US\$50.00 range, that claim to be able to remove almost any software package installed at almost any time. If you have a big collection of software you'd like to prune back right now, it might be worth the investment. But in tests done by some well-respected computing magazines, none received a perfect score. In fact, some actually erased important files needed by other programs! The ones that played it safe didn't do a thorough job. On the other hand, they're easy to use. You don't have to remember to run them before each new installation.

Pros and cons of install-tracking uninstallers

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Install-tracker-type uninstallers tend to cost much less. **Faros Uninstaller 3 PLUS** is a *free* program from author Periklis Koutsogiannis which comes with First Train. Most install trackers cost from US\$10.00 to US\$25.00, and most of them do about the same job as **Faros**, although some are considerably less effective.

On the plus side, a well-written install tracker won't accidentally delete software used by another program simply because it can't find a connection. It deletes what was installed and nothing else. They're fast, effective, simple to use and require no knowledge of your system. You don't have to (and shouldn't) use install trackers for programs you expect to keep for a long time. You can reserve them only for testing new software. They don't need updating, since a well-written install tracker should never have to be updated to accommodate minor changes to an operating system or new types of software available for an old operating system. And they can usually be used on any version of Windows.

On the minus side, some install trackers will erase files needed by other programs, since many programs need the same set of shared resource files. This is no more than an inconvenience though. At worst, you'll have to reinstall a program which uses one of these shared files, and it's not likely to happen that often, if ever. You must also remember to run the uninstaller before actually installing the software. And some install trackers do a less-than-perfect job of cleaning up configuration details on your system. Once again, this should never be more than a minor inconvenience.

We hope you see now why we recommend install-tracking uninstallers, even though they require a little more effort to be used effectively.

If you need help now...

{ewl ew256bmp.dll,ew256bmp,eraser.bmp}Our advice if you need a lot of data removal done right now is to find a local expert, perhaps a college student or high school hotshot you can hire for an hour or two, to clean your hard disk for you. Find someone who will know enough to get Windows back up and running if the wrong file gets erased. We don't know of any uninstaller that can do that for you, but we *do* know of uninstallers that will suggest that you delete important data.

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Working with Faros

We don't have an actual section for Faros Uninstaller 3 PLUS, since we wrote a complete helpfile for it. We suggest taking Faros Uninstaller 3 PLUS for a test drive by clicking its icon at the bottom of this pop-up to start the program and then clicking its help button to launch the tutorial and helpfile.



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The Traveler's Lexicon

{ewl ew256bmp.dll,ew256bmp,openbk.bmp}Click the title of the section of interest to you. From there you'll find subsections and other menus. Add bookmarks for the submenus you refer to most often to help you find your way around more quickly.

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Definitions of Internet services

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Other important definitions

{ewl ew256bmp.dll,ew256bmp,openbk.bmp}Once you understand the nature of the various services available on the net, it will pay to know a few terms relating to those services and the methods used to access them. This is a brief collection of the terms you're most likely to run across, and they'll be used often on the First Train as you continue your adventure.

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Where to find definitions for other terms

{ewl ew256bmp.dll,ew256bmp,books.bmp}Why buy books when you can learn on your computer? This section lists four additional resources for terms, definitions and detailed explanations of the Internet, its uses and services. **The Internet Lexicon** is worthy of special attention because it is included as part of your First Train tour.

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Welcome to mudville

{ewl ew256bmp.dll,ew256bmp,books.bmp}Your first look at the Internet might leave you feeling like you've just stepped into a foreign culture with a completely different language. It's not *that* different...it only *feels* that way. (If you want to know why it feels that way, just press the panic button at the bottom of this section.)

This is one of the most extensive and detailed guides to understanding Internet terminology available anywhere. This section will not only acquaint you with the basic definitions of several dozen Internet-related terms, but give you all kinds of ideas on how you can use them and link you directly to the sections of First Train related to those specific terms. In fact, many travellers find this their most frequently-used resource on the First Train...or second only to the rest rooms.

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This section also includes some critical definitions for important general computing terms and concepts which you'll need as you navigate through the First Train. It's not necessary to browse them all before proceeding, though. You'll have opportunities to go back and pick up information you didn't get the first time at each succeeding portion of the trip.

More a dialect than a new language

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It's actually more like a new dialect than a new language. You're already familiar with almost every important concept used on the Internet. All you need to do is figure out how Internet concepts relate to things you already know. Once you have a reference point, the mud usually clears right away. And if it makes you feel any better, remember that the net changes so rapidly that even a lot of Internet veterans are in mudville these days.

This section provides you with a ready collection of the most basic terms that average Internet users need to know and understand. These terms represent only a fraction of the jargon used on the net. If you want to learn it all, be warned: by the time you're done, you will be speaking a different language!

You'll be completely overwhelmed if you try to grasp all of this information at once. It takes even veteran computer users many months to get a strong feel for what the Internet is all about and what it has to offer. Use this page to get a basic feel for what's what, and if you don't plan on using a specific service for a while yet, focus on the services you are using.

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What makes the Internet useful isn't the collection of computers attached to it, but the various services available on these computers. The net is not a unified whole, but rather a group of separate and often distinct services. Some of these services are interconnected, and more integration is happening all the time. Just as public utilities actually describes several services (gas, power, telephone, cable, police, road maintenance, etc.) the Internet describes its own collection of services. Here are brief descriptions of the ones you'll likely use most.

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What is the World Wide Web?

{ewl ew256bmp.dll,ew256bmp,spider.bmp}If this spider image bothers you, we have unpleasant news. The spider is the unofficial mascot animal of the World Wide Web, also known as WWW or just the Web, and if you spend any amount of time "surfing" you're bound to be seeing a lot more of these.

{ewr ew256bmp.dll,ew256bmp,web.bmp}The World Wide Web is just one service among many on the net, but in less than three years of existence it grew to become the single most-used part of the Internet, and the focal point for tying all Internet services into a unified, integrated whole. To most novice users, the Web is the Internet. It was originally conceived at the European Center for Particle Physics (CERN) in Switzerland as a means of making documents and information more accessible to the public.

To find out more about the World Wide Web, and get some introductory training in navigating the Web, Tourist Class and First Class travellers are directed to the **World Wide Web Resources Page**. We recommend it as one of the first stops on your package tour.

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What is email?

{ewl postmark.bmp}Email, or electronic mail, is the term widely used to describe an Internet service that allows you to send private messages to individuals anywhere on the Internet. It works just like regular mail, except that everything is done electronically. When you receive an account on the Internet, you almost always receive access to email as well. Virtually every provider includes email as part of their package of Internet services.

Email is also used to describe any kind of electronic messages sent from person to person over a network. You can send and receive email through a local bulletin board service, an online service such as CompuServe or Prodigy, and within the network of computers that might be used where you work.

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Email over the Internet is extremely fast. In most cases, the recipient can read their message within ten minutes of your having sent it. With bulletin boards and online services, it might take several days for a message to get from one person to the other. Email is fastest of all on small, privately-owned networks. Inter-office email sent from one person at corporate headquarters to another person in a different department can arrive at its destination in less than a second.

Tourist Class and First Class travellers are directed to the **Email Resources Page**. This online/offline Internet resource will connect you with everything you need to get fully online and in touch, including sources for the best free email software, help with installing and setting up your email program, and tips for making the most of electronic mail on the Internet.

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This button takes you takes you to the Configuring Eudora page, where you'll be walked through the process of setting up this free email program for Windows and shown its basic features. The link to the software itself is actually on the Email Resources Page.

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What are USENET and newsgroups?

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This is another Internet service which you are sure to want to try at some point. Newsgroups are discussion groups devoted to specific topics of interest to the participants, where you can learn about a subject, ask questions or just pal around. Newsgroups are like big public email areas, where you can send messages to a group of people interested in the same subject and read messages from others without having to contact them individually. Every newsgroup has its own particular feel, and the discussion can range from the most lofty scholarly discourse to silly ravings; from deep intimacy to the downright disgusting.

USENET is the umbrella for all newsgroups on the Internet which use a standardized method of posting and distribution. USENET is known as a distributed bulletin board, because it's a collection of information which every Internet host computer can access on request, post to whenever they like, and share with users of that particular computer.

Another perspective

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If newsgroups are the daily newspapers of the Internet, USENET is the newsstand. Tourist Class and First Class travellers are directed to the **USENET Resources Page**, where you can learn how newsgroups work, obtain and set up high-quality free newsreader software for newsgroups, find out how to locate and participate in them, and get software and other resources for making use of what has been termed the "world's biggest magazine rack".

Newsgroups should not be confused with newsletters, which are usually sent and managed via mailing lists.

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FTP stands for File Transfer Protocol. This is a means of transferring files from one computer to another across a wide range of platforms. This means that you can use Internet to copy files from a Macintosh, IBM-compatible, UNIX machine, large government mainframe, almost anything, to your computer as if that computer was another disk drive on your own computer. It's as easy as copying files from one directory to another.

This button will take you to the FTP Resources Page where you'll learn more about how FTP works, where to find a high quality free program for FTP, and access to a list of more FTP sites than you will ever have time to visit.

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Gopher preceded the World Wide Web as a means of making documents on many computers available from anywhere. It's still in use today as a means of searching for information on a large number of computers, but it's not nearly as popular as the Web. In fact, while you can still gopher over old-style TELNET connections, most gopher services have been fully integrated into the Web. Gopher services are now almost completely interconnected with the World Wide Web, and most users will never need to work with dedicated Gopher software or learn specific Gopher commands.

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Internet Relay Chat, or IRC, is an Internet service that allows you to talk to other Internet users from around the world by typing text at your keyboard. It's like a gigantic party line with thousands of people discussing hundreds of topics.

This button connects you to the IRC Resources Page, which includes a complete explanation of how IRC works and what it can do for you, tips for getting connected to IRC, help with obtaining, installing and setting up free and shareware IRC software for Windows, links to IRC-related resources for users at all skill levels, and even some assistance with some of the strange language and practices in the IRC subculture.

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What is TELNET?

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TELNET isn't an actual Internet service, not really. Instead, it's a means of accessing many of the services available on the Internet. TELNET is like the old-style modem programs used to connect with bulletin boards and online systems before everything became as simple as pointing and clicking.

TELNET access looks and behaves a little like DOS' command line, and in fact it's very similar to DOS, because when you TELNET, you are actually using the UNIX command-line operating system on one of your provider's computers to talk to other computers on the Internet.

The "dinosaur" of the Internet

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Compared to the point-and-click ease of the World Wide Web, most people find TELNET to be a slow, clumsy and demanding way to get around. It's like taking a step back to DOS after you've used Windows.

At this time there are a lot of interesting and entertaining services such as MUDs, MOOs, MUSHs and MUSEs, public and university library catalogues, and state/municipal agency databases can't be accessed any other way but with a TELNET program. That will change in the next year or two as Web browsers become more sophisticated.

A useful service...but not for everyone

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Many people prefer to simply avoid TELNET altogether, which is fine. Most of the services available by TELNET today will be replaced in the near future with new services which you can operate just as easily as you navigate First Train or the World Wide Web.

First Class and Tourist Class passengers have access to the **TELNET Resources Page**, which includes information on services you can access via TELNET, how obtain a high-quality free TELNET program for Windows, instructions for setting up TELNET software for use with your Web browser, and how to make use of some of the TELNET-able services you can't access any other way on the Internet.

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What is a shell account?



A shell account is a special type of account which is available from most Internet service providers. If you had a shell account, you wouldn't be able to get nearly as much use out of the simple point-and-click interface you are using right now. Instead, you would access the UNIX operating system's own shell just as if you were at the provider's offices and sitting in front of one of their computers, without the limitations of graphical utilities such as Web browsers and email programs. Unfortunately, you would also be without a lot of the goodies you get with a SLIP/PPP account, unless you have a UNIX operating system on your own computer or special software designed for shell access.

Remote computing with an on-site feel

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If you had a shell account you would also be given space on one of the hard disks on your provider's computers to store information such as your email, file transfers and news, and you would probably copy this data to your own computer by typing commands instead of clicking with the mouse. Expert users love this kind of flexibility. Most newcomers are baffled by the number and complexity of the typewritten commands.

Much of the keyboard work can be automated in ways you can't automate Windows, provided you have some elementary programming skills. Shell access is a much better way to work intensively with Internet Relay Chat, to manage FTP sites, and maintain home pages and Web sites.

If you want to get a feel for what it's like to work with the Internet through a shell account, experiment with TELNET. Most of the things you can do with TELNET are very similar in feel to the way things work with a shell account.

Shell accounts: not a good choice for novices

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In general we do not recommend shell accounts for any user who is not thoroughly familiar with DOS and ready to learn another DOS-like operating system from the ground up. Most of those we know who have switched from SLIP/PPP accounts to shell accounts have regretted it.

A complete guide to working with the Internet through a DOS-level shell account, a program by Terry Gray called **Learning the Internet** can be obtained from a section of the **Software Resources Page** included in Tourist Class and First Class packages. You can also hunt for it on the net if you like. This excellent piece of shareware (cheap too at under US\$10.00) offers walk-throughs for all of the essential Internet navigation skills needed by shell-level users.

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What is a search engine?

How to find just about anything on the Internet

{ewl ew256bmp.dll,ew256bmp,vlibrary.bmp}Search engines are designed for finding information on the mammoth interconnected databases tied into the Internet. Gopher and the World Wide Web are only two of a growing number of interconnected databases.

In a perfect world, these search engines should be able to search every single document available on the net for the information you're looking for, but the net changes far too rapidly for any of the most popular services to be fully catalogued, even by the high-speed, automated cataloguing programs (also known as robots) already set up for the task.

Get used to the idea that a single search for information in a specific database -- any database -- is likely to turn up only a small fraction of the total available information on a given subject or topic.

The Fact Finder Page



Search engines are used in different ways, and Tourist Class and First Class riders will be shown how to use many of them as they navigate through the First Train. The online package includes a special training and resource section called the **Fact Finder Page** which includes built-in search forms and help with understanding and making the best use of these marvelous services.

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These terms usually refer to the state of a piece of hardware and its relationship to another piece of hardware. If it's connected and working, it's considered to be online. When your printer is ready to print, it's online. When your computer is ready to send and receive information via the Internet, your computer is online. Think of online as meaning the same as being on the line with someone on the telephone. Offline, of course, means disconnected.

It can also refer to a specific person's relationship with a specific machine or service as well. Right now, for example, you are online with your computer, but unless you are using this while connected to your Internet service provider, you are *offline* in relation to the Internet.

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What is a browser?



A browser is a program designed for navigating the World Wide Web, and for tying together all the various services which are available on the Web. Moving around on the Web is accomplished by *browsing* the documents and information on the computers connected to this particular Internet service and making point-and-click selections from those documents.

In order to make use of this information, you need a program specifically designed to read and react to the special formatting used in Web documents. This is what Web browsers do...but it's only a part of what the browser you'll probably choose *can* do.

An extremely sophisticated and versatile program



On many home computers, the Web browser is the most sophisticated piece of software on the whole system. Because in addition to allowing you to view documents on the Web, it provides facilities for displaying graphics (and, with some newer browsers, animation), playing sounds, running programs, managing information, sending and receiving email, browsing and storing newsgroup information, and much, much more.

In fact, more and more commonly the browser is just the centerpiece for a suite of Internet applications that all come in one handy, central shell program that can manage all of your Internet activities. This package focuses on the best of the free utilities you can obtain for using Internet services, but the "Internet suite", of which the browser is only a part, will soon become the normal method of accessing and keeping track of all your Internet data.

The best part about browsers is that thanks to some recent advances called MIME and Java, your browser is almost infinitely expandable. With the addition of small (and sometimes large) pieces of software, you can use your browser as a point-and-click menu shell for not just Internet applications, but other programs such as spreadsheets and databases which you usually ran as separate programs.

Netscape and Mosaic



The two most popular browsers on the market right now are **Netscape Navigator**, created by Netscape Communications, now marketed as commercial software, and in its latest incarnations more of an Internet suite than a browser; and **Mosaic**, created by the National Center for Supercomputing Applications (NCSA) at the University of Illinois and offered free to the public.

There is some question that NetCruiser might be the second most-popular browser, but since only users of Netcom's Internet service can use it, we don't consider it a valid contender.

A sample browser

This sample screen which we developed for First Train shows a reduced-size browser window with all features intact. There are twenty hotspots on this particular diagram, each describing features which are common to virtually all browsers. The sooner you acquaint yourself with these features, the more you'll get out of your Internet wanderings.



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This button will load a definition of *browser* from the Internet Lexicon included with First Train, and lead you to related definitions with more information on the subject.

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 **Internet terms**

What is hypertext?

Hypertext: the universal help tool



Hypertext is a generic term that refers to the way documents are structured. Hypertext is not something which is confined to the Web. In fact, it's used extensively on almost every computer built today.

Hypertext can either mean text documents which are linked to other documents or bits of information that form a body of information which would be difficult to manage or understand as a single document.

It can also mean a single document which contains its own built-in cross-referencing system, so that you can jump from place to place in the document by clicking a highlighted area with your mouse or highlighting it with your cursor.

The Web: one enormous hypertext document



The World Wide Web is actually one enormous hypertext system. In some way or another, every accessible document on the Web is linked to every other document, and many people like to think of it as just one enormous volume with millions of pages. (In fact, individual documents are referred to as just that: pages.)

Windows helpfiles are also hypertext documents. First Train includes a few small utilities, but in large part it too is hypertext. If you have a computerized encyclopedia or dictionary, chances are that it qualifies as hypertext as well.

Bringing a friendly chaos to cold order



Hypertext was originally developed to make a wide variety of complex, highly structured text information easier for the average person to access, use and understand.

The reasons for having all these linked documents and segments of documents are twofold. The first reason is that hypertext looks and feels more like a paper book than plain digital text. The second reason is that a well-constructed hypertext document is actually quicker and easier to use than an actual book. You can instantly jump to the information you want in a hypertext document without having to search through an index or hunt through hundreds of lines of raw text.

First Train is an example of what we'd like to think is well-constructed hypertext. Instead of asking expert users to bear with a lot of information they may not need, thousands of hypertext links are provided to allow new users to quickly find information.

More than just a way to structure text



Hypertext can be used for much more than teaching and reference. It's possible to build

adventure games using hypertext as the interface. In fact, in some circles text-adventure games such as Zork, Hitchhiker's Guide to the Galaxy and the Colossal Cave Adventure are thought to be just a sophisticated form of hypertext. (By the way, if this sort of game appeals to you, we think you'll find an unending source of fun when you discover the hundreds of MUDs available on the Internet.)

Hypertext has also been used for many forms of experimental fiction. Hypertext allows the author to build a story that can actually turn out differently each time you read it, simply by altering the plot line slightly depending on which hypertext links you choose to follow.

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What is bandwidth?

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Bandwidth, on the Internet, refers to the amount of data which can be carried by a specific transmission line at any one moment in time. Bandwidth is not the same thing as transmission speed, even though that's how most people talk about it.

An overused term

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Here's an example. The baud rate of your modem connection -- the speed at which you can receive data -- is 28,800 bits of information per second (28,800 1's or 0's to be precise) The bandwidth of your connection is measured in terms of the frequencies that can pass through the network lines. Phone lines have notoriously narrow bandwidths. Because telephone technology is still fairly low-tech, the phone company doesn't allow high-frequency and low-frequency transmissions to pass through their lines. These frequencies could either cause interference with other signals or result in reduced overall sound quality. Their circuits filter the signal so that only the narrow band of frequencies that most people can understand as part of human speech are allowed through.

If that sounds confusing, consider the yellow-lens sunglasses which were so popular a while ago. They also filter out most light and allow only the narrow band of light in the yellow spectrum to pass through them. They do nothing to decrease the speed of light. What they actually decrease is the bandwidth, or volume of light.

Bandwidth and the Internet

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The wider the bandwidth, the higher the baud rate...but not always. The T1 servers used by most large Internet providers can transmit data halfway around the world over fiber-optic cables and satellite downlinks at a rate of over a million bits per second. That's faster than some hard disks. But while the bandwidth of your telephone line has not increased significantly in recent years, modem speeds have risen dramatically. In fact, the average modem sold in 1995 was ten times faster than the average modem sold just six years earlier.

Trivia



As late as 1990 it was still believed by many experts that modem transmission rates over standard telephone lines higher than 14,400kbps were impossible due to the restrictions imposed by the narrow band of audio allowed by telephone lines.

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What are shareware, freeware, public domain?



These three words are used in connection with to the exchange of software over the Internet and in many other forms: on CD, floppy disk, bulletin boards and other media. The differences between these three terms are extremely important, and their definitions are not obvious. Every personal computer owner ought to know precisely what each of them means.



Think of shareware as try-before-you-buy software, or fully-functioning software with a best-before date. Freeware is copyrighted software which you don't have to pay for, and public domain software is 100-percent, no-cost, no-obligation, no-strings-attached software you can do with as you please.



This is a long topic, so clickable titles and **Return to Top** buttons are provided so you can jump to specific areas of interest. You may also want to print this section by clicking **File** from the menu bar and selecting **Print topic**.

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How the terms evolved

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Purists still tend to believe that shareware refers to any software which is permitted to be exchanged or shared with others. But most of the computing world doesn't see it that way.

Shareware

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The idea behind shareware first emerged in the early 1980s as a means of exchanging software. Many authors found that they were creating programs for clients which were useful enough to be shared with others. In an effort to make their programs available, the files were posted to bulletin boards or offered on disk for a nominal fee, and owners of the software were encouraged to share these programs with others. Software distributed in this fashion became known as shareware to distinguish it from commercially-licensed software purchased from a publisher.

Naturally the idea caught on like wildfire. In just a couple of years, some authors discovered that shareware programs were reaching tens of thousands of users. There was clearly a market here. The question was how to exploit it. It is widely believed that Jim Button, the author of a database program called PCFile and several other legendary PC programs, first began the practice of offering his software on bulletin boards and tradable floppy disks...but with a twist. You were allowed to use the fully-functional, copyrighted version of his software for a certain amount of time to determine its value to you. If you kept using it after that time, you were legally required to pay the author for a license to use it. You could usually register your license by sending a check to the author for the amount requested.

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Freeware

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In order to distinguish between this type of shareware and software which you could use for free with no time limits, some programmers started to use the term freeware to refer to no-charge shareable software which was still protected under the author's copyright. The copyright usually meant that you could use the software, but you could not package it alone or in combination with other programs and sell the results as your own creation. Most freeware authors are still deadly serious about retaining the copyright on their works.

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Public domain

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But some aren't, and an old term usually used to describe songs and poems written a century ago came into popular use in the computing world: public domain. Some authors simply decided that rather than mess with copyrights on something that wasn't going to earn them money, they would make a gift of it to the world. Legally, you can do whatever you like with public domain software. Unfortunately, the term was often used to describe try-before-you-buy shareware and copyrighted free software.

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The importance of knowing the difference



There is not much true public domain software around, not compared to the thousands of freeware programs and the hundreds of thousands of shareware packages. Special care has been taken to focus heavily on freeware on the First Train for the Internet, software which will cost you nothing to try and use for as long as you like. We'd like to think the price of your ticket should be all-inclusive. Be aware that once you get out and start seriously exploring the net, most of the programs you find will be shareware, and if you use them longer than the publisher's allowable trial period, you are legally obligated to pay for a license to use the software.

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What do you own when you pay for a piece of software?



Something else you should know is what a software license means to you. Any time you receive a piece of software that is not in the public domain -- whether it's a program you bought

in a store or downloaded from the Internet or an online service -- you do not own the software. All you own is a license to use it for the purposes defined by the author in their license agreement, and virtually every program out there which is not public domain will have a licensing agreement somewhere in the package. It will either be in the README.TXT file, the helpfile, or in the enclosed documentation. Software licenses are like driver's licenses. When you pay for your driver's license, you're not paying for ownership of the highways. All you get for your money is a license to use them.

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Who pays for shareware programs anyway?

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You might wonder why anyone would pay for a program which is made available fully functional, and free for trial use, on the Internet. What programmer is stupid enough to think you'll pay for something you can use with no restrictions without paying? Why not just use it for free? Isn't that what most people do anyhow?

Well, yes, that *is* what most people do. It's important to remember that shareware is a trust system, and if no one ever paid for the use of their shareware programs, you can bet that half of the best programs available on the net would either be of vastly inferior quality or simply not available. Programmers just wouldn't bother making them available. In fact, scores of talented programmers have either quit programming completely or refused to make their programs publicly available after discovering that their work was being used daily by thousands of people with almost no one paying for licenses.

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Some authors are very strict about payment. If you use the program longer than the trial period, you must either pay for it or erase it from your hard disk. Some programmers use a built-in self-destruct mechanism to make sure that you can't use it after the trial period. Some will actually attempt to take legal action if they discover someone who has been using their software illegally. Others won't mind if you simply can't afford the license, as long as you make a reasonable effort to pay when and if your financial situation improves.

We personally know many shareware authors. A large percentage of them are students hoping to make a few extra dollars to support their education. Some write shareware programs as their sole source of income, so if no one paid for them they would be out on the street...literally. Most of them are not wealthy or even well-off. In fact, by our estimates, most shareware authors earn far less than the national average from both their regular jobs and their programming.

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One of the nice things about Internet access is that you can actually write to these programmers and ask how they feel about the situation. Some are downright surly; most are kind to a fault.

So who pays for shareware programs? Who cares? The important question is, will you pay when it's appropriate to do so?

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What is a newbie?

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A newbie is, of course, anyone new to the Internet. It's an obvious term, but there's a reason why a definition was included here.

The Internet is growing so quickly that no one can properly keep up with its growth. Some estimates say that in 1995 the number of people on the net doubled every two months. Naturally, with all these newbies trying the net's services for the first time, it results in a bit of inconvenience for longtime Internet users who might feel that they have more of a right to the net and its services. They don't have special rights, of course, but be prepared to run across people who will tell you otherwise.

It takes all kinds to make up a virtual world

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The Internet is unlike any other social phenomenon in history, but it is prone to the same problems as any other type of social gathering. You'll meet your share of helpful, kind, generous, jovial, humble people on the net, but you'll also run into arrogant, ignorant, hurtful and manipulative people who derive satisfaction from telling people like yourself that you have no business using their Internet without a few years of hard labor as a programmer or hacker.

The worst part about these attacks is that you never see them coming. When you spot a shady character on the street, you can usually take steps to avoid confrontation. You don't get much, if any, advance warning of verbal assault on the net.

The Internet is undergoing serious growing pains that will continue for several years yet. There are stubborn parts of it that do not want to grow up and eager parts that are dying to find out what comes next. You are part of that growth and change. You can make a positive impact with your presence regardless of your experience level.

Don't take it personally

{ewl ew256bmp.dll,ew256bmp,vlibrary.bmp}On the other hand, always remember that even veterans make mistakes, and you will too. None of us are immune. If you do something wrong, that just means you're human. It's common courtesy on the net to admit your mistakes and try not to repeat them, but that's not enough for some people.

Don't take rants and flames over one-time mistakes too seriously. The best way to deal with any confusing personal conflicts you may encounter on the net is to remember how children deal with conflicts they don't understand. Run away from the person, stay away, and if you're still bothered by the incident after a while, talk to someone. Your provider's support staff may be able to help you understand many of these conflicts and how they develop, but your best emotional defense will be experience and understanding of the workings of the Internet itself. The more you know about how complex and error-prone the net can be, the less likely you will be to be hard on yourself...or anyone else.

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What are SLIP, PPP and Interfacing?

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SLIP and PPP are acronyms for **Serial Line Interface Protocol** and **Point-to-Point Protocol**. They describe the methods used by the software on your computer to communicate with software on your provider's computers.

Protocol in this case is the same as the garden-variety diplomatic protocol you're probably used to hearing about on the news. The two computers at both ends have to go through a series of digital rituals before they reach agreement on how they will communicate with each other.

Serial line refers to the fact that the computers communicate with each other through the serial ports on both computers. Your computer has both serial and parallel ports, each designed for different types of communications. Parallel ports are usually used to connect printers. Serial ports are designed for connecting with devices needing longer cable lengths or slower data transmission rates.

And **interfacing** of course means communicating interactively. Right now you are interfacing with this software.

Put it all together and SLIP is a method of handshaking and reaching agreements for communication used by two computers joined together through their serial ports.

SLIP versus PPP



SLIP is the most common method of connecting with the Internet through Microsoft Windows, but PPP -- a somewhat more efficient protocol -- is gaining in popularity. Your provider may offer PPP connections as well as SLIP connections. If so, you might already be using PPP, since it's more efficient for both of you. If not, you can ask to see if it's available. Switching from SLIP to PPP is usually as easy as downloading a script file from your provider's Web site and copying it to the directory containing your winsock connection program (usually Trumpet's TCPMAN).

SLIP is on its way out at this time as an Internet protocol, replaced by PPP and other more efficient protocols, and no doubt even more efficient connection schemes will be coming in the future.

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What is MIME?

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MIME is an acronym that stands for Multipurpose Internet Mail Extensions. It was developed to allow non-text data of various types to be attached to text-only electronic mail to make the exchange of information between individuals simpler and more efficient. It also offers a means to include data files as an integrated part of the message. This feature of MIME is not widely used in email yet. When it is, it will revolutionize email.

Your Web browser is light years ahead of your email program in regard to its ability to use MIME. Virtually any type of file imaginable can be designated as a MIME type and used in conjunction with your Web browser. If your browser is configured properly, you'll be able to click on a hotspot on any Web page and have the document linked to it downloaded automatically into a program designed to handle it. You can automatically load word processing documents and spreadsheets, sound and video clips, you can even have a saved game file automatically load into your favorite game, just by clicking the link connected to the file.

How MIME types are identified

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Web browsers identify the MIME type of the file firstly by its header, the section at the start of the file that contains information about what it is and which programs might use it; and secondly by its extension, the part of the file name after the last dot or period. Traditionally, IBM-compatible computers have only permitted files with a maximum of eight characters, a period, and a three-character extension. Windows95, OS/2, Mac, Linux and FreeBSD all allow much longer file names.

When your Web browser sees a file extension it doesn't know how to handle, it will usually ask you if you want to save that file to your hard disk for later use or configure a program to view it or play it. When you configure the browser to handle files with this extension, the browser will add it to its list of MIME types and handle files of this type for you automatically in the future.

If you don't know how to do configure new viewers and extensions for your browser, the page linked to this help button will show you how it's done.

MIME can make email as exciting as the Web

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In the next year or two, MIME will also make email as exciting as the Web. As more and more people gain access to the net with high-speed modems and digital phone lines, it will be a simple matter to attach voice greetings, pictures, even whole programs to your email. These files and programs can be configured by the recipient to start automatically when the message is read. Imagine adding a musical soundtrack to your letters and having your picture pop up in the corner of the screen when the recipient reads it and you have some idea of MIME's potential power.

MIME is already in use as a way to send faxes. In fact, fax is one of the main reasons MIME was developed. MIME attachments can be automatically configured to print a document

directly from your email program with no prompting from you. This is how faxing is accomplished with email.

A new and not yet universal standard

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MIME is a relatively new standard, and you're likely to discover that many people you meet on the net can't yet handle files attached to email encoded as MIME. There are other ways to attach non-text data to messages, including BinHex (used mostly on the Mac) and uuencoding, but you can expect these to all but disappear by 1997.



More information on Multipurpose Internet Mail Extensions is available to First Class and Tourist Class travellers from the **Email Resources Page**.

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What are downloading and uploading?

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These terms are used to describe the direction in which data travels between two connected devices. The confusion comes in because a lot of people find that the terms seem to be used backwards.

If a file is being transferred from a computer on the Internet to your computer, it makes sense to think of it as coming up to you. But it seems that the computing world prefers to view you, the end user, as the inferior. Data downloads to you and uploads from you.

Downloading and uploading on the Internet usually refers to the process of transferring files to and from remote computers. Technically speaking, they can be used to describe almost all data transfer from one point to another. For example, when the scanner checks a price at the grocery store, the data gathered from the bar code is uploaded to the computer in the cash register. When you install a new program from a CD, you are downloading the software from that CD to your hard disk.

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What is a sig?

{ewl ew256bmp.dll,ew256bmp,mail2.bmp}Sig has two computing meanings, one related to email, the other related to computing in groups. This help button will take you to the second definition which is located on a different page.

It won't be long before you notice that many people end their email messages and USENET posts with two or more lines of what appears to be cryptic messages. They might close with a remark, a saying, a URL or two, or other information that could have absolutely nothing to do with the subject of the message or posting. Some people even include pictures drawn with typed characters.

A personal touch for your posts

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These are known as signatures or simply as sigs. These began years ago as a way for people to add a personal touch to their email in the absence of real signatures.

Once you've seen a few sigs, you'll probably want to create your own for inclusion in your USENET newsgroup posts and email. Most email and newsreader programs have facilities for adding sigs with your posts.

If you'd like to find out more about sigs and how to set up your own, the **Email Resources Page** included with the Tourist Class and First Class package tours include more details on sigs and advice on creating your own.

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What is a home page?

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Home page is an overused, and often misused, term relating to the World Wide Web. Home pages refer to the title pages for individual sites located on the Web, or title pages for individual sections of a site. Your Internet provider will have a home page where you can often find help for specific problems related to their configurations and learn about new services and service interruptions. Several of First Train's staff have their own home pages.

Your Internet provider might allow you to set up your own home page as part of your account. Providers might also provide home pages for a fee to for subscribers and commercial clients. But once you have several Web pages, you have more than just a home page...you can actually say that you have your own Web site.

This page is not a home page in the purest sense of the word, although you could consider it your First Train home page if you like the way it's laid out and refer to it for information before any other page. When in doubt, think of a Web page as simply a page.

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What is a URL?

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URL stands for **Uniform Resource Locator**. It's an acronym used most often when discussing the World Wide Web, and it refers to the physical address of a file or resource of some type which is accessible through the Web. If you look at the top of your browser at the Location: or **Go to:** box, the strange text code you see in that box is the URL, or physical address, of the document you have accessed. (If physical address sounds too technical right now, it will make perfect sense to you in just a moment.)

This is an important topic, as important for navigating the net as file management is for navigating your own computer, so this topic is rather lengthy.

URLs are also frequently referred to as *pointers*.

How URLs are structured

URLs always have two elements, and most have three.

Service type

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Look at the **Location:** or **Go to:** line of your browser, and you'll see that it starts with **http://**. This element of the URL, the part up to the double slash, tells you what kind of data the URL points to. An **http://** tells you that the data at this address is a World Wide Web document, perhaps much like this one, and is accessed using the standard protocols of the Web.

Depending on which service the link you clicked is trying to access, this line could also read **ftp://**, which means the URL points to a file, not a page to be displayed by your browser; **gopher://**, which means that the URL points to part of the gopher database available on the Web; or **mailto:** without the slashes, which means that the URL is someone's email address and not an actual place you can visit or file you can obtain.

Domain

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The second element of the URL -- the part between the multiple-slash and the first single slash -- is the *domain*, or location of the computer the URL points to. Every computer connected to the net which offers services to people from outside of that computer must have a unique domain name. These names must have no spaces, which is why the two, three, and sometimes up to five words that make up the domain name, are separated by periods.

Some sample URLs

Our Internet service provider has a Web domain name that looks like this one:

www.cyberstore.ca

Domain names must also have unique numerical equivalents, but to make things easier for everyone to understand, you'll rarely see domains displayed as numbers.

This domain name might also include a port number. One computer can be used to

provide many different Internet services at the same time, so different ports, or access points for data, are assigned on each computer for each different service to be offered. Port numbers are always separated from the domain name by a colon, like so:

http://134.83.112.57:8080/~cs93jtl/irc_info.txt

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This URL, which at the time of this writing connected to an Internet site which offered an information sheet on Internet Relay Chat, uses only a numeric domain address and adds port number 8080 to the address. This computer uses a different port for Web connections than most computers on the net, so the URL must include the special port number to connect you properly.

The third part of the URL, the part after the first single slash, is the specific location on the host computer where the document is found, or the path of the document or resource.

Internet URLs use the UNIX method of describing files and locations. It's a little different from the way DOS and Windows machines do it. In the URL we saw above...

http://134.83.112.57:8080/~cs93jtl/irc_info.txt

...the directory names are separated from the domain name and the file name by slashes instead of backslashes. And at the very end you see the name of the file you are accessing: `irc_info.txt`.

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Putting it all together



Put it all together, and we see that this file should be viewable using your Web browser, because the URL starts with **http://**; that the computer where it is located is using a numeric domain name instead of words, and if we had the list of domains we could pinpoint exactly where that computer was located; that the file is located in a directory called `~cs93jtl`, and that the file itself is called `irc_info.txt`. We know something about *what* it is, something about *where* it is, and the name of the file itself.

Not all URLs are this complex

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Don't be concerned if you see URLs that don't include all of this information. Many URLs are purposely made shorter so they're more easily remembered, so you won't always see the file's directory and file name, and the domain name might have only two parts instead of three or four.

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What is a site?

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A site is a location -- any location -- where data is stored or where you can log into the net. Site and domain are not the same thing. If you are online right now, you are currently connected to your provider from your own client site, or remote site.

Your provider is in turn host to a number of different sites, including FTP sites where you can download information, view Web pages and a number of other things. If you have your own Web site or FTP directory, your provider is acting as host for them.

In other words, a site can be any location, including a computer, a disk drive, or even a section of a disk drive, that is connected to the Internet. The main difference between your personal site and your provider's site is that when you connect to the Internet, your site usually isn't providing information to anyone but you.

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What are client, server, host and daemon?

These four terms are either interrelated or used in similar contexts.

Client

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In Internet-ese, client doesn't refer to your financial relationship with your provider. It refers to your relationship with the services you use on the net.

Think of clients as consumers and hosts as suppliers. When you first selected this page for viewing, your browser program requested the files that make up this page from your computer's hard disk. Your hard disk then supplied, or served, all the necessary files to your browser, which is your client program, to put this page together and display it on your screen.

Every program you use to connect to the Internet, from the winsock program that makes the first connection to the program you're using right now to your email, newsreader and IRC programs, are all client programs.

Host and server

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Hosts and servers are essentially the same things. Server is a term used with all kinds of networks, not just the Internet, and it can refer to the computer hardware used by your provider and other Internet sites as a permanent library of information for you to access.

Daemon



The actual software programs used by host or server computers are also known as daemons (*day-munz*). Whenever you see the term daemon being used anywhere outside of a dungeons and dragons game (where a daemon is a demon), you'll know that it refers to a program which supplies some sort of information to others on request.

However, the term has become blurry because of the original definition of daemon. Daemon is meant to signify a piece of software, not hardware, on a network which automatically responds to user requests. Mailing list programs that automatically send information to people requesting to be placed on that list are daemons in the strictest sense. But if you think about it, isn't this exactly what is done by *all* software on the Internet which provides information? You make a request for information or data, either by clicking a link or typing a command, and the software at the other end responds automatically. It's no wonder the terms daemon and server have become blurred.

Another blurry distinction: client and host

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As if that wasn't confusing enough, some programs can act both as client *and* host programs, because they can receive data from other sites on the Internet and also supply information to people who request it. Some sophisticated IRC programs can act as hosts, and there are some surprisingly easy-to-use programs such as HTTPD -- a World Wide Web server -- that will

allow you to use your home computer as a server for Web documents which anyone on the Internet can access...as long as you are connected to the Internet and the other person knows your server's address.

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What is HTML?

The most popular programming language ever

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HTML (Hypertext Markup Language) is the programming language used in creating this and most of the documents which make up the World Wide Web. Although it is growing in complexity at an astonishing rate, it is still one of the simplest programming languages ever developed, and most people who have basic word programming skills can usually turn out reasonably good Web pages on their first try...provided they use good software for the job.

In fact, if you look at HTML as a programming language instead of simply a method of formatting text, it is the single most common and widely-used programming language in the world. In 1995 the world quite literally took with a passion to the task of converting billions of paper documents to the HTML format for access on the Web, and this task is likely to continue for several years to come.

HTML is actually a stripped-down language designed for simplicity and ease of use. Its parent language is called SGML, or Standardized General Markup Language, which many people believe will eventually be the document formatting language not just for the World Wide Web, but for all kinds of word processing and document exchange. SGML is not in wide use though, and HTML is evolving so quickly that it may surpass its parent in flexibility and versatility by the end of 1996.

An evolving standard

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At this writing, the standard in the industry is HTML Level 2.0, but that's not how most people who write Web pages see it! Netscape Communications, the designers of the Netscape Navigator Web browser program, have been the most active in adding new formatting commands, known as tags, to HTML's arsenal, as a means of adding more punch and versatility to Web documents. These extra goodies have become part of the *proposed* HTML 3.0 specification -- keep in mind that HTML 3.0 as of November, 1995 is not a true standard -- and by 1996 many of them will be part of the full scope of HTML's official capabilities.

There are no HTML resources supplied with First Train for the Internet at this time. Programmers love to share their tricks, and there is an enormous amount of information on virtually every corner of the Web if you want to pursue Web page authoring at more depth.

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The Internet Lexicon

{ewl ew256bmp.dll,ew256bmp,intlex.bmp}If you purchased a Tourist Class ticket or better, your copy of First Train also includes the junior version of a computing and Internet lexicon called The PC/Internet Lexicon. Day Excursion passengers have only the Internet Lexicon. It contains an enormous collection of Internet, networking and telecommunications acronyms, terms and phrases, as well as email and chat abbreviations. It is this lexicon which is used to display the definitions of all the highlighted, clickable terms sprinkled throughout First Train.

This resource will provide information more quickly than any online Internet search, and should be your first choice when trying to figure out the meaning of a new piece of netspeak. It's not as complete in some areas as the online dictionaries, but in other areas it contains more detail than any resource we've seen anywhere.

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You'll find this icon for the Internet Lexicon in the **First Train for the Internet** program group of **Program Manager** (First Class Tourist Class only), and you might want to refer to it often as you learn more about your computer. We even refer to it frequently ourselves, and we wrote it.

The PC/Internet Lexicon included with First Class and Tourist Class packages contains the complete lexicon of over 3,000 computing and Internet terms.

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EFF's Guide to the Internet



One of the best all-around guides to the Internet is the Electronic Frontier Foundation's **Guide to the Internet** by Adam Gaffin. The EFF has made this available free to all from their site in the US. It includes a lot of information which will only be of use to you if you're using a UNIX shell account, but it also contains some very well-written information and explanations of Internet services.

If you've been having difficulty following many of the concepts described here, perhaps you're someone who learns best by hearing two points of view and putting them together. If that's the case, you should find this guide, which comes in program form, indispensable. It won't tell you how to install programs, but it will provide a lot of help with the services your Internet software is designed to use, and it's very funny in spots!

If you have the First Class or Tourist Class package, you received a copy of the **Guide** with First Train. If you have the Day Excursion package, you can still get this superb reference for free when you get an Internet account. We have point-and-click links to the latest Windows version of the **Guide** on the First Train support page at our World Wide Web site.

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The Jargon File

A funny and fascinating guide to geekspeak



If you'd like to learn even more about computing, or just want to have a handy reference to a large number of computing terms, **The Jargon File** is a gigantic collection of more computing terms than you'll ever want to know. It also includes a wealth of fascinating computer-related trivia, history, humor and other information. It was used extensively as a source of information when we assembled our own PC/Internet Lexicon.

The Jargon File is an enormous file as ordinary textfiles go (2Mb in size at last check), and for most purposes the Internet Lexicon should contain all the information you're likely to need, but it still makes an excellent addition to your Internet information resource collection. Tourist Class and First Class travellers with Internet accounts will also find a form for searching an online version of The Jargon File for specific terms.

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Help with online dictionaries and lexicons is available from the **Fact Finder Page** of the online section of First Train (First Class/Tourist Class only).

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What is the Internet?

{ewl ew256bmp.dll,ew256bmp,world.bmp}There's no easy answer to that question. We can tell you its hardware configuration, lay out its theoretical basis, describe its services, offer strict dictionary definitions and much more, but none of these will adequately explain to you exactly what the Internet is and what it can do for you.

This is something you'll have to determine for yourself, because in a very real sense the Internet is whatever you decide it is. The simplest way to describe the Internet is as the world's largest-ever network of computers, all linked dynamically and each with the capability of being both providers and consumers of information. But that gives you absolutely no clue about the adventure that awaits you.

Instead we'll leave this for you to define as you go along. But if you're really serious about having a strong theoretical understanding of what the Internet is all about and where it came from, the document linked to the help button is here to answer that question

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This document contains a fair bit of computer-ese, but If you can get past the language, this document is the best answer we've seen to the question: *What is the Internet?* and is considered by many to be *the* newcomers' introduction to the net.

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Essential computing terms and concepts

{ewl ew256bmp.dll,ew256bmp,vlibrary.bmp}The terms described in this section are used repeatedly throughout First Train, and you'll need an understanding of all of them at some point. If you don't want to learn them now, you'll be given other opportunities at various points throughout the software to come back and get the information you need.

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What exactly is meant by...

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[Bits, bytes,
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[Installation,
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This is a collection of important words and concepts every computer enthusiast needs to know. In this section, you'll be offered detailed explanations of many critical concepts and terms useful to anyone computing in the late 1990s. You'll also be offered other resources to enhance your understanding and skill. As always, go as far with this as you feel necessary for the task at hand. There's probably far more information here than you need, but better to have it and not need it than to need it and not have it.

Even if you're not a beginner, you'll probably find a lot of interesting trivia and computing facts you didn't know before. This page will help you get a lot more out of the hardware and software you have by letting you focus less on what it is and more on what it does.

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📖 Essential terms

What are bits, bytes, kilobytes and megabytes?

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A bit is the smallest amount of data you can have on a computer. A bit can be either a 0 or a 1. It's like a switch...one switch...that can be on or off.

A byte is eight bits, or a combination of eight on-off switches. It sounds pretty meaningless until you see bytes as similar to LED letters and numbers. Think of each segment is a bit, and the combination of these segments, on or off, make up all the letters and numbers in your computer's alphabet.



Here are all eight bits shown as **on** or **1**, which might represent the switches necessary to display all segments in our eight-piece (8-bit) LED display. It appears here as an 8 with slashes in the two loops. Naturally if they were all set to **off**, all segments would be invisible, creating a blank or "null" character. (Every computer's alphabet reserves at least one such character.)



Here, two segments have been turned **off** or **0** to create the letter R.



And here, three segments have been set to **0** to make a 6 character.

These eight segments combine to make all the letters in the most basic PC alphabet: the eight-bit *character set*. This isn't a perfect example of how it works, because some of the characters made from combinations of these segments won't look like anything you would recognize as a normal character. What's important is not so much that you understand all 256 possible combinations, but that your computer does. Most software simplifies the translation so that all you need to know are the alphabet, numbers and punctuation keys on your keyboard.

Here's where things get a little strange

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A kilobyte might logically seem to be 1,000 bytes. It isn't. Instead, it's 1,024 bytes, and it's interesting the way this works. These multiples are actually exponents, or powers of 2. 8 is 2 cubed (2 to the 3rd power); 1,024 is 2 to the 10th power. Here's where it gets interesting...not to mention confusing, since kilo- almost always means 1,000 in other contexts.

A megabyte is a million-plus, or 1,048,576 bytes, or 2 to the 20th power.

Gigabyte, the current level of measurement used for PC hard disk storage, is a billion-

plus; 1,073,741,824 bytes, or - naturally - 2 to the 30th power.

Terabyte, more often used theoretically than practically, represents a trillion-plus bytes; 1,099,511,627,766 to be exact. *Tera* here has nothing to do with three, since it represents 2 to the 40th power.

What's interesting is how close these base-2 exponents come to being base-10 large round numbers, and how each three additional zero's is exactly 10 powers of 2 higher than the previous three.

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What is memory...exactly?

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There are more than a dozen types of memory in the average PC today, including static, extended, video, shadow, upper, cache, virtual, and a few others. But there are two specific types of memory you need to know about. If you don't know about them, then you can't know your computer's capabilities.

RAM memory

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The first type is called RAM memory (Random Access Memory), or chip memory as it is sometimes referred to on the First Train. RAM or chip memory is a collection of millions of switches stored on the computer's chips. These are extremely fast switches, able to turn on or off millions of times a second, and they require electrical current to stay fixed in either the on or off position. The contents of your RAM memory disappear every time you turn off your computer.

RAM memory exists to help programs run and run quickly enough to be usable to you. It is possible to have a working computer without RAM memory chips, but it would be dreadfully slow.

Storage memory

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The second type is storage memory, and almost no one calls this memory any more. It's simply called storage, disk storage, or disk space, because this type of memory uses your hard disk or floppy disks to hold data rather than the chips themselves.

If your computer had to process information using only your disks, it would take at least 100 times longer for almost every computing task, so this type of memory is only used normally for long-term storage of data.

Short-term and long-term memory

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Think of your computer's chips as short-term memory that changes in content thousands of times a second with each new task the computer performs, and disappears every time you turn off the computer. Think of disks as long-term storage that might only change a few times a day. In fact, most of the data on your disks will never change at all.

Your computer can use chips to store some data over the long term, but long-term chip storage is extremely expensive. A 1.44Mb floppy disk costs about fifty cents. A megabyte (a million bytes) of hard disk storage costs between thirty and fifty cents. A meg of RAM in chip form (almost all PC RAM chips are sold as modules called SIMMs, or Single In-line Memory Modules) cost about \$50 in July of 1995.

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What's the difference between a hard disk and a floppy disk?



If you've never seen the inside of your computer, you might not know that there is another disk drive inside that you can't access by hand and will usually never see from the front panel. This hard disk (also called a hard drive by some oldtimers) is actually one or several metal disks -- not the flexible plastic type -- usually about three inches around and vacuum-sealed in a steel case.

The difference between these hard metal disks and the floppy disks and compact disks you feed your computer from the front panel is a lot like the difference between a cheap audio tape and a high-performance metal cassette. Metal tapes sound better on a tape player because they can store more audio information in the same amount of space. Metal disks work faster in your computer because they can store more data in the same amount of space than regular floppies. In fact, today's hard disks can store the equivalent of the contents of thousands of floppy disks.

Storage for now, storage for later



The hard disk is the disk you use most often for storing your files. The hard disk is what holds Windows, DOS and all of your most-used programs. Floppy disks are only commonly used today for keeping backup copies, distributing new software, moving files between computers, and sharing data with friends or colleagues.

Floppy disks are also much slower than hard disks. If your computer had to start Windows from data stored on floppy disks instead of a hard disk, you might have to wait up to five minutes before being able to run programs from Windows 3.1's Program Manager or Win95's Start menu, and wait an additional minute to five minutes when running any new programs from Windows.

Both floppies and hard disks are usually defined by how much data they'll hold, or how much disk space they provide for storing files. Hard disks can come in dozens of different sizes, floppies in just a few. Storage space is measured using the same units as memory -- bytes, kilobytes and megabytes -- because disks are nothing more than a way to store information that can't be stored permanently on your computer's memory chips.

"Data expands to fill the container"



Five years ago, 20 to 40 megabytes (20Mb) was considered a standard size for most hard disks, and people wondered how they could ever fill that much space. Today, most experts recommend a minimum of 500 megabytes of total hard disk space on your system if you plan to run Windows or OS/2 and at least 100 megabytes if you just use DOS. The latest version of WordPerfect alone will overflow an old 20Mb hard disk, and it can consume twice that amount of space if you install the Windows version rather than the DOS version.

There's an axiom among computer professionals: "data expands to fill the container". Essentially what this means is that if you spend much time with your computer, it won't matter if you have 100Mb or 10Gb...eventually you'll run out of room. We recommend that serious Windows users have hard disks of at least 500Mb, and you will probably find anything less than 300Mb difficult to work with if you get serious about using the Internet.

Maintenance-free media



Hard disks are maintenance-free. They are hermetically sealed and extremely sensitive to dust, so in most cases they'll never need cleaning and can't be repaired if they break down. Fortunately hard disks have become extremely durable over the last decade, to the point where you might be able to drop a brand-new hard disk on solid concrete and still use it. Ten years ago, people were afraid to even touch their computers while they were running for fear of damaging delicate hard disk mechanisms.

Floppy disks are also considered to be maintenance-free. When either a floppy disk or a hard disk stops working, it's almost always cheaper to dispose of it than to make any attempt to repair it.

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There is an extensive guide to understanding floppy disks and formatting available elsewhere on the First Train by clicking this help button (First Class/Tourist Class only).

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What are format and formatting?



Formatting has two meanings in computerdom. The first has to do with the arrangement of data on a disk, and the second concerns the arrangement of data inside of other data. The only type of formatting you need to worry about for your first month or two with a computer is disk formatting, and hopefully you won't even need to deal with that.

The format is the layout -- or floor plan if you prefer -- that disks use for arranging their files and data. Floppy disks and hard disks need a magnetic floor plan so that the data stored on them can be arranged in an orderly manner. Tapes used in tape backup drives and CDs also need a format. (In a sense, even your computer's memory chips need a format, but this is something you'll probably never need to know about.)

Formatting is usually a once-in-a-lifetime experience for a hard disk or floppy. Once it has been done, it rarely needs to be redone. Disks are magnetic media, just like cassettes and videotapes, and all magnets tend to weaken with time and use. But by the time a floppy or hard disk's magnetic strength drops below useful levels, the hard disk is usually so old and so small compared to the latest products that it's usually more sensible to dispose of it than to reformat it.

The different types of formats

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Each different computer type has its own method or "formula" for formatting floppy disks and hard disks. A disk formatted for an Apple Macintosh won't work on an IBM-compatible running DOS, Windows, UNIX or OS/2 without re-formatting or the use of special software designed to read Mac disks. The same is true of IBM-compatible disks read on a Mac.

There is only one surviving standard size of floppy disk in use on today's IBM-compatible, down from four standard sizes used no more than a couple of years ago. There are still billions of floppies in three other sizes in common use though, and it may eventually be useful for you to know what these standard sizes are.

Hard disks on the IBM-compatible don't have a storage size standard since they aren't generally transferred from one computer to another. Each manufacturer decides based on their own test results the ideal size and format will be for their hard disks, and these special parameters are applied by your computer's hardware when the disk is formatted. Don't worry about your hard disk's floor plan though. If it wasn't already formatted, you wouldn't be reading this page.

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There is an extensive guide to understanding floppy disks and formatting available elsewhere on the First Train by clicking this help button (First Class/Tourist Class only).

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What is the difference between software and programs?



Let's start by defining what makes up a program. A program is a chain of commands that get carried out by a computer. It's a series of instructions that starts, does its thing, and stops. It can perform its duties this either with or without further instructions from you, depending upon how it was designed.

Software

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Before we define software, let's look at hardware first. The bolts that hold a door on its frame are hardware, but practically speaking so is the rest of the house, from the concrete foundation to the roofing tiles. A bolt on its can't do anything. You can't normally use it to eat ice cream, talk to it or make it do your dishes. It has one purpose and one purpose only: holding up your door. But the whole house is something you can work and play with, something you can apply in many different ways.

Software in your computer is like the hardware that makes up your home. It has a specific purpose, and the sum total of all your software is what gives your computer the power to do all the many things it does for you.

Programs



A program is like an automatic door latch. The latch may open and close at your command, but it needs the bolts and other hardware which make up the sum total of the door and latch mechanism before it all functions properly. The automatic latch by itself is useless without a door to attach it to.

The latch mechanism is a piece of hardware, but of naturally not all hardware is latch mechanism. In the same way, programs are all software, but not all software is a program. In fact, most software isn't a program.

Picture files and word processing documents are both software, but you can't run a picture file or start a word processing document because they normally have no mechanisms in them for starting on their own. What you start is the program designed to handle that particular type of data. Just like you apply the latch to the task of opening and closing the door on cue, you apply a program to the task of viewing or altering data. (This is why programs are often referred to as applications.)

Binaries and executables



Two other terms used to describe software are binaries and executables. Executable is just another word for program. A binary file is generally considered to be any non-text type of file. There are a total of 256 characters available in the alphabet of today's PCs, Text generally uses

only the first 128 characters in that alphabet. The other 128 characters are either considered special characters for text formatting or used for creating non-text data files.

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What is the difference between DOS and Windows?



Both DOS and Windows qualify as programs. But they are special types of programs known as operating systems. They have to follow the rules laid down by your computer, but unlike most other programs, they are also allowed to make the rules for how other programs must behave when running on your computer. Think of operating systems as a digital dwelling and your software as the furnishings.

Operating systems are the programs or collections of programs which act as translators between your computer's chips and disks and your programs (or, if you like, applications). They are pretty useless on their own, like an empty house with no furniture. They only become useful when other programs apply them to specific tasks.

DOS versus Windows



DOS and Windows are both different types of operating systems. DOS is the granddaddy of personal computer operating systems, and Microsoft's MS-DOS is still the most popular OS in the world.

The difference between DOS and Windows is much like the difference between a tent trailer and a ranch home. DOS is the tent trailer. It can be dressed up in many ways, moved easily from place to place and made livable, but it's hardly a place where most people will feel comfortable setting down roots. Windows, on the other hand, provides all the comforts of suburban living, with the main disadvantage of being difficult to transport from place to place. You can copy the basics of the DOS operating system to a floppy disk in about ten seconds, and have room left for many programs. You can't even fit the absolute basics of Windows on a single floppy disk.

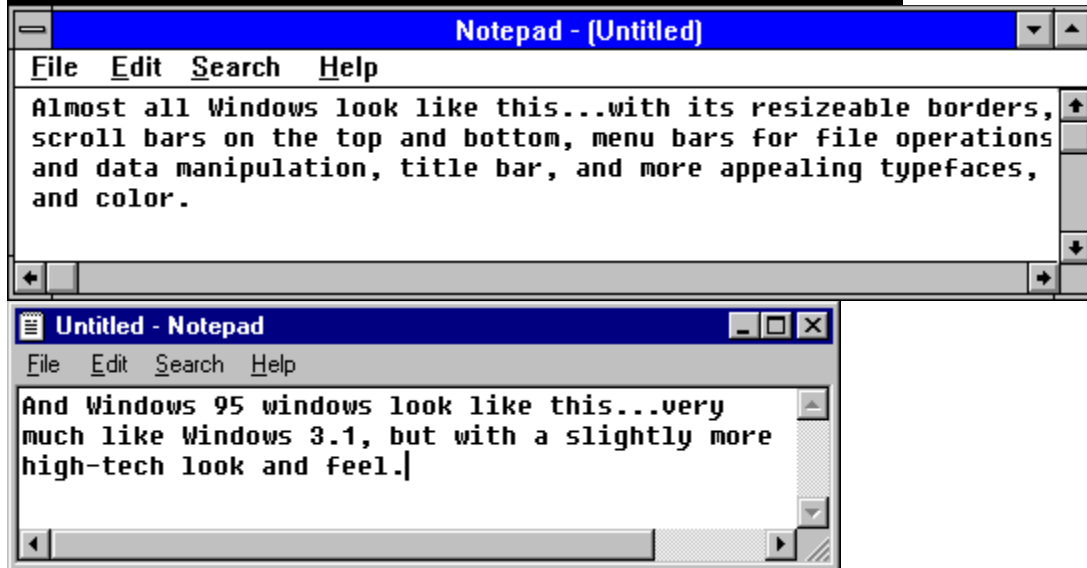
DOS will do just about everything Windows will do, for all practical purposes, except run more than one program at the same time. Like a tent trailer, it becomes uncomfortably crowded with more than one occupant. With a little fancy interior decorating you can make DOS look like Windows and feel like a ranch home, but eventually you run into the severe limitations of such an illusion. Unless you have highly sophisticated software designed for the purpose (DesqView is one such program), you can't run two programs at once in DOS. Windows will easily allow you to run two programs at once -- or twenty -- provided it has the real estate, or memory, to work with.

How do you tell the difference between DOS and Windows?



It's actually very simple once you have seen both systems in operation. DOS and Windows have two very different appearances. When your computer first starts up, everything you see until the hourglass appears on your screen is DOS activity. You can also run DOS programs from within Windows. You can tell you are running a DOS program in most cases because all of your normal windows will disappear while the DOS program is running and be replaced by a much less pleasing-looking screen layout.


```
[Windows] E:\7\> This is what DOS looks like...  
[Windows] E:\7\> ...when you run it from within Windows.  
[Windows] E:\7\> Most DOS programs do not use icons,  
[Windows] E:\7\> graphics or Windows' fancy typefaces.
```



Confused? Blame the advertising agencies!



Understanding the differences between operating systems, and the difference between the OS and the software it is designed to use, is made considerably more difficult by the way DOS, Windows and nearly all other OS' are sold. The actual operating system software for DOS and Windows need only a select few files. But there's no glamour in selling an operating system you can't do anything with.

Think of it from the publisher's point of view. If you had just invented the house, how would you market it? A big, empty house will look pretty meaningless to people who have spent their lives in tents or sleeping outdoors. What will make the house appealing is showing how it can be put to use, with furniture and decorations. We all grew up understanding what houses and apartments are and how they are used. Most of us did not grow up with an understanding of the difference between operating systems and software.

For more than a decade it has been traditional for publishers to package new operating systems as fully-furnished homes, complete with bundles of programs you can use right away. DOS comes with an editor, games, a simple programming language and a range of file manipulation tools. Windows comes with word processors, simple databases, games and a paint program. But **Paintbrush** and **Program Manager** are not part of Windows, not strictly speaking. Instead, they are applications or furnishings, ways you can apply the Windows operating system in a useful manner.

Internet can also be thought of as a new operating system, even though in practice it is actually more like a bundle. In order to make it appealing to you, since you probably have no idea how to make productive use of it, most providers supply you with a suite of furniture to make it livable right away.

Until Windows 95, you needed both Windows and DOS

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Here's where things become especially confusing. Until the release of Windows 95, Windows itself wouldn't operate on the average home computer unless you also had DOS. This arrangement was like having a two-bedroom home that could only be entered through your tent trailer. The idea behind this arrangement was to allow Windows to be fully compatible with your old software, so that you could dispose of your army cot and folding chairs and purchase a queen-sized bed and livingroom suite when you were ready to do so.

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Unfortunately, this arrangement also made many of Windows' operations ugly and, quite literally, as slow and cumbersome as having to use a tent trailer to gain access to your ranch home. You can be glad those days are over...provided you can afford enough memory "real estate" to give Windows 95 a nice yard to sit in.

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What's the difference between files and directories?



Practically speaking, the difference between a file and a directory is the same as the difference between a letter and an envelope or file folder. A file is like a letter. It's what holds your information. The directory is the envelope or the file folder. Its sole purpose is to organize individual documents and files.

Technically speaking, a file is any sequence of useful data that has a beginning and an end, can be altered, and can be moved from one place to another in one piece. A directory is nothing more than a marker on your disk that allows you to quickly locate specific files or groups of files.

It is only an accident of history that resulted in files and directories being called by these names. If computers had developed in a different way, we might be calling them parts and boxes, objects and containers, particles and molecules, or even soldiers and platoons. All these models have the same underlying meanings, and any of them could have passed into common usage.

How files and directories are organized



Think of a floppy disk or hard disk as a big filing cabinet. You can put all kinds of letters and objects inside of it. It can even contain other envelopes that hold still more objects. Every directory on your hard disk is like an envelope, and every one of these digital envelopes has its own label that describes what it contains. Files also have labels, or names, so that they can be identified as easily as directories can.

Your **WINDOWS** directory is one example of a directory which contains other directories. In fact, it is probably the fattest file folder in your hard disk's filing cabinet. Inside of your **WINDOWS** directory, you will find literally hundreds of files, plus at least one other directory -- another file folder or envelope -- called **SYSTEM** which contains even more files needed by Windows and Windows' programs.

A directory can never be a file, and a file can never be a directory. There are ways to make them pretend to behave like each other, but down on the surface of your hard disk where it counts, directories are never more than markers that behave like containers for data.

The origins of the file/directory model



The idea for the file and folder model came from the origins of computers. They have largely been developed and refined on university campuses and the research departments of industry, and the most similar models to computers in both environments are the mountains of paper the employees of these institutions are required to manage. Most of the developers were somewhat insulated from the day-to-day business of the institutions that employed them and probably had less experience with file folders and filing cabinets than they had with directory listings and catalogs, so directory came into popular usage rather than file folder.

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By the mid-1980s, developers began to realize that the notion of directories confused many people, and several new computers that emerged at that time, in particular the Apple Macintosh and Atari ST, chose to use a file, folder and cabinet model to describe files, directories and disks. Unfortunately, the directory concept stuck on the IBM-compatible and lingers to this day, and many people still look at this as proof of how inferior products can still find ways to dominate the market.

Remember Sony's Beta videotape? Many experts believe it is still a better system than VHS.

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What is a shell?

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You already know what a seashell is. It is designed to hold the creature who lives in it and make its life easier. In terms of your computer, shells have pretty much the same purpose. They are programs whose reason for existence is to make other programs easier to live with.

DOS itself is a shell...a shell for the chips in your computer. But even if you were a DOS expert, you would be totally lost if you had to communicate directly with DOS. You would need to think and communicate in a completely different way in order to use your computer. So DOS uses its own shell program, a program called **COMMAND.COM**, as an interpreter. **COMMAND.COM** traps your mistakes so that you can't bring DOS to a crashing halt by typing the wrong command at the wrong time. It also traps the mistakes of other programs, and for exactly the same reason. Most useful of all, it communicates, or at least tries to communicate, with you in something that might occasionally look like plain English.

Windows has its own unique shell. In fact, it uses several. **Program Manager** is the shell that sends start program messages to the Windows operating system. But when Windows 3.1 wants to talk to your hard disk, it has to talk to DOS first. When you run a DOS program from within Windows, there is another layer of shell between the program and DOS itself. DOS talks to Windows which in turn talks to DOS again.

Even this software uses a shell, a program called **WINHELP.EXE** which loads helpfiles such as this one into it for browsing.

If all this is a little too confusing, think of shells as interface software or interpreters. Regardless of how they look, all shells are designed for this basic function.

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What is a path?

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A path in computer-ese is just what you probably expect it to be: the trail that leads you to the data you're looking for on your hard disk. What's confusing about paths is the way they're described.

Let's start with a real-life example of how paths work. Imagine that you are standing on the corner of 1st St. and 1st Ave. in your home town and you want to go to the bakery, which is at 1772 13th St. The streets and avenues in your town are numbered in sequence, so as long as you know the street address, you can figure out how to get just about anywhere from anywhere else. To get to the bakery you have to walk to 13th Street, turn, and walk sixteen blocks down to number 1772. The address of the bakery is also a path for you to follow.

Your hard disk works in the same logical fashion, except that your hard disk probably behaves more like your real hometown. The bakery probably isn't on 13th street, and 1772 may not be sixteen blocks from 1st Avenue. It may be at 1772 Main St., meaning that you have to know how to get to Main St. before you can find the bakery.

Here's an example of a path for a file you have on your system right now called **USER.EXE**.

C:\WINDOWS\SYSTEM\USER.EXE

It's just like a street address in reverse. **USER.EXE** is the bakery, the specific location you want to get to. **SYSTEM** is the part of town it resides in, Windows is like the borough, and **c:** is like the state or province.

Getting to **USER.EXE** from where you are now is like getting to the bakery from another state or country.

Your starting place is your keyboard. First you have to enter your **c:** drive, then proceed to your **WINDOWS** directory, then into another directory called **SYSTEM**, and finally stroll through your **SYSTEM** directory until you spot **USER.EXE**.

The exact path is a direct, nonstop flight to your data



Knowing how to type exact paths is a lot like being able to take direct, nonstop flights from anywhere on your system to anywhere else. When you type **c:**

\WINDOWS\SYSTEM\USER.EXE at the keyboard, it takes you directly to the file you requested with no delays. The key to being able to do this is to understand path syntax, the navigating language used by your computer.

Unless you use specially-designed software to streamline the job, paths on DOS and Windows computers always use the same syntax, just like your street address. Your address reads like this:

Your Name,
Street Number, Street Name,
City, State, ZIP

DOS and Windows paths read like this:

DRIVELETTER:\FIRST-DIRECTORY\NEXT-DIR\ETC\FILENAME.EXTENSION

It's nothing more than an unusual way of typing an address. There are a few simple rules you need to follow, though.

All drives are one letter, followed by a colon and a backslash (\). All directories between the top of the drive and the file you want to access must be included in the path and typed exactly as they are spelled. Directories and files have a maximum of eight characters, followed by a dot and up to three more characters. The dot and the extra three characters, called an extension, are optional. Most files use the extension; most directories do not.

There's no way around it...you have to know these rules. You can't type your address as Anytown 64, terry 12002 doe, USA, Proudfoot Suite 106 Lane and expect your mail to be delivered properly, and you can't mix up path syntax on your computer and expect to find the file or directory you want.

Two types of paths? Not really...but...

[C:]

A path is a path, but the water has been muddied a lot over the years. Sometimes you'll hear something referred to as a partial path or a directory path and other times you'll hear of full path. In the example we just used, **C:\WINDOWS\SYSTEM** is the directory path because all it does is point to the directory, or street if you prefer, where the file is located, not the full address of the file itself. Full paths also include the name of the file.

Can you handle a little bit more mud? There are also two ways to type directory paths: with and without the final backslash. And the worst part about it is that you never know whether you were supposed to type the last backslash until the program tells you whether or not you've made an error. If you want to play it safe, don't use any trailing backslash when typing paths to directories where you want to hunt for files. Just type the name of the directory and leave it, like so: **C:\WINDOWS\SYSTEM**

Can you handle a bit *more* mud? Here's where DOS plays a really rotten trick on all of us. If you were looking for a file called **SYSTEM** in your **WINDOWS** directory, you'd type it exactly the same way as you would type it to look for the directory called **SYSTEM**!

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Believe it or not, this particular feature of DOS was actually intended to make it *easier* to use.

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What are zip and archive files?



Archive files are data files which have been specially processed for long-term storage or transmission. Archives are created either by joining a large group of files together into one single file which can be split up later, or by shrinking one or more files using special software so that they take up less space on a disk or require less time to transmit over a network or telephone line.

ZIP files are compressed archive files created with a particular program designed for the job. This program is usually called **PKZIP.EXE**, but there are other programs which can do the same type of job. On a few of the pages on First Train you'll be introduced to a free program called Stuffit Expander which is designed to work within Windows. You can also use PKZIP and PKUNZIP, which are DOS programs released free to the public by PKWARE for non-commercial use. (Commercial users such as ourselves must pay a licensing fee.)

How compressed archives work



Archive compression programs shrink files before joining them so the archive file will use less space than the original. It's like a form of digital trash compacting. But unlike a real trash compactor, compression software used for archiving can uncompress the original data to its original, usable state whenever you want to use it.

Compressing files for archive purposes takes time, but it saves disk space. It has become less of a concern since disk storage has gotten so inexpensive, but it is still important in areas when time and data transmission speed are uncomfortably slow. This is why almost every piece of new software you get from the Internet, including the graphics which make up Web pages such as this one, are transferred to your computer in compressed form.

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If you'd like to learn more about how data can be reduced in size and restored to its original form without loss or change, click here to browse a much more detailed guide to data compression wizardry (First Class/Tourist Class only).

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Install, uninstall setup, and configure

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Think of it this way. You install your new VCR by putting it on the right shelf. You set it up by connecting the cables. You configure it by programming the remote control.

With software, installation is the process of putting the files that come in a particular software package in their proper locations on your hard disk. Depending on the package, you may have had to install it from floppy to hard disk, and then install it a second time to its proper destination directories.

Uninstallation is the same as removal. uninstalling refers to removing the files and setup information for a software package from your system.

Setup is the process of properly connecting the software to your computer...linking it to the right printer port, the right printer, the mouse or joystick, setting the menu type, choosing which monitor to use, selecting the Windows or DOS version, video card type, amount of memory needed, and arranging all of the other basic operating features that might be required by the program to work most effectively on your system. (By the way, most programs will only require you to know about one or two of these particular features.) Setup is also known as initialization, so called because during this process the software is figuring out what its initial settings will be before getting its final customizing touches.

And customizing is what configuration is all about. It's where you, the user, get to tailor the software to your tastes to whatever degree the programmer has allowed. Common configuration options include: warnings or no warnings for certain operations, custom colors for different parts of the screen, sound or no sound, window size, mouse cursor shape, and the overall look of the program's window.

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What's a prompt?

[C>] Prompts, in DOS and Windows, are your computer's way of asking you *What now?* Newsmen use prompters to remind them of the next part of the story they're reading when they don't have it memorized. Teachers prompt students for answers by asking them questions about the current topic to jog their memories.

DOS and Windows prompt you for responses in several ways. Most of the better software makes it easy for you to tell when you are being prompted, but not so the ordinary DOS prompt.

If your computer hasn't been configured with a built-in menu system, you'll see this every time you boot:

C:_

It might also look like this:

C:\WINDOWS_

...or even look as complex this:

C:\GAMES\GOLF\PGA_TOUR\COURSES\MYCOURSE\BACKNINE_

(The section on paths will tell you what this strange code means.)

This is called the DOS prompt, but it is also known by users as the C prompt (or the A or B prompt if it's a floppy disk drive). Technically it's called a command prompt, because it's DOS' way of prompting you to give it some sort of command. Many people feel it would have been a lot more effective if it looked something like this:

"I'm ready in the C:\WINDOWS directory. Type your command on the line below. If you need help, just type HELP. What now? _"

(Unfortunately, it was Friday afternoon at 4:00 p.m. when the research department brought this particular idea up at the product development meeting...or so the story goes.)

All you really need to know about the DOS prompt is that whenever you see it, you are probably not in a program. (Type **EXIT** and press the Enter key if you want to find out for sure. You might be shelled out to DOS by the program you were just using.) Sometimes you will get DOS prompts from within programs by accident if you press the wrong key, and you might think you've quit your program when in fact you've simply run another program -- the DOS shell called **COMMAND.COM** -- from inside it.

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What's a boot?



Boot is actually short for an ancient computer term (if any computing term could truly be called ancient) called bootstrapping. When a boot is happening, the computer or program is running its own internal software -- pulling itself up by its own bootstraps, so to speak -- to prepare itself to work for you.

Boot, in computer-ese, isn't a thing. It's an action. Booting is the act of starting a program, a part of a program, or your whole computer system. You can boot programs, hardware, or procedures which are offered within individual programs.

Whenever you double-click a Program Manager icon, you're booting a program. Whenever turn on your computer's power switch, you're booting the hardware. Each of individual messages you see while the computer goes through its boot process are readouts of how parts of the software themselves are booting.

A little about system booting



System booting is an important term for every user. When you boot your system, you are turning on the hardware and starting the software. There are two ways to do this on most computers, and they are known as cold booting and warm booting.

A cold boot starts with the power switch off, in other words with the system's hardware cold. A warm boot is used to restart a system which is already running. When you press the **Reset** button on your computer's case (it's not a **Power** switch), you are warm-booting your system. You can also warm-boot from the keyboard by pressing the **Ctrl**, **Alt** and **Delete** keys all at the same time. This restarts most of the internal software without turning off the fan, the power supply, the central processor chip (CPU) or hard disk, and it's a much faster process than cold-booting. In some circles it's known as the three-fingered salute.

A cold boot requires you to turn your computer's power switch off and turn it back on again. Most modern computers don't need to be left off for several seconds as many oldtimers suggest except when you're cleaning up a virus problem. You may have heard that you can also perform a cold-boot from the keyboard by pressing **Ctrl+Alt+Delete** plus the **Shift** key, but this will not usually clear out bad data in things like modems and sound cards. You have to completely power down to reset those components.

If it helps, think of it this way. Powering down your computer completely to restart it is like giving it a cruel, cold boot to the backside. Pressing the less violent **Reset** switch is like a more forgiving, *warm* boot to the behind.

Just a reminder: if you ever have your computer crash while you're online with your provider, all the warmth in the world probably won't reset your modem!

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What is a modem?

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Modem, strictly speaking, stands for MOdulator DEModulator. Unless you have a direct Internet connection through a digital phone line, a modem is the device either attached to the outside of your computer or mounted inside of it which connects your computer to the telephone system and ultimately to your Internet provider.

Almost everything that happens inside your computer is a series of 1's or 0's being moved from place to place to accomplish various tasks. Phone lines don't take well to binary information, but right now they're the best means we have of connecting with Internet providers.

Modems were developed as a means of converting digital computer data into an audio signal that can be sent through a telephone line. You've probably heard the sound created by your modem; it sounds a little like radio static. What the modem does is encoded the 0's and 1's that make up all computer information into a MOdulated audio signal. The modem at the other end of the line DEModulates the signal and DEModulates it back into its original binary form.

Modems use the same basic principle used to carry music over radio waves. You might recall that AM stands for Amplitude Modulation and FM for Frequency Modulation.

Modems will probably be all but obsolete in the next five years as telephone and cable systems rewire themselves for digital transmission. In the meantime, they are the best means we have of getting Internet and other online services into in our homes.

Trivia

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The fastest modems in common use are almost one-tenth as slow as the digital phone lines available in areas where the phone company has the hardware installed. The reason they're so much slower is that the phone system is designed to handle a narrow frequency range. All the trebles and basses are cut out of your phone signal. Basses interfere with signals on other lines, and trebles are too fragile and require too much technical precision to be transmitted reliably. If telephone lines had the kind of frequency response you hear on a reasonably good stereo, we might all be using 100kbaud modems by now instead of the 14.4 and 28.8kbaud modems which are the current market standard.

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What is UNIX?

Here's the straight scoop on UNIX from **The Jargon File**:

UNIX: /yoo'niks/ [In the authors' words, A weak pun on Multics] *n.* (also `Unix') An interactive time-sharing system invented in 1969 by Ken Thompson after Bell Labs left the Multics project, originally so he could play games on his scavenged PDP-7 (a very old model of computer). Dennis Ritchie, the inventor of C (a programming language), is considered a co-author of the operating system. The turning point in UNIX's history came when it was reimplemented (meaning rewritten or re-coded) almost entirely in C during 1972 to 1974, making it the first source-portable OS. (*Source stands for source code, which is the basic text information used to create almost all computer programs from scratch.*) UNIX subsequently underwent mutations and expansions at the hands of many different people, resulting in a uniquely flexible and developer-friendly environment. By 1991, UNIX had become the most widely used multi-user general-purpose operating system in the world. (*DOS is a single-user operating system.*) Many people consider this the most important victory yet of hackerdom over industry opposition.

They explained it better than we could. The only thing we might add to this explanation is that most Internet service providers of note in North America use UNIX as the operating system on their host computers.

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What is a BBS (Bulletin Board System)?

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Strictly speaking, a BBS is any central computer designed for exchanging information between users. It's not the same as a server because it is meant more for interactive exchange of information than for use as a fixed, unchanging database.

Practically speaking, BBS' are the most basic level of online service. They are usually dial-up services which you access with a modem and an ordinary terminal program. Once you are connected you can send and receive messages with other users and exchange text and non-text data without having to connect one-on-one. BBS' generally offer the same features as the Internet but on a much smaller scale.

Where the online adventure began

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For most online veterans, BBS' was where their adventure began. Long before there were inexpensive dial-up Internet services, or even online services such as GENie, CompuServe and America OnLine, there were thousands of companies and private computer owners who offered their computers for public or invitation-only access using a modem. Most corporate and hobby BBS' were open 23 hours a day (the other hour was reserved for system maintenance and for retrieving inter-BBS mail) year-round, and offered their services either free of charge to all or at a nominal fee which was used to pay for the hardware and telephone bills.

BBS' remain popular alternatives to online services for many reasons. Besides the obvious reason (most are free if you have a modem and a local telephone line), they are usually highly specialized and offer a volume and quality of information and discussion on certain subjects that can't be equaled by commercial online services. A local bulletin board devoted to automotive hobbyists, for example, might contain several times the total amount of information available on automotive topics from even the largest online service. This occurs because the owner/operator and the users of the board dedicate their efforts to collecting and sharing information on just this topic.

Over 100,000 little online services

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How popular are BBS'? According to some estimates, there have been at least 100,000 public and private BBS' in continuous operation North America for several years now, and probably many more than that. It's safe to say that at least a million bulletin boards have come and gone over the past decade. You name it, from brownie recipes to accountants who deal exclusively with the medical community, either there is or was at one time a BBS devoted to that specific subject.

BBSing joins the Internet

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BBSing has been a culture unto itself for many years with its own codes of conduct, language and traditions. But the BBS scene is changing rapidly. It is now possible to open up BBS' to low-cost TELNET connections via the Internet, many of the most popular BBS' are going

international where before they were once almost exclusively local.

Making a board available for TELNET access costs money for the operators, and telephone rates even for hobby boards have skyrocketed in recent years since phone companies began charging a higher rate for BBS line rental. More and more BBS' are asking for donations before they allow you to access the more interesting areas of their boards.

These fees are often well worth the investment. Increasing exposure via the Internet for BBS' devoted to unusual subjects can only result in an improvement in the variety and quality of the information they offer.

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What are viruses and trojan horses?

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There are few more misunderstood subjects in computing than viruses and trojans. Let's clear this up once and for all.

A computer virus is program code which is created for the purpose of spreading itself. Viruses don't have to be destructive to data or hardware. All they have to do is spread. A virus could be as simple as the many joke viruses which have been circulated, which do nothing more than pop up on your screen for a few seconds, say something like:

HAHAHA! Gotcha!

This virus was created by the Parting Shot Group.

BOYCOTT PANTS!

...and then disappear forever, without doing a trace of damage to anything but your nerves.

{ewl ew256bmp.dll,ew256bmp,eraser.bmp} Some viruses, such as the dreaded Michelangelo, can erase every bit of useful data you have in the time it takes to boot your computer. And unless you have antivirus software to detect the problem, you won't know what until it's too late.

A trojan horse is a program which carries data designed to operate without the user's knowledge. Remember the original trojan horse, the Greeks' gift to the King of Troy which carried soldiers sent to destroy the city? A trojan might be just as harmless as the example shown above, or so deadly that it can actually damage your hardware and destroy your data.

Most trojans do not carry viruses and do not reproduce themselves except when you copy or share the program containing the destructive code. Trojans tend to be more common today than viruses.

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This button will take you to the superb **Computer Virus Myths** document by Greenburg and Rosenberger, one of the all-time classic ghostbuster articles on viruses and trojans and part of your **Insurance and Medical** package.

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This help button leads to the **Virus Awareness Kit** which will tell you much more about what viruses and trojans are, how they work, how safe you really are, and show you precisely what you can do to protect yourself.

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What is a hacker?



Hacking is usually defined as the process of finding out how things work and what can be done with them. It is believed that the term came into popular use with computers because learning to use some of the earlier software and hardware often felt a lot like hacking one's way through heavy underbrush with a machete.

It is generally agreed among veteran computer users that the term hacker is more synonymous with daredevil, tinkerer or explorer than prankster, vandal or spy. Right now, you are hacking your way through Internet, so technically speaking that makes you a hacker.

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Hackers are not demons in human flesh whose only purpose in life is to cause problems or other computer users. The media has weighted its coverage heavily on the side of destructive hackers and paid very little attention to constructive hackers. This imbalance has become so severe that the mere mention of the word hacker can strike fear into the hearts of average people.

To put it another way, there are users and there are hackers, and practically anyone getting involved with Internet at this point in time can consider themselves to have more than a little hacker blood in them.

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What are SIGs?

{ewl ew256bmp.dll,ew256bmp,mail2.bmp}Sig has two computing meanings, one specifically Internet-related and the other related to computing in groups. This help button will take you to the first definition which is located on a different page.

SIG is an acronym that stands for Special Interest Group. SIG is also spelled lower-case as sig, and the term is used to describe any group of computer enthusiasts who gather to share information about a common interest. That interest is usually computer-related, but sigs can be formed for virtually any purpose.

Message areas on bulletin boards and online systems are often referred to as sigs when the messages are about specific topics. Computer clubs often have many sigs to encourage the various interests of its members. It's not uncommon for large clubs to have more than a dozen, including sigs for programmers, novices, gamers, Mac users, OS/2 users, graphics fans and MIDI/music lovers. USENET newsgroups are also occasionally referred to as sigs (many feel that this is not a correct usage of the word) since they tend to focus on specific topics and issues.

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Windows 3.1/3.11 comes with its own glossary, which you may not have realized was on your hard disk if you didn't read the manual or stumble across it. It contains brief explanations for more than 200 different terms relating to Windows and its components and operations, as well as some interesting information on other aspects of your computer. If you cannot find its icon in **Program Manager**, you may wish to add this icon to your **Accessories** group. It's a very simple, point-and-click guide, although its explanations are not always the best for novice users.



If you need help installing the icon, a section of the **Pre-trip shape-up** will walk you through the process step by step with full illustrations. Click the help button if you'd like to try this exercise now.

If you purchased a Tourist Class ticket or better, your copy of First Train also includes the junior version of another computing lexicon called The PC/Internet Lexicon. It contains a long list of acronyms and computing terms not included with Windows' own **GLOSSARY.HLP** as well as an extensive Internet lexicon with all kinds of useful information. You'll find its icon in your First Train program group, and you might want to refer to it often as you learn more about your computer. We even refer to it frequently ourselves, and we wrote it.

The Internet Lexicon included with First Train is an introductory version of the complete lexicon and contains only about a third of the terms, phrases and features of the complete version, but you should still find it quite useful. If you'd like to obtain a copy of the complete lexicon, you'll find ordering information from the main menu of this program.

At the time of writing we were negotiating to make Phil Margolis' superb PC Dictionary available to First Train users at a special price. If you'd like more information on this program, write or email us at the addresses provided elsewhere in First Train.

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Skills you'll need for First Train



There are a couple of skills you can learn in just a moment or two which will make your trip much smoother. A lot of what you'll want to do will involve switching between this software and another program on your system. There is a way to do this quickly and easily using the **Alt+Tab** keys on the keyboard, and if you don't know how to do this yet, it would be an excellent idea to learn how now. The second skill involves working with Windows **Help**, and it's actually two skills in one. It involves history and bookmarking. Because you will be moving around a lot from topic to topic to fill holes in your knowledge, you'll often get lost, or at least disorganized, if you don't have a ready method for finding your way back to your seat on the train. Knowing how to use history lists and bookmarks within Windows **Help** can be very useful for keeping yourself organized.

Click the title for the skill you want to learn, or click one of the bars at the bottom if you don't want to bother with this. The "help with **Help**" topics will open a second copy of the help window to guide you through the ins and outs of Windows **Help**, and you can use these as samples to learn how to switch between programs if you like (First Class/Tourist Class only).

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[Tips for using Windows 3.1 Help history and bookmarks](#)

[← Last topic](#)

[Tips for using Windows 95 Help history and bookmarks](#)

[← Last topic](#)

[Switching between programs \(Windows 3.1\)](#)

[← Last topic](#)

[Switching between programs \(Windows 95\)](#)

There are a couple of skills you can learn in just a moment or two which will make your trip much smoother. A lot of what you'll want to do will involve switching between this software and another program on your system. There is a way to do this quickly and easily using the **Alt+Tab** keys on the keyboard, and if you don't know how to do this yet, it would be an excellent idea to learn how now.

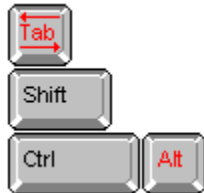
The second skill involves working with Windows Help, and it's actually two skills in one. It involves history and bookmarking. Because you will be moving around a lot from topic to topic to fill holes in your knowledge, you'll often get lost, or at least disorganized, if you don't have a ready method for finding your way back to your seat on the train. Knowing how to use history lists and bookmarks within Windows Help can be very useful for keeping yourself organized.

 **Pre-trip shape-up**

 **Last topic**

Switching between programs

An indispensable trick for Windows 3.1



The first skill you need before you can start working seriously with First Train is the ability to switch between one running program and another while you're working with Windows 3.1 or Windows for Workgroups. This is a very important skill, especially for working with programs that take up the whole screen or don't have buttons to minimize the window.

One of the nice things about Windows is that it lets you run several programs at once, but in order to make use of that feature you have to know how to switch between them. If you hold down the **Alt** key (*Please don't do it just yet*) and tap the **Tab** key, you'll see a box pop up in the center of your screen with an icon and the name of another program. It might be **Program Manager**, Tabworks or **File Manager**. If you keep tapping **Tab** while the **Alt** key is held down, you'll see names and icons for every program currently running on your computer flash by in the center box.

As soon as you see the program you want to use shown by its name and icon, simply release the **Alt** key and Windows will instantly switch you to that program. Microsoft's programmers named this feature *CoolSwitch*.

Putting it into practice



Now we'll put this into practice. As soon as you finish this paragraph, Hold down **Alt** and tap **Tab** until you see **Program Manager's** icon in the center box. Then tap it again until you see the icon for First Train. If you release the **Alt** key at that point, it will look like nothing has happened, because you'll still be here in First Train. Try it and see.

But something *has* happened. You will have switched through every program currently running on your computer, and eventually returned to First Train.

Now try it for real. Hold down the **Alt** key and tap **Tab** until you see **Program Manager's** name and icon. Once you see it, let go of the **Alt** key and you'll be there...right at **Program Manager**.

Once you're there, you can start other programs while First Train or another program is still running, and switch back and forth between these programs with the same combination of **Alt+Tab** switch to check these instructions as often as you need to. You'll definitely need this skill to take advantage of the help we offer you in working with other programs.

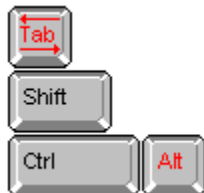
 **Last topic**

 **Pre-trip shape-up**

 **Last topic**

Switching between programs

An indispensable trick for Windows 95



The first skill you need before you can start working seriously with First Train is the ability to switch between one running program and another while you're working with Windows 95. This is a very important skill, especially for working with programs that take up the whole screen or don't have buttons to minimize the window.

One of the nice things about Windows 95 is that it lets you run several programs at once, but in order to make use of that feature you have to know how to switch between them. Windows 95 offers two easy ways to switch between running programs.

Two ways to do the job



This first method is the easiest and most effective method for switching programs. All you need to do is press and hold a **Ctrl** key and tap **Esc** (the **Escape** key) in the back left corner of your keyboard. This will bring your **Start** menu bar to the front if it isn't always visible to you. From there you can click with the mouse on the program you want to switch to. Regardless of which program you're in, even if the **Start** bar appears to be hidden, you can call up your **Start** menu by clicking **Ctrl+Esc**.

Remember that key combination: **Ctrl+Esc**. You'll be using it a lot while you work with First Train.

You can now continue and learn the expert method for switching between programs if you like, or return to the essential skills menu by clicking the bar above.

Coolswitch: not so cool in Windows 95

If you hold down the **Alt** key (*Please* don't do it just yet) and tap the **Tab** key, you'll see a box pop up in the center of your screen with a row of icons. Windows 3.1 also gave you the names of the other programs, but unfortunately Windows 95 only shows icons, so it's important that you associate icons with the programs that they represent.

If you keep tapping **Tab** while the **Alt** key is held down, you'll see an outline around one icon, and it will move from one icon to the next in sequence. Whichever program is associated with the highlighted icon is the program you will switch to when you release the **Alt** key, and you can switch back by holding **Alt** and tapping **Tab** until the icon for your original program is highlighted.

 **Last topic**

Microsoft's programmers named this feature *CoolSwitch*, but it's definitely *not* as coolly done in Windows 95 as it was in Windows 3.1, and virtually everyone gets confused when using it.

Putting it into practice

Now we'll put this into practice. As soon as you finish this paragraph, Hold down **Alt** and tap **Tab** until you see the row of icons in the center box. If you do not see any icons, you have no other programs running right now except First Train, and you may want to save this exercise for a time when you have another program running.

 **← Last topic**

Tap the **Tab** key again until the icon for First Train (shown in the disabled sample button at left) is highlighted with the box. If you release the **Alt** key at this point, it will look like nothing has happened, because you'll still be here in First Train. Try it and see.

But something *has* happened. You will have switched through every program currently running on your computer, and eventually returned to First Train.

Now try it for real. Hold down the **Alt** key and tap **Tab** until another program's icon is highlighted. Then let go of the **Alt** key and you'll be there...ready to use that program.

From there you can switch back to First Train by pressing the same combination of **Alt+Tab**, tapping **Tab** until First Train's icon is highlighted, and letting go of the **Alt** key.

 **← Last topic**

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 [Pre-trip shape-up](#)

Copying and pasting between Windows programs



If you're new to computing, and particularly if you're new to Windows, copy-and-paste might sound like something you last did in kindergarten art class. Even so, like most things you learn in kindergarten this a skill you now need as an adult. In fact, you will find this skill to be a serious timesaver as you gain more experience with the Internet.



To make effective use of this skill, you'll need to know how to switch back and forth between programs. The help button on the left will show you how it's done for Windows 3.1; the button on the right for Windows 95.



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Why you need this skill

The weak link in the "chain of commands"



Hand-transcribing text from your computer is more than just a time-consuming activity. It is also a weak link in the chain of information transmission. You can't afford any opportunities chances to make mistakes with Internet addresses and most general computing tasks. If your spelling and syntax aren't correct, many things simply won't work. The technology is not smart enough to allow for spelling mistakes and missed capital letters.

The example below demonstrates how this can happen. In just a moment we will copy and paste the address, or URL, for a new page from your web browser's window into its Location: box. If this address isn't copied exactly as it is shown, the page won't load. Period.

Believe it...the Internet is that finicky about addresses, and exact spelling and syntax are that important.

Commands, file names and even cases demand the same precision



It's not just addresses that require this level of precision. Specific commands, requests and other information needed to access Internet services demand the same level of accuracy. Windows 3.1 doesn't care whether you use upper or lower-case letters in a file name, but UNIX insists upon case accuracy. UNIX is the operating system used by most of the host computers on the net.

They can be configured so that they are more forgiving, but don't count on it. If someone told you that you could find a file called `Silly.Jokes.for.Holidays` on a remote site somewhere and you made your request as `silly.jokes.for.holidays`, it's quite possible that the remote computer would not find the file.

The list goes on and on. The point is simply this: at this time in the computing world there is very little room for error. Unless you have a perfect memory, you can't afford not to know how to copy and paste.

The **Next topic** bar will walk you through an exercise in copying and pasting and show you how it's done.

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 Copy & paste

An exercise in copying and pasting



This is a very simple exercise that will not require you to switch between programs or cause any unexpected results. Click the **Next topic** bar at the bottom to move on once you have copied some information to the keyboard.

Step 1: copy some information to the clipboard

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The help button at left will pop up a box which contains text you can "grab" and copy with your mouse and keyboard. When you click the icon, you'll see the text and instructions on exactly how this is done. If you use custom fonts, the text might not all be visible within the window.

← Last topic

An exercise in copying and pasting

Step 2: paste the new data in an appropriate place

← Last topic

If you're saving scraps of information found on the Internet, most of the data will be in plain text format. The most logical way to deal with these scraps is to copy them from the source document displayed on your screen and paste them into a database or store them in an ordinary text document for sorting and filing later. We use Windows **Notepad** for this job.



Click the help button and it will pop up a copy of **Notepad** you can use to play with for this example. We preloaded this copy of **Notepad** with more instructions in case you need them.

Did everything go as expected?

← Last topic

you did not see any text added to **Notepad** when you pressed **Ctrl** and tapped **V**, it was either because you did not select any text with your mouse from the previous window, or because you misstruck a key when you tapped **Ctrl+C** to copy what you selected. Go back and try again if necessary.

If you have already tried twice and you can't get the copy and paste operation to work for you, you might be too agitated or tired to absorb this information right now. Come back to it when you are more relaxed and you should be able to get through it. The only reason why you would not be able to complete this exercise is if your version of First Train for the Internet was not properly installed to Drive C as recommended by the setup program.

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An exercise in copying and pasting

Step 3: Let's make sure you never forget these steps!

 **Last topic**

To copy, select the text by dragging the mouse cursor over it, press **Ctrl** and tap **C**.

To paste, place the cursor where you want the text, press **Ctrl** and tap **V**. If it helps, think of this as "**Velcroing**" the text into its new location.

Bailing out...how to get the old information back

 **Last topic**

If you made a mistake and you want to get your old information back, there's a key combination for that too. It's called **Ctrl+Z** and it works in most Windows programs. It will undo the last word, letter or operation you just entered into the computer so you can try again...but *only* the last operation unless the program you are using has what's known as "multiple levels of undo". So if you discover that you didn't want to paste the new address after all, press and hold the **Ctrl** key now and tap **Z**. It's called **Undo**, but if it helps you to remember it better, think of it as **Zeroing** out the last command.

 **Last topic**

 **Last topic**

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What you can and can't copy and paste

An extremely versatile tool

[← Last topic](#)

You may be in for a nice, long string of surprises as you discover the number of ways you can copy, move and paste data within Windows. The best way to find out what you can and can't copy, and which programs will accept certain types of copied data, is to experiment.

For example, if you select pictures in many programs by dragging them with the mouse, you can copy them to the clipboard and paste them into **Paintbrush** or word processor documents to be saved, viewed or edited. Sometimes you can copy icons or even whole programs. Try dragging an **.EXE** file onto an open **Write** document and you'll see this at work...you can actually insert a whole program into the document which can then be run just by double-clicking on the icon within **Write**!

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A Windows 95 exercise and a useful tip

Saving URLs and email addresses

← Last topic

Many people like to save bits and pieces of text from Web pages and email messages for their personal files. This data can be saved as a textfile document on your computer and used over and over again without having to track down the source where you originally found it. Give it a try. If nothing else, this will give you a feel for how to move text information back and forth between Windows programs.

Here's the URL location of a file which was included as part of First Train. Its format is identical to the format of URLs you'll see on the World Wide Web, and it works on any computer where First Train Tourist Class or First Class is installed.

file:///C:/FIRSTRN/COPYPAST/THISISIT.HTM

Grab this URL with your mouse by clicking at the start of the line, dragging (holding down the mouse button), and releasing the mouse button at the end of the line. Don't be concerned that this text looks a little different; regardless of how the typeface (or font) looks, it will copy to your clipboard just as it did before. (Unfortunately, you cannot grab text right out of a helpfile with Windows 3.1/Windows for Workgroups.)

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Now switch to **Notepad**, a word processor, works program, or any other program you use for taking notes or writing letters. If you click the help button at the start of the paragraph, it will automatically launch **Notepad**. As soon as you see the flashing cursor: | press your **Ctrl** key and tap the **V** key to paste the new information into **Notepad**'s window.

A tip on naming Internet address lists

← Last topic

Unless you want to keep the information (and you probably don't at this point), close your word processor and return to this page. If you do, you can save it to your hard disk. We recommend saving lists of email addresses and URLs to a file with a particular extension: **HTM** (or, with Windows 95, **HTML**). Many Internet programs will automatically recognize correct URLs and email addresses and let you click them to automatically send email or browse a Web page. You might want to call your URL and address list **INTADDR.HTM** if you use Windows 3.1 and **Internet addresses.html** if you use Windows 95.

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More information on navigating the file selector box that pops up when saving files can be had at the help topic linked to this button.

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Important information about copyrights

A little knowledge is a dangerous thing

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Now that you know how to copy and paste text from documents on the Internet into your own documents, you have just enough knowledge to be dangerous, at least in a legal sense. We encourage you to copy and paste all you like...*provided* the information you're copying is for your own use! But if you intend to share or post that information publicly, there are a few things you need to know about the law.

Copyright is a growing concern on the Internet right now. Most new users have no idea how copyrights apply to their own material or to material provided by others. Most of what you'll find on the net is yours to do with as you wish, but it's important that you know the difference between legal and illegal use of copyrighted material.



Clicking the red copyright symbol at left will take you to an important FAQ (Frequently Asked Questions) topic regarding copyrights and the Internet. Please read it. It just might save you a lawsuit.

While it might seem petty and cruel to you, the fact is that some companies are making loud noises about suing individuals who violate copyright to set an example for everyone on the Internet, and many of the targets of these threats are people who only intended to do favors for others and had no conscious intent of defrauding the copyright holder. The more you know about where your rights begin and end the better you can protect both yourself and others on the net.

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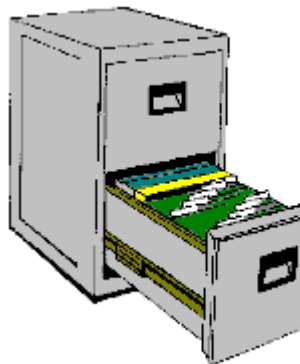
The basics of Windows file management



This section will walk you through some important skills for managing data on your computer. Return to it as often as you need to in order to master the tasks described here. You will probably find the skills you learn here will be more useful than you can imagine both in working with new information you find on the Internet and for managing the data you already have.

{ewl embh.dll,ARROW,A100}**Note:** This version contains help for Windows 3.1/Windows for Workgroups' **File Manager** only. Windows 95 also comes with a copy of **File Manager**, and it performs exactly the same functions described here but it does not support Win95's newer features. You can use Win95's **File Manager** for your Internet file management chores, but it will not give you the advantages of **Explorer**.

Select a topic by clicking the blue title for the section you want to browse.



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Why you need these skills

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You can easily get by for several weeks on the Internet with the point-and-click simplicity of Netscape Navigator, Internet Explorer, Microsoft Exchange and Eudora. But if you spend any amount of time on the net, eventually you're going to want to exchange more than just text information. You'll want to send and receive pictures, data files, try out new software or upgrade your old software. At that point you will need elementary file management skills.

It's not just the Internet that demands these skills. So does everyday work with Windows. There's no two ways about it...if you don't want to pay someone for every bit of maintenance and help needed with your computer, either you or someone else in your household is going to have to know these things. The price for not knowing is being severely

limited in your ability to get and use new data on your computer, and that limitation becomes *painfully* visible to most new Internet users within just a couple of weeks.

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 [File Manager](#)

Introduction for Windows 95 users



We have some good new and some bad news. The good news is that as a Windows 95 user, you are unlikely to suffer a lot of the problems Windows 3.1/Windows for Workgroups users experience. The bad news is that when it comes to learning file management skills, you're doubly damned.

It will be mid-1996 at least before the majority of programs available for Windows are also available for Windows 95. That is probably going to include the software you receive when you sign up for an Internet access account.

Even by then, there will still be some old standards that will probably not be upgraded to the new version of the operating system. These programs use different methods of file storage from Windows 95 and show you different types of screens known as dialog boxes when you open, save or otherwise manipulate files.

The choice in front of you...



This means that you're going to have to make a choice. You can stick exclusively with Windows 95 software, which will shut you out of a lot of superb free software on the net and probably cost you more in stores; you can learn the Windows 3.1 way of managing files and settle for its limitations; or you can learn both. It's entirely up to you.

If you have no file management skills at all, we recommend trying the second course of action, simply because the tools needed to learn Windows 3.1 skills are right here. You can always add Win95 skills to your resume at a later date. **File Manager** should be quite sufficient for most of your Internet needs, and while it's not as flexible as Windows 95's **Explorer**, it's easier to learn. Even better, the skills you learn with **File Manager** will be skills you can take with you when you start to work with **Explorer**.

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Having trouble?

Good it might be, perfect it's not

⬅️ Last topic

We tried to make this page as simple and straightforward as Web-based training can be. But it's not perfect. The problem with computer-based training is that there is no way to know exactly how much the average reader already understands or needs to know. There is always some of guesswork involved. Unfortunately that means that this page is not perfect and there may be few points you don't quite understand.

If you discover that this page is much too technical for you, you may either want to consider private, one-on-one instruction, or content yourself with the use you get out of your computer until you can find something or someone to explain these concepts in terms that you understand.

Don't take it personally

⬅️ Last topic

Don't take the failure to grasp the concepts on this page as a sign of stupidity! Not all of us have brains that take well to this kind of learning, and the older we get, naturally the harder it is to find space in our lives for one more piece of new knowledge. There are thousands of people who work on computers every day who don't know a boot from a bug, and don't need to, because they have real people around them to answer questions and help with problems. You may be tackling this material alone, and since no one is there beside right now, the authors of this page can only guess at what you need to know. Above all, take it easy on yourself. You didn't learn to drive from a book, and most people need one-on-one help with their computers at some point to get past rough spots.

So if you're ready to continue, hit the **Last topic** bar and make your next selection. If not, you have two other choices: go back to the previous menu...or *panic!*

⬅️ Last topic

⬅️ Last topic

The first skill you need before you can start working with **File Manager** is the ability to switch between one running program and another while you're working with Windows. If you already know how to use **Task Manager** or the **Alt+Tab** switch, you can skip this section. If you don't know how to do this, click the **Essential Skills** bar below to take a quick and *critically* important two-minute lesson. If you *do* know how to switch between running programs, click anywhere *but* the bar to return to your place.

You might wish to **Bookmark** your place before continuing so you can return to the **File Manager** lesson quickly once you learn these skills.



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Working with File Manager

[← Last topic](#)

Some of these skills you may already be familiar with. Focus on the skills you don't have yet. If you find you're in over your head, you can always go back and catch up.

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[Starting File Manager \(Windows 3.1\)](#)

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[Starting File Manager \(Windows 95\)](#)

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[The File Manager window](#)

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Starting File Manager (Windows 95)

1. If you cannot see the **Start** button, hold down the **Ctrl** key and tap **Esc** (in the back left-hand corner of your keyboard) to make it visible.
2. Click the **Start** button. Your program menu will pop up.
3. One of the first items on that list will say **Run...**. Select this item and a box will pop up on your screen.
4. Type **WINFILE** in this box and **File Manager**'s main window will pop up on your screen.
5. When **File Manager** is open, switch back to First Train by holding down **Alt** again and tapping the **Tab** key until you see the First Train icon. It won't matter if **File Manager**'s window fills the whole screen...you can still switch back.





Starting File Manager (Windows 3.1)

1. Hold down an **Alt** key and tap the **Tab** key until you see **Program Manager**'s name and icon in a small box in the center of your screen.
2. Release the **Alt** key and you will be switched to **Program Manager**.
3. Find the icon for the **Main** program group within **Program Manager** and open its window if it is not already open by double-clicking its icon.
4. Find the filing cabinet icon that looks like this one and double-click it to start **File Manager**.
5. When **File Manager** is open, switch back to First Train by holding down **Alt** again and tapping the **Tab** key until you see the First Train icon and program name. It won't matter if **File Manager**'s window fills the whole screen...you can still switch back.



 **File Manager**

 **File Manager help**

The File Manager window

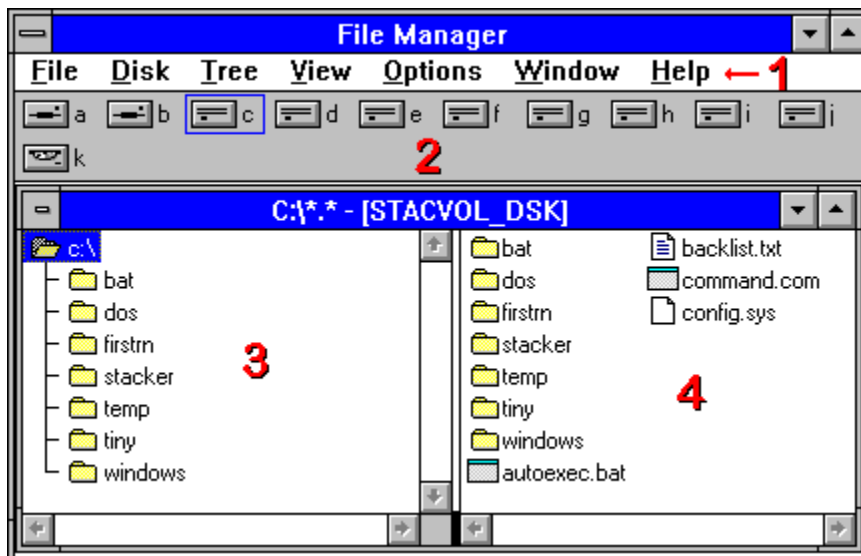
 **Last topic**

Curious about why we go into this much detail for such a "simple" skill? Click the help button to find out.

The pictures you'll see below show a shrunken version of **File Manager**. Your **File Manager** window will probably look much larger. Windows 95 users: your version will look slightly different, but all the important elements will be in the same places.

This demonstration version of **File Manager** was reduced in size so that this page doesn't crash your computer or slow it to a crawl. Even simple graphics such as these consume enormous amounts of system memory while they're being shown. Also be aware that these pictures are just pictures. They may look exactly like the **File Manager** window on your computer, but they are for demonstration only. You will have to practice on your own version of **File Manager**. Click the numbers to get a full explanation of the features.

[Click here if your File Manager looks radically different from this one.](#)



 **Last topic**

 **Last topic**

Detail is critical here because as a new Internet user *you need these skills!* You need them skill for two reasons.

First, how can you use new software you find on the Internet if you can't find it once it gets to your computer?


Second, most of the installation procedures used by programs you find on the Internet leave messes behind, and if you don't know how to clean them up, your hard disk will fill up as much as three times faster than it would otherwise. This does more than just take up space. For various reasons it also slows down your system.


Unfortunately there's no way around it...file management is something you have to know in order to effectively use software you find on the net.

You might have more elements to your version than the one shown here, but if your **File Manager** looks *radically* different from the one shown, someone has probably modified it from its original settings. If so, this material may be difficult to follow, and you may need private instruction.

There is a way to restore **File Manager** to its original factory settings, but if you needed to learn the skills in this section, the restoration procedure would be best performed by someone familiar with your computer.

At the top of the window you see a clickable text menu bar **(1)**, and below it a row of icons for all of your logical drives **(2)**. (You can have several logical drives with just one hard disk.) This **File Manager** has eleven drive icons (our graphic designer likes to make things complex), but in most cases you'll see between three and six.

On the left-hand side of the screen is a list of directories **(3)**, shown as a tree. Directories are distinguished from ordinary data files and program files by the file folder icons they use. Directories, like real file folders, don't do anything but hold files, and always appear in **File Manager** as open file folders , open and shaded folders

, or closed file folders

.

The right part of the **File Manager** window is used to list all the files in whatever directory you are currently looking at **(4)**. You can open several different windows within **File Manager** itself, but each window will only show the contents of one directory or file folder.

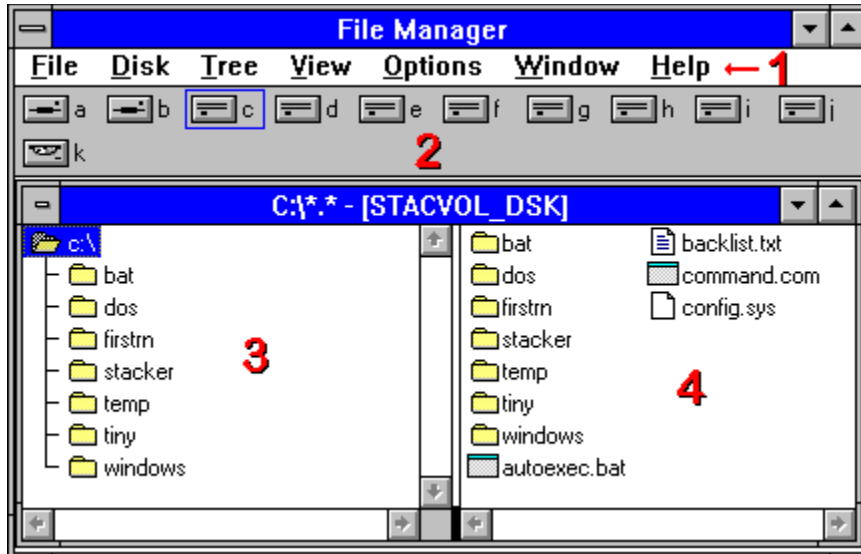
← Last topic

← Last topic

Finding the right file and directory

← Last topic

The first thing we'll do in this section is find a directory from the list on the left.



Do you see the open, shaded file folder icon at the top, highlighted in blue and labeled **c:**? That tells us that the list of files shown on the right-hand side of the screen is a list of files from the very top directory (also called the *root directory*) of Drive C.

Now we're going to hunt for a specific file on your hard disk called **CUSTHELP.HLP**. It's a toy, actually, a small program we developed that allows you to change the colors of the highlighted links in Windows help tools, and alter a few other features as well. It's also used as a sample program in the uninstaller tutorial section which you will probably get to later.

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Finding the right file and directory

← Last topic

The **CUSTHELP.HLP** file is currently sitting in a directory inside First Train's directory called **INETWARE**. Before we can do anything with that file, we have to find this directory and open it to see the file. Once you gain more experience, you can start hunting for files using nothing more than the name of the file and the directory where it is found, but until you get used to that concept, it's handy to use **File Manager**'s visual representation of the file as a crutch.

← Last topic

Before we go any further, you will need a short introduction to something called *path syntax*. A path in computer-ese is just what you probably expect it to be: the trail that leads you to the data you're looking for on your hard disk. What's confusing about paths is the way they're described. Path *syntax* refers to the structure of the language your computer uses to describe the locations of files on your hard disk.

If you already understand path syntax from your experience with DOS, Atari, Mac or Amiga, you can continue. But if this is the first time you've ever heard the term in a computing context, we strongly recommend that you browse the explanation of paths found in the **Local Dialects** page.

Clicking here will take you straight to this topic now. Click the **Back** button above this window to return to this topic when you have a *basic* understanding of the concept. It's not necessary to grasp all of it.

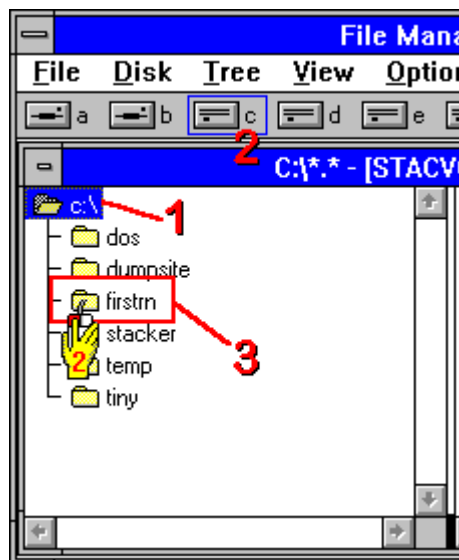
Let's track down CUSTHELP.HLP



Now that you understand how paths work, let's put this information into practice by tracking down a file on your computer. The first thing you have to do when you start **File Manager** is get oriented, and this is where the left-hand box is handy. Click the **Next topic** bar to move on when you're ready.

At the top, the **c: **, marked in blue, shows that you are looking at Drive C (1). If you're looking at any other drive on your own copy of **File Manager**, you'll need to switch to Drive C by clicking its icon, marked here by the thin blue square around it (2).

Next you have to go into one of the directories shown on Drive C, and here's where it's handy to know your way around your own computer. In this case you know the file is in the **FIRSTRN** directory, so you open the directory by double-clicking either on its name or on the file folder icon beside its name (3).



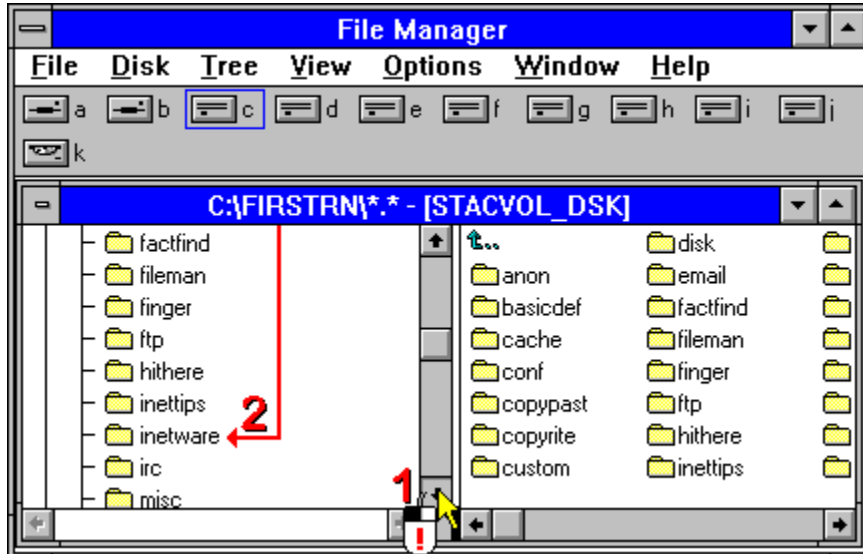
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Finding the right file and directory

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When you double-click on **FIRSTRN** you may see the list of directories get much longer, because the **FIRSTRN** directory for First Class and Tourist Class passengers contains a *lot* of subdirectories. The screen diagram below shows how the top portion of the directory list for the Tourist Class package looks. You'll see directories shown on the right-hand side of your window too, as well as the names of the individual data files in that directory. But you won't see **CUSTHELP.HLP** because it's buried one more level deep, in the **INETWARE** directory.



In order to get to that directory and see the file you're looking for, you have to open **INETWARE**, and you might not be able to see its name on your screen. In order to find the icon for **INETWARE**, you'll need to scroll down the screen by clicking and holding on the down arrow button (1), just like you've been doing here, until its name appears in the window (2).

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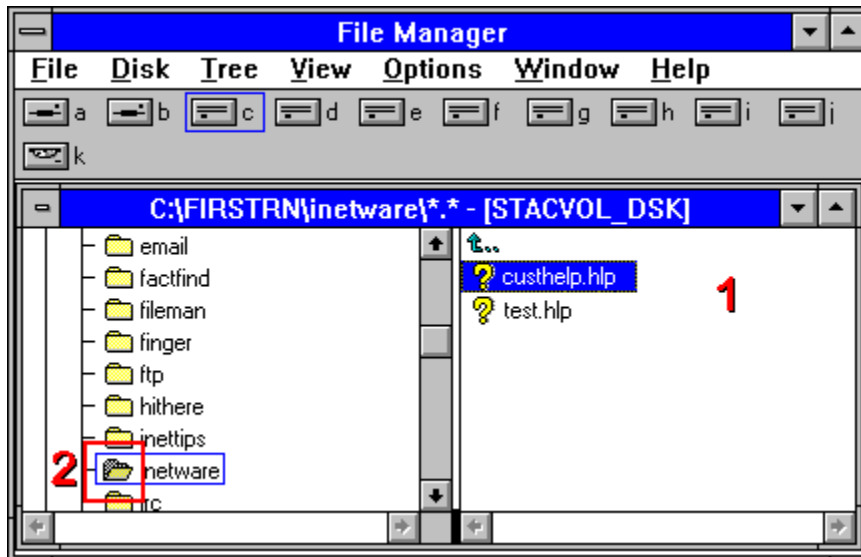
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Finding the right file and directory

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Double-click on **INETWARE**'s name or icon. The folder will open as shown in the diagram below, and its contents can be seen in the right-hand side of the window (1). You cannot gain mouse access to these files until the directory containing the files you want is shown by an *open and shaded* file folder icon (2).



Now that you've found the file you're looking for, move on to the next section. If you had a little trouble here, you might want to go over this again. There's a fair bit of learning involved in this file management business, and almost no one picks it all up their first time.

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Moving files to their proper locations

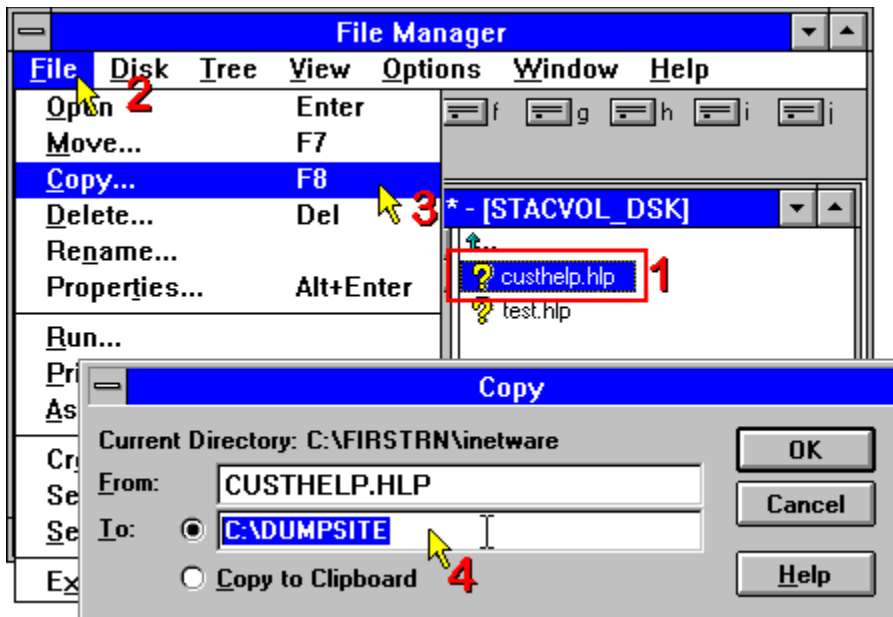
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We caution all novice users not to work on files received from the Internet without first moving them to a temporary directory on their hard disk designed specifically for this purpose, because you can create a real mess if you don't. This is what we're going to do with **CUSTHELP.HLP**: copy it -- not move it -- to a temporary directory called **C:\DUMPSITE** where we can work on it. In most cases you'll be copying your files from your **NETSCAPE** or **MOSAIC** directory, but this exercise will give you general idea of how the process works.

If you are used to working with other computers, you might think that the copy operation is as simple as clicking and holding on the name of the file, dragging the mouse cursor to the name of the directory you want to drop it into, and letting go. Unfortunately, Windows doesn't work that way, and this is not kind at all. In order to do the job safely, it will take a bit more work.

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This next illustration is a complex one, and be sure not to miss the text beneath it. Click on the numbers to learn the steps involved.



Once you get the general idea how files are copied with **File Manager**, you might want to go back to your **INETWARE** directory and copy another file, **TEST.HLP**, to your **C:\DUMPSITE** directory. It's a companion file to **CUSTHELP.HLP**. Once you have copied both files, you can try out the new toy by clicking on **DUMPSITE** in the right window to open the directory and then *double-clicking* on **CUSTHELP.HLP** to start it up. Once you have done this a few times, you'll know how to run programs found with **File Manager** that don't necessarily have icons in **Program Manager**.

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Click on the file's name or mini-icon to highlight it. **File Manager**'s most-used functions only apply to the files and/or directories which have been highlighted. As you can see here, the **CUSTHELP.HLP** file is highlighted in blue, so it is ready to be worked on by **File Manager**.

Click **File** from **File Manager**'s top menu bar to get your drop-down menu of choices.

Select **Copy** and the **Copy** dialog box will pop up.

Enter the path of the directory where you want the file. You do not need to type the name of the file unless you want to give it a different name. Just type the drive letter, a colon, a backslash, and the names of all directories --with backslashes between them -- as shown in the short tutorial on paths and [path syntax](#).

[Click here](#) to find out more about this backslash business.

The backslash after the `C:` is not needed in this case. You might have seen a lot of programs that tell you to type `A:SETUP` instead of `A:\SETUP`, but it is a good idea to get into the habit of using it. The backslashes between drive and directory names are like the spaces between words, and Windows gets much more confused by backslashes that *aren't* there than it does by backslashes that are.



Sometimes you can type just the name of the directory if you know what you are doing, but it's usually a good idea to always enter the full directory path, including the `C:\` part, in this box. This box has already been filled out to show you how to copy it to the dumpsite directory. Click the bar below to return to the previous topic.



Don't get too comfortable using the **Copy** command with files you get from the Internet. In most cases you will want to **move** them to your dumpsite directory -- not **copy** them in different directories -- once they have been transmitted to your system.

You **move** files using an almost identical process. The only difference between moving in copying is that in the first step, you click **Move** from the drop-down **File** menu instead of **Copy**.

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Saving copies of new software

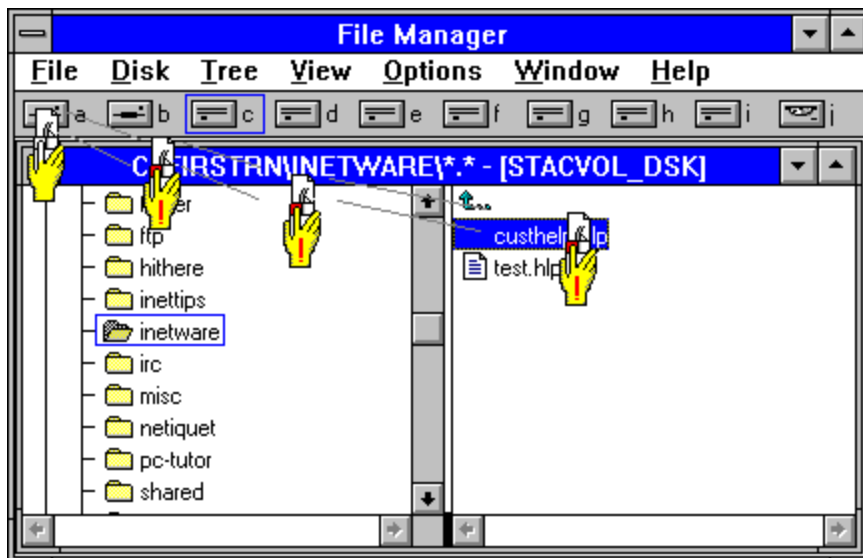
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For the sake of safety with your first **File Manager** exercise, we played a little trick on you and showed you how to do something in a way you won't ordinarily do it when you start working with software from the Internet. Click the help button to find out what that trick was.

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Before you start working with the new file, you might want to save a copy of it on a floppy disk so you can use it later or share it with friends. As you will learn in a moment, it's very easy to lose a file by accident, and some large files containing programs you can get from the net can take more than an hour to transmit from remote computers to your computer.

This job is easy if you've come this far. Can you see the grey drive icon in the top left-hand corner of the **File Manager** window below? All you need to do is put a formatted floppy disk in Drive A, click on the file you want to copy, hold the mouse button down, drag the cursor to the **A** icon (1), and let go of the mouse button as shown by this diagram. This is known as **drag and drop**.



An important note about drag and drop

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If you've had bad experiences in the past dragging and dropping files using **File Manager**, don't worry...*the file won't be moved or erased!* If you drag a file to a different directory on the *same* drive, Windows **moves** the file and it disappears from its original location. But if you drag it to a *different* drive, Windows makes a **copy** of the file on that drive and leaves the original file alone.

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Just so you know, this was yet another of the design choices made by Microsoft's developers that was intended to make Windows easier to use.

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Deleting files that you don't need

Some important theory

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Now that you've gotten the data to the **DUMPSITE** directory where you can work on it, you're mere moments away from erasing it. This isn't a cruel trick. It has to do with what you'll be doing with most of the new files and software you get from the Internet. The secret is to move these files to a temporary directory (we called it the dumptsite) where the software's installation or setup program can be run or the file be examined before it arrives at a final resting place.

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Remember that you don't have a CD or floppy disk to hold your data when you get new software from the net. If you leave that software in the location where you originally transferred it from the remote computer, it's too easy to get your new data confused with old data, especially after you unpack the archive containing the software.

A two-part installation process

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Most of the programs you'll find have a two-stage installation process. You must first unpack the contents of the .ZIP or run the .EXE file so that the program can be installed, and *then* do the installation. This leaves a second set of files behind on your hard disk which you don't want. These are the files which were originally contained inside the ZIP or EXE file, and while not all programs create these leftovers, many -- perhaps most of them -- do create them.

Fortunately, if you've followed all these steps properly, all these unneeded files will be located in your dumptsite directory. Deleting them is a snap after you've done it once or twice.

Since you still have a copy of the **Customizing Windows Help** files in First Train's **INETWARE** directory, the files in your **DUMPSITE** directory are all expendable.

The next topics show you how to do this job quickly and efficiently.

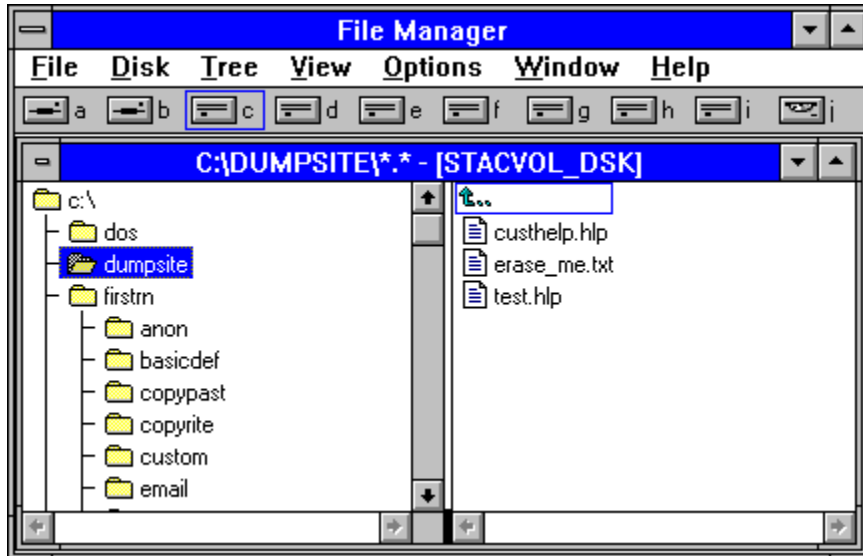
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Deleting files that you don't need

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The diagram below shows what your dumpsite directory looks like to **File Manager** after you've copied the two **Customizing Windows Help** files into it. (The **ERASE_ME.TXT** file is expendable too; it was used by First Train's installation procedure in the process of creating your dumpsite.) The trick here is to select all of the files at one time and delete them all with one press of the **Delete** key. Deleting them one at a time is easy (just select the file by clicking on it and press your delete key); deleting multiple files isn't as obvious.



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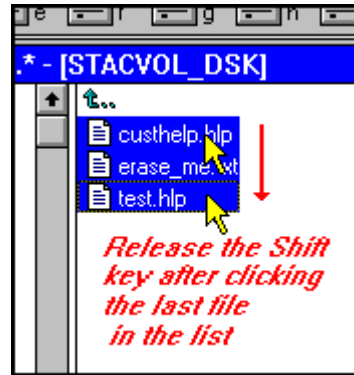
Deleting files that you don't need

Shift-clicking

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You select multiple files for actions such as deleting and copying with a trick called **shift-clicking**.

1. To select all the files in your dumpsite directory at once, hold down the **Shift** key and click the top file in the list that you want to delete. Keep the **Shift** key held down and click the last file in the list to be deleted. You'll see the whole list become highlighted, and even if the list takes up several columns in **File Manager** you can still get all of the files in one grab.



2. If you can't see all of the files you want to erase on your screen at once, you can use the arrow keys and scroll buttons to find the end of the list *even if your **Shift** key is held down!*
3. Release the **Shift** key and the files will stay highlighted...unless you click somewhere in the list window with your mouse cursor.
4. Now press the **Delete** key, and a box such as the one below will pop up. It gives you a chance to back out in case you hit **Delete** accidentally.

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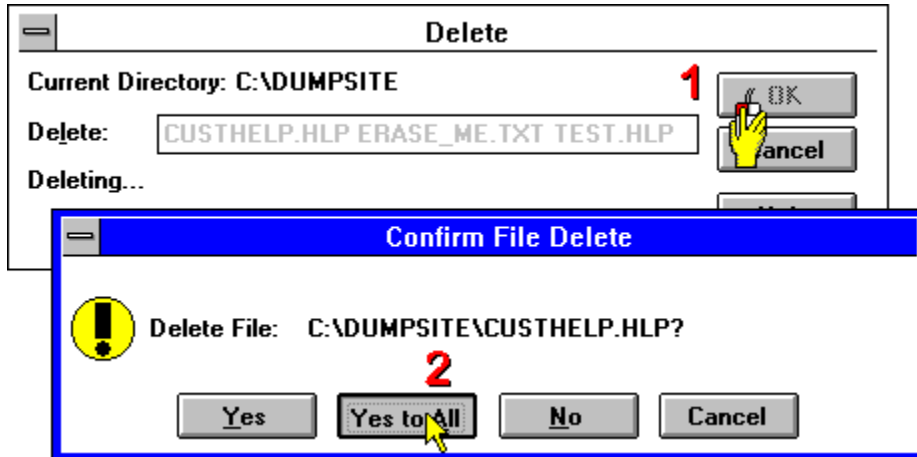
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Deleting files that you don't need

Click the red numbers below for an explanation of the two final steps.



When the job is done the boxes will disappear, you'll see an empty dumpsite directory again and you're all finished.

In closing...

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This is the end of your **File Manager** lesson, and we have some good news and some bad news to pass along at your graduation.

The good news is that you now know more about how to manage files within Windows than more than half of all Windows users.

The bad news is that you only know a handful of the dozens of actions you can perform with **File Manager**. Hopefully this is all the help you'll need to make productive use of the software you'll find on the net.

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The first box asks whether you're sure about erasing the files. You *do* want to delete these files, so click **OK**.

Another box will pop up asking *how* you want to delete them: one at a time, the whole group at once, or none at all. If you click **Yes** in this second box instead of **Yes to all**, you'll be forced to deal with this same box for every file in the list. If you click **Yes to all**, Windows will delete all of the files in one pass without bothering you again.

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Getting and managing software from the Internet

How to make the most of the thousands of free and low-cost programs available on the net

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Before you can use the free and shareware software you'll find scattered all over the Internet, you will have to come to terms with a few facts that you might not like. Software available from the Internet almost always comes in a form that you may never have seen before. In most cases, installing it is a *three*-stage process, not the one-stage process you go through with CD's and floppy disks. But once you get the hang of the process, you should find installing software from the net is actually *faster* than installing from a ready-made floppy or CD.

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Installation is only half the battle though. Managing new programs and keeping track of what's useful and what's useless is one of the biggest headaches faced by novice to expert-level Windows users. It's not made much easier by Windows 95, so here's a ready painkiller for both the old and new Windows. Click the title to jump to the topic of interest to you.

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Introduction

Please...take the time to do the job well

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If this is your first experience working with online services or installing new software which does not come on floppy or CD, we strongly suggest that you at least skim through it completely to get a feel for what's involved. There's a lot to this topic, and every part of this section of First Train is important. We want you to get started the *right* way, with the skills you'll need to recognize potential problems and prevent future headaches. Expect this entire exercise to take anywhere from a half-hour to two hours depending on your current level of knowledge about Windows.

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If this irritates you, it might help to remember that most of the available software you'll find linked to the First Train, including the Stuffit Expander used here, is free software. You don't make any trips to the store to get it. You don't have to pay extra for it either. It may also help to remember that after your first few installations, you'll probably find that this process is actually faster than installing programs from floppy disks!

The toughest part of your fitness program

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This is the most detailed training section in the whole First Train package, and the toughest for most users to get through. It covers a lot of territory, and actually teaches you *four* different skills, not just one. But with any luck at all you will only need to go over most of this material once.

A note to more experienced users

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This section was designed especially for people who have never done anything more than install new programs from a floppy disk or a CD. If you have more experience than this, skip to the sections that contain information you need. If you don't have this experience, try to stick close to the suggested structure of this section.

It will probably be no consolation at all to know that before this page was created, learning to manage this type of software was even more difficult. Most people who don't have the benefit of a private tutor or a lot of computer experience spend hours trying to figure out ZIPs, archives and install scripts. Consider yourself on the fast track to expert user status...you should be able to complete the exercises on this page in anywhere from a half-hour to an hour from now depending on your skill level.

A simple but imperfect walk-through

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We tried to make this page as simple and straightforward as possible, but it's not perfect. This is an extremely difficult subject to teach anyone. Special thanks to the people at Aladdin Systems for creating the **Stuffit Expander**, the simplest tool for managing these special files

which we've ever seen, and for making our job -- and yours -- that much easier.

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Harvesting the net's goodies

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Before you start thinking of the Internet as an expert-level scavenger hunt or a giant candy store where everything is free for the asking, there are a few things you should know about the way software is packaged for Internet distribution and what you can expect to find in the many souvenir shops on your journey.

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What exactly can you find on the net?

The world's largest software shelf

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Think of the largest software rack you've ever seen, and imagine one a hundred times larger. (A thousand times larger might be more accurate, but that figure tends to stretch people's understanding.)

There are literally *millions* of programs and software packages available via the Internet. You name it and chances are excellent you'll find something available, either free of charge or on a free-trial basis, somewhere on the Internet to fit the bill. Need a database to track the activities of your volunteer organization? You'll find several. Looking for new games? There's an unending supply. Interested in programming? The Internet is an almost endless gold mine for programmers. Enjoy graphics, sound or music? The variety of software, sounds and images may astonish you.

Don't expect the best for free

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Keep in mind that the best of the best always winds up in stores and is rarely given away free even on a trial basis, so don't expect to find a ton of world-class games, applications and utilities. But as publishers adapt their marketing techniques to the net, more and more of them are releasing free fully-functional "junior" versions of their retail packages as teasers for their retail versions.

Here are some examples. ID Software, the makers of the enormously popular Doom and Wolfenstein games, built a small empire on this marketing strategy. Enough people liked the free versions of Wolfenstein and Doom to make Doom a top-ranked retail product for months on end. Microsoft released the full Microsoft Money home accounting package free on the net late in 1995 to early buyers of Windows 95. For nearly two years, Serif offered the entry-level version of their PagePlus desktop publishing package free for the asking. And early-release first-version copies of software designed for using Internet services is available almost everywhere you look.

If you can settle for working copies of just the first part of the latest games, no-frills utilities that do the job without a lot of extras, and applications that will handle basic jobs but might not be suitable for more complex tasks, then the net will be an unending gallery of delights. If you keep your eyes open, read the reviews of the helpful net citizens who like to inform others about their free software finds, and don't mind a little trial-and-error, you can build an enormous library of useful software without spending a penny on anything but backup disks to store the software and your Internet account connect charges, and it's all legal.

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Believe it...the harvest is that rich, and you'll learn about some of our picks of the best free and free-trial software as you continue your journey with us.

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Packaging software for the Internet

Same software, trickier wrapping

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Software you get on the Internet is different from software you buy in stores. It's different because of the way it is packaged. When you buy a new program from a store, you usually get something which has been optimized for ease of installation. The same is *usually* true of software found on the Internet, but ease of installation has a slightly different meaning on the net.

Consider this. Your copy of the Windows operating system came packaged on between six and twelve floppy disks, but you only had to type one DOS command -- `A:\SETUP` -- to install it. What you may not know is that there are several hundred files on those disks. All you needed to know was the name of one of them -- `SETUP.EXE` -- and Windows handled everything else for you.

Solving the distribution problem

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Now imagine the problems involved in making modern software packages with a hundred or more files available on the Internet. *A hundred files??* Not many people have the patience to sit and transfer them one by painstaking one and install each one to its proper destination.

To make things easier, the overwhelming majority of programs available on the net are actually groups of files combined (*archived* is the official term) into one single file for quick, convenient transfer. This allows you to get a software package from the net that might contain several hundred files simply by downloading one specially-processed archive file which combines all the needed files into just one.

The problem is that special processing is required to archive these groups of files, and where most users run into difficulty is in *unprocessing* them for use on their own computer

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What is a ZIP file?

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By far the most common format for archiving and storing software for distribution on the Internet called ZIP, x-zip, or -- most properly -- PKZIP compression. Most people refer to these files simply as ZIPs because the files themselves have names ending in **.ZIP**. Almost every user eventually runs into ZIP-compressed archive files, and if you want to take full advantage of what's on the net at this time, you *must* know how to deal with ZIPs. Fortunately, some recent improvements in ZIPfile processing software have made the task much simpler for newcomers than it was just a couple of years ago.

Trash-compactors and gift-wrapping machines

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ZIP files are groups of files reduced in size and packed together so they can fit into one single, convenient file. This packing process is also called archiving. (Archiving has other meanings as well, but let's leave other definitions out of this for the moment).

Convenience isn't the whole story here. The programs which create archived files, usually called **PKZIP.EXE** or **WINZIP.EXE**, are more like trash compactors than gift-wrapping machines. They don't just combine several files into one...they also shrink the original files down to a fraction of their original size. What's even more amazing is that they can do this without causing the slightest bit of damage to the data.

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This help button leads to an extended section of First Train that teaches you more about how this data compression wizardry is accomplished (First Class/Tourist Class only).

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This link takes you to a shorter, alternative explanation of data compression and archiving.

The advantages of compression are obvious. Packing and shrinking makes ZIP files handy for storing data on floppy disks and exchanging files over a modem. Time is money, especially when you're calling long distance, and a smaller file takes less time to transfer over the phone lines, and several files combined into one are less work for everyone involved in spreading and storing them.

The problem is that it takes special software to create compressed archive files, and you must have equally-special software to restore the contents of these compressed archives to a form which your computer can use. This is because most compressed files are useless to you until the packing and compacting is *undone*.

Archive extraction: an essential skill

{bml The process of unpacking compressed archive files is called extraction, and until this job is done you don't have anything except a file taking up space on your hard disk. **UNZIP.EXE** and **PKUNZIP.EXE** are the most common programs used by the average user to extract the contents of compressed archives, and these two DOS programs are not fun to work with for most users who first learned to compute with Windows. Fortunately, **Stuffit Expander** makes this chore a snap in Windows.

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Other types of compressed files

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You can get by quite nicely for a long time on the Internet knowing nothing about any other type of archive than PKZIP-compressed archives. But ZIPs are far from being the only type of compressed file you'll find on the net.

You'll also see **tar**, or tape archive files (these usually end with **.TAR**, **.TAR.Z**, or **.GZ**) on the Internet quite frequently, which are packed but not compressed; and files that end in **Z**, not **ZIP**. In most cases files ending in **.Z** or **.GZ** were created by a program called **gzip**.

Amiga, Atari and IBM-compatible users might also run across **LZH** files, which are very similar to ZIP files and are handled in a similar fashion. But because **LHA.EXE** (the program that handles the compression) isn't used much any more, you're unlikely to run into many **.LZH** files on the net for IBM-compatibles.

Macintosh users will see **CPT**, **HQX** and **SIT** files, and while there are programs for IBM-compatibles which will extract data from these files to a Windows-based machine, nearly all of the software

The same is true for files ending in **.ARC**, **.ARJ** (the program used by the makers of *Doom* and *Wolfenstein*), and **.PAK**. Hopefully you'll never need to worry about these. There are also some new contenders to PKZIP's supremacy, including **RAR** and **UC2**, but these too are relatively rare. PKZIP is the standard.

A different type of ZIPfile

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What you *will* run into is a type of file called a **self-extracting archive**. This is a program or software package which has been compressed by **PKZIP.EXE**, **Winzip** or any of a wide range of other types of data compression software, and then altered so that it becomes a program, not just a data file.

What's nice about these files is that you don't need the programs that originally compressed the archives to handle self-extracting archives, and the more considerate folk on the net try to make their files this easy to handle. Files ending in **.EXE** are actual programs which can be run from DOS or Windows.

A case of understandable paranoia

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What's *not* nice about these files is that in the past, many malignant hackers have used this type of compressed file distribution as a way to sneak trojans and other destructive types of data into archives made available to the public. This has made a lot of Internet sites who specialize in making software available to the public understandably concerned about providing ready-to-install **.EXE** files available in their repositories. Therefore, this type of file is still not as common as it could be.

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Don't be alarmed by this! Trojans and viruses carried in self-extracting archives are rare, and

no more common today in our experience than viruses in regular PKZIP-compressed archives. When you get software from a reputable site on the net, you don't face much more risk of infection than you face when you buy shrink-wrapped software from a shop shelf.

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Getting software from the Internet: a simulation

First things first...you'll need some essential software that doesn't come with DOS and Windows

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The first thing we're going to do is get you the software you'll need to handle a ZIP-compressed archive file, show you how to find it on your hard disk and install it on your system. It's a process you'll have to go through every time you get a new piece of software from the Internet. It will take anywhere from a few minutes (if you already have most of the needed skills) to an hour or two (if you need to gain important Windows skills before proceeding) to complete this process your first time through.

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Don't let that scare you. Once you've done it three or four times it shouldn't take more than two to five minutes to set up *any* new program or software package. You'll also have skills which will come in very handy in the future not if, but when, you have to track down lost files or programs you might not have installed properly, and useful skills for working with your system that most Windows users never get.

Until you're familiar with the process, it is recommended that you use **Stuffit Expander** for handling your ZIP files. It will handle practically every type of archived file you're likely to find on the Internet, including those tricky .GZ files from UNIX-based computers, and it might also help you when you find you want to get some of the software made available on USENET newsgroups. We're going to use this package as an example to work with.

A little chore we left for you to do

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In order to make this as realistic a simulation of your actual Internet experience as possible, First Class and Tourist Class passengers will discover that we chose *not* to install **Stuffit Expander** when you installed First Train. Instead, we left this job for you so you can see for yourself how the process works. Click the **Next Topic** bar to learn more about how this works. (If you're a Day Excursion passenger, you'll have to adapt some of the information in this simulation to your situation.)

The **Next topic** bar will start the simulation. In order to prevent confusion, there will be none of the normal return-to-menu bars on the next few screens.

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Getting software from the Internet: a simulation

← Last topic

This is a sample Web browser program screen developed for First Train. This is a stripped-down, shrunken-window version of what most World Wide Web browser programs look like, and your browser is likely to be your most-used piece of Internet software. It is also the most complex and versatile piece of software you'll use.

There are several hotspots on this screen to get information on what its components do. You'll see this diagram in a couple of other sections of First Train, and we suggest getting a feel for the components at some point in your travel preparations.



It's important that you understand the whole procedure. First Class and Tourist Class passengers already have **Stuffit Expander** on their systems, but we're going to walk you through the process you would follow if you were to actually download it from a remote Internet site. You can skip this section and install it directly from your system, but it's recommended that you follow the steps shown here. It will work the same way whether it's on your system right now or not. Click the **Next topic** bar to continue the simulation.

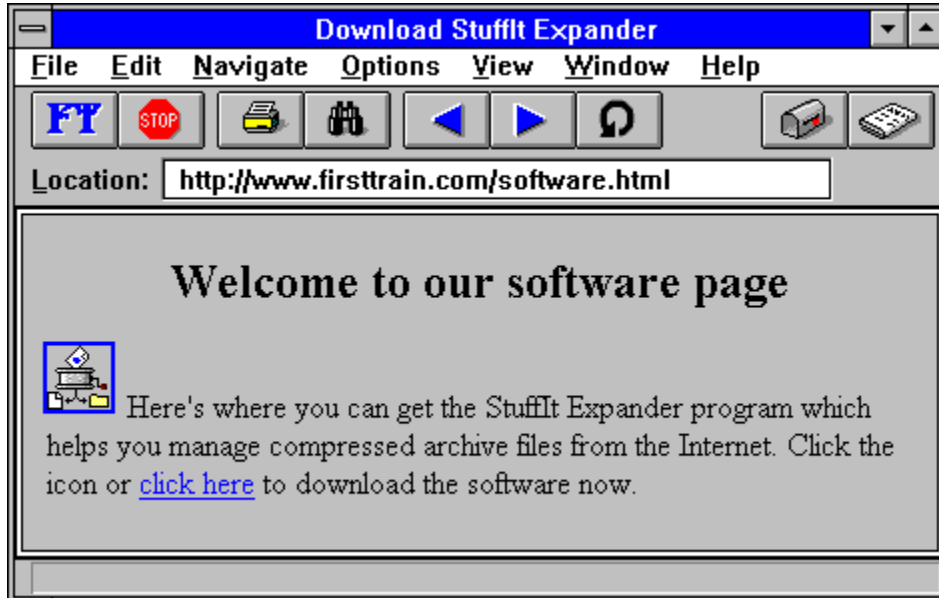
← Last topic

← Last topic

Getting software from the Internet: a simulation

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Here's your First Browser, connected to our special software page. Read the page and follow the instructions. Most Web pages are just this easy to follow.



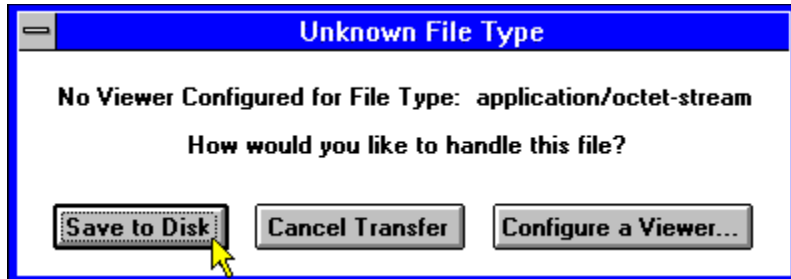
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Getting software from the Internet: a simulation

Unless your browser is specifically set up to handle this type of file, you'll see a box like this one pop up on your screen as the file transfer starts. We've already highlighted the correct choice (**Save to disk**), but it seems more logical to many people to select **Configure a viewer** since browsers usually handle unfamiliar file types with new software modules (viewers) to handle them.

This is an important point, so follow this carefully. Try clicking the **Configure a viewer** button to see what happens. Then click the **Save to disk** button to properly save your simulated file.



Note: If you attempt to download software from the Internet, cannot find the software later, and you do *not* see this box pop up on your screen, your browser is improperly configured. Please note that you cannot fix it by reinstalling the same browser software, although you can usually fix it by installing a different brand of browser. This problem is explained in more detail in the next topic.

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You wait a few minutes, and eventually you see the status bar at the bottom of your screen report that the file has finished transferring.

ZAP! Nothing happens. And when you look for the file you transferred on the hard disk, you probably won't find it anywhere. Either that, or if you use the browser as the viewer, your browser's window will fill with garbage characters which can't be saved to a usable file. That's because there *is* no viewer for these files...not yet at least. *And there shouldn't be.* This is software designed for use later, not a file to be viewed only while connected with the Internet.

This confusing point has cost tens of thousands of people untold hours of lost time and heartache. So remember...when you are getting software from the net that you want for later, **save** it, don't try to view it.

By the way, if your browser was set up incorrectly from the start, you'll never see this option box, and you may be baffled as to why you can't download from the Internet. First Class and Tourist Class travellers should consult **First Train Help's** Troubleshooting section for help with fixing this problem.

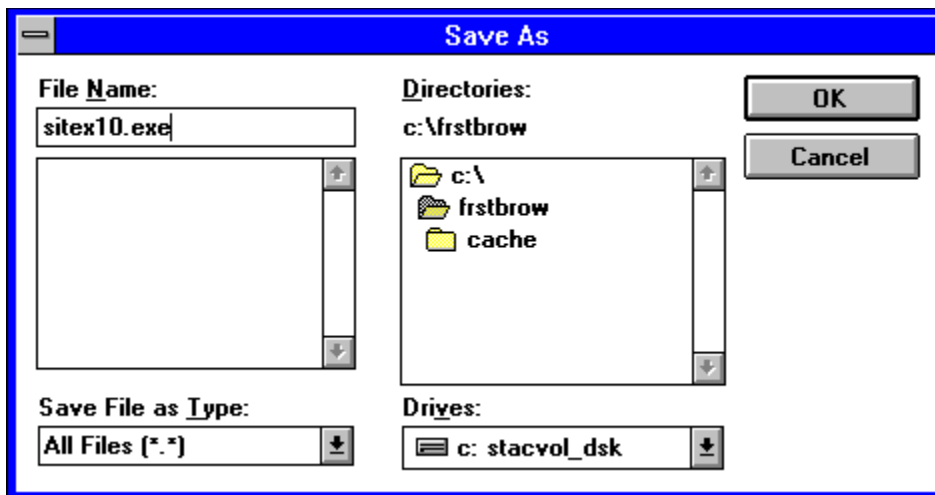
Software from the Internet: a simulation

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First Browser now knows that the file is to be saved, not viewed. The next box will ask you to select a suitable location for temporary storage of the file. We created a directory on your hard disk called `C:\DUMPSITE` specifically for this purpose when First Train was installed, and we recommend you select this directory now. Normally when the **Save** dialog box comes up, you can simply click the **OK** button and the file will be saved to the same directory as your browser, which may be fine for you.

It is absolutely, positively vital that you know where your downloaded files are going to be stored! So when you see this dialog box when you download a file from the Internet, regardless of where you choose to store it take careful note of the line of text under the word **Directories:** in the dialog box just before you click **OK**.

We're going to "force" you to do the job right here. To save the file in this simulation, you must first double-click on the [← Last topic](#) (NOTE: A single click will be enough for this simulation) so you can see your dumpsite directory in the right-hand list box, and then double-click on **dumpsite** when it appears to open *that* directory. Try it now.



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Oops...you clicked the wrong spot in the box. You need to click on **dumpsite** in the right-hand list box.

Oops...you clicked the wrong spot in the box. You need to double-click on the

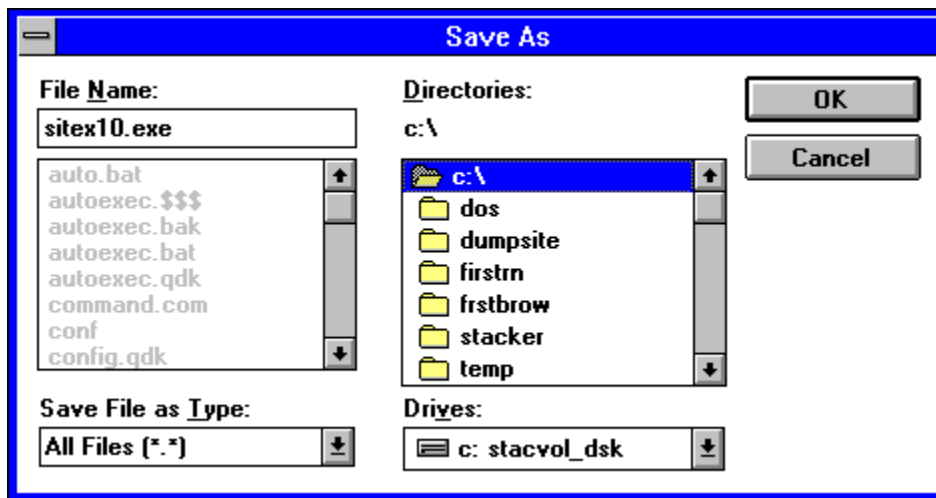
[← Last topic](#) in the right-hand list box.

Software from the Internet: a simulation

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Before you begin the transfer, one last warning about the behavior of many browsers. Once your browser starts transferring files, it might need to be allowed to complete the transfer before you can do anything else. Clicking any highlighted text or graphic may abort the transfer and force you to start over again. Test this yourself to find out how much your browser will let you get away with.

Now double-click on the folder or name for the **dumpsite** directory to open it. (Once again, a single-click is enough for the exercise.) When it's open, you can click **OK** and the file transfer will proceed.



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You've picked the wrong spot in the box. You have already opened the **dumpsite** folder, so all you need to do is click the **OK** button to start the transfer and save the file to this directory.

The directory is already open. Simply click the **OK** button to save the file.

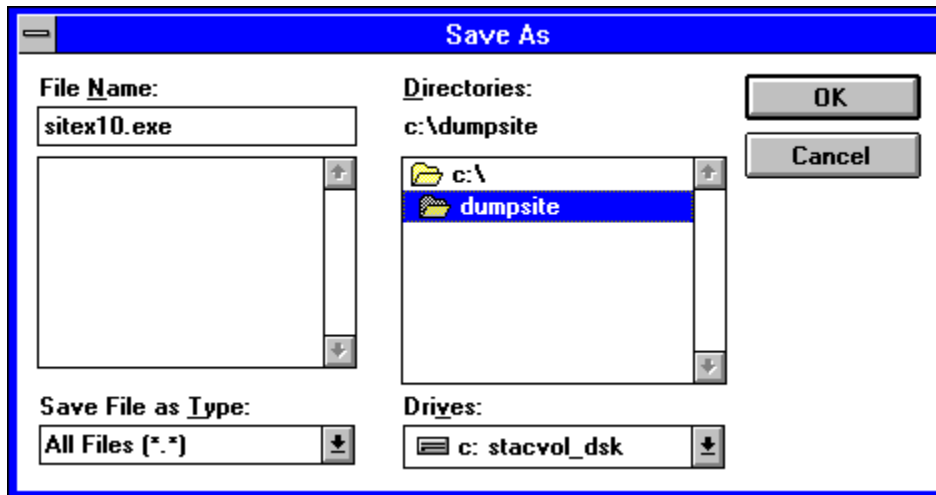
You'll need to double-click on the **dumpsite** directory or its folder icon first to open it.

Software from the Internet: a simulation

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Before you begin the transfer, one last warning about the behavior of many browsers. Once your browser starts transferring files, it might need to be allowed to complete the transfer before you can do anything else. Clicking any highlighted text or graphic may abort the transfer and force you to start over again. Test this yourself to find out how much your browser will let you get away with.

Now double-click on the folder or name for the **dumpsite** directory to open it. (Once again, a single-click is enough for the exercise.) When it's open, you can click **OK** and the file transfer will proceed.



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Software from the Internet: a simulation

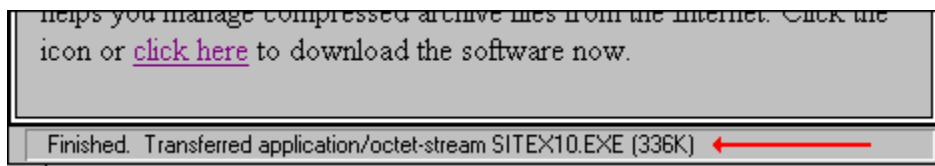
← Last topic

Success at last. Some browsers will pop up a status box to show you how things are progressing, but some of the simpler browsers will give you about as much information about the transfer as we gave you here...none. Hopefully your browser of choice will give you this information.

Now that the transfer is in progress, a warning is in order about the behavior of many browsers. Once your browser starts transferring files, it might need to be allowed to complete the transfer before you can do anything else. Clicking any highlighted text or graphic may abort the transfer and force you to start over again. Test this yourself to find out how much your browser will let you get away with.

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If this were an actual Internet file transfer, it would take between three and six minutes to complete depending on the speed of your modem, during which time you can work with other Windows programs. Some newer browsers will even allow you to load other pages from other sites while the data is being transferred. You might see the status bar at the very bottom of your browser's window say "finished" as shown in this example, letting you know that the file is ready to be used on your own system.



If you have already installed **Stuffit Expander** on your system, or you use a program such as **Winzip** to handle your archived file chores, you can return to the previous menu by clicking **Installing: the steps**. You can continue on to the **Stuffit Expander** installation and setup procedure and complete this part of the job by clicking the bar below, or move on to the next section with the **Next Topic** bar.

 **Stuffit Expander™**

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Install your first program the *right* way!



You have a choice. You can install programs...or you can learn how to efficiently store new software on your computer. Regardless of your choice, we'd like you to know how to do the job *right*.

You'll note that the summary of steps is included twice: at the start and at the end. We suggest browsing it briefly now to find out what you *don't* know and then reviewing it again when you've gone through the rest of the topics. **Please try to follow these topics in order.** Some earlier topics have information which will be needed in later topics. The only exception is the summary of steps, where you'll have the opportunity to return and pick up on what you might have missed.

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Pre-installation topics

[← Last topic](#)

[Prerequisites for this section of your fitness program](#)

[← Last topic](#)

[Preparing for installation](#)

[← Last topic](#)

[Ladies and gentlemen, start your uninstallers!](#)

[← Last topic](#)

Installation procedures and pitfalls

[← Last topic](#)

[Extracting EXE files](#)

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[A special case: EXE files created with Winzip or software packagers](#)

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[Bad files...a fairly common occurrence](#)

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[Extracting ZIP files](#)

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Non-ZIP, non-EXE file formats

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[Installing new software](#)

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Finishing up

[← Last topic](#)

[Completing the installation](#)

[← Last topic](#)

[Saving your new software to a floppy disk](#)

[← Last topic](#)

[A step-by-step summary of the process](#)

The procedures you learn here should be all the help you'll need to handle 99 percent of the software packages you're likely to want from the Internet as a Windows user. But ZIP and EXE files represent only one of several different types of compressed archives. If you want to find out more about these file types and the programs used both to create and extract them for use, there are many resources around the Internet for learning about the various compressed archive formats.

 [Last topic](#)

 [Install it right](#)

Prerequisites for this section

File Manager skills are essential for this part of the tour

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If you know how to get around your hard disk using Windows **File Manager**, you're well ahead of the game. If you don't know how to do this, the help button will take you to a page which will walk you through the steps for finding files on your hard disk and moving them around. These are important skills which you will eventually use every day. Take this lesson right now if you don't know how to navigate your hard disk yet. This page may also help you to cut through a lot of the mud if you feel like you've been wading through a swamp here.

It could take a half-hour or more to get through the **File Manager** instructional page. If you don't feel you have the patience, come back to it at another time. But if you have not learned how to find and move files around on your hard disk, we strongly suggest leaving this page for a time when you have acquired those skills. You aren't likely to hurt anything by not learning these skills, but you *are* likely to experience a lot of lost time and frustration that wouldn't otherwise be necessary.

If you're ready to continue, click the **Next topic** bar.

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Preparing for the installation

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Once the file you have requested has finished transferring to your computer (you can use **SITEX10.EXE** as a demonstration file if you like), it needs to be moved to an appropriate location before you install it, or you may have a real mess on your hard disk. The **Stuffit Expander** archive is a very clean package, producing only three files from its archive; but many archives you'll find on the net contain more than a hundred files. The full First Train package, for example, contains over *four hundred* files. The default directory where your browser stores the file is not appropriate for the work we need to do, because it is already being used to store your browser's files.

Now start **File Manager** and move to your browser's directory. (If you're using **SITEX10.EXE** as an example, you need to move to the **C:\FIRSTRN\INETWARE** directory.) The file you just transferred should be found there.

Now move the **SITEX10.EXE** file to your temporary dumpsite directory by clicking the file to highlight it, clicking File from the top menu bar and selecting Move.

If you want to save a copy of the program for use later or to share with friends (you won't need to do this since a duplicate should already exist in your **C:\FIRSTRN\INETWARE** directory), either copy it to a floppy disk or place a copy in a directory designed for the storage of new programs received from the Internet. Many users keep a directory called **ZIPs** or **DOWNLOAD** on their hard disk for this purpose. Keep in mind that you need to **copy** the file, not **move** it.

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This help button is here in case you only now realized now that you need a refresher course in **File Manager**.

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Extracting .EXE files

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To install software contained inside of EXE files all you need to do is start **File Manager**, find the file and run it by double-clicking its name.

Two possible results...one of them rather strange

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When you double-click on an EXE file, one of two things will happen. Either **a)** it will start its installation routines, just like **Stuffit Expander** does when you install it (which means that the program's author has generously created a one-step installation procedure); or **b)** your screen will blank out for a second, flash a bunch of DOS gibberish at you and blink back to **File Manager** once it's done.

If you didn't see an installation screen and instead saw your screen flash to DOS and back, here's where things will get really strange. What happened when all that gibberish flashed past your screen was this:

Where are the extracted files?

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The program ran, extracted all the files that were inside of it, quit, and returned to **File Manager** just like it was supposed to. But if you look at your **File Manager** screen, it may look exactly the same as it did before! Why don't you see the files that came out of that EXE archive you just ran?

The reason for the confusion is bad communication in Windows. The self-extractor program switched to DOS mode (if you don't understand this, the help topic linked to the highlighted text should explain it) to extract the files contained inside the archive. When the computer switched back to Windows, it didn't tell **File Manager** that new files were created on your hard disk. So if there are no new files shown, you won't see any of them until you click the grey drive icon  at the top marked **c**. Clicking the **c** drive icon "refreshes" **File Manager**'s memory, and you will suddenly see all the files that came out of the EXE program you just ran.

This is an important trick to remember since there is no **Refresh** option in **File Manager**'s menus.

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If you'd like to walk through a demonstration of finding and installing an .EXE archive, this help button will take you to the section devoted to installing and setting up **Stuffit Expander**. You might want to bookmark your position before making this jump.

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Ladies and gentlemen, start your uninstallers!

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Before you do start the actual installation, start your uninstaller utility if you have one. If you don't own a commercial uninstall utility such as Landmark or Microhelp Uninstaller or Uninstall Pro, we'd like to see you *get* one. Even Microsoft thinks they're important. With all the extras they left *out* of Windows 95, an uninstall utility was one of the tools they *added*.

The Windows 95 uninstaller is not enough

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If you have Windows 95, which includes its own uninstall utility, you might be a little dismayed to learn that this utility only works with Windows 95 programs specifically set up to use its features, and even as late as the end of 1995, most new Windows programs available on the Internet did not take advantage of the Win95 uninstaller. So while most inexpensive uninstallers leave a few leftovers and have minor cautions attached to them, even a basic Windows 3.1 uninstaller will be more useful in the short term than the one built into Windows.

Where to obtain an effective, inexpensive uninstaller

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Our uninstaller of choice is **Faros Uninstaller**, included free with your First Class or Tourist Class ticket and available from CompuServe or Internet sites. You'll find links to it at our Internet site.

This utility will pay back the time you invest learning its features several times over in time, trouble and lost hard disk space which it will save you, and we liked it so much that we volunteered to write the helpfile for Software Innovations. You won't need it until you actually start to download software from the Internet. First Train has its own uninstall routine, and **Stuffit Installer** is so effective and takes up so little space that you are unlikely to want to erase it for some time to come.

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This help button is linked to the section devoted to Windows uninstallers. You'll learn a great deal about what programs such as Faros can do for you. **Bookmark** your place before continuing if you wish to return to this section when you're done.

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Bad files...a fairly common occurrence

Still an imperfect science

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Transferring files over the Internet is far from a perfected process. Expect one file in twenty to turn out to be unusable, one in ten if you have a flaky Internet provider. Unfortunately, Windows doesn't pipe up with a **Bad File** message at the end of the transfer. You find out for yourself when you attempt to extract files from the archive or load an uncompressed file into a program.

When it comes to EXE files, the only way you can find out whether the file is bad is to run it. If the EXE has a built-in installer and the install program suddenly stops with an error message about being unable to read data, it's a bad file. If it flashes to DOS and back and you

see no new files in your dumpsite directory even after clicking the [← Last topic](#) drive button, you have a bad file.

There's not much you can do at this point except to try transferring the file again. This will only solve the problem about half the time. If it *doesn't* solve the problem, it means one of two things. The file could have been bad before it got to you, meaning there's nothing you can do about it until the administrator at the site where you found the file replaces it with a good copy. The other possibility is that your provider (or the Internet backbone network your provider connects to) is having congestion problems and your downloads are stopping before you they are completed, leaving an incomplete file on your hard disk.

Don't delete the original EXE file yet

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The EXE file has now done its work and is ready to be deleted. Leave that job until later...just in case you accidentally delete the wrong file during cleanup file and need to work with it again.

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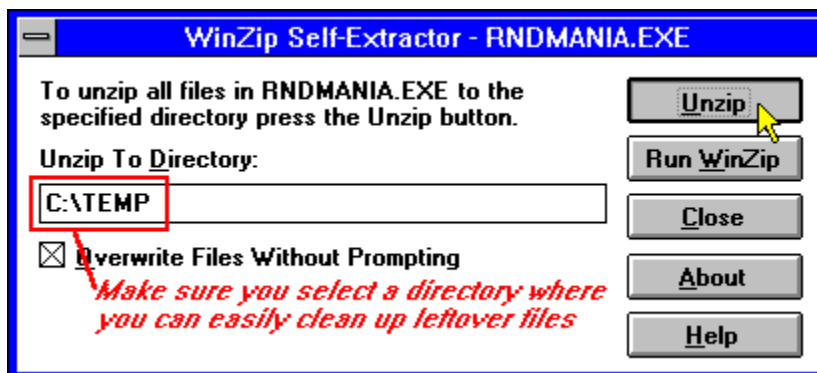
A special case: EXE files created with Winzip or software packagers

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If you've been following along by downloading StuffIt Extractor, you're about to run into a special-case situation which you should know about. You'll probably see it a lot more often in the future.

EXE files created with Winzip or some of the more sophisticated software compression tools (instead of the usual PKZIP for DOS format) have a special routine that allows you to do everything from Windows including automatically starting the installation setup program. The problem is that a few of these programs -- and that includes Winzip's special self-extraction feature -- don't clean up after themselves.

Below is an example of a box you'll see when you run a compressed EXE archive file created with Winzip. It tells you that the files to be extracted from **RNDMANIA.EXE** will be copied to the **TEMP** directory on Drive C. All programs packaged using **Winzip's** self-extractor feature do this unless there is a specific directory mentioned in the Unzip to directory: box.



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Unfortunately, your **TEMP** directory is not always the best place to put the new files. Whenever you see **C:\TEMP**, **C:\DOS** or **C:\WINDOWS** in this special box -- and only this box; don't confuse it with other dialog boxes that look similar -- type **C:\DUMPSITE** instead unless other instructions tell you otherwise. If your dumpsite directory has a different name, use that name instead of **TEMP** (for example, if you named your dumpsite directory **COMPOST** instead of **DUMPSITE**, you'd type **C:\COMPOST**). You'll very often have problems cleaning up afterward if you allow Winzip's self-extractor to extract its files to **C:\TEMP**, and if these files start landing in your DOS or Windows directory you're begging for a mess that will need professional cleaning.

Use a dumpsite directory...you'll be glad you did

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Get used to using your dumpsite directory. It will help a clean and trouble-free system stay clean and trouble-free, and it takes no more time or effort than doing a sloppy job.

IMPORTANT WARNING ABOUT FIRST TRAIN UPDATES: Updates to your First Train software use the Winzip self-extractor to make the job easier for you, and are automatically set

up to install the correct files to First Train's directories. **DO NOT** unpack updates you receive from us to your dumpsite directory. Always follow the instructions found in the email message attached to your update.

The key here is to remember that **Winzip** self-extractor files do not usually install the software for you. The regular updates to your First Train kit, which use **Winzip's** self-extraction feature, *do* perform all the installation for you automatically, but most such files do not. All they do is unpack the files and prepare them for installation.

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Extracting ZIP files

There is a sample ZIP file, a tiny and rather useless graphical image which we can use for an example, in First Train's INETWARE directory, placed there for practice. It takes virtually no space on your hard disk.

A two-step installation process

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Installing software contained inside of ZIP files is a two-step process, three if you count getting the file from the Internet as a step.

First you need to find the file on your hard disk using **File Manager** and extract usable data from the ZIP file. Fortunately, if you have installed **Stuffit Expander**, **Winzip**, **Winpack** or another quality archive management tool, this is as simple as double-clicking on the file that ends in **.ZIP**. Your **File Manager** lesson showed you how to find the file. All you need to know at this point is that these archive management tools will allow you to double-click on a ZIP file to automatically load or extract the compressed data inside with no extra work on your part.

Once the data has been extracted, you will need to install the new software (remembering to start your uninstaller first), or if it's just data, **Move** it to the directory where you intend to store it for later use. Finally you clean up leftover files from the dumpsite directory.

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Installing the new software

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You should now see a list of new files in your dumpsite directory. If not, click the grey icon for C

drive [← Last topic](#) to refresh the directory. In many cases these freshly-extracted files will have strange names ending with an underline or dollar-sign character, such as `DATA.DA_` or `README.WR$`. Don't worry about these names. All you're looking for is the file that starts the installation procedure. It will almost always have one of two names: `INSTALL.EXE` or `SETUP.EXE`. Running this program will start the installation procedure, and in a minute or two your new software should be installed and ready to use.

It's usually idiot-simple, but it pays to pay attention

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In most cases you can whiz through any standard Windows installation procedure without changing a single thing. Just press **Enter**, **Enter**, **Enter** or click the **OK** buttons on every installation screen until the software is installed, and everything should go smoothly. But it's usually a good idea to pay attention to the installation screens once you have an idea of what they mean.

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It's also usually a good idea to simply ignore any screen that contains options you don't understand but gives you no warning about possible problems, and either press **Enter** or do what the install program recommends. Most authors are smart enough to optimize their installations for novice users so that you can safely install the program without knowing a thing about it. Any software which does not offer this ease of installation is something you might be better off leaving for a time in the future when you have more experience and more knowledge of your computer. Chances are good that if the installation procedure is difficult to understand, the program itself will be no walk in the park either.

Not all programs come with `INSTALL.EXE` or `SETUP.EXE`

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Note that not all programs have built-in installation procedures. Some programs simply come as ZIP archives which you must extract and install yourself. If you need help with this right now, this topic in the troubleshooting section will help you deal with these finicky programs.

Restarting Windows

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Many programs (but thankfully not most of them) need to close and restart Windows completely, or even restart your entire computer, before they will work properly. This is most inconvenient if you are online with your Internet provider at the time and you don't want to hang up. In these cases you can usually tell the installation procedure not to restart Windows, but it also means you may not be able to use the software in the way it was intended to be used until you do restart Windows.

If you're fairly new to computing, you probably have your hands full with your Internet

software without worrying about running new programs while you're online. Install the software and try it during times when you are not connected until you get a feel for how the process works.

Some programs don't give you a choice. They force you to restart Windows before you can exit the installation program. In cases like these, there are programs you should close manually before allowing the installation to continue. Even if the install program fills your entire screen, you can still use the Alt+Tab switch to change to your uninstall program and close it properly. Other programs you should close manually include your Internet software, such as your Web browser and your email program.

Disconnect properly before allowing any installation program to restart Windows!



You should also properly disconnect from your Internet provider as well. This means that you must switch to your Trumpet Winsock program, click **Dialler** from the top menu, and click **Bye** so that your phone hangs up properly. Then and only then can you safely allow the installation program to restart Windows. If you don't do this properly, a bug in the winsock software might make it think that your modem is still connected to your provider. This will force you to completely shut down your computer before you can properly log in with your modem again, or even send a fax.

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Completing the installation

Close your uninstaller



Once the program's installation procedure is finished, close your uninstall program. It will take a reading of all new files and changes to your system so that you can remove the software later with the click of a button if problems crop up, or if you simply decide that you don't want the program after all.

Finally, remove any unneeded leftovers

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Next you'll need to go into your dumpsite directory using **File Manager** and remove all the unneeded files left behind during the installation process.

The only reason you would *not* want to erase all these files is if you accidentally told the program to install itself in `C:\DUMPSITE`. Hopefully you didn't do this, but if you did, you can use your uninstall program to remove it in just a few seconds and re-install the software in a more appropriate directory.

You don't need to do this with floppy disk or CD installations because the installation files are meant to stay on the disk and never be erased. You don't need these installation files on your hard disk though, and if you leave them there they will fill up your hard disk two to four times faster than normal. All you need to keep if you want a copy of the software for later is the original ZIP or EXE file.

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If you need help with deleting files, this button will take you to the from the **File Manager** instructional section where you'll find detailed instructions.

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Saving your new software to floppy disk

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If you want to save a copy of the original ZIP or EXE file you transferred over the net, this is the time to do it. There are two ways to do this, but you can skip this section if you're feeling overwhelmed with new information. In most cases it isn't necessary to save a backup copy, but it can be very handy.

Floppy backups: a simple choice

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You have a choice about how to back up the program to floppy. You can either copy the original ZIP or EXE file directly to a floppy disk, or you can erase the ZIP or original EXE file (don't erase any new EXE files yet) and copy the rest of the files in the directory to floppy disk. If you choose to do it the second way, you can use the floppies as a ready-to-go installation kit if you ever need to re-install the software or want to share it with friends.

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It's usually a good idea not to use the same floppy disk for more than one program or you could lose a program...especially if two or more programs install from files called **INSTALL.EXE** or **SETUP.EXE**. Also keep in mind that some newer programs available on the net are so big that you'll need several floppy disks to hold all their files.

Some, such as the latest versions of both Netscape and NCSA Mosaic, are so big that even the *compressed* EXE or ZIP file won't even fit on a single floppy disk. You'll have to back them up in sections and reinstall them by first copying the files back to your dumpsite directory and then running the install/setup program.

Some software can't be easily backed up



And then there are a few files which are so large that you won't be able to back them up to floppy disk even if the files *are* compressed. You'll need special tools for that such as **PKZIP.EXE** or **Winzip**, and the process for doing this is beyond the scope of this help tool. In most cases, when the files are so large that they won't fit on a floppy, the publisher never intended you to create backups anyway.

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Time-saving tricks that could cause trouble

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Once you have installed a few programs on your own, you're likely to spot a few things that might give you ideas for saving time and trouble with your installations. If you're thoroughly comfortable working with Windows' **Open** and **Save** dialog boxes, by all means try them. But if you're not, stick close to the procedure outlined here. Remember that most mechanics know a lot of tricks for saving time on repairs and maintenance...but they usually have to learn them by blowing up an engine or two first. Don't risk blowing up your computer's software engine unless you have the money or skill to rebuild it.

Laziness makes craziness

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Here's an example. **Stuffit Expander** will let you work on your ZIP files regardless of where they are located on your hard disk. You might be tempted to leave your transferred files in your Netscape or Mosaic directory and process them directly from there. If you know enough about directory structure to know what paths are and how to set them properly, this shouldn't be a problem. But unless you have configured **Stuffit Expander** to always expand archives to your dumpsite directory ([this topic](#) explains how to configure this option), don't start working with ZIPs until you first move them to your temporary dumpsite.

Saving directly to your dumpsite

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You should also avoid saving files from your Web browser directly to your dumpsite until you are thoroughly familiar with the entire transfer -> copy -> install -> cleanup procedure. It is too easy to make a mistake by moving several new archives into your dumpsite directory all at once, install one, and then accidentally delete the rest before you get a chance to try out the others. Even experts make this mistake from time to time. Only process one ZIP or EXE archive file at a time from your dumpsite directory.

Using your ZIP extractor as a viewer in your Web browser

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It's a tempting thought to skip a couple of steps by setting up **Stuffit Expander**, **Winzip** or another archive extractor program as a viewer so that you can click a link and extract the file all in one step.

Unless you feel very confident about your skills and never need backups of software downloaded from the net, this is a *definite* no-no.

Most browsers consider viewing to be a one-time-only operation. When the file has been transferred, it is loaded into the program configured to view it. Once the viewer program has closed, the file stays on the system, but when you close the browser, the file is gone. Erased.

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This is especially troublesome with ZIP and EXE files. Netscape and other Web browsers

might not save the original ZIP file once it reaches your computer. If your installation goes haywire, or if you press the wrong key at the wrong time, you won't get a second chance to install it. You will have to get the original ZIP file all over again.

You won't have a backup copy of the software either, and that can be a real problem considering the speed at which things come and go on the net. It's not just possible but common, that you only get one chance to obtain some of the better free programs on the net. And it's even more common that an old version of a program you saved on a floppy disk will be needed to replace a buggy *new* version you just downloaded.

Unless you don't mind the extra work and expense, play it safe. Develop a routine that works for you and stick with it. It might seem like extra work now, but eventually you'll be glad you did it.

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Step-by-step through the installation

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You may discover that you don't understand some of the things you are asked to do here. If so, click the corresponding help button to return to the topic index and follow through the whole page. This is all important information. None of these steps can be safely skipped. You'll understand the procedure quite well by your third or fourth installation, and once you know what you're doing, new software installations of almost any kind will take all of two minutes and never scare you again.

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1. Make sure you have software on your system that can be unpacked and installed. If you do not, click here to walk through a demonstration using **SITEX10.EXE**, which you can use as a sample program for practice.

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2. Make sure you know how to get around your hard disk using **File Manager**. The skills you will need include finding and opening directories, and copying, moving and erasing files. If you don't know how to do these things, click here to take a quick lesson in hard disk management.



3. If you did not install First Train from the supplied installation disks or the setup routine offered with the original archive, create a new directory on Drive C for use as a temporary dumpsite for new software that hasn't been installed yet. We recommended that you call the directory dumpsite for the time being. Many of the more advanced pages on this site refer to your dumpsite directory when discussing file installation and removal.



4. Move to your Netscape directory (or your chosen download directory if you selected a different location than the default save directory) using **File Manager**. If the transfer was successful, the file you just transferred will be found here.



5. Move the new EXE or ZIP file to your temporary dumpsite directory.



6. If you want to save a copy of the program for use later or to share with friends, copy it to a floppy disk now or place a copy of the file in a directory used for storage of archived files from the Internet and other online services. Remember that you must select Copy from the File menu in File Manager to do this. If you drag the file to your chosen directory and drop it, and the directory you chose is on the same drive as the archive file, the file will be moved, not copied.



7. Extract the data from the packed EXE file by double-clicking on the file's name from **File**

Manager. If it is a ZIP file, you will need to install and configure **Stuffit Expander** first. If you double-click on a ZIP file and nothing happens, you will need to re-install **Stuffit Expander**.

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8. Refresh the **File Manager** directory by clicking on the grey Drive C icon

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at the top of the **File Manager** window so you can see the new files which have been extracted.

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9. Start your uninstaller program if you have one, and get one now if you don't. (You will need to be online to get the software if it was not included in your package.)

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10. Look for a file called **SETUP.EXE**, **INSTALL.EXE**, **INSTALL.BAT** or any other file with a name that looks like a logical choice to start the installation, and run it by double-clicking on its file name from **File Manager**.

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11. Follow the steps outlined in the software's installation program for setting up the software. If you don't understand a specific screen, just press your **Enter** key or click the **OK** buttons to continue the installation until it is complete.

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12. Close your uninstaller utility and delete all leftover files in your temporary dumpsite directory.

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13. Test the program by starting it from its **Program Manager** icon if one was set up for you, or by setting up a new program icon yourself if one was not set up for you.

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14. Try not to use any time-saving tricks until you are comfortable with the installation procedure.

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Troubleshooting the installation

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This section covers most of the problems you can run into when installing new software. You might want to add this to your list of bookmarks so you know how to find it when you need it again...and chances are that you will at some point.

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 [Install problems](#)

"The program has no manual. How do I use it?"

{bml wrench.bmpThere are many possible answers to this question. Unfortunately, the only way you will find the answer that works for a particular program is to go through these suggestions one by one until you find the one that works.

There's probably help somewhere

The first thing to remember is that 95 percent of all the programs you find on the net will have their own built-in help somewhere. The trick is to figure out where it's hiding. The first place to look, of course, is under Help from the program's top menu bar, or by pressing the **F1** key. Sometimes all you get from **Help** is a "splash screen" with information about the program, but helpfiles for Windows have become so easy to create that most authors, even weekend hackers creating software for kicks, include them with their programs. If you have always relied on the manual in the past, freeware and shareware will almost certainly turn you into a Windows Help fan. (That is, if First Train doesn't do it first!)

Context-sensitive help: even better than a manual

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Well-written helpfiles are integrated directly into the program they were written for, and the **F1** key is used as Windows' universal help key. This means that you can press F1 from most menus and option screens in a lot of programs and be taken directly to the section of the helpfile with information on that particular function of the program. Try it with **Stuffit Expander** for an excellent example of well-used context-sensitive help.

Other places to look for help

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Programs that don't include built-in helpfiles may have been packaged with **Write** documents or plain-text documents known as READMEs. Look in the directory where the program was installed for any file ending in **.TXT**. These files load into **Notepad** and they can be viewed instantly by double-clicking on the file's name. Files ending in **.WR1** files load into Windows **Write** in the same way.

Files ending in **.DOC** could be either Microsoft **Word** files or plain textfiles. Try loading it into **Notepad**, **Write**, or Windows 95's **WordPad** to see if you can view them that way.

Then there are programs that include no help at all. The author simply assumed that if you wanted it, you should already know how to use it. Or perhaps they figured that their program is so basic that its functions don't need to be described. All you can do with a program like that is sigh deeply, remember that you got it for free, and come back to it later when you may have enough experience to understand what it does.

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"What if I don't see **INSTALL.EXE** or **SETUP.EXE** in my dumpsite directory?"

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A lot of DOS and Windows software packages available on the Internet don't come with installation programs. Instead they expect you to manually install the software yourself. Nine times out of ten, programs that don't include special installation procedures can be used without any further installation once they've been extracted from the archive file. All you need to do is create a new directory with an appropriate name, move the files (and any additional directories as well) which **Stuffit Expander** unpacked from the original archive file to the new directory, and use **Program Manager** to install a new icon for the program.

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The section linked to this help button shows you step by step how to manually install new icons into **Program Manager**, and also teaches you how to recover icons for programs which may have gotten lost on your hard disk.

Instructional pages on the Web

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There is so much available to programmers in the way of installation software that a poorly-designed install setup is a sign of laziness or lack of concern about their work. But even if the install program doesn't completely configure the software, some Web sites offer instructional pages for guiding you through the installation of the programs they offer. As a last resort, check the home page of the site where you got the program to see if you can find such a page, or email the author asking where instructions can be found for installing the program.

It is not considered good form to write the programmer or administrator of a Web site and ask to have instructions emailed to you, and you should look upon any response you get from such an inquiry as a gift, not a right, especially if the program was free or if you have not paid for it and don't intend to.

When all else fails, look for documentation



In almost every case, software that does not have an **INSTALL.EXE** or **SETUP.EXE** will have a **README.TXT** or a **README.WRI** you can view by double-clicking on the file's name from **File Manager**. This file will either have instructions for installation or else tell you which file in the package contains the instructions you need. If you don't see one of these files, look for a file ending in **.HLP**. This will usually be a Windows helpfile, and the more considerate authors include copies of their installation instructions in their helpfiles.

Some programs just aren't worth the trouble

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Some programs are just plain unfriendly. The QuickTime for Windows video viewer version 1.1 is a prime example of a piece of software recommended and supported by many Web sites that

not only did not include an install program, but actually forced you to hack your own system to get it to work. Not a kind thing to do to a new user, and something Apple fixed with their later versions. Expect to run into a few of these in your travels...perhaps more than a few if you spend a lot of time sampling the local cuisine. (By the way, Apple solved the problem...by making the most recent version of the QuickTime viewer for Windows a \$20.00 commercial program.)

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This is a serious dilemma for new Windows users, and many intermediate level users too. In fact, it's so important that First Train includes a page designed to show you how to deal with this situation. If you have been able to follow this page, you should find the icon installation guide very easy to understand. It shouldn't take you more than ten minutes or so to complete it. Click the bar below if you need this help now; click anywhere else if you don't need the help.



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"The program refused to extract a certain file in the EXE archive"

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What has usually happened when you see this is that the archive name was given the exact same name as the program that starts the software. **MYPROJECT.EXE**, the archive file, could also contain a file called **MYPROJECT.EXE**, the program file, and Windows doesn't like that.

Fortunately this problem is easy to deal with. All you need to do is rename the archive file using **File Manager**. You will find the **Rename** function under **File Manager**'s File menu. Simply rename the archive that has this problem to **1.EXE** and run it again. This usually solves it, but if it doesn't, see the next section for more possible causes and cures.

Why does this happen?

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Sometimes software authors make major blunders in assigning names to archive files when they are finally ready for posting to the net. It's hard to accept, but it's understandable when you consider all the work that went into getting the product this far and the eagerness many programmers have to get their work to a waiting world. We've been guilty of this overenthusiasm ourselves from time to time. Sometimes we'll take the attitude "better that the world should have our product imperfect than wait until it's perfect".

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"What if the installation doesn't work?"

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Any number of things could happen to result in a faulty installation. It's not a problem which is strictly confined to software found on the net, but it *is* more common than it will be with software bought off the shelf.

The most common causes: botched transmissions and damaged archives

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You may have received a bad file and some of the data may be unusable, or something might have gone wrong during the transmission to corrupt the archive file at your end. If so, at some point in the installation procedure you will see an error. **Stuffit Expander** will tell you if the archive is damaged and needs to be transferred again. If **Stuffit Expander** tells you it needs repair, consider it not worth repairing unless it's the only copy you can get. Even if fixed, we have found that the software will only be usable about one time in four or five. Experienced hackers get better odds than that, but they work harder to get them.

If it's an EXE file and you can't get any new files out of it, it's a damaged archive and needs to be transferred again. If you transfer the file a second time and it still won't install properly, the original file on the host computer at the other end is probably damaged. Your best bet is to look for a copy of the same program on another site. using the software search forms on the **Fact Finder Page**, which is accessible to First Class and Tourist Class passengers at any time by clicking the **Search** button at the top or bottom of any First Train page loaded into your browser.

If the program says it needs a certain file that it can't find on your system before it will work properly, you have a choice. You can either track down that file and install it on your system, or you can wait until you have installed a few other programs and try again. You should also make sure you have installed the files on the **Essential Files** disk included with First Train. (If you did not receive this with your package, check the First Train home page for instructions for downloading it directly from our Internet site.) The files you're most likely to need which are not always included with software from the Internet include **VBRUN100.DLL**, **VBRUN200.DLL**, **VBRUN300.DLL**, **CTL3D.VBX**, **CTL3DV2.DLL**, **THREED.VBX**, and **BWCC.DLL**. The latest versions of these files are all on the **Essential Files** disk.

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An important warning about some installation programs

A potential nightmare to guard against

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There is a potential nightmare situation you might encounter that you should know about in advance. This applies to retail Windows software as well, not just some of the programs on the Internet

Some software installation programs have severe problems with some brands of computer hardware. They will not only freeze your computer, but possibly even change your configuration in a manner that makes it impossible for you to get back into Windows.

This is almost never a deliberate act on the part of the programmer. It's a mistake, a bug in the installation software, and it usually occurs because the programmer never had a chance to test their program on a machine with hardware such as yours.

The most common victims: ATi Mach 32 video drivers

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The most common incidence of this in our experience occurred with the Windows 3.1 video driver software for the enormously popular ATi Mach32 video card. If you have such a card, or a compatible card which uses the Mach 32 drivers, it is strongly recommended that you find and install Version 2.42 of the driver software which was released late in 1994. If you do not upgrade your driver software you will almost certainly experience problems with some new programs. Most Mach32 cards sold in 1994 came with the version 2.40 drivers.

A free and simple cure for what ails Windows

{bml This is only the most common of many such problems which can occur with Windows installations. Fortunately there's help for this problem if you can't find an easy fix...emergency system backup.

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It is strongly recommended that you use such a program, such as our **F-A-S-T Emergency Windows Backup**, **PC-911** or **Safety Net** to create or update your emergency Windows backup disks before each group of new installations. This will insure that any serious problems caused by a bad installation can be fixed in just a couple of minutes.

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In most cases, not without a faster modem. Some of the larger files available from the **Software Resources Page** might take up to three-quarters of an hour to finish transferring to your computer, or even longer if your network connection is a slow one. But you don't need to abandon your computer or bore yourself silly while you're waiting. You can still use the Internet while your file is being transferred. Among the things you can do without serious delays while waiting for a file to transfer are:

- **check your newsgroups** (this will be somewhat slower than normal)
- **collect, read and reply to your email**
- **experiment with TELNET**
- **hang out on Internet Relay Chat and meet new friends** (our favorite option)
- **work with any other application on your computer that does not require a connection to the Internet** (this might be tricky if you have less than 8Mb of memory, but even if you don't you can experiment to see which programs you can use while you're on the net. Note that games will be especially jerky, and action games of any kind are *not* recommended as "time-killer" activities while on the net if you have Windows 3.1/Windows for Workgroups.)

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"What are my risks of getting a virus?"

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The risk is pretty slim as long as you're careful. We recommend sticking with large commercial FTP sites and commercial web sites if this is a major concern for you. These institutions have the most to lose if a virus were found on a program offered on their system, so they usually take the most care to insure their offerings are virus-free. Private individuals offering software from their Web pages or personal FTP directories are likely to be a little less thorough.

Trust net veterans to take care of their own

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If a virus happens to get into a software package freely available on the net, someone will find out very quickly and inform the person or provider who made the file available. Since it's unlikely you'll be the first -- or even the hundred and first -- person to transfer that file, you can be almost certain that any file available on the Web will be virus-free.

USENET binaries: almost always a risk

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USENET binaries are a different matter. It is strongly recommended that you use the latest and best virus protection on your system if you plan on making use of software distributed on USENET groups. Software distributed in the *comp* hierarchy (newsgroups whose names begin with *comp*) is usually checked thoroughly for corruption; software in the *alt* hierarchy generally speaking is not.

Should you be concerned? Absolutely. Should you be worried? We say no. Most people panic at the thought of a virus and the results of the panic can be worse than the effects of the virus itself. If you take care of your data, even the worst virus infection should never be anything more than a minor inconvenience.

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In order to help you get over your fears, we've included the latest version of the **Computer Virus Myths** report with First Train. This free report, created by two American virus experts, is the best fear-buster we've ever seen for squeamish computer users. Click the help button to view it now.

It bears repeating that virus panic is irrational if you exercise reasonable caution. If you're *really* worried about viruses, you should be even more worried about random errors on your hard disk. They can be just as destructive to your data. Thorough, regular backups are the only preventive treatment for this problem. So if you're worried about data loss and are not making regular backups, either learn how to do it or accept the consequences...not if, but *when*, you suffer data loss.

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The **Virus Awareness Kit** at this help topic will teach you more about viruses and trojans. It will also assist you in developing effective strategies for protecting your data against possible infections and minimizing the risks if a new strain of virus happens get through your armor.

One final note about protection

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If you choose to use **Winzip** instead of the free **Stuffit Expander** utility for unpacking files, we recommend configuring it to search all new files received from the Internet for viruses. Consult **Winzip's** helpfile for instructions on how to set this up. Be aware that this protection will only be as good as your antivirus software.

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How to install new or lost icons

This exercise is for Windows 3.1/Windows for Workgroups,
and for Windows 95 users who still use Program Manager.
It does not cover lost Windows 95 START menu items.

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Before you can make use of the skills taught here, you will need to know how to switch back and forth between programs in Windows 3.1 without closing them. If you don't know how to do that, click the help button to learn how.

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 [Installing icons](#)

Why is this skill important?

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Few experiences are more frustrating than receiving a brand-new program from the Internet or an online service that looks absolutely wonderful and discovering that it comes with no installation program or setup instructions. While most authors and publishers try to provide user-friendly operation, even for free software, not every author has access to -- or the desire to work with -- proper setup software. That places the job of installation, including icon setup, squarely in your lap. The lessons in finding, unpacking and installing new programs will help you get the software and prepare it for use, but if you don't know how to run it, you're stuck.

If that's not enough motivation, consider this scenario. It happens in virtually every office and household. One afternoon you turn on your computer and discover that someone has accidentally pressed the **Delete** key, erasing the icon for your most-used program.

This section will help insure that these nasty surprises never cost you more than a few seconds' inconvenience by showing you step-by-step how to install new program icons and recover lost ones. It's a skill every Windows user who spends any amount of time with their computer can benefit from having in their arsenal of tricks.

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Installing icons: how it's done



Follow along through each of these sections or jump to the section of interest you if you already have a partial idea of how this job is done.

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[The Program Manager screen](#)

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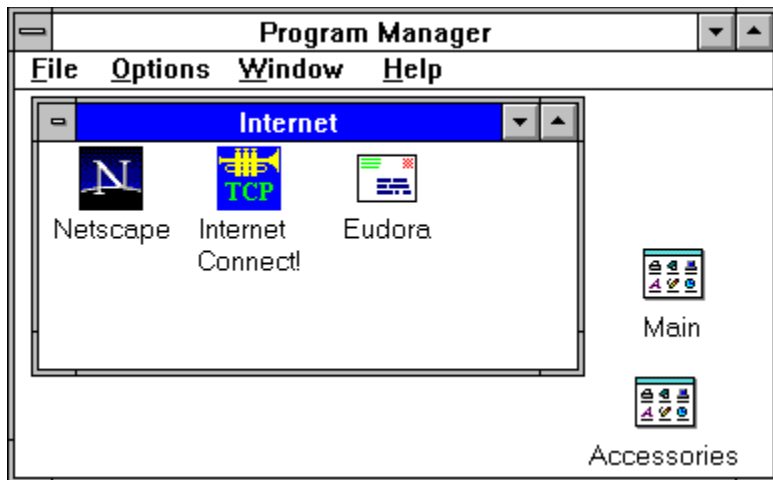
[The two different types of icons](#)

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[How to add new program icons to a group](#)



Here's a sample **Program Manager** screen to get you oriented. Yours will probably look much larger; this one has been reduced in size to make this material easier to follow in the limited amount of space on your screen.

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 [Icons: how it's done](#)

The two different types of icons

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Before we continue, you need to know that there are two different types of icons in Windows **Program Manager**. There are icons for runnable programs and files; and there is also a fixed, unchanging icon for groups of programs which are contained in individual windows such as the sample Program Manager shown here.



Unless you use a custom menu program such as **Tabworks** (and if you do, some of these concepts may not make much sense to you), your program group icons will always look like the one at the start of this paragraph. Program icons can look like anything they want.

A new program item or a new group?

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The first decision you need to make when installing a new icon is whether you want to install it into a new group or an existing group. If you are installing software designed specifically for the Internet, it's a good idea to keep all of your icons in the same group as your browser, email and Internet connection program (probably represented by a trumpet icon in Windows 3.1). You can rearrange them later if this group gets too cluttered by creating a new group and simply dragging icons from the old group window to the new one.

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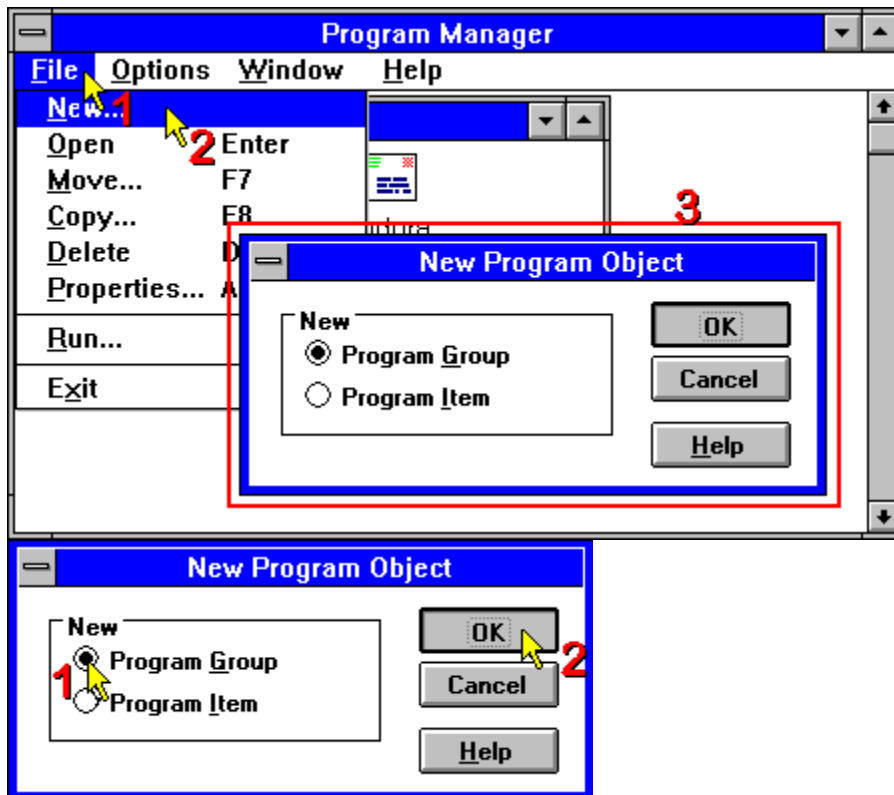
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How to create a new program group

A simple procedure

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To create a new group, click the word **File** from the top menu bar of **Program Manager** (1). Select **New** from the menu that drops down (2). **Program Manager** will display a **New Program Object** box (3) over top of the open windows.



This box asks you to choose between a program *group* or a program *item*. Since we're creating a group, which will hold other icons, click the spot next to **Program Group** to highlight it as shown here (1) and click the OK button (2).

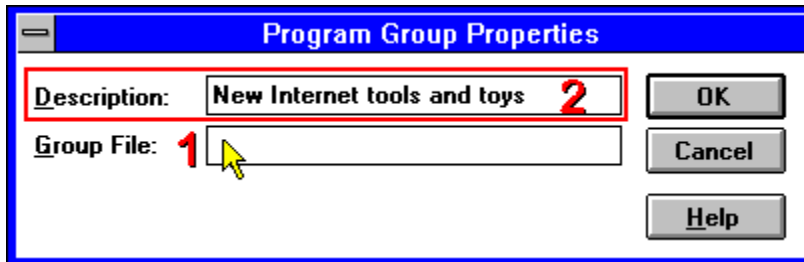
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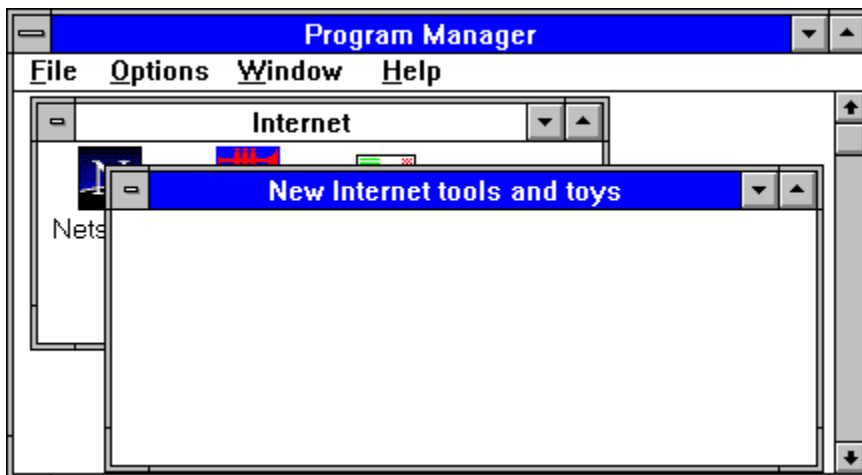
How to create a new program group

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Another box will pop up that looks like the one below. Don't worry about the **Group File:** line (1); Windows will take care of that for you. The only line you need to fill in is the **Description:**, the title you want to see displayed for the group (2). In general it's a good idea to keep the title short. Click the **OK** button in the **Program Group Properties** box...



...and your new group window will appear on the screen, open and ready to accept new icons. It should look similar to the one in this diagram.



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How to add new program icons to a group

A little bit more complex

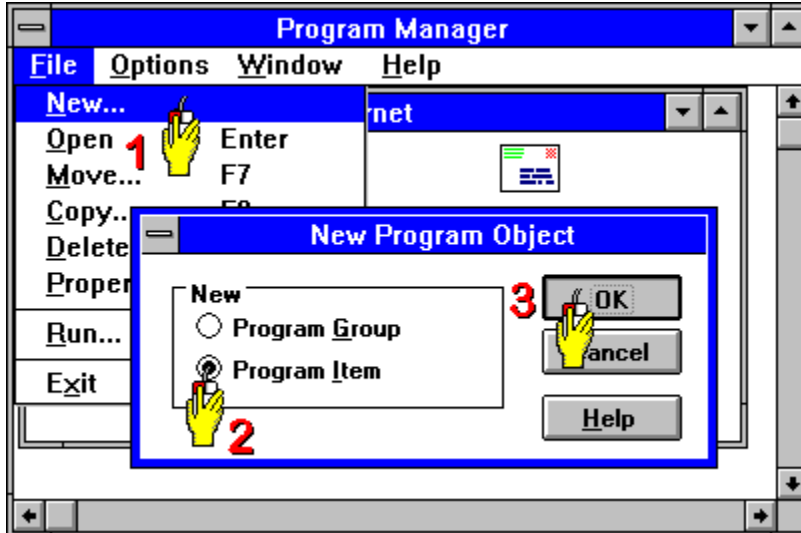


This is a bit more complicated than creating a new group, and the steps might not make sense to you the first time you do this. Follow the diagrams and by the time you've done it once or twice it should all make sense to you.

The first thing you need to do is select the **Program Manager** group you want to hold the new icon. This is important, because if you select the wrong group -- or no group -- the icon may show up somewhere you didn't expect. You might even think it has been lost.

Select the group for the new icon by clicking anywhere in the group's window to make it the active group. You can't get this wrong, because only one program group can be active at any one time. If the group is iconized and all you can see is its name and the group icon, double-click on the group's icon to blow its window up to normal size. The very top bar -- the bar with its title -- will be highlighted, usually in blue, indicating that it is ready to accept new icons.

Start by clicking **File (1)** from the top menu bar of **Program Manager** and select **New** just like you did when creating a program group. The **New Program Object** box will pop up again, and this time you select **New Program Item (2)** and click **OK (3)**.



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How to add new program icons to a group

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This time you will have to navigate through more boxes before the job is done. The box that pops up next, the **Program Item Properties** box, allows you to define your new icon. Windows will do most or all of the defining for you if you can find the file you want the icon to represent, so click the **Browse** button as shown below, and we'll move to the toughest part of the job: finding the file.

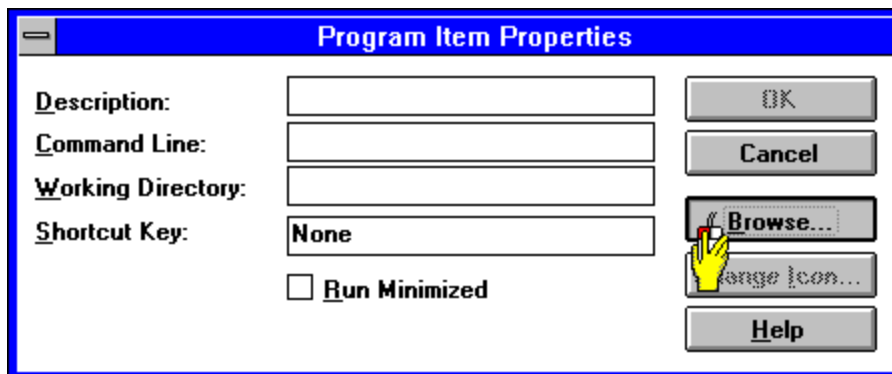
A quick note about a skill you'll need

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If you took the **File Manager** lesson you should find this quite easy since you already know about directory structures and how directories look to Windows. If you didn't take this lesson, it is highly recommended that you do so before continuing. The next section could be very confusing without some understanding of directory structure.

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Click the help button to jump to the **File Manager** training section now if you need a refresher.



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Click the **Browse** button to search for the file you're looking for. Everything else here should be filled out when you've found the file you want to install as an icon.

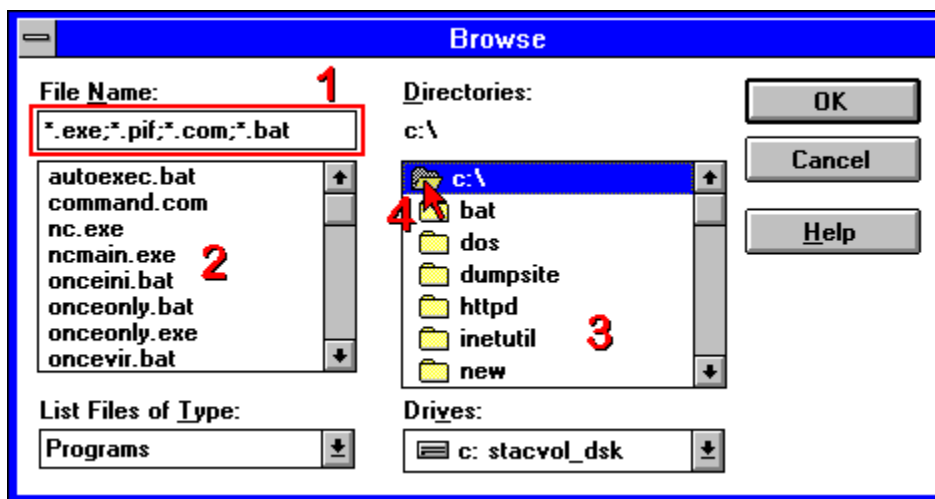
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Finding files using Windows' dialog boxes

← Last topic

These boxes are used in various forms in all Windows programs, and even Windows 95 still uses them for older Windows programs. Understanding their structure and usage is a *critical* skill for becoming a confident Windows user. As you can see there is a **Help** button here which explains what the various parts of this box are for, but many new users have difficulty with Microsoft's help. Move your mouse over the various sections of the box and click where your cursor changes to a pointing finger for more detailed explanations of each section of the box. The numbers will be explained in just a moment.



Click the **Next topic** bar to continue with the guide to installing icons. Click the **Last topic** bar to return to your place if you got here from another location on the First Train.

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This top bar displays the type of box being used by the program. This example is being used to **Browse** for a file to be installed as a **Program Manager** icon. Whatever was displayed on the menu or button you clicked to pop up this box, that's what you'll see in the title bar.

The **File name:** box is where the name or "mask" of any preselected file or group of files appears, and what you see here will depend on the program. It's not terribly important to know *exactly* how this box works; you'll get the hang of it as you work more with Windows.

When you are saving files to your hard disk, this box is where you type the file's name. When you are opening files (loading them into a program), this box sets the type of file to search for so that you have a less cluttered list to choose from.

In this particular dialog box, the types of files Windows expects (but does not insist) that you want are only those files ending in **.EXE**, **.PIF**, **.BAT** and **.COM**. (The asterisk character works on both sides of the dot, so that **MYSTUFF.*** would show only those files whose names *begin* with **MYSTUFF**.)

More commonly though you'll want to see *all* files in the directory you are viewing. To do this, you erase whatever appears in the **File name:** box and type ***.***. This tells Windows to display the names of all files, since the asterisk is a "wild card" and the double wild card tells Windows to show the names of all files regardless of how they are spelled.

This box is where you see the names of all files in the directory where Windows happens to be looking at the moment. If this box is empty, it is probably because no files matching the specification in the **File name:** box can be found in that directory, but if you have *.* appearing in your **File name:** box and see no filenames here, the directory has no files in it. (Don't be alarmed if you do see this...some programs need empty directories to work with.)

You don't normally need this box when saving files to disk, since you will use a new, unique name for each file you save. Instead you use it for loading files. When you see the file you want here, clicking once and then clicking the **OK** button loads the file into your program. (You can also double-click on the file's name and avoid having to click the **OK** button.)

The **List files of type:** box changes depending on the program you are using. Clicking the grey down-arrow button to the right of the box displays a list of types of files, usually represented by the last three characters in the file's name. Selecting a different type of file changes what you see in the list of files above.

In this example, the **Programs** option displays all files ending in **.EXE**, **.PIF**, **.BAT** and **.COM**. A word processor might have a **Documents** option on the list that shows only files ending in **.DOC**.

Most of these boxes have an **All files (*.*)** option that displays every file in that directory. This is a handy point to remember when you think you might have saved a **.DOC** file as **.DOX** by mistake and can't find it again using the **Documents** option.

The **Directories:** box has two useful sections. This top section shows the path of the directory you are currently viewing, and provides a handy reminder of exactly how directory paths should be typed when it is appropriate to use them.

The **Directories:** box has two useful sections. This bottom section shows a hierarchical picture of exactly where you are on your hard disk. At the top of this example you see `c:\` which, of course, indicates that you're browsing Drive C. Underneath it is a list of all directories contained within that top directory.

In case you aren't familiar with how Windows structures directories, note the open, shaded file folder next to the `c:\`. This mini-icon, highlighted here with a red arrow, tells you that the files listed in the **File name:** box are all in that particular directory.

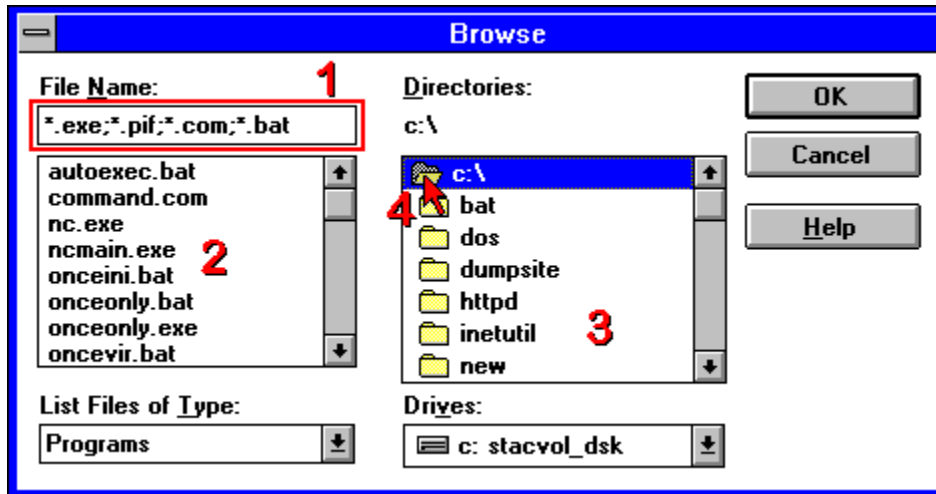
Windows allows folders inside of folders inside of folders down many levels deep. You might see several open folders in a diagonal pattern before the open and shaded folder. This pattern tells you that the directory you are in is inside of another directory, which is inside of yet another directory, and so on.

Finally there's a **Drive:** box where you can select a different drive if you can't find the file you want on the drive you are currently browsing. Most PCs have only one or two hard disks and if a CD-ROM is connected it will be Drive D. Clicking the down arrow button will display a list of drives to choose from and the names assigned to these drives by DOS. (Windows 3.1 uses DOS for file operations such as these.)

How to add new program icons to a group

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Here's the dialog box again. Now that you know what its parts mean, you can click on the red numbers to get explanations of how to use this to find the file you want to install as an icon. This looks exactly like the previous diagram, but its hotspots will now display specific information related to the task of installing an icon.



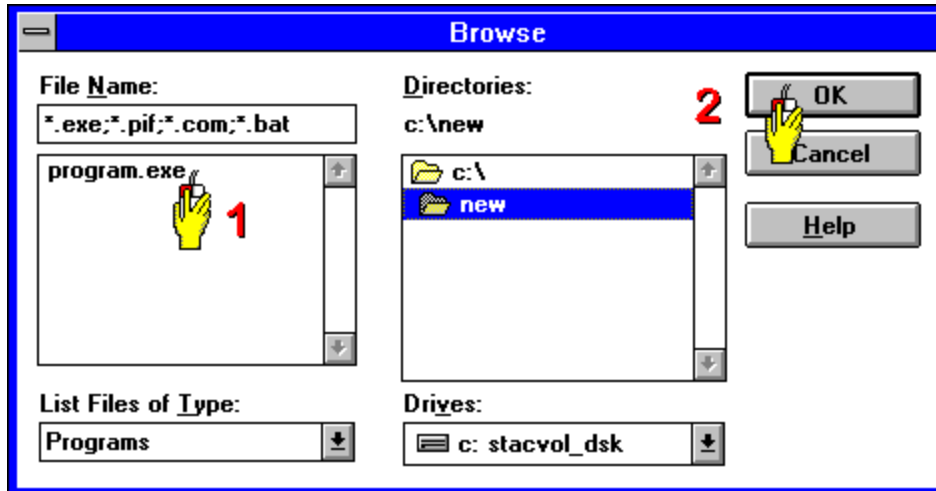
Once you find the directory you want, and you see the name of the file you want to install as an icon in the left-hand list box, you click on the file's name to highlight it and click **OK**. You can also just double-click the filename to save yourself the hassle of the **OK** button.

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How to add new program icons to a group


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In the example below, we've changed to the `c:\new` directory and there is only one program-type file here: `PROGRAM.EXE`. Clicking on that file (1) and then clicking the **OK** button (2) will return us to the **Program Item Properties** box which is displayed in the next topic.




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This window shows how one of our test computers looked when this diagram was created, and as you can see we're **Browse**-ing at the very top of the drive (note the  next to the `c:\`). When hunting for files to install as icons, your working directory with the

 will usually be your **WINDOWS** directory.

The **File name:** box is fine for looking for actual programs...notice the **Programs** option listed below in the **List files of type:** box? You can start hunting by scrolling through the list of available file choices shown underneath **File name:**. If you don't see a file that looks like the one you want to install, you need to change directories and keep hunting.

You do that by scrolling through the list of available *closed* directories  in this section of the dialog box until you see what you are looking for and double-clicking on the directory's name to open it.

If you don't see a suitable-looking directory name, you have two choices: dig deeper or go back to the top. You can try opening other directories on the list to see if the file you want is *nested* inside of another directory, but in most cases that won't be as efficient as going back to the top of the directory structure.

If you're working on Drive C, you can always get to the top level of the drive by scrolling to the top of the list and double-clicking on the drive's letter or its folder icon. Most programs install themselves in directories at this top level, so it's the most sensible place to start looking for a directory and file with an appropriate name.

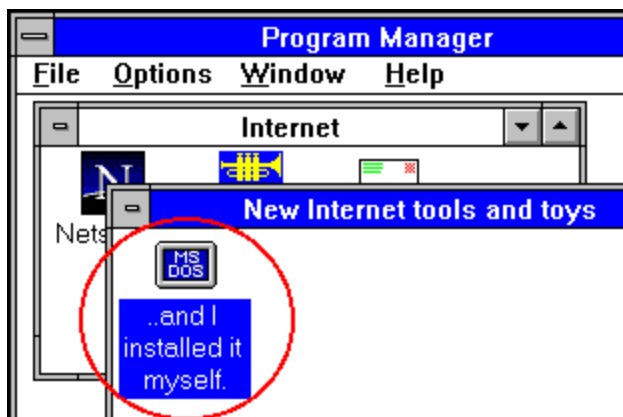
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How to add new program icons to a group

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Now we're back at the **Program Item Properties** box. From here you have a choice. You can play with the other options (the only one we recommend for novices is **Change Icon**), or simply click **OK** to finish the job. Click the highlighted numbers for details on the three options described here. You can change other options, such as the icon and **Working directory**:, but in most cases you will have everything you need without bothering with more options.



And here's how the finished product looks. (We modified the icon title ourselves, by the way.)

That's all there is to it. The file dialog box and finding the file are the tough parts, and if you return to the **Installing icons** menu we have a sample exercise you might want to try.

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This line is where you can enter the title you want displayed for the icon in **Program Manager**. You can also leave this blank if you like, and **Program Manager** will use the first section of the file's name as its title. In this example, if the top line were left blank, **Program Manager** would display this icon as **PROGRAM**.

This line was filled in automatically by Windows when you selected the file from the dialog box, but if you know the precise path of the file you can fill this in by hand. It's the only thing needed by the **Program Item Properties** box to install an icon; everything else is optional.

Once you have a file name and a title, you can click **OK** and the icon will appear in your program group as shown in the next diagram.

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Troubleshooting icon installation

← Last topic

This section outlines the most common problems you're likely to encounter when installing icons in **Program Manager**.

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[Deleting icons and program groups](#)

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How do you know if you got it right?

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What if the program icon doesn't start the program?

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How to install files that Windows won't show you

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 [Icon problems](#)

Deleting icons and program groups

A reversible process



When you uninstall a piece of software, the process is not usually reversible. But when you erase icons, you *can* undo what you've done as you've just seen in the walk-through. You can generally feel a lot safer about removing icons from **Program Manager** than you can feel about erasing files from **File Manager**.

Important note: Deleting icons from **Program Manager** is *not* the same as removing files from your hard disk. When you erase an icon, the software which it represents will still be on your hard disk.

It couldn't be easier

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Deleting icons and groups couldn't be simpler. To erase an icon from **Program Manager**, just click on it to highlight it and press your **Delete** key. Windows will give you a second chance to back out if you pressed **Delete** by mistake.

Once all of the icons in a particular group's window have been erased, empty program groups can be deleted in exactly the same way. As long as the top bar of the group window is highlighted (meaning that the group window is *active*) you simply press **Delete** and click the **Yes** button when Windows asks if you really want to erase it. The group will disappear until you decide to create it again.

An important caution about erasing icons

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Unless you are very sure that you will never need the software again, or you have a complete set of installation disks for the software, never erase icons from any program group that contains a program you are still using **unless** you installed those icons yourself. Some programs use special start-up configurations that can't be duplicated using the procedure we just showed you. As you recall, we did not fill out all of the sections of the **Program Item Properties** box, but some programs need these other options for correct operation. If you erase an icon that uses this information and you don't know how to replace it, you'll lose the program's startup configuration and you might not be able to restart the program even if you can find the file that starts it and get its icon installed.

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Ninety-nine percent of all Windows programs have their own unique icons. If you install an .EXE file for a new program and it looks similar to the one at the start of this paragraph, either you picked the wrong file the program you installed is a DOS program, not a Windows program.

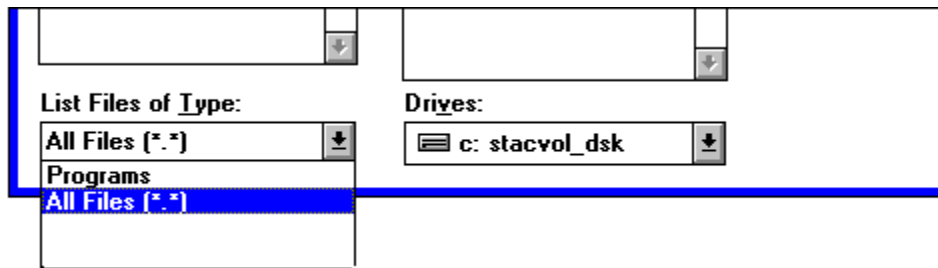
Try running it to find out if it does anything useful before deleting the icon, though. Sometimes you'll get a pleasant surprise. It might also crash your computer, so make sure you have no important work in progress when you try this, but in most cases it will simply do nothing. You will just need to go hunting again for the correct file and re-install its icon.

Try installing new icons for any other .EXE files you find in the directory where you found the file that didn't work. If you're handy with **File Manager**, you can use it as a quick way to find the right file. Switch to **File Manager** and see what happens when you double-click on every file in the directory that ends in .EXE. The worst you can do is crash your computer and lose a minute or two while you wait for it to restart. Once you find the file that starts the software, remember the name and location of that file when you switch back to **Program Manager** to install the icon.

If none of the files starts a program running, the data in that directory is designed to be used by other software, not to be started as a program by you.

Sometimes you'll want to install icons for files that aren't shown on the list of files in the **Browse** dialog box. Helpfiles for Windows programs, for example, always end in **.HLP**. They won't appear in the file list box unless you specifically tell Windows to show them to you.

If you want to see all of the files in a directory -- not just the ones with the four usual extensions -- look at the bottom of the dialog box for the line that says **List Files of Type:**. Click the down-arrow button to the right of the box and a list will be displayed. Select **All Files (*.*)** from the list of choices, and everything in the directory will then be viewable from the left-hand file list box.



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A demonstration exercise

Let's install something useless and harmless

← Last topic

If you took the **File Manager** tutorial, you are familiar with the **Customizing Windows Help** toy we used there as a demonstration program. We'll use it again here to test installing a new Windows icon. These steps are summarized, and if you need more help, click the help button next to the section giving you trouble to go back to the related help topics. Your understanding will be put to a test here since there are no diagrams to help you with the exercise.

Getting ready

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1. Switch to **Program Manager**. (The button leads to help with switching between tasks if you need it.)

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2. Decide whether you are going to install a new program group or a just new program. [Click here](#) if you're installing a new program group; [click here](#) to install a new item into the group. For this exercise, go through each step in turn.

Installing the program group

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1. Click **File** from the top menu bar and select **New**.

2. When the popup box appears, click the spot next to **Program Group** to highlight it and click **OK**.

3. Type the name you want to use for the group in the box that popped up when you clicked **OK**. You can use several words if you like, but for the sake of this demonstration, type **Demo** or **Customizing Windows Help** on the line and click **OK**.

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4. Go to the procedure for installing a new program item (`CUSTHELP.HLP` for this demonstration) into the group by [clicking here](#).

Installing a new icon

Continue with the exercise by following each of these steps one by one.

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1. Select the program group where you want to place the new icon. In this case, we'll use the **Demo** or **Customizing Windows Help** group. You select the group by clicking it once. It will turn to the highlight color (usually blue) to let you know it's ready for action.

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2. If the group you select is shown as an icon and not as an open window, a list of commands will pop up when you do this. Press your **Escape** key to get rid of them. If the group window

is already open on your screen, clicking anywhere in the window will highlight the top bar and prepare it for action.

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3. Click **File** from the top menu bar and select **New**.

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4. When the **New Program Object** popup box appears, click the spot next to **Program Item** to highlight it and click **OK**. Another popup box will appear in its place.

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5. If you know the exact location on your hard disk of the program you want to install, enter its name on the line that says **Command Line:**. In this case, the command line will almost always read `C:\FIRSTRN\CUSTHELP.HLP`, and if you enter this on this line and click **OK**, you're done. But in most cases you won't know exactly what the file is called or where it is, so you'll need to click the **Browse** button to hunt for the right file. Click the **Browse** button now and the **Browse** dialog box will pop up.


 [Last topic](#)

6. Look for the directory containing the program you want to install (**firstrn**) in the right-hand list window under **Directories:**. In this case you should see it right away. But if you *don't* see it, *double-click* on the open folder at the top for Drive C. It will look like this:

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This will show you all the directories at the top level of your hard disk, and you should now be able to find the directory you want by scrolling up and down the list of directories.

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7. Once you find the directory you are looking for (the **FIRSTRN** directory, which in turn will be shown underneath your  [Last topic](#) directory), double-click on its name or folder icon to open it.

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8. In the left-hand window you will now see a list of all the files in that directory which end in **.EXE**, **.PIF**, **.COM** and **.BAT**. Look for the file **CUSTHELP.HLP**. You won't see it here, because it doesn't end in the correct name.

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9. In order to see *all* files in the directory you are browsing, click the down-arrow button in the lower left **List files of type:** box and select **All files (*.*)**. **CUSTHELP.HLP** will now be visible in the list box above.

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10. Double-click on its name, **CUSTHELP.HLP**, the box will close, leaving the **Program Item Properties** box displayed again. Click **OK** to close the **Program Item Properties** dialog box and the item's new icon will show up in your program group.

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11. Check to make sure that the icon works properly by double-clicking on it. If it was installed properly, you should see the **Customizing Windows Help** main screen.

Last topic

12. If you do not want to keep this icon, erase it by clicking it once with the mouse and pressing your **Delete** key. Windows will give you a second chance to back out if this was a mistake on your part. You can delete groups with no icons as well by highlighting them and pressing the **Delete** key. *All this erases are the icons.* **CUSTHELP.HLP** is still on your hard disk, perfectly safe.

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Installing and setting up Stuffit Expander

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Stuffit Expander, from Aladdin Systems, is our choice as the easiest to use, most cost-effective program available for working with new software archives found on the Internet. While there are better products and more complete products, we consider this to be *the* newcomer's tool. The price is certainly right (it's free). It also has the added advantages of being able to decode uuencoded binaries and MIME email attachments if you need this capability. (Free Agent and Eudora users may eventually need this kind of flexibility.)

In all of about five minutes this section will walk you through the process of installing and configuring Stuffit Expander, sparing you the miseries endured by hundreds of thousands of new Internet and online users faced with their first compressed or encoded file.

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[Installing the Stuffit Expander](#)

[← Last topic](#)

[Setting up the Stuffit Expander](#)

[← Last topic](#)

[Troubleshooting \(please read this even if you are not experiencing difficulty\)](#)

 [Last topic](#)

 **Stuffit Expander™**

Installing the Stuffit Expander

As simple as installations get

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This job is as simple as most installations get. First you need to switch to **File Manager** and find the **SITEX10.EXE** file. If you are a First Class or Tourist Class traveller, you'll find the installation package in your **C:\FIRSTRN\INETWARE** directory. If you are a Day Excursion passenger, you'll need to obtain a copy of this program either from the Internet or your favorite online service before continuing with this exercise. When you receive the software, you will find it in the directory where it was stored by your browser or terminal software.

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If you don't know how to find this program, you will need help with using **File Manager** before continuing. This help button will take you to the **File Manager** training section where you can learn how to find files on your hard disk.

 [Last topic](#)

If you still can't find the program and would like to install it anyway, click this **Stuffit Expander** icon to start the installation. (This will not work properly if First Train was installed into a directory not recommended by the setup program.)

Once you find **SITEX10.EXE**, it's simply a matter of running the program by double-clicking on its name from **File Manager**.

The screen shot on the next topic shows you how the program will look when you first run it. Click the **Next topic** bar now to move on.

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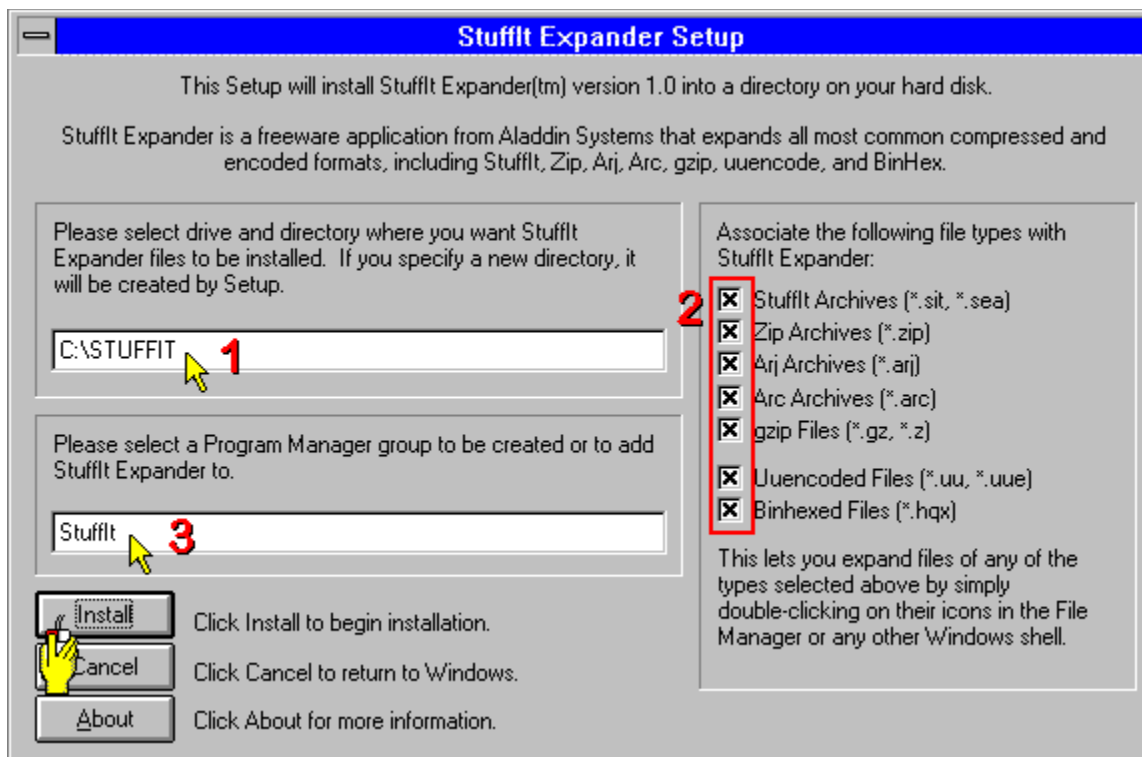
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The configuration screen

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In most cases you can click the **Install** button as shown without altering a thing here, but there are three options you might want to change. Click on the red numbers for details on these options.

Once you've made your choices on these three options, click **Install** as shown in the diagram and in less than a minute the whole job will be done. Click the **Next topic** bar below the diagram to move on.



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The first option to consider is the destination directory. In most cases the `C:\STUFFIT` directory will be just fine, but if you already have a `UTILS` directory for your utility programs (**Stuffit Expander** is known as a utility program since it's a tool for processing existing data, not for creating new data), you might want to install it to that directory instead.

The second option relates to how **StuffIt Expander** will handle the files you receive from the Internet. Unless you are familiar with how archived files work and want to change some of these options, it is recommended that you *not* change any of these settings. Leave all of these boxes checked, and your life will probably be made a lot easier.

The third option is the **Program Manager** group where **Stuffit Expander** will place its icons. If your **Program Manager** is getting cluttered with group icons, you might want to enter **Accessories** or **Internet Utilities** in this box and start adding your new Internet-only tools to this group rather than having them all in one group. We don't recommend placing it in your First Train group since you'll be erasing First Train once you've finished your tour and are satisfied with what you've learned.

If this sounds confusing, just leave this box as it is and you should have no difficulty with the software.

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Setting up the StuffIt Expander

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Now that you have it installed you're more than halfway home. StuffIt Expander has an excellent online help facility which you can use at any time by pressing the **F1** key.

When you run the program for the first time it will look pretty much like this, although the window size may be slightly different on your computer. You'll notice that **Options** is one of the main menu choices, and that's our next stop.



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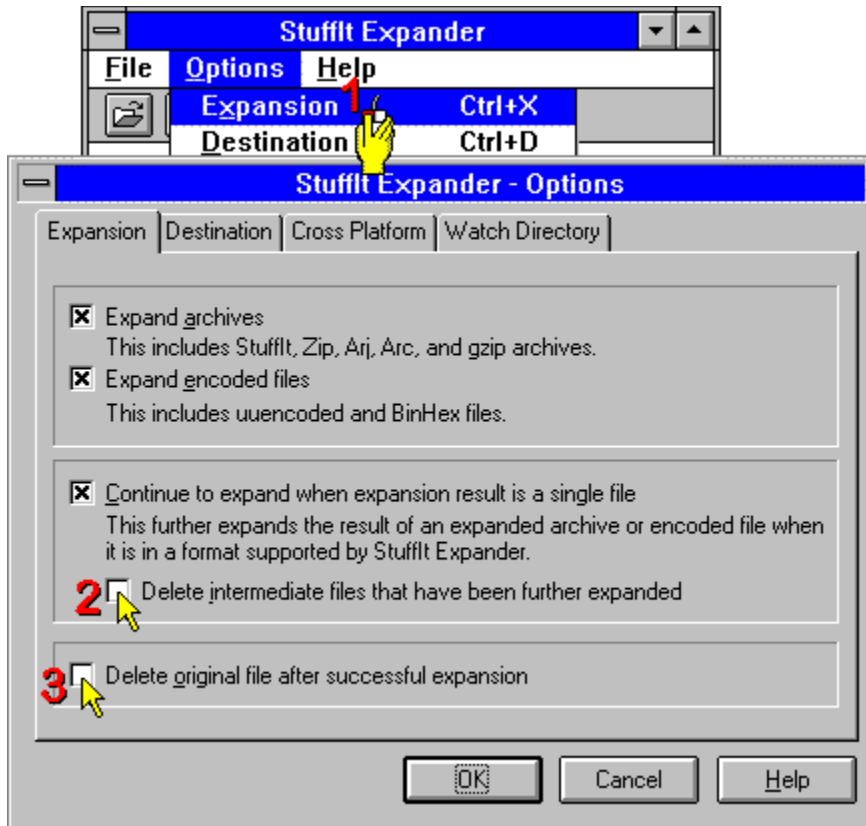
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Setting up the Stuffit Expander

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The program is configured quite nicely "out of the box". There is not much here we can recommend changing, but there are a few optional settings which can make your life easier. Click the numbers on the next diagram for complete explanations, and click the **Next topic** bar at the bottom of the diagram to move on to the last screen.



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The most important options that you might want to change are available by clicking **Options** from the top menu bar and selecting **Expansion**. A tabbed Windows 95-style option screen such as the one shown above will pop up.

The first option to consider changing is **Delete intermediate files that have been further expanded**. If you plan on getting software from newsgroups, it would be a good idea to **check** this box to let **Stuffit Expander** delete encoded files that have been converted to usable data. This will help you keep your hard disk clean of useless data, since uuencoded USENET binaries are often first compressed with PKZIP and then re-encoded with uucode when they are posted to the group.

The second option to consider is **Delete original file after successful expansion**. Until you become familiar with working with archived files, it is recommended that you **do not** check this box. After you have installed a half-dozen or so new programs, you might want to come back and check this box to save yourself the trouble of manually erasing ZIP files and other archives after you've extracted the data.

If you plan on sharing data from the Internet with others, it is recommended that you *never* check this box, because you'll want the original archive file to share with others.

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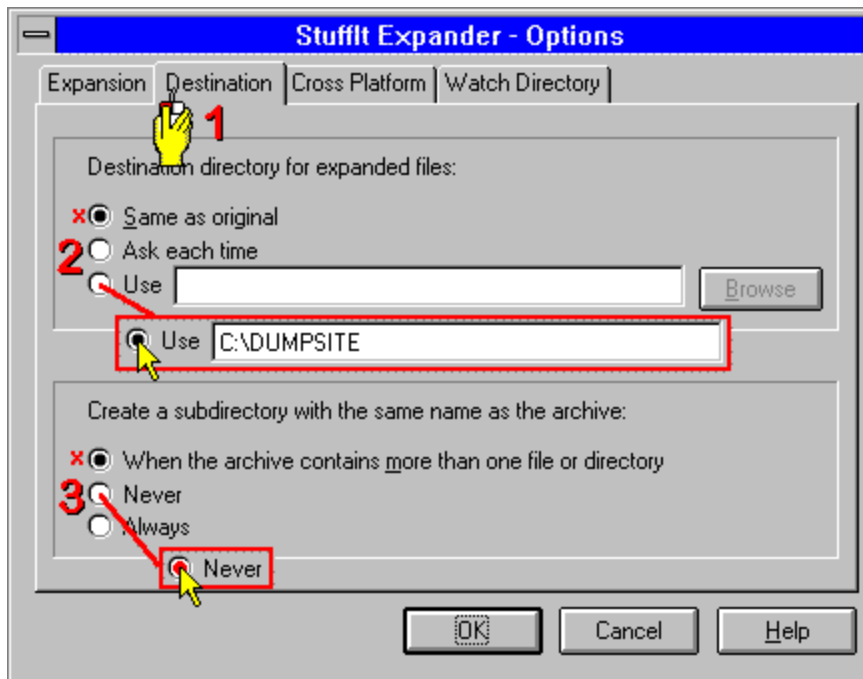
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Destination options

Click the red numbers for explanations of each of the suggested changes. This is the last screen in the **Stuffit Expander** setup section.

Once you've selected the options you want, **Stuffit Expander** will be fully installed and ready to use. And it is so easy to use that you might never see its actual program screen again unless you want to change its options. It's almost fully automatic. Click **OK** to exit the options menus and close the program and you'll be ready to handle 99 percent of all the archived files you'll want from the Internet.

Before finishing with this exercise, please browse the short troubleshooting section. It tells you about a problem you are quite likely to encounter with **Stuffit Expander** and how you can fix it quickly and easily.



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Click the **Destination** tab **(1)** from the row of four tabs at the top. This screen contains two very important options to consider.

The **Destination directory for expanded files**: is an important thing to think about. Remember that *expanding* the files does not *install* them! You'll usually have to run the install or setup program that comes with the package in order to do that. All **Stuffit Expander** does is prepare the data for installation.

This data should *not* be stored in the same directory as your Web browser, nor in your Windows directory, any of your First Train directories, or in the directory where you plan to put the data once it has been fully installed. We don't even recommend your **TEMP** directory if you have one because of the clutter this can create.

Instead it should be stored in an *intermediate* directory, and we suggest the following:

Click the button next to **Use** and fill in the text box with **c : \DUMPSITE** as shown in this picture. We have already created a **c : \DUMPSITE** directory on your hard disk specifically for this purpose.

Once this has been checked, all of your archives will unpack to **c : \DUMPSITE** where you can install them properly and erase leftovers neatly, and this should save you a lot of confusion.

One of the very few things we don't like about **Stuffit Expander** is the next option: whether to create a subdirectory for the expanded files. The program does this by default unless you tell it not to, and this can mean extra work for you. It's handy to have this directory once you gain more experience, but it can be a pain in the neck while you're learning to handle archives. We recommend clicking **Never** instead of **When the archive contains more than one file or directory**.

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Troubleshooting

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There's very little that can go wrong once you have Stuffit Expander up and running on your system, but there is a situation you should know about *before* it happens.

Problem: **Stuffit Expander** suddenly stops extracting files, or else you double-click on a file and you don't see the familiar status bar pop up that shows you **Stuffit Expander** is working. This is likely to happen with one or more types of files you receive from the Internet, and it's not **Stuffit Expander's** fault.

What has probably happened is that you tried to install a new program that stole **Stuffit Expander's** job of handling certain types of files. The easiest way to deal with that is to re-install **Stuffit Expander** so it can get back its old jobs from the program that took them away.

First Class and Tourist Class travellers should always have an extra copy of **Stuffit Expander** ready to re-install in their c:\FIRSTTRN\INETWARE directory. Switch to **File Manager**, find SITEX10.EXE again, double-click on its name, and you should be back to normal once the program has been re-installed.

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FYI on "What is the Internet?"

Click here to see a graphical representation of the Internet's communications network in the US as of early 1995.

Network Working Group

Request for Comments: 1462

FYI: 20

E. Krol

University of Illinois

E. Hoffman

Merit Network, Inc.

May 1993

Status of this Memo

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This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

Abstract



This FYI RFC answers the question, "What is the Internet?" and is produced by the User Services Working Group of the Internet Engineering Task Force (IETF). Containing a modified chapter from Ed Krol's 1992 book, "The Whole Internet User's Guide and Catalog," the paper covers the Internet's definition, history, administration, protocols, financing, and current issues such as growth, commercialization, and privatization.

Introduction

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A commonly asked question is "What is the Internet?" The reason such a question gets asked so often is because there's no agreed upon answer that neatly sums up the Internet. The Internet can be thought about in relation to its common protocols, as a physical collection of routers and circuits, as a set of shared resources, or even as an attitude about interconnecting and intercommunication. Some common definitions given in the past include:

- * a network of networks based on the TCP/IP protocols,
- * a community of people who use and develop those networks,
- * a collection of resources that can be reached from those networks.

{ewr ew256bmp.dll,ew256bmp,backbone.bmp} Today's Internet is a global resource connecting millions of users that began as an experiment over 20 years ago by the U.S. Department of Defense. While the networks that make up the Internet are based on a standard set of protocols (a mutually agreed upon method of communication between parties), the Internet also has gateways to networks and services that are based on other protocols.

To help answer the question more completely, the rest of this paper contains an updated second chapter from "*The Whole Internet User's Guide and Catalog*" by Ed Krol (1992) that gives a more thorough explanation. (The excerpt is published through the gracious permission of the publisher, O'Reilly & Associates, Inc.)

The Internet

(excerpt from "The Whole Internet User's Guide and Catalog")

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The Internet was born about 20 years ago, trying to connect together a U.S. Defense Department network called the ARPAnet and various other radio and satellite networks. The ARPAnet was an experimental network designed to support military research--in particular, research about how to build networks that could withstand partial outages (like bomb attacks) and still function. (Think about this when I describe how the network works; it may give you some insight into the design of the Internet.) In the ARPAnet model, communication always occurs between a source and a destination computer. The network itself is assumed to be unreliable; any portion of the network could disappear at any moment (pick your favorite catastrophe--these days backhoes cutting cables are more of a threat than bombs). It was designed to require the minimum of information from the computer clients. To send a message on the network, a computer only had to put its data in an envelope, called an Internet Protocol (IP) packet, and "address" the packets correctly. The communicating computers--not the network itself--were also given the responsibility to ensure that the communication was accomplished. The philosophy was that every computer on the network could talk, as a peer, with any other computer.

These decisions may sound odd, like the assumption of an "unreliable" network, but history has proven that most of them were reasonably correct. Although the Organization for International Standardization (ISO) was spending years designing the ultimate standard for computer networking, people could not wait. Internet developers in the US, UK and Scandinavia, responding to market pressures, began to put their IP software on every conceivable type of computer. It became the only practical method for computers from different manufacturers to communicate. This was attractive to the government and universities, which didn't have policies saying that all computers must be bought from the same vendor. Everyone bought whichever computer they liked, and expected the computers to work together over the network.

At about the same time as the Internet was coming into being, Ethernet local area networks ("LANs") were developed. This technology matured quietly, until desktop workstations became available around 1983. Most of these workstations came with Berkeley UNIX, which included IP networking software. This created a new demand: rather than connecting to a single large timesharing computer per site, organizations wanted to connect the ARPAnet to their entire local network. This would allow all the computers on that LAN to access ARPAnet facilities. About the same time, other organizations started building their own networks using the same communications protocols as the ARPAnet: namely, IP and its relatives. It became obvious that if these networks could talk together, users on one network could communicate with those on another; everyone would benefit.

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One of the most important of these newer networks was the NSFNET, commissioned by the National Science Foundation (NSF), an agency of the U.S. government. In the late 80's the NSF created five supercomputer centers. Up to this point, the world's fastest computers had only been available to weapons developers and a few researchers from very large corporations. By creating supercomputer centers, the NSF was making these resources available for any scholarly research. Only five centers were created because they were so expensive--so they had to be shared. This created a communications problem: they needed a way to connect their centers together and to allow the clients of these centers to access them. At first, the NSF tried

to use the ARPAnet for communications, but this strategy failed because of bureaucracy and staffing problems.

In response, NSF decided to build its own network, based on the ARPAnet's IP technology. It connected the centers with 56,000 bit per second (56k bps) telephone lines. (This is roughly the ability to transfer two full typewritten pages per second. That's slow by modern standards, but was reasonably fast in the mid 80's.) It was obvious, however, that if they tried to connect every university directly to a supercomputing center, they would go broke. You pay for these telephone lines by the mile. One line per campus with a supercomputing center at the hub, like spokes on a bike wheel, adds up to lots of miles of phone lines. Therefore, they decided to create regional networks. In each area of the country, schools would be connected to their nearest neighbor. Each chain was connected to a supercomputer center at one point and the centers were connected together. With this configuration, any computer could eventually communicate with any other by forwarding the conversation through its neighbors.

Last topic

This solution was successful--and, like any successful solution, a time came when it no longer worked. Sharing supercomputers also allowed the connected sites to share a lot of other things not related to the centers. Suddenly these schools had a world of data and collaborators at their fingertips. The network's traffic increased until, eventually, the computers controlling the network and the telephone lines connecting them were overloaded. In 1987, a contract to manage and upgrade the network was awarded to Merit Network Inc., which ran Michigan's educational network, in partnership with IBM and MCI. The old network was replaced with faster telephone lines (by a factor of 20), with faster computers to control it.

The process of running out of horsepower and getting bigger engines and better roads continues to this day. Unlike changes to the highway system, however, most of these changes aren't noticed by the people trying to use the Internet to do real work. You won't go to your office, log in to your computer, and find a message saying that the Internet will be inaccessible for the next six months because of improvements. Perhaps even more important: the process of running out of capacity and improving the network has created a technology that's extremely mature and practical. The ideas have been tested; problems have appeared, and problems have been solved.

For our purposes, the most important aspect of the NSF's networking effort is that it allowed everyone to access the network. Up to that point, Internet access had been available only to researchers in computer science, government employees, and government contractors. The NSF promoted universal educational access by funding campus connections only if the campus had a plan to spread the access around. So everyone attending a four year college could become an Internet user.

The demand keeps growing. Now that most four-year colleges are connected, people are trying to get secondary and primary schools connected. People who have graduated from college know what the Internet is good for, and talk their employers into connecting corporations. All this activity points to continued growth, networking problems to solve, evolving technologies, and job security for networkers.

What Makes Up the Internet?

Last topic

What comprises the Internet is a difficult question; the answer changes over time. Five years ago the answer would have been easy: "All the networks, using the IP protocol, which cooperate to form a seamless network for their collective users." This would include various federal

networks, a set of regional networks, campus networks, and some foreign networks.

More recently, some non-IP-based networks saw that the Internet was good. They wanted to provide its services to their clientele. So they developed methods of connecting these "strange" networks (e.g., Bitnet, DECnets, etc.) to the Internet. At first these connections, called "gateways", merely served to transfer electronic mail between the two networks. Some, however, have grown to translate other services between the networks as well. Are they part of the Internet? Maybe yes and maybe no. It depends on whether, in their hearts, they want to be. If this sounds strange, read on--it gets stranger.

Who Governs the Internet?

← Last topic

In many ways the Internet is like a church: it has its council of elders, every member has an opinion about how things should work, and you can either take part or not. It's your choice. The Internet has no president, chief operating officer, or Pope. The constituent networks may have presidents and CEO's, but that's a different issue; there's no single authority figure for the Internet as a whole.

The ultimate authority for where the Internet is going rests with the Internet Society, or ISOC. ISOC is a voluntary membership organization whose purpose is to promote global information exchange through Internet technology. (If you'd like more information, or if you would like to join, contact information is provided in the "For More Information" section, near the end of this document.) It appoints a council of elders, which has responsibility for the technical management and direction of the Internet.

The council of elders is a group of invited volunteers called the Internet Architecture Board, or the IAB. The IAB meets regularly to "bless" standards and allocate resources, like addresses. The Internet works because there are standard ways for computers and software applications to talk to each other. This allows computers from different vendors to communicate without problems. It's not an IBM-only or Sun-only or Macintosh-only network. The IAB is responsible for these standards; it decides when a standard is necessary, and what the standard should be. When a standard is required, it considers the problem, adopts a standard, and announces it via the network. (You were expecting stone tablets?) The IAB also keeps track of various numbers (and other things) that must remain unique. For example, each computer on the Internet has a unique 32-bit address; no other computer has the same address. How does this address get assigned? The IAB worries about these kinds of problems. It doesn't actually assign the addresses, but it makes the rules about how to assign addresses.

← Last topic

As in a church, everyone has opinions about how things ought to run. Internet users express their opinions through meetings of the Internet Engineering Task Force (IETF). The IETF is another volunteer organization; it meets regularly to discuss operational and near-term technical problems of the Internet. When it considers a problem important enough to merit concern, the IETF sets up a "working group" for further investigation. (In practice, "important enough" usually means that there are enough people to volunteer for the working group.) Anyone can attend IETF meetings and be on working groups; the important thing is that they work. Working groups have many different functions, ranging from producing documentation, to deciding how networks should cooperate when problems occur, to changing the meaning of the bits in some kind of packet. A working group usually produces a report.

Depending on the kind of recommendation, it could just be documentation and made

available to anyone wanting it, it could be accepted voluntarily as a good idea which people follow, or it could be sent to the IAB to be declared a standard.

If you go to a church and accept its teachings and philosophy, you are accepted by it, and receive the benefits. If you don't like it, you can leave. The church is still there, and you get none of the benefits. Such is the Internet. If a network accepts the teachings of the Internet, is connected to it, and considers itself part of it, then it is part of the Internet. It will find things it doesn't like and can address those concerns through the IETF. Some concerns may be considered valid and the Internet may change accordingly. Some of the changes may run counter to the religion, and be rejected. If the network does something that causes damage to the Internet, it could be excommunicated until it mends its evil ways.

Who Pays for It?

[← Last topic](#)

The old rule for when things are confusing is "follow the money." Well, this won't help you to understand the Internet. No one pays for "it"; there is no Internet, Inc. that collects fees from all Internet networks or users. Instead, everyone pays for their part. The NSF pays for NSFNET. NASA pays for the NASA Science Internet. Networks get together and decide how to connect themselves together and fund these interconnections. A college or corporation pays for their connection to some regional network, which in turn pays a national provider for its access.

What Does This Mean for Me?

[← Last topic](#)

The concept that the Internet is not a network, but a collection of networks, means little to the end user. You want to do something useful: run a program, or access some unique data. You shouldn't have to worry about how it's all stuck together. Consider the telephone system--it's an internet, too. Pacific Bell, AT&T, MCI, British Telephony, Telefonos de Mexico, and so on, are all separate corporations that run pieces of the telephone system. They worry about how to make it all work together; all you have to do is dial.

If you ignore cost and commercials, you shouldn't care if you are dealing with MCI, AT&T, or Sprint. Dial the number and it works.

You only care who carries your calls when a problem occurs. If something goes out of service, only one of those companies can fix it. They talk to each other about problems, but each phone carrier is responsible for fixing problems on its own part of the system. The same is true on the Internet. Each network has its own network operations center (NOC). The operation centers talk to each other and know how to resolve problems. Your site has a contract with one of the Internet's constituent networks, and its job is to keep your site happy. So if something goes wrong, they are the ones to gripe at. If it's not their problem, they'll pass it along.

What Does the Future Hold?

[← Last topic](#)

Finally, a question I can answer. It's not that I have a crystal ball (if I did I'd spend my time on Wall Street instead of writing a book). Rather, these are the things that the IAB and the IETF discuss at their meetings. Most people don't care about the long discussions; they only want to know how they'll be affected. So, here are highlights of the networking future.

New Standard Protocols

Last topic

When I was talking about how the Internet started, I mentioned the International Standards Organization (ISO) and their set of protocol standards. Well, they finally finished designing it. Now it is an international standard, typically referred to as the ISO/OSI (Open Systems Interconnect) protocol suite. Many of the Internet's component networks allow use of OSI today. There isn't much demand, yet. The U.S. government has taken a position that government computers should be able to speak these protocols. Many have the software, but few are using it now.

It's really unclear how much demand there will be for OSI, notwithstanding the government backing. Many people feel that the current approach isn't broke, so why fix it? They are just becoming comfortable with what they have, why should they have to learn a new set of commands and terminology just because it is the standard?

Currently there are no real advantages to moving to OSI. It is more complex and less mature than IP, and hence doesn't work as efficiently. OSI does offer hope of some additional features, but it also suffers from some of the same problems which will plague IP as the network gets much bigger and faster. It's clear that some sites will convert to the OSI protocols over the next few years. The question is: how many?

International Connections

Last topic

The Internet has been an international network for a long time, but it only extended to the United States' allies and overseas military bases. Now, with the less paranoid world environment, the Internet is spreading everywhere. It's currently in over 50 countries, and the number is rapidly increasing. Eastern European countries longing for western scientific ties have wanted to participate for a long time, but were excluded by government regulation. This ban has been relaxed. Third world countries that formerly didn't have the means to participate now view the Internet as a way to raise their education and technology levels.

In Europe, the development of the Internet used to be hampered by national policies mandating OSI protocols, regarding IP as a cultural threat akin to EuroDisney. These policies prevented development of large scale Internet infrastructures except for the Scandinavian countries which embraced the Internet protocols long ago and are already well-connected. In 1989, RIPE (Reseaux IP Europeens) began coordinating the operation of the Internet in Europe and presently about 25% of all hosts connected to the Internet are located in Europe.

Last topic

At present, the Internet's international expansion is hampered by the lack of a good supporting infrastructure, namely a decent telephone system. In both Eastern Europe and the third world, a state-of-the-art phone system is nonexistent. Even in major cities, connections are limited to the speeds available to the average home anywhere in the U.S., 9600 bits/second. Typically, even if one of these countries is "on the Internet," only a few sites are accessible. Usually, this is the major technical university for that country. However, as phone systems improve, you can expect this to change too; more and more, you'll see smaller sites (even individual home systems) connecting to the Internet.

Commercialization

Last topic

Many big corporations have been on the Internet for years. For the most part, their participation has been limited to their research and engineering departments. The same

corporations used some other network (usually a private network) for their business communications. After all, this IP stuff was only an academic toy. The IBM mainframes that handled their commercial data processing did the "real" networking using a protocol suite called System Network Architecture (SNA).

Businesses are now discovering that running multiple networks is expensive. Some are beginning to look to the Internet for "one-stop" network shopping. They were scared away in the past by policies which excluded or restricted commercial use. Many of these policies are under review and will change. As these restrictions drop, commercial use of the Internet will become progressively more common.

This should be especially good for small businesses. Motorola or Standard Oil can afford to run nationwide networks connecting their sites, but Ace Custom Software couldn't. If Ace has a San Jose office and a Washington office, all it needs is an Internet connection on each end. For all practical purposes, they have a nationwide corporate network, just like the big boys.

Privatization

← Last topic

Right behind commercialization comes privatization. For years, the networking community has wanted the telephone companies and other for-profit ventures to provide "off the shelf" IP connections. That is, just like you can place an order for a telephone jack in your house for your telephone, you could do this for an Internet connection. You order, the telephone installer leaves, and you plug your computer into the Internet. Except for Bolt, Beranek and Newman, the company that ran the ARPAnet, there weren't any takers. The telephone companies have historically said, "We'll sell you phone lines, and you can do whatever you like with them." By default, the Federal government stayed in the networking business.

Now that large corporations have become interested in the Internet, the phone companies have started to change their attitude. Now they and other profit-oriented network purveyors complain that the government ought to get out of the network business. After all, who best can provide network services but the "phone companies"? They've got the ear of a lot of political people, to whom it appears to be a reasonable thing. If you talk to phone company personnel, many of them still don't really understand what the Internet is about. They ain't got religion, but they are studying the Bible furiously. (Apologies to those telephone company employees who saw the light years ago and have been trying to drag their employers into church.)

← Last topic

Although most people in the networking community think that privatization is a good idea, there are some obstacles in the way. Most revolve around the funding for the connections that are already in place. Many schools are connected because the government pays part of the bill. If they had to pay their own way, some schools would probably decide to spend their money elsewhere. Major research institutions would certainly stay on the net; but some smaller colleges might not, and the costs would probably be prohibitive for most secondary schools (let alone grade schools). What if the school could afford either an Internet connection or a science lab? It's unclear which one would get funded. The Internet has not yet become a "necessity" in many people's minds. When it does, expect privatization to come quickly.

Well, enough questions about the history of the information highway system. It's time to walk to the edge of the road, try and hitch a ride, and be on your way.

Acknowledgments

We would like to thank O'Reilly & Associates for permission to reprint the chapter from their book by Ed Krol (1992), "The Whole Internet User's Guide and Catalog."

For More Information

Hoffman, E. and L. Jackson. (1993) *"FYI on Introducing the Internet --A Short Bibliography of Introductory Internetworking Readings for the Network Novice,"* 4 p. (FYI 19, RFC 1463).

To find out how to obtain this document and other on-line introductory readings, send an e-mail message to: nis-info@nis.merit.edu, with the following text: **send access.guide**.

Krol, Ed. (1992) *The Whole Internet User's Guide and Catalog*, O'Reilly & Associates, Sebastopol, CA. ISBN 1-56592-025-2.

Quarterman, J. (1993) *"Recent Internet Books,"* 15 p. (RFC 1432).

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Security Considerations

Security issues are not discussed in this memo.

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 **Last topic**

 **Last topic**



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[← Last topic](#)

Welcome aboard the First Train for the Internet



This section contains a lot of material meant for first-time computer users and Internet newcomers. If you're an experienced user, feel free to skim over this material, but please browse the topic titles. These topics are mainly concerned with making this software more useful to you.

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[A personal welcome from your engineer](#)

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[Important information for all passengers](#)

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[For more help...](#)

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 [Welcome aboard](#)

Important information for all passengers

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This section is designed to show you how to find your way around and get accustomed to the way things are done here on the First Train. While this isn't the actual Internet, you'll find a lot of what you learn here can be applied to your Internet experience. A little time spent here can save you a lot of puzzlement and frustration later.

{ewl embh.dll,ARROW,A100}**Important note:** There are *two* welcome sections: one for your pre-travel preparations and another for your online journey. Some of the material is duplicated between the two sections in case you miss some important points. You don't need to read all of both sections, but please be aware that you will find new information in the welcome section once you start your actual Internet journey.

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[What is First Train for the Internet?](#)

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[How the First Train for the Internet is structured](#)

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[Finding your way around](#)

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[Bookmarking sections of the tour](#)

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A personal welcome from your engineer

A foreword from Cub Lea

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I want to urge everyone who reads this to be completely *unprepared* for what lies ahead. First Train is here to help you find your way around, but it's up to you to find your place. I firmly believe there *is* a place on the Internet for everyone who reads this. The challenge on this trip, just as it is in life, is to find that place.

Make no mistake...the challenge of the Internet is not just to be on it and do things, but to *be* and to *do* in your own unique way. It may take you a while to truly come to terms with this notion, but it's true: the Internet is not "virtual reality" where people play-act and waste time. It *is* reality where people live, act and *react*, and where people *spend* their precious time.

Don't ever fall for the notion that the Internet is simply a collection of information and entertainment. While that's what the Internet was designed for, it has become a collection of people, real people, and the only difference between the Internet and most people's daily lives is that communication and interaction takes place in a different form. That difference is what makes the Internet one of the spices of life in the 1990s.

The Internet as it stands today can only reach two of your senses: sight and hearing. But if you do a little exploring, you are almost certain to discover that there are places on the net that will touch you in ways you could never feel with your senses. Yes, a book can do that too, and so can a look, a movie or even a meal. But never in the history of mankind has there been a medium to offer such variety of experience, and such safety to explore and experiment.

It is in that exploration that you will find what touches you, and it is in that experimentation that you will find what it is in you that touches others. Regardless of who you are or how you use the Internet, always know that your presence is needed. You might not always seem welcome or appreciated, but make no mistake...you are needed.

[← Last topic](#)

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Customizing First Train

← Last topic

First Train is designed with a few options for customizing the look and feel of the package. We know how critical it is to be comfortable and well-oriented in order to absorb new information, and we think you'll appreciate these touches, available from First Train's **Extras** menu by clicking **Options**. These features are limited in this version.

← Last topic

[Changing the background colors \(online section\)](#)

← Last topic

[Changing Windows Help colors \(offline section\)](#)

← Last topic

[The Table of Contents option](#)

If you have a Web browser which is capable of using background graphics, we have added a small touch to help improve your learning environment. It's a menu that allows you to select one of ten different background colors for different moods and lighting conditions.



This button launches the online color changer; clicking anywhere else will exit this pop-up. This is a DOS program and is available at any time from the **Options** submenu of First Train's **Extras** menu or from the menu of **First Train Help**. This utility is for First Class and Tourist Class passengers only.

This is a small program we wrote which allows you to change the default colors used for First Train's background and to set a few other normally-unavailable options. It's not for everyone, but the program was so small we felt it was worth including with the package for those who might like it.



Click the button at left to launch **Customizing Windows Help** now or click anywhere else to exit this topic. This option is also available from the **Options** submenu of First Train 's **Extras** menu. This option is for First Class and Tourist Class passengers only.

This registered shareware version of First Train Day Excursion contains two Table of Contents options, one for Windows 3.1 and one for Windows 95. We think you'll find it a lot easier to get around using this feature, and while you'll miss the introductions to each section you'll be able to move straight to the subject that interests you with no muss and no fuss.

If you have Windows 95 you may find the Table of Contents option an irritation rather than a help, so you'll find an option for removing this feature under the **Extras** menu by selecting **Table of Contents On/Off**. This feature takes effect the next time you start First Train.

If you have Windows 3.1 or Windows for Workgroups you can turn this item off if you like, but it is not recommended. The software for this option is already on your system, and the actual contents table itself takes up very little room in the total package.

 **Welcome aboard**

 **For all passengers**

What is First Train for the Internet?

Much more than just the Internet

 **Last topic**

Welcome to the first one-stop, interactive training and resource system for Windows Internet users. This is a resource designed specifically for novice to advanced-intermediate level computer users, and it provides information about a wide range of subjects relating to computing and the Internet.

You'll soon discover that there is *much* more to First Train than just help with the Internet. Travelling comfortably and enjoyably on the Internet demands a little bit of knowledge about computing in general and your computer in particular, and we make sure you have the tools you need to get that knowledge.

Designed with Windows in mind

This kit was designed and structured to allow you to learn and use all of the Internet services provided with a standard Windows SLIP or PPP Internet access account, even if you have almost no computer experience. It will also walk you through the basics of many critical skills for getting more out of Windows with less risk and hassle.

There is a *lot* of material here, enough to keep you busy for weeks. The text alone would fill several hundred book pages. But don't feel overwhelmed by it all. Chances are you won't need more than a fraction of the help here. Since we can't know what kind of help you *will* need, First Train purposely errs on the side of providing more than you're *likely* to need. We believe it's better to have it and not need it than to need it and not have it.

It's all important, but only some will be important to you

And don't feel the need to go through everything unless you want to. No one, not even ten-year computing experts, master the net in a day, a week, or even a month. In fact, no one *ever* truly masters the Internet. The trick -- and it is nothing more than a trick -- is to figure out what you want to do, focus on that skill, and move ahead based on that goal. Accept right now that the best you can hope to do is learn how to make the best possible use of the services that most interest you. It might help take a lot of the pressure off and help you enjoy the ride more if you can give up any notion of becoming an overnight Internet expert.

This is your trip. We'll often suggest skills and techniques we feel are particularly important or helpful, but always remember that *these are only suggestions*. More than anything else, we want you to get out and enjoy the net.

 **Last topic**

 **Last topic**

[← Last topic](#)

[← Last topic](#)

How the train is structured

[← Last topic](#)

First Train for the Internet was designed from the ground up to suit the way you think and adapt to your changing moods. Sometimes you want to get on the net to accomplish a certain task. Other times you just want to have fun. Still other times you'll need to learn a specific skill, and do it quickly.

Designed with your mind in mind too

We tried to make First Train fit like an old pair of sneakers and feel like an old friend. We want it to be just as useful and interesting for computing veterans new to the Internet as for people who have never used a computer before. Expert users should be comfortable with its features and interface in just an hour or two. First-time computer owners with just a day or two of computing experience won't find it as quick -- there's a lot to learn when you get your first computer -- but they should find it just as easy.

This section of the train has many different methods of navigation. When you installed the software, you were given the option of adding full-text search capability and a pop-up table of contents menu in addition to the iconic, push-button menus. As you wander through the train you'll find it loaded with buttons designed to help you navigate in a number of different ways.

[← Last topic](#)

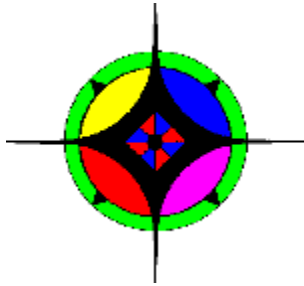
[← Last topic](#)

← Last topic

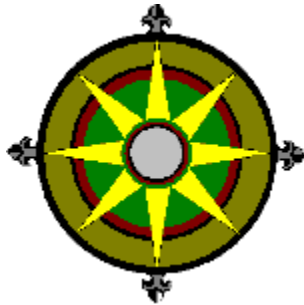
← Last topic

Finding your way around

Many methods of navigation



We built the train with this many methods of navigation because you don't always think and feel the same way. You'll find the same sort of flexibility on the net. You'll have days when it's everything you can do to follow a procedure from point A to point B and others when you simply want to fool around and see what you can find. And on still other days you'll want to get to a specific bit of information *right now*. Regardless of your learning style, both the online and offline sections of First Train will help you navigate efficiently and quickly.



There's no right or wrong way to navigate First Train. Like the Internet itself, this site has no map, although it does have an extensive table of contents if you want it. You are encouraged to come and go as and where you please. We'll help you learn at your own pace, in your own way, and to assist you at every step to gain skill, confidence and power. Some people are uncomfortable with a completely unstructured approach to learning, so if you'd prefer to take a more disciplined approach here are a few suggestions.

First Train navigation options

We've built several different types of menus into this package, some of which might come as a surprise to you if you're used to working with Windows Help as a drab, linear tool.

Full-text search

This is available only to First Class and Tourist Class passengers due to the amount of space this option takes, but it is so handy that we felt we had to include it. You'll find this option listed as one of the menu choices under the **Extras** menu at the top of this window, and it is also available by clicking the **Wordfind** button at the top of this window. Here's a hint: not all topics in this guide have titles, and you might find that the information you need is tucked away in an unnamed topic that shows up as blank space in the search form. We recommend trying the named topics first though if you're not quite sure where to find the information you seek.

The level bars

Every topic in this kit which is not part of an exercise that you need to browse from start to finish includes at least one and usually two jump-level bars at the top of the screen, and "page turner" bars at the bottom of the topic. We think you'll find these most useful once you've used them a few times.

 **Last topic**

The open book mini-icon tells you that clicking the bar takes you to the menu for the section you are currently browsing.

 **Last topic**

The closed book mini-icon takes you up *two* levels.

Take things at your pace, and in your way

Like most of what you'll find on the Internet's World Wide Web, this site encourages you to jump from place to place at will. If you don't want to worry about remembering where you were five minutes ago, it will help if you exercise a little patience when moving around for the first little while. There are literally thousands of links in the First Class/Tourist Class package, in fact there were nearly ten thousand at last count.

Everything is interconnected

Everything in this kit is interconnected. If you get lost, there are hot buttons at the top and bottom of every section that will take you back and forth between topics and up and down between levels. If this seems confusing now, it's something you'll eventually have to get used to...this is how most of the better-organized sections of the World Wide Web are structured.

The online version has simple buttons that allow you to quickly jump to one of six different "home pages". The top menu of the offline section is always available by clicking the **Contents** button at the top of this window.

Expect to get lost...many times...before you get your bearings as a net novice. But expect to find new and interesting things whenever you do. The Internet is like that. Random wandering is the essence of surfing the net, and we believe it's the best way to learn how the Internet works, and what it can do for you. The same thing applies to First Train.

 **Last topic** **Last topic**

← Last topic

← Last topic

Check your bookmarks

Two types of bookmarks



If you already have some Internet experience, you are probably familiar with the concept of bookmarks. They allow you to remember where you've been and find your way back to favorite locations. Some Internet navigation software refers to bookmarks as hotlists, favorites, or navigation items, but the generic term is "bookmark".

What you might not have known is that this Windows Help tool can use bookmarks too, and for precisely the same purpose. Help bookmarks work the same way as bookmarks used in Internet browsers, and we strongly recommend becoming acquainted with this feature. They won't just help you with the large volume of help available in First Train either. Windows 95 uses many enormous helpfiles, and bookmarking your place in some of these files can help you quickly go back to points you keep forgetting.

More help with bookmarks

← Last topic

First Train includes additional help for working with bookmarks in Windows (First Class/Tourist Class only). Click the title or document icon that corresponds with your version of Windows for more help. Close the new window to return to this section of First Train.

← Last topic

[Bookmark help \(Windows 3.1/Windows for Workgroups\)](#)

← Last topic

[Bookmark help \(Windows 95\)](#)

← Last topic

Additional help with bookmarks in Web browser software is available from First Train's online section on the **Welcome Aboard!** Page, and you might find additional help for your particular Web browser by clicking its **Help** menu item and making the appropriate selection.

← Last topic

← Last topic

[← Last topic](#)

[← Last topic](#)

Printing sections of First Train

Special printing options



We don't feel good about using a lot of paper (that's why First Train has such a small printed manual) but there are times when it just plain makes sense to have a printed copy of the topic or topics you are browsing when attempting to perform a certain exercise. There are also a few forms included in First Train which lend themselves to printing, such as our Internet Access Shopper's Checklist.

The **Print** function in Windows **Help** won't give you the flexibility you'll need to print some exercises in the way you'd like since it only prints one topic at a time: the one displayed on your screen. We've added a little extra oomph to Windows' printing routines with special printer buttons at the top of some topics which will allow you to print the whole exercise regardless of its length. We preselect the topics you'll need printed and send them all to your printer at once, a neat work-around for a buggy function.

Something to watch for

[← Last topic](#)

We've tried to set First Train up for maximum efficiency, meaning that when you need printed instructions you won't necessarily get the graphics included with a particular topic. Some printer buttons *will* give you graphics in your topic print-outs...the exercises would be pretty useless without them...but most will not.

Printing online sections

[← Last topic](#)

You can also print any of the HTML-format pages included in First Train's online section from most Web browser programs by clicking **File** from the top menu bar of your browser and selecting **Print** from the menu that drops down. In this case, the printed pages will usually contain all the graphics and design elements you see on your screen, although they will only print in color if you have a color printer.

[← Last topic](#)

If you have less than eight megabytes of memory on your computer, you may find that printing many of these pages will takes time.

Please print only the information you need



We do not encourage indiscriminate printing of our materials. This kit was designed to be as paperless as possible. We also hope you'll get a lot of reuse out of the package, and even copy over the disks once you've outgrown First Train.

If you *do* need to print a lot of this material, try to reuse old 8-1/2 by 11 printer or copy paper, and pass your unneeded printouts on to someone else who may be starting out on the

Internet. A month or two from now you will probably have most of the toughest material memorized.

What you should know about our copyright

{ewl embh.dll,ARROW,A100}One important note about printing pages you find on the Web, and this applies to all material included in the online section: Unless specifically stated somewhere on the page, every page on the World Wide Web is copyrighted! Some pages may specifically warn you not to print them, save them to disk or copy any part of them for others. It is generally considered okay to print most Web pages for personal use, but do not share your printouts, or any files you may save from Web sites, unless you are specifically told by the publisher or author of that file that you have permission to do so. If permission is not granted in the file or on the page itself, assume that you cannot use the page for anything but viewing with your Web browser! This caution applies to all pages in this kit bearing the Dynamic Living Media copyright. (Many pages here do not have our copyright.)

[**← Last topic**](#)

For more information on how copyrights apply to the Internet and the World Wide Web, please read **10 Big Myths About Copyright Explained**, available by clicking this help button.

Additional information copyrights on the Internet is available from the Copyright Clearance Center Inc.'s archive of information, including information sheets, FAQ (Frequently Asked Questions) files, and links to legal resources should you ever need them. There are links to this material in the online section of **First Train** on the **Welcome Aboard!** page.

[**← Last topic**](#)

[**← Last topic**](#)

 [Last topic](#)

 [Last topic](#)

The [Last topic](#) button

A different kind of help

We have done everything we can to make your journey as comfortable as possible, but we don't compromise on the truth. We believe it is more important to give you accurate, complete information and let you make your own decisions rather than try to sell you on the Internet and its services. You'll find a lot of exciting information here, about the Internet and about your own computer.

 [Last topic](#)

You will also discover a lot of things that may frighten or anger you...and we don't just mean anarchy, pornography and government interference on the net. We also mean irritating problems with software and hardware, and other potential disaster areas you should know about. We'll warn you about many of these points in advance using this icon.

 [Last topic](#)

You'll be warned about many of the more unpleasant aspects of computing and Internet with one of these bitter-face icons.

 [Last topic](#)

Finally, Some of the net's more frightening aspects are marked with this "fraidy-cat" icon. This icon is also used to warn you about specific parts of the trip which our trial users found particularly scary.

 [Last topic](#)

But there's something else you need to watch out for: raw panic. It's not an uncommon experience. The sheer volume of learning involved in getting comfortable on the net, along with the mass of information and entertainment available, overwhelms a *lot* of people.

We've been there

 [Last topic](#)

On many of the novice-level training and walk-through pages you will find a panic button We're not going to tell you where it takes you, but we will tell you is that it is there for a reason. Press it any time you feel like you don't belong on the Internet. Press it whenever you feel that shouldn't own a computer. Press it when something happens or someone says something to make you believe should quit your account and leave the Internet to the real computer users.

We created this button, and the material you'll find at the other end of it, because *we've been there!* We *know* how it feels to be in over your head and afraid you'll never get your questions answered. We *know* the pressure some people feel to become Internet adepts in a short period. And we also know that we're human...we haven't done a perfect job in providing you with the information you'll need, and we never will.

Don't be ashamed to press the panic button

 [Last topic](#)

It's a dirty secret that *most* people feel some degree of panic or despair at some time during the learning process, and this is especially common when learning to use a computer for the first time, or when trying to understand a new computing resource such as the Internet. The panic button will not solve your problems for you. What we hope it will do is help you regain your courage and confidence. This isn't such a scary place, but it sure looks that way at times.

Use it as often as you need to. We're adding new tension-relievers all the time, so you should find the panic button pages different depending on when and where you have to use them. We hope you don't feel the need to press it already, but if you're feeling overwhelmed, ashamed, stupid or hopeless *right now*, then by all means go ahead and press it! That's what it's there for.

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← Last topic

← Last topic

Navigating First Train's online section

This information is for Tourist Class
and First Class travellers only.

A somewhat different interface

← Last topic

As you'll soon discover, the online section of First Train has a very different look and feel to this offline section, and it's a lot less versatile and feature-packed. But then it's an accurate representation of how you will work with the Internet, and frankly you won't get the gadgets and goodies you might be used to with Windows from a World Wide Web page...at least not for a while. Then again, the offline section doesn't connect to a billion or so documents and files either.

The online resources (most of which can also be used whether you have an active Internet account or not) work in a slightly different way and have a somewhat different structure.

Your first task: understanding the interface

← Last topic

We tried to build the same sort of flexibility into the online version as you find in the offline version, meaning there are several different ways of navigating. If you use Netscape Navigator, we have a prepared set of bookmarks you can **Import** directly into your Netscape bookmarks list. This will allow you to jump instantly to any section of First Train simply by selecting an item from the **Bookmarks** menu.

We implemented other forms of navigation as well. Like First Train's offline section, the material has a large number of hot-linked words and phrases you can click at will to jump to different sections of the site. This method of navigation tends to appeal to people who don't have a specific goal in mind.

At the top of each page you'll see a cluster of six bars similar to the ones in the offline section. Clicking these bars will take you instantly to one of six different First Train "home pages". Click the sample bars below for explanations of what each of the pages contain:



The Tour Itinerary page

The **Tour Itinerary Page** is a detailed list of all pages available in the online section of First Train, and includes links to training and setup pages available at other sites on the Web. It's designed to help you track down complete lessons you can take and point you to the main resource page for each of the Internet services available with most Windows Internet access accounts. The **Quick Index** contains the same list, but this is the only place on the First Train where you'll find a complete, categorized, *descriptive* list of all training and setup pages and resource materials.

The Tourist's Interpreter Page

The **Tourist's Interpreter** is more loosely structured, making it more suitable for casual browsing or "surfing". It's little more than a list of common words, phrases and acronyms you'll see used on the Internet, complete with instructions, a few diagrams and pictures, and entertaining trivia. Each definition and explanation on this page includes several links to resource pages or specific sections of pages on the First Train that contain more information on the term or service being described. All of the most important training materials are linked to one of these two pages.

By the way, the material in the **Tourist's Interpreter** is duplicated in the offline section. It's important that you have access to this material regardless of what part of the train you're on.

The Fact Finder page

The **Fact Finder Page** is more of an expert tool, and it requires a fair bit of precision on your part, but it's also the quickest way to find what you're looking for if you know exactly what it is you want to know. It's designed for use on the Internet, not for use on the First Train.

The **Fact Finder Page** includes search options for hunting down many kinds of information located all over the Internet, and it's a service you'll eventually want to learn how to use.

This page will not work unless you are connected to your Internet provider. It is designed to work with other resources connected directly to the Internet, and at the very top you'll see a help button which will take you to a training page for working with Internet search resources.

The Software Resources Page

As you gain a little courage, or simply become bored, one page you're likely to use frequently is the **Software Resources Page**. This is your one-stop shop for all the best (at least in our opinion) shareware and freeware software available on the Internet. Many of the programs listed on the **Software Resources Page** are cross-referenced with the page that describes the Internet service which the program is designed for.

The Quick Index

We've also added a "hotlist" page, the **Quick Index**, for those who don't want to mess around. It's nothing but a list of titles of every page on the site. Once you become familiar with First Train's layout, you'll use this page to quickly jump to the section of most interest to you.

We hope the **Quick Index** becomes your most frequently visited First Train online page. If and when it does, it will mean you've developed the confidence and skill to find what you want with the least possible effort.

The What's New Page

Here is where you'll learn about the new features added to First Train and our latest net discoveries since we created your copy of First Train. This will only be of interest to you if you have already been using First Train for a while...if you update your copy immediately after purchasing it, then of course *everything* will be new.

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[← Last topic](#)

Common questions about First Train



[← Last topic](#)

Where's the manual?

[← Last topic](#)

Why the train motif?

[← Last topic](#)

Why no sound or animation?

[← Last topic](#)

[Why does First Train have to be updated?](#)

We chose the train motif for a reason. The Internet really is like a foreign land, and using the net does feel a lot like travelling. You'll find that if you prepare properly for your journey and have a better idea of where you're going, you'll be much more comfortable much more quickly, and get more out of your time online. There was no way we could cover all the bases, but we have tried to deal with the most important subjects.

There isn't one. We believe that providing manuals for software is about as sensible as using a steam engine to start your car. The software *is* the manual. You'll find lots of spots in various places in the program to jump to extra help, troubleshoot problems and take care of other situations which the manual usually covers. You can print sections of the package in several ways, create bookmarks and annotations to remind you of your place, and do things with these tools you can't do with a manual.

First Train for the Internet was originally designed to be used online as part of the services you get with an Internet account. Part of the problem with sound and video on the Internet is that unless you have an extremely fast connection, you can spend hours a day waiting for sound and video to transmit to your computer. We didn't want to put modem users, who comprise the vast majority of new net users, through this kind of a test of patience, so we stuck with text, and as much as possible tried to keep the size of graphics files small. This meant compromising on much of what we could do at the time the product was developed.

As time went on, we realized that the whole point of the software is to help you when you need help, and when possible *before* you need help, not to be a multimedia "tour of the Internet". We'd still like to add some multimedia to First Train, but it will be kept to a minimum. You can find glitzy video-tutorial CDs to teach Internet just about anywhere, but you won't find anything that gives you the raw power to help when you need it that First Train provides, ugly masses of text and all, and as long as we feel like First Train is doing what we originally intended it to do...and doing it better than anything else on the market...we'll continue to be help-heavy and multimedia-light.

[← Last topic](#)

[Common questions](#)

Why does First Train have to be updated?

It's never perfect, but we're always working on it!

{ewr ew256bmp.dll,ew256bmp,undcon2.bmp}One of the most common phrases you'll see as you make your way around the Web is *under construction*. Some days it will seem like half the pages you come across will have this message written somewhere on them. Doesn't anyone ever finish their work here?

In a word, no. At least, we sure don't.

The Web is constantly evolving, growing, gaining new features and more possibilities. The programming used in publishing for the Web is also one of the easiest languages ever developed, meaning that by the end of 1995 literally millions of people will know how to create high-quality Web pages. Some material does get completed to the point where a year or two might go by before it gets updated, but in most cases, Web pages change as quickly as the weather. A good ten percent of Web pages have new features or changes every single day!

The only constant is change

First Train for the Internet is no different. In an attempt to keep as current with developments on the Internet as we possibly can, we constantly test, tune, and rewrite these pages to offer more information in easier-to-understand language, better graphics, and better resources. The look and feel won't change much from day to day, but you can be sure that hardly a week will go by without several changes in the content or style of these pages.

And as the Internet changes, so do the requirements of First Train. We *have* to update it regularly or it will be of no more use to you than another out-of-date book about the Internet...and every book about the Internet *is* out of date, at least in some respects, by the time it hits store shelves.

So the train is always being refurbished and refitted for an ever-changing journey. It would not be the top-quality resource that it is without this kind of attention. And if you don't update your copy of First Train, you won't get full benefit from what First Train has to offer.

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For more help...

What to do when the ride gets bumpy

[← Last topic](#)

It's your ticket. We've done as much as we can to make the trip easy trouble-free. Unfortunately, there is no way First Train for the Internet can be all things to all people, and we need your feedback to truly make it work. There's nothing teachers love more than students with lots of questions, so ask away. You may find snags and dead ends we didn't catch when we built it. Chances are excellent that you're not the only one who will have a specific problem, and when you let us know, we will also be able to help others who run up against the same problems in the future.

Day Excursion passengers: sorry, but you're on your own

Due to the time and expense involved in assisting our Tourist Class and First Class passengers, we regret that we cannot offer support-by-email to Day Excursion or non-paying passengers except in getting the software up and running. If you find you need more support than your Day Excursion ticket offers you, please consider upgrading your ticket to Tourist Class or First Class.

If at first you don't succeed, write us!

{ewl ew256bmp.dll,ew256bmp,mail2.bmp}The first thing you should do if the problem is not immediate is to email Dynamic Living Media and let us know where you had a problem. At the bottom of every page in the site created by Dynamic Living Media, right underneath the bottom set of "home page" buttons, you'll see a clickable email link which will instantly send an email message to us...*provided* you are online with your provider at the time you do this.

In most cases we can find a solution to your problem and have an answer to you by email in less than 24 hours. If we feel that your problem is outside the scope of First Train, we'll let you know that too, and we'll tell you why. (If it's a common question, you may receive a "form letter" response...don't take it personally; customer support costs money and this is one of the ways we keep First Train affordable.)

If you don't hear from us within 48 hours, it might be because of a problem with email delivery. If your query hasn't been answered, write us again. Sometimes electronic mail gets lost.

If you need an answer right away, call your provider

If you get completely lost, and you absolutely *must* get your problem solved by tonight at six, or find information to complete a homework assignment by Monday morning, call the helpdesk of your provider. While there is no guarantee that they will be able to help you, it's probably your best bet in a pinch.

Title or caption bar

The title bar usually displays the name of the browser program (when nothing is loaded into it) or the title of the "page" you are browsing. If this topic were a Web page, the title might read **Web browser basics**. It's a good idea to keep an eye on this bar, since many clickable links actually move to different places on the same page. You might think you've moved to a different page, and this title bar may be the only way to know for sure where you are.

Location: *or* Go to: *box*

The **Location:** or **Go to:** box is not marked with a text label on most browsers, but it is always found in this part of the window. Here's where you'll see the actual Internet address (URL) of the document you're browsing. Much more on URLs is available from the **Local Dialects** section.

File

This is the **File** menu found on virtually all browsers. Documents received from the Internet can be saved to your hard disk and opened for viewing later. This menu also offers **Print** options.

Of special note is a selection many browsers offer here titled **Open new window**. This allows you to open a completely new window for browsing two, three, four or more different documents at once, each in what appears to be a completely unique copy of the browser with its own menus and buttons.

If you've seen people on TV talk about how you can "be several places at once" on the net, this is one of the easiest ways to do it. We do not recommend opening more than three windows on Windows 3.1/Windows for Workgroups though due to the instability of the operating system when several fully-menued windows are open at once.

Edit

Newer browsers allow you to load the actual source text, with all formatting and programming commands, into **Notepad** or another text editor for viewing, and may even allow you to load the page you are viewing directly into your word processor. These are only two of the many **Editing** options available with browsers.

Navigate, Hotlist or Bookmarks

This menu is shown on some browsers as **Hot list** or **Bookmarks**. This menu allows you to save a list of your most frequently-accessed Web documents so that you can load them with a click of a menu item from your own computer rather than hunt the Web for a clickable link or try to remember and type the exact address (URL) of the document in the **Location:** box.

Options or Preferences

Here is where you select your personal preferences for the look and feel of your browser. It's also shown as a **Preferences** menu on many browsers. On most browsers you can hide button bars, change menu text (so that **Navigate**, for example, becomes **Bookmarks**), speed up or slow down operations, set security options if you plan on shopping on the Web, and configure the browser to handle new types of sounds, video, graphics and other data which may be incorporated into the page you are viewing.

View

The **View** menu usually offers options for configuring the look and feel of your browser, and many simpler browsers incorporate their viewing options into the **Options** or **Preferences** menus.

Windows

This is the standard **Windows** menu found on most of the better Windows applications. Not all browsers feature this menu.

Help

Chances are that this is not what you think it is! While some publishers give you Windows Help tools such as this one which can be used from your own computer, many do not. Instead, they offer help from their own site on the Internet. That means that when you click **Help** and select the item for help with the browser, the browser may try to connect with the publisher's Internet site and load a page of information rather than an actual helpfile... and it may dial your provider and connect you to this site *even if you have not asked to be connected to the net*. This is something you'll have to test with your own browser.

Menu bar

The menu bars of the different brands of browsers all look different, so we can't show you a typical browser's menu. Moving from one browser you're comfortable with to a new one can be tricky, because many of the menu options may not be found where you expect to find them. We recommend starting with quality Internet software such as an integrated Internet suite from a reputable publisher such as Delrina, Quarterdeck or Netscape and staying with it if you can. Click the individual menu choices for information on what you'll find in each menu.

Home page

This obscure-looking button is often shown as a house rather than a circle, is almost always on the far left of the button bar, and connects you to your "home page" on the Internet.

Be warned...unless you have specifically set the home page option to a page of *your* choosing, the home page button will take you to the home page of the browser's publisher, in effect giving the publisher control over your first set of choices when you navigate the Web. You might be quite satisfied with this arrangement, but it's up to you how you proceed. You might not like seeing the UltraSuperBrowser home page every time you connect to the Internet, and most of the better browsers allow you to change your default home page (or load no home page at all) from the **Options** or **Preferences** menu.

Stop or Cancel

The **Stop** button (it could also be a **Cancel** button) stops all data transmission from the remote computer which is sending document data to your computer. It's an important part of any browser, since some pages with a lot of text or graphical data can take several minutes to load if the remote site is slow or if there are a lot of large graphics. Clicking this button when a page takes too long to load forces the browser to display the text and graphics it has received so far for that document. Usually you'll get all of the text in less than a minute. You can usually find a menu item under **Options** or **Preferences** for preventing your browser from fetching the graphics if you simply want fast access to the text information.

Print

Web pages, being documents, are printable. If your printer is capable of printing graphics (nearly all printers are), you can also print the graphical data included with the document. Be aware that printing Web pages on many machines can be time-consuming as the computer processes data for the printer, and if you are paying by the hour for Internet connection this may be an important point to keep in mind.

You can shorten the printing time dramatically by telling the browser to *not* load graphics into the document. This will allow it to focus solely on the text, which takes a lot less time to process.

Search the Web

Nearly all browsers have a **Search** button, signified by a pair of binoculars or a magnifying glass. Clicking this button usually takes you to a page on the browser publisher's Web site where forms are available for searching the net. Many search pages now incorporate advertising, and in response to this some publishers allow you to change your default search page to a location of your choosing from the **Options** or **Preferences** menu. Tourist Class and First Class passengers have a ready-to-use, multi-function search page called the **Fact Finder** (**FACTFIND.HTM**) in First Train's **FACTFIND** directory, and you will find that this page loads much more quickly than most search pages on the Web.

Back

Every browser in common use has a **Back** button which looks something like this one. These are as useful with your browser as the **Back** button in this window, as it allows you to quickly flip through some or all of the documents which have been transmitted during your current Internet session.

This button will not let you go back to documents which you accessed during a previous session. Instead, most browsers have facilities to store data from previous sessions so that they can be accessed much more quickly the second time you connect to a specific page than they were the first time.

Reload

This button, which might look different on other browsers, **Reloads** the page you are currently viewing on your screen. Sometimes you'll hit the **Stop** button a little too quickly and not get enough of the page. Sometimes the net will slow to a halt momentarily and your browser might stop the transmission before the whole page is loaded. Sometimes you'll have the page set to load with no graphics and discover that you *need* graphics to see what's on the page. And sometimes you'll see a page that changes every minute or two and asks you to reload it manually to view the differences. This versatile button is not often noticed by novice net travellers, but it is one of the most useful on the bar.

Forward

This button moves you forward. It won't do anything if the page displayed in your browser's window is the last page you accessed from the Internet, and it will be greyed out on most browsers to reflect this. But if you have been flipping backward through previous pages, this will do just as you might expect...move you forward one page in the chain.

Send email

If your Web browser is configured properly and you have entered the appropriate information for email, this button will allow you to send mail directly from your browser without opening your regular email program. If you use an Internet suite, this button will load the email portion of that software. Many newer browsers also allow you to receive email, although we recommend an integrated suite or a stand-alone email program for that.

This button is a handy way to send quick notes to friends on the net, or even make hasty notes you can email to yourself, without breaking the "rhythm of the surf", but we do not recommend it for all email functions since most browsers will not keep copies of the notes you send.

Browse newsgroups

This is the news button. If your browser is configured to access the news server offered by your Internet provider, or one of the many public-access news servers located around the world, this button will load a page of information that allows you to point and click your way through newsgroups. If you have an Internet suite, this button will load the news portion of the software.

As with email, we generally do not recommend using your browser as a serious tool for newsgroups since it will not usually keep track of the articles you browse and save them permanently on your system. Unless you only want to browse and don't care about organizing your news, a dedicated newsreader program such as Free Agent or WinVN is a better choice for managing newsgroups.

Other buttons

Nearly all browsers have these button bars, which you can usually turn off from the **Options** menu. Like title bars, they are unique to each browser and offer different choices depending on what the publisher thought was most important to the average user. Many of the buttons are common to nearly all browsers. Click the individual buttons for information on what each of them does.

The browser window

Here's where most of the real action takes place. This area of the browser screen is where you'll see the text and data transferred from the remote site. We'll be showing you examples of actual Web pages as you proceed through the First Train. In case you're wondering why this area is grey instead of white, it was decided by many browser authors that black-on-grey is much easier on the eyes at night when most people access the net, and this color scheme for plain text without fancy backgrounds has stuck as the standard.

Status bar

Well well...clicking in an unnumbered area? You're the adventurous type who will probably appreciate what this part of the browser screen can do for you. This is the status bar, where information is shown about the current document or the transmission in progress. One of the nicest features of status bars on newer browsers is that they can tell you *in advance* where the links on a page will take you. If you hold your mouse cursor over a highlighted word, phrase or graphic on a Web page, many browsers will display the URL of the document or location you will access by clicking it.

Links

These highlighted regions, or hotspots, function the same way as highlighted text in a Windows **Help** document, either taking you to another location in the same document, loading a new document from the same or a different location, or fetching information such as sound, video, or a data file or software package you can use on your computer.

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Passports and visas

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Before you can enter this new land you'll have to deal with the immigration authorities and even take a new name. And if you want VIP treatment, be prepared to grease the palms of the local officials. In other words, you can access the Internet for free, but fast, reliable Internet access usually requires a paid Internet account. Fortunately, your dollar goes a *long* way here and you'd be surprised at the treatment you can receive if you know the right people.

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Selecting your host and accommodations

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What to look for in an Internet provider

Expect it all...anything less is unacceptable

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Not more than a couple of years ago, Internet access was sold by the hour *and* by the service. You paid a regular rate for the access itself, which usually included email and some news and TELNET privileges, and everything else was extra. Shell accounts are still set up in pretty much the same way.

No longer. The industry-standard SLIP/PPP accounts allow providers to configure their services for all their customers at once, and the only real configuration needed for your account is the allocation of a few megabytes of hard disk space for an email in-box and the creation of a billing account and an email address. (You'll sometimes be given free space for setting up your own mini-site as well, but that's a bonus you probably won't use for the first couple of months anyhow.)

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Any provider today who charges a basic rate for SLIP/PPP access through Microsoft Windows and bills you extra for email, file transfer, news and other services either has a captive market or no clue about what's happened to the industry lately. Unfortunately, in some countries you still have to put up with this kind of marketing due to the smaller numbers of Internet providers competing for your dollar, but in Canada and the US the market simply won't bear this kind of billing.

So if you're told over the phone that your Internet account is \$10.00 per month for twenty hours plus a dollar an hour, expect that to include access to *all* of the basics: TELNET, newsgroups, IRC, World Wide Web and email. Any provider *not* offering all of these services as part of your Windows SLIP/PPP Internet account either doesn't know what they're doing or doesn't care about developing a consumer dialup clientele. Be especially wary of SLIP/PPP providers who charge by the megabyte for FTP file transfers in areas where everyone else charges by the hour.

Don't be fooled by figures



Most of the shopping guides for Internet access suggest that you do a lot of research that will tell you little if anything to the actual quality of your Internet connection. They tell you to insist that your provider have their own T-1 server. Many small-volume Internet access providers don't *need* a T-1 server. They can provide satisfactory service with nothing more than partial ownership of a T-1 line, providing that not all the other part-owners are also IAPs.

Another myth concerns the number of modems. We've seen an arbitrary 32-modem minimum tossed around as the absolute minimum you should settle for in an Internet provider. The number of modems or phone lines available to a given Internet provider is far less important to you as a dial-up user than how available those modems will be at the times you want to access the Internet. Prime time evening hour usage statistics and growth plans are far more

important. Any provider planning to add lines as their subscribership grows may run into roadblocks with the phone company, placing all subscribers in the position of having to fight for a limited number of lines during prime time while the provider waits for new lines to be installed.

Some providers get around this problem by deliberately placing a cap on the number of subscribers they will permit based on the number of modems they have and/or the amount of data their Internet connection will handle. *That's* the kind of information which you'll find useful. Any provider with a prime time modem usage statistic of higher than 80 percent for any of the last three months is very close to being overextended.

Your provider could be some kid in the basement with a rich parent who runs an Internet site as a hobby and have only four or five paid subscribers. As long as you can get the access you need at the times you need it, it shouldn't matter if they have one-tenth ownership of the slowest T-1 line in town. They might still offer better service than the local Internet superstore with a lightning-fast T-3 connection and 500 phone lines to service 10,000 users.

The right host makes all the difference



One theme you'll see repeated throughout First Train is that the Internet is and always should be by, for, and about the people who use it. But it's also about the people who manage it, create and maintain it, and who provide access to travellers such as yourself. One of the most common complaints travellers have about the net has nothing to do with Internet itself, but instead concerns the people who provide access to it.

There are many financially unstable providers but very few *shady* Internet providers. Oh, they'll come and go, but you can always move to another provider. It's not a terribly big deal if your provider goes out of business. Unless you're paying by the year for a considerably full-featured commercial account and depend on the provider's domain (not a wise decision in our opinion), having your provider go bankrupt is at worst a temporary annoyance.

Finding the best fit



The trick is finding a provider you can feel good with, who provides services that match your needs at a price that suits your budget. Here are a few general guidelines.

If you don't mind doing a lot of hacking on your own, the after-sign-up service won't matter to you. But be aware that you're going to need help at some point, and if you expect your Internet provider to be there at the end of the phone with answers when you need them, you might have another thing coming. Large-scale urban providers offering unlimited use accounts cannot justify the cost of the kind of help most new users need. Expect to have a provider at this level direct you to a paid in-home consultant or a 1-900 service where you'll pay by the minute for help.

Is this unreasonable? We don't think so. Your Internet provider doesn't write the software and doesn't manage the Web, and shouldn't be expected to support you with problems which are not related to problems originating on their server or to connecting to their Internet gateway.

On the other hand, if you're paying \$2.00 an hour for access from a small-volume provider, which is a relatively high price, you can reasonably expect some support for software-related problems. But you've got to find out ahead of time.

Establishing rapport

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We recommend actually talking to a customer service representative working for your prospective provider before opening an account. If you feel like you'll need support in your first few weeks, it will be important that you have a sense of rapport with your hosts, and you'll find that the type and quality of service varies widely from provider to provider in tune with the prevailing attitudes of the service's management.

Be warned: most of the first wave of low to medium-volume local access providers are owned and operated by hard-core entrepreneurs and hackers, and neither group is known for warmth or street-level communication skills.

Unlimited access versus pay-for-play

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Until you actually begin to *use* the net, you may not know whether an unlimited-access account will be worthwhile for you. If you're facing this question, there is a relatively simple solution: get a trial account with a provider -- *any* provider -- and see what's out there. Most medium and large cities have providers who will set up a one-month trial account for a low price, waive the setup fee, and give you an inexpensive glimpse of the net. Until you get your most serious software hassles out of the way (and you *will* have software hassles), you won't feel comfortable enough to grasp what the net can give you. This means that a one-month trial is virtually essential for anyone who is unsure about what kind of provider to use.

Unlimited-access accounts are appealing, but there can be hidden costs. Virtually every provider offering such service has difficulty at times keeping up to subscriber demand. You can almost count on having difficulty connecting to such a provider during the prime-time evening hours during periods when the provider is waiting for new phone lines to be installed, or worse, waiting for the financing needed to pay for those lines.

On the other hand, unlimited-access accounts are the ideal choice for virtually anyone working an afternoon shift, since connection will not be a problem during their off hours.

A myth shattered

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Here's an unfortunate fact: it is difficult, if not impossible, for most low-volume Internet providers to make money providing unlimited-access accounts to dial-up customers. It's unfortunate for the provider, not for you, but if you keep this in mind you may have a better feel for how precarious this industry actually is. The money is made in setting up and supporting commercial accounts, and only large-scale providers such as Netcom and Internet Direct can support inexpensive unlimited access.

The reason for this is because your provider doesn't pay for the time you spend connected to Internet services. What they pay for is the amount of data transmitted to and from your computer. They have to lease bandwidth from an Internet backbone provider from Sprint, MCI (yes, the same people who offer the long-distance calling deals) or some other carrier with the infrastructure to handle large-volume data transfer. And they usually pay by the megabyte.

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In fact, one analyst we spoke with says she expects unlimited-access Internet accounts to be a thing of the past within a couple of years, and that virtually the entire industry will soon switch to

the same per-megabyte arrangement used in countries such as New Zealand. Many providers are already applying this kind of rate to their clients in areas where it doesn't price them out of the market.

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What's involved in setting up an account

This is a rather lengthy topic, but we recommend that you read through all of it. The information you get here could save you hours of frustration later.

A simple and often frustrating process



Setting up your first Internet account is a simple matter. You choose a provider, pay your money, install the software, click a few buttons and away you go. And if you read enough provider advertising, you might actually start to believe this.

If you're lucky there's a little more to it than this. If you're unlucky there's a *lot* more. Expect the worst and a smooth trip will come as a pleasant surprise. It ought to...in our experience it's the rare first-time traveller who hasn't had at least one brush with *turista* when attempting to get their first Internet account online and stable.

The first chore is getting the software. If you're lucky, your provider will give you a disk with a well thought-out installation routine that will prompt you as it goes and configure your email program, browser software, newsreader and IRC software so that they are all compatible with the provider's setup. If you're *unlucky*, you'll have to configure everything, from the actual software used to make the connection through to your email program and browser by yourself.

If you're *really* unlucky you won't get instructions for setting up anything but the actual connection software. In fact, you might not even get a disk. You might be given a phone number to dial with your terminal program where you can obtain the software. That will be a real adventure if you've never even tried Windows **Terminal** or Win95's **HyperTerminal** before.

The real adventure begins...

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Your adventure has just begun. If all goes well, the software will be compatible with your modem and the software supplied by your provider will not conflict with your Windows installation, or worse, a previous installation of Internet connection software. Your password and account will have been created by the provider, and you'll be ready to go in just a few short minutes.

In our experience, you have about one chance in four of having problems getting connected. Either your computer, your modem, or some part of your software will be incompatible with the Internet software package given to you by your new provider. These sorts of problems can often be sorted out in just a few moments over the phone, and they can actually be a blessing in disguise. Connection problems are an excellent way to "test the waters", to find out just what kind of service and support you can expect from your new provider. If it doesn't meet your expectations, jump ship *immediately*.

Ask first about the difficulty of installation...

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Once you connect, you'll find out how well your provider really did with their installation package. The email software should be able to fetch your "Welcome to our service!" test

message with just a few mouse clicks. If it doesn't, you'll have to configure it yourself, and a mistake in this process could cause real problems with your email account at a later date. The browser software, if it was supplied, should be able to connect instantly to the World Wide Web. It should also be able to browse newsgroups, and if the installation package included a newsreader it should be able to send *and* receive newsgroup data without any configuration on your part.

...and hold them to their word

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In our experience, you can expect to have to do at least some configuration of the software before you can access all three of these essential Internet services. Many providers are moving toward licensed suites of software from firms such as Quarterdeck, Spry & O'Reilly and Netscape Communications which are easily-configurable during installation, but most still expect you to do at least part of the work.

If you find that the installation and basic configuration of Internet connection software, email, World Wide Web browser and newsreader software take more than a half-hour, you've definitely gotten a less-than-ideal installation package. If it takes more than an hour, you've encountered a bad one. If you're still at it after *two* hours, either find a new provider or call for professional help.

And then there's Windows 95...

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As if all this wasn't frightening enough, Windows 95 has added a new wrinkle to the face of Internet connection. Its included 32-bit connection software is definitely superior to the commonly-used Trumpet, Chameleon and Netscape connection software used in 16-bit Windows, but it requires a fair bit of work to configure, so much so that we developed a rather large help tool designed to assist you in the task.

To put it simply, if you're thinking of connecting to the net using Windows 95, either you had better know what you are doing, get help such as our *Easy Windows 95 Internet Step-up* package to assist you, or stick with older-style 16-bit connection software with Windows 95 until your provider makes special software available that automates the task.

In all fairness, some providers have made it relatively easy to connect with Windows 95, providing easy-to-follow walk-through instructions tailored to their configuration scheme. Ask about this to see if such help is available. If it isn't, you might be better off sticking with the connection software supplied by your provider, and it will almost always be a little slower and more cumbersome than Win95's software.

Good news and bad news

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The good news is that there *are* some setup packages which *are* virtually flawless and provide you with a quick, easy Internet connection. The bad news is that they almost always come at a price: either high per-hour connection costs (e.g. smaller, business- or service-oriented providers), the problems that go with using a large-scale provider instead of a smaller, more personalized Internet access provider (e.g. Netcom and Internet Direct), or the limitations of requiring a specific type of connection (e.g. Internet access using an online service such as CompuServe, GEnie, America Online or Prodigy).

Is there a way around these problems?

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We offer a qualified yes. Most providers work hard (and thanklessly) to make tricky Internet setup procedures as faultless as possible. But there will often be problems. We recommend trying it yourself, or switching to a provider who supplies an installation kit you *can* try yourself, to see if you can't get it right the first time. If you encounter a problem, contact the provider for help. Chances are good you'll have one or two minor glitches that can be cleared up in just a minute or two over the telephone.

But if that one call turns into three or more, and the time spent getting help starts to mount on you, it's time to call in a professional Internet setup and training service. Every medium to large city has a number of people, who may be college students, computer consultants, or even Samaritan hackers, who will come to your home, install the software and give you a quick walk-through of the basics. Expect to pay anywhere from \$50 to \$90 for this service, but if your choices are limited and your provider is giving you no satisfaction, it may be well worth the cost.

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Shell access: the hacker's road

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There are two basic types of consumer-level Internet access accounts: the shell-level access account and SLIP/PPP. The differences between the two are outlined in the **Local dialects** section. You can access these topics from here. Click the **Back** button at the top of this window or the **Last topic** button at the end of each of these sections to return to this part of **Passports and visas**. The **Next topic** buttons will access sections of **Local dialects** instead of this section of First Train.

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ISDN and other costly, effective alternatives

Where there's a bill you can pay, there's a way

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Connecting to the Internet by modem is the standard method of accessing the Internet at the consumer level right now, but that's changing fast. There was some fear early in 1995 that by late 1996 most of the dial-up Internet access providers would be out of business, replaced in the marketplace by telephone companies and cable television providers offering high-speed Internet access at about the same price the average user now pays for dialup access,

Fortunately for the IAPs these predictions were a little off. Yes, it is possible to access the Internet via a TV cable connection. The problem is that the overwhelming majority of cable providers will need at least a couple of years to redesign their infrastructures to handle *two-way* data transmission. Right now cable TV in most locales goes one way: into your home. There is no provision for interacting with the signals you receive except to change the channel.

The ISDN solution

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Two years will be far too long a wait for thousands of Internet users, especially professionals needing at-home access to videoconferencing and transmission of large amounts of data. As a meantime solution, telephone companies in many locales are providing an alternative: ISDN or Integrated Services Digital Network. Through the use of special modems and some changes to the circuitry on the telephone line itself, it is possible to allow data transmission through a "normal" phone line at speeds up to eight times higher than the consumer standard of 28.8Kbaud for modems.

ISDN lines offer more than just the opportunity for high-speed modem access. They can essentially allow your home computer to be used as a full-fledged Internet site, and with the abundance of software for Windows designed for this purpose virtually any capable Internet consultant can set up a working net site on a home PC in less than a day.

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As you might expect, this kind of access does not come cheaply in comparison to regular telephone rates. Users wishing to establish ISDN connections to the Internet must pay their phone company extra for the installation of the line and must also purchase a special modem for the job, which at this writing cost about three times as much as a consumer-grade 28.8Kbaud modem. Costs for this kind of net access can range upwards of \$1,500 a year over and above the cost of a regular phone line, not cheap when you consider that \$20.00 a month is the going rate for Internet access in most larger centers.

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Direct connection: the only way to fly

Access the Internet as fast as your hard disk

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If you *really* want your net access to fly, there's always direct connection. If you can spare anywhere from \$5,000 to \$50,000, you can become a partner or full owner of an actual T-1 or, if you're really fortunate, a T-3 connection to the Internet and start accessing data on the net at speeds comparable to those of many older hard disks. T-1, or higher-speed T-3 connections (T-3 can actually operate faster than any consumer-grade hard disk), are how your provider accesses the net, and once you own such a beast you'll be paying your usage fees directly to the backbone provider rather than an IAP. In fact, this is precisely how your IAP connects to the net. You have to settle for a much slower connection rate because of the limitations of your modem and phone line.

Many smaller IAPs are part owners of T-1 connections which they might share with other IAPs or, preferably, with businesses or institutions who won't need the bandwidth during prime time evening hours.

Not quite a pipe dream

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If this sounds like a pipe dream to you, it might be closer to reality than you think. There are now condominium and apartment buildings being refitted or built from scratch with telecommuting in mind. Tenants will actually share bandwidth on a full-power T-1 line (hopefully a fast one; T-1's come in several speeds) eliminating the need for special ISDN phone lines and modems or sluggish dial-up Internet accounts through providers.

Cable companies are scrambling to enter the market as well and offer T-1-quality access via the existing cable TV infrastructure in place in every large and small center, but it will not be as simple as connecting server computers and selling special cable modems to clients. Some expert opinions on the subject say that this ease and speed of Internet access won't be common for at least another three years and may not arrive before the end of the century.

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Accessing the net through an online service

Pulling no punches



There's a good chance that you received this software from an online service provider such as CompuServe, GEnie, America Online, Prodigy or the Microsoft Network. That definitely puts you well ahead of the game in terms of your ability to access the Internet (all four of these popular services offer Internet gateways to their clients), but it places you in a rather difficult situation. And here's where we risk alienating the very firms which could be our biggest allies.

Having ready access to these services virtually insures you almost effortless access to the Internet. However, as an Internet user accessing the net through an online service you face handicaps and hardships most other net users will not have to deal with.

Not always worth the convenience

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The first thing to consider is the cost. If you're a casual Internet user who only needs occasional email and Web services, then a gateway through your CIS or GEnie account might be just what the doctor ordered. You might pay extra to send and receive data files between your online service account and Internet destinations, but if it's an infrequent need, or if you barely cover the value of your online service subscription in hours spent online, you may as well use what you have.

However, if you plan on distributing or receiving a fair volume of mail or files, for example if you're collecting add-ons for your Doom game or mailing out dozens of electronic resumes, the cost can add up.

So can the inconvenience. Don't forget that Windows Internet access is usually accomplished through a protocol known as TCP/IP, and virtually all third-party Windows Internet software is designed with TCP/IP in mind. Online service providers ask you to connect at *their* protocol, not the Internet's, and that means using *their* Web browser, *their* email software, and suffering all the limitations these programs will likely place on you. Don't forget that Internet is only part of the business of a CompuServe or a Prodigy, and while it's possible, it is unlikely

you'll get a browser with all the latest features and email or news access with all the extras you may need.

An expensive habit for net junkies

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The other point to consider is cost. If your household expects to spend more than ten hours online a month (the average for a two-parent household with two teens is closer to 30 hours), accessing the net through an online service simply isn't cost-effective. At rates in the neighborhood of \$3.00 per hour, Internet access through these services is more than twice the cost per hour of access through a dedicated local Internet provider.

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On the other hand, your Internet connection won't always give you easy access to the goodies you have probably grown to love about your commercial online service, such as large, well-organized file libraries and automatic event announcements, so you may want to keep your America Online account for a little while at least.

Keep your online service account...just in case

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In fact, it might be a good idea to keep it for as long as you make any use of it. It can be a handy second email address in case email gets lost (this does happen), your local Internet provider suffers a service interruption (this happens more often than anyone expects) or you suffer a software problem you can't fix right away and need access to the Internet. It won't take long for you to discover that the Internet blows away every online service in existence for variety of services, but there will always be a few things which the Internet will never be able to do as well as a dedicated commercial online service.

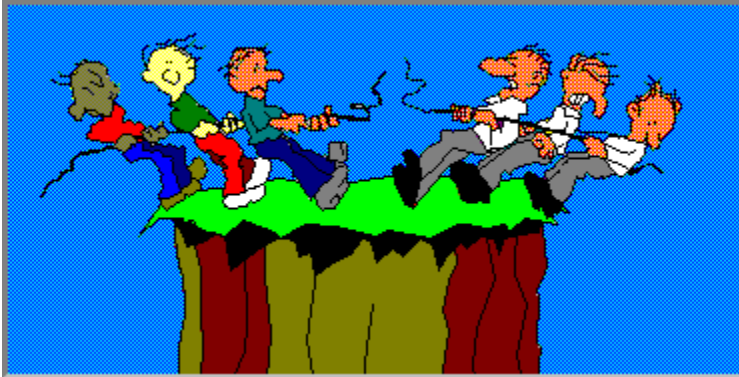
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Local Internet service providers



Springing up like weeds

Since Internet became *the* buzzword of 1995, it seems like providers of consumer-level dialup Internet access have been springing up like proverbial weeds in every city in North America. The industry still needs to develop standards and stabilize financially, so it looks as though there will be a lot of competition for your Internet access dollar over the next year, and this will only be the first round of a battle the multinationals will be joining in a very short time. By early 1997 you'll begin to see the less stable providers drop like flies as competition dwindles to a handful of high-volume providers per city and several more service-oriented "boutique" providers, along with the RBOS' (Regional Bell Operating Companies) and cable outlets as new players in the game.

There is a *ton* of money in Internet access provision at the consumer level and not many players making money yet. That means it's a buyer's market, and where there's a buyer's market there are bound to be a few hucksters.

Despite the risks, local is still one of the best ways to go

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You'll have to keep an eye out for too-good-to-be-true offers, such as unlimited access for \$10 a month (no provider can make money from that) or complete in-home training and setup for \$35 (no competent Internet consultant can make a living on that) or Internet-in-a-Box for 60 percent off the retail price.

However, a lot of these offers are genuine loss-leaders, incentives to get you online and loyal, and generating monthly income for the provider. What many small-scale providers hope is that they can build client bases large enough to sell out to a larger firm. They'll make a quick profit and let the buyer earn the big money setting up private and corporate Internet sites and maintaining a long-term client base.

The bottom line? At an average cost of \$.75 to \$1.50 per hour (less for unlimited-access accounts that you actually use) Internet access is by far the best entertainment, education and research bargain since the invention of the family. And right now, for anyone shopping on a budget and wanting quality Internet access, local mom-and-pop Internet providers are a super buy.

Here come the multinationals

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As we already mentioned, the level of service you'll get from locally-owned and operated Internet providers is inconsistent, and you should really spend some time getting a feel for the people running the show before deciding to set down roots with one provider. Because while the multinationals such as Internet Direct, Netcom, IBM, Microsoft and other soon-to-be-household-name providers are vying to steal market share from the locals with lower prices for more time, the fact is that any properly-configured Internet access provider can compete in terms of price and service with the biggies...for a while at least.

In fact, when it comes to service -- a prime consideration for *all* new Internet users -- the multinationals simply can't touch the locals. A faceless voice a thousand miles away on a helpline might be able to tell you that your problem is a faulty modem. A local provider's support person can tell you the same thing...but they can also suggest that you go to Bob's Computer Service and ask specifically for Ahmad in the back shop because he's done good work with that make and model. Or suggest places to look for competent training, support or service. It's something you just can't get from a multinational, and it's something you'll probably appreciate...if you can find a local provider who can offer this type of personal touch.

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Freenets, toasternets and schools

For the budget-busted and socially-conscious

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Another option to consider is cooperative Internet access. Freenets are Internet access providers who offer free access thanks to grants or some sort of promotional arrangement. Toasternets are the equivalent of the Internet co-op.

Freenets

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Freenets provide access to all comers, but many have become so severely overloaded that they have waiting lists and may provide access to new users based on financial need. You might have a long wait if you're not living close to the poverty line. Toasternets are run largely by non-profit organizations and staffed by volunteers who might be university students, retired high-tech workers or socially-conscious hackers. University and institutional Internet accounts are generally available only to students and staff, but some have alumni and community access plans that might be worth inquiring about.

The advantage is obvious: low cost. The disadvantages can range from endless waits for connections during prime time evening hours to limited access to Internet services. Freenets have traditionally been the last to set up SLIP/PPP dialup access, which is the only type of access worth having for first-time Internet travellers. Some allow only email and TELNET access until you have contributed funds or equipment or demonstrated financial hardship. If you can afford \$20 a month for Internet access, which is chicken-feed for what you get in return, freenets are rarely a good option.

Toasternets

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Toasternets, or Internet co-ops, are becoming increasingly popular alternatives to freenets and commercial dialup providers. In return for equipment, needed software, cash donations or a certain number of hours' work maintaining the system, you can receive membership in a toasternet and essentially bypass the crass materialism rampant in current Internet access marketing.

In fact, taking commercial providers out of the loop was the whole idea behind the toasternet.

Since toasternets are set up for the benefit of users, you can be pretty sure that you'll get nearly all of the regular services offered by a commercial Internet access provider, including a SLIP or PPP connection and the instant gateway to the Web, IRC, FTP and TELNET services that usually go with it, as well as your usual Internet email address. You'll get them because most users will want them.

While the personalities behind toasternets and Internet co-ops depends in large part on who started the net, you can usually expect to find the minds running the show to be one of two types: either basement hackers who enjoy tinkering with computers for the sheer pleasure of it, or the "tofu and Turbo C" set, hackers with social consciousnesses who appear just as in-step

marching at civil rights rallies and volunteering at hospitals as they do at a terminal screen or with their noses buried in programming manuals.

University and institutional access



There's hardly a college of any note in North America today that doesn't have at least a partial T-1 connection to the Internet, meaning that there may be bandwidth to spare for users outside of normal school hours. Some other institutions, such as large community centers and even churches are beginning to develop their own Internet provision services. The primary objective of these institutions is making Internet access available for staff and students, but many realize that they can involve and serve the community as well.

Most colleges offering public Internet access have restrictions, and some of them are severe. In many cases all you may be allowed is an email account, and then only if you are an alumnus. Others offer full-fledged SLIP/PPP access on an as-needed (or as-available) basis. Community groups, churches and other institutions may only allow access to members and their families, although there may be provisions for a small number of accounts for the general public.

Public and secondary school access



One of the most interesting trends is occurring in public and secondary schools, but unfortunately it's confined to more affluent areas at this time: head start programs for students involving T-1 Internet connections owned by public schools or school boards for the use of students and staff.

Many of these are still in the planning stages, and the few we know of which are online do not all offer the slick look and feel of a SLIP/PPP account from a commercial provider, but where they're available they range from inexpensive to more than double the price of comparable commercial access accounts. Subscription costs usually go to upkeep of the equipment and software, and because they serve a closed circle of users and may have limited usership, quality of service may be more important than cost which will contribute to the higher price tag.

By the way, unless a school board operated Internet service has members-only services not accessible any other way, there will seldom be any benefit to students in using an Internet service offered by the school over a commercial Internet service. That's not to say that there won't be issues of pride and satisfaction involved in being a user of an Internet service that your child helped to set up or maintain, and the value of these feelings can't be calculated in dollars and cents.

One possible problem to consider



The one area where you may feel a real lack when opting for a freenet, toasternet or institutional account might be local access to newsgroups. It takes a lot of work and a fair bit of hardware to manage the amount of data generated by a thousand or two USENET newsgroups in a single day, and many freenets, toasternets and smaller institutions simply can't justify the expense of maintaining USENET newsgroups for local users.

You can always access slow but free public-access USENET sites, and there are many such sites around the world, but if you become a heavy newsgroup user you may find toasternets disappointing...unless of course you can contribute enough for a hard drive to store

the newsgroups and the time involved in configuring access. And if someone has already anted up the needed time and hardware it might not be an issue at all.

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A shopper's checklist

A printable form to assist your investigative chores



The next topic is a printable form which you can use to compare the merits of Internet access providers you may be considering. Print a copy for each provider you're considering and add the topic to your bookmarks list so you can access it quickly in the future.

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Clicking the printer icon at the top of the window will send the form to your printer. If you would rather store this form as plain text, click the clipboard icon. If you have Windows 3.1/Windows for Workgroups, the **Copy** dialog box will pop up. Click the **Copy** button and the text will be copied to the clipboard. If you have Windows 95, the text will automatically be copied to the clipboard without any further prompting.

Note: The form may not appear properly formatted on your screen, but it should print without problems. Any unusual appearance will be due to Windows Help's display characteristics and is not related to any flaws in the formatting of the checklist.

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A shopper's checklist



Internet Access Provider Checklist

General information

Full Internet access (Web/FTP/TELNET/IRC/email/newsgroups)? Yes ☐ No ☐

Extra-cost services (if any) _____

Is there an up-front charge for account setup? ☐ Yes ☐ No Cost: \$ _____

Is space for personal Web site included? Yes ☐ No ☐ How much? _____ Mb

Any discount for email accounts for other family members? Yes ☐ No ☐

If so, how much are additional accounts? _____

Is PPP access provided? Yes ☐ SLIP only ☐ Shell accounts only ☐

Is Win95 32-bit access point-and-click easy? Yes ☐ Not sure ☐ No ☐

How many newsgroups? _____ Are newsgroups censored/filtered? Yes ☐ No ☐

Can you provide statistics on modem usage percentages during prime

time (if applicable)? Yes ☐ No ☐ Is average less than 70%? _____

Access is billed... ☐ per hour ☐ per megabyte ☐ unlimited per month

Special services (if any) _____

Connection software used: ☐ Trumpet ☐ Chameleon ☐ Other _____

Is there an up-front cost for this software? ☐ Yes ☐ No Cost: \$ _____

Will customer service help with:

-connection/modem problems ☐ Yes ☐ No ☐ Don't trust answer

-problems with software in the setup kit? ☐ Yes ☐ No ☐ Don't trust answer

Who do you contact for service problems? Name: _____ Extension: _____

General feeling about this person: _____

How many times was system down during the last 3 months? _____ times

What was the longest time during that period without service? _____ Hours

Cost per month (minimum): \$ _____ Cost per hour: \$ _____

Extra-cost services (estimated monthly cost): \$ _____

Expected cost of account setup: \$ _____

Expected monthly cost (leave blank if unsure): \$ _____

Expected cost of software: \$ _____

Total startup cost: \$ _____ Expected monthly cost: \$ _____

Overall impression of personnel: _____

Overall impression of services: _____

Overall impression of value: _____

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Travelogues



Here are some basic guides to the most commonly-used Internet services. This section is strongly recommended even if you already have some experience with these services. Even longtime Internet users have found some interesting material in these introductions.

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[Welcome to the World Wide Web](#)

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[Internet electronic mail \(email\)](#)

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[USENET and mailing lists: the Internet's newsstand](#)

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[FTP: the \(usually\) free digital store](#)

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[Internet Relay Chat: the cyberspace pub](#)

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[TELNET: the Internet's hard core](#)

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[Travelogues](#)

What is the Internet?

{ewl ew256bmp.dll,ew256bmp,world.bmp}There's no easy answer to that question. We can tell you its hardware configuration, lay out its theoretical basis, describe its services, offer strict dictionary definitions and much more, but none of these will adequately explain to you exactly what the Internet is and what it can do for you.

This is something you'll have to determine for yourself, because in a very real sense the Internet is whatever you decide it is. The simplest way to describe the Internet is as the world's largest-ever network of computers, all linked dynamically and each with the capability of being both providers and consumers of information. But that gives you absolutely no clue about the adventure that awaits you.

Instead we'll leave this for you to define as you go along. But if you're really serious about having a strong theoretical understanding of what the Internet is all about and where it came from, the document linked to the help button is here to answer that question

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This document contains a fair bit of computer-ese, but If you can get past the language, this document is the best answer we've seen to the question: *What is the Internet?* and is considered by many to be *the* newcomers' introduction to the net.

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Welcome to the World Wide Web

{ewl ew256bmp.dll,ew256bmp,world.bmp}This is a guide to the most popular service on the Internet, and the one which, along with email, you will likely use more than any other during your first few weeks on the Internet.

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 **Travelogues**

 **World Wide Web**

A first look at Internet's World Wide Web

{ewl ew256bmp.dll,ew256bmp,web.bmp}Here's some basic information to get you started on your journey.

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A little history

An idea born of need



Like most things Internet-related, the Web was born of need. It began at the European Center for Particle Physics in the late 1980s as a method of allowing information to be easily shared among scientific research institutions on demand, and for allowing information to be structured hierarchically.

The idea was to allow people involved in research to be able to access documents referenced in another document simply by selecting the reference on their screen. The networking protocol behind the scenes, known as Hypertext Transport Protocol, would take care of determining the exact address of that document and taking the reader right to it.

The advantages over previous methods of electronic document distribution (FTP, newsgroups and email) were many and instantly apparent. The information was available on demand, and in context. It didn't require the user to gather information from several sources to verify a certain fact; the references could be linked and supplied on demand.

Phenomenal growth

It didn't take long before this text-only system became wildly popular, partly because it mimicked the behavior of a popular computing pastime: adventure games. Creative contributors soon discovered that Web links could lead to a lot more than just technical references. As the net became a more popular pastime and a more accessible public tool in the early 1990s a need was seen to expand its capabilities, and before long it was possible to link far, far more than just text to a Web page. Graphics, gopher documents, files and software available via FTP and much more were added, and the Web literally exploded in a blaze of sight, sound and mountains of information.

Today it's the most popular service on the Internet, the "front end" for most people's Internet activities, and the forefront of publicly-accessible communications and information retrieval. CERN's management of the Web has been taken over by a dedicated organization, the World Wide Web Consortium, a sensible move considering the amount of work involved in administering this service.



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How the Web is structured

A point-and-click world

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First Train might be your first exposure to a concept known as hypertext. If it is, prepare for one of the wildest rides of your life...this is only a *taste* of what you'll find on the net.

You probably already know what a Mac, OS/2 or Windows helpfile looks like. If so, you already have an idea of how hypertext works. When the help program starts, a file like this one loads into it which contains text like you see here. Sometimes it includes graphical buttons like this:  or bits of colored highlighted text [like this](#) which you click with your mouse cursor to get to information that the author didn't want cluttering up the main body of the document.

These "hot spots" on the document connect you with still more documents or different sections of the same document, and they are known as links.

Over one billion being served

And that, in a nutshell, is what the World Wide Web is all about...a massive hypertext system that by the time you read this may offer as many as a *billion* different documents, with much, much more to come. As you'll learn in a moment, the Web has become much more than just a clickable reference library, but it's the point-and-click ease which is its charm. Navigating the Web is as simple as moving your mouse cursor over a picture or spot of highlighted text and clicking. The software translates your clicks into commands and Internet addresses and takes you where you want to go just as quickly as your modem can communicate with the remote computer.

This extraordinary level of simplicity, combined with the enormous variety of activities and information available, made the Web the most popular service on the Internet in a span of less than two years.

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How the World Wide Web works

A temporary connection

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The Web works a lot like this helpfile. While you're reading this information on your screen, Windows **Help** sits idle, waiting for instructions. It is not actively rooting around your system looking for things to do.

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In just the same way, when you connect to an Internet site using the Web you are making a temporary connection. You request the page you want, and when it has arrived at your computer the connection closes. You can have several connections open at once, and be transferring several pages or parts of a page at the same time, but once the data has arrived, you and the remote site are not connected until you request more data. This makes the World Wide Web an efficient method of providing data on the Internet, since the computer providing the data can only allow so many "visitors" at one time.

A modular design

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This helpfile is even structured like the Web. The graphics you see on your screen are not part of a combined text-and-graphics display. They are individual elements of it, and every picture you see in a Windows helpfile is an actual file stored inside the helpfile itself. Once again the Web works in the same fashion. Each graphical element of a Web page is a separate file stored on the remote computer, and each of them must be fetched through a new connection with that remote computer.

Graphics are only a small part of the deal. Some Web pages may contain music, animation, video and much more. In fact, by 1997, Web pages will be able to include virtually any kind of data you can imagine...and the software you'll be using will be able to access and use almost all of it.

This is actually a much more efficient arrangement than it might seem at first. For example, it allows people who only want the text information to avoid transferring any graphics and this speeds up their work. It also allows those storing the files to share those files with others. Some of the pages you'll find on the Web might have text stored in Singapore, graphics stored on a computer in the US, and connections to data stored in North Africa...all available from a single screen on your computer.

How it all weaves together



Perhaps now you can understand why it's called the Web. Each of these sites storing these separate components of the same is connected to a network of cables, microwave transmitters and in some cases satellite downlinks that, when viewed on a diagram, look like a messy spider web.

There is a common and false belief that the Web is called the Web because you connect with one site, which then connects you to another, and so on, until the path of connections is so

tangled that it looks like a web. Not so, because whenever you've finished transferring a page of text or a graphical element to your computer, the connection between you and the remote computer closes. When you choose to move to the next location, you do it from *your* computer, not the computer where you got the information. But even if that takes some of the mystique out of Web wandering, it doesn't change the way it feels...and it does feel a lot like traversing a spider's web.

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What you need to work with the Web

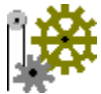
Tools of the "trading"

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Navigating the Web, negotiating the connections, fetching information and displaying it on your computer is accomplished using a program called a *browser*, which is a generic term used for many years to refer to software designed for reading text on a computer screen.

When the Web was first developed there were no graphics. The first Web software was called a line mode browser, and all it could do was display text as you might see it in DOS with a few interesting formatting features. Instead of the colored, underlined text used by most browsers to display links, line mode browsers had you move your cursor over highlighted text to select it and then press **Enter** or another key to make the jump to the next document or section of a document. If you'd like to get a feel for how this works, try pressing the **Tab** key on your keyboard, and you'll see the hotspot links on this page become highlighted one by one by **Help**.

Sophisticated software...simple to use



Web browsers are among the most complex pieces of software on most Internet users' computers. Consider the work involved. As each file arrives, the browser fits them all into their places on the page, launches programs to play sounds and view other types of data that it can't handle all by itself, and eventually you get a full picture of what the author wants you to see. The file containing the actual text is usually only a small fraction of the total package.

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What does a browser look like? Pretty much like this **Help** window, but with a few more gadgets. The help button will take you to our sample "First Browser" where you can get a closer look at how Web browsers are structured if you'd like. We recommend checking out the sample browser linked to this help button since it will show you many interesting features of browsers that might not seem obvious to you right off the bat.

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This button will take you to the **What to pack** section devoted to Web browser software, which will tell you a little more about what is involved in selecting a quality browser to match your computer.

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*Click the buttons, menu items or screen areas to find out what each section of the browser is for. These features are duplicated across most Web browsers, so knowing the features of one will usually allow you to easily understand another browser made by a different publisher. Close this **Help** window before returning to First Train.*

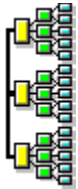
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The Web can just about do it all

Infinitely extensible



As the Web has become more popular, most of the Internet's existing features have been built into it. Actually that's only partly true...they only *seem* to be built into it. Gopher, IRC, FTP and newsgroups can be "linked" to the Web only if your browser software is set up to handle it. So in a way, you could say that your browser functions like your Internet **Program Manager** or **Start** menu.

We're fast approaching the point where there is almost nothing you can do on the Internet that can't be done from the Web (or more specifically, from a Web browser program)...from sending email, to one-on-one chat, to transferring files, to browsing and writing to USENET newsgroups, to searching for information and software. And since the advent of the Web's "own" programming languages -- Java and Perl -- it will do a lot of things you can't normally do on your home computer.

New features in some Web browsers will actually allow you to talk live with others on the Web, or even have computers thousands of miles away start and control programs on your own computer. You'll be seeing a lot more of this kind of flexibility in the months to come, and there seems to be no end in sight to what people want to do, and will do, with the World Wide Web.

Consider yourself wired

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In other words, you can now consider yourself fully connected and wired for the future. Because regardless of what new software technology comes into existence, you can almost bank on seeing it demonstrated and used on the Web before it shows up anywhere else. At this point in time, the World Wide Web is the leading edge of communications technology. And for the next few years, it's likely to stay that way.

A suggestion

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Until you become comfortable with being online, you'll probably want to use your Web browser for virtually all of your Internet activities. For all practical purposes, the Web *is* "the Internet" to most people, even it's only one of many services available. But try to remember that the World Wide Web is not the Internet. It's only one of many services.

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A few basic tips for managing the chaos



First Train for the Internet is structured specifically to help you find your way around easily, and to help you get back to where you came from without your having to remember each step you take. Once you depart the train and head out onto the Internet, you will be in the midst of complete, glorious chaos. People try to make it easy for everyone to navigate, but everyone fails in some respects. Everything on the Web ultimately connects to everything else, but it's rarely obvious how it all connects. Expect to get completely lost at least once, and probably several times, before you come to understand how to navigate the Web. You need a few basic skills before you can do anything but wander aimlessly in the wilderness, skills which will take you all of five minutes to learn...but give yourself more time than that to memorize them!

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What is and what is not a link


It's obvious only if you already know



The first thing you need to know is how to get from place to place. You already know that clicking on color-highlighted text (usually blue text [such as this](#)) will take you either to a new place on the page you're looking at, or to a whole new page of information on this or some other site.

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Graphical objects can also be as links (which are also known as anchors, since the highlighted text "anchors" the link between one computer and the next).

Text anchors are always highlighted in a different color from the main body of the document. Not so with pictures. You can usually tell whether a picture or icon is anchored to a link by its appearance. It will be surrounded with a highlighted border, like the colored square around this smiley-face: .

Sneaky creativity



But some creative Web page authors are making it more difficult to tell links from non-links, because programs such as Netscape allow you to hide the border from a graphic anchor. You'll see a lot of borderless links on the First Train to help you get accustomed to this. The non-highlighted buttons we use right in this helpfile are also examples of borderless links.

So how do you know if a picture is just a picture or a link that connects you to something new? The one sure-fire way to find out without actually clicking on the object is to move your mouse cursor over the picture. If the mouse cursor changes to the shape of a pointing finger , it's a link. If not, it's just a picture.

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Image maps

More sneakiness

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A third type of link you find on the Web is called an image map. Image maps are graphical objects that contain more than one link. Thanks to special software on the provider's computer, it's possible to take a single picture and have it connect you to several locations. Some will be obvious invitations for you to point and click. But some of the more artistic or amateurish image maps will force you to guess at where you're going.

Here are two pictures that look like typical image maps. The top one tells you where you'll go if you click on the particular marked area of the graphic. The one on the right asks you to guess. The problem is that a lot of the most interesting pages are constructed in just this fashion...they force you to guess. Keep your sense of adventure when you encounter pages with large graphics and you'll enjoy this.

{ewl ew256bmp.dll,ew256bmp,imapdemo.bmp}

{ewl ew256bmp.dll,ew256bmp,imaptext.bmp}

Hiding in plain sight

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A lot of the more creative authors are hiding some of their most interesting material in image maps that don't appear to be anything but pictures and aren't signified in the text as clickable images. Any time you encounter an interesting page that doesn't seem to go anywhere, run your mouse cursor over the pictures to see if you can't spot hidden links. (Don't worry...we won't pull that trick on you here.) You'll only be successful about one time in fifty, but for many the enjoyment of the search is what counts.

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You've just found our Easter egg. Read on.

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Managing your time and energy on the Internet

When does all this doubling stop?

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"Junk information" is one of the latest buzzwords on the Internet. According one recent estimates, the total volume of information on the World Wide Web doubles every two months thanks to the widespread availability of home page and directory space where individuals can share their own information. The massive shift of businesses to Web advertising is another reason for its explosive growth.

Many people believe the "playground" is being polluted with neon and bloated egos. (Purists believe it started to happen when the "library" turned into a "playground"!)

But the net's attempt to be democratic and open -- and to remain that way -- is a large part of its beauty and charm, and perhaps its greatest strength. Anyone who wants to speak can speak. Then again, anyone who wants to tell someone to shut up do that too. And every day the level of "noise" and "junk information" rises, just as the level of useful information...useful to *you*, that is. You should find just as much to turn you on as you will to turn you off.

Self-discipline

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One of the first things we hope you discover about the Web is that no matter what interests you, you'll find it here, probably in places and you never imagined, and very often in an overwhelming variety of forms. It's not unusual for people with oddball hobbies to burst into tears when they discover that there are hundreds, if not thousands of people like them, connected to the Internet and talking, sharing information and resources, just being with each other, and perhaps for the first time in their lives, sharing their enjoyment with those of like mind.

Children in particular will browse the web for hours, just exploring what it has to offer and finding out what interests them and what doesn't. Regardless of how old we are there's a lot of kid in all of us, and tens of thousands of Internet newbies know the feeling of a groggy Monday after a weekend spent doing little else but "surfing the Web".

It takes self-discipline to really use the Web as a resource. If you let it, it can chew up enormous amounts of your time, give back nothing but the pleasure of the time you put in, and make many of your daily concerns look petty and meaningless.

A question of personal preference

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Many people like that aspect of the net. Others despise it. It really boils down to this: what do you want out of the Internet? If you don't know, we recommend looking at it as the world's biggest toybox, and treating it that way until you know how to use it as a resource.

We don't make this recommendation because it puts more money into the pockets of your service provider. We suggest this because if you really want to learn, there is no better way to learn than to have fun doing it. The Web is a truly awe-inspiring recreational resource, but it's also a market, a meeting place, and the world's largest institute of higher education. And one thing that remains true throughout the ages is this: those who enjoy what they do get more out

of what they do.

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Orienteering on the Web

How do you keep track of where you're going or where you've been?

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There's no easy answer to this question. The Web has been likened to a gigantic, ever-changing maze with literally millions of twists, turns, dead ends and detours. Links change constantly, and pages come and go without warning. You'll find sites you visited only a couple of days ago have disappeared forever. Worse, you might lose track of a favorite site or even forget its name. Bookmarking your locations will help you keep track of favorite places, but eventually you'll probably want to learn how to understand URLs -- the address code used for data on the net -- so you can get some idea in advance where a given link might take you.

Avoiding "junk information"

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Pressing the wrong key, or clicking the wrong link by accident and losing track of an interesting page is a frustrating experiences shared by virtually every Web wanderer. It's almost a rite of passage.

Some Web pages transmit painfully slowly, so slowly in fact that they're not worth the wait. Some pages are just a waste of your time. (In fact, there are several popular sites, including Mirsky's Worst of the Web, Useless Web pages and Fool Site of the Day which are dedicated to glorifying wasteful, useless and tasteless Web pages.) But waste is in the eye of the beholder, and what may be useless to you might be enormously entertaining to others.

Sorry to say it...there's not much you can do to insure that you aren't wasting your time until you actually see the page which is being transmitted to your computer, but you'll find a couple of ideas in the next section: **How to get the most from the Web.**

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How to get the most from the Web

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Here are some useful tips you might want to add to your list of First Train bookmarks...you may find them handy when you start getting comfortable enough on the Internet to want to improve the performance of your net connection.

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Breaking your modem's speed limit

Impatience sometimes pays

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Here's a tip that sometimes helps with pages that take too long to appear on your browser's screen. If you've waited more than thirty seconds for the page to arrive and you're getting impatient, press the **Escape** key at the upper left end of your keyboard. That will abort the transmission of the rest of the page and force whatever has already been transmitted to be displayed on your screen. You'll usually be able to read everything on the page, and use all its links too. You just won't see the graphics.

Getting rid of "meaningless" graphics

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If all you care about is raw information, you can turn graphics off altogether with a click of your mouse button. You can do this by clicking **Options** from the top menu bar of your browser and then clicking **Auto Load Images** from the drop-down menu so that it no longer has a check-mark next to it. This is how it's done with Mosaic and Netscape, and virtually all other browsers will offer this option somewhere from the top menu bar.

If you receive a page and decide that you'd like to see its graphics after all, turn **Auto Load Images** back on and Reload the page. (The Reload option is under the View menu in Netscape and under the Navigate menu in Mosaic. Newer browsers even have an option that allows you to click on a single image and load it without loading all other pictures on the page.

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Try placing your cursor over a graphic object of any kind on a web page and press your right mouse button. The latest versions of Netscape and NCSA Mosaic will both give you a special menu.

A convenient feature not everyone uses

Recent enhancements to the Web's page programming language have allowed authors to speed up loading of pages by telling the browser how large the graphic image will be before it arrives. The browser can then allocate enough space for the image, fit the text around the empty blocks, and then "fill in the blanks" one at a time after the text has loaded. This lets you read without waiting for the whole page to load. Not all browsers have this feature, and not all Web page authors write their pages with this fast-loading feature in mind. (All First Train for the Internet online section pages are fast-loading.)

How much faster can pages load with the fast-load feature, or with **Auto Load Images** turned off? On a busy evening using a 14.4k modem, you might wait five minutes for a graphics-heavy page to load completely into your browser. But even if the page contained 20K of text, which is a lot, the text alone could arrive in less than 20 seconds.

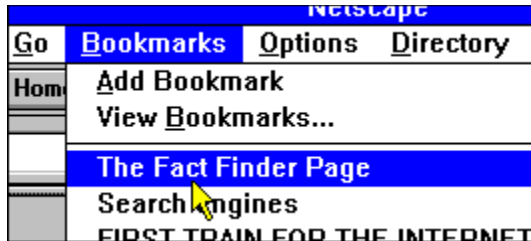
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Bookmarks: the best way to get there the second time

"You can't get there from here."



That old joke doesn't apply to the Web. You can get almost anywhere from almost anywhere else...as long as you know the address (formally known as the URL or *Uniform Resource Locator*) of the page you want to browse. But the Web is not well organized, and it may never be fully indexed and catalogued. It's just too large and growing too rapidly.

This poses a problem for average users. If it can't be catalogued, it can't be hunted down using standard methods. So how do you get back to a page you want to visit again if you can't remember its URL?

The only solution...for now

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You might not like the solution, but it's the only one that exists right now. Get into the habit of bookmarking the locations of every interesting site you come across before you leave the page. All good Web browser programs have bookmark or hotlist menus. If you're using the browser supplied by your service provider, your bookmark list may contain a list of interesting sites and locations pre-configured for you.

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You'll find more information on working with bookmarks in your Web browser in First Train Help (First Class/Tourist Class only).

A good habit to get into



You can get a head start on working with bookmarks by starting to use them now if you haven't already done so. We've tried to make this material as easy to follow as possible, but regrettably there was no way to create a truly complete indexing system and navigator for First Train offline. Windows **Help** bookmarks will go a long way toward assisting you in returning to points you want to remember at a later date.

Windows **Help** creates bookmark lists for each individual helpfile, making your search chores a little easier. Your browser doesn't do this though unless you spend the time to set it up properly. It creates an ever-expanding list of bookmarks of the whole World Wide Web based on the locations you want added, and organizing bookmarks and hotlists can be an agonizingly boring chore with some browsers.

More than you can manage?

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As you become more proficient and experienced in navigating the Web, your bookmark list is likely to grow so large that the list won't fit on your screen. At that point you'll have to use the **View Bookmarks** or **Edit Hotlist** function, which opens up a special box that allows you to scroll through long lists of bookmarked locations.

Don't be surprised if you build a list of over 100 bookmarks in just a few weeks online. There are actually programs written for the sole purpose of managing these bookmarks!

Once your bookmark list grows to this size, you'll probably want to learn how to organize it more effectively. Your Web browser's manual might have a section that shows you how to do this. If you're using Netscape, make sure you have at least version 1.2 of the program, which adds a brand new method of handling bookmarks. It's much easier to work with than the older version. We'll also try to keep the **Software Resources Page** (First Class/Tourist Class) updated with pointers to useful tools for managing Netscape and Netscape-compatible bookmark lists.

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Netscape users will also find information on managing bookmarks at the Netscape site in their online manual section (available from Netscape's **Help** menu when you're online).

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Software for getting more out of the Web

A wealth of extras

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It won't take more than a couple of days before you notice that your Web browser isn't doing all of the interesting things you've probably seen on TV or in magazines. Where's the sound? Where are the video clips and animations?

Your Web browser probably came configured only for graphics and text. Virtually everything else you might want to do with it will require other software. And *what* software! There has been an explosion of new Web browser extensions since the beginning of 1995, and it doesn't seem likely to slow down.

Among some of the newer gadgets built into Web pages which you can access if you have the software are: audio samples in real time (including several actual Internet "radio" stations with 24-hour music broadcasts); the ability to cruise the net in groups; meet, see and chat with other users on the same Web site, and even shop for software, information and other goodies using a virtual cash register

Finding new browser extensions



Finding, installing and setting up these gadgets is one of the biggest headaches most new users face. That's why First Train for the Internet maintains an extensive, up-to-date list of all the most popular Web browser extensions, and special pages to help you configure your browser to handle the unusual file types used by this special software.

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We've provided special help for setting up browser extensions for NCSA Mosaic, Netscape Navigator and Microsoft Internet Explorer in the First Class/Tourist Class package. You'll find this walk-through help in **First Train Help**. If you've never configured Windows software such as File Manager, Word or Excel for a new file type before, the process may not seem intuitive to you. This material will walk you through the installation of one of the programs you're likely to want to use with your browser, and once you've done it a couple of times you should understand the process well enough to be able to do it with any Web browser software.

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Where to find more links

On the hunt

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If you're asking that question, you must already have at least enough experience on the Web to know that you're not finding what you want to find.

Our favorite method for searching for information on the Web is the WebCrawler search engine. You'll find a fast-loading WebCrawler form included in the online section as part of the **Fact Finder Page**.

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But WebCrawler is only one of many ways you can search for information and new links. You might simply be overlooking the obvious. The Web can be so seductive that even veterans frequently get caught missing obvious solutions. If you use Netscape, you can jump right to a search page provided by Netscape Communications any time you're online by clicking the **Net Search** button at the top of the browser window. Virtually every Web browser provides a handy **Search** function either from the top menus or button bar.

Two other Netscape search options



The two buttons over the page window which say **What's New** and **What's Cool** apply to what's new and cool on the Web, not just with the Netscape program. These buttons are built-in links to pages at Netscape Communications, describing all kinds of links to new and interesting Web sites.



If you use NCSA Mosaic, they have an even more extensive **What's New** page, and it is often used as an industry reference point to keeping track of Internet goings-on.

Our favorite all-around site for links and references to material on the Internet is Yahoo, an enormous database which was founded at Stanford University and quickly became a net favorite. This site has gone commercial and may offer less and less free public access as time passes, but at this time it is an amazing resource for hot links, cool links, links to more links, and lists of links for virtually any topic that might interest you. It's a little slower than WebCrawler, particularly for West Coast users, and it isn't quite as intuitive, but if you can't find anything interesting at Yahoo, you've probably outgrown the World Wide Web!



Yahoo provides an extensive and precise search form on their own site, and we have complete walk-through help for this superb search engine available in the online section.

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The best way to find out about the Web and what's on it is to *use* it. People who are familiar with the details of its workings are not usually secretive about their knowledge! In fact, there's probably more information on the Web about the Web than on any other single topic!

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You'll also find links to other sites providing information on the World Wide Web from the online section of First Train.

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FTP: The (usually) free digital store

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If you have an ounce of hacker blood, FTP might also be the best thing to happen to your computer since disk utilities. If you don't have a taste for adventure, you might find FTP to be the single most boring aspect of the Internet. The best comment we've heard on the subject is that Internet FTP appeals to people who either: a) love a good garage sale or b) would rather deliver a message by hand than depend on the post office to do it for them.

But be aware that more and more business on the Internet is being conducted through FTP file transfer, and while your browser will take care of most FTP chores quite adequately, there are times when you may discover you really need FTP skills...for example, if you ever decide to set up your own home page on the Web,

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FTP

An introduction to FTP

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Working with FTP is a lot like working with files on your own computer. In fact, if you don't have a basic working knowledge of **File Manager** and its functions, we recommend that you work on these skills before delving too deeply into FTP, although the topic on FTP and the World Wide Web may be of use to you right away. Clicking the help button will take you directly to the **File Manager** section.

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Putting FTP to work for you

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Here's a practical look at what FTP is all about and how you will probably put it to use.

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Down to business...let's get some software

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If you're the type who likes a good freebie, wants complete access to everything or enjoys a scavenger hunt, here's the payoff...and some information on how to turn it into a bonanza. Happy hunting...

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FTP Troubleshooting

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Like the man said, "there ain't no such thing as a free lunch. (Actually, it was Robert Heinlein who wrote it in "The Moon is a Harsh Mistress", and TANSTAAFL is now a common Internet abbreviation.) There are a few things you should watch out for on your FTP adventure, but as with most things Internet, the potential problems aren't nearly as serious as they look at first...providing you arm yourself with information in advance.

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This section contains important information for everyone considering FTP as an Internet activity or pastime. Please take the time to review it if FTP interests you.

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[An important note about software piracy](#)

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[Welcome to FTP](#)

What is FTP?

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FTP stands for *File Transfer Protocol*. FTP allows you to go directly into someone else's computer, locate a given file and copy it to your computer. It looks and functions much the same way as moving files around on your own hard disk. Some of the newer FTP software looks and feels just like a file management utility. In fact, if you have Windows 95, some of the newer extensions such as Norton Navigator work seamlessly with the Windows file system, meaning that working with FTP sites actually does use your regular file management utility.

A world of software at your fingertips



For many years FTP was the easiest way to send and receive non-text data over the Internet, and now that FTP has been integrated into the World Wide Web it is more popular than ever. Having FTP access is a little like adding the whole world's software databases to your computer as one enormous, but slow, hard disk.

There are literally dozens of different types of operating systems in use around the world. If you tried to log into an institution's VAX mainframe using a standard network connection, you might find that your computer can't make heads or tails of what's on the other computer. The operating systems simply aren't compatible. FTP software handles the translation for you so that what you see on your computer screen looks much like what you'd see if you were sitting at the computer at the remote location. FTP won't let you work with that computer's programs (that's what TELNET and terminal emulators are for), but it will allow you to transfer actual data files back and forth between the two systems.

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Who needs FTP?

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If you enjoy collecting software and scouring databases for specific types of data such as sound files, pictures, new Internet applications or games, FTP is like a giant, never-ending scavenger hunt.



If you regularly send and receive large amounts of data by courier or modem to customers, colleagues or friends across town or across the globe, FTP can simplify the task enormously and save you enormous amounts of money on telephone and shipping charges.

FTP is often looked upon as a "real surfer's" tool, because until search engines were developed for finding software located on systems other than the one you were connected to, you had to know the exact name and location of the file that you wanted in order to gain access to it. You also needed to know what security and what kind of file system was used on that computer, and obtain a proper password to directory holding the file you wanted before you could actually obtain it for your system. FTP still works in this fashion in the forms that most people use it.

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FTP on the World Wide Web

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FTP is only one of many data transfer protocols supported by the World Wide Web. It is used on the Web mainly for the purpose of allowing you to download programs, pictures and especially compressed archive data just by clicking on the appropriate link on a Web page.

Unless you're using a dedicated piece of FTP software or the remote site has set up a different protocol, the software offered by links in the online section of First Train for the Internet will all be transmitted to your computer using the FTP protocol built into your World Wide Web browser. You don't need to know anything more about it than that unless you want to get really serious about sending and receiving files.

In fact, if you're fairly new to the Internet and you don't have a lot of experience with bulletin boards or online systems, you might want to ignore FTP completely for the time being and think of it as something that happens behind the scenes. All you really need to know is that clicking on a link that asks you to save a file is either an FTP activity or a Web activity designed as a substitute for FTP.

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Unfortunately you *will* need to know how to manage the software once it reaches your computer. First Train offline provides one of the most extensive and easy-to-use guides to managing downloaded software ever published, and if you click the help button you'll be taken there now.

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Two-way and multiple file transmission

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The FTP protocol built into your Web browser program is fine for most uses. But you can't easily send data to another person's computer from most Web browsers...not yet at least. There are hundreds if not thousands of sites on the Internet where you can submit your homemade computer graphics for display or judging for contests, thousands of databases, millions of word processor files, and an ever-growing number of repositories where you can make your work publicly available to everyone.

FTP makes it possible to participate in a *two-way* flow of non-text information without the hassle of using email attachments encoded binaries or tediously waiting for Web pages to load. This eases the workload on those managing these public databases, and makes the process quicker for you when you want to fetch data from a remote site.

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The other thing FTP does that can't be done easily any other way is permit the transfer of multiple files from several locations on a remote computer in one session without needing someone at the remote computer to set things up for you.

Multiple-file transfer becomes an enormous timesaver once the initial thrill of the Internet wears off. If you have ever sat idle in front of your Web browser, downloading files one by painstaking one from a directory listing on your screen, it may come as a welcome surprise to know that much of this waiting can be avoided in the future by using a dedicated FTP program that does nothing but manage file transfers.

Multitasking

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The third advantage of a stand-alone FTP program is multitasking. Many FTP sites are notoriously slow at transmitting their files. The browser software included in most Internet setup bundles at this writing is still not good at multitasking. In other words, when you fetch a file by FTP you are stuck at your keyboard while that files are being sent, watching and waiting, and unable to do much of anything else with your browser, and you have to wait for the first to arrive before you can request the second. You can work with other programs on your computer, but your Internet activities usually come to a grinding halt until the file transfer is finished. Fortunately newer browsers have solutions to this software, and Windows 95 handles this problem in a much more elegant fashion with its built-in winsock software, but you might not have the benefit of this new technology early in your adventure.

You can have an FTP program and your Web browser running at the same time, both fetching data from two completely different sites that might be thousands of miles apart...provided they aren't both trying to FTP files with both programs. If you have a 14.4kb modem or your provider happens to be especially busy, you are likely to notice a significant slowdown in data transfer to your browser while FTP is running. On 28.8kb modem connections you might have a hard time telling that two programs were transferring data at the same time.

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After a while you'll even find 28.8kb modems to be slow when transferring from two sites at once, but generally speaking you should find working this way gets the job done much faster than transferring data from one site at a time.

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 **Working with FTP**

Our pick of free Windows FTP programs

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If all you want to do is download an occasional file from the Internet and don't mind accessing files one at a time, you don't need anything more than your Web browser. If you have some online experience you already know what your file transfer habits are. But before you can use FTP for two-way and multiple-file transfers at this time, you will need a special piece of software designed to handle the job. Our program of choice for Windows users is John Junod's excellent...and free (to non-commercial users)...WS_FTP program.

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You'll find additional help with setting up and using WS_FTP in **First Train Help** and links to the latest version of the program on the **Software Resources Page** (online section; First Class/Tourist Class only).

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One more reminder: you do not need WS_FTP or a dedicated FTP program to make normal use of FTP services on the Internet. This program is optional and you may already have more than adequate software built into your computer (e.g. Norton Navigator for Windows 95) or your Internet suite (e.g. Delrina Cyberjack).

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The anonymous FTP adventure

Making software available to everyone

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The notion of making software freely available to everyone has changed the way individuals think about obtaining new programs and has also affected how publishers and authors distribute their work.

Wide public availability of software is promoted by many non-profit organizations and educational institutions as a way of bringing the full power of personal computers within reach of anyone who can afford to own the hardware. It's a noble idea, but it poses certain problems for the organizations wishing to supply the software. A way had to be found to allow access to certain files to anyone who wanted them while denying access to file storage areas which are no one's business the organization which owns the host computer.

What evolved from this need is a system for supplying and accessing data on remote computers which is commonly known as anonymous FTP.

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Anonymous FTP is how your browser program gains access to software you download from the Web using First Train's online section or any other Web document designed for the purpose. Anonymous FTP works much the same way as the login procedure used to gain access to your Internet provider's host computers. Any time you request access to a directory or computer configured for anonymous FTP, you are first asked for your "login", or your user name. Instead of entering your real name, you type **anonymous**. A few systems still ask you to use the name guest instead.

Password please...

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You are then asked for a password, which of course you don't have. Instead of entering a password given to you by the remote computer's administrator, you enter your email address. This information is saved to a file along with information the remote computer gathers about your connection so that the administrator knows who has visited their computer and when, how long they stayed, what they did while they were there, and whether the email address of the person who logged in matches up against the address identified by the computer. Once that information has been logged, you are given access to areas of the host's computer set up for public use.

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Logging in and looking around

What most people never see



If your only knowledge of FTP comes from what you've seen in Netscape, Mosaic or another Web browser, you have probably never seen what happens during an anonymous FTP login procedure. Most browsers handle this work behind the scenes for you. FTP actually involves a lot of handshaking, querying and messaging back and forth before both computers see the same set of files eye-to-eye, and while your browser does this behind the scenes, you'll see all sorts of cryptic information flash by in a message window if you use dedicated FTP software.

Once you're logged in, you can select any files from the available public-access directories and transfer them to your computer. You might also be able to move around the directory structure of the remote system's hard disk if the host site is set up to allow this, allowing you to browse several sections of the remote storage facility.

Direct access to the remote computer

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If the remote system permits you to write files to a directory on the remote system -- that is, to copy files to the host system's hard disk -- you may also be given access to a small number of the file management commands on the host system such as renaming files and creating new directories.

The ability to work with the remote computer at this level is imperative when the directory is yours, given to you for your personal home page by your Internet provider, and more and more businesses are asking for other businesses to send mail via FTP rather than courier or direct modem transfer because it's so much more convenient to all concerned. Unless you have a newer browser capable of this feat, you will have to use an FTP program to do these jobs.

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Don't worry about wrecking the computer at the other end, though. You could accidentally erase files at the remote site, but not many of them, and unless you're given unusually high levels of access, you won't be able to cause any serious harm.

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How FTP looks to your Web browser

The trade-off: better looks for poorer performance

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FTP works slightly differently from browsing the Web in the way it handles connections, and while it looks a lot nicer to novice users, it is actually a lot less versatile than working with dedicated FTP software or a file management tool capable of FTP operations. Each Web page of data and each image on the page must be transferred using a brand-new connection with the

host computer. Even if it's a tiny 75-byte "bullet" like this one [← Last topic](#), a new connection must be opened and closed for the file.

Some sites set their FTP directories up with fancy layouts and graphics to lure you in. (Most of the best-looking sites are commercial, and expect to have to pay by the file or by the hour to use them in coming months). Some sites that *appear* to be FTP sites are actually nothing more than cleverly-constructed Web pages. You might not mind the extra wait for the page and graphics to load, but after a while you will probably find it an inconvenience...particularly when you want fast access to data and know exactly where to find it.


FTP doesn't have any of these fancy features. Once you are connected to an FTP directory, you are physically connected to that part of the host computer until you, the remote computer, or the network itself closes the connection. As long as you are transferring data, the connection remains open, and it will stay open for up to fifteen minutes (but usually five minutes or less) between transfers before kicking you off for idling. This "grace period" allows you to read program documentation or directory messages before you decide what to download or which directory to enter next.

Two types of links

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There are two types of links used for FTPing from a Web browser. The most common type of link is an image, icon or text hotspot which selects the file for you automatically and starts the download when you click on it. Less common, but more interesting, are links to directories instead of files. Instead of starting an actual transfer, links to directories actually build Web pages for you automatically when you enter each new directory.

The custom-built page, constructed by your browser from information it receives from a reading of the remote computer's FTP directory, consists of a list of highlighted hotspot links to each individual file and subdirectory inside the remote directory you have accessed. Each highlighted text link is either a file, a directory, a way up and out of the current directory, or a shortcut to another part of the remote system's hard disk.

Most Web browsers automatically convert directories on remote systems to pages of links which you can click to start the file transfer. File icons -- individual files you can transfer to your computer -- look like this  on the Netscape program: and directory icons, which will contain other files for you to browse, look like this:



File and directory icons will have a similar appearance on most popular Web browsers,

and you can usually click either the highlighted text or the icon to transfer a file or change to a new directory.

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If you'd like to try a practice session using your Web browser for FTP, there are a few sample links and further instructions available in your online section on the **Software Resources Page**.

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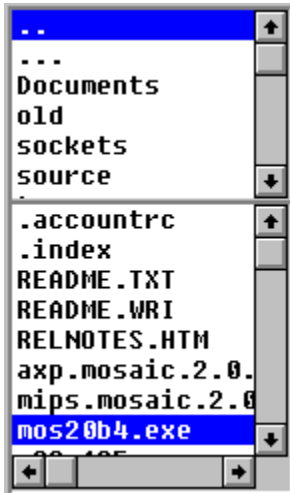
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Using FTP

Which files to take?

So many files and so little time...



If you don't have the patience to simply poke around and see what you can find, then it will help to have at least some idea of the name of the file you want. It takes time to download files over a modem -- *lots* of time for the better Windows and Windows 95 software -- and chances are good that you also face the problem of limited storage space on your hard disk. So when you receive a directory listing instead of a complete pointer to a specific file, you'll have to figure out for yourself which file or files to transfer.

Not knowing is where the adventure comes in. For example, let's say you're looking for a sound sample from a W.C. Fields movie to dress up your sound collection. You click a link or enter an FTP address in your FTP software and gain access to a directory containing all kinds of sound samples which are supposed to be from old movies. Unfortunately, none of the filenames appear at first glance to have anything to do with W.C. Fields.

Unless there is an index of files, or a catalog of the site's contents somewhere on the remote system which you can view, you might have to transfer every file, one by painstaking one, to find the file you want. Fortunately more and more sites now provide you with indexes of files and descriptive Web pages describing the contents of their FTP directories. You can usually recognize these files by their names: **00INDEX.TXT** (named with the 00 so the file appears as first alphabetically in the directory), **INDEX.TXT**, **FILES.TXT**, **MANIFEST.TXT**, **FILES.DOC** and similar names.

One person's treasure is another's trash



If you're on a specific mission and you need this file for a project you're working on right now, the lack of an index file just might send you scurrying to the medicine chest for antacids or aspirin. But if you have collector or hacker blood in you, you have just stepped through the gates of heaven. And if you're not sure which side of the line you stand on, an hour or two of FTP will surely tell you. There is nothing a "real" net junkie loves more than wading through public-access directories and sampling every file that looks interesting to see what it offers. We

ought to know...we spent dozens of hours doing just that when building the First Train.

If you'd like to try your hand at turning anonymous FTP from just another Internet activity into a genuine adventure, the next section describes how to hunt down new and interesting FTP directories.

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Hacking new FTP sites

Do you really need more sites to browse?

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At first we thought that we really shouldn't have to give you this information. After all, there are literally tens of thousands of anonymous FTP sites to sample around the world. But eventually you'll want to narrow down your searches to sites and software of particular interest to you. Fortunately all it takes to do this are a couple of hackers' tricks.

All you really need to know to gain access to a whole world of software...literally...is that every Web page you come across is in a directory on the remote computer. If the directory can be accessed through the Web page inside of it, very often it can be accessed through FTP as well. Here's how to find out whether the directory holding a given Web page's directory can be FTPed.

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Whenever you access a Web page, its location and directory are shown at the top of your browser in the **Location:** or **Go to:** box. Here's a sample URL using our demonstration First Browser. It's not a real address, so you'll get a harmless error if you try to access it.



This address, if you entered it in your browser's Location: box, would access and load the Web page entitled feather.html. We can find out whether there are other files in feather.html's directory by editing the URL directly in the Location: box.

Change http to ftp and remove the name of the Web page file -- **feather.htm** -- from the end, so that the URL looks like this instead:



Press **Enter**. If that particular directory permitted anonymous FTP access, you would see its contents with your browser. There might not be anything interesting in the directory, but this is only the beginning of the hunt.

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There will usually be a highlighted line of text at the top of the directory listing page that says **up one directory level** (or just a pair of periods " .. " if you're using an FTP program), and there may also be highlighted lines of text with file folder icons next to them. The file folder icons will take you into new directories deeper inside the host computer. Going up a directory level will usually allow you to see other directories and files you can try to access.

If the URL reports an error or quits after a minute or so, it's nothing to worry about. No one will come after you for trying. It just means that the particular site you chose allows Web access but not anonymous FTP access.

Most people get bored after their first hour of hunting through anonymous FTP

directories and only use it to locate or update specific software. Some people become thoroughly addicted to rooting through strange directories on computers around the world. We ought to know.

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Not at all. There are *times* when the remote system might not like you looking around their computer, but that's not your problem. It is an easy task to set up a remote computer so that you can access Web pages but not FTP, and any properly-configured publicly-accessible FTP site will only allow you access to certain directories. If you willfully erase or damage files on the remote system, then what you are doing is considered in many areas to be vandalism. But if all you are doing is poking around for files and the remote site has *not* told you that you cannot do this, you can consider any accessible directory on the remote computer to be fair game. However, if you discover a directory containing software you don't believe should be publicly available, such as commercial software or private files, it is common courtesy to alert the site's administrator. There may have been an error made when the site was configured, allowing public access to private areas.

If you're *really* serious about FTP, or have a particular interest for which you have found very little in the way of good publicly-available software, there is an enormous free list of FTP sites that allow anonymous guest logins. You'll find direct links to this massive list from the **FTP Resources Page** of your online section (First Class/Tourist Class only), but here are the URLs even if you don't have the full package:

<ftp://oak.oakland.edu/SimTel/msdos/info/ftp-list.zip>

or...

<ftp://archive.orst.edu/pub/mirrors/simtel/msdos/info/ftp-list.zip>

Just be careful...there's more interesting software out there than you have time to sample, let alone use productively!

There are additional FTP-related resources available from the **FTP Resources Page** of your online section (First Class/Tourist Class only).

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The answer to this question is covered in depth at the help topic connected to this button. You may wish to bookmark your place here before moving to this section since there is no **Last topic** bar there to return you to the travelogue.

This happens less and less as more sites use standard login procedures, but from time to time you will encounter a site you know to be public that refuses to let you in, even though you correctly entered anonymous as your username and your email address as your password. Here are several things to try.

1. Try placing a hyphen in front of your username (for example *joe@joe.com* becomes *-joe@joe.com*. Some systems insist that your email address password be entered this way.
2. Try using *guest* as your password instead of your email address.
3. Try using *guest* as your username and *anonymous* as your password.
4. Try accessing the site at a different time. It might be off-limits to remote users at times of the day when the computer is needed by employees or students at the host site.

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 [FTP problems](#)

Can I get into trouble?

Oops...wrong file!

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Can you get into trouble by downloading the wrong file? Yes, but if you use a reasonable amount of caution and common sense you should never have this problem. In most cases there are no restrictions on what you can take from public-access directories. This is particularly true with software made available from educational institutions. These sites tend to be very strict about government regulations and illegal software. But there is some software which it is illegal to export outside of the US. There are even certain types of data which cannot be transported across state lines within the US, including some forms of erotica and instructions for performing illegal activities or building illegal devices. And yet you'll find it freely available on publicly-accessible FTP sites in almost every state, province and territory.

It is almost impossible to prevent individuals who want to share this type of information with others from doing so. Ethical Internet service providers do not routinely monitor or police FTP file transfers to and from their computers unless someone reports a problem. They place themselves at risk by not doing so, since their computers could be seized if one of their clients was indicted, but it is generally not worth the work involved to keep track of this activity.

But don't think they condone illegal activity, because no provider in their right mind will do that. Nearly all providers reserve the right to deny access to files and directories containing software which would break local or federal laws if the data they contain was transferred to you by way of one of their computers.

Doing whatever it takes

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Your provider is likely to take any and all action they deem necessary if any their subscribers allow software to be distributed on their server computers whose contents violate local or federal statutes. The consequences for making illegal software available can include, but are not limited to, loss of storage rights for the person or persons involved, cancellation of the account without notice and legal action if the activity is considered willfully destructive or an act of fraud.

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An important note about software piracy



There's another type of trouble you can get into, and that involves pirated software. Pirated software refers to software which has been illegally copied from a commercially-available software package and made available to people who have not paid the licensing fee. In other words, it's giving away software which you would normally have to buy.

Piracy is a violation of copyright, and copyright violation qualifies as illegal behavior. These offences are usually dealt with by civil authorities rather than the criminal justice system unless the violation constitutes criminal fraud.

Millions of computer users willfully take copyright violation and software piracy lightly. After all, isn't everyone doing it? Make no mistake about it, piracy is something Internet service providers take very seriously. If police ever decided to crack down hard on software piracy, it is likely that hundreds of innocent Internet providers could literally be put out of business overnight, because the first thing police do when gathering evidence of software fraud is to seize the computer equipment -- all of the computer equipment -- where the violation is suspected to have occurred.

Share your software, but know what you are allowed to share

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It's quite common, and quite admirable, to want to give something back to a good FTP site by uploading something to their incoming files directory for the benefit of those who uploaded for you. If you ever decide to do this, make certain ahead of time that the program you are uploading can legally be made available to others.

There too many myths about what is and is not legal for upload. Don't ever assume that if a file or software package is old, has no visible copyright, and included no licensing information that it is okay to share it with others on the net.

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A few storebought software products have outlived their sales life and been released by their publishers as freeware, their way of thanking the world for their success. We do this ourselves. All Dynamic Living information products more than two years old are now free for everyone. Many other publishers have also chosen to make "entry level" versions of their most popular programs available free in hopes of selling the user on the more expensive retail version. But this is a rare exception, not the rule, and at this point in time you should consider it a gift, not a right.

Copyright notices

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Most programs and files without copyrights were meant to be shared, but many of them are not. Just because you can't find a copyright notice doesn't mean there isn't one in the data. Copyright notices can be embedded in graphics, text, programs, sound files, MIDI song files and other types of data in places where you won't find them unless you know exactly where to look. Never, ever assume that a given program or file is okay to share with others, even if someone

you trust tells you it's okay. Unless that person actually wrote the software, they can't insure that it's okay for you to distribute it.

So before uploading any files for public access on the Internet, make sure it's okay to share with others. Check the documentation and helpfiles for distribution and licensing information. If necessary, contact the author or publisher by post or email before uploading it. And if you can't determine for certain whether or not the data can be shared with others, don't make it available on your provider's computer, on a private server set up on your own computer, or on any other site on the Internet.

The penalties can be harsh...

In years past, the worst you could have expected from mistakenly posting an unlicensed piece of commercial software was the loss of privileges at the site where you uploaded, and possibly a nasty letter from the site's administrator. Usually you got a warning and a second chance.

Online service providers can't always afford to give you that second chance. Some software publishers are making loud noises on the net about suing individuals for fraud after they have found commercial software on publicly accessible anonymous FTP sites and USENET newsgroups. Some online service providers whose users made commercial software available without informing the administrators have been forced out of business completely by legal actions taken against them. As a result of this, some will now call the police straight away when they discover commercial or illegal software being distributed by their users...they're that afraid of losing their businesses.

...but fortunately they are seldom applied

 **Last topic**

It might be an innocent mistake, but if a large corporation decides to make a public example of you and a few other individuals by serving you with legal action, there might not be much you can do about it except to beg for mercy. And no provider will permit or tolerate having its right to do business placed in peril by users who make commercial software publicly available on their server.

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What is and isn't legal

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If you need more help determining what is and is not okay to upload to FTP sites or make available for others from your own FTP directory, please read **10 Big Myths About Copyrights Explained** available from this help button.

More information on copyrights on the Internet is maintained by the Copyright Clearance Center Inc. in its archive of information related to copyrights and the Internet, including information sheets, FAQ's, and links to legal resources should you ever need them. You'll find a link to their Web site from the **Anonymity and Security on the Internet Page** in your online section. If you are still unsure about a particular file, contact your provider's support staff for clearance before posting it.

What to do if you spot someone making software available illegally

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In this society you are innocent until proven guilty, and there are already too many self-appointed "Net.Cops". Remember in all cases that no harm has been done unless people have actually gotten and used the illegal software, or the person has made this software available as a deliberate and willful act of fraud. In most cases it's an innocent mistake.

There are so many new users online today that you should always assume someone is innocent until proven guilty. In fact, this is usually how software authors themselves will proceed when they discover that someone has taken liberties with their license.

First, email the person who made the file available

{ewl ew256bmp.dll,ew256bmp,mail2.bmp}The first person you should contact, if you can, is the person who is made the file available. If you got the software from a link on a web page, the person who set up the page should have provided an email address somewhere on the page where you can write to them. Let them know that what they are doing is illegal. This is usually enough to get them to stop even if they do know that it's illegal. (Real pirates are not fools. Your message will be a warning to them that they've been caught by someone who might cause them trouble if they continue to make the illegal software available.)

Second, check the directory later to see if the offending file is still there

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If you write this person and receive no reply after a couple of days or so, check to see if the files you wrote them about are still there. The person will have heard from many different people about problems with the files in their directory and only have responded to the first two or three people who told them about it.

Third, contact the administrator of the site where you found the file

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If the files are still there, the next person you should contact is the Webmaster or administrator at site where you found the files in question. In fact, if you're really scared about what you saw,

write the Webmaster at the same time as you write the person offering the files. The company or organization who provides this person with net access might be very concerned about this, and they may be able to handle things without the need to call in law enforcement agencies.

How do you contact an administrator? It's quite simple. If the URL, or address, of the page or directory with the problem files read like this:

ftp://ultra.secret.net/noaccess/eyesonly/trouble4u/ ...then the Webmaster's email address will almost always be *webmaster@ultra.secret.net* or *webmaster@secret.net* ...or even *webmaster@www.secret.net*. In fact, if the site has been configured properly, all three of these addresses will work.

(*secret.net* is only an example, by the way. If you ever need to send this kind of message, use the domain address of the host computer in place of *secret.net*.)

To get mail to a system administrator, try *admin@secret.net*, *help@secret.net*, *support@secret.net* or *info@secret.net*. Once again, all four of these addresses should be valid if the site is properly configured.



Try fingering these addresses first to see if one or more of them is valid, and don't be afraid to send multiple letters to different addresses to the same site. The administrators will probably be glad you contacted them.

Fourth, leave the enforcement to those responsible for the remote site

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If you don't get a reply, assume that your email got through. It could be that the host computer got so many reports from other users that they chose not to reply to all of them.

However, if *all* of your messages are returned undeliverable, call your provider's support staff. They might not be able to stop the other person from distributing the information, but they can close off access to that file or site for your fellow subscribers. This will insure that their subscribers can't get into trouble by downloading data which they might not recognize as illegal.

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It's usually a good idea not to call law enforcement officials except as a last resort. If the violation is serious enough, the host site's support staff will inform the authorities themselves.

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A note about courtesy



As we've seen, a dedicated FTP program can transfer a whole directory containing hundreds of files totalling several megabytes to your computer with just a mouse click. It's a powerful tool for acquiring new software and data.

This kind of flexibility in the hands of amateurs can also be a serious problem for system administrators.

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Many public-access FTP sites are now on computers owned by commercial Internet service providers and software publishers. CD-ROM publishers Walnut Creek host one of the most popular FTP sites on the net. But at least as many, and perhaps even more sites, are located at government or educational institutions where other people need the use of the computers during their day. Each computer on the net can allow a limited number of FTP connections before it either slows down or refuses to allow any more people to transfer files.

Imagine the plight of a student at a large university who needs to access the school's computers from their bedroom while working on a report, but can't because all connections are filled by outside callers, none of whom might have anything to do with the school. This problem has occurred so often that many of the best FTP sites on the Internet have either closed their doors to outside callers or severely restricted the number of connections they will allow. Some close their computers completely to outside callers during the hours of 8:00 a.m. to 6:00 p.m. local time.

Identifying institutional sites

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How can you tell if an FTP site is located at an educational institution? If you see the letters edu in the site name (ftp.monash.au.edu for example), you can be sure it's an institute of higher learning somewhere. Government sites in the US end in .gov and military sites end in .mil (Click here to learn more about "top-level domains" and their meanings.)

It is possible to automate an FTP program to copy dozens of directories containing dozens of megabytes of software and consume several hours -- even whole days -- on the same site. It's a tempting thought, considering the high cost of software and the relatively low cost of Internet access. Administrators of many sites might not even mind this...provided you do it during the institution's off-peak hours.

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We once spent eight hours at one stretch on one of the busiest Windows software sites in the United States obtaining software when researching First Train. We were *not* banned from the site. We didn't even get a nasty email message from the administrator, which is what we expected at the very least. But had we done this during the daytime, we could well have lost our privileges there -- or worse, pushed the administrator over the edge and into closing the doors to anonymous FTP completely. In fact, we know that one of our staff's love of software caused so much trouble for a local online service a few years back that it did close its doors to anonymous file access.

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Remember...any site that closes its doors to the public won't have any new software for you three months from now.

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Internet Relay Chat: the cyberspace pub

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An introduction to IRC

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What is Internet Relay Chat?

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Online chat: the Cyber-cafe (an article)

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Webchat: an alternative to IRC

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Keeping records of IRC chat

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"Why have I been banned from Internet Relay Chat?"

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"My favorite server is always full when I want to IRC!"

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"This IRC software sucks."

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Other IRC resources

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[Internet Relay Chat](#)

What is Internet Relay Chat?

A culture unto itself...or just a fun way to pass the time?



Internet Relay Chat, or IRC, is a service on the Internet that allows you to talk (or rather, type-talk) in real-time with people from over 100 countries across the globe. It has become an increasingly popular feature of the Internet and something almost everyone wants to try at some point. Think of it as a less expensive, infinitely more diverse, and text-only version of the telephone "party line" services so popular a few years ago. If nothing else, IRC will prepare you for the next wave of Internet telecommunications: live teleconferencing by voice and video.

Almost everyone needs help with this Internet service at first. It isn't something you can usually walk into and use your first time without a little bit of prior understanding. In fact, in a way, learning IRC is like learning a whole new operating system.

You'll also need a little patience to get through your first few hours on IRC. It's a whole subculture unto itself with its own rules and social mores. This aspect of IRC turns a lot of people off, but if you're a social butterfly with too few places to spread your wings you may soon wonder how you ever got along without it.

An exclusive look at IRC

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If you'd like to learn more about what IRC is all about before continuing, the next topic contains an exclusive article prepared to give you a better idea of what online chat in general -- and Internet Relay Chat in particular -- are all about. This article is strongly recommended for all newcomers to IRC. In the course of researching it, the author uncovered a number of unusual facts and bits of trivia that even most IRC veterans don't know.

If this article whets your appetite you'll find links to other articles on IRC located on the **IRC Resources Page** in the online section (First Class/Tourist Class only).

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Internet Relay Chat: The Cyber-cafe

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This article was originally prepared for print publication. It is provided as a basic introduction to the purpose and concepts behind Internet Relay Chat and online chat in general.

Colt_45: Heh...60 hours online in ten days, I'm overdrawn on two net accounts and used up on a third, I'm engaged to a woman half my age and 1,500 miles away and I've made a sworn enemy out of a Gulf War vet I never even met before. It's official...I'm a chat addict.

modello: You really ARE sick!

Fruitfly: My stats are almost as bad...

teegar: don't worry colt, you're just an average user...you'll get over it...NOT! <grin>

Colt_45: Thanks. I feel a WHOLE lot better.

Sue-sin: At least you're not watching Married with Children...

CB radio enters the computer age



Online chat is the 1990's equivalent of citizens' band radio and computer bulletin boards. Subscribers to online chat services or the Internet log onto one of a group of networked computers and "meet" in public forums provided for the purpose of live discussion.

Once connected, users talk to each other in real time, communicating through their computer's keyboard. The talk is live group conversation where nearly anything goes (and very often does), and where the only limits are your imagination and typing speed.

Local online service providers, most of them privately-owned bulletin boards, usually offer one central meeting place and access to more specialized channels -- also known on as "rooms" -- for everything from 12-step recovery meetings to corporate teleconferencing to virtual sex via modem and keyboard.

International providers such as CompuServe, GEnie and America OnLine, offer hundreds of channels, and they'll usually allow any user to set up their own channel for practically any purpose or topic of discussion. The Internet is fast becoming the place for online chat, thanks to a network technology known as Internet Relay Chat and the increasing popularity of low-cost access to the Internet using graphically-based software. On any given evening the three main IRC networks link as many as 10,000 users from across the globe on up to 4,000 channels in one giant teleconferencing forum.

A little history

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.Online chat has been around for at least a decade. Local providers in every large city have had live chat since at least the late 1980s. International services have had live teleconferencing even longer. The Internet has had its own teleconferencing forums, called Internet Relay Chat, since at least 1989. (Typical of the Internet's "consensual anarchy", it took an extensive search to discover that IRC was originally developed in Finland by Jarko Oikkarinen in 1988. (Last known email address: jto@tolsun.oulu.fi.) Not even veteran IRC users and system operators on IRC itself knew who started it and when.

IRC is accessible at no cost by almost anyone with an Internet account; most other online chat systems are included as part of paid services.

The IRC's first major public exposure came late in the Persian Gulf War. Updates poured in from around the world while chat users gathered to view postings by individuals on the scene, typed into the network as the events unfolded around them, with transmission delays of a few seconds at most.

Just a place to talk...and talk...and talk...

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But this level of serious discussion is more unusual than most onlookers might imagine. Online teleconferencing by and large lives up to its "chat" moniker. Casual observers will find that the chat in most channels looks not unlike what you'd hear in a neighborhood pub, a rented room in a church basement, or a block party. Discussion is often little more than small talk, an excuse to be social without leaving home. Many first-timers or "newbies" who come in search of specialized topics either make an early, disappointed exit or start their own channels. Most of the IRC networks and international online services will allow almost anyone to start a channel for discussion of almost any topic.

Anonymity: a safeguard and a weapon

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Anonymity is not just tolerated, it's actively encouraged. For reasons of practicality, users are known by a pseudonym, or "nick", rather than their real name (imagine ten Hans Schmidt's or Chung Lee's on at the same time), and this anonymity breeds a unique intimacy. It's not unlikely to find yourself discussing the latest Emmy nominees on a channel with Rockstar, an alienated, tone-deaf 15-year-old from Ohio; Tinks, a bored receptionist calling in from her office in Auckland; DonTrump, an out-of-work machinist from Edinburgh; Sappho, a gay-rights activist from Amsterdam; Ecurb, a quadriplegic living in a group home in Alaska; and Catwoman, a lonely 40-year-old divorcee from Israel.

Anonymity greases the wheels of honesty by reducing the risk of personal exposure and short-circuiting opportunities for prejudicial treatment. It brings together people who would never have anything to do with each other in "real life". But the ability to hide behind a nickname also allows for elaborate role-playing and manipulation. Many people choose their nicks based on their interests; just as many use them to project images they could never live down in person. It doesn't much matter to the regulars though. Poseurs are eventually spotted by the inevitable slips in their conversation.

More than an escape from reality

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It's easy to mistake online chat as a way of communicating without actually involving yourself in

other people's lives, but serious net-chatters frequently act on the need to put faces and names to the nicks. Many get together through prearranged gatherings or "meets". These meets have resulted in everything from long-lasting friendships to business partnerships, job offers to marriage proposals.

International chat services don't offer the same opportunities for social contact as local chat, but that doesn't stop some users. One IRC channel, #30plus, has regulars who party together in New Orleans from time to time. Many IRC channels are devoted to users from specific cities, making meets of regulars easy to arrange. Commercial services such as GENie and CompuServe have actively promoted meets among users from the same area, and some attract literally hundreds of users eager to put faces to the names they've seen on their screens.

As software and hardware grow more sophisticated, meets may become less popular...and less necessary. Near-real-time voice chat programs, designed for use on IRC, enjoyed so much success in the winter of 1994/1995 that many host computer sites banned them due to their high data transmission demands. Even with text-only chat, users regularly complain that IRC is becoming congested and data transmission too slow. Audiovisual chat, when it arrives for good, will probably become the domain of commercial providers and telephone companies once its legalities and practicalities are sorted out. The popularity of IRC Interphone has raised serious questions about the future of public-access telecommunications, not the least of which is whether audiovisual chat can ethically be made available over phone lines by firms other than telephone companies.

Entertainment first and foremost

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Its social implications aside, online chat is first and foremost entertainment, where the rules seem to change from day to day even on the same channel, and the conversation frequently devolves into a delightful silliness. Witness a recent exchange on the IRC #philosophy channel. The topic at the time was "Refuge from the Undernet coma epidemic. Please, no more than 2,500 brain cells past this point."

```
*CELESTE:* moop
*Ivor:* meep
*CELESTE:* beep
*tweetnik:* Gronk
*Paradox:* yeah, me too
*madredio:* So nice to see some real intelligence on the net. At
one time this channel was restricted to discussion of philosophy.
*tweetnik:* Gronk
*Paradox:* Most of us have come to realize that truth is where you
find it, madredio.
*tweetnik:* So shall we wax philosophical, then?
*CELESTE:* be-boop
*Paradox:* Guess not...
*[mode change]* madredio has changed the topic on #philosophy to
"Low humor as a tool of philosophical argument: flatulo ergo sum"
```

Aliases were changed to protect the silly.

← Last topic

Some channels have strict rules about language, good taste and staying on topic, and those who do not go along may be asked to leave the channel, kicked out by channel operators, or banned altogether from participation. Strangely, channels such as #vampire and #punk often

appear to be more tolerant of extremes in behavior and opinion than #love, #friendly and #trust.

The darker side of IRC



Most regular users will readily admit that online chat helps them to gratify -- at least in part -- needs which they don't or can't get met in real life. The lure of online sex is a major IRC drawing card among users of all ages. At any given time there may be as many as fifty IRC channels devoted to various preferences, practices, orientations and fetishes. But there is surprisingly little true "virtual sex" in public view on the wide-open IRC. Couples or groups may pair off and start a private chat, or join a channel which is invitation-only. Generally speaking the public sex-related channels are less racy than an R-rated movie.

On the other hand, there are channels devoted to frank discussion of illicit activities such as software piracy, drug use and anarchy. The tools exist for users to swap data of all types while they chat, from pictures and sounds to software and text documents complete with powerful data encryption to keep prying eyes from browsing the transferred data. Users are well aware that law enforcement officials know of these channels and their purposes, and take steps to avoid incriminating themselves and help others to do the same.

Open discussion of sexuality and illegal activities is usually carefully monitored on commercial chat providers (usually more out of legal concerns than ethical ones) but IRC's overseers are reluctant to make judgements until the law insists upon it. Users are generally loathe to see discussion actively policed, although it is widely acknowledged by regulars that intelligence-gathering agencies are at work on IRC analysing conversations and taking down names and addresses.

Personal freedom is the main concern

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The main concern most users seem to have is not that IRC might be used for illegal purposes, but that some might use IRC as a forum for forcing their opinions on others. The fact is that the IRC can't be policed at any meaningful level, just as the phone company can't prevent individuals from using the telephone system or control the content of telephone calls.

While it appears to be a remarkably democratic society, it actually reflects most of the same prejudices seen in the "real world". The upper social stratum is not the young, rich and pretty, but the literate, creative and witty. But there are few long-term rewards for achieving status, and fame is as fleeting as a deep breath. The first rule of media consumption is law here: if you don't like what you see, change the channel.

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Unfortunately, the second rule also applies: even with 2,000 channels, a lot of users still have a hard time finding anything worth tuning in.

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Webchat: an alternative to IRC



If IRC sounds like too much work to you, you might want to look into Webchat. Webchat is a relatively new system that allows anyone with a World Wide Web site and a little configuration skill to set up a chat-like system for communicating with people on the World Wide Web. What it means to you is that you can use Internet chat with nothing more than the browser program you are using right now. No setup is needed. All you do is connect with a Webchat site by clicking on a link that takes you to one, and you'll be shown how to do everything else. (Webchat sites tend to be quite nicely documented for new users.)

The advantage of Webchat is, of course, its ease of use. The disadvantage is that it does not work in real time. When you type your chat into the Webchat form and press the Send button, no one will see it until Webchat builds a new page of information and sends the page containing your words to all those who are connected. It is not uncommon for it to take more than a minute for a simple "Hi", "Hi to you too", "So what's going on tonight?" exchange to take more than two minutes using Webchat.

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Some companies are using it for online product support, so that your questions can be answered by a live operator without the expense of 1-800 numbers or long-distance charges. In most cases Webchat is set up for specialized use or commercial uses which are not suited to IRC.

You'll find links to Webchat sites, as well as information about other new IRC-like services on the Web, on the **IRC Resources Page** of your online section (First Class/Tourist Class only).

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Windows IRC software

First time lucky

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Now that you have an idea of what IRC is all about, you'll want to get online and try out the service for yourself. Note that most people run into problems within the first ten minutes, because IRC software is not usually supplied with high-quality beginner-level help. Don't fret...we should have you online in all of twenty minutes. In a very short time you'll be talking live with people from all over the world.

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The hard truth is that setting up IRC software for the first time is not an intuitive process with most IRC programs, and there are many new commands to learn as well. Unfortunately, unless you were provided with a ready-to-go, preconfigured IRC program as part of your Internet setup bundle, have a Wizard-enabled program such as Cyberjack for IRC or an IRC-preset Internet suite such as NetCruiser, you will need to do your own setup.

Help with the software

Before you can go online you'll need the right software. Most Internet starter packages come with primitive or out-of-date IRC programs, and it is highly recommended that you get the latest version of either WSIRC or mIRC -- two very good IRC programs for Windows -- before continuing unless you already have workable IRC software you are happy with. The **Software Resources Page** and **IRC Resources Page** in your online section will show you how to obtain these two programs.

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The help button leads you to the **What to pack** section where we discuss these two IRC packages and give you an idea of what to look for if neither of these are suitable to you. You may wish to bookmark your place before jumping to this topic since no **Last topic** button is supplied on this part of the train.

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If you already have your software and want to learn how to set it up, you'll find a complete walk-through that fills the holes in these programs' own helpfiles in **First Train Help** (First Class/Tourist Class only). You'll find these pages useful even if you have already been using mIRC or WSIRC for some time.

Accessing IRC with a TELNET connection

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You might have heard that you can use IRC two ways: either by TELNET connection or with a dedicated IRC program. You might also have been told that TELNET is a superior way to use IRC. Unless you're an expert-level user or amateur C programmer, you'll probably find IRC through a TELNET program to be a royal pain.

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Learning the language

One of the first things you'll notice on IRC is that even English-speaking IRCers seem to be talking a different language, and have what may appear to be profoundly strange ways of expressing themselves.

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In order to help you feel more at home more quickly in this new culture, we've provided a couple of translating aids. The first is a tutorial which explains many of the commands available on IRC, but be aware that not all of them will work as described with Windows IRC programs. If you are using mIRC or WSIRC, consult their helpfiles by pressing **F1** from the IRC program. There are equivalent commands or buttons in both programs for many commands listed in public-domain documents and IRC helpfiles such as this one.

Ensor's IRC Newbie Guide Thing



In order not to violate copyright, we included **Ensor's IRC Newbie Information Guide Thing** as a separate file which will load into **Notepad** when you click the disk button. From there you can save it, print it, or simply cancel it at your discretion.

Nicholas Pioch's IRC Primer

This 1994 IRC primer by Nicholas Pioch is included as part of the online section of First Train. You'll find a link to it on the **IRC Resources Page**. It explains a great deal more about UNIX-only commands and advanced IRC use than the other help files in this kit, and offers some excellent general advice for new users.

And now, if you wish to proceed, the next topic will display a table of IRC-isms. Print and save buttons are also supplied if you'd like this table as a file or print-out.

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A table of IRC-isms



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IRC is text-based, so it's not always possible to respond to people as quickly as you would in normal conversation. In order to speed up the flow of chat, a whole new acronymical dialect developed among the online community -- first on bulletin board systems and later on IRC chat -- to ease the stress on the participants and help bring the flow of ideas closer to the speed of live chat.

These acronyms can be extremely confusing to newcomers when they start flying hot and heavy. Here's a list of most of the common acronyms you're likely to see tossed around on IRC. Use this as your "IRC-to-English interpreter" for your first weeks on IRC. (Note that the disk button will save a copy of this table to your First Train directory as **IRCTERMS.TXT**.)

AFAIK	as far as I know
AFK	away from the keyboard
ATYS	any thing you say...
BBIAB	be back in a bit
BBL	be back later
BBS	bulletin board system
BFD	big f***** deal (sarcastic)
BRB	be right back
BTW	by the way
CU	see you
CUL	see you later (also cyl)
DIIK	damned if I know (also fiik)
FIIK	(see diik)
FITB	fill in the blanks
FROPPED	f***ing dropped (as in "dropped carrier" or kicked off the net)
FWIW	for what it's worth
FYATHYRIO	f*** you and the horse you rode in on
FYBITO	f*** you buddy i'm the op
FYI	for your information
GD&R	grinning ducking & running (usually left at the end of a digging message)
GROK	as in "I grok" means thorough understanding. from r.a. heinlin)
GIWIST	gee I wish i'd said that
HLAYK	here's looking at you kid (a parting)
IC	I see
IMHO	in my humble opinion

IMNSHO	in my not-so-humble opinion
IPHONE	internet phone (software that permits voice chat on irc)
IOW	in other words
IRCOP	IRC operator (manager of a site computer where people connect to irc)
JSNM	just stark naked magic
L8R	later
LAB&TYD	life's a bitch and then you die.
LOL	laughing out loud
LTLYB	love to love you baby (discouraged on most hipper channels)
MM	Merry Meets (used on channels frequented by new agers)
MP	Merry Parts (goodbye to "merry meets" hello)
NBFD	no big f***ing deal
NETCOP	a fictitious person who patrols irc looking for offenders (see ircop)
NP	no problem
FTPATHIRIO	f*** this place and the horse it rode in on
OIC	oh I see
OTOH	on the other hand
PFM	pure f***ing magic
PITA	pain in the ass
POV	point of view
RAD	raw unadulterated dumbness
RE	re-hello (hello again) or re-hi
ROTFL	rolling on the floor laughing
ROTFLMAO	rolling on the floor laughing my ass off
RSN	real soon now
RTFM	read the f***ing manual
SUP	what's up?
SYSOP	system operator
TANJ	there ain't no justice
TANSTAAFL	there ain't no such thing as a free lunch
TPTB	the powers that be
TTBOMK	to the best of my knowledge
TTFN	ta ta for now
TTUL	talk to you later (also ttyl)
TUT	tutorial

WTF

what the f***

WTH

what the hell

WYSIWYG

what you see is what you get

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Keeping records of IRC chat

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IRC logs are simple text files which contain all the text seen on the screen while you're on IRC. You must be on IRC to make these logs, and you must either be in a channel or in private chat with someone before you can log what is said. You cannot "tap into" any channel or conversation which you are not actively involved in without some pretty sophisticated hacking software or direct, IRC operator status. Even then, to access a private conversation is considered one of the worst possible offences one can commit on IRC, and operator status is not generally passed about to the untrustworthy.

No permanent records

There are no permanent, stored records of who said what on IRC. Complete logs would take up far too much space to be worthwhile or useful, and many believe it would be an invasion of privacy. But it often comes as a surprise -- and sometimes as a shock -- when new users discover that records of conversations with people on IRC have been kept by other users. All good IRC software has a feature for keeping logs of everything said and done on IRC, and this can be a worry as much as a helpful way of keeping track of new information.

Most users do not keep logs of IRC chat. Some save IRC logs as a means of keeping track of Internet addresses mentioned in conversations. These are usually harmless. So are logs kept by channel operators for the security of the channel.

Logs: a tool for the memory or for manipulation?

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On the other hand, there are some users who enjoy the power they have on IRC so much that they use their logs to track and prove behavior on IRC which needs to be brought to the attention of IRC operators who have the power to take action against troublemakers. These self-appointed "IRC cops" can be a royal pain in the neck, and their activities have scared hundreds, if not thousands, of new users away from IRC.

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And then there are the sociopaths who keep logs just for the sake of keeping logs. It is these people you need to worry about. Fortunately, they're fairly rare, and when they are discovered their access to IRC can be permanently revoked often in a matter of seconds.

IRC logs are lousy legal records

Don't depend on your logs to protect you against harassment or to be useful in a court case. IRC logs are lousy records in a legal sense, because they can be modified by anyone with a text editor. It's unlikely that IRC logs will ever be used as important evidence in court simply because it's so easy to alter them. By the same token, you can feel fairly safe discussing sensitive matters on IRC, because unless you are being monitored by someone with the legal authority to do so, it is highly unlikely that what you say could ever be used against you in court.

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Also keep in mind that while logs are unreliable, they do stay on your hard disk until you move

or erase them, and their limp legal status will probably *not* protect you from a spouse uncovering an illicit IRC liaison or a parent's unwanted intrusion into your net activities.

If you are at all concerned about having records of your words kept by others, you can always ask the person or people you're with to refrain from keeping logs, but there is never any guarantee that logs haven't been made and kept anyway. The golden rule: don't say anything on IRC you wouldn't want to have recorded by the people you're chatting with. Assume it is *all* being logged by someone somewhere. And with recent revelations about massive storage and retrieval available to some government agencies, it's entirely possible that it is...unlikely, but possible.

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The Many Faces of IRC

Channels and networks



Did you know that there are literally *dozens* of Internet Relay Chat networks, not just two most popular? Even veteran IRC users don't usually find this out until the subject comes up in chat.

The most popular network by far by far is EFnet, with about 10,000 users on up to 5,000 channels during evening hours in North America and as many as 150,000 users daily. But EFnet has become crowded, prone to frequent network disruptions, and "lag", those annoying delays when the net is overcrowded and you can't keep up with the conversation.

The Undernet alternative

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Undernet is smaller and more intimate than EFnet, available to anyone with a SLIP connection, as is DALnet, a smaller and even more intimate IRC network. Many of EFnet's more popular channels are duplicated on Undernet, and DALnet sprang up originally at Dalhousie University to solve the problems encountered by both systems. DALnet features protected channel names and conferences, protected nicknames, and all kinds of security against the aggressive behavior which has become such a headache with the other two networks.

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There are also many smaller, more specialized IRC networks. Australia has its own network, as do many Far Eastern nations and languages. The **IRC Resources Page** offers a link to a site with listings of more than a dozen English-speaking IRC networks, complete with descriptions and server names.

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"Why have I been banned from IRC?"

Don't take it personally unless it was clearly meant that way

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Chances are that *you* haven't been banned. It was probably your *provider* which was banned from a particular IRC server you've been using.

In most cases your provider won't connect you directly with IRC. Instead, you must use a server at another location perhaps hundreds of miles away that offers free public access, and it is on that site's computers where the action happens. When your provider has been "site-banned" meaning that none of your provider's clients can use that particular server, it is likely that one of two things have happened:

Abusive users

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Someone using the same provider you use who also has a UNIX shell account may have created "bot" programs (scripts that behave like real users) and used them either to keep 24-hour control over a particular channel, to "bomb out" channels as an act of aggression, or as a toy that chewed up too much processor time on the host's IRC server.

It's easy to fool the IRC host computer into thinking you're someone you are not. We've done it ourselves for "performance art" pieces on IRC. When one user on your system has been abusing the host computer, it's not always easy to identify and deal with that particular user. So instead of allowing their computer's processor time to be "pillaged" by an unwanted hacker, the operator at that particular IRC site probably banned your whole site.

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This problem can be corrected by having the provider implement a mandatory procedure called IDENT-D. IDENT-D is a small piece of software that allows any computer you connect with to pinpoint who you are. This allows IRC operators or service providers to pinpoint exactly who has been doing what, and make sure that individuals are dealt with rather than whole sites. Not all providers can or will set up IDENT-D for their users.

This use of scripted IRC personalities or "bots" is a major center of controversy on the IRC right now. Expect to see it continue, and if your provider has been regularly suffering "site bans" from the best IRC servers, complain until they implement mandatory IDENT-D.

Faulty software

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Another common reason for site-bans is Windows SLIP IRC software such as earlier versions of WSIRC that doesn't automatically check your Internet address each time you log in. When you use a modem-based service provider, each modem at their site has a specific address, and each time you log in you are assigned a new address depending on which modem you happened to connect with. On permanent non-modem networks, your address never changes. When you dial in by modem your address changes with each login.

In order to properly track who has been using and abusing the system, an IRC operator

must be able to determine what your exact address is. If he or she can't do that, it's too risky to allow your provider access to their system, and your whole site may be banned without notice.

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Newer IRC programs such as mIRC (the program we recommend at this time) automatically sets your address each time you log into IRC. Older programs, including versions of WSIRC prior to version 1.4, set your ID once and leave it. And if you don't configure mIRC properly, it will do the same thing.

If you use this software in this way, without properly identifying yourself to the host computer, any IRC operator who does a random check on your actual net address may find that it's not right. Even if you mean no harm, the operator of the host computer might ban your whole site instantly as a precautionary measure. It's sad that this has to happen, but IRC has proven too many times to be a favorite playground for sociopaths and troublemakers.

 **Last topic**

Try a different port from port 6667. Many of the larger EFnet sites, such as *irc.texas.net*, *irc.portal.com*, *irc.ais.net* and *irc.eskimo.com*, use multiple ports for their IRC connections to help prevent delays. If your favorite server is busy at port 6667, try port 6666 or 6668 instead. This will very often solve the problem.

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"This IRC software sucks. Is there something better?"

Unfit for duty

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If you're using a Windows SLIP connection to access the IRC and you're not using mIRC version 3.2 or later (preferably the latest version), a newer version of WSIRC or one of the newer Windows 95 IRC clients, you're right...it probably does suck! At this time, Khaled Mardam-Bey's mIRC is "it" for the serious Windows IRC enthusiast. The most recent version of the software was 3.74. Try the direct links to copies of mIRC on the **Software Resources Page** (First Class/Tourist Class only) to update your copy.

If you want more IRC flexibility than even the best Windows clients can offer, think about purchasing a shell account in addition to your SLIP or PPP account. Many IRC hobbyists keep inexpensive shell accounts for the sole purpose of using IRC, and do the rest of their Internet work with a SLIP/PPP account.

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One quick note: regardless of which IRC program you're using, *read the helpfile!* Programs such as mIRC and AutoWinNet, which includes its own sophisticated IRC software, may have literally dozens of unique features that you won't learn about any other way. Mastering a new IRC program will often be like learning how to IRC all over again, but if you're serious about becoming an IRC wizard, you are likely to find it time well spent.

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You'll find a collection of links to more IRC resources on the **IRC Resources Page** of your online section (First Class/Tourist Class only).

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TELNET: the Internet's hard core

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If you've been merrily mousing your way around the Internet and have decided that it's time to try your hand at TELNET, you may feel as though you just stepped into the dark ages. (Actually, "dark ages" isn't such a bad description, since dungeons'n'dragons-style adventures are one of the most popular recreational uses for TELNET.)

On the other hand, if you're a BBS veteran, slipping into a TELNET client might feel a lot like putting on an old pair of shoes with a new set of insoles. In fact, you might find that a few of your old favorite BBS' are now available for access as TELNET sites. Simply speaking, TELNET is to the World Wide Web what DOS is to Windows. It's operated almost exclusively by command line, meaning that you type your commands at a prompt that looks like the DOS prompt.

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An introduction to TELNET

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What TELNET has to offer

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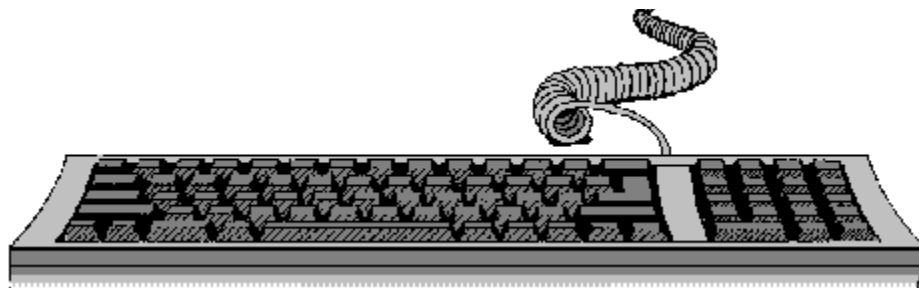
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[To pay or not to pay?](#)

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[More information on TELNET](#)

(Thanks to dspencer@phaedrus.punk.net for his assistance in developing this section.)



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 [TELNET](#)

What is TELNET?

Where it all began

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Before there was the World Wide Web, virtual reality in cyberspace or the mythical Information Highway, there was TELNET. TELNET is the protocol used to connect different computers in different geographical locations in network fashion, and if you have ever had the (mis)fortune of working on a LAN system where access to the other computers in the network was done via the command prompt, or spent some time playing around with local bulletin board systems, you already have an idea of what TELNET is all about.

On the plus side...

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One of the biggest complaints expert users have about Windows is that it doesn't give you the hands-on flexibility for manipulating your computer that DOS gives you. (These are the same people who complain about the over-simplicity of the Web...point-and-click links and menus just don't have the speed and flexibility that full verbal commands can provide.)

TELNET brings the same flexibility to the Internet...and the same complexity. TELNET sites aren't generally graphics-intensive in the way Web sites are (this is changing, and will continue to change in coming months), but they are much more responsive. For example, when using one of the Web search engines via TELNET, you can narrow your search parameters in ways most Web search forms don't permit. You can interact with other users on the site in near-real-time, much like you can on IRC, and just as importantly you can interact with programs on the host computer as if you were there at the keyboard instead of thousands of miles away.

On the minus side...

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TELNET is Internet networking at its most primitive. According to UNIX gurus, it is also Internet in its most pure form, but that's a matter for debate. Suffice it to say that if you decide to get involved in TELNET to any great degree, your memory for typed commands of the sort that DOS demands of you and your patience will probably be taxed at some point. The rewards for your patience can be great, but in many cases there are better ways to do what TELNET does. This is usually the last service the average recreational Internet user gets around to exploring.

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Don't get the wrong idea...some TELNET sites require a lot of prior learning in order to use at a reasonable level, but most operate from menus and one-word commands. If you have your hands full just managing your Web browser then TELNET will probably not be something you'll want to explore very deeply for a while, but if you have a little DOS experience and a few Windows smarts, TELNET shouldn't be any more difficult than working with DOS commands such as **FORMAT**, **CHKDSK**, **ATTRIB** and **DIR**.

TELNET and today's Internet

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TELNET is one of the last of the old-style Internet service protocols to be integrated into the World Wide Web, and only the newest Internet suites have TELNET software which is both easy to use and easy to understand. Telnet commands are almost always typed at the command prompt, meaning that only the most sophisticated Internet suites capable of learning on-the-fly will be able to offer you point-and-click entry of common commands. But that may be about to change.

New ways of configuring small and hobby-type bulletin boards, which can give even the smallest BBS in a teenager's basement the look and feel of something as sophisticated as a CompuServe or a GENie, promise to breathe new life into TELNET and offer the kind of point-and-click access that will make it a widely usable tool. Several standards are currently competing to take over the commonly-used, dull-looking VT100 and TN3270 protocols used by most TELNET sites, and when the dust settles, perhaps as early as mid-1996, TELNET may take on a whole new life.

In the meantime it's primarily a text-based service, and will probably be useful to you mainly for text-based activities.

You're on your own...

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TELNET is command-line driven for the most part, so it requires a different way of thinking from the Web. You'll often be given menus to work with where you only need to press a key. But many of the more sophisticated sites allow you to work very closely with the computer at the other end. Because TELNET sites vary so widely in their capabilities and operations, you'll find the walk-throughs used in **First Train Help** (First Class/Tourist Class only) cover only the simplest TELNET sites.

Remember that most TELNET sites have their own built-in help systems which you can access simply by typing **HELP** at the command line and pressing **Enter**. So if you ever get lost, ask the remote computer for help. As is the case with most things computerish, there are no guarantees that you will be able to make sense of the help which is offered.

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Searching for information

Extra muscle for the net's search engines

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One of the most common uses of TELNET is for finding information on specialized subjects. In fact, this was one of the biggest selling points for Internet service providers up until 1994.

Almost any wide-area search engine available on the Web, from Archie to Gopher to WAIS, can be accessed more quickly and precisely using TELNET than using World Wide Web search forms. The **TELNET Resources Page** of your online section contains links to EARN's superb Web site where you can obtain a guide to using these net search engines using TELNET (First Class/Tourist Class only).

Search engines and document databases provide only a fraction of the information you can access via TELNET. In fact, queries to search engines for information on a given topic will often produce names and net addresses of even *more* specialized databases with their own search engines devoted to just that particular topic. These specialized databases are often located on a single computer, or on a small, centralized network linked to the Internet through one or two TELNET-connected server computers. Larger databases such as Archie and WAIS use computers all over the world as parts of their databases.

Wider access to computerized databases

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The Web can't provide you with nearly this level of flexibility...not yet. As an example, let's say you're looking for information on tourist attractions and accommodations in Lebanon, Kansas for a business trip. You might not find a specific database to accommodate your requests on the Web. All you might find are a couple of brief pages of tourist information sponsored by the local tourist board or state tourist agency.

But if sections of the network used by the city of Lebanon are connected to the Internet via TELNET, you can access the same database available to Lebanon's own tourist board employees. Instead of being told by a Web page that Lebanon has two non-smoking motels, you might be able to get their names and phone numbers, and perhaps even high-season and off-season room rates. You won't get the glitz of the Web, but you'll very often make up for this loss with detail and precision.

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Business users in particular will appreciate this aspect of TELNET. Web pages get updated whenever someone gets around to updating them. Online databases, however, are usually updated automatically as part of the daily routine of the people who use them on the host computers. And depending on the level of access you have, your queries can be much more detailed and immediate than most Web search engines will permit you.

This kind of access to information has been available "in-house" in business and industry for a long time, and for several years on the Internet as well. But most casual users never realize that a large and growing number of formerly local-access-only databases are now online and available to anyone with an Internet account, SLIP/PPP or otherwise.

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Games and meeting places

MUD's, MUSH's, MOO's and MUSE's

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One of the most popular uses of TELNET for recreational purposes is MUD-ing, or accessing Multi-User Domains (also known as multi-user dungeons). MUDs first became popular among medium and large-area government and industrial networks in the early 1970s as a way to break up the daily routine of data entry and system management.

Some enterprising programmers devised a way to turn the keyboard-based chat functions available with most networks into a game, where the various rooms, or channels, had to be accessed as though they were areas of a mystical dungeon. Simple online chat suddenly became something that could be "played" as if it was a real dungeons and dragons game, with as many features as the programmer wanted to apply.

Along the way, users might encounter beings that appeared to be other users but which were actually scripts which had been written to look like live users. They might also encounter leftover chat from users who may have logged off hours ago and had their words saved by the computer, or actual users in the same room/channel with whom they could converse, fight, or join forces in the quest.

Questing on company time

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Quest for what, you ask? Well, while there always seemed to be a goal, or a way to "win" a MUD, it usually became secondary to the experience. So for most users it became: "quest for what? Who cares?"

Needless to say, the idea took off like a computerized Star Trek simulation. The typical computerized dungeons and dragons game of yesteryear has grown and diverged into an awe-inspiring variety of choices. There are now hundreds, if not thousands of MUDs all over the world, varying in complexity from the simplest dungeons and dragons simulations where the accent is on interaction with other users, to hard-core, cut-throat, wizard-level D'n'D nightmares so vivid and absorbing that many users forget that this is a shared experience.

A wide range of MUD-y choices

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Any idea this popular was bound to diversify. Today you can find a wide variety of MUSH's (Multi-User Shared Hallucinations) where you can pretend you are anything from a neighbor of the Brady Bunch to a character in a Monty Python sketch; MOO's (Multi-user Object-Oriented sites), which provide an even wider range of interactive possibilities; and MUSE's (Multi-User Self-directed Education sites) that offer training and education on a number of subjects to a wide age range and behave almost like adventure or detective games.

MUD's and MUSH's are even starting to appear on the Web, but because of the nature of the Web's programming they are considerably slower than the same site would be through a TELNET connection.

Experiencing MUD

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How does a MUD look? If you've played text-based computer games such as Colossal Cave Adventure, Zork or Hitchhiker's Guide to the Galaxy, you already have an idea of how to interact with a MUD or a MUSH. If not, here's a sample of how a detective-style MUSH might look. Share this hallucination for a moment:

After traversing what seems like miles in total darkness, you reach the end of the viaduct. But instead of arriving back at the palace, you're in a small basement that looks like the cellar of one of the out-buildings. The ground is packed earth. In one corner you see a table with a book on it, and an old lamp that looks like it might have worked back in Shakespeare's day. To the north you see a ladder that leads to the main floor of this building.

What do you want to do?>get book_

You can't reach the book from here.

What do you want to do?>go to table_

You walk over to the table. You see a black, hardbound book here that appears as if it might be a ledger of some sort.

BoDiddly has just entered the room.

What do you want to do?>say bodiddly Hello. Are you a genuine user?_

Bodiddly says:>As genuine as anything in this place. So what's with the book?

What do you want to do?>say bodiddly Well it could be booby-trapped. Do you have gloves?_

Bodiddly says:>Yup. Want me to check it out?

What do you want to do?>say bodiddly Sure. I'll light a candle. I know that lamp won't work. So where are you from, bo?_

Bodiddly says:>Montreal. You?

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MUD's, MUSH's, MOO's and MUSE's are most definitely not for everyone. They tend to require strong logical thinking skills, good puzzle solving abilities and precise typing skills if you expect to master them. Many people enjoy them purely for the opportunities they provide to contact other people with similar interests. To these folks the game aspect is secondary to the social contact, and if that's what appeals most to you about these services, you might want to look into Internet Relay Chat instead.

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You'll find links to resources on the World Wide Web where you can learn more about multi-user sites and interfaces on the Internet on the **TELNET Resources Page** of your online section (First Class/Tourist Class only).

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BBS': specialized services for all interests

A rapidly-growing sector of the Internet

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By now it should be sinking in that TELNET lets you do just about anything you can do with a networked computer that doesn't require a lot of graphics. With that in mind, hobby and small-business bulletin board systems are opening daily as literally thousands of new TELNET sites are spring up every month. Services which were once available only through direct telephone dial-up are finding a much wider market for their offerings on the Internet.

Most of these new services are bulletin board systems, many of which have been around for years, that were reconfigured to allow TELNET connections. Now, instead of paying long-distance rates plus membership fees to dial the only BBS in North America with a discussion group on training tropical fish for TV and movies, you can access the board for little more than the cost of membership, which you may have been paying anyway, and the relatively low connect-time rate of an Internet access account.

Unending variety

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What sorts of bulletin board systems can you find? You name it. If it's not TELNET-connected now, either it will be soon or the system operator (sysop) is working on a web site instead. Bulletin boards related to medicine, new age topics, hobbies, law, education, religion, almost anything you can imagine, are now accessible through TELNET-able BBS'.

What's available on these BBS'? Just about anything available from a normal BBS, including message areas (these can be likened to local -- or limited-distribution -- newsgroups), private system-only email, online games (text-based or BBS-compatible in most cases), and in most cases, mini-libraries of text information devoted to the theme of the BBS.

Finding TELNET-able BBS'

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The problem is locating these BBS'. They come and go at such a rapid rate, and are so difficult to catalog accurately, that there is no good central source for finding them...at least not that we were able to find. The best source we were able to discover was HYTELNET, accepted by most as the finest clearinghouse of information on TELNET-able resources on the Web, but it still never seems up-to-date enough.

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One warning: more and more bulletin board systems which have traditionally been open to the public free of charge will probably find that they have to charge nominal registration fees of \$10 to \$50 per year to stay alive. Rising phone line rates charged to BBS operators -- even hobby operators -- combined with the cost of a 24-hour direct Internet connection will almost certainly price a lot of once-free BBS systems out of the market.

Hopefully the Internet community will make users aware enough of this to allow most of the better boards to remain open on the strength of user donations. If this happens, fees won't have to be charged to those who can't afford them. The BBS world has survived on this kind of

goodwill for years.

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Remailers and private chat networks

Two other interesting services which are often available only via TELNET connections are anonymous remailing services and private chat networks.

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Anonymous remailers are sites where you can post anonymously to USENET newsgroups and mailing lists. They're useful for participating in support groups or sensitive issue-oriented groups where you'd prefer not to have your name or email address known to other participants.

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There is more information on anonymous remailers available from the topic on the Anonymity and Security on the Internet section linked to this help button.

Live chat

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On the other hand, if live chat is more your speed there are many small chat networks devoted to a wide range of subjects and interests available through TELNET that can't be accessed with IRC software designed for SLIP/PPP accounts. Some are devoted to discussion of taboo subjects. Others function as self-help support groups. A lot of them operate in secrecy, and you will only hear about them from active members. Others can be found on public lists of TELNET sites such as those available from the **TELNET Resources Page**.

Most of these chat systems function much like IRC. They usually operate on privately-owned systems that don't follow IRC protocol, so rules and command sets will change from one chat system to another.

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To pay or not to pay?

Going commercial

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Most of the sites you discover will be free for you to use, but more and more TELNET sites are offering various levels of access. As an unpaid user of a fee-based bulletin board system, or "pay board" you'll be allowed to look around and do a few things without paying a registration fee, but the administrator may want money from you before letting you use many of the more interesting sections of the site.

"Pay boards" are becoming more and more common, and you can expect to see more pay sites on the Web as well in the next year or two. Bulletin boards have an edge over the Web in this regard, because many of them operated for years as full-fledged, dial-up online services before they ever became part of the Internet. It will be up to you to decide whether the system is worth paying for.

When you consider that many TELNET sites are hosted by institutions such as universities or organizations such as municipal networks, making them Internet providers in their own right with hundreds or thousands of users and very often an enormous wealth of online resources you might not find anywhere else, you might be more than willing to shell out \$25 to \$100 a year for access. Some commerce and industry-related TELNET sites charge several times this fee, and it might still be a bargain considering the quality of information available.

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More information on working with TELNET and configuring your Web browser to connect with TELNET sites linked to the World Wide Web can be found in **First Train Help**. Additional resources for TELNET-related information, including links to databases of TELNET sites and tutorial sites on the Web can be found on the **TELNET Resources Page** of your online section (First Class/Tourist Class only).

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Internet electronic mail

Email is the Internet's postal service, and it works just like a digital post office. It has almost all of a regular post office's features, including parcel post (the ability to include software with an email message) and even "junk mail". The only thing email doesn't have at this time is "priority courier service", mainly because it's not needed. Email is so quick that you can send any message, provided it's not too large, to almost any email address in the world usually in less than ten minutes. If you have to page someone directly and immediately, there are other services designed for this purpose

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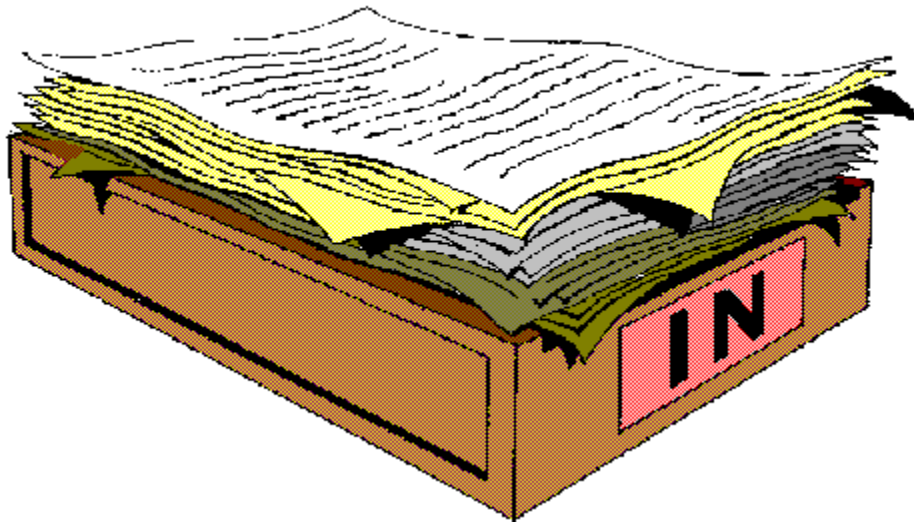
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Email terms, concepts and definitions

Here's a brief list of essential terms used in Internet email. There are many more, but these are likely to be the most important to your day-to-day email activities for the first month or two. Many of the concepts discussed here are also applicable to mail sent and received on an online service such as CompuServe or Prodigy.



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In box and out box

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Sig

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MIME

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Mailing list

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Using Internet email



If you've left a message on an answering machine and written a letter, you already have most of the basic prerequisite knowledge to work with Internet email. The software designed for this purpose is about as easy to use as it can be...provided you don't get stuck with something beyond your abilities to understand. The standard introductory email software for Windows is Eudora, which virtually everyone knows and can work with. So there's not a lot of help here with working with email at a basic level. The focus instead is on the less-common aspects of email. If you need help with the basics, consult **First Train Help** (First Class/Tourist Class only) for advice on working with Eudora.

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[Configuring your Web browser to send email](#)

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[Adding signatures to email](#)

These are database files which hold email messages you have not chosen to file in any other fashion. Naturally, your in box holds messages sent to you, and your out box holds messages you send to others. These are all you'll need for your first while, since it is unlikely you will be sending or receiving large volumes of mail until you become a little more comfortable working with the Internet.

Sig has two meanings. In terms of email, sig is short for signature, small text message many people attach to their email to individualize it.

SIG is also an acronym that stands for Special Interest Group. SIGs are usually small groups within a certain organization who share a common interest. For example, computer clubs will often have SIGs for programmers, DOS users, Windows users, a games lovers and so on. When discussing email, a SIG usually refers to the specific group for whom a given mailing list was created.

More information on sigs is available farther down the page. Here's a handy link button to take you to that section now.

MIME is a method of encoding files so that they can be attached to email messages. A more detailed explanation of MIME is available at the topic on this page linked to the help button.

Mailing lists refer to newsgroups which distribute messages using email instead of USENET. This type of mailing list is also known as a discussion group. Mailing lists can also refer to databases of email addresses used by companies or organizations for distributing information on events and products, and these function just like electronic versions of regular postal mailing lists.

This help button takes you to the section of the USENET Resources Page where mailing lists are discussed in more depth.

Technically speaking, a LISTSERV is a program used to automate mailing lists, but many people also refer to discussion group mailing lists as LISTSERVs.

This help button takes you to the section of the USENET Resources Page where LISTSERVs are discussed in much more depth.

 **Internet email**

 **Email terms**

Header

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A header is email's postmark and return address. The term is used to refer to the start of any file, but when used to describe email it refers to information at the start of a message that gives information on where the message came from. A header can also refer to information at the start of any file that defines what it is, how it is used and where it came from. Some email programs hide the header from you and only show the parts of it that it thinks you want to see.

Here's a sample header with explanations of each line.

```
Received: from dyn-99.internutty.com (dyn-99.internutty.com
[111.11.111.99]) by mail.internet.com with SMTP id XXX90909;
Wed, 28 Jun 1995 00:30:43 -0700
```

This top line tells you where the message came from, with both the domain name and the numeric address, and which machines it passed through on its way to you.

```
Message-Id: <199506280730.AAA07098@mail.>
```

This is the unique number assigned to the message, like the waybill number on a package you might send using an express courier service.

```
X-Sender: tdoe@internutty.com (Unverified)
X-Mailer: Windows Eudora Version 1.4.3
```

You might see these lines if the message came from a mailing list or someone with a direct-access UNIX shell account. The first line is, of course, the email address of the sender. The second line is the name of the program used to create the message. The x-mailer line is handy for troubleshooting problems in deciphering the message.

```
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Length: 862
```

These three optional lines describe the data format of the message and any files attached to it, and the size of the body of the message in number of characters. (One character equals one byte.)

```
To: buddyboy@internet.com
From: tdoe@internutty.com (Terry Doe)
Subject: Get-together this weekend?
Cc: jdoe@hardcore.com
```

The last four lines are fairly straightforward, except for Cc:, which indicates that this person received a carbon copy of the same message. Eudora and most other email programs let you send carbon copies of messages to multiple recipients so that you don't have to queue up the same message for each recipient.

Email programs usually give you two carbon-copy options. Normal carbon-copy lets each person receiving the message know the email addresses of all others who received the same message. Blind carbon-copy, or Bcc, will also send the same message to multiple addresses, but none of the recipients will know who else received the same message.

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Here's the whole header. It's usually a lot more information than you will ever need about any message.

```
Received: from dyn-99.internutty.com (dyn-99.internutty.com
      [111.11.111.99] by mail.internet.com with SMTP id XXX90909;
      Wed, 28 Jun 1995 00:30:43 -0700
Message-Id: <199506280730.AAA07098@mail.>
X-Sender: tdoe@internutty.com (Unverified)
X-Mailer: Windows Eudora Version 1.4.3
To: buddyboy@internet.com
From: tdoe@internutty.com (Terry Doe)
Subject: Get-together this weekend?
Cc: jdoe@hardcore.com
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Length: 862
```

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We do not recommend using your Web browser to send email messages unless they are non-critical messages or unless you are sure that your browser will save a copy of your email. The entry-level Web browser software provided by most Internet providers in their starter kits and which may have been included in your copy of First Train does not normally have automatic saving and filing. If you are not using an Internet suite which allows you to save and organize your email, we strongly recommend using Eudora to handle your email.

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On the other hand, it can be very handy to have your browser configured to send email, and we offer help in setting up this capability for NCSA Mosaic, Netscape and Microsoft Internet Explorer in **First Train Help**. These sections will also show you how to set up your email software for TELNET and newsgroups if you like, although we recommend browsing the section on USENET and newsgroups before proceeding with this.

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 [Using email](#)

First things first...let's get the software

Plan ahead...it really does pay

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Although you can use many different types of programs to send and receive email, including network email programs designed for corporate networks, newsreader programs such as Free Agent, and Internet "works" programs and suites, we recommend using a stand-alone Internet email program for Windows. The reason? Eventually your email database and needs will grow beyond the capabilities of most integrated packages and definitely beyond the ability of most browsers.

There are more email programs available for Windows all the time, but until you have enough experience to know if you need a more full-featured email program, we recommend using Qualcomm's simple, robust Eudora program. It's an almost-free version of their full-featured Eudora Pro emailer (in order to own a legal license, you have to send the author a postcard of thanks...those are the rules), and most Internet setup software bundles include a copy of Eudora. If you do not have this program, the **Software Resources Page** in your online section will help you track down a copy.

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And if you already have a copy of Eudora, it is likely you do not have the latest version (1.52 at this writing). This version is virtually identical in function to previous versions of Eudora, but it does have a nicer graphical layout and is the one we support in **First Train Help**.

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To learn more about email software, we recommend browsing the **What to pack** section devoted to email software linked to this help button.

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Sending files and software with email

More useful than you might think

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Email can be used for a lot more than transmitting text messages from place to place. It can also be used to send and receive data of practically any type. Using email for file transfers is becoming more common every day, and in a couple of years you can even expect to see software and updates to your existing software offered by major publishers in four ways: on disk or CD, via Web-linked FTP, or as an email enclosure or attachment.

The "old" way of sending non-text data via Internet email was to encode the data in a fashion that fit the prescribed standards for cross-platform email. Several techniques emerged for doing this, but the method which gained the popularity was known as uuencoding. It is still in common use today as a way to data files to USENET news groups. Files encoded in this way are usually referred to as uuencoded binaries, although a binary can refer to any non-text data, and although it is generally not used this way, strictly speaking a binary refers to a file of computer data of *any* type.

More information about binaries

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This help button will take you a section of the introduction to USENET that discusses uucode and binaries.

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Eudora versions 1.4.3, 1.4.4 and 1.52 will not automatically decode uuencoded binaries included with your email, although they *will* handle MIME attachments very nicely. If you use Eudora you will need special software to manage uuencoded email enclosures. (Interestingly, Free Agent, the newsreader program, handles uuencoded binaries but not MIME, and both the retail versions of Eudora Pro and Agent handle both types of files.)

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The program we recommend for new users for handling uuencoded binaries is **Stuffit Expander**. You can find more information on setting up this program, which may have been included with your package, at the section linked to this help button.

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MIME attachments and enclosures

Don't just sit there...do something

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A better method than uuencode of handling non-text email attachments had to be found, and several more schemes evolved over the years. The most popular of these methods for many years was BinHex, now used mainly on Macintosh computers. But BinHex too was limited. People wanted the option to have their email attachments *do* something, such as automatically start a printer and print the file (this is how faxing is accomplished on the net), play sounds, show pictures, and perform other fancy tricks, some useful and some simply entertaining. They also wanted the option to be able to decode and use these attachments in real-time on some of the newer Internet services such as the World Wide Web.

The new encoding standard for email attachments, the standard that "does it all", is MIME. MIME stands for *Multipurpose Internet Media Extensions*, and it is used not only by most better email programs, including the Microsoft Exchange build into Windows 95, but also by your Web browser to handle graphics, multimedia and other types of files available on the Web.

MIME permits files to be more than just bits of data stuck onto a message. It allows them to actually be part of the message. And when it finally comes into general usage on all Internet services it will turn email into the full-fledged multimedia extravaganza promised for so many years by the media.

Multimedia email



Anyone can send email with a MIME attachment, but if you want your MIME-attached picture or audio sample to be played automatically when your mail is read, you have to make sure the computer on the other end is configured to do so.

Most email programs, even the better ones, aren't automatically configured to "launch" MIME enclosures. That will only change as more people have computers powerful enough to automatically launch the most popular file types, and more email programs are equipped to handle enclosures as well as attachments. Until then, making use of a MIME-attached file will usually be a manual process, unless you want to go through the process of configuring your email to be as versatile as your browser.

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So while MIME is considerably more versatile than most other forms of person-to-person file mail -- and the new standard for the Internet -- for the time being it's little more just another way of attaching a file to a message.

More information on Multipurpose Internet Mail Extensions, including links to the FAQ at Ohio State University, can be found in the USENET section of the travelogue and on the **USENET Resources Page** of your online section (First Class/Tourist Class only).

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Personalizing your email with multimedia

Multimedia email? Not now, please...

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Some people prefer their email even more personalized. You can attach a small picture of yourself converted to a GIF or JPEG format graphics file, and even have your own signature scanned and converted to a graphics file and used as a part of the picture.

The problem with this is that the person receiving your email must be able to accept this picture as a standard type of enclosure (MIME is the today's preferred choice) and have a graphics viewer program available to view it. A lot of people still don't have this kind of software and account access yet. Sure, they can use decoder software, but ask yourself this: how easy would it have been for you without the help supplied in First Train for this task?

Keep it down



There is also the matter of size. If you do decide to attach a picture, business card graphic or some other file to your email, keep it small. Anything over 10kb (10,000 bytes) could be considered excessive by many recipients. Email attachments take time to transmit, and they force your recipients to wait for the file to come across to their computer. Millions of casual and institutional Internet users are still stuck with older 2400 baud modems, which will require almost a minute to transfer a 10k file, making attachments a real hardship...especially if the person has already seen your "signature" once.

At this time we know of very few people who use graphics, sound or other types of email attachments to personalize email to those who have not specifically requested these kinds of files. Until this type of attachment becomes the norm, we recommend you avoid this type of personalization.

If you simply must personalize your email...

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Even if you plan on using a simple text sig as a personal tag for your email, we recommend that you stick to plain text and avoid using even "text-like graphics" and fancy lettering using programs such as Figlet if at all possible.

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Creating your own signature

Can I add an actual signature to my email?

Yes...but.

There is a standardized method for personalizing email known as a signature file or simply a sig. This is just ordinary text, usually with a small ASCII drawing or a favorite saying of the sender. This is the preferred way to personalize email.

Some sample sigs

Here are some sample sigs to give you a few ideas. You'll see many more as you begin receiving your own email and browsing USENET newsgroups. You may need to click the **Maximize** button (the grey "up" arrow in the upper-right corner of the window) to enlarge this window in order to see these sigs properly on your screen. Click the same button again when you have viewed the sigs to restore the window to its normal size.

Steve Peeve (speev@abc.def.edu) | "I play music for people who want to be on
WWW: <http://abc.def.edu/~speev> | drugs but can't afford it." -Jon William

=====

NAME: Gustavo Sanchez IRC HANDLE: Boston Bob HOME PAGE: I can't write!
"Ask not what your country can do for you, but whether onions
cost extra on your hamburger." - BoboBob, the NetFool -

+=====+

This not the start of my PGP public key. It's a fence to keep out SPAM.
aoakley@wildwest.net "guns a-blazin'" "another brownie, officer?"
Yours in Christ, Annie.

This sig uses a painstakingly-designed "ASCII graphic" logo that looks absolutely horrid on many systems. Here's how it looks if you do not use a monospaced font (and a lot of people don't anymore):

```
\-V-/  /--\      /-/| Trouble trouble...
 V/  /\ \    //| Down and double...
 /\_//  \ \_//  | X - Ackley Wilson
 /\_//  \ \_//  | ---xavrwilsn@internet.com---
```

Here's how it was supposed to look:

```
\-V-/  /--\      /-/| Trouble trouble...
 V/  /\ \    //| Down and double...
```

/ / \ / / \ \ / / | X - Ackley Wilson
/_ / _ / _ / | ---xavrwilsn@internet.com---

...see what we mean?

Setting up your own sig

There is additional help in the section on Eudora in **First Train Help** (First Class/Tourist Class only)

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Finding email addresses on the net

I wonder what became of so-and-so...

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One of the first things most people want to do when they first get an Internet account is create a list of email addresses of people they know and hunt down friends and relatives on the Internet. It's easier said than done.

Email addresses can be found in a number of ways. Unfortunately there is no true global "address book" with the addresses and identities of every user on the net. In fact, there isn't even a database which contains *most* users, and it's likely (and even hoped by many) that there never will be. So if you don't know the email address of the person you're trying to contact by email, you may have an adventure in store for you trying to find it on your own.

Because email address searches are so spotty at this time, we recommend contacting people directly by post or telephone to find out their email addresses. But if you can't afford the expense or don't have a number or street address, the best way to proceed is to search through all the available databases on the net where email addresses and user information are stored, one by one, to see what you can find.

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Links to the necessary resources are included in your online section on the **Email Resources Page** (First Class/Tourist Class only). These resources change in efficiency and availability quite frequently, so we recommend keeping your copy of First Train updated to reflect these changes.

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How secure is your email? As secure as you want to make it. Ordinary text messages can be intercepted by anyone with elementary hacking skills, but data can be encrypted using widely-available free software such as Pretty Good Privacy to such a degree that it would take hours on an extremely powerful computer to decode your message...providing the resources and desire existed to do so.

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To find out more about email security, and how to acquire the software and expertise to secure your email correspondence, this help button will take you to the Anonymity and Security on the Internet section. You'll find information there about newsgroups devoted to anonymous communications and addresses for servers which will anonymously remail your email messages and newsgroup posts, as well as some tips about mail encryption and some information on what your actual risks are.

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USENET: The world's newsstand

There's something about change and human interaction -- positive *or* negative -- that transcends the need for sensation. This need is most immediately visible on IRC and the voice-chat networks, where the action is as close to real-time as the net can get. Not far behind are newsgroups and mailing lists. If chat is the neighborhood pub of the Internet and email is its post office, newsgroups and mailing lists are its newsstand. And everyone can contribute. Newsgroups and mailing lists aren't often as high on most people's priority lists as email and World Wide Web, but we urge you to take a close look at what's offered here. There are opportunities here to meet and commune with fellow travellers who share even your most obscure interests.

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How USENET and mailing lists work

The very size and structure of USENET tends to overwhelm a lot of new users, especially when they're confronted with having to learn several net services at once. Hopefully this overview of USENET will help you come to a quicker understanding of how it all fits together and help you start getting something out of USENET sooner and with less difficulty.

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USENET Binaries

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As FTP is to the Web, binaries groups are to USENET. They are the ever-changing software treasure trove, the "free disk with your daily paper" so to speak. They're not for everyone, but most recreational Internet users find they just *have* to try a binaries group at least once.

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USENET, netiquette and the law

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Please pay particular attention to this section, especially if you plan to subscribe to any of the "binaries" newsgroups (groups where software, pictures, sounds, movie clips and similar materials are made available to subscribers) or groups where article reprints or instructions for engaging in illegal activities might be posted. This is especially pertinent to anyone interested in newsgroups relating to erotica, political revolution, surveillance, computer hacking or software piracy.

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A giant public bulletin board

Internet town square



If you have experience with online services or bulletin boards, you might already be familiar with the concept of forums or message areas. Newsgroups are the Internet's version of these. If you've never been online before, the concept behind newsgroups might seem a little mysterious.

Newsgroups are like an enormous public bulletin board posted in a town square. Individuals can tack up messages, bulletins and questions (newsgroup postings are referred to as articles or posts). These messages can be read by passers-by, and responses and new messages can be posted on the same board for all to see.

This bulletin board might be divided into several sections, for example Home and Garden, Help Wanted, For Sale, Meetings and Greetings and Automotive.

Here's an example. One morning you tack up a notice on your community bulletin board under the Home and Garden section that reads something like this;

Hello everyone!

I'm looking for some canning jars. If anyone has a dozen or two two-quart sealers they can spare, loan or sell me, could they please contact me at 555-5555 or leave a message?

**Thanks in advance!
Terry Sanchez**



You might pop by in the afternoon to discover that several people have taped small notes to your bulletins letting you know where you might be able to find jars. Some people will jot notes right on your message. Some will reply with answers that have nothing at all to do with your request. Someone might even tack up a copy of a lengthy article on the history of the Mason jar. One or two might even have left messages on your answering machine. Or perhaps no one will respond at all.

You decide to leave your message there for another day or two and see what replies you get. When you return to the bulletin board you discover that it's not there any more, and neither are the replies people posted! All you find are new messages where yours used to be. The town's maintenance staff have removed all the old messages to make room for new ones.

The community bulletin board goes global



Now let's translate this into what happens on the Internet. Imagine that your town's bulletin board has not just a half-dozen sections, but *several thousand*, covering practically every imaginable area of interest. Imagine your bulletins, messages and questions being read by people not just from your home town, but all over the world. Imagine that someone could actually tack up an unlimited supply of Mason jars for you, right on the bulletin board, so that you and anyone else who wanted them could use them. Imagine that the community bulletin

board was instead a global community newspaper or magazine, where your scribbly, handwritten messages are formatted, given headlines and author's credits, protected by copyright and perhaps even clipped and collected by historians.

Imagine all this happening electronically, and you have a pretty good idea of how newsgroups work. Newsgroups are, among other things, the meeting places of the global village.

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Who writes for newsgroups?

An all-volunteer effort

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Unlike magazines or newspapers, no one gets paid for posting articles to a USENET newsgroup. It's an all-volunteer effort. A newsgroup may have an active moderator -- someone who oversees the discussion to insure that everyone stays on topic -- but that person is almost always an unpaid volunteer. If they are paid, it is usually as an employee of the site that originally sponsored the newsgroup, and managing the newsgroup may simply be part of their job description. But at this time there are no paid "editor" positions on USENET newsgroups.

In other words, *you* can write for newsgroups, provided you have something to say which will be of interest to those participating, or a question or comment which is relevant to the topics being discussed. Just don't expect to be paid for it!

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What should you write? That's entirely up to you, but there is one thing you should always do before posting your first messages to a newsgroup, and that's to "get your FAQs straight".

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Get your FAQs straight

"Frequently-Asked Questions"

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Before you post your first article to a USENET newsgroup, you need to know the rules that apply to that group. All USENET newsgroups have to go through an application process before they are allowed to become part of USENET, and part of that process involves submitting a proposal to USENET's Powers that Be which outlines what the group will discuss and how it will govern itself.

That proposal is known as an RFC, or a Request for Comments. If there is no criticism of the newsgroup, and enough people can be found to support its existence, it is allowed to join USENET. But once it joins USENET it must adhere to its own guidelines. These guidelines can change as the needs of the participants change, but they usually remain fairly faithful to the proposed guidelines first submitted in the RFC document.

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RFCs tend to be highly technical, in some cases downright scholarly, and that makes it difficult for the average newsgroup user to figure out exactly what's expected of them, and what is and is not allowed from reading the RFC alone. People come and go from newsgroups all the time, and the same questions are asked over and over again about the same things: how do I do this? Who can I talk to who knows about this subject? What is and is not fair game for discussion?

In order to reduce the number of redundant messages on the newsgroup, and to help new participants become familiar with the newsgroup's guidelines and reasons for being, almost every newsgroup publishes a regular or semi-regular Frequently Asked Questions file, commonly known as a FAQ.

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In fact, there is even a newsgroup, *news.answers*, devoted to the posting of nothing but FAQs from various newsgroups. It's an excellent place to keep abreast of new newsgroups and discover previously-ignored newsgroups of interest to you.

A good FAQ collection can be more useful than an encyclopedia

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FAQs are incredibly useful resources. In fact, you can usually learn more about the subject being discussed in a given newsgroup by reading the FAQ than you'll learn in several weeks of reading the postings.

In most newsgroups, FAQs are posted as articles in the newsgroup at least once a month for the benefit of new participants. If you don't want to wait that long, check old postings in the newsgroup to see if someone has asked where to find the latest FAQ. In busy newsgroups, it's not uncommon to see one person every other day post a "where's the FAQ?" message. If someone has made such a request, it's very likely that a regular participant in the newsgroup posted a brief reply which will tell you where to find the most recent FAQ.

If a week or so has passed and you have not seen such a posting, post a brief one- or

two-line article asking someone to provide an address where you can obtain the FAQ for that newsgroup. In a day or less someone will probably respond with an equally brief reply letting you know where it can be found.

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Do not request to have the FAQ sent to your email address. It's considered poor etiquette to ask for this, because most newsgroup moderators get requests like these ten times a day -- in some newsgroups as often as *fifty* times a day -- and don't have time to respond to all queries personally.

Eventually you can expect to see a central source or search page which will guide you to FAQs for all newsgroups, and you can often use one of the many Web search engines to quickly locate Web pages or gopher sites offering FAQs for specific newsgroups. The **USENET Resources Page** in your online section (First Class/Tourist Class only) provides just such links. But right now, tracking down a FAQ on your own is something of a hit-or-miss proposition, because in the first place they're spread out on thousands of different computers all over the net with no readily-available central index, and in the second place not every newsgroup publishes a FAQ on a regular basis.

RTFM...more than just good advice

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RTFM is a commonly-used abbreviation for "read the f***ing manual", and it is often thrown at new USENET contributors by impatient veterans who are tired of seeing the same old questions repeated over and over again. The term has become such a fixture that there is an actual RTFM archive maintained at MIT (Massachusetts Institute of Technology) for the purpose of storing commonly-requested USENET and Internet-related documents. It's a gold mine of information for people interested in learning more about what's available in a given newsgroup and the ethics and mores of posting to a given group.

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You'll find a link to the RTFM archive, which is so popular that its contents are mirrored on several other institutional sites, on the **USENET Resources Page** of your online section (First Class/Tourist Class only).

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You can also hunt for FAQ information using a Web search engine maintained at Ohio State University. This database allows you to hunt for information in specific FAQs relating to subjects of interest to you, and it's a great way to track down information about newsgroups that might be of interest to you. A search form for this database is included on the **Fact Finder Page**.

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How many newsgroups are there?

More information than any one person can manage

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There are *tens of thousands* of different newsgroups available, and at least 100,000 posts daily to USENET newsgroups at this writing. The total amount of information posted daily to USENET around the world would overflow an average hard disk on a new system.

Only the very largest providers can carry every available newsgroup on their server. Even small-volume providers could easily make the space available for all these newsgroups, but takes a lot of time to transfer all of the data for all of the available newsgroups, and the cost involved -- not to mention the inconvenience to you as a subscriber -- makes it impractical. If your provider's Internet server is constantly tied up receiving incoming newsgroups, your connections to sites on the Internet will slow down considerably.

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Most of the special-interest and foreign-language newsgroups are not made available unless subscribers have a demand for them. Lately more and more providers have also limited the amount of data they will carry on "binaries" newsgroups, which are discussion groups designed for the purpose of distributing software. The volume has gotten so high that you can no longer expect every post from every contributor to make it to your provider's server.

Just so you don't feel *too* deprived, even if they refuse to add new newsgroups on request you are still left with between 2,000 and 5,000 newsgroups to choose from!

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What happens to your posts

How posts are formatted

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When you post an "article" to a newsgroup, it is sent to a central location where all articles are collected. Each individual newsgroup has a central site where all postings are collected and then redistributed to every Internet service provider who requests access to that group. When you post to one of the more popular newsgroups, your posting could wind up on tens of thousands of computers all over the world.

In practical terms, newsgroups function like magazines or newspapers devoted to a particular topic. Every article has a "headline", also known as a *subject header*, that tells other readers of the newsgroup what you want to ask or talk about. It also has a "byline", which is your email address. There are a few newsgroups where you can post anonymously -- provided you use a special service designed for this purpose -- but not many will encourage this method of contribution. USENET postings are accompanied by the email address of the person posting the article firstly to announce you to the readers and contributors and secondly to prevent abuses.



Articles also have a "body", which is the text or substance of the letter. Strangely enough, this is known as the *body* of the posting. (Isn't it nice when something on the net makes sense?)

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Leaving a thread for you to follow

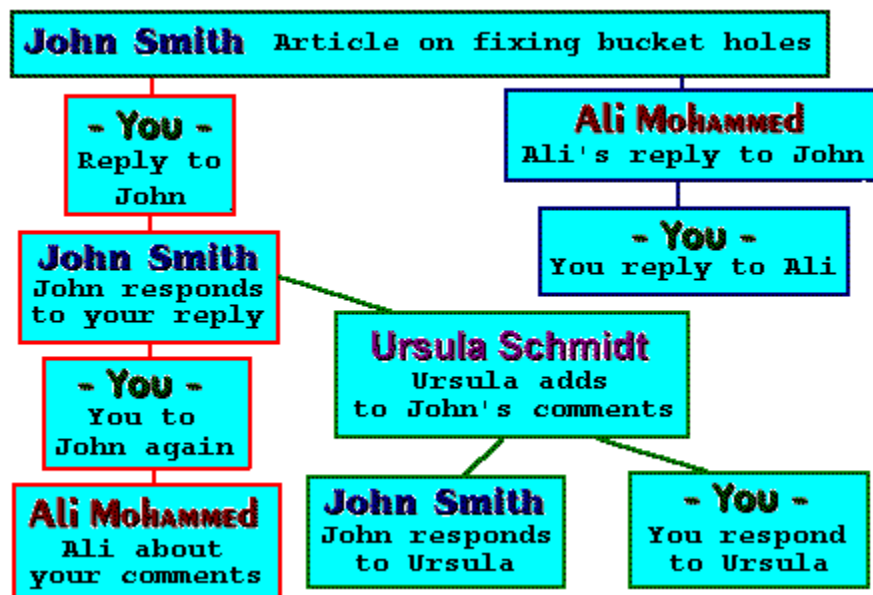
Who said what when?

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One of the most confusing areas of newsgroups for new users is the concept of threads. If you don't understand this concept, and your newsreader is not set up in a way that fits with the way you think, USENET might appear to be far too disorganized to be of use to you.

When someone posts a new article, you have two options when posting a response to that article. You can either create a fresh article or reply to the original article. In most cases it will make more sense to reply than to post a completely new article.

Whenever you reply to an existing article or posting, you are either creating or adding to a *thread* on the given topic. Someone might respond to your response, and someone else might respond to that person, until you get a "tree" of postings that might look something like this:



In this diagram there appears to be two threads to John's original posts on bucket hole fixing. In fact, there are *four*, because when you and John responded to Ursula's comments instead of speaking directly to John's original article, you created two additional threads.

The problem is that unless your newsreader is configured properly, all you'll see is a symbol next to John's original article that lets you know that threaded replies have been posted. You won't see the replies unless you ask for them. You might not even know how many replies there are.

Easing your way into the action

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If you've already gotten your feet wet with newsgroups by using Netscape or your usual Web browser to scan postings, you'll see these threads quite clearly on your screen and understand

their structure. Once you have an idea of how you'd like your regular newsgroup setup to look, you can configure most quality newsreaders, including Free Agent and News Xpress, to look the way you'd like. All the better new newsreader programs come with a large number of customization options.

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As disposable as yesterday's newspaper

Here today, gone tomorrow

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An important thing to remember about postings to newsgroups is that posts are disposable. They last at most a couple of weeks and then are gone for good, unless someone somewhere thought it was important enough to save it as a file on their computer.

How temporary are your postings? Some providers don't keep postings for more than a couple of days. And in some high-volume groups, postings are deleted from the server's computer on a daily basis.

Some newsgroups are archived, that all articles regardless of their importance, are collected by one subscriber, combined into a file every few weeks, and made available for download at a specific Web, gopher or FTP address.

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Other newsgroups are digested, meaning that one subscriber keeps track of only what they feel are the most significant postings, combines them into a single file, and makes this file available to readers and contributors, usually from an FTP or Web site every week or two.

"Back issues"

Most of the scholarly newsgroups are archived, and postings dating back several years can be downloaded and reviewed if you can find out where they are, a little like having "back issues" of scholarly journals available for review.

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Don't get the impression that USENET archives and digests are on a par with such journals, because they are not subject to the same rules of journalism and journalistic ethics.

Keeping your own archives

Most of the less serious newsgroups are not archived, meaning that once a message is gone, it's gone for good. So if a particular newsgroup is so important to you that you want to make sure every posting is saved for future reference, remember to follow these steps:

1. Configure your newsreader so that it does not erase, or "purge", articles in that particular newsgroup.
2. Never take it "on faith" that you've configured your newsreader properly. Some of the more sophisticated newsreader programs use several methods and options for purging old articles, and your favorite newsgroup might not have been protected the way you thought it was.
3. If you have any doubts at all about whether you've done this correctly, save all articles as files on your hard disk for the first sixty days. Your newsreader will usually allow you to save several selected articles to the same file, making your organizational chores easier. This might take up a lot of room on your hard disk, so you'll have to ask yourself whether it's worth your while to save this much data. If you have a fairly new system, this temporary clutter shouldn't be a problem.

4. Don't expect an archive in any newsgroup to be maintained the way you would maintain it. Some archives include only certain postings, or may not contain threads. Any time you join a newsgroup and know instantly that you want to keep a personal archive of its postings, *keep your own*. If you later discover that the archiver for the newsgroup does a good enough job for you, you can erase your own archive later and write the time spent compiling it off to experience.

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Mailing lists that behave like newsgroups

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Before there was USENET, there were mailing lists. The main difference between newsgroups and mailing lists is the way in which information is distributed. Newsgroups are provided on demand by an Internet provider's computers, meaning that you can pick and choose which messages, or "postings", you want to read. Once you're on a mailing list though, you get every posting to that list whether you want to read it or not.

Two types of mailing lists

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There are two main types of mailing lists: public-participation discussion groups (also known as *reflected* mailing lists) and those used by a specific individual or organization for sending information to a large number of people.

This second type is like a standard junk-mail type of list. Once your name is added, you receive mail automatically until your name is removed. Microsoft, for example, has many mailing lists which automatically send out regular bulletins on their products and services to subscribers. If you respond to a message received from this mailing list, the only ones who will see it are the Microsoft employees who manage the list.

The other type of mailing list functions like a newsgroup. In fact, BITNET is a news service available on the Internet which operates something like USENET, but instead of allowing you to pick and choose the articles you want to receive, once you're on a BITNET mailing list you get every message posted to the list, and every message or reply you send to the mailing list gets sent to every other subscriber.

Fortunately, most of the more popular BITNET newsgroups have been integrated into USENET. Unfortunately, you can't access all BITNET mailing lists directly from the Internet. In some cases you have to go through a special site designed for this purpose.

Mailing lists on USENET

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If you're interested in receiving a discussion group mailing list on a regular basis, you might ask your provider's support staff if they can add that list to their regular newsgroup offerings. Many mailing lists under the BITNET umbrella can be distributed this way. If your provider can do this, it will make working with the list a lot easier for you since you can organize it with your newsreader. Organizing mailing lists with an email program such as the postcardware version of Eudora can be tedious work.

On the other hand, if you fancy yourself a bit of a hacker, you might find mailing lists more interesting and efficient than newsgroups regardless of how you have to handle them.

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LISTSERVs

The Internet's robot postal workers

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If you're interested in participating in a discussion group, you simply act as if the list itself is someone to whom you are sending email. When you address email to a mailing list, a computer program on the computer hosting the list will automatically redirect your email to everyone on the list, and send a carbon copy of your message back to you so that you know it was sent.

That program is known as a LISTSERV, or a mailing list server program. Its purposes are twofold. Firstly it automates the distribution of mail to subscribers, and secondly it allows subscribers to custom-tailor the way in which they'd prefer to receive the mailing list's messages and articles. LISTSERVs can be designed to send a specific message from the manager of the list to every person on the mailing list or to reroute bulletins posted by the mailing list's users to all persons on that list. LISTSERV has come to mean the same thing as mailing list in many circles, so don't be surprised if someone asks if you subscribe to a certain LISTSERV rather than a mailing list.

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LISTSERV software is widely available, by the way, and if you wanted to set up your own mailing list for a specific topic, it's as simple as configuring the LISTSERV program to handle it and getting subscribers. Many of the better commercial email programs can handle the job, and LISTSERV programs are popping up for Microsoft Exchange and Windows 3.1 as write this. (Unfortunately there was not enough time to test and report on this software prior to this release.)

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Be aware that if you want to work with the standard type of LISTSERV used by most mailing lists that this is UNIX software. You will need to have direct shell-level access to your provider's host computer in order to set up and manage your own mailing list, UNIX skills to work with the software, and if the list becomes an especially busy one you can expect to be charged extra for having it by your provider.

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With thousands of newsgroups to choose from, it pays to be selective about which newsgroups you subscribe to. It's not uncommon for new Internet users to subscribe to several dozen newsgroups and be completely overwhelmed, to the point where they can't follow what's happening in any of them.

There are three ways to find out about more newsgroups. You can either "eavesdrop" on a newsgroup by reading some of its postings, get a copy of the Newsgroups Info Center, or read the FAQ (Frequently Asked Questions) file. You'll find more information about these in the online section's **USENET Resources Page** (First Class/Tourist Class only).

You'll find more information on working with newsgroups, LISTSERVs and mailing lists in **First Train Help**, and links to outside resources where you can obtain "lists of lists" and other information from the **USENET Resources Page** of your online section (First Class/Tourist Class only).

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 [Binaries](#)

What are USENET binaries?

The "free disk" with your morning paper

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As you graze the enormous selection of newsgroups available on USENET, you'll probably notice several interesting-looking newsgroups with "binaries" in their names. These are newsgroups created for the express purpose of sharing non-text data. You'll find these newsgroups especially attractive if you're a fan of programming, graphics, games, erotica or desktop multimedia, or if you're simply a software collector.

"Binaries" are non-text data files. Making all this software available on USENET newsgroups poses certain unique problems, problems you'll have to know how to deal with to take part in this ever-changing exchange of software.

For starters, USENET only allows text data to be used in a posting. You can attach files to your email any time you like, add special formatting, even turn your email message into a sound or video file. But when you post to USENET you are expected to post in text form only, using a standard format which your newsreader program will manage for you.

Half the available characters



An article in a USENET newsgroup can be more than 10,000 lines of text long -- that's about the same amount of text as you get in small to a medium-sized paperback novel -- but you are only allowed to use the first 128 of the 256 characters used by the vast majority of programs and data files today. In fact, a lot of the characters in *this* character set are considered out-of-bounds as well. (In case you haven't guessed this by now, the characters you can type from your keyboard are only a fraction of the total number of characters actually available on your computer.)

To make matters worse, single lines of characters in programs and data files can be thousands of characters in length. The length of lines in a legitimate USENET post is limited (the recommended limit is 70 characters) and each must end with a carriage-return, a character that simulates the press of the **Enter** key on your keyboard.

Overcoming USENET's limitations

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All these limitations created problems for early Internet users wanting to post more than just text data. A programmer wishing to post some of their program code on USENET for other programmers to try, criticize and debug couldn't easily do this because many lines of program code extend far beyond the recommended line length. A program, which is really nothing more than a collection of characters organized so that the computer's operating system will pay attention to it, might have none of these carriage-return characters at all, and adding carriage returns for the sake of USENET distribution will destroy the functionality of the software. Binary posts must be transmitted *exactly* -- character for character -- or the program, data file, or even plain-text program code, won't work once it gets to your machine.

Special software for USENET binaries

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To get around this problem, a piece of software was invented called *uucode*. This software rewrites data files into text that fits within USENET's requirements, so that you can post programs or other types of non-text data for others to use, and decode postings made by others for use on your own computer.

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This help button leads to a section of an extended guide to data compression where this bit of wizardry is explained in more detail (First Class/Tourist Class only).

New capabilities, new problems

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Uuencoding brought a new level of functionality to USENET and added considerably to its appeal. Unfortunately it also created traffic problems. Most of the systems set up to handle USENET were designed for text-only, and while programs and data files can be several megabytes each in length, the average length of a text-only post is only a few dozen lines. When casual users discovered they could post data files as well as articles, the volume of traffic on some newsgroups skyrocketed, placing a lot of stress on many institutional servers not designed to handle this much data on a daily basis.

Eventually the Powers that Be decreed that binaries shall have their own newsgroups, each to include *binaries* in its name, and that users shall not post software to groups which doth not have this mark. Thus the binaries groups were born, and it is under the *alt.binaries* and *comp.binaries* hierarchies where you'll find your daily fix of software.

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How USENET binaries are handled

Processing the goods

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When you receive a uuencoded USENET post, you save it as a text file on your hard disk and process it with a special program designed for the job. If you're a Windows user, a dedicated newsreader program such as Free Agent will handle this job.

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There are many drawbacks to uucode, not the least of which is the fact that it is highly vulnerable to minor damage to the file, and presents difficulties when posting large files. Until recently a large percentage of uuencoded articles on USENET had so much damage that they couldn't be decoded, so they couldn't be used by anyone anywhere.

A second drawback to uuencoded files is that they often take longer to transmit than files fetched from the Web or by FTP. This is because unlike compressed, archived software such as .ZIP files, uuencoded and MIME encoded files actually become larger (sometimes *much* larger) when they are encoded. This is because MIME and UUE have to mimic a 256-character set used by your computer using just 128 characters (UUE) or even 64 (MIME).

Another drawback is the fact that many, if not most, data files or software packages of any reasonable size have to be split up into parts before they can be posted to USENET. Most better newsreader programs will take care of that automatically from the sender's end, but as a receiver you need to be aware that you will need *all* parts of a given file if you expect it to be useful. Fetching these parts is usually as simple as selecting all parts at once and asking your newsreader to download them, but don't be surprised if you see parts of files missing from some or all of the binaries newsgroups.

The software is divided into parts due to the limitations of the server computers providing access to users. America OnLine subscribers were, at this writing, limited to very small post lengths (900 lines or about 50K). Virtually every provider places limits on how large individual parts of files may be, usually between 10,000 and 15,500 lines in length (15,000 lines is about 1Mb of text or between 700K and 800K of actual data).

MIME: gaining on the backstretch

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Fortunately, MIME enclosures and attachments are becoming a more popular and efficient method of attaching non-text data to USENET postings, and you can expect to see uuencoding all but disappear by 1997.

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Free Agent permits the decoding of uuencoded binaries only, not MIME, and you will need to use a program such as StuffIt Expander to handle MIME-encoded binaries posted to USENET. Eudora has MIME decoding built into the postcardware version, but regrettably it will not handle your USENET chores.

Not a reliable method to get or share software

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Lately the explosion of interest in the Internet has resulted in a whack of new contributors to the binaries newsgroups, and this has resulted in the same congestion problems experienced in the early days of binaries. You may discover binaries newsgroups to be spotty at best on your provider's news server. When some binaries groups generate as much as *150 megabytes* of data every day, it's no wonder parts of some files don't make it to every provider. Usually the data is lost in transmission on the backbone, long before it arrives at your provider's hard disks, but in some cases providers will routinely refuse to allow any USENET posts larger than a certain size to be stored on their computers.

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Remember that storage space costs money. Unless you are specifically paying your provider for the right to full access to a specific newsgroup, you have no guarantees, and little recourse, if the binaries newsgroups are unreliable.

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USENET and viruses

Mischief and mayhem

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If you have a few hacking skills, it's possible to post to virtually any USENET newsgroup under an assumed name and not get found out unless someone really wants to go after you. This makes USENET ripe territory for spreading viruses and trojans, but it's also a very safe place for any user who exercises a little bit of caution. There's safety in numbers as you'll see in a moment.

What to avoid

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In general, we recommend avoiding any program that looks too good to be true. On July 9, 1995, someone posted a program to several different newsgroups which was supposed to make a 486 computer behave like a Pentium. Several hours later, another participant posted a reply warning that this program was a trojan horse which would erase your hard disk if you tried to run it. Fortunately we saw this warning before attempting to use the program.

As an additional precaution if you do not trust or want to use antivirus software, you may wish to avoid unpacking or using any binary data from USENET for at least 48 hours after it is posted. Most dedicated newsreader programs will display the date and time of the posting so you know precisely how long the data has been available.

The reason for this 48-hour cooling-off period is to give time for warnings from anyone who may have been hit by a virus. In any newsgroup where software is made available for download you will see a very quick response to any posting of viruses or trojans. We're a pretty protective bunch.

Can you get a virus from a plain-text USENET post?

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No. But if you're a DOS user you might get a nasty surprise. If you're using Windows you don't need to worry about this problem, but if you use a DOS program to read your email, be aware that there are ways of formatting text that play nasty tricks on your keyboard, so nasty that a clever user can remap your **Escape** or space bar key to erase your entire hard disk with a single keystroke! The same precautions listed above for USENET binaries apply to text posts. If you're at all concerned, don't browse any newsgroup posting less than 48 hours old.

This can't happen in Windows because of the way Windows handles your keyboard, but it is a risk if you read text from DOS. If you don't see "garbage" characters in a USENET post when reading it from Windows, you can almost always consider it safe to read from DOS as well.

Hoaxes

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There have been virus hoaxes perpetrated on USENET. One of the most famous occurred in the winter of 1994/95 when there was a major scare about a text virus allegedly called Good

Times. The word was that if you read the post that contained the bogus virus, and later saw the words *good times* in another post, those words would activate the virus and cause all kinds of damage. But the virus didn't exist! Thousands of messages were posted via USENET and email in regard to this phony threat.

Interestingly enough, the Good Times virus is now classified by many to be a genuine virus...not because it did any actual damage, but because the perpetrator scared so many people that tens of thousands of needless warnings were issued about this non-threat. The scare itself was the virus!

For more information

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This button jumps to the **Virus Awareness Kit** where you can learn more about computer viruses and trojan horses, learn about the risks involved, and find out how you can protect yourself with maintenance procedures and antivirus software.

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Computer Virus Myths, linked to this help button, is highly recommended if this discussion has you worried about participating in USENET where you were not worried before.

 **Last topic**

You might also want to check out the *alt.comp.virus* newsgroup, where information is posted about new computer viruses. If your provider carries this newsgroup, you can browse today's postings now by clicking the help button for this group on the **Virus Awareness Kit** page in your online section (First Class/Tourist Class only).

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Etiquette for USENET posting

Democracy in action...for better or worse

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Although USENET as a whole is a wide-open forum for just about any type of discussion, please be aware that individual newsgroups are *not* democracies in the usual sense of the word. Your individual freedoms in a particular newsgroup are dictated by the newsgroup, its founders, and the people who maintain it.

By all means, look for newsgroups where you can feel comfortable "being yourself", whether that means spouting four-letter words in every sentence, professing your love for Christ, or acting silly or aggressive. But don't expect to be tolerated for this behavior in all newsgroups. In fact, you may even be barred from participating in a newsgroup without notice if your conduct is considered offensive to users. In fact, in some of the "outlaw" newsgroups, *legal* behavior might cause you problems!

What's in a name? Not enough.

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One of the most common mistakes people make when posting their first articles to a new newsgroup is believing that its name tells them everything they need to know about the purpose of the group and what they can post. This is particularly common in newsgroups dealing with more controversial subjects, such as the *alt.support* self-help newsgroups and the *alt.sexuality* and *alt.personals* newsgroups.

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Always research the group by reading a few days' worth of articles before posting your first article to the group, and if possible obtain a copy of the most recent FAQ. Each newsgroup has its own peculiar form of etiquette -- its own rules for conduct -- and you should either make yourself aware of these mores and customs before posting or ask if you are out of line with any statement or activity you are not sure about.

The safest way to proceed if you cannot find the FAQ for a particular group is to email a brief request for guidance to a participant in the newsgroup who appears willing to offer advice before posting to the group. You should know in a day or two how that person feels about what you want to do, and in most cases, veterans of the newsgroup and frequent posters are the best people to ask about what is and is not good etiquette for a given group.

Netiquette: the unspoken code of ethics

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There is a code of behavior which is more or less unspoken that applies to all services on the Internet, and Arlene Rinaldi has been kind enough to offer a "guidelines to netiquette" brochure, included as part of this kit and browsable now by clicking the help button, to help new users avoid misunderstandings and unintentional errors in judgment. (Ms. Rinaldi reminds you all that she is not to be considered the "Miss Manners of the Internet". She cannot be available to answer individual questions.)

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A more complete guide to netiquette can be accessed from Ms. Rinaldi's **Core Rules of Netiquette** page on the World Wide Web. You'll find a link to this page on the **USENET Resources Page** of your online section (First Class/Tourist Class only).

Posting to multiple newsgroups



One particular activity to avoid at all costs is "spamming". Spamming refers to posting the same article, message or question on a large number of newsgroups all at once. It's not uncommon to see desperate people post messages asking for information about an old friend or lost love to hundreds of channels on the same day.

In fact, once your name and email address get on a few lists, you can expect to see one or two email messages a month from people who have somehow acquired that list and are trying to track down lost children or old friends, or raise money in a real or invented emergency. Veterans have gotten so tired of these as well that some have deliberately gone after people making these pleas, even to the point of losing all concern over how real the sender's emergency might be.

Moneymaking plans

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Moneymaking plans are particularly rotten "spam", and no matter how often the veterans go after the people involved in them, they keep reappearing in new and more irritating forms. *Please* believe us when we tell you that the "easy money" schemes circulating on the net do not work and are most definitely illegal, regardless of what those who promote them may tell you.

Cross-posting

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Another unwelcome form of spamming is posting the same article or question simultaneously to several newsgroups related to the same topic. Some of the more aggressive veterans of USENET hate this so much that they will go out of their way to make your life miserable if they feel you've been particularly obnoxious about it. They'll email your provider, perhaps even "mail-bomb" your provider's mail server with so much mail that their mail server software crashes, and this hurts everyone.

Fortunately the saner members of the USENET community are taking steps to deal with the problem in a more appropriate manner.

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This doesn't mean you shouldn't ever cross-post an article to more than one newsgroup. It just means you should have patience and use discernment. If you find that an article you post in *rec.sport.baseball* gets a great deal of positive reaction, then you'll probably hear very little criticism if you cross-post it to *rec.sport.baseball.misc*. The same is usually true if your *rec.sport.baseball* query gets no response after 36 hours or so...people won't generally mind if you cross-post to the *misc* group if your original posting gets no response.

But keep in mind that readers of one baseball-related group are usually readers of all the related groups. So unless it's really urgent and you must get an answer as soon as possible, try to avoid posting questions to more than one related newsgroup on the same day.

How to cross-post if you absolutely have to do it

Try the most likely group to be able to help you first, and if you don't receive a response in a day or two, *then* cross-post to related groups. Wait another day, and if you still haven't seen a suitable response, try another related group. If you're off-topic in a given group, chances are good that someone will politely inform you of that fact. But if you cross-post the same question in multiple groups on the same day, you're likely to receive at least one nasty response and perhaps a huge pile of unwanted email.

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Flame

"Help! My email is on fire!"



If you haven't encountered this term yet, don't worry...you will. Flame is what spouts from the mouths of dragons. In this case the dragons are electronic, and the flame is verbal.

The Jargon File defines flame thusly:

1. *vi.* To post an email message intended to insult and provoke.
2. *vi.* To speak incessantly and/or rabidly on some relatively uninteresting subject or with a patently ridiculous attitude.
3. *vt.* Either of senses 1 or 2, directed with hostility at a particular person or people.
4. *n.* An instance of flaming. When a discussion degenerates into useless controversy, one might tell the participants "Now you're just flaming" or "Stop all that flamage!" to try to get them to cool down (so to speak).

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Why do people flame? Because they can, usually. The net is a haven for thousands of people who would otherwise have little or no social contact with others. It's also a place to hide, to become something you can't become in real life. This brings out the brightest and best in many people. But you can't have day without night, and eventually you'll notice that it also brings out the worst in people.

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If you ever get flamed for reasons you can't understand and asking for help with the matter doesn't seem to bring you satisfaction, it's usually safe to assume that you've run into someone who simply didn't have any better way to express themselves and used you for a target.

And if you ever catch *yourself* flaming, congratulations. You're either human or a net junkie. You'll have to decide for yourself which description fits you best.

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What you can and cannot post to USENET

Can you get into trouble by posting something to USENET?

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Yes. But if you use a reasonable amount of caution and common sense, you shouldn't have a problem.

In most cases there are no restrictions placed on redistribution of files placed in public-access directories, particularly if those directories are located on institutional sites. Software available from commercial sites may have restrictions attached to redistribution. A commercial software developer may insist that while their software is free, they and *only* they can make it available to the public.

There is some software, including the Pretty Good Privacy encryption software and registered versions of PKZIP, which it is illegal to export outside of the US due to the encryption software they contain. There are even certain types of data which cannot be transported across state lines *within* the US! It's very hard to keep individuals who want to share a piece of free software from making data like this available to anyone who wants it.

Reposting copyrighted print materials

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A related form of copyright violation is the reposting of newspaper or magazine articles -- or even *parts* of those articles -- without the permission of the publisher. Dave Barry's columns were made available on a USENET group for some time by an avid reader until the publisher found out about the practice and put a stop to it.

It's common, and quite admirable, to want to give something back to a good newsgroup by posting something for the benefit of those who have posted for you. But if you ever decide to do this, make certain ahead of time that the software or text information you are posting can be legally made available to others.

If it's a magazine article or newspaper, you must have permission before posting more than a brief quotation from it. In general you should limit your quotes to fifty words or less, and make sure the quote is credited so that everyone knows where it came from.

Some commercial software is okay to post...the vast majority is not!

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There's another type of trouble you can get into, and that involves pirated software. Pirated software refers to software which has been illegally copied from a commercially-available program and made available to people who have not paid the licensing fee. In other words, it's giving away software which you would normally have to buy.

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A few store-bought software products have outlived their sales life and have been made freeware by their publishers, but these programs are rare exceptions to the rule. Never, *ever* assume that a program is okay to share with others. **Make sure** it's okay to share with others. Check the documentation and helpfiles for distribution and licensing information. If necessary,

contact the author or publisher by post or email before uploading it to an FTP site, making it available on your home page or posting it to USENET.

Traditionally, the worst you could have expected from mistakenly posting copyrighted information was loss of privileges at the site where you uploaded and a nasty letter from the site's administrator. That seems to be changing. Some software publishers are literally threatening to sue individuals for copyright violation for uploading commercial software to publicly accessible anonymous FTP sites and USENET newsgroups.

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It might be an innocent mistake, but if a large corporation decides to make a public example of you and a few other individuals by serving you with legal action, there might not be much you can do about it except to beg for mercy.

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And keep this in mind. If a software or periodical publisher decides that they lost money or sales because you posted their copyrighted information, you could be facing a charge of criminal fraud.

Important information about copyrights

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Copyright is becoming a very serious matter on the Internet. In fact, it's such a serious issue that a copyright issue regarding a certain file format threatened to bring the World Wide Web to its knees early in 1995. The free flow of information on the net has resulted in a situation where an enormous number of people have developed false ideas about what constitutes fair and legal use of copyrighted material, and what is and is not copyrighted.

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This help button will take you to a page which outlines the popular misconceptions about copyrights and fair use and show you exactly what copyrights mean to you, how to respect them, and how to exercise your own rights. You could be on the receiving end of a costly and avoidable legal dispute for something you didn't even know was wrong. *Please...read this report before posting articles or data files to USENET, or if you have any remaining questions about what is and what is not okay to post in regard to printed material.*

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USENET and the law

Protecting yourself

While most newsgroups are well-"policed", the fact is that in most cases, as soon as someone posts an article to a newsgroup, it becomes available to all subscribers to the group until someone with a high enough level of access can check it for legality or legitimacy. There doesn't appear to be any movement afoot to tighten controls over USENET, so for the time being, if someone wanted to post a piece of commercial software to a USENET newsgroup, a copyrighted photograph or sound bite, illegal pornography, hate literature, or even a quote from a published article which is too lengthy to be considered "fair usage", there is nothing to stop any subscriber from obtaining that information until someone with enough clearance can remove it from public view. There are even ways for people to post to newsgroups without revealing their real email address, so the people who do this deliberately can't always be easily traced.

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What *can* be traced is who accesses which newsgroups, how and when. It's not easy to do, and there are certainly questions about personal freedoms involved in this issue, but it is possible. When that information is used by law enforcement officials to police illegal activity on the net, everyone loses, from the newsgroup itself to your Internet service provider to you, the subscriber.

A few groups requiring caution

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A few of the "worst" newsgroups for illegal activity are:

- *alt.binaries.erotica.teen* newsgroups, where pictures of children below legal age are often posted for other subscribers (believe it or not, your provider probably has this material on their servers whether they know it or not)
- *alt.binaries.fonts*, where people routinely post copyrighted font files and where at least one publisher has made loud noises about suing individuals to set an example
- *alt.binaries.pictures.art*, where copyrighted works of art have often been posted
- any group ending in *warez* ("warez" is hacker slang for illegally copied software, and warez groups exist for the sole purpose of distributing it) as well as *alt.cracks* (a group dedicated to sharing information on circumventing copy protection schemes) and even the once-innocent *alt.binaries.misc*, which in late-1995 was a haven for software piracy
- many of the *alt.sex* newsgroups where pornographic materials which violate some state and provincial statutes has occasionally been made available

If these groups are not currently on the list of newsgroups available from your provider, the reason probably involves the potential these groups have for placing your provider and its clients -- including you -- at legal risk. Please be aware that providers will take any action they deem necessary to stop or prevent any illegal transfer of data through their computers. They have to. The risks are just too high.

A tough line to draw

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The moderators and founders of these newsgroups usually work very hard to keep a "clean house", but without tighter controls which would change the very nature of USENET, they can't do a perfect job, and most of them don't even want to try to restrict the flow of information until the law forces them to do so.

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Make no mistake, if you post something illegal to USENET in a group where such behavior is unwelcome, or do so without the protection of an anonymous email address, you'll hear about it. Hopefully you'll receive nothing more than a friendly reminder from a veteran of the newsgroup and a suggestion to brush up on the law, but random police sweeps of Internet users known to have downloaded child pornography have already occurred. Every week or two you'll see a story in one of the *warez* newsgroups about a user who was arrested for fraud simply for downloading material from the group.

Even if you are found innocent in court, it's a hassle you don't want. If you have any questions or concerns about activity in a particular newsgroup that may violate laws in this jurisdiction, please contact your provider's support staff.

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Money-making plans

"What's the deal with these money-making plans on the Internet?"

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While not on a par with child pornography or terrorism, illegal money-making plans have probably caused more inconvenience for Internet service providers than almost any other "net nuisance" in recent memory.

Recently the Internet has become the new home of the chain letter, or pyramid money-making scheme, which for so long has plagued post offices and hobby bulletin board systems. Thousands of people have made the mistake of believing that these "make money fast" plans will actually work this time because of the enormous volume of people to be reached over the net.

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You'll recognize these scams quite easily. The heading of the email or article will either be an urgent plea for attention, look something like a job advertisement, or tell you that you can make money fast for nearly no work. Usually the "product" you're asked to sell by someone else -- and buy into yourself -- is nothing more than a list of names and addresses, or some textfiles outlining how to make money in mail order or on the Internet. The article or email might make it appear that there's more to it, and that the program is both legal and ethical, but the fact is that this is precisely what the plans say you *should* tell people, ethical or not.



A few, *very* few, of these plans are legal. The vast majority are highly *illegal*. But legal or not, they are not wanted on the Internet, and almost no one makes money with them. Many people receive visits from postal inspectors, police officers and other unwanted guests as a result of their attempts. They waste time for thousands of people, and the few who do make a few dollars from them seldom earn enough to justify the time and effort they put into "working the plan".

An enormous headache

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These scams are an enormous headache for Internet service providers, and here's why. Let's say you decided you wanted to go along with a certain plan and solicit others to buy in by posting details of the plan to several newsgroups, or randomly emailing 100 or more people on the Internet. There is a standard response to this sort of behavior, and that is to "bomb" both you and your Internet service provider with hundreds or thousands of pieces of email, so much junk data that it could shut down the provider's mail system completely and prevent other users from getting legitimate mail. People react this violently to make sure that this kind of behavior is stopped immediately.

What you can expect if you try one of these plans

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The first time you log onto the Internet after posting such a plan to a newsgroup or mass-mailing to email addresses, you're likely to discover that you have hours' worth of hate mail to retrieve...if you can get into your account at all. Most providers will close your account instantly, and some will alert the authorities without contacting you. You might not know that what you are doing is illegal, but that doesn't stop this kind of swift and extreme reaction.

If you have any questions about a certain moneymaking plan, call your provider's support staff to see if they will permit it. But be warned that 99 times out of 100 you will be told that if you try it, you could very likely lose your Internet account. It's no laughing matter...not to Internet providers, and not to those on the receiving end of these letters.

Last topic

If you still don't believe these "moneymaking ventures" are not worth trying, we've included a little something that should change your mind. It's a copy of the Dave Rhodes moneymaking letter which originally started circulating in the early 1970s by mail. It roped in thousands of people and resulted in countless lawsuits by postal authorities. Many people lost their right to receive US mail as a result of participating. The version you'll see here was modified only enough to make it suitable for spreading over bulletin board systems and online services such as GEnie and CompuServe. It's not a joke, no matter how funny it might appear to you; it's dead serious.

UPLOADER'S NOTE: Do not under ANY circumstances participate in this plan! Not only is it highly illegal, but unworkable as well. Believe me, I was sucker enough to go for it.

This is for information purposes only. Don't put it to use!!!!

Spreaded 22 July 1990 -Do it while it still works!- Print It out!

Letter from the Author:

Dear Friend,

My name is Dave Rhodes. In September 1988 my car was repossessed and the bill collectors were hounding me like you wouldn't believe. I was laid off and my unemployment checks had run out. The only escape I had from the pressure of failure was my Apple computer and my modem. I longed to turn my advocation into my vocation.

This January 1989 my family and I went on a ten day cruise to the tropics. I bought a Lincoln Town Car for CASH in February 1989. I am currently building a home on the West Coast of Florida, with a private pool, boat slip, and a beautiful view of the bay from my breakfast room table and patio. I will never have to work again. Today I am rich! I have earned over \$400,000.00 (Four Hundred Thousand Dollars) to date and will become a millionaire within 4 or 5 months. Anyone can do the same. This money making program works perfectly every time, 100% of the time. I have NEVER failed to earn \$50,000.00 or more whenever I wanted. Best of all you never have to leave home except to go to your mailbox or post office.

In October 1988, I received a letter in the mail telling me how I could earn \$50,000 dollars or more whenever I wanted. I was naturally very skeptical and threw the letter on the desk next to my computer. It's funny though, when you are desparate, backed into a corner, your mind does crazy things. I spent a frustating day looking through the want ads for a job with a future. The pickings were sparse at best. That night I tried to unwind by booting up my Apple computer and calling several bulletin boards. I read

several of the message posts and than glanced at the letter next to the computer. All at once it came to me, I now had the key to my dreams.

I realized that with the power of the computer I could expand and enhance this money making formula into the most unbelievable cash flow generator that has ever been created. I substituted the computer bulletin boards in place of the post office and electronically did by computer what others were doing 100% by mail. Now only a few letters are mailed manually. Most of the hard work is speedily downloaded to other bulletin boards throughout the world. If you believe that someday you deserve that lucky break that you have waited for all your life, simply follow the easy instructions below. Your dreams will come true.

Sincerely yours,

Dave Rhodes

INSTRUCTIONS FOR THE MODEM USE

By Dave Rhodes

Follow these instructions EXACTLY, and in 20 to 60 days you will have received well over \$50,000.00 cash, all yours. This program has remained successful because of the honesty and integrity of the participants. Please continue its success by carefully adhering to the instructions.

Welcome to the world of Mail Order! This little business is a little different than most mail order houses. Your product is not solid and tangible, but rather a service. You are in the business of developing Mailing lists. Many large corporations are happy to pay big bucks for quality lists. (The money made from the mailing lists are secondary to the income which is made from people like yourself requesting that they be included in that list.)

<1> Immediately mail \$1.00 to the first 5 names listed below starting at number 1 through number 5. Send cash only please (total investment \$5.00). Enclose a note with each letter stating: "Please add my name to your mailing list." (This is a legitimate service that you are requesting and you are paying \$1.00 for this service).

<2> REMOVE the name that appears NUMBER * 1 * on the list. Move the other 9 names up one position. (Number 2 will become number 1 and number 3 will become number 2, number 4 will become 3, etc..) Place your name, address and zip code in the number 10 position (after doing all the operation at the beginning of the <2>).

<3> Post this new text file with your name in the number 10 position into 10 (Ten) separate bulletin boards in the message base or to the file section, call the file, MAKE.MONEY.FAST. (People without a modem will have to mail 100 Letters by hand or so! See how it can help to have a modem! Also, make sure you send this file to a bbs where it IS NOT there already!).

<4> Within 60 days you will receive over \$50,000.00 in CASH. Keep a copy of this file for yourself so that you can use it again and again whenever you need money. As soon as you mail out these letters you are automatically in the mail order business and people are sending you \$1.00 to be placed on your mailing list. This list can than be rented to a list broker that can be found in the Yellow Pages for additional income on a regular basis. The list will become more valuable as it grows in size. This is a service. This is perfectly legal. If you have any doubts, refer to Title 18, Sec. 1302 & 1341 of the postal lottery laws.

NOTE: Make sure you retain EVERY Name and Address sent to you, either on computer or hard copy, but do not discard the names and notes they send you. This is PROOF that you are truly providing a service and should the IRS or some other Government Agency question you, you can provide them with this proof! Remember as each post is downloaded and the instructions carefully followed, five members will be reimbursed for their participation as a List Developer with one dollar each. Your name will move up the list geometrically so that when your name reaches the number five position you will be receiving thousands of dollars in cash.

1. Name removed to protect the participant
2. Name removed to protect the participant
3. Name removed to protect the participant
4. Name removed to protect the participant
5. Name removed to protect the participant
6. Name removed to protect the participant
7. Name removed to protect the participant
8. Name removed to protect the participant
9. Name removed to protect the participant
10. Name removed to protect the participant

The following letters were written by participating members in this program.

To Whom It May Concern: (he HAS a modem)

About six months ago I received the enclosed post in letter form. I ignored it. I received about five more of the same letter within the next two weeks. I ignored them also. Of course, I was tempted to follow through and dreamed of making thousands, but I was convinced it was just another gimmick and could not possibly work. I was wrong! About three weeks later I saw this same letter posted on a local bulletin board in Montreal. I liked the idea of giving it a try with my computer. I didn't expect much because I figured, if other people were as skeptical as I, they wouldn't be too quick to part with Five dollars. But, I buy lottery tickets weekly in my province and have nothing to show for it but ticket stubs. This week I decided to look at this as my weekly lottery purchase. I addressed the envelopes and mailed out one dollar in each as directed. Two weeks went by and I didn't receive anything in the mail. The fourth week rolled around and I couldn't believe what happened! I can't say I received \$50,000, but it was definitely well over \$35,000! For the first time in ten years, I got out of debt. It was great. Of course, it didn't take me long to go through my earnings so I am using this excellent money opportunity once again. Follow the instructions and get ready to enjoy.

Please send a copy of this letter along with the enclosed letter so together we can convince people who are skeptical that it really works!

Good Luck,
Charles Kust
St Agathe Que. July 89

Another letter (from someone WITHOUT a Modem)

I tried a similar program in which the cost was \$5.00 per response. In that one the return was about 3%. Since I did not have a modem I sent out letters regular mail. I created mailing labels with Appleworks and printed the labels on pressure sensitive tape. The first mailing that I used the

\$1.00 dollar per reponse approach I started to get return mail in just over one week! I sent out 200 letters instead of 100 that is required if you use the mail instead of the bulletin boards. Additionally, I included as many friends, relatives, classmates, that I could think of in order to encourage their participation if they happened to recognize my name, so my percentage of gain was higher. I am trying again with 500 letters to see if I surpass the \$141,000 of the last time. You just won't believe it until you try.

Best Wishes,
Mark Garner
Dallas Texas

Additional Notes (For people who wish to use this but don't have a modem)

This system works equally well if mailed out manually. Mind you it takes more effort to hand address the envelopes and the cost goes up proportionately to cover the postage and envelopes. You must also photo copy the instructions, cross out the name in number one position, write in your name in the number ten slot and change the rest of the numbers accordingly. (It might be neater to use white out or paste over the names.) In order to achieve the same results you must send out the \$1.00 dollar to the first five names and then send out another 100 letters with copies of the program enclosed. It has been suggested not to put a return address on the outside of the envelope in order to encourage the recipient to open it. The return will approximate that then received from the posts listed on the bulletin boards.

Another letter (from somebody WITHOUT a modem)

I was working the grave yard night shift at the hospital administration office and was bored to tears. I saw this letter laying on my desk from the previous shift. I had nothing better to do so I figured, Why not? I ran off over 100 copies on the office copier. I found some blank envelopes in a desk drawer and began to hand write the addresses from the telephone book. I borrowed the postage meter and stamped the envelopes. Carefully I stuffed the envelopes not forgetting to put in the five one dollar bills to the first five names. I put the entire lot in the mail bag. Total time from start to finish was three and one half hours which included several short stops to answer the telephone and fill out an admission slip. Total cost to me \$5.00 dollars.

Fourty two days later I gave notice to my employer and I will never have to work the night shift again.

Peggy Lou G.
Scottsdale Arizona

PS. I made a nice size donation to the hospital building fund. I figured it was the least I could do for the use of the postage and office supplies.

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