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***A Plain English Guide  
to the Internet<sub>xe "Internet"§</sub>  
at TVA***

**Ed Ditto**

## A Plain English Guide to the Internet at TVA

### ***Introduction:***

The "Information Superhighway" is a great buzz phrase --- you can use it to impress your boss, your friends and neighbors, and job interviewers.

But there is truth in this much-abused metaphor. The Internet is already the greatest information resource ever assembled, and its potential is such that soon anyone in the information business who is not at least familiar with the fundamentals will be competing at a serious disadvantage.

As we face increased competition, we need to take advantage of the Internet as another tool in our box. But it can be difficult to understand, and actually using the Internet at TVA can be quite a chore. We have several different "on-ramps", and all of them are as different as they can be. Even discovering them can be tough --- with as much variation from system to system as we have, figuring out what questions to ask and who to ask them to can be too much for a user. This guide is designed to get you started on your own exploration.

I certainly felt frustrated at first. As I've gotten more educated (although I don't think anybody ultimately can claim to be an expert) I've come to realize that it would be a good thing for anyone who works with the Internet to disseminate whatever information they have to whomever might need it. We need to help each other up the learning curve. There are several ways to accomplish this communication, including the Internet Users group, e-mail, word-of-mouth, and desktop publishing. Join in, and start spreading what you learn.

Information Services is doing so. I recommend that you contact your local IS liaison for the IS guide: "Internet Handbook". Since the Internet is so large, nobody can claim to have written the "standard" guide to the Internet. The IS guide goes into several areas that I don't cover here: more specific detail on hardware required for Internet access from various TVA platforms, TSO use from the mainframe, and key IS contacts.

And that's partially the answer to a question I've been asked frequently since the first edition of this guide was published. I may not work for IS, but I certainly don't intend for this guide to be a "competing" guide. It's simply another source of information about the incredibly rich resources available on the Internet. The more people who share their Internet knowledge within the TVA community, the better off we'll all be.

While I've got your attention, I'd like to make a pitch for your help. This guide is intended to be a living document, so if you run across any questions or issues that you'd like to see addressed, any interesting sites that you'd like to see included, or even any feedback that you might have, please get in touch with me at the address listed below.

This is the sixth edition of this guide, and this edition contains some new information. The Internet is in a constant state of flux, so that anything committed to print about the Internet, especially with regards to the resources available on it, will change over time. One of the changes which affects this guide most profoundly is the termination of USENET news services (i.e., international discussion group access) by the University of Arizona. Until recently this has been an excellent site for USENET, but now TVA users will find it necessary to gain access by different means. I've included two new sources for USENET in Section 5 under USENET.

This guide is now available for anonymous FTP on info.tva.gov. It is located in the pub/p\_e\_g directory. You'll find three files there:

readme.txt	A brief explanation of the files in the directory
p_e_g.doc	The guide in Microsoft Word for Windows 6.0 format
p_e_g.txt	The guide in DOS text format

This guide is not copyrighted, so help yourself. For more information on what all of this means, see Section 4: Uploading/Downloading files through FTP.

Thanks. Happy surfing.

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## 1) Overview of the Internet

### 1.1 What the Internet is and is not:

There is no formal, structured “Internet:what it is”. There is no Internet, Incorporated, or any regulatory body which exists to administer and/or otherwise control what goes on in the loosely joined world-wide network of computers which is commonly referred to as “the Internet”.

The Internet is computer networking made easy. If you have the right software on your personal computer, you have the ability to log in to a large central computer, which will in turn will probably have the ability to log in to many other large central computers. And this is what “accessing the Internet” really means: finding the way through various computer networks into the resources that you need.

A good (and frequently abused) analogy for the Internet is like a highway system. But the highways do not link places like houses, cities, and parks --- they link computers. And while there is no “capital computer” on the map through which all highways pass, there are highways which have more traffic on them than others. These heavily trafficked pathways generally lead to the areas of most interest to the travelers. If you leave your house and you know the right turns to make, you will eventually wind up someplace that you are interested in.

Areas of interest could include anything. Absolutely anything. Federal databases, on-line keyword searches through library card catalogs, UPI and AP news wire services, National Weather Service updates, shareware, acoustic guitar discussion groups, Space Shuttle photography, and so on and so on. Given some time to explore, you too will find the places which you will want to visit the most often.

Who pays for the Internet? Everyone does. There’s no centralized structure (although main groups do exist to address Internet issues: the Internet Architecture board, the Internet Engineering Task Force, and the Internet Society), so everyone pays for their own piece of the Internet. For example, the University of Tennessee pays for the UT computers which provide service. If you want to call that computer, you have to pay for your own computer and phone time.

This leads to an interesting ethic: when using the Internet it’s best to use the avenues that are least expensive to whomever your host at the moment is. If you’re combing the library of Congress on-line catalog from your PC in Knoxville, you do not want to use the University of California, Berkeley’s computers to relay you to Sidney, Australia and from there into the Library of Congress. Use UT Knoxville’s computer and go directly to the Library of Congress. This costs less in the long run and frees up national and international phone lines for those who need them more urgently.

### 1.2 The history of the Internet:

Approximately 20 years ago, the US Department of Defense set up a computer network called the ARPAnet, which was designed to aid military research. In order to minimize the vulnerability of the system, it was designed to be decentralized; that is, a chunk of the network could be missing (bombed in a nuclear attack, perhaps), but the remainder of the network would keep functioning. This assumption that the network itself would be unreliable has turned out to be a good one; if history has taught us anything about computers, it is that they are reliably unreliable.

The next revolution in networking occurred 10 years later, when local area networks (LANs) began to emerge. These networks included bulletin board systems, mainframe-served workstations, and the like. Our Wang system is a good example of this kind of thing. And in

fact, dial-in mainframes became so popular as businesses and universities came to realize the potential of the resources they had at their fingertips, that in 1987 a contract to revamp and upgrade the most heavily used supercomputer network in the country (which happened to be the National Science Foundation's five supercomputer centers) was awarded to Merit Network in partnership with IBM and MCI.

The National Science Foundation began a program which would fund university access to its supercomputers only if universities would promise to spread the access around. Now, most universities and many businesses have their own mainframe computers, and the communications which link them tend to be very similar. So while at one time the NSF was the "hub" of the Internet (and in fact still acts as a franchisor of Internet access points), now there are millions of hubs. These hubs are interconnected, so that if you can access one, you can access 'em all.

As of January of 1994, one estimate placed the number of computers linked to the Internet and number of hosts at 2.2 million -- and growing at an exponential rate. This only counts "hub" computers, not the desktop computers which link into them. The following chart will give you some idea of the rate of Internet expansion.

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Amazing, isn't it? I read an estimate that there are over 30 million Internet users on these machines, and my opinion is that the estimate is too low.

### **1.3 The future of the Internet and TVA:**

#### 1.3.1 International development

If you know the right way, you can find yourself browsing through historical archives at the University of Beijing from your desktop (of course it might help if you read Chinese). I have personally copied and read English translations of KGB archive documents on groups involved in subversive activity --- completely legally. Many such resources are available, and more are coming on line every day. It doesn't take a great deal of imagination to see the potential for future Internet activity here at TVA. Our company's expertise in public infrastructure management, as well as computer technology, business services, and so on, is a competitive advantage which is applicable around the world, and especially to developing economies. At the present time the spread of Internet connections is only really limited by the state of local communications infrastructure.

TVA is currently involved in a great deal of international development, and as this process continues the Internet will come to be relied on more and more as a means of research and communication.

#### 1.3.2 Commercialization

Serving the Internet and commercialization can be expensive, and at the present there's not really a way for a company or university to recover its cash investment (all other benefits of being connected aside, of course) in equipment and phone lines. In the past, what little regulation of Internet activity there was came under the auspices of the federal government. But now, organizations like CompuServe and Prodigy have proven that commercial network access can be very profitable. And inevitably, phone companies are looking at ways to make Internet access provision pay off. While a phone company usually sells the phone line to the user with fairly unrestricted use, in the future it may be necessary to order some type of Internet connection the way

you might order a cable TV hookup.

Multi-service power distributors might therefore take an active role in Internetxe "Internet"\$ commercialization if and when it comes about. Expect Internet access to become a commercial activity when such access is recognized as a necessity. But it's hard to say when that will occur.

### 1.3.3 Censorshipxe "Censorship"\$

It's unfortunate that irresponsible use of Internetxe "Internet"\$ resources by a few limits what everyone is allowed to do. Remember that the Internet serves the whole world, and there are some very strange people with some very strange tastes out there. You will generally be able to tell when you might be straying into a danger area...use your common sense!

A current issue in TVA's Internetxe "Internet"\$ administration is just exactly which areas TVA users will be "allowed" to access by system administrators. TVA Internet users should be responsible enough to behave by a professional standard, especially when using TVA's equipment and time to access the Internet. A good rule of thumb is that if you can make a sound business case for what you are doing with TVA equipment and time, then it's probably OK. Examples of this might include taking part in an economic development discussion group, or sending e-mail about TennCare to state representatives. But using TVA equipment and time to access discussion groups like alt.sex is going to land you in hot water. It's also going to cause system administrators to restrict access even more. The concept of restricted access is somewhat of a joke on the Internet, because if a resource is there you can find a way to access it. But in spite of this, let's preserve the status quo. Be careful what you're up to.

The downside this discussion of who will be allowed to read what is that while the discussion goes on, there's no server that will allow you to access Internetxe "Internet"\$ discussion groups at all. The baby has been thrown out with the bathwater, so to speak. Currently in order to keep "obscene" discussion groups out, "wholesome" ones like sci.econ.research must be kept out as well. But does this mean that you can't access them at all?

No. Censorshipxe "Censorship"\$ and ethics notwithstanding, I'm going to tell you how to completely bypass this logjam so that you can access any discussion group on the Internetxe "Internet"\$ that you want. That way, the responsibility will be left where it should --- with the user. For this information, see the glossary (section 5) under USENETxe "USENET"\$.

Another "censorship" issue is that of exploring. One person's "learning experience" is another person's "goofing off". It's very difficult to learn about the Internetxe "Internet"\$ without doing a certain amount of immediately unproductive "surfing" of the Internet. You have to pan a great deal of sand and gravel before finding a gold nugget --- but the nuggets are the payoff. If you intend to use the Internet as a resource, you need to find areas of the Internet which will be useful to you, which means that at some point or other you will have to do some exploring on your own. Just make sure that what you're doing is clearly within your line of work, and be prepared to defend your reasoning if you should ever have to.

### 1.3.4 Security

There are troublemakers on the Internetxe "Internet:and security"\$xe "Internet"\$; make no mistake about that. Some are harmless pranksters, some are malicious monkeywrenchers, some are outright thieves. All of them can wreak havoc on an unprotected system. TVA's system contains some very sensitive areas. While some (such as nuclear plant control systems) are utterly inaccessible to outsiders due to their isolation from the Internet, others are wide-open to viruses, worms, and inappropriate hardware use.

So while it may be frustrating at times to have to continue dealing with security measures, remember that

it's your system and data that are at risk.

If you're storing very sensitive data files on a location where you're worried they might be intercepted and misused, there is a military-grade encoding program that's available free on the Internet<sup>§</sup>. Section 3.4 describes the software, and Section 4 will tell you how to download it. This program will code your data so that it's uncrackable by unauthorized users.

### 1.3.5 Bandwidth "Bandwidth"§ at TVA

"Bandwidth "Bandwidth"§" refers to the size of the channel used to link TVA and the Internet "Internet"§. There is a finite amount of bandwidth available, and while there is no cap on the number of users who can access the connection, the more users there are on the system at a given time, the slower the system will be.

TVA buys "connectivity" to the Internet "Internet"§ from SURANet "SURANet"§, a franchisee of the National Science Foundation (as discussed above). TVA connects to its node, or common point, on the Internet through a 56 kilobit per second line. This is a finite amount of bandwidth which must be shared by all users. As more users come on line, the average amount of bandwidth which is available shrinks, so that the ultimate result is a system which runs more and more slowly. You have probably noticed similar slowdowns during peak usage times on other TVA computer systems and on the phone system. One recommendation for Internet users is to try to conduct Internet business at other times than between 7 AM and 7 PM, which are peak usage hours.

As business traffic builds up on the TVA - Internet "Internet"§ connection, IS "IS"§ will work to upgrade the system. Who will pay for the upgrades? Well, that's a delicate point. IS may find it necessary to require a "nominal" charge for Internet usage in the future -- how much, I couldn't say. I'm not sure what "nominal" means, and I don't think anyone does at this point. One sure way to decrease the amount of traffic on the system is to limit exploring and extracurricular activity. As I've stated earlier, a certain amount of this is constructive, but it's a fact that several people "surfing" can drastically slow down the system for those who are working.

### 1.3.6 A more technical examination of "Information Superhighway" infrastructure

Warning: this section veers dangerously away from "Plain English". Unfortunately this is necessary due to the rapid pace of technology and its effect on communications infrastructure development. Bear with me.

Discussion about the structure of an international communications infrastructure centers around three main areas: "base band", "wide band" and "broad band". These areas of bandwidth are analogous to "lanes" on the superhighway: narrow being the slow lane, wide being the mid-speed lane, and broad being the fast lane.

*Base band* communications "Base band communications"§ are generally carried via analog signal through existing phone lines (copper wire, coiled pair). These communications are typically only capable of carrying one type of signal in one direction, and they occupy one entire channel. An e-mail message is an example of base band communication; text is carried via analog signal across a phone line, and it occupies the entire channel for however long it takes to travel from sender to receiver. This means a simultaneous e-mail conversation isn't really possible on one phone line, although some computer networks like Compuserve do offer central locations for real-time chats. They accomplish this by using multiple lines into one bulletin board, where incoming text is displayed.

*Wide band* communications "Wide band communications"§ are transmitted via coaxial cable, which is the same type used to transmit cable TV. Since a wider range of channels are available via coaxial transmission, wide band can accommodate interactive communications. This band will most likely be the most common communications avenue in the foreseeable future, as much of the infrastructure necessary to serve wide band is already in place.

*Broad band* communications "Broad band communications"§ are carried digitally via fiber optic cable. Broad band can accommodate digital data, voice, and video signals simultaneously on a multitude of

channels. Broad band currently represents the ideal communications network to many “superhighway” developers.

### 1.3.7 About the federal government’s superhighway development activities

The *National Information Infrastructure* “National Information Infrastructure” (NII) is a vision of the Clinton administration, and is currently being studied by the House of Representatives, Telecommunications Subcommittee, and Senate Committee on Commerce, Science, and Transportation. The basis for NII is a high speed, wide spread, multi-purpose network projected to be built by the private sector at an estimated cost of between \$50 - \$100 billion over the next 10 years. The federal government is investing \$1.2 billion a year to promote the development and deployment of the information technology needed for NII. NII will consist of thousands of interconnected, interoperable information networks, computer systems, televisions, fax machines, telephones, and other information appliances, software, information services, and information databases and trained people who can build, maintain, and operate these systems. (From “Bandwidth” and Public Policy”, published by the Association of Information Systems Professionals (DPMA))

Again we see the potential for TVA involvement in the development of a world-wide communications network. Our experience in public infrastructure development and management makes us uniquely qualified to aid the NII and other developmental organizations. A concern at the NII is the “egalitarianism” of information access. It’s expensive to lay fiber optic cable; how will rural area networks pay for themselves? It’s clear that TVA was able to solve an identical problem through its power distributor system, and many of the lessons we learned in doing so will be applicable to communications infrastructure development in the future.

Other government agencies are present on the Internet: the White House, the Department of Commerce, the Supreme Court, and even a few members of Congress.

## 2)On-Ramps

### 2.1 *Gwinet* "Gwinet": *TVA's link to the Internet* "Internet"

TVA is linked to the Internet "Internet" through a "gateway" called GWINET. GWINET is a Sun Microsystems computer which is located in Chattanooga. It acts as local hub or "router" which allows users access to other hubs which are "out there", which is why it's referred to as a gateway. As I'll discuss further, GWINET is available through the two most common systems of Internet access at TVA: the mainframe "mainframe" pick on the Wang "Wang" system, and PCTCP "PCTCP" on desktop computers.

GWINET "GWINET" is "protected" from outside security breaches by a "firewall" known as the "Eagle Secure Gateway" "Eagle Secure Gateway". The firewall prevents access into the TVA system by unauthorized personnel, but it also prevents authorized personnel from certain activities.

One such prohibited activity is the use of Mosaic "Mosaic", a Windows "Windows" interface touted as the "killer Internet" "Internet" application by its developers. Unfortunately for those concerned primarily with ease of access, Mosaic is too trusting a program to risk use on the TVA system. If it were possible for Mosaic to get out of the firewall "firewall", it would be possible for unauthorized users armed with Mosaic to get into the firewall. However, I've been told by a Gwinet administrator that soon Mosaic will be available to TVA employees in a secure form.

### 2.2 *TCPIP* "TCPIP"/*PCTCP* "PCTCP": *Desktop links to the Internet* "Internet" *through the TVA gateway* "gateway"

Perhaps the easiest of the on-ramps "on-ramps" is the Windows "Windows"/TCPIP "TCPIP" interface which is available to TVA employees throughout the service area. Mine was installed on my computer when my local area network (LAN) administrator installed Oracle's Data Browser "Data Browser" on my hard drive. If you have a PCTCP "PCTCP" directory on your hard drive, it's a good bet that you already have access to the software you need to access the Internet "Internet" and begin communicating freely around the world.

TCPIP "TCPIP" stands for Transmission Control Protocol/Internet "Internet" Protocol. Transmission Control Protocol's job is to break down the information you want to transmit (whether send or receive) into chunks which are manageable for the network protocol to transfer and then reassemble them once they have been transmitted. Internet Protocol's job is to link computers together in order to transmit information. These two software packages work behind the scenes to ensure that your message, job, game, et cetera gets accurately routed to the correct recipient.

PCTCP "PCTCP" stands for PC Transmission Control Protocol, and refers to the PC DOS "DOS" version of TCPIP "TCPIP". There are versions of TCPIP for every conceivable type of computer: Macs, UNIX "UNIX", PC, and so on.

There are two main software items for Internet "Internet" communication which will be contained in your PCTCP "PCTCP" directory: Telnet "Telnet" (tn.exe) and FTP "FTP" (ftp.exe).

Last I heard, TCPIP "TCPIP" software cost about \$60 new, or \$20 for an upgrade.

### 2.3 Using Telnet

If you want to call someone, you need a phone. Telnet acts as the phone when you are ready to dial the Internet. It will let you log in to other computers. PC users will find Telnet in their PCTCP directories, or perhaps as an icon on their desktops in Windows, and Wang users will find Telnet under the supersession pick (SS) on the TVA mainframe. In the following example, we'll log on to the UT Knoxville library gopher.

#### 2.3.1 Telnet for PC users:

At the c:\pctcp prompt (or for Windows users at the hostname dialog box after double clicking on the TN icon - see below for how to create a TN icon), enter:

```
tn gwinet "gwinet" (simply "gwinet" if you're a windows user)
```

This connects your PC with the TVA gateway. After a moment, you will see:

```
Eagle Secure Gateway "Eagle Secure Gateway".
```

```
Hostname:
```

```
gwinet "gwinet".cha.tva.gov 08:49:20
```

with a blinking cursor after the Hostname prompt. Enter:

```
library.utk.edu
```

to contact the UTK library gopher. After a moment you'll see:

```
Internet "Internet" Gopher Information Client 2.0B pl9
```

```
Root gopher server: gopher.lib.utk.edu
```

1. Welcome to UTK Online Library Information System (OLIS)/
2. About UTK Libraries/
3. UTK Libraries Holdings/
4. Other Library Catalogs & Info Systems/
5. Electronic Books/
6. Electronic Journals/
7. Electronic Reference/
8. Information by Subject/
9. Other Internet "Internet" Resources/
10. Other UTK Information/
11. VERONICA: Search the World of Gopher for Information/
12. What's New in OLIS.
13. Search the OLIS menus <?>

```
Press ? for Help, q to Quit
```

```
Page: 1/1
```

```
gwinet.cha.tva.gov 08:02:44
```



You've successfully contacted the UT library gopherxe "gopher"\$ and you're ready to start exploring.

This process will be the same no matter who you're contacting, as long as you know the correct address. You first access the TVA Internetxe "Internet"\$ server, Gwinetxe "Gwinet"\$, and you then tell Gwinet to contact the computer with which you wish to communicate.

To create a telnet icon on your Windowsxe "Windows"\$ desktop, create a new program item with the name "TN" and the command line "c:\pctcp\tn.exe".

### 2.3.2 Wangxe "Wang"\$ mainframexe "mainframe"\$ pick: "Supersessionxe "Supersession"\$" access to the Internetxe "Internet"\$

If you don't have PCTCP available on your PC, the Wang mainframexe "mainframe"\$ is your only point of immediate access. It may run more slowly than a PC, but it is definitely better than nothing at all. If you don't have a Wang mainframe pick, you need to contact your local Wang administrator about getting one. Ask for a form 12101. In a few days Security Administration will return a form to you explaining your account number and some other security measures.

Once you're set up, turn your Wang on and log in. Choose the "TVA Mainframe" pick from your main menu screen. The Wang will return the mainframexe "mainframe"\$ main menu. Choose:

GATEWAY (SS) CL/SUPERSESSION

by entering:

SS

at the enter selection prompt. The mainframexe "mainframe"\$ will return a TVA logo screen and will prompt you for the following information:

PLEASE ENTER LOGON INFORMATION

USER ID..... \_\_\_\_\_  
 PASSWORD...\_\_\_\_\_

GROUP.....\_\_\_\_\_

PROC.....\_\_\_\_\_

Enter the User ID and your Password from the memo sent to you by Security Administration. You will have the option to change your password. If this is the first time you've logged on to the mainframexe "mainframe"\$, you will have to change your password.

Once you've cleared the security hurdle, you will have three options:

\_ORAMAIL  
 \_TELNET  
 \_TN3270

Enter a slash "/" in the blank in front of TELNET. The Wang will return an "ACTION CODE MENU" which will include:

S BEGIN OR RESUME A SESSION

Enter S at the "COMMAND ==>" prompt or beside the S option. You will then see the "CL/SUPERSESSION MAIN MENU".

```

      TELNET
LOGON DIALOG
      TVA

```

```

HOST.....:
TVA OR GLOBAL INTERNET..:
TERMINAL EMULATION.....:
AUTO LOGIN (Y OR N).....:
  USERID.....:(your user ID)
  PASSWORD.....:
  TERMINAL TYPE.....:VT100

```

We're really only interested in the first two lines, because this is where the Telnet session begins. In the above example we accessed the UTK Library Gopher through a PC. To accomplish that through your Wang, enter

```
LIBRARY.UTK.EDU
```

at the HOST prompt, and

```
GLOBAL
```

at the TVA OR GLOBAL INTERNET prompt. The Wang will automatically contact Gwinet, and Gwinet will in turn relay you to the UTK Library gopher. Soon you will see a menu which includes:

```
ROOT GOPHER SERVER: GOPHER.LIB.UTK.EDU
```

```
1. WELCOME TO UTK ONLINE LIBRARY INFORMATION SYSTEM
(OLIS)/
```

and you'll know you're in. You can repeat this mainframexe "mainframe"\$ login process for any other computer attached to the Internetxe "Internet"\$ for which you have an address.

### 2.3.3 Surfing the Wild Keyboard: Wang terminal commands in mainframexe "mainframe"\$ mode

The Wang keyboard functions change when you enter Supersession mode. Here's a list of functions as compiled by Information Servicesxe "Information Services"\$ which will help you move around in remote machines.

Key Pressed	Command Sent
PF1	? (help)
PF2	m (Main Menu)
PF3	u (previous menu)
PF4	q (quit)
PF5	*
PF6	* <HT>
PF7	Cursor Up
PF8	Cursor Down
PF9	Cursor
PF10	Cursor Left
PF11	Cursor Right
PF12	<ESC>*
PF13	&KP1
PF14	&KP2
PF15	&KP3
PF16	&KP4
PF17	&KP5

---

PF18	&KP6
PF19	b
PF20	X'20'
PF21	&KP9
PF22	&kp0
PF23	Control
PF24	Cursor
PA1	Break
PA2	&Comma
Clear	Reshow

---

The reason for these special key functions will become clear if you try to navigate through menus using the arrow keys. While the cursor on your screen will move, this “move” command is not being transmitted to the remote machine. Only the PF commands above will actually signal the remote machine that you’d like to move the cursor.

## ***2.4 Other terminal programs***

Programs such as Microsoft Terminal<sup>xe</sup> "Microsoft Terminal"<sup>§</sup> and other modem managers can also be used to access any portion of the Internet<sup>xe</sup> "Internet"<sup>§</sup> which can be reached over a standard phone line via modem. Many local and national bulletin boards do not have an Internet address and cannot be reached by TCP/IP. It’s necessary to dial them up with your modem. They are still part of the Internet, they’re simply communicate by different standards.

Unfortunately there’s not space to devote to the workings of the main terminal programs on the market such as Crosstalk, Microsoft Terminal<sup>xe</sup> "Microsoft Terminal"<sup>§</sup>, PC Anywhere, and so on. If you own one of these programs (which you do if you are using Microsoft Windows), consult your reference manual for details.

If you don’t have a modem on your desktop PC and you’re interested in getting one, all you really need is

a 244PC phonexxe "244PC phone"\$\$. These phones include a "data line", which links your computer directly into a central TVA modem pool, access to which is shared by all TVA users. Contact your local telephone system administrator about obtaining one.

## ***2.5 ISxe "IS"\$ tips for remote login using a MacIntosh***

Information Servicesxe "Information Services"\$ has published the following tips for using Telnet through a MacIntosh. This is a direct quote from "Internetxe "Internet"\$ Handbook".

### **Remote Login using a MacIntosh**

**Step 1:** Using your mouse, point to the TCP Connect II icon and click the mouse button. A menu bar will be displayed at the top of the window.

**Step 2:** Using your mouse, point to the **Terminal** option on the menu, press the mouse button, and drag the mouse down until you see the options available under **Terminal**. Continuing to hold the mouse button down, point to **Connect** and then release the mouse button.

**Step 3:** The Terminal Connect screen will be displayed. It will prompt you to enter a session name. Type **gwinet** and press the **enter** key.

**Step 4:** GWINET will establish a connection to the other computer. Some computers have a limited number of sessions, so you may have to try several times before a connection is completed. When the connection is established, control passes from GWINET to the host computer. The host computer will prompt you for your User ID and password.

**Step 5:** Enter your User ID and password as directed. You are now signed onto the other computer and working with an application that resides on that computer. At this point, all directions will be supplied by that application. Unfortunately, all applications are different, but most provide some type of instructions. When you are ready to terminate the session, follow the instructions provided by the application. You may be directed to type a **q** for **Quit**, or **x** for **Exit**, or some other command. When you enter the terminate command, the connection will be broken, and control will be passed back to your computer.

**Step 6:** Using the mouse, point to the button in the top left corner of the Terminal Connect window and double click. This will close the TCP Connect II window.

### 3)E-mail

#### 3.1 Introduction

I think it's safe to assume that the reader is familiar with the concept of e-mail, so I won't go into it too deeply here. Suffice it to say that the advantages of using electronic mail over ordinary mail are enormous when one considers the problem and expense of transmitting information quickly from one place to another. This of course depends on the type of information transmitted --- there is no such thing as confidential e-mail, for example, and a company wouldn't want to send out a slick sales brochure via e-mail. But for ordinary communication e-mail is a wonderful option. It's quicker than the post office and it's cheaper than a telephone call. In fact, I have been told that TVA pays a flat fee for the fiber optic line we use to access the Internetxe "Internet"\$ here. Assuming this is true, e-mail someone in the next cubicle or e-mail Bill Clinton (president@whitehouse.gov---according to the message you'll get back, he doesn't read every piece of e-mail, but he does get opinion polls based on e-mail) and it's going to cost the same amount. The more you use this system, the more value TVA gets for its money in the long run.

#### 3.2 Wangxe "Wang"\$ e-mail explained

It is indeed possible to send e-mail from the Internetxe "Internet"\$ to a TVA Wang mailbox. There are several memos circulating to this effect, but following the procedures in these memos can be quite confusing, and I have personally not been able to get a couple of the processes described in them to work. However, there is one that does.

A Wang Internetxe "Internet"\$ address follows this form:

tva!wang#.wang@mhs.attmail.com

where wang# is the first fifteen digits of the Wang ID number for the box being addressed. On some Wang systems, your Wang ID number may be found by choosing from the Wang Office menu, in order:

User administration  
User profile

and looking under:

User ID

On other systems, you may find your Wang ID number by choosing from the master menu, in order:

Wang office defaults  
Display user defaults

and looking under:

User ID

The first fifteen digits of your user ID are your Wang number for Internetxe "Internet"\$ e-mail purposes. My number is 00113 00001 00306 01417, so that my Internet address would be:

tva!001130000100306.wang@mhs.attmail.com

That's all. It's that simple. In order to test this I sent myself two different messages from locations on the

Internetxe "Internet"\$, and it took approximately 7 minutes for them to get through. I suspect that this was slower than usual, but still much faster (and cheaper) than a fax, overnight package, or US Mail.

With this address you can receive e-mail from just about anywhere on the Internetxe "Internet"\$ directly to your own Wang mailbox. The drawback is that you cannot originate Internet e-mail from your Wang mailbox unless someone outside the system has first sent you something. Once they have, however, you can keep their mail in your box and reply to it all day long without having to worry about what their e-mail address is.

### **3.3 Internetxe "Internet"\$ e-mail**

#### **3.3.1 Setting up an e-mail account**

There are plenty of places which offer e-mail accounts: Prodigyxe "Prodigy"\$ and Compuservexe "Compuserve"\$ are examples. I'd like to walk you through setting up an e-mail account on the Lorain County Free-netxe "Lorain County Free-net"\$ . If you'd like to know more about just what exactly a free-netxe "free-net"\$ is, see the glossary (section 5). I'm going to assume you're using the TCPIPxe "TCPIP"/PCTCPxe "PCTCP"\$ system from your PC rather than the Wangxe "Wang"\$ mainframexe "mainframe"\$ pick, although the processes are virtually identical.

I've chosen the Lorain County Free-Net (LCFN) because I've found it to be very convenient to use personally. You may try several and decide you like another one. All free-netsxe "free-nets"\$ that I've explored have more or less the same guest registration procedure, so this one will serve as a good guide.

Let's start by assuming that you don't have Microsoft Windowsxe "Windows"\$ . In your PCTCPxe "PCTCP"\$ directory you will have several key executable files (.exe), which will include ftp.exe and tn.exe. For the moment, tn.exe, or "telnet" is what we want to concentrate on.

Telnetxe "Telnet"\$ allows you to "call" a host computer, which in this case will be "gwinetxe "gwinet"\$", as we've discussed earlier. Typing:

```
tn gwinetxe "gwinet"$
```

at the "c:\pctcp" prompt will bring up the following lines:

```

FTPxe "FTP"$ Software PC/TCP tn Version 2.2 02/25/93 18:05
Copyright (c) 1986-1993 by FTPxe "FTP"$ Software, Inc. All rights reserved.
Escape character is ALT-F10 or F10

```

```
Eagle Secure Gatewayxe "Eagle Secure Gateway"$.
```

```
Hostname:
```

The first two lines describe the PCTCPxe "PCTCP"\$ software which you are using and the date. Remember ALT-F10, as this escape key will probably come in handy at some point. The Eagle Secure Gatewayxe "Eagle Secure Gateway"\$ refers to gwinetxe "gwinet"\$, and the hostname is the computer which you will be using gwinet to access.

This procedure will be even easier if you use Windowsxe "Windows"\$ and have a "TN" icon somewhere in your program manager (and if you don't, create one with the command line "c:\pctcp\tn.exe"). Double clicking on the "TN" icon will bring up a dialog box which will ask you for "parameters". Entering:

```
gwinetxe "gwinet"$
```

will bring up the hostname screen shown above.

At the "Hostname:" prompt, enter:

```
freenet.lorain.oberlin.edu
```

This address is analogous to the phone number of LCFN, and Telnetxe "Telnet"\$ will use this information to link your computer with LCFN. After a brief delay you will see:

```
SunOS UNIXxe "UNIX"$ (freenet)
```

```
login:
```

Telnetxe "Telnet"\$ has contacted LCFN, and LCFN is asking you to identify yourself. Since you are a first time user, enter:

```
guest
```

LCFN will respond:

```

Last login: Tue Feb 22 08:16:54 from suncube.ccs.ortn
SunOS Release 4.1.1 (LCFN) #1: Sat Jan 23 15:43:35 EST 1993
Type dec-vt220 unknown
TERM = (unknown)

```

LCFN is asking you to identify your terminal settings. If you're using a TVA PC to access LCFN, you will most likely be using the VT220 terminal emulation, which LCFN does not support. You will still be able to type, but you will not have full access to the editing and hot keys which you would if LCFN supported the VT220 emulation.

Enter:

```
vt220
```



at the command prompt. This will let LCFN know that you are using an unsupported terminal. (Note: entering vt100xe "vt100"\$, ASCIIxe "ASCII"\$, et cetera will also work, although you may find that your keyboard behaves strangely at times). LCFN will then return a welcome message:

### WELCOME

As a visitor to this system you are allowed to go anywhere and read anything available. However, posting messages, sending or receiving electronic mail, using the chat area or accessing certain other features like telneting requires you to be a Registered User. Please review the Registration Information located under the Administration Center (type go register).

The registration process costs \$5.00 (voluntary contribution). Vanity identification accounts are also available. You are limited to one hour per visit. There presently is no limit on the number of visits you can make per day.

Thank you for visiting the system. We hope you will become a registered user and that you visit us often.

Paul Boguski, Executive Director, LCFN

End of File, Press RETURN to quit

gwinetxe "gwinet"\$cha.tva.gov 15:04:18

You may also run into another screen which updates you about possible downtime for the system, or other important system news. Simply follow the appropriate instructions on the screen. Finally, you will wind up at the following screen:

### LORAIN COUNTY FREE-NET

#### Main Menu

- 1 Administration Center (go admin)
- 2 Civic Center (go civic)
- 3 Commerce Center (go commerce)
- 4 Communication Center (go cc)
- 5 Community Center (go community)
- 6 Computer Center (go computer)
- 7 Education Center (go education)
- 8 Health Center (go health)
- 9 Help Center (go help)
- 10 Human Services Center (go human)
- 11 Library Center (go library)
- 12 Natural Resources
- and Agricultural Center (go natural)
- 13 Academy 1

m=Main Menu | p=Previous Menu | h=Help | x=Exit FreePort

Your Choice ==>

Note the menu items. Most free-netsxe "free-nets"\$ will be laid out like towns, with a "center",

“building”, or “street” for each general area of interest. Also note the “go” options. These are jump commands - typing “go health”, for example, will take you to the Health Center from anywhere in the system.

At this point, you can choose to explore the free-netxe "free-net"\$ services, bearing in mind that you will not have full access, or you can go ahead and register. Entering:

go register

will shortcut you to the registration process.

You will be at this screen:

## LORAIN COUNTY FREE-NET

### Registration Menu

- 1 Voice Mail or U.S. Postal Service Registration
- 2 Print Out Registration Agreement - (Capture or Log file required)
- 3 Vanity Identification Numbers Available
- 4 Donor Account Available

m=Main Menu | p=Previous Menu | h=Help | x=Exit FreePort

Your Choice ==>

gwinetxe "gwinet"\$cha.tva.gov 15:21:03

This is a good time to sit back and follow the directions on the screen. Option 1: Voice mail or U.S. Postal Service Registration is probably the most convenient at this point. When I registered on this free-netxe "free-net"\$, it took about two weeks for them to get my account set up. I passed the time by exploring the free-net on a “guest” account, and I was able to find some good stuff.

If you’re using a Windowsxe "Windows"\$ 3.1 icon for Telnetxe "Telnet"\$, it is possible to “edit mark” and “edit copy” sections of the document you are scrolling through. You can then paste them to your clipboard or notepad and print the document. In this case this might be quicker than waiting on the US Postal Service to deliver your registration form. It’s also possible to copy from the clipboard, notepad, or another word processor to the Telnet window; this will make it a lot easier to write e-mail.

Once you’ve got notification of your account back in the mail, you will be ready to start managing your own e-mail box.

### 3.3.2 Sending e-mail

The e-mail process at the Lorain County Free-netxe "Lorain County Free-net"\$ is self-explanatory. The jump command is “go post”, and the “send e-mail” command is #2 on the menu.

You will be prompted for a destination address. E-mail addresses take the form of:

“name@domain”, or for example, “aa3396@freenet.lorain.oberlin.edu”

which means “send mail to box # aa3396 at freenet.lorain.oberlin.edu”. This is the mailing address. There are a great many types of domains, depending on the mail server that is handling.

E-mail addresses can also take the form of four numbers between 1 and 256, such as:

121.56.241.27

### 3.3.3 Common e-mail protocols and what you will need to know about them

Your e-mail server might have problems routing e-mail if the mailing address does not fall within the parameters it knows. The following are some of the more common parameters and what you can do to ensure that they get where you want them to go.

**Bitnet** addresses will usually appear in the form of:

*name@host.bitnet*

Try changing this form to:

*name%host@cunyvm.cuny.edu*

Cunyvm.cuny.edu is a Bitnet **Bitnet**-Internet gateway, or a machine which acts as an interpreter from Bitnet to Internet. Routing through this gateway places your e-mail in a form that Bitnet can understand.

**CompuServe** addresses follow this form:

*12345,678*

Change this to:

*12345.678@compuserve.com*

CompuServe **CompuServe**.com is another gateway, or interpreter.

**Sprintmail** addresses look like:

*"FIRSTNAME LASTNAME"/HOSTNAME/TELEMAIL/US*

Try changing this to:

*/PN=firstname lastname/O=hostname/ADMD=TELEMAIL/C=US/@sprint.com*

**gateway** **MCImail** addresses might look one of two ways:

*1234567*

or

*firstname lastname*

Whichever you have, address the mail to:

*1234567@mcimail.com*

or

*firstname\_lastname@mcimail.com*

### **3.4 Securing your e-mail**

If you have information of a sensitive nature that you need to transmit to someone electronically, are you stuck? Not at all. While it is possible for unauthorized users to intercept e-mail transmissions, it is also possible for the sender to encrypt e-mail so that it can't be read if it's intercepted.

"Pretty Good Privacy" is a military grade encryption program which is available on the Internet for free downloading. The encryption technology relies on 150-digit prime number factoring, which is tech-ese for an algorithm so hellishly complex that it's practically impossible to descramble. The program is used much like a compression program called PKZip. You simply tell the program to encrypt or decrypt a text file. If you're encrypting so you can send e-mail, the program asks for you for a keyword on which it will base the encryption algorithm. If you're decrypting after you've received e-mail, the program asks you for the keyword -- and if you don't have it the program will not decrypt the text file.

This program is based on such sensitive technology that the federal government ruled that the author could not export the program based on federal International Traffic in Arms Regulations (ITAR), which specifically ban the export of some encryption algorithms. The author didn't actively export the program, but he or an associate placed the program on an anonymous FTP site so that anyone with Internet access could get a copy -- including those users from outside the United States. Was this exportation? Did the author break the law? Well, his favorite pastime is no longer writing encryption software. He is now busily preparing his legal defense. This has stirred up a new debate -- how can any one government try to control what is rightfully an international community?

PGP is available for anonymous FTP from:

*pc.usl.edu*

under the file name

pub/msdos/crypto/pgp23.zip

Section 4 shows how to use FTP to download files. You will also need a copy of PKZip in order to decompress this file once you've downloaded it. It has been compressed so that it will take less time to transmit than it would otherwise.

PGP comes with a good manual, so I'm not going to go into how to use it. I have tested it, however. I encrypted a text file and then tried to open the file with Word 6. Not only couldn't I open the file, but my entire system crashed. I was impressed.

### ***3.5 A quick word about face characters ("smileys" or whatever else you'll see them called)***

Even in the most stuffy and academic of places on the Internet you will occasionally run into smileys like:

: )

and so on. Read sideways, you can see a smiley face. Cute, right? They are at first, but having plowed through about ten million of these cute things, I can tell you that I wish their inventor had been struck by lightning.

; )

See? A wink. This character conveys sarcasm. Smileys came about as an attempt to convey emotional context through written media, which can be a difficult job. There are a whole lot of different ones out there...I'll leave you with the most bizarre one I've encountered so far.

: P\*\*\*\*\*O

That's a baby drooling into a puddle on the floor. I warned you.

## 4)Uploading/Downloading Files Through FTPxe "FTP"§

### 4.1 Introduction

FTPxe "FTP"§, which stands for File Transfer Protocolxe "File Transfer Protocol"§, is really where the phrase "Information Superhighwayxe "Information Superhighway"§" begins to take on its true meaning. There is a staggering amount of information available on the Internetxe "Internet"§ free for the taking (in Internet slang, "via anonymous ftp"). I have downloaded or have seen downloaded:

- 30 minute old weather satellite images
- Federal documents like NAFTA, the Clinton Healthcare plan, the Brady Bill, and the 1995 Federal Budget proposal
- Free software like an upgrade to Microsoft Word 6.0A (which cured a bunch of bugs in 6.0 that were making my life miserable), Mosaicxe "Mosaic"§, and Distinct
- Electronic magazines on subjects of interest such as the environment
- Maps of the surface of Venus
- .GIF images of Bill Clinton
- KGB archive files.

There is much, much more. Lists like this could go on forever; the best way to find what you want is again the Columbus method. Sail thataway!

When using FTPxe "FTP"§ you must be careful to remember that there are as many protocols in which information can be storedxe "protocols in which information can be stored"§ as there are types of information. You will run across the main ones like .BMP, .GIF, ASCIIxe "ASCII"§, .TXT, and ZIP. By the way, it is very helpful to keep a copy of PKZipxe "PKZip"§ on your computer...you will probably be using it a lot.

### 4.2 Downloading files through PC DOSxe "DOS"§ FTPxe "FTP"§:

#### 4.2.1 Connecting to a remote machine:

At the c:\pctcp prompt type

```
ftp remote-machine-name
```

where remote-machine-name is the machine you're trying to link up to. If you work for TVA, it will always be "gwinetxe "gwinet"§". If you were to enter "ftp gwinet", you would see:

```
C:\PCTCPxe "PCTCP"§>ftp gwinetxe "gwinet"§
FTPxe "FTP"§ Software PC/TCP File Transfer Program Version 2.2 02/25/93 18:05
Copyright (c) 1986-1993 by FTPxe "FTP"§ Software, Inc. All rights reserved.
FTPxe "FTP"§ Trying...Open
220 Secure Gateway FTPxe "FTP"§ server (Version 5.60) ready.
Userid for logging in on gwinetxe "gwinet"§.cha.tva.gov?
```

At this point you will need to enter the address of the computer you are trying to log on to. In this case it might be "ftp.fedworld.gov", which is the address of "Fedworldxe "Fedworld"§", the federal

government's repository for files like NAFTA and the Health Care Act. You will need to enter:

```
anonymous@ftp.fedworld.gov
```

which means that you are trying to anonymously log into Fedworld's machine. You will then see:

```
331 Anonymous Login OK, send id as password.
Password for logging in as anonymous@ftp.fedworld.gov on gwinetxe "gwinet"$cha.tva.gov?
```

The computer is asking for some kind of ID which will allow Fedworldxe "Fedworld"\$ administrators to contact you if necessary. You can enter your Internetxe "Internet"\$ address, your name, your telephone number, et cetera. Logging on with gibberish is possible, but I don't recommend it. After you enter your ID, ftp will return:

```
You are currently logged into FTPxe "FTP"$ server FEDWORLD, as user ANONYMOUS.
Your full login name is Anonymous (FTPxe "FTP"$).
```

```
The date is Mon Mar 21, 1994, and the time is 10:25:19.
Your access is Readonly.
```

```
If you enter the directory MAIN you will find the file LIBS. This file
is a listing of all directories and there contents. Each directory has
a file called FILES that lists the files, file sizes and file descriptions
within that directory. If you have any problems please call the Fedworldxe "Fedworld"$
help desk
```

```
***** FedWorld help desk number 703-487-4608 *****
***** Connect to FedWorld at 703-321-8020 *****
***** Connect via Internetxe "Internet"$ at FEDWORLD.GOV
*****
***** Connect via IP address 192.239.92.201 *****
```

```
The maximum connect time limit is 20 minutes, with 20
minutes remaining. The maximum idle time is 4.
```

```
=====
```

```
ftp:gwinetxe "gwinet"$cha.tva.gov>
```

The "ftp:gwinetxe "gwinet"\$cha.tva.gov" prompt is much like a c: prompt on your hard drive, except that you are now logged in to the remote machine's hard drive, after a manner of speaking.

#### 4.2.2 Browsing through a remote machine's files

It's possible to browse through a remote machine's files almost exactly as you would browse through your own machine's hard drive. Entering

```
dir
```

will return a directory of the remote machine you are connected with. In the case of Fedworldxe "Fedworld"\$, this would return something like:

```
512 Mar 4 94 08:29 commerce
```

```

512 Mar  4 94 08:31  ctn
512 Mar  4 94 08:31  gatewayxe "gateway"$
512 Mar  2 94 10:22  hlthact
512 Mar  2 94 10:22  hlthrpt
512 Mar  3 94 15:30  images
1638 Feb 28 94 17:24  intro.ftp
512 Mar 20 94 03:50  jobs
512 Mar 20 94 03:53  main
512 Mar 10 94 11:35  media
512 Mar 17 94 08:50  misc
512 Mar  7 94 03:37  modil
512 Mar  2 94 10:22  nafta
512 Mar  2 94 10:22  nii
512 Mar 20 94 10:59  npr
512 Mar 17 94 08:50  ntis
512 Mar  4 94 08:31  ota-pres
512 Mar 16 94 17:03  patent
512 Mar 20 94 15:27  pbsrch
512 Mar 18 94 03:38  results
512 Mar 20 94 19:47  sat-imgs
512 Mar 21 94 09:04  w-house

```

This would be on the right side of the screen, while some information used by the Fedworldxe "Fedworld"\$ administrators will appear on the left side. The names in the right-hand column are the names of the directories through which you can browse. The command:

```
dir media
```

will return a directory of the directories and files contained in the "media" directory. The bottom part of list would resemble:

```

2460 Feb 10 93 09:58  ta311.txt
1933 Feb 17 93 11:01  ta312.txt
1977 Feb 25 93 13:44  ta313.txt
1950 Mar 29 93 16:45  ta316.txt
1615 Apr  9 93 13:00  ta317.txt
1440 Aug  6 93 13:56  ta318.txt
2226 Jun 17 93 16:10  ta319.txt
2479 Jun 17 93 16:13  ta320.txt
1834 Jun 17 93 16:19  ta323.txt
2272 Jul 23 93 11:46  ta324.txt
1633 Jul 23 93 11:46  ta325.txt
1831 Jul 19 93 18:06  ta326.txt
1721 Jul 19 93 18:06  ta329.txt
1887 Jul 19 93 18:06  ta330.txt
2086 Aug 10 93 15:35  ta331.txt
2269 Jul 19 93 18:09  ta332.txt
4484 Nov 29 93 05:50  ta333.txt
4894 Nov 29 93 05:51  ta334.txt
3688 Nov 29 93 05:46  ta401.txt
1995 Nov 29 93 05:48  ta402.txt
2285 Nov  3 93 19:56  ta404.txt

```



5633 Mar 20 94 03:43 topfiles

This is a partial list of the files available in this directory. Incidentally, using the “ctrl-s” keystroke combination will stop the screen scrolling so that you get a chance to read the files at the top of the list as well. Pressing “enter” will then continue the scrolling.

Browsing can be a complicated thing: directories contain directories which contain directories which...you get the picture. A command you might try if you want to exhaustively search all the directories of a remote machine is

```
dir -1R
```

which lists all directories, then all directories in those directories, and so on and on. This command will only work if the computer into which you’ve logged runs UNIXe "UNIX"\$.

Most databases like this will contain a file called “index”, “contents”, or “readme”. These files are usually plain English indexes to the files contained in the same directory as the index file. In the next section, we’ll download and read one of those index files.

#### 4.2.3 Downloading and uploading files:

The get and put commands allow you to download, or get, and upload, or put files. When you’re logged on to a remote machine anonymously, you will generally not be allowed to upload files, although you’ll be allowed to download files for as long as the machine will allow you to remain logged in. Most anonymous ftp sites do set time limits.

In order to download the index file to the media directory at Fedworldxe "Fedworld"\$, at the ftp:gwinetxe "gwinet"\$cha.tva.gov prompt you would enter:

```
get directory/filename
```

where directory/filename is the directory location and filename of what you are trying to download. In our example the command you would enter would be:

```
get media/index
```

Fedworldxe "Fedworld"\$ would return:

```
local file (default index):
```

You are being asked for the location you would like to download the file to. Anywhere on your hard drive or on a floppy drive is acceptable. I keep a special directory on my c: drive which I use expressly for downloading: it’s called c:\internet. If you had a directory with this name on your hard drive, you would enter:

```
c:\internet\index
```

And the downloading would commence. This file is relatively small, so in a few seconds you would see:

```
Transferred 11119 bytes in 5 seconds (17790 bits/sec, 2223 bytes/sec)
226 Transfer complete
ftp:gwinetxe "gwinet"$cha.tva.gov>
```

You now have the file "index" stored on your hard drive in the location where you placed it. If you'd like to read the file, log out of Fedworldxe "Fedworld"\$ by entering:

quit

and you will find yourself back at the c:\pctcp prompt. You can then open your file using your favorite word processor, the DOSxe "DOS"\$ editor, or the type command. When you open the file it should resemble:

INDEX FOR LIB MEDIA NTIS media announcements (See bulletin) Page 1

Keyword	Filename	Description
acid	IBULLG.	Acid Rain Data Systems
aids	HBULLV.	AIDS Prevention in Dental Offices
banks	HBULLQ.	Recommendations for Safer Banks
broadcast	IBULLS.	Foreign Broadcast Information Service
business	IBULLR.	Polymer Composites for Small Business
canada	HBULLZ.	US/Canada SIC Code Index
cases	HBULLC.	Tracking EPA Civil Cases
catalog	HBULLS.	Catalog of Federal Technologies
catalog	IBULLN.	Catalog to NIST publications
catalog	IBULLO.	Catalog Lists 1,000 Govt Inventions
catalog	IBULLP.	DoD Library Cataloges on CD-ROM
cia	HBULLN.	CIA Atlas of Eastern Europe

And so on and on. I haven't reproduced the entire list here because it would probably run on for several pages. You now know what files exist in the media directory in Fedworldxe "Fedworld"\$ . If you repeat the ftp process and download one of these files, you will be able to use it at your desktop from your hard drive.

"Putting" a file is more or less the same. Entering:

put *directory\filename*

uploads a file to the remote machine with which you are communicating.

It is important to note that FTP requires the use of slashes:

/

as opposed to backslashes (which are common DOS parlance):

\

A subtle difference, but the use of backslashes in file names will cause error messages.

4.2.4 Differences between binaryxe "binary"\$ (program) and ASCIIxe "ASCII"\$ (text) files, and how to make FTPxe "FTP"\$ download/upload them correctly:

FTPxe "FTP"\$ assumes that you are transferring ASCIIxe "ASCII"\$ files unless you tell it differently. ASCII files are based on a standard set of characters, which will not change much from system to system. If when attempting to run or read a file you have just downloaded you see a message that says something like "unable to understand this file" or "file type error", et cetera, you have probably downloaded the file in the wrong format, although it is possible that you have correctly downloaded a file that your machine simply cannot understand, like a MacIntosh file.

Binary files are in "machine language" and are generally program files, although they may be graphics, spreadsheets, et cetera. In order to download a binaryxe "binary"\$ file in our Fedworldxe "Fedworld"\$ example, at the ftp:gwinetxe "gwinet"\$cha.tva.gov> prompt enter:

```
binaryxe "binary"$
```

The machine will respond:

```
Type set to I, binaryxe "binary"$ transfer mode
```

It is now ready to transfer a binaryxe "binary"\$ file. To download one you would enter:

```
get directory\filename
```

where *directory/filename* is the directory location and filename of the file you are trying to download, and you will begin the now-familiar FTPxe "FTP"\$ process. When you are ready to transfer another ASCIIxe "ASCII"\$ file, enter

```
ascii
```

and the machine will respond:

```
Type set to A, ASCIIxe "ASCII"$ transfer mode
```

You are back to square 1. At this point you can continue to browse and download as you wish.

Common file formats and the protocols you should use to up/download them include:

text files	ASCIIxe "ASCII"\$
bitmaps, gif files, and other graphics	binaryxe "binary"\$
.exe files	binaryxe "binary"\$
.zip and other compressed files	binaryxe "binary"\$
program source code	ASCIIxe "ASCII"\$

Remember that it's good to get familiar with PKZipxe "PKZip"\$ before you do too much downloading, because you are probably going to need it, especially when you start downloading large programs.

#### 4.2.5 Common FTPxe "FTP"\$ commands

If you enter:

help

at the c:\pctcp\ftp prompt, FTPxe "FTP"\$ will return the following list:

Available commands are:

```
!  ?  acct append ascii binaryxe "binary"$ bye  cd  debug delete
dir  drive exit fcd fdir fpwd get  help  iget image
iput lcd ldir lmkdir local login lpwd ls  mdelete mget
mkdir mput option parent passive put  pwd  quit quote rename
retrieve rmdir send server show stat store take tenex
tget tput type user verbose version
```

These are some more advanced FTPxe "FTP"\$ commands, and I'll go through the most common ones briefly here.

*acct information*-- a function which is sometimes necessary for giving additional account or security information  
*ascii* -- enter ASCIIxe "ASCII"\$ transfer mode, as discussed above  
*bye* -- log off  
*cd remote-directory* -- just as in DOSxe "DOS"\$, a command to change directories  
*delete filename* -- same as the DOSxe "DOS"\$ command; wipe out a file  
*dir file destination* -- as discussed above, show the contents of the specified directory  
*exit* -- quit  
*get* -- download a file  
*help command* -- gets information about a specific command  
*lcd directory* -- changes the default directory on your local machine to the named directory  
*lmkdir new directory name* -- makes a new directory on your local drive  
*mdelete file-list* -- deletes multiple files from the remote machine. DOSxe "DOS"\$ "\*" type wildcards may be used.  
*mget file-list* -- downloads multiple files from the remote machine. DOSxe "DOS"\$ "\*" type wildcards may be used.  
*mput file-list* -- uploads multiple files to the remote machine. DOSxe "DOS"\$ "\*" type wildcards may be used.  
*put file* -- uploads single files to the remote machine.  
*pwd* -- prints the name of the current remote directory  
*quit* -- closes open connections and shuts down FTPxe "FTP"\$  
*rename* -- changes the name of a selected file

Generally, publicly accessible files will be available in a “pub” directory on whatever server you’re browsing through. Most servers are good about having “index” or “readme” files which will spell out file locations and other important server information.

### **4.3 Downloading files through Microsoft Windowsxe "Windows"§ using WFTPxe "WFTP"§:**

WFTPxe "WFTP"§ is a snap. If you have a wftp.exe file in your PCTCPxe "PCTCP"§ directory you’ll be downloading files in less than two minutes. If the icon shows up on your desktop somewhere, double click to open it. If not, create a new program item with the name “WFTP” and the command line “c:\pctcp\wftp.exe”. Double click on the icon when it appears. You’ll get a program window which will resemble your file manager.

WFTPxe "WFTP"§ has four menu items: Session, settings, commands, and help.

The Session menu is where you either establish new connections, save current connections, or reopen old connections. A “connection” or a “session” includes a table of vital information about a computer which you wish to log in to. Once this table is set up, you can tell your computer to connect with the remote computer and communication will begin automatically. Choose “new” from this menu and you will be prompted to fill in the following blanks (and for this example we’ll also be using Fedworldxe "Fedworld"§, just like above):

Host name or address:

Username:

Password:

Account:

Port Number:

You’ll want to enter the following (disregarding the words in italics and the parenthetical statements):

<i>Host name or address:</i>	<i>gwinetxe "gwinet"§</i>	(the TVA gatewayxe "gateway"§ computer)
<i>Username:</i>	<i>username@host</i>	(in this case, anonymous@ftp.fedworld.gov)
<i>Password:</i>	<i>your password</i>	(here, whatever your contact information is, as discussed above)
<i>Account:</i>	<i>your account #</i>	(You usually won’t need one)
<i>Port Number:</i>	<i>21</i>	(WFTPxe "WFTP"§ should fill this blank in automatically; if not a good guess is 21)

When you get this data entered, you will be able to connect with the remote computer. Hitting the “connect” button should accomplish this.

When you are connected, you will see that you have two columns of file information. The one on the left, labeled “local system” is your file directory, and will most likely be on your c: drive. The one on the right, labeled “remote directory” is the file directory of the remote computer. Above the local directory window will be a command status window, which should now read “ready for new remote command”. Between the local and remote directory windows should be a mode box, with buttons for ASCIIxe "ASCII"§, binaryxe "binary"§, and local 8 transfer.

You can browse through the remote directory simply by pointing and clicking your mouse. To enter a subdirectory simply double click on it. To return to the previous directory, double click on the two dots

“.” which will appear above the list of directories and files within the current directory.

When you have found a file you are ready to transfer, single click on it. The copy arrow will appear between the two directory windows in black. It should be pointing away from the file you just clicked on, towards the location into which you wish to copy the file. You also have some other options which are pretty run of the mill, like delete, rename, show, and help.

This is a good point to double check the mode box: are you trying to transfer an ASCII file, a binary file, or a local 8 file (whatever that is...I've never used it). Then clicking the copy box will bring up a dialogue box asking you to name the destination file.

You might enter:

```
c:\internet\nafta.txt
```

just for example. Copy the file to anywhere you want and name it whatever you want -- as long as your chosen name corresponds to DOS rules.

The settings menu contains the functions which define the display of the information in the local and remote file directory boxes. These menu items are similar to the ones you have in your file manager, and I won't go into them in any detail. The only two which are roughly different are general and host type.

“General” brings up the dialogue box we saw earlier which lists the vital information about the remote location. “Host type” allows you to target specific types of remote operating systems: UNIX, VMS, DOS, OS/2, et cetera. “Plain” will usually take you where you want to go.

The commands menu duplicates some commands of your file manager. Within WFTP you have the ability to change and create local and remote directories. The commands menu also includes the “start remote login sequence” command, which duplicates the function of the “connect” button in the vital information box discussed earlier.

When you are ready to terminate a session, choose “save” from the session menu. You will be allowed to save the “vital information” that you have compiled under a name you create. Interestingly, you're not limited to the seven-character name demanded by DOS. I usually save a session by the name of the remote computer; I've got ftp.fedworld.gov saved as “Fedworld”. The next time you're ready to log in to a computer you've connected with in the past, choose “open” and double click on the appropriate name. The connection with that computer will occur automatically.

#### **4.4 Downloading files through the WANG mainframexe "mainframe"§ using FTPxe "FTP"§:**

In section 2.3.2 we looked at using the Supersession pick on the Wang mainframexe "mainframe"§ menu to access Telnet. It is also possible to use the mainframe to transfer files from a remote machine to a TVA machine. However, you apparently need some kind of special permission to do so. Contact your local Wang administrator for details on how to get security clearance to use the TSOxe "TSO"§ mainframe pick.

From what I've heard, once you've satisfied the Wang's security requirements for entering the TSOxe "TSO"§ mainframexe "mainframe"§ pick, the process is exactly the same as it would be for a PC (as I've outlined above). The Wang should return a ready prompt. At the prompt, enter:

FTP GWINET

You will be connected to Gwinet, and will be prompted for a user ID. As in the PC FTP example given above, if you wished to contact Fedworld you would enter:

ANONYMOUS@FTP.FEDWORLD.GOV

and you would be connected. Use your Wang mailbox ID for the password when you are prompted for it, or if you haven't got that much patience use:

FIRSTINITIAL.LASTNAME@TVA.GOV

I would enter:

E.DITTO@TVA.GOV

You should then be ready for normal FTP operations, which will follow the above protocols. Again, I haven't tried this because I don't have the right clearance.

#### **4.5 TVA's FTP Sites**

TVA has two FTP sites. The first, at:

bbs.cha.tva.gov

is inside the firewall, and is available only to TVA users. This site is intended for "insider" information, general guides to the Internetxe "Internet"§, tips on Internet use, TVA Internet "netiquitte", file transfer between internal users, and so on.

The second, at:

info.tva.gov

is outside the firewall, and is open for read-only access to any user of the Internetxe "Internet"§ anywhere in the world.

This guide is now available on info.tva.gov. It is located in the pub/p\_e\_g directory. You'll find three files there:

readme.txt	A brief explanation of the files in the directory
p_e_g.doc	The guide in Microsoft Word for Windows 6.0 format
p_e_g.txt	The guide in DOS text format

This guide is not copyrighted, so help yourself.

#### ***4.6 ISxe "IS"§ tips for transferring files using a MacIntosh***

Information Servicesxe "Information Services"§ has published the following tips for transferring files through a MacIntosh. This is a direct quote from "Internetxe "Internet"§ Handbook".

**Step 1:** Using your mouse, point to the TCP Connect II icon and click the mouse button. A menu bar will be displayed at the top of the window.

**Step 2:** Using your mouse, point to the **FTP** option on the menu, press the mouse button, and drag the mouse down until you see the options available under **FTP**. Continuing to hold the mouse button down, point to **Connect** and then release the mouse button.

**Step 3:** The Open FTP Session window will be displayed. It will prompt you to enter a hostname, user name, and password. In the hostname box, type **gwinet**. Move down to the user name box and type the **user name**. Move down to the password box and type the **password**. The user name is usually **anonymous@zzz** where **zzz** is the name of the computer where the file resides. If you are accessing a public FTP site using the anonymous User ID, the Internetxe "Internet"§ etiquette recommends that you use the following as your password: **first initial.lastname@tva.gov**. An example of this is **b.yates@tva.gov**.

**Step 4:** The system will display the directory for your computer on the left side of the window and the directory for the computer where the file resides will be displayed on the right side of the window. Scroll through the directory and select the file that you want to transfer. Scroll through your directory and select where you want the file copied. Using the mouse, select the appropriate data format, ASCII or Image. Using the mouse, point to copy and press the button.

**Step 5:** The system will copy the file from its resident computer to your computer. It will notify you when the transfer is complete.

**Step 6:** Using the mouse, point to the button in the top left corner of the Terminal Connect window and double click. This will close the TCP Connect II window.



## 5)Glossary

### *Archie "Archie" §*

Archie is a sort of super-searching utility which looks for files through public servers on the Internet. Last I heard there were indexes of about 1,200 servers and 2.1 million files, so you would think you can find just about anything you want, wouldn't you?

Archie allows searches by keywords within the file titles or within the file descriptions. Archie will then return filenames which meet the criteria you have set, as well as the servers where those files are located.

There are eight Archie servers that I know of. These servers are telnet sites; simply telnet to one of the following addresses to access Archie. Some of these sites are used so heavily that their access is restricted during working hours, but if you telnet to one of these sites and it's shut down, it will list some other sites which also serve Archie that might be up and running.

```
archie.rutgers.edu
archie.sura.net (the best location for TVA users because of its proximity, but almost
always closed down during working hours)
archie.unl.edu (a good site to try during working hours)
archie.ans.net
archie.mcgill.ca
archie.au
archie.funet.fi
archie.doc.ic.ac.uk
```

After you have used Telnet to contact an Archie server, you will see something like:

```
SunOS UNIX (yog-sothoth.sura.net)
login:
```

Log in as:

```
archie
```

and a screen with a welcome message and a group of servers will come up. A partial list will resemble:

archie.th-darmstadt.de	130.83.22.60	(German Server)
archie.unipi.it	131.114.21.10	(Italian Server)
archie.univie.ac.at	131.130.1.23	(Austrian Server)
archie.unl.edu	129.93.1.14	(U. of Nebraska, Lincoln)
archie.uqam.ca	132.208.250.10	(Canadian Server)
archie.wide.ad.jp	133.4.3.6	(Japanese Server)

Client software should be supported at all of these sites.

```
archie>
```

Note that you have two addresses for each server: alphabetical and numerical. Archie is now ready to search its databases. Please also note that this is the welcome screen for the site at archie.sura.net. You may see other welcome screens at other sites, but Archie is essentially the same no matter what site you're

at. Entering:

```
prog filename
```

will allow you to begin searching for a file with a certain name, such as:

```
prog mosaic
```

Mosaic is a so-called “killer app” of the Internetxe "Internet"§, which is a graphic user interface much like Microsoft Windows. It allows use of menus, the mouse, and so on. For more information, see “killer apps” in this glossary. Mosaic is a very popular program, and will be located on a number of servers.

One thing you’ll want to do before beginning a search is enter the command:

```
set pager
```

This will cause Archie to display only one screen of information at a time, with pauses between screens. If you don’t use the pager command, Archie will scroll through every match without stopping, and you won’t have time to read most of the list if you find a lot of matches.

As Archie searches for files which meet the criteria you have set, it will display the number of servers it has searched and the percentage of the total number of servers it has access to that this represents. When Archie completes the search, it will display a list of servers which have the file, such as:

```
Host chalmers.se (129.16.1.1)
Last updated 07:37 3 Mar 1994

Location: /.gopher/pub/mac/mosaic/.resource
FILE  rwxrwxr-x    0 Feb 17 14:55  cth.mosaic.sea.hqx
```

Chalmers.se is the host server where Mosaic for the Macintosh can be found. It will be available for anonymous FTP at gopher/pub/mac/mosaic/resource.

It is also possible to search Archie with descriptions. Entering:

```
whatis description
```

where *description* might be “economics” for any economics information, would prompt an appropriate search by Archie. The result would be:

```
RFC1216      Richard, P.; Kynikos, P. Gigabit network economics and paradigm
              shifts. 1991 April 1; 4p.
```

RFC1216 is a filename which contains the appropriate information. To find the location of this file, do a program search as illustrated above. You’ll wind up finding RFC1216 at:

```
Host iggy.gw.vitalink.com (132.240.4.11)
```

last updated 17:27 26 Apr 1994

Location: /pub/RFC

FILE rw-r--r-- 7904 May 13 1991 RFC1216.TXT

The help command can be very useful. Entering:

help

at the Archie command prompt will return a list of useful commands, which will include:

list - displays a list of anonymous FTP sites which are indexed in the Archie server

mail *address* - sends the results of the Archie search to a desired e-mail address

servers - returns a list of all known Archie servers

site *computer* - lists all the files available for FTP at *computer*

**xe "Finger"\$**

**Free-nets**

Free-nets are server computers which, for whatever reasons, allow free access to the Internetxe "Internet"\$ to most, if not all comers. Most free-netsxe "free-nets"\$ are set up to provide networking access to urban communities. You will usually find that free-nets are organized similar to small towns. There will be "community centers", "commerce centers", "culture centers", and so on. There are many popular free-nets (whose addresses are given in section 8).

#### Advantages of free-netsxe "free-nets"\$

-They usually don't cost the user a dime. Most will ask for some donation at the time of registration, but they will be careful to say that donations are recommended but voluntary. This is left up to the user.

-They provide some excellent services: e-mail privileges, confidential discussion groups, access to library catalogs, access to UPI news wire services, free e-mail Q&A from doctors, lawyers, and psychologists, and many other kinds of things.

#### Disadvantages of free-netsxe "free-nets"\$:

-Their services are really limited. This may sound incredible but it's true. Most do not have access to the whole Internetxe "Internet"\$. For example, the Lorain County Free-netxe "Lorain County Free-net"\$ will not allow you direct access to USENETxe "USENET"\$ news groups. USENET, which is the international forum for over 4000 different on-line discussion groups, contains many groups such as alt.sex which are considered obscene by the free-netxe "free-net"\$ administrators, so the administrators have blocked user access. It's like a family theater. But the administrators have really thrown the baby out with the bathwater. There are many, many wholesome discussion groups which would be useful to users-on every subject from tax law to DOSxe "DOS"\$ applications.

Interestingly, there is a back door into USENETxe "USENET"\$ from the Lorain County Free-netxe "Lorain County Free-net"\$. Visiting the communications center will allow the user to telnet to sundry sites. Choose the University of Arizona Gopherxe "Gopher"\$ and do some digging, and you will

eventually find the USENET server. You will not be able to post your own articles to USENET through the gopher "gopher"\$, but you will be able to read what's being discussed.

But you will be able to post to USENETxe "USENET"\$ via e-mail. See USENET in this section for details.

### **FTP**

FTPxe "FTP"\$, which stands for File Transfer Protocolxe "File Transfer Protocol"\$, is really where the phrase "Information Superhighwayxe "Information Superhighway"\$" begins to take on its true meaning. FTP is the software by which files may be uploaded or downloaded from computer to computer. There is a staggering amount of information available on the Internetxe "Internet"\$ free for the taking (in Internet slang, "via anonymous ftp"). For complete information on FTP and its uses, see section 4.xe "FTP"\$

### **Gophers**

It's easier to learn about gophers from experimentation than from reading text definitions, so you should really jump in and explore at some point.

A gopherxe "gopher"\$ is a computer which acts like a huge filing cabinet. Open one drawer and you will have a choice of files. Within each of those files will be subfiles, which in turn will contain sub-subfiles. By borrowing through this system, you will probably find the resource that you want. Unlike an ordinary filing cabinet, however, a gopher will allow you to access the files across the street, in Washington, D.C., or in London. The process of finding your resource will be pretty intuitive, and gophers remove the need to remember convoluted place names and software protocols. The gopher handles all of that for you.

Gophers usually allow you to perform keyword searches, much like a CD ROM magazine article searcher in a library might do. When you pick keyword search from a gopherxe "gopher"\$ menu, you will be prompted for a keyword or phrase (and if you're familiar with Boolean logic operators, you may get to use those as well). Enter something you're interested in, and the gopher will tell you what system resources match your query. Remember that although one gopher doesn't have information about your subject, many others may. Gopherxe "Gopher"\$ research is sometimes best performed via the Columbus method...sail in one direction and hope you run into something.

The Wangxe "Wang"\$ system is a mini-gopherxe "gopher"\$. After you've turned the machine on and logged in, you have a main menu of functions. Picking any one of these will lead you to sub-functions, and eventually you will be able to get your job done.

Gophers usually reside at major universities. I tend to use the one at UT Knoxville (telnet library.utk.edu) the most because of the cost issues involved, although the gophers at the University of Minnesota (telnet consultant.micro.umn.edu) and at the University of Indiana (gopherxe "gopher"\$uiuc.edu) are popular. Most gophers have an "other Internetxe "Internet"\$ services" or "Other gopher servers" pick which will allow you to move from gopher to gopher. As has been discussed, you can find your way just about anywhere from one starting point...the maze of gophers is so dense that it's possible to spend a lifetime just exploring.

A word of warning: most gophers can run very slowly depending on the system load at the time. Gophers like the University of Minnesota's are very heavily used and may get bogged down. The way the systems will deal with overloads is simply by blocking off services which you may want to access. They hope you'll get discouraged and go somewhere else. Surf at your own risk.

Common gopherxe "gopher"\$ commands (as listed by the University of Tennessee "University of Tennessee"\$ gopher) are:

Arrow keys and navigationxe "navigation:in gophers"\$

Up -- Move to previous line.

Down -- Move to next line.

Right Return -- Enter/Display current item.

Left, u -- "Exit" current item/Go up a level.

>, +, Pgdown, space -- View next page.

<, -, Pgup, b -- View previous page.

0-9 -- Go to a specific line.

M -- Go back to the main menu.

Bookmarksxe "Bookmarks:in gophers"\$

a -- Add current item to the bookmark list.

A -- Add current directory/search to bookmark list.

V -- View bookmark list.

D -- Delete a bookmark/directory entry.

Other commands

s -- Save current item to a file.

D -- Download a file.

Q -- Quit with prompt.

Q -- Quit unconditionally.

= -- Display Technical information about current item.

^ -- Display Technical information about current directory

o -- Open a new gopherxe "gopher"\$ server

O -- Change Options

f -- Connect to an anonymous FTPxe "FTP"\$ host

/ -- Search for an item in the menu.

N -- Find next search item.

!, \$ -- Shell Escape (Unix) or Spawn subprocess (VMSxe "VMS"\$)

## ***Gwinetxe "Gwinet"\$***

Gwinet is TVA's "gateway" through which all communication with the Internetxe "Internet"\$ goes. The computer itself is a Sun Microsystems machine and is physically located in Chattanooga.

Any Telnet session must begin with the command:

```
tn gwinet
xe "OLIS"$
```

## ***Mailing listsxe "Mailing lists"\$***

Like USENETxe "USENET"\$, mailing listsxe "mailing lists"\$ are special interest discussion groups.

Unlike USENET, which is a central point to which you must go for messages, a mailing list is basically a

central point from which message are sent to you. A mailing list will consist of a mailbox to which interested parties send mail on a certain subject. At that mailbox a distribution list is kept, so that any mail sent to the central box is routed to every person on that distribution list. Any member can send mail to the whole group.

There are two different ways to subscribe to mailing lists. If a person is taking care of the list, sending a subscription request e-mail message in the following form should work:

*list-request@host*

or, for example:

*tcp-ip-request@nic.ddn.mil*

for a discussion group about TCPIP hosted at nic.ddn.mil.

If a computer is maintaining the mailing list, sending to:

*mailserver@host*

or, for example:

*listserv@nusvm.bitnet*

should take care of your request.

If a computer is maintaining the mailing list, you must include

subscribe *listname*

in the body of the e-mail that you send. If a person is maintaining the list, make sure you get the point across that you want to join the list.

When you have joined a mailing list, you will automatically receive any messages which are posted to that list. If you wish to post a message, simply send e-mail to the address of the list, like:

*econ-dev@csn.org*

for posting messages to the economic development mailing list which is maintained at csn.org.

There are a few commonly accepted guidelines to posting to mailing lists which you will want to be aware of.

- Make sure your postings are appropriate to the list.
- Consider whether or not your postings should be sent to the entire list or just to one of its members.
- Do not send announcements regarding major news events -- by the time they get posted they will be old news.
- Don't include graphics or formatting because these will not show up on many machines.

A good source of information about the specifics of mailing lists is *"mailing lists"* as well as a good index of lists is *Internet "Internet": Mailing Lists*, published by SRI International. This book contains addresses and descriptions of several hundred lists on subjects from cogeneration to the Sigma Nu fraternity.

#### *Mosaic "Mosaic" and other "killer apps" "killer apps"*

"Killer apps" tend to be Microsoft Windows-compatible or other graphic user interface programs which make Internet "Internet" use as painless as possible. Mosaic and Distinct are both examples of these programs. They generally incorporate Telnet, FTP, E-mail, graphic viewing, and so on all into one package.

Gwinet does not allow the use of these "killer apps" to access the Internet "Internet". As discussed elsewhere in this guide, the "firewall" security is quite strong to prevent unauthorized access, and these easy applications tend to be too "trusting" for the firewall.

I've been told by a Gwinet administrator that Mosaic will soon be usable by TVA employees. Mosaic is available for anonymous FTP at:

csuvax1.murdoc.edu.au

under the file name:

pub\pc\windows\mosaic\wmos20a1.zip

Be sure that you have PKZip "PKZip" so that you'll be able to decompress this file, and be sure that you read the accompanying "readme.now" file.

#### *TCPIP "TCPIP"/PCTCP "PCTCP"*

Perhaps the easiest of the on-ramps "on-ramps" is the Windows "Windows"/TCPIP "TCPIP" interface which is available to TVA employees. Mine was installed on my computer when my LAN administrator installed Oracle's Data Browser "Data Browser" on my hard drive. If you have a PCTCP "PCTCP" directory on your hard drive, it's a good bet that you already have access to the software you need to access the Internet "Internet" and begin communicating freely around the world.

TCPIP "TCPIP" stands for Transmission Control Protocol/Internet "Internet" Protocol. Transmission Control Protocol's job is to break down the information you want to transmit (whether send or receive) into chunks which are manageable for the network protocol to transfer and then reassemble the chunks once they have been transmitted. Internet Protocol's job is to link computers together in order to

transmit information. These two software packages work behind the scenes to ensure that your message, job, game, et cetera gets accurately routed to the correct recipient.

PCTCPxe "PCTCP"§ stands for PC Transmission Control Protocol, and refers to the PC DOSxe "DOS"§ version of TCPIPxe "TCPIP"§. There are versions of TCPIP for every conceivable type of computer: Macs, UNIXxe "UNIX"§, PC, and so on. There are currently two main versions of PCTCP in use at TVA: 2.2 and 2.3. PCTCP 2.3 is a newer version which includes more Windows functions than 2.2. I wrote this guide while using PCTCP 2.2, so I have not had the chance to include these new functions yet.

There are two main software items for Internetxe "Internet"§ communication which will be contained in your PCTCPxe "PCTCP"§ directory: Telnetxe "Telnet"§ (tn.exe) and FTPxe "FTP"§ (ftp.exe). You may also have Windows interfaces like Windows FTP (wftp.exe) and Windows Telnet (wtn.exe CHECK FILENAME).

Last I heard, TCPIPxe "TCPIP"§ software cost about \$60 new, or \$20 for an upgrade.

### ***Telnetxe "Telnet"§***

If you want to call someone, you need a phone. Telnetxe "Telnet"§ acts as the phone when you are ready to dial the Internetxe "Internet"§. It will let you log in to other computers. PC users will find Telnet in their PCTCPxe "PCTCP"§ directories, or perhaps as an icon on their desktops in Windowsxe "Windows"§, and Wangxe "Wang"§ users will find Telnet under the supersessionxe "supersession"§ pick (SS) on the TVA mainframexe "mainframe"§.

To create a Telnetxe "Telnet"§ icon on your desktop in Windowsxe "Windows"§, make a new program item called "TN" with the command line "c:\pctcp\tn.exe". That should do it. If you make the command line "c:\pctcp\tn.exe gwinetxe "gwinet"§", you'll be able to skip the hostname dialog box and proceed directly to Telnet.

A more complete guide to Telnet can be found in section 2.3

### ***USENETxe "USENET"§***

USENETxe "USENET"§ is perhaps the most fascinating resource on the Internetxe "Internet"§. More than 3,000,000 users post messages to over 4,000 discussion groups on every imaginable subject (and I mean that quite literally...watch your step).

#### Identifying a discussion group:

A discussion group's title will give a good clue as to its nature. For example, sci.econ.research is the name of an economic research forum.

"sci" is the major category into which the group falls: science

"econ" is the sub-category: economics

"research" is the specific area of discussion, although not all discussion will be about research. There is noise on the Internetxe "Internet"§, just like anywhere else.

There are seven major categories of USENETxe "USENET"§ discussion groups:

**comp** --- computer science and kindred topics

**news** --- USENETxe "USENET"§ news network and software topics



**rec** --- recreational activities (hobbies, pastimes, art, music, etc.)  
**sci** --- scientific research and activities. This group is very broad and includes the social sciences, the hard sciences, and the fuzzy sciences (cryogenics and so on).  
**soc** --- political and societal issues  
**talk** - forums for debate on various topics, usually controversial or tabloid  
**misc** --- the catch-all

There are also some "local" groups which technically aren't part of USENETxe "USENET"§ but which are generally included anywhere USENET is. The distinction between USENET and non-USENET discussion groups is probably too subtle to worry about.

**alt** --- "alternative" viewpoints. A word of warning: while you can be a baaaaad boy in this area, there are some good things here like alt.gopherxe "gopher"§, a group for the discussion of gopher management. Groups like that may make their way here because this is the easiest area in which to establish a new group. Swim at your own risk.

**bionet** --- discussion of biology and related issues

**bit** --- forums for Bitnetxe "**Bitnet**"§ listserv (and don't ask me what this is...I haven't got a clue)

**biz** --- business-related discussions. This is one of the few areas on the Internetxe "Internet"§ where advertising is allowed.

**de** --- discussion groups in German

**fj** --- discussion groups in Japanese

**ieee** --- IEEE discussions

**gnu** --- a group for discussion of the Free Software Foundation and its GNY project. Again, I haven't a clue.

**k12** --- discussion for teachers and students from grades K - 12

**u3b** --- discussion of the AT&T 3b computer system

**vmsnet** --- discussion of the VAX/VMSxe "VMS"§ operating system and Decnet

You may or may not have access to these groups, depending on the source for USENETxe "USENET"§ that you're accessing. Most sources will have the seven major groups outlined above.

#### Accessing discussion groups: how to read what's there

The University of Arizona Gopher no longer offers USENETxe "USENET"§ news. Previous editions of this guide recommend that gopher as the best source of USENET, but since those editions came out, the system operators at UA have removed that service.

Currently the best way to get to USENETxe "USENET"§ in TVA is through the Louisiana Tech gopher, which for now you will have to reach through the University of Tennessee Gopher. The process is somewhat convoluted, but it is better than nothing.

How to get to USENETxe "USENET"\$ through the Lousiana Tech Gopher (via UTK)xe "Lorain County Free-net"\$ xe "gopher"\$:

It will first be necessary to telnet to the University of Tennessee gopher at:

library.utk.edu

by the process outlined in section 2.3.1: Telnet for PC users. One you're there, you will see the following menu screen:

Internetxe "Internet"\$ Gopher Information Client 2.0B pl9

Root gopher server: gopher.lib.utk.edu

1. Welcome to UTK Online Library Information System (OLIS)/
2. About UTK Libraries/
3. UTK Libraries Holdings/
4. Other Library Catalogs & Info Systems/
5. Electronic Books/
6. Electronic Journals/
7. Electronic Reference/
8. Information by Subject/
9. Other Internetxe "Internet"\$ Resources/
10. Other UTK Information/
11. VERONICA: Search the World of Gopher for Information/
12. What's New in OLIS.
13. Search the OLIS menus <?>

Press ? for Help, q to Quit

Page: 1/1

gwinet.cha.tva.gov 10:21:01

In order to get to USENETxe "USENET"\$, choose (in the following order):

9. Other Internetxe "Internet"\$ Resources/
2. All Gophers & Information Servers/
8. North America/
4. USA/
20. Louisiana/ [note that you can hit '+' to get to the next page of choices]
5. Louisiana Tech University
11. USENETxe "USENET"\$ News/

Each of these choices will lead you to other menus, and you may want to come back to some of these to explore. All Gophers and Information Servers is a very interesting place, because you can get to just about any place in the world.

Once you've arrived at the Lousiana Tech gopher, you'll see the following screen:

Internetxe "Internet"§ Gopher Information Client 2.0B pl9

### USENETxe "USENET"§ News

1. About USENETxe "USENET"§ News at Louisiana Tech.
2. Threaded (Overview)/
3. Unthreaded (Overview)/

Press ? for Help, q to Quit, u to go up a menu Page: 1/1  
gwinet.cha.tva.gov 10:28:57

USENETxe "USENET"§ is listed under picks 2 and 3. It really doesn't matter which you choose; both will refer you to a menu like this:

Internetxe "Internet"§ Gopher Information Client 2.0B pl9

### Unthreaded (Overview)

1. alt/
2. bionet/
3. bit/
4. comp/
5. misc/
6. news/
7. rec/
8. sci/
9. soc/
10. talk/

Press ? for Help, q to Quit, u to go up a menu Page: 1/1  
gwinet.cha.tva.gov 10:38:13

You can then choose one of the main groups, like sci, where you'll see:

Internetxe "Internet"§ Gopher Information Client 2.0B pl9

### sci

1. sci.aeronautics/
2. sci.aeronautics.airliners/
3. sci.agriculture/
4. sci.agriculture.beekeeping/
5. sci.answers/
6. sci.anthropology/
7. sci.anthropology.paleo/
8. sci.aquaria/
9. sci.archaeology/
10. sci.archaeology.mesoamerican/
11. sci.astro/
12. sci.astro.fits/
13. sci.astro.hubble/
14. sci.astro.planetarium/

- 15. sci.astro.research/
- 16. sci.bio/
- 17. sci.bio.ecology/
- 18. sci.bio.ethology/

Press ? for Help, q to Quit, u to go up a menu  
 gwinet.cha.tva.gov 10:44:10 Page: 1/7

This is the first page of discussion groups available under "sci". Note that there are seven pages. Choosing sci.bio.ecology would return:

Internetxe "Internet"\$ Gopher Information Client 2.0B pl9

sci.bio.ecology

- 1. JOB: Population Genetics (3273 bytes).
- 2. A Biologist's Guide (PostScript format) (2012 bytes).
- 3. RFD: sci.bio.ecophysiology (1223 bytes).
- 4. growth and sustainability (2154 bytes).

Press ? for Help, q to Quit, u to go up a menu  
 gwinet.cha.tva.gov 10:46:51 Page: 1/1

These are the subjects of the USENETxe "USENET"\$ items which are posted. Choosing growth and sustainability would lead us to a posting about, you guessed it, growth and sustainability.

USENETxe "USENET"\$ is like a haystack, but there are a great many needles. In section 8.6 I've listed some of the USENET groups that you might be immediately interested in. You will need to do some exploring on your own to find other groups which may be of interest.

You will not be able to post your own messages to USENETxe "USENET"\$ groups through the Louisiana Tech gopher. In order to accomplish that, you'll have to follow the process I outline below.

#### How to get to USENETxe "USENET"\$ through Launchpad

Launchpad is a site on the Internetxe "Internet"\$ which offers users more control over their USENETxe "USENET"\$ access. On Launchpad, you can set up a personal file (called .newsrsrc) which will screen specific USENET discussion groups for new postings, and will inform you when new postings occur. You can also post to USENET directly from Launchpad.

Launchpad's address is:

152.2.22.80

To set up a new user account, follow the directions on the screen. The process is self-explanatory. I'm not going to go into the mechanics of setting up your own .newsrsrc file because Launchpad can explain that process to you better than I can. Suffice it to say that the process is pretty complicated, and you have to set up the file after you already have a good idea which newsgroups you want constant access to. This might be a good place to go for USENETxe "USENET"\$ access after you've gotten more familiar with USENET through other locations.

Accessing discussion groups: how to post your own messages

Once you've read enough and you decide that you are ready to post a message to a newsgroup, you need go to the post office in the Lorain County Free-netxe "Lorain County Free-net"\$ (go post) or whatever other e-mail server that you're using and send e-mail. You will be sending to a computer which will take your e-mail and post it to the appropriate group for you.

If your groupname were sci.ecn.research, you would post your message to

sci-ecn-research@cs.utexas.edu  
or  
sci-ecn-research@pws.bull.com

Note that the dots in sci.ecn.research have been replaced with dashes. Your message will be posted to the discussion group you have chosen.

Discussion groups of possible interest:

Section 8.6 contains a table of USENETxe "USENET"\$ discussion groups which might be of interest.

***Veronica: Searching Gopherspace***

For some reason, characters from the "Archie" family of comics have been immortalized on the Internetxe "Internet"\$ . Archie, Veronica, and Jughead are all software packages which attempt to catalog Internet resources.

Veronica is a program which searches gopher menus for text matches. You could for example, have Veronica search for I think the best way to show you what Veronica is capable of is by showing you a sample session. Veronica is available on the University of Tennessee library gopher at:

library.utk.edu

See USENETxe "USENET"\$ in this section to check what the UTK startup screen looks like. Choose pick 11 to begin searching gophers with Veronica.

The Veronica start-up screen looks like:

Internetxe "Internet"§ Gopher Information Client 2.0B pl9

# VERONICA: Search the World of Gopher for Information

1. About VERONICA.
2. FAQ: Frequently-Asked Questions About Veronica.
3. How to Compose Veronica Queries.
4. Search Gopherspace (via CNIDR, North Carolina) <?>
5. Search Gopherspace (via Imperial College, United Kingdom) <?>
6. Search Gopherspace (via Manchester, UK) <?>
7. Search Gopherspace (via NYSERNet, New York) <?>
8. Search Gopherspace (via PSI, California) <?>
9. Search Gopherspace (via SUNET, Sweden) <?>
10. Search Gopherspace (via UNINETT/University of Bergen) <?>
11. Search Gopherspace (via University of Nevada at Reno) <?>
12. Search Gopherspace (via University of Pisa, Italy) <?>
13. Search gopherspace at University of Cologne <?>
14. Search gopherspace for GOPHER DIRECTORIES (NYSERNet) <?>
15. Search gopherspace for GOPHER DIRECTORIES (PSINet) <?>

Press ? for Help, q to Quit, u to go up a menu  
gwinet.cha.tva.gov 07:21:59

Page: 1/1

The first three menu items are must-reads. They will give you good information about the UTK Veronica server, about Veronica in general, and about the specifics of searching gophers through Veronica.

If you were interested in searching gophers for information about the economy, you might choose #4: Search Gopherspace (via NYSERNet, New York). In the middle of the screen, you would see:

```
+-----Search Gopherspace (via CNIDR, North Carolina)-----+
|
| Words to search for
|
|
|
|
| [Cancel: ^G] [Erase: ^U] [Accept: Enter]
|
+-----+
|
```

with a blinking cursor. You could then enter:

economy

and Veronica would begin searching. Assuming that you got a connection (because Veronica servers tend to be very busy and assuming that somewhere a gopher exists with the word “economy” in one of its menu items, you would eventually be rewarded with an appropriate list of gophers.

Veronica searches can be made more specific through the use of special conditions. For a list of these conditions, choose #3 on the Veronica menu at the UTK library gopher.

## ***The World-Wide Web (WWW) and Hypertextxe "Hypertext"§***

The WWW is a server based on Hypertext, which is a system of “linked words”. The best way to learn

about Hypertext is to jump in. If you telnetted to:

info.cern.ch

you would see something like:

Welcome to the World-Wide Web

### THE WORLD-WIDE WEB

This is just one of many access points to the web, the universe of information available over networks. To follow references, just type the number then hit the return (enter) key.

The features you have by connecting to this telnet server are very primitive compared to the features you have when you run a W3 "client" program on your own computer. If you possibly can, please pick up a client for your platform to reduce the load on this service and experience the web in its full splendor.

For more information, select by number:

A list of available W3 client programs[1]  
 Everything about the W3 project[2]  
 Places to start exploring[3]  
 The First International WWW Conference[4]

This telnet service is provided by the WWW team at the European Particle Physics Laboratory known as CERN[5]

[End]

1-5, Up, Quit, or Help:

Note that in five places numbers in brackets appear. If you were to enter a number, you would receive information about the corresponding menu item. Entering

3

for places to start exploring would retrieve the following screen:

### GENERAL OVERVIEW OF THE WEB

There is no "top" to the World-Wide Web. You can look at it from many points of view. Here are some places to start.

by Subject[1]	The Virtual Library organises information by subject matter.
---------------	--

List of servers[2] All registered HTTP servers by country

by Service Type[3] The Web includes data accessible by many other protocols. The lists by access protocol may help if you know what kind of service you are looking for.

If you find a useful starting point for you personally, you can configure your WWW browser to start there by default.

See also: About the W3 project[4] .  
[End]

#### 1-4, Back, Up, Quit, or Help:

You now have several more choices to make. Choosing 1 will return a “virtual library” of subject matter, with the entries reading somewhat like an encyclopedia:

Environment HOLIT[34] (Israel Ecological & Environmental Information System), ANU biodiversity services[35] , FireNet[36] , Hurricane and other disasters preparation[37] , The Purdue - ES-USDA Water Quality[38] Information Management Project , the Australian Environmental Resources Information Network[39] ; North Carolina Cooperative Extension Service Gopher[40]

Whoa. Plenty of information out there about the environment. You can now access any of the sources above through your computer, and each of them will probably lead you to many more.

This is where the name “World-Wide Web” arises from. All of these picks lead you to other Hypertext, or “linked” menus, which lead you to other menus, which lead you to...you get the idea. The best way to learn about this is to explore.



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Estrada, Susan. "A Mine Worth Digging". Network Computing, January 15, 1994.

*A list of resources available on the Internetxe "Internet"\$. Includes a section on "The Business Information Vein" which is worth checking out.*

Hardie, Edward. Internetxe "Internet"\$ Mailing Lists. SRI International, 1994.

*Hundreds of special interest mailing listsxe "mailing lists"\$. May be very useful in communicating with professionals in your field around the country.*

Hogan, Kevin. "Chillicothe Corp.". Forbes ASAP (available through the corporate library).

*A success story in use of the Internetxe "Internet"\$ to promote regional awareness and development.*

Krol, Ed. The Whole Internetxe "Internet"\$xe "The Whole Internet"\$: User's Guide and Catalog. O'Reilly and Associates, 1993.

*A good beginners guide to the Internetxe "Internet"\$\$. A must have.*

Locke, Christopher. "Time to Cash In". Network Computing, January 15, 1994.

*Examinations of Internetxe "Internet"\$ issues and corporate Internet-use case studies.*

Otte, Peter. "Navigating the Internetxe "Internet"\$". Mobile Office, June, 1994.

*An examination of commercial and non-commercial Internetxe "Internet"\$ access providers.*

Penney, Robert. "Understanding Energy Conservation Technologies Through Electronic Information Transfer". Strategic Planning for Energy and the Environment (available through the corporate library).

*Lists a variety of modem-accessible electronic information services which specifically concern energy conservation issues. Networks include EcoNet, EEI Online, Electric Ideas Clearinghouse BBS, and others.*

Tetzeli, Rick. "The Internetxe "Internet"\$ and Your Business". Fortune, March 7, 1994.

*Companies which are integrating the Internetxe "Internet"\$ into their operations, and why you should too.*

Wallich, Paul. "Wire Pirates". Scientific American, March, 1994.

*Examination of the good guys and the bad guys on the Internetxe "Internet"\$: hackers, phreaks, trojan horses, and so on. A very good dictionary of Internet slang.*

Wired Magazine.

*A good "cyberspace" magazine. Explores Internetxe "Internet"\$ issues, lists resources, and presents new technology.*

## 8) People, Places, and Things

These sites are recommended for exploration. If I've contacted the site I'll include a brief explanation. Please let me know about your experiences with these sites, as well as other great sites you've found.

### 8.1 Telnet sites

Cleveland Free-Net -- [freenet-in-a.cwru.edu](mailto:freenet-in-a.cwru.edu), [freenet-in-b.cwru.edu](mailto:freenet-in-b.cwru.edu), [freenet-in-c.cwru.edu](mailto:freenet-in-c.cwru.edu)

*The original free-net, and one of the largest in the country. These lines are almost always busy.*

Fedworld -- [fedworld.gov](mailto:fedworld.gov)

*An excellent repository for thousands of government documents. You might find NAFTA, the Clinton Health Care Plan, the 1995 Federal Budget, the Brady Law, and so on.*

Library of Congress -- [marvel.loc.gov](mailto:marvel.loc.gov) -- login as "marvel"

Lorain County Free-net -- [freenet.lorain.oberlin.edu](mailto:freenet.lorain.oberlin.edu)

*A server in Lorain County, Ohio which provides free Internet "Internet" access.*

NASA Spacelink -- [spacelink.msfc.nasa.gov](mailto:spacelink.msfc.nasa.gov)

*A good place to look for up to date information on the Hubble Telescope, shuttle launches, weather forecasts, and so on.*

Peoria Free-net -- [heartland.bradley.edu](mailto:heartland.bradley.edu)

The Well -- [well.sf.ca.us](mailto:well.sf.ca.us)

*The Well is a huge Internet "Internet" server located in San Francisco. It's a neat place to visit, but it's fee-based and you can find free access elsewhere.*

Weather -- [madlab.sprl.umich.edu](mailto:madlab.sprl.umich.edu)

*National Weather Service reports*

Youngstown, Ohio Free-Net -- [yfn.ysu.edu](mailto:yfn.ysu.edu) -- login as "guest"

## 8.2 FTP Sites

CDROM -- anonymous@ftp.cdrom.com

*A wonderful archive of thousands of files which you will want. There's a whole directory devoted to Windows 3.1, and I can't stress enough what a great site this is. You could spend days downloading useful things from here. If the line is busy, keep trying. It's well worth the wait.*

Fedworld -- anonymous@ftp.fedworld.gov

*Where to download files from once you've discovered them in the Fedworld Telnet site.*

Internetxe "Internet"§ information stored at TVA -- anonymous@bbs.cha.tva.gov

Microsoft -- anonymous@ftp.microsoft.com

*Microsoft places drivers, free upgrades, and demonstrations here. For example, right now you can get the free Microsoft Word 6.0A upgrade from this site.*

Special Internetxe "Internet"§ Connections compiled by Steve Yanoff -- anonymous@csd4.csd.uwm.edu

## 8.3 Gophers

University of Arizona Gopher -- info.ccit.arizona.edu or lanka.ccit.arizona.edu -- login as "info"

*At one time this was a good source to read USENETxe "USENET"§ discussion group postings. USENET services at this site have been discontinued, but this is still a good place to begin because traffic on this machine is not very heavy.*

University of Minnesota Gopher -- consultant.micro.umn.edu -- login as "gopher"

*The original gopher. This gopher server is very heavily used and will be slow.*

University of Tennessee, Knoxville Library Gopher -- library.utk.edu -- login as "gopher"

*This is a good gopher for general use. It's close and it has a lot of resources available, including a UTK library catalog on-line.*

## 8.4 Mailing Lists

Cogeneration -- cogeneration-request@grove.iup.edu

*This is a fairly inactive discussion group for cogeneration topics. Occasionally some mail will be sent out to the members of this list, but the mail usually concerns conferences on related topics. Perhaps there aren't enough people interested in this list yet.*

Economic Development -- majordomo@csn.org

*Econ-dev is a good discussion group for economic development and related issues. The group is fairly active and includes some subscribers with impressive credentials.*

### **8.5 Miscellaneous sites**

US Department of Agriculture Office Economic Research Service -- (1-800-821-6229) -- 9600 baud -- access through a terminal program

Bureau of Prisons Office of Information Systems -- (1-202-514-6102) -- 9600 baud, terminal

Commerce Office of Business Analysis -- (1-202-482-3870) -- 2400 baud, terminal

Environmental Protection Agency BBS -- (1-800-658-8815) -- 2400 baud, terminal

Federal Deficit Reduction -- (1-202-225-5527) -- terminal

FERC Commission Issuance Posting System -- (1-202-208-1397) -- terminal

Historical documents -- minnesota gopher/libraries/electronic books/by title/historical documents

Internal Revenue Service Statistics of Income Division -- (1-202-874-9574) -- 9600 baud, terminal

Library of Congress News Service -- (1-202-707-3854) -- 2400 baud, terminal

US Department of Energy -- Megawatts BBS -- (1-202-482-3870) -- 2400 baud, terminal

USDA information -- psupen.psu.edu

## 8.6 USENETxe "USENET"§ Discussion Groups

You may find some of the following discussion groups to be of interest. There are approximately 4,000 groups in the USENETxe "USENET"§ family, so there are probably a great many others you'll want to explore as well.

Two sources you can use to access these groups are the Louisiana Tech gopher and Launchpad. You can find how to access these two sites in section 5 under USENETxe "USENET"§.

Group Name	Subject matter
biz.jobs.offered	Position announcements
comp.apps.spreadsheets	Spreadsheets on various platforms
comp.dcom.lans.misc	Local area network hardware and software
comp.infosystems.gis	All aspects of Geographic Information Systems
comp.infosystems.gopher	Discussion of the gopher information service
comp.lsi.testing	Testing of electronic circuits
comp.org.eff.news	News from the Electronic Frontiers Foundation
comp.os.ms-windows.advocacy	Speculation and debate about Microsoft Windows
comp.protocols.tcp-ip.ibmpc	TCP/IP for IBM personal computers
misc.jobs.contract	Discussions about contract labor
misc.jobs.misc	Discussion about employment, workplaces, careers
misc.jobs.offered	Announcements of positions available
misc.jobs.offered.entry	Job listings only for entry-level positions
misc.jobs.resumes	Postings of resumes and situation wanted articles

misc.taxes	Tax laws and advice
sci.econ	The science of economics
sci.edu	The science of education
sci.electronics	Circuits, theory, electrons, and discussions
sci.energy	Discussions about energy science technology.
sci.engr	Technical discussions about engineering tasks
sci.engr.biomed	Discussing the field of biomedical engineering
sci.engr.chem	All aspects of chemical engineering
sci.engr.civil	Topics related to civil engineering
sci.engr.control	The engineering of control systems
sci.engr.mech	The field of mechanical engineering
sci.environment	Discussions about the environment and ecology
sci.math.stat	Statistics discussion
sci.physics.fusion	Info of fusion, especially cold fusion
alt.appalachian	Appalachian region awareness, events, and culture
alt.dcom.catv	Discussion of cable TV technology
alt.dcom.telecom	Discussion of telecommunications technology



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alt.internet.access.wanted	Information about connecting to the Internetx "Internet"§
alt.internet.services	Information about services available on the Internetx "Internet"§
alt.politics.economics	Political economics, taxes, government budgets

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### ***8.7 The Help Desk and the Internetxe "Internet"§ Users Groups***

How do I know if I'm connected to the Internetxe "Internet"§? How do I get connected? Where else can I get Internet information? What are good sites to visit on the Internet?

These are all good questions. There are two very good sources of Internetxe "Internet"§ information in TVA. The Help Desk at 615-751-HELP is a good place for information about the mechanics of getting connected.

Additionally, three user's groups meet periodically within TVA to discuss Internetxe "Internet"§-related issues. Notification of meetings is usually given via e-mail.

Location	Contact	Phone
Knoxville	Bill Haynes	(615) 632-6319
Muscle Shoals	Gary Williams	(205) 386-2042
Chattanooga	Debra Mills	(615) 751-4916

### **About New Products and Services**

New Products and Services is one of the eight organizations which make up the Customer Group's Marketing Council. NP&S is managed by Russell Robertson (615-751-6441).

The purpose of NP&S is to seek out new ideas, promote innovation, and work with others to ensure that the best ideas in customer service reach the marketplace in the shortest possible time.

NP&S contains three sections: Market and Business Analysis, managed by Jim West (615-751-6428), Marketing Product Analysis, managed by David Lamb (615-751-6318), and Dispersed Generation Acquisition, managed by Mike Anderson (615-751-6275).

### **About the Author**

Ed Ditto came to TVA in 1993 from MBA school at the University of Tennessee, Knoxville. He is a member of the Powerhouse, a recruiting organization contained within New Products and Services.