wcUUCP News and E-mail gateway

wcUUCP runs with your *Wildcat!* BBS to process incoming and outgoing Internet mail and newsgroup articles.

UUCP 1

The **UUCP 1** tab contains general system information. You must select and configure an Internet e-mail conference before leaving this tab.

UUCP Administrator

Local domain name

Local site name

Primary provider

Organization

This is the person who is responsible for your system. This user must be a user in *Wildcat!* user database, usually the System Operator. Any e-mail that is addressed to root, Sysop, or postmaster will be re-addressed to the Administrator's name.

This is your "fully qualified" Internet domain name (for example MUSTANG.COM). This name is assigned to you by your UUCP host provider. A "fully qualified" domain name is a combination of your site name, a period, and additional domain information. For instance, MUSTANG is MSI's site name, COM is the domain (COM is short for "commercial" as opposed to EDU for "educational" or ORG "organization").

The site name is often referred to as your "machine name". The Site Name is often, but not always, the first part of your domain name. For instance, the site name for MUSTANG.COM is "mustang". wcUUCP uses the site name field to identify messages according to UUCP standards. The proper name for this field is available from your UUCP host provider. If you aren't sure what to put here, ask your host.

This is the UUCP host to which your outgoing e-mail and newsgroups should be forwarded.

This field is optional, and allows you to put a very brief description of your company or organization. If you enter information in this field, any e-mail message or newsgroup article will have this information placed in the "Organization" field in the message header.

Choose a conference to use for the mailing list. If you have not defined a conference for this mailing list, you will have the opportunity to select one and make the appropriate configuration changes before continuing.

UUCP2

The UUCP2 tab requires information about how to handle messages.

Alternate domain name

News request name

Maximum export message count

Bounce invalid messages

When you first establish an account with a host provider, you may be issued with a temporary domain name during the period of time that your official domain name is being registered. The Secondary Domain Name field allows you to list the temporary domain as well as your permanent domain name, so that messages addressed to either domain will be recognized and imported by wcUUCP.

If you have only ever used one domain name, you should leave this field blank. The Secondary Domain Name should not be confused with domain names or alias lists for downline nodes — this field should only be used if mail addressed to your site uses either a temporary domain name or a permanent name.

This is a special e-mail address that wcUUCP will use to process offline news requests. The default request name is **news**.

You can limit the size of message packets created by your host for downline nodes by entering a number here. wcUUCP will create message packets containing no more than the number of messages you specify here.

When mail software is unable to deliver a message, the software delivers a "Bounce Message" back to the original sender. The bounce message usually provides some information on the nature of the problem - a misspelled or unknown user name is one of the most frequent reasons a message is undeliverable.

If this option is turned **on**, *wcUUCP* will send a "bounce message" when it is unable to translate the Internet address on an incoming message into a valid user name on the local *Wildcat!* BBS. However, this slows down mail processing because *wcUUCP* has to open the user file to look up user records.

Turning this option **off** speeds up message insertion, at the cost of not informing users sending mail to your system that their messages were undeliverable.

Hosts

You must create a **Host** entry for each site you will be connecting with to transfer mail. Use the information your Internet Service Provider gives you to fill in these fields. There are three tabbed sheets - Host Info, Newsgroups, and Translation tables.

Hosts: Info

The **Host Info** tab contains general information about the Internet Service Provider that will be forwarding your incoming and outgoing mail to the Internet.

Host name

Administrator

Domain

Site name

Spool path

Alt. spool path

Attachment limit

Delete files after processing

Allow news requests

This is the name *wcUUCP* uses to create configuration files and subdirectories for this host. This must be a legal DOS file name, and can be no more than 8 characters long. The Host Name normally matches the Host Site Name.

This is the name of the authorized administrator of a downline node. This is the only user name from which news request messages will be processed. You can leave this field blank for your primary provider (the site from which you receive incoming mail from the rest of the Internet).

This is the fully qualified domain name for your host, for instance HOLONET.NET.

This is the UUCP name of the host site, without extension (for example HOLONET - ***not*** HOLONET.NET). The host UUCP site name is often referred to as your host's "machine name". Note that in most cases this is the site name only, not the fully qualified domain name. If you are unsure what to put here, ask your host.

This is the directory where *wcUUCP* expects to find incoming mail packets collected by *UUCICO*. Your spool path should look something like this (substitute [hostname] for the actual site name of your host.

`\WC5\GATEWAY\[hostname]`

where [hostname] is a subdirectory with the host name of your host provider.

Note: With the exception of your Wildcat! home directory and the [hostname] directory names, these paths are hard-coded, and must be entered exactly as shown. If these path names are changed, wcUUCP will not function correctly.

This is the directory where *wcUUCP* expects to find incoming mail packets (.BAG files) received by satellite.

This is the maximum size in kilobytes for outgoing file attachments. UUCP and QWK Networking both allow you to specify attachment size limits. Since large message attachments could add substantially to the time it takes to transmit and process an outgoing reply packet, this could affect your phone charges if your host is a toll call.

This is an On/Off option, and the default is **on**. Normally, when *wcUUCP* has finished importing packets, you want to delete the packets to prevent them from being re-imported the next time you run *wcUUCP*. You should set this option to **Off** ONLY if you are going to do further processing on the packets. Remember to delete the packets when you have finished processing them, or *wcUUCP* will try to import the same messages the next time you run the program.

The news request services of wcUUCP allow a downline UUCP node to send a message to its wcUUCP host to list, select and deselect newsgroups. This is somewhat similar to the offline control message feature of the *wcMail* QWK mail door.

Turn this option on if you would like nodes to be able to make newsgroup configuration changes offline.

Offline configuration

To set up news request services on the host, run *wcGate*, go to the main UUCP configuration screen, and select the name to which downline nodes should send their news requests (for example "news" or "msinews"). Edit each of the hosts designated as downline nodes, and enter either the sysop name or name of the user who will be making the requests (for example "sysop" or "sam robertson").

wcUUCP will respond to a control message from a downline node from the sysop name for that node, addressed to the news request name you specified in your host configuration. The control message should contain one or more keywords, each on a separate line of the message.

Click here to see a complete list of keywords.

Click here to see some examples of offline news requests

Examples

To subscribe to newsgroups, send a message to the news request service at your host and place the keyword simple as the first or second line in the body of the message.

The next line(s) should list the name of the newsgroups you wish to subscribe to. Here is an example of a correctly-formatted control message to GateNews:

```
from: sam.robertson@the-edge.com
to: news@mustang.com

simple
alt.bbs.wildcat
rec.music.rem
comp.misc.waffle
.
```

The "." helps GateNews detect the end of the control message without being confused by taglines or signature blocks which may appear after your control message.

The control message in this example clears your current subscriptions and adds the three newsgroups before the period.

The following control message requests a copy of the documentation (this file), and requests the GateNews version number.

```
from: steve.crippen@kaos.mustang.com
to: news@mustang.com

documentation
version
```

The next example unsubscribes to a newsgroup you are currently receiving, and adds two other newsgroups to your subscription.

```
u alt.bbs.wildcat
s alt.bbs.qmodem
s comp.misc.uucp
save
.
```

In this example, we are telling the host to unsubscribe to alt.bbs.wildcat, and subscribe to alt.bbs.qmodem and comp.misc.uucp.

Notice that we send the command 'save'. Unless you are in Simple mode, GateNews will not save changes unless you specify. You can place the "save" keyword anywhere in the message.

To see a list of all the newsgroups you are currently subscribed to, send the following command in a control message:

```
listcurrent
```

To see a list of all the newsgroups available to downline nodes from your host, send the following command in a control message:

```
listall
```

News Request Keywords

Here is a complete list of keywords and their actions.

`simple`	(each newsgroup is on a separate line and can be stopped by '.' on a line by itself. Clears current list and sets save mode)
`clear`	(clears all subscriptions for the current host)
`listall`	(lists all the newsgroups that are available to downline nodes)
`listcurrent`	(lists all the newsgroups selected for this host)
`u <newsgroupname>`	(unsubscribe this newsgroup)
`s <newsgroupname>`	(subscribe to this newsgroup)
`version`	(current version of the GateNews implementation)
`.`	(while in simple mode turns off simple mode. If in command mode GateNews stops processing this message. All that follows is ignored).
`documentation`	(Sends a file called 'gatenews.doc' from within the gateway directory).
`save`	(Will save all changes after completion `Simple mode forces save mode).`

Newsgroups

The newsgroups you added to the **Conferences** section of *wcConfig* will be visible in the Newsgroups tab. If no newsgroups are visible, go back to **Conferences** and add them using *AddNews*.

Select the newsgroups you will be exchanging with this host, and double-click to toggle them on. Use the **Select all** button to select and toggle all newsgroups.

When adding newsgroups to your BBS, don't forget that not only must you have enough hard drive space for the newsgroups themselves, but enough also for *Wildcat!* to process and pack them.

UUCP: Hosts Translations

Sometimes a caller wants to use a "generic" address on UUCP to answer mail, but does not want to create another user account on the BBS to receive personal mail. His *Wildcat!* Name will be one thing, while his External Name is another. Translation lets you re-address mail from one account to another automatically.

Local name

External name

Translate Import

Translate Export

Translate Both

Edit translation

Use this tab to tell wcUUCP how to handle alternate names for your callers.

Local name
External name
Translate Import
Translate Export
Translate Both
Edit translation trashcan import
Edit translation trashcan export

$ Local name This is the name your user is known by on your *Wildcat!* BBS. For instance, "SAM ROBERTSON" or "GREG HEWGILL".

This is the name or names by which your user may be known outside your system, for instance "srobertson" or "greg".

Translates both incoming and outgoing mail addresses. For example, Bob Allman is a salesperson at MSI. He wants to use a "generic" address on UUCP to answer sales inquiries, but does not want to create another user account on the BBS to receive personal mail. His *Wildcat!* Name will be "BOB ALLMAN", while his External Name is "sales". Incoming mail addressed to "sales@mustang.com" will be readdressed to "BOB ALLMAN", while outgoing mail from Bob will be sent from "sales@mustang.com".

Translates imported mail addresses. For example, Sam is a local user on the BBS. He is known as "SAM ROBERTSON" on the BBS, and "srobertson" to some of his correspondents via UUCP. Incoming mail addressed to "srobertson" will be redirected to "SAM ROBERTSON". The domain name "@mustang.com" is not considered as part of the translation. Any mail addressed to "sam.robertson" is already correctly addressed, and will not be translated.

Translates exported mailing addresses only. For example, a user is located at a different UUCP site. She is known as "KORINNA KURSIV" to users on the local BBS, but her proper UUCP address is "korinna.heavy@dingbat.com" Outgoing mail to "KORINNA KURSIV" will be readdressed to her proper UUCP name when mail is exported.

Export translations are also useful in the case where you correspond with someone whose full UUCP address is too long for the To: field in the message header, or is otherwise cumbersome to type. Our example here is "j.r.bob.dobbs@ultimate.slack.org".

Create a translation entry of "JRB" as the local name, and "j.r.bob.dobbs@ultimate.slack.org" as the external name, and messages addressed to "JRB" will be translated to his full mailing address when mail is sent to your UUCP host.

UUCP Mail Lists

There are literally thousands of mailing lists available on the Internet, for every possible interest. Mailing list software distributes messages regularly to mailing list subscribers, using e-mail to transport the mail rather than newsgroups.

The **UUCP Mail Lists** feature allows you to subscribe to a mailing list under a user name you create specifically for each mailing list subscription, and post the mailing list messages in a regular message conference, rather than as private e-mail.

When adding mailing lists to your BBS, don't forget that not only must you have enough hard drive space for the mailing lists themselves, but enough also for *Wildcat!* to process these lists.

UUCP MailList Edit Add

UUCP MailList Name

UUCP MailList Conference

UUCP/Mail List listbox

Reply-to Address

The UUCP Mail Lists feature allows you to subscribe to a mailing list under a user name you create specifically for each mailing list subscription, and post the mailing list messages in a regular message conference, rather than as private e-mail. Use the Edit command to change information about your mailing lists.

This is the name of the mailing list, for instance HUMOR or BGRASS-L. wcUUCP will look for this mailing list name in the message header, to redirect the messages from the private e-mail conference to the conference you have defined for this mailing list.

About mail lists

wcUUCP looks at the to: line in the message body to find the above list name. For example:

```
... (Other message header information)
To: "Multiple recipients of this mailing list" <LIST-L@xyz.com>
... (message header and message body will follow)
```

wcUUCP processes this line by looking for the actual mailing address. In this case it's enclosed in <>'s. Sometimes, the name of the list may be simply:

```
To: LIST-L@xyz.com
```

This address doesn't contain any comment information at all. wcUUCP looks at the name before the '@' symbol and compares this name to what is contained in this field. It does not look at anything more than this. In both examples we would put 'LIST-L' in this entry field.

In some cases the to: line is 'folded' over multiple lines, and wcUUCP may not be able to extract the information easily. In this case, you can put a user name here which wcUUCP will compare to the to address in the X file (the envelope of the message) which will guarantee all messages addressed to this user name will be properly routed to the conference. Caution should be taken here, since wcUUCP doesn't discriminate between the users regular e-mail and a mailing list name, and therefore could cause problems. The best solution, is to ask the user to 'unsubscribe' to the mailing list, and then you create a user on your system which will be the receiver of mailing lists. This user would not be one of the users on your system, but rather a 'fake' account on your system. After the user is created, you would log with this newly-created user name, and send a subscription letter to the list server.

Select a conference from the list to receive the mailing list messages.
Be sure the conference you select is defined as an Internet Mailing List in the Conference Settings section of *wcConfig*.

This is the e-mail address of the moderator or mailing list to which replies should be directed, for instance humor@uga.cc.uga.edu. wcUUCP will send replies as e-mail addressed directly to the list name or moderator name.

UUCP Auto Response

Auto response messages are text files sent by return e-mail to anyone sending e-mail to a list of auto-response addresses defined in *wcConfig.*

This is an easy way to send product information, UUENCODED files, or anything else that can be sent in text format in response to a request for information.

UUCP AutoResponse Name

UUCP AutoResponse Text

UUCP Edit Auto Response

Auto response messages are text files sent by return e-mail to anyone sending e-mail to a list of auto-response addresses defined in *wcConfig.* Use the **Edit** command to edit your auto response setup.

UUCP AutoResponse Name

UUCP AutoResponse Text

This is the name of the mailbox that will automatically respond to messages addressed to it, for instance "info" or "wc5info". Do not include your domain name, just the mailbox name.

This is the text to send in response to an auto response request. Auto response mailbox names must conform to standard Internet naming conventions a filename may not contain spaces, parentheses, commas, or other prohibited characters. One-word mailbox names are best. If your *Wildcat!* configuration is stored on a network drive that does not allow long Windows 95/NT file names, you must also adhere to standard DOS file naming conventions

Make an identical copy and give it a different name.

Process all the items on the list.

Process none of the items on the list.

Deletes the item currently selected.

Click the **Add** button to add an Internet Service Provider to the list of hosts.

Creating auto response files

There are two ways to create an auto response file. The first way is to create a text file using a plain text editor such as Notepad, and save it in your CONFIG directory with the extension ARF (Auto Response File). When you pop up the Auto Response property sheet, all files with the ARF extension will be listed in the window. This is the best way to create auto response messages that are more than a couple of paragraphs long, or contain complex formatting, or attached UUENCODED files.

The other way to create auto response files is to edit and save them in the **Edit Auto Response** property sheet. Click the **Add** button, and type the name of the auto response mailbox in the top window. Type your message in the bottom window, and click **OK** to save the file. *wcConfig* will create and save the file with the correct extension.

Status

You can check the status of wcUUCP by right clicking on the taskbar icon or program manager and selecting **Status**.

Import e-mail
Import news
Export e-mail
Export news
Bounced
Bad
Export Errors
Import Errors

This is the number of e-mail messages that have been imported.

This is the number of newsgroup messages that have been imported.

This is the number of e-mail messages that have been exported.

This is the number of newsgroup messages that have been exported.

This is the number of bounced messages that wcUUCP has attempted to import. When mail software is unable to deliver a message, the software delivers a "Bounce Message" back to the original sender.

This is the number of bad messages that have been encountered while wcUUCP was importing mail and news messages.

This is the number of bad messages that have been encountered while wcUUCP was importing mail and news messages.

This is the number of errors that have been encountered while wcUUCP was exporting messages.

This is the date that the currently displayed statistics started. When you clear the statistics, this date will be reset, along with all of the displayed statistics.

Clear the current statistics from the status window.

Importing and exporting messages

wcUUCP runs with your *Wildcat!* BBS to process incoming and outgoing Internet mail and newsgroup articles.

To use *wcUUCP*, you must start *wcServer*, then run *wcConfig* to define your UUCP settings, host information and newsgroups. For more information, please refer to the on-line documentation file WCCONFIG.HLP. If you change any of the *wcUucp* configuration in *wcConfig*, you will need to shut down and restart *wcUucp* (it's safe to do this at any time, even while it's tossing mail).

To start *wcUUCP*, open a DOS command window and type

```
WCUUCP
```

wcUUCP will provide an informational display on your screen of the incoming and outgoing messages it has processed since it was executed. When new files appear in the spool directory or new messages appear on the board, it will automatically toss them right away. It records its activity in a log file called WCUUCP.LOG — please remember to delete this file periodically to conserve disk space.

Automatic extraction of UUENCODED files

Internet uses a special protocol for sending binary files as messages, to allow for the difference in data and parity bits between systems. This protocol allows a pair of utilities known as UUENCODE and UUDECODE to send binary files as mail at the source, and reconstruct that mail back into binary files at the destination.

wcUUCP automatically translates attached files into UUENCODED format and places the data in the text of the message. In this way, binary files can be "mailed" easily from one system to another, regardless of the operating platforms through which the messages pass.

wcUUCP will also attempt to decode incoming messages with enclosed UUENCODED files, and save the decoded file as a message attachment. Note that incomplete files, or files containing errors or missing information will *not* be translated. Multi-part UUENCODED messages are also not translated, since there is no way to be sure that all parts of a message have arrived or are in the correct order.

Offering UUCP mail to downline nodes

Your *Wildcat!* BBS can serve as a UUCP mail server, allowing you to echo newsgroups, mailing lists and e-mail to other systems. Downline nodes are set up in the same way as hosts.

To set up downline nodes:

1. Verify that *wcServer* is running, and start *wcConfig*.
2. Open the **UUCP Networking** icon.
3. Open the **Hosts** tab.
4. Use the **Add** button to add hosts.
5. Save your changes and close the UUCP Networking icon

To prevent nodes from getting each other's mail, *Wildcat!* uses an automatically-executing door program that checks an access profile defined in *wcConfig*, and then uses the UUCICO control file "PERMITS" to check the security of the downline node before sending mail.

Offline configuration

To set up news request services on the host:

1. Verify that *wcServer* is running and start *wcConfig*.
2. Open the UUCP Networking icon
3. Open the UUCP2 tab
4. Enter the name to which downline nodes should send their news requests (for example "news" or "msinews") in the "News Request Name" field.
5. Edit each of the hosts designated as downline nodes. In the Host Info tab, fill in the Administrator Name of the user who will be making the requests (for example "sysop" or "sam robertson").

wcUUCP will respond to a control message from a downline node from the sysop name for that node, addressed to the news request name you specified in your host configuration. The control message should contain one or more keywords, each on a separate line of the message.

How do I...

Displays all hosts that have been defined in *wcConfig*. To add a new host, click **Add**. To edit an existing host, select that item and click **Edit**.

Displays all newsgroups that have been defined in *wcConfig*. To add a new newsgroup, click **Add**. To edit an existing newsgroup, select that item and click **Edit**.

Displays all of the host translation setups that have been defined in *wcConfig*. To add a new item, click **Add**. To edit an existing item, select that item and click **Edit**.

Displays all Mailing lists that have been defined in *wcConfig*. To add a new item, click **Add**. To edit an existing item, select that item and click **Edit**.

All auto response setups that have been defined in *wcConfig* are displayed here. To add a new item, click **Add**. To edit an existing item, select that item and click **Edit**.

Add a new item to your defined configurations.

Pops up the Edit property sheet. You can then edit an existing item.

Deletes the selected entry.

Launches the online help system.

Select this option to delete imported packets with the selected translation name.

Select this option to delete packets with the selected translation name that are to be exported.

Running UUCICO

UUCICO (UNIX to UNIX Copy In Copy Out) performs all modem communication with the remote system, and is responsible for protocol selection, implementation, error correction, and file transfer. In addition, it removes transferred files at the host, and keeps a log of all activity. Mustang Software Inc. has licensed a special version of FX UUCICO for distribution with *wcUUCP*.

UUCICO is usually run from a batch file or directly from the command prompt. There are two different modes of operation, dial-out or master mode, and dial-in or slave mode.

Quick Start

wcUucp's installation program will have copied the necessary configuration files for UUCICO into your wcUucp directory. You will need to edit each of these files to reference the correct modems, ports, domain and site names, user IDs and passwords. Each feature and function is explained in the reference guide.

Here are some sample configuration files:

FXUUCP.CFG

```
device        : 1
speed         : 19200
uu.locked     : 19200
node          : <YOURDOMAIN>
uucpname      : <YOURSITE>
spool         : C:\WC5\gateway\fxuucp
uu.retries    : 1
uu.handshake  : 60
uu.time       : 60
uu.windows    : 3
```

PERMITS

```
default   /system=known
```

SYSTEMS

```
holonet Any g modem14400 toholonet <PHONE> <*USERID> <PASSWORD>
```

DIALERS

```
MODEM14400    Default  19200   "" ATZ OK ATDT\T CONNECT \m\c
```

SCRIPTS

```
toholonet name? \L word \P
```

UUCP.BAT

```
c:
cd \WC5\gateway
uucico -sholonet
```

Creating a logon script for your host

Two configuration files, SYSTEMS and SCRIPTS, provide information to UUCICO that allow it to dial the phone, connect, recognize prompts from the host, and send appropriate responses. You will need to customize these two files to match the prompts your host is likely to send.

You should start by editing the SYSTEMS file to put your own information in, following this format:

```
<hostname> <time> <protocol> <dialer> <scriptname> <userid> <password>
```

Your next step is to dial your service using your regular communication software, and open your capture file so you have an example of the system prompts and responses to enter in your SCRIPTS file.

The SCRIPTS file follows this format:

```
<scriptname> <expect> <send> <expect> <send> . . .
```

SCRIPTNAME is the name of the script referenced in your SYSTEMS file for this host. The expect-send-expect-send sequence is the actual series of prompts and responses that log you into the host.

Following is a sample capture file with line numbers, showing the logon sequence at Holonet:

```
ATZ0
OK
atdt95107041058
CONNECT 14400

Annex Command Line Interpreter   *   Copyright 1991 Xylogics, Inc.

HoloPacket(SM) - HIGH SPEED ACCESS TO HOLONET(SM) SERVICES

To access HoloNet type "holonet" at the service prompt

HoloPacket Class A/B -- Service name ("?" for help):
service: holonet
Trying...
Connected to zen.


HoloNet(SM) -- A service of IAT

HoloNet Member Name (Non-members type "guest"): rheming
Password
Last login: Tue May 17 11:34:16 from annex
Please enter your terminal type (? for examples) or <CR> for none:
```

We'll call this script "toholonet". The first prompt that expects a response is line 9, "service". The response is "holonet ". The next prompt is the login prompt, and all we need to enter here is enough to identify it uniquely. The word "member" will work well here.

You'll remember that the UserID and password are stored in the SYSTEMS file. Our script will extract those two fields automatically with the responses \L for login name and \P for password. So, the proper response for the prompt "member" will be "\L". The next prompt is "Password ", so the answer is "\P".

The final prompt asks for the terminal type. For an automated UUCP session, the proper response is "uucp ". From that point onward, UUCICO will take control and automatically sends and receives mail, then disconnects from the host. UUCICO automatically sends a carriage return after each response.

Our finished SCRIPTS file would look like this:

```
toholonet service: holonet Member \L Password: \P terminal uucp
```

Some systems need to be "woken up" before they will prompt you to log on. In this case, the script should send carriage returns until it gets a response it recognizes, then it can proceed with logging you on. The expect-send sequence for "blank screen" "send carriage return" would look like this:

```
"" \r
```

Or you may need to send a BREAK signal ... the command would look like this:

```
"" BREAK
```

Additional script commands are discussed in the section titled "Script Syntax".

UUCICO reference guide

Master mode

The Master mode is for dialing out to place a call, usually known as polling. This is the default mode and only requires you to specify the sites you want to call with the -s parameter. The -s parameter has three different usage conditions:

Keyword	Notes
-s all	polls all known hosts
-s any	polls hosts with queued jobs -
s host[,hostlist]	polls specified host[s]

For every outgoing call, UUCICO will run two scripts, the dialer and the login scripts as specified in the "systems" file. The dialer script initializes and dials the modem. The login script accesses your remote host uucp services.

Slave mode

Dial-in mode receives incoming calls. The -r0 parameter signals UUCICO to enter slave mode. Obviously the -r0 and -s parameters are mutually exclusive. FX will not currently pick up the phone or prompt for login by itself. This task must be performed by *Wildcat!*.

Aborting the Connection

UUCICO can be interrupted with two different keys. [CTRL] [BREAK] will abort immediately, with no attempt to recover or update log files. UUCICO will hang up the line and exit the program.

[CTRL] [K] produces a soft break. When UUCICO detects this key it will close the connection in a clean and orderly fashion. This has the advantage of updating all the logs, informing the remote host, and flushing any internal buffers. It may take a few moments for UUCICO to react.

Configuration

While the default options are usually enough for most *wcUUCP* users, FX UUCICO is highly configurable. Most settings default to reasonable values. At the minimum you must supply the appropriate "systems" entries, your computer name, device and port speed; everything else is optional.

Five configuration files are required: FXUUCP.CFG, SYSTEMS, DIALERS, SCRIPTS and PERMITS. All five configuration files, along with UUCICO.EXE *must* be located in your `\WC5\`GATEWAY directory. Examples of each file are provided, and have been installed in your GATEWAY directory. Most will require editing before use.

The main configuration file is called FXUUCP.CFG, and must be located in your *wcUucp* directory. You can override the configuration by specifying a different path in an environment variable such as

```
SET FXUUCP=c:\fxuucp\fxuucp.cfg
```

FXUUCP.CFG configuration file

The syntax for items in your FXUUCP.CFG file is: "option : setting". Case is not sensitive, free white space may be added or omitted at both sides of the ":" separator. The option name must start on the first column. Unknown keywords are skipped without warning, A "#" or ";" in the first column is conventionally used as a comment line and is ignored by UUCICO.

Some options are Booleans that may be enabled or disabled:

```
yes, true, 1 = enabled
no, false, 0 = disabled
```

The following entries must be present in the configuration file:

Keyword	Notes
device	Default port number of your serial/modem device.
speed	Default speed setting of the serial port
spool	Directory path for queuing outgoing and receiving incoming jobs. One subdirectory will be created for each connecting host.
uucpname	Your machine name as known by your neighbors. It must match the "system" entry in your remote host.

Other useful options:

Keyword	Notes
uu.debug	Debug level, controls the amount of info written to the "uucico" and "debug" logs.
uu.driver	Selects between "NATIVE", "DIGI" or "FOSSIL" driver. Overrides "driver".
uu.locked	Locked port speed. UUCICO will always use this setting and disregard any other speed options.
uu.time	Time-out in seconds for scripts executions.
uu.visual	Debug level, controls the amount of message displayed on the screen.
fx.gPktSize	Default packet size for the "g" protocols family
fx.share	Enables the networking features of FX UUCICO.
include	Include additional information from a separate configuration file. For instance "include: c:\mydir\config3". There is no limit to the number of files, and files can be nested up to four levels deep.

Some parameters, typically the packet size, may be configured in a per systems basis using the "permits" file.

"Systems" file

The "systems" file describes the remote hosts you are connecting with, usually called neighbors. At least one line must be present for each one. Multiple entries for the same host are allowed specifying different dialing numbers or changing other parameters. Multiple entries will result in UUCICO using them in sequence when retrying a failed connection.

The format of the "systems" file is:

```
#host    time   protocol  dialer     script   phone-number  login    password
laser    Any    g         Hayes.2400 toUnix   123-45678     uulaser  secret
```

Keyword	Notes
host	Equivalent to your uucpname. Your neighbors must list your name in their "systems" or equivalent file.
time	Allowed times for placing outgoing calls. See below for a description of this field.
protocol	Single letter. Selects the protocol on outgoing calls.
dialer	Dialer script. This is not a literal script, but the name of a matching entry in the "dialers" file.
script	Login script. Same as above.
phone	Telephone number of your remote host. Will replace \T in scripts.
login	Your login name that will grant you access on the remote machine. Replaces \L in scripts.
password	Password for to the login. Replaces \P in scripts.

Only the first field (host) is used in incoming calls. The last three entries are optional and normally not needed in direct serial links.

"Dialers" file

```
#Dialer-name     device   speed    dialer-script
Hayes.2400       Any      default  "" AT OK ATD\T CONNECT \m\c
```

Keyword	Notes
dialer	Name of the entry. UUCICO will search for a matching entry as specified in the "systems" dialer field.
device	Overrides default device port in the config file.
speed	Overrides default speed in the configuration file.
script	The rest of the line is the actual dialer script. Script syntax is described below

"Scripts" file

```
#script-name   login-script
toUnix         in:--in: \L ord: \P
```

Keyword	Notes
script-name	Name of the entry.
login-script	The rest of the line is the actual login script.

Scripts syntax

Scripts are a very powerful tool. Note that because of the script design, UUCICO is less smart that normal communication programs. It doesn't have a specific command for dialing, nor a fixed sequence of initialization commands. It's all up to you to make it as complex or simple as you wish or need. The dialer script is performed first, and then the login script.

The scripts are formed by pairs of send/expect sequences. Send tokens are transmitted to the serial port and then UUCICO waits for the *expect* token. If the *expect* token doesn't arrive in time, the alternate token (if present) is sent, otherwise the script fails. The syntax define special escape sequences that are replaced at run time. Tokens that are not alternate are separated by free white space. Empty tokens may be set with a pair of double quotes.

```
"" ATZ OK ATD123-45678 CONNECT
```

Long scripts may be continued in the next line placing free white space (one or more spaces and/or tabs) in the continuation line. Using this method there is no formal limit to the script length.

```
gin: \L word: \P service: uucp gateway: direct age: 20
  hobbies: soccer others: ENOUGH!
```

A pair of dashes signal an alternate sequence. The token between the dashes is sent, and the script expects a new token after the last dash.

```
in:-BREAK-in: \L
```

In this example, if the in: token is not found, a BREAK is sent and then another in: is expected.

Escapes allowed in send tokens only:

Token	Notes
\ooo	Send any byte represented in octal notation.
\c	Suppress ending carriage return. By default all send tokens have a carriage return appended.
\d	Delay of two seconds.
\E	Turn echo check on. Valid for this token only. Very useful for modems that are slow receiving commands and tend to lose some characters.
\e	Turn echo check off.
\K	Send break signal. This is basically an antique for old UNIX dialers.
\L	Replaced by the login name field in the "systems" entry.
\m	Turn carrier checking on. By default carrier detect is not sampled during scripts execution.
\M	Turn off carrier checking during the rest of the script.
\p	Delay of approximately half a second.
\P	Replaced by the current password.
\S	Replaced by the remote host uucp name.
\T	Replaced by the phone number field in the "systems" entry.
BREAK	Send a break signal
P_NONE	Sets the COM line to 8 bits no parity.
P_EVEN	Set the line to 7 bits even parity. Normally valid for the login sequence only. Most protocols will revert back to 8 bits no parity.
P_ODD	Set the line to 7 bits odd parity. Same note as above.

Escapes allowed in both send and expect tokens:

Token	Notes
\b	Backspace
\m	Carriage return
\n	Line feed
\r	Carriage return
\s	Space
\t	Tab
\\	Backslash

Add sequence at the end of any expect string overrides the default time-out (uu.time and -t) in seconds for expect-send sequences:

```
uu.time : 10
"" AT OK ATDP\P CONNECT~60
```

The OK must arrive ten seconds after the AT command, but the CONNECT message may take up to 60 seconds.

"Permits" file

The "permits" file controls security issues. FX also uses the "permits" file to change some common parameters between different systems. It doesn't have a fixed field format as the other configuration files. Each entry is started with a name that identifies this permit. Other parameters may be added in any order.

The selection of the current permit uses the following algorithm:

If -p <permit> was received from the command line, UUCICO looks for the named permit, otherwise it fails. Else (no -p parameter) UUCICO searches for a permit name matching the remote system name. If a specific permit file is not found, UUCICO searches for the permit named "default".

Note that the -p parameter, forces a specific permit and prevents using the "default" one. Without a matching permit the connection will not be performed.

The "fx.joinDefPermit" configuration modifies the exact behavior of the "default" permit and the default values assumed for options not present in the current permit.

When "fx.joinDefPermit" is off (default), the permit named "default" doesn't affect parameters on other permits. Parameters not specified in the current permit, are considered not present and assume internal defaults.

When "fx.joinDefPermit" is on, the permit named "default" is always parsed. Parameters not specified in the current permit, inherit settings from the "default" permit. This is very useful to set global parameters without restricting to a single permit.

Each parameter starts with a slash. The "=" character separates the keyword from the value. Spaces or tabs must be present between parameters. Line continuation is fully supported, and it is customary to put each parameter in a single line. Many are relevant for dial-in calls only.

The sample PERMITS file provided with *wcUUCP* should work without modification.

Keyword	**Notes**
/account	Login name allowed for this permit. This option in conjunction with the -u parameter is the key for a secure system. Dial-in only
/speed	Minimum connect speed. Dial-in only.
/time	Allowed dial-in calls. Same syntax as the time field on "systems". "never" disables dial-in for this permit.
/system	Use "any" to allow for anonymous uucp.
/download	Download directory for sending non-job files. It is enforced on remote requests only. Specify a single name only, multiple directories are not supported. It may be an absolute path, or a relative subdir from the "spool" directory. See "fx.trusted" All download requests are denied if not present.
/upload	Upload directory for receiving non-job files. Same notes as "download".
/fx.trusted	Boolean option. Normally FX expands non-job requests under the "download" or "upload" settings. The remote user cannot specify an absolute path. It must use the ~/ uucp convention or a simple file name without path. Enabling this option grants full access to the whole file systems. Every request is accepted as long as it is not denied by the operating system. Note, this produces a SERIOUS SECURITY HOLE. Use only for yourself, or really "trusted" users.
/fx.maxtime	Maximum time in seconds allowed for the connection. The timer starts counting from the end of the uucp handshake. FX checks for time exceeded between job transactions, it will not abort the current file. The limit is per session only, no daily total is maintained.
/fx.maxbytes	Maximum total bytes allowed for transmission. The value represent the sum of bytes sent plus received. Same notes as "fx.maxtime"
/fx.gpktsize	Overrides the "g" and "G" protocols packet size. If you have increased the global packet size, put a 64 value for systems that do not support large packets. Or, leave the global packet size at 64 bytes, and set larger values for specific systems.
/uu.windows	Overrides the "g" and "G" protocols window size.
/fx.shortpkts	Overrides the -S flag for enabling/disabling variable packets on the "g" protocol. Boolean option.

Example:

```
laser    /account=uuslaer
     /commands=rnews,rmail (not used by UUCICO)
     /download=d:\home\mydir
     /upload="uploads"
     /time=any
     /fx.gpktsize=1024
     /fx.maxtime=3600
```

Time field format

Time fields are present in the "systems" and "permits" files. The "systems" enforces dial-out calls and the "permits" enforces dial-in calls.

A time description starts with a special abbreviated keyword and may be optionally followed by a numeric range. Multiple entries separated by commas "," are supported. The time will be validated if it matches any one of the entries.

Keyword	Notes
Any	Matches any day.
Never	No match. Disables dial-out calls in "systems" and dial-ins in "permits"
Evening	Matches any time on Saturday and Sunday
dd	Matches the specific day(s), one or more of: Su, Mo, Tu, We, Th, Fr, Sa, Wk "Wk" matches any day expect Sunday and Saturday A "military" time range may be added after the keyword to further restrict the entry. Military times are four decimal digits in the format "hhmm"
SaSu2000-2300	Matches Saturday and Sunday from 20:00 to 23:00
Any1000-1600,M	Matches any day from 10 Am to 4 Pm, and Monday at any time.

Command line parameters

Command line parameters cover runtime options that override settings in the configuration file. A few of them, are available only as runtime parameters and cannot be set in the config file. With the exception of -r0 or -s that specify dial-in/dial-out mode, none of the options are strictly required.

The switches follow the syntax of the traditional UNIX "getopt" parsing, with the following rules:

- Options are case sensitive
- You cannot use "/" as the switch character, only "-"
- Multiple options may be folded in a single parameter (-aoV)
- Options that require arguments may have, but do not require spaces before the argument: -r 3
- List arguments cannot have spaces in the middle of the list: "-s host1, host2" is incorrect, use "-s host1,host2"

Following is a complete list of valid parameters for FX UUCICO. Overrides "xxx" means that the option takes precedence over the "xxx" configuration variable.

Keyword	Notes
-a	Disable file restart (crash recovery)
-b bps	Baud rate. Sets the DTE speed between the computer and the modem. Overrides "speed". Disregarded if locked with "uu.locked"
-d device	Device name or port number. May optionally include an I/O address and/or IRQ. See internal driver for the full syntax. Overrides "device"
-g grade	Single letter that sets the minimum grade for transferring jobs. Used only in dialout mode. Overrides "uu.grade"
-l	Do not check carrier detect. Needed for some direct connections with null-modem cables
-k pkt_size	Packet size for the "g" and "G" protocols. Overrides "fx.gPktSize". The packet size have a dramatic influence on the throughput, but values unsupported by your remote host might break the connection. See the "g" protocol
-n hostname	Changes the machine name as communicated to the remote host. Overrides "uucpname"
-o	Disable enforcement of time restrictions specified in "systems" and "permits"
-p permit	Use the name permit entry. See "permits" for the full searching algorithm used by FX
-r retries	Amount of retries before giving up calling each one of the current entries in "systems". Overrides "uu.retries". -r0 have special meaning and engages dial-in mode.
-t seconds	Time-out on scripts execution. Overrides "uu.time"
-u login	Login or account name verified by the login sequence in dial-in mode. This allows FX to verify that the remote host name corresponds to the login name as specified in "permits"
-v debug	Debug level for screen output. Overrides "uu.visual"
-w windows	Window size for the "g" and "G" protocols. Overrides "uu.windows".
-x debug	Debug level for file output. Overrides "uu.debug"

-z trigger	Sets trigger levels for 16550A UARTs. -z0 disables FIFO usage and autodetection.
-S	Disable variable packets ("g" protocol only).
-V	Enable status bar and direct video access.

Protocols

Protocol "f"

The protocol "f" is on the original UNIX UUCPs. It's designed for "flow controlled, error correction" 7-bit lines. This protocol is very inefficient for binary (8-bits) files. It has no internal flow control or error correction. The only recommended use (and the one it was designed for), is X.25 or other non 8-bit transparent lines.

Any error during downloads will result in truncating the file to zero length, this is to avoid invalid data if file restart is afterwards used. (Note: aborted downloads with [CTRL] [C]/[CTRL] [BREAK] are not truncated).

Protocol "y"

This protocol is new. It's extremely fast and efficient. As with the "f" protocol, it was designed for "error correction" (MNP-V42) modems, but it uses 8-bit bytes. It's probably the fastest protocol, but you need a "clean" connection between both ends.

Most new modems have hardware error correction, though they are not 100 percent infallible. The modems will take care of flow control and error correction. Note that FX UUCICO has no reliable way to ensure that an "error correction" connection has been established. We recommend you "force" MNP or V42, (see your modem manual). Because its a streaming protocol (no windows), "y" is very efficient on HALF duplex connections (USR HST and Telebit's PEP/TurboPEP).

Note that UUCICO "y" protocol is not the same as the Ymodem protocol.

Protocol "g"

FX UUCICO supports the full "g" implementations with variable sized packets up to 4096 bytes. The error management is very robust and efficient, which should result in a much better throughput in noisy lines.

Using a large window size (packet size * max windows), makes a big difference in "long delay" lines (as in long distance calls), especially in high speed modems. We do recommend the largest packet size supported by your host, up to 4096 bytes, and keep windows at 7.

Because UUCP protocols are used to transfer everything, not just the files, large packets are inefficient for very small files. This is why variable size packets are used, only the minimum packet size needed will be used for each packet.

Unfortunately many old UUCP implementations don't support anything but 3 windows, 64 bytes fixed packets. Some are so badly designed that they accept other configurations and then crash instead.

The -k parameter governs the max packet size allowed. If the remote host requests packet sizes larger than 64, variable size packets will be used too. Only powers of 2 (from 32 to 4096) are valid: 32, 64, 128, 256, 512, 1024, 2048 & 4096.

Versions of UUCICO from other vendors offer varying levels of support. For instance, Waffle UUCICO supports 128, 256 and 512, but not variable sizes. We note that many UNIX systems accept 128 (HDB based) and some of them 256. Taylor UUCP supports the whole range. FX UUCICO is fully compatible with it, and will work with any configuration. For better results you should ask your remote hosts which use Taylor to implement large packet size and enable short packets.

You must use the -S switch to connect with Waffle UUCICO at any packet size larger than 64 bytes. If you can't connect to a UNIX host, reduce the packet size to 64. Many old implementations will behave in very strange ways when trying to use large sizes.

The default packet time-out was increased to 20 seconds. If you use large packets and receive calls at low speed, check that the parameter "uu.delay" is not too short.

Protocol "G"

This is a variation of the "g" protocol used in SVR4 that is known to implement the full range of packet sizes. It doesn't use variable sizes, so it's not recommended for systems which support large packets on the "g" protocol.

Features of FX UUCICO

FX 32 recognizes a device "TCP" besides any "COMx" one. The device can be specified in any place that FX allows. Currently supported are the command line, the configuration file, and the dialer.

When using TCP, either the remote Internet host name, or its IP address are specified in the "systems" file, in the place where you normally put the phone number. Currently FX 32 doesn't implement a telnet emulator. When using TCP/IP, it would connect to the remote host at the TCP port 540 (also known as "uucpd"). This is a standard, and most providers run there.

There is no formal limit on the amount of simultaneous sessions through TCP/IP.

Internal COM driver

FOSSIL driver interface

File restart

Execution request

Grades

File size negotiation

Status bar

Logging

Networking

Exit levels

Internal COM driver

UUCICO supports regular serial connections, intelligent serial cards, and Fossil drivers. It supports up to 115200 bps, hardware flow control, custom I/O port addresses and IRQs, and automatic detection of 16550A chips.

FIFO operation is controlled by the parameter -z. Use -z0 to disable auto detection and FIFO mode. For maximum reliability in multitasking systems use low trigger values.

To change the default settings of your serial port, append the new I/O address and IRQ level to the port number. You may specify one or both parameters, the missing one will keep the default value.

The syntax is port,address,irq. The address must be in hex.

Examples:

```
1,2F0,5
3,,7
COM2,2E0 4
```

You may use this syntax in any place that FX reads port devices:

1. "device " in FXUUCP.CFG
2. the port field in the dialer
3. the -d runtime parameter.

Note that when both are set, the port number is actually disregarded.

The PC has a de facto standard on the hardware settings of COM1-COM4. Most internal modems and serial cards come configured for those default values. Use ONLY if you know what you are doing, unexpected behavior may result trying to access the wrong hardware.

FOSSIL interface

When using a FOSSIL driver you MUST set the receiving buffer size larger than the packet size (/R parameter in the BNU version). The default of 1024 bytes is not enough for the "y" protocol. Note that a FOSSIL driver will usually slow your performance. Most FOSSILs do not support bps over 38400. For those that support them, you must lock the speed from the FOSSIL command line.

It's possible that some systems may experience erratic behavior with the internal COM driver. Some old RS-232 boards, and some internal modems do not have a fully compatible UART. In those cases a FOSSIL driver (which may have been tested with these boards) may give better results. X00 and BNU are both available from Mustang Online!.

File restart

FX UUCICO supports file transfer restart, compatible with UNIX SVR4 and Taylor UUCP implementations. This is similar to the crash recovery feature in ZMODEM. You can disable file restart with the parameter -a.

You may need to temporarily disable the crash recovery option when sending a file whose name matches an existing file. If UUCP is used to transfer a file, and the same filename is found in the destination directory, UUCICO will interpret this as a "recovery" situation, and APPEND to the existing file.

"E"xecution request

FX supports Taylor UUCP "E"xecution requests. While *wcUUCP* does not generate "E" files, some other systems do, and this function may be of use if you are offering downline links to non-*wcUUCP* systems.

These commands don't need the transmission of "X.*" files, resulting in a single file transfer per transaction instead of two. Note that some sites running Taylor UUCP will not send "E" commands. FX UUCICO will receive "E" requests automatically without any changes, FX UUCP is needed for sending them. The operation is completely transparent to the user.

Grades

Grades in UUCP links mean "priorities". By using different grades you can control which (uucp) jobs are more "urgent". Many sites implement this so they can make better use of the system resources. For instance, mail always gets assigned Grade "A" so that it will be sent/received at all hours. But news may be assigned a Grade of "B" (or something lower than "A") so that newsfeeds only happen during sessions which permit "B" traffic. Regular file sends/receives may be Grade "C" or lower.

All of this allows a site to arrange their traffic so that mail always comes and goes, but newsfeeds only happen at certain times, and file transfers only happen in the wee hours of the morning when system usage is lowest.

FX UUCICO has full support for grades, and it's compatible with the standard used in most UNIX UUCP hosts. Grades consist of a single letter attached to the (uucp) job file name when it is created. They are classified in reverse alphabetical order: "A" is the highest grade and "z" is the lowest. Grades are case sensitive in UNIX systems, but they aren't in DOS because DOS doesn't distinguish cases in filenames.

Calls made by UUCICO use the FXUUCP.CFG file parameter "uu.grade" and/or the -g command line parameter for establishing call grade. Calls received by UUCICO uses the grade requested by the caller. The "caller" (who's probably paying for the connection) ALWAYS governs the grade. UUCICO will not send jobs that have lower grades than specified, and the remote host is supposed to do the same.

When no grade is specified, all jobs are transferred.

FX UUCICO may also order the jobs by grade priority. See "fx.sortJobs"

If you do not use grades, UUCICO will create all jobs with decimal digits which have an even higher priority. You can still request the remote host for grade limits. A request for a determined "grade" will enable transmission of any job with the same or higher grade. This is not fully compatible with Waffle 's UUCICO usage, but it is with virtually all other UUCP packages.

Grades are not very useful if the "caller" doesn't know the remote host convention. If you implement grades you should tell your BBS users and downline nodes what grades you use for mail and news.

UUCICO doesn't generate grades, because it doesn't create jobs. Rmail, rnews, uux and "uucp create"" create jobs as specified in the "mailgrade" and "newsgrade" configuration. Call your provider for specific information about grades.

File size negotiation

This is an extension to the UUCP protocol introduced by UNIX SVR4 and enhanced by Taylor UUCP. Each side tell the others the maximum file size it can accept, and the exact size in bytes of files before they are transmitted. File sizes are limited by the Operating System, by the available space on disk and by configuration.

FX UUCICO can be configured for a maximum file size transmission and to leave a minimum free space on the spool disk. A cooperative party (a remote UUCICO that uses file sizes) is needed for full implementation.

There are two parameters in the "FXUUCP.CFG" file for size usage: "fx.maxfile" and "fx.freespace"

FX UUCICO will not send files larger that "maxfile". It will request the other side to not send files larger than "maxfile" or that will leave less than "freespace" on disk.

If the remote host doesn't understand file size negotiation, FX UUCICO will still check space on the local site, and reject any files which will leave less than "freespace" bytes the local system.

Caution: FX UUCICO will not do additional checking once the transmission of a particular file has begun.

Note that the remote side who is sending a file may react to the "denying for size reasons" in different ways. If it's not aware of the "file size" extensions it may NEVER send that file again even though you may have enough space on disk later. This is not a failure of FX UUCICO, but simply a feature missing from the host you communicate with.

If "fx.freespace" is not present in the configuration file, FX UUCICO will not check for free space on disk at all (which might improve performance on some systems). If "fx.maxfile" is not present the default is 32 Megabytes.

Status Bar

The switch (-V) enables a status bar at the top of the screen. This bar shows file transfer progress at real time. The exact format of the line changes if UUCICO doesn't know the length of the current file. When talking to another FX or Taylor UUCP, FX always knows the length beforehand.

To support this status bar, the -V switch changes completely the way it writes to the screen. Normally all screen output goes through DOS, but when the -V switch is on, FX writes directly on the video memory. This may have a negative impact on performance and compatibility.

Logging

Logging is essential for large site administration. FX has several log files and allows you to configure the amount of information written to them. The location of all log files may be specified with "fx.logdir"

FX UUCICO creates two different main log files: "uucico" has the normal logging, and "debug" has all the testing messages and info. This has the advantage of not filling the normal log with line after line of debugging messages.

All logged messages are displayed on the screen as well. Each message has a level number assigned; only those with a lower or same level than the current debug level are logged. The debug level may be independently configured for the screen and for the log files. "uu.debug" and the -x switch, "uu.visual" and -v, configures the disk and screen debug level respectively. **Using high settings may substantially impair performance.**

Because using high debug levels may create a huge log, there is a parameter in the "FXUUCP.CFG" file that overrides the location where the "debug" file is written. You may want to put your "debug" file in a ramdisk, because otherwise the speed may slow down considerably when using higher debug levels (8 and up).

In addition to those, UUCICO also writes to the "net" and "uulog" files. The "net" log has a single line for each connection reporting total time, bytes and errors. Files transmitted are logged in "uulog", while the "fx.uulogLevel" option is similar to the debug level one.

Networking

FX UUCICO is fully networkable. You can run multiple UUCICOs concurrently over a network, without any kind of conflict between them. FX will manage all contention automatically.

From FX's point of view, networking means "sharing", running multiple UUCICOs in the same file system. Running it over a network doesn't necessarily imply sharing if used in single user mode. Multitasking two or more UUCICOs on the same machine has the same sharing effect as a network. You usually need use the fx.share statement in your FXUUCP.CFG file. SHARE.EXE is implicitly loaded in WinNT and OS/2.

All configuration files are accessed in shared mode, which means that you don't need to make them "read only". Writable files and jobs are accessed in exclusive mode.

If you multitask more than one UUCICO in the same machine, you must take care that they do not try to access the same port at the same time. FX doesn't currently prevent more than one application from trying to share a port.

Exit levels

If "fx.wQuirks" is on, FX UUCICO returns 0 when one or more connections were successful, otherwise it returns 1. Successful means that the uucp handshake has been accomplished. These values can be overridden with the options "uu.exit" and "uu.fail" respectively.

When "fx.wQuirks" is off, FX returns 0 when the connection has been completed, and 1 when it should be retried. Reasons for retries could be failed scripts, loss of carrier, fatal time-outs, etc. If multiple connections are requested with -s all or -s any, the exit level reflects the status of the last connection attempted. Note that no connections due to no queued jobs is interpreted as successful.

FX may abort with higher exit levels, typically two or three, because of configuration or I/O errors. Examples are, invalid parameters, some file errors, or other unexpected situations.

16550A FIFO UARTS

The -z switch controls the internal driver buffering for the FIFO. The syntax is -z<bytes>, where bytes is the trigger setting in the UART. To disable the FIFO UART entirely use -z0. Using any other value will bypass FIFO auto-detection and FX will force the internal driver to enter FIFO mode. This may be helpful for not fully compatible UARTS and in some virtual environments, but without a FIFO it will produce transmission errors.

In some multitasking/networking environments, using the full FIFO buffers at high DTE speed may produce data loss. If you experiment "Rx" errors with the FIFO in full mode, you may "trigger" interrupts with FIFO buffers partially full. Using -z1 (which is not the same as -z0) will give the maximum reliability to the system.

Most setups don't need to adjust this parameter at all. It is used by the internal driver only, and ignored in FOSSIL mode.

Accessing the public mailing list

All users of FX products are invited and encouraged to subscribe to the mailing list. It was specifically created to be a forum for discussing installation, configuration and implementation issues.

To subscribe to fx list, you must send a message to the command server, fx-cmd@tau-ceti.isc-br.com. In the body of the message, issue the commands

```
subscribe fx-list
listname fxuser@somesite.dom
(the mail address you wish list materials sent to)
```

If you should choose to leave the list, send the same message to the command server again, substituting the word "unsubscribe" for "subscribe".

When reporting a bug, please include pertinent clips from your logfiles, or any other documentation which may assist the authors of FX UUCICO in resolving the problem.

Security issues

Disclaimer

Although a correctly-set up *Wildcat!* BBS itself is designed to be secure from unauthorized access, a completely secure system is dependent on many additional factors, including:

- the type of network it is connected to
- access rights to network drives and resources for local workstation users
- access rights to network drives and resources for users connecting from outside your network through Wide Area Network ports
- access rights to network drives and resources for users connecting via Internet connections

Internet access in particular is "open" by design, and could pose a security problem not only for the BBS, but for all the resources of your network if your network is not explicitly configured to prevent unauthorized access via common Internet protocols such as FTP, TELNET and RLOGIN.

For that reason, we strongly recommend that you do *not* install this package on a network that has a direct Internet connection, unless you are prepared to invest time and resources into configuring your network to protect it, and *Wildcat!*, from unauthorized access.

Many systems use a combination of specially-designed hardware and software, known as a "Firewall", to prevent unauthorized access. A number of different configurations are possible.

Many different network configurations and access profiles are possible in Windows 95 and Windows NT, and this documentation cannot hope to cover the entire range of possibilities. We strongly recommend making full use of the Windows 95 Resource Kit, included on the Win95 CD-ROM distribution disk, and the Windows NT resource kit, available from Microsoft's World Wide Web page at

`http://www.microsoft.com/BackOffice/ntutil.htm.`

MD5 Secure Passwords

The RSA Data Security, Inc. Message-Digest Algorithm (MD5) secure password feature is designed as a security measure for Sysops who have their *Wildcat!* BBSs connected to the Internet. MD5 is an encryption specification that allows a host and caller to exchange a password without actually sending the password. The MD5 secure passwords option is automatically used any time you connect with a host that is capable of exchanging MD5 information.

Since it is possible at some points on the Internet to monitor data passed between sites, Internet connections are not inherently secure, MD5 secure passwords are designed to prevent people outside your system from obtaining passwords to your BBS by monitoring network connections.

In order to make use of MD5 Secure Passwords, the caller's communication program must also have the MD5 feature. The free graphical *Wildcat!* Navigator makes use of MD5, as does QmodemPro for Windows and Windows 95, and other quality packages. Here's how it works.

When a caller connects, *Wildcat!* sends a unique group of random characters just before the copyright banner. The caller's communication software encodes this group of characters, plus the caller's password into a new character group called a digest string using a process known as MD5.

The caller's communication software sends the digest string back to the BBS and the BBS performs the same process of MD5 encoding using the caller's password from the user database and the original sent to the caller. Then *Wildcat!* can compare the encoded digest string it created with the one received from the caller. If they are identical, the caller can then log in without having to send their unencoded password across the connection. Note that MD5 secure passwords work over regular dialup connections as well.

TCP/IP NetBios on NT networks

As another security measure, you should turn off nbt (NetBios over TCP/IP) access to your NT machine. This is best done by blocking TCP ports 137, 138, and 139 at your router. This prevents clever people from manually adding nbt name entries to their systems and accessing public shares (if any) on your machines.

What is FTP?

FTP stands for "File Transfer Protocol". It is a way for people to connect to your BBS via the Internet, to send and receive files. Files are copied from one site to the other using a standard binary protocol created for Internet file transfers.

ANONYMOUS FTP allows callers to connect to your system and transfer files without requiring a User ID on your BBS. They log into a special user account with privileges you define for uploading and downloading, and use their e-mail address as a password.

Callers with user accounts on your BBS can connect via FTP, with the same file access they would have if they logged into the BBS itself.

Only files and file areas "known" to *Wildcat!* are available to FTP callers. As the sysop, you have full control over what parts of your file system your callers can see.

You can also offer outbound FTP access for your callers. BBS users can select from a menu of FTP sites, or they can enter an FTP address themselves. *Wildcat!* will connect them with the site they select, allowing them to transfer files between the remote site and their computers.

Configuring *Wildcat!* for FTP access: Incoming FTP

Incoming FTP allows callers from the outside world to use the Internet to connect to your system, log on as an "anonymous" user, and send or receive files from a selection of file areas. Files are sent and received between machines using an Internet protocol called FTP.

Callers with user accounts on your BBS can log on via FTP with their normal user names, and see all the same files and file areas they would be able to access if they had logged directly onto the BBS itself.

Creating a user ID

To provide this service:

1. Create an access profile for anonymous FTP, with access to only those file areas you want to make available to the general public. You should not ordinarily allow upload access to anonymous FTP users.
2. Create a user on your BBS named "ANONYMOUS FTP". Set the password to FTP. *Wildcat!* contains code that prevents callers from logging on interactively with this account.
3. On the "Extra Info" page of this user record, change the setting to "Allow multiple logons**.**

Creating incoming FTP nodes

To allow incoming FTP access:

1. Verify that *wcServer* is running, and start *wcConfig.*
2. Double-click the Nodes icon.
3. Select a node to allocate for FTP access. Note that you cannot designate the same node for *both* modem access and Internet access. You *can* use the same node for incoming FTP, Telnet, HTTP and Local (LAN) calls.
4. In **Call types**, select one or more of the options to use for this node.
5. Repeat the procedure for as many incoming nodes as you want to use.

How many nodes can I assign?

The maximum number of incoming Telnet/FTP/HTTP nodes is limited by the "bandwidth" or total capacity of your net connection. A 14.4 kbaud dialup connection may be able to support only one or two incoming Internet connections, depending on traffic. A 56 Kbaud (57600 bps) connection can support four or more connections, since not everyone is likely to be transferring files at the same time.

FTP file areas

This is the directory name shown to users who connect to the BBS's FTP server. FTP file area names are defined in ***wcConfig*/File Areas/Editing file area.**

If FTP is offered, enter a short description of the file area in this field, keeping in mind that some FTP clients limit the amount of text displayed.

If you leave this field blank, *Wildcat!*'s FTP server creates descriptions "on the fly" from the standard directory description by removing spaces and other characters that are prohibited. Spaces and some other characters are not permitted since this field must conform to allowable FTP filename conventions.

Outgoing FTP

Create an FTP menu selection

To add an FTP Outbound menu selection to your BBS:

1. Start *wcConfig,* and double-click the *wcMenu* icon.
2. Select the menu to update, and press [INS] to pop up the Edit Menu Item window.
3. Define a selection key, taking care not to duplicate one already in use. Fill in the description for the command using the example in the window, and don't forget to use the Access button to define the access profiles that can use this command.

4. Note that this action updates only the *dynamic* menus generated by *Wildcat!* — it does not update your custom ANSI menus. Pop up the ANSI DRAW icon in the *wcConfig* window to add your new menu selection to your menu display files.

For more information on using *wcMenu*, please refer to your *Wildcat! Sysop Guide* or *Reference Guide*.

Using @LINK codes to create a custom FTP menu

The following FTP.BBS menu file shows how to use the @LINK command to display a selection of FTP sites. Note that the GOTO= construct specifies an Internet address rather than a file to display.

```
@CLS@
- - - - - - - - - - - - - - - - - - @0F@
  FTP Menu             Wildcat! v5

C @LINK SEL=C TITLE="Walnut Creek CDROM" GOTO=ftp.cdrom.com@
N @LINK SEL=N TITLE="Netcom"        GOTO=ftp.netcom.com@
S @LINK SEL=S TITLE="Microsoft"     GOTO=ftp.microsoft.com@
```

Tip:

You can specify an absolute IP address in place of the domain name. For instance, the IP address for ftp.netcom.com is 192.100.81.1. The following @LINK construct would also be valid:

```
N @LINK SEL=N TITLE="Netcom"        GOTO=192.100.81.1@
```

You can find more information on using @LINK menus in your *Wildcat! Sysop Guide*.

FTP User security

wcConfig has two security settings that affect FTP services:

Temporary FTP file space

The first FTP security setting is in the **Security Profiles** icon**.** The **File Privileges** tab for each security profile has a setting for "Temporary FTP file space". *Wildcat!* uses this space as temporary storage when a caller uses the outbound FTP service on your BBS to connect with another site and download files. The files are copied to this temporary storage area first, downloaded to the caller, then deleted.

To limit storage space to a fixed number of kilobytes, enter the maximum number of kbytes to store in this field. When the temporary storage area is full, the caller will be notified.

To allow unlimited downloading, enter a 0 (zero) in this field.

Allow any FTP address

The second FTP security setting is in the **Access Profiles** icon. The **Internet** tab for each access profile has a setting for "Allow any FTP address."

When a caller requests an outbound FTP connection, their choices are normally limited to the selections you enter in the @LINK menu. If you would like callers to be able to enter any FTP address, turn this option **on**.

What is Telnet

Telnet is a networking protocol that allows a user to login to a remote computer to use applications. Telnet is a client/server application: the server is the site you're connecting to from *Wildcat!*, while *Wildcat!* itself acts as the Telnet *client* during a Telnet session. When callers from other machines use Telnet to connect to your *Wildcat!* BBS, *Wildcat!* acts as a Telnet *server.*

Telnet allows callers to connect with their favorite sites — other Bulletin Board Systems, Internet Service Providers, public and private computer networks and other information services, as if they had dialed in using a modem, or from a terminal connected directly to the machine they are accessing.

Creating incoming Telnet nodes

To allow incoming Telnet access:

1. Verify that *wcServer* is running, and start *wcConfig*.
2. Double-click the Nodes icon.
3. Select a node to allocate for Telnet access. Note that you cannot designate the same node for *both* modem access and Internet access. You *can* use the same node for incoming FTP, Telnet, HTTP and local logons.
5. In **Call types**, select one or more of the options to use for this node.
6. Repeat the procedure for as many incoming nodes as you want to use.

How many nodes can I assign?

The maximum number of incoming Telnet/FTP/HTTP nodes is limited by the "bandwidth" or total capacity of your net connection. A 14.4 kbaud dialup connection may be able to support only one or two incoming Internet connections, depending on traffic. A 56 Kbaud (57600 bps) connection can generally support four or more connections.

Create a Telnet menu selection

To add Telnet Outbound menu selection to your BBS:

1. Start *wcConfig,* and double-click the *wcMenu* icon.
2. Select the menu to update, and press [INS] to pop up the Edit Menu Item window.
3. Define a selection key, taking care not to duplicate one already in use. Fill in the description for the command using the example in the window, and don't forget to use the Access button to define the access profiles that can use this command.
4. Note that this action updates only the *dynamic* menus generated by *Wildcat!* — it does not update your custom ANSI menus. Pop up the ANSI DRAW icon in the *wcConfig* window to add your new menu selection to your menu display files.

For more information on using *wcMenu*, please refer to your *Wildcat! Sysop Guide*.

Using @LINK codes to create a custom Telnet menu

The following TELNET.BBS menu file shows how to use the @LINK command to display a selection of FTP sites. Note that the GOTO= construct specifies an Internet address rather than a file to display.

```
Telnet Out Menu        Wildcat! v5/NT
A  @LINK SEL=A TITLE="Mustang Online! " GOTO="bbs.mustang.com,t"@
T  @LINK SEL=T TITLE="Taylor Farms BBS " GOTO=bbs.tcfarm.com,t@
Z  @LINK SEL=Z TITLE="Zeitgeist BBS" GOTO="bbs.zgnews.com"@
W  @LINK SEL=W TITLE="Wildcat! 4 Development GOTO="wc4.mustang.com"@
```

Tip: You can specify an absolute IP address in place of the domain name. For instance, the IP address for bbs.mustang.com is 204.250.9.130. The following @LINK construct would also be valid:

```
A @LINK SEL=A TITLE="Mustang Online!" GOTO="204.250.9.130"@
```

The ",t" parameter: Transparent mode

The ",t" parameter shown on some of the example menu links is necessary for BBS sites connecting via Telnet. This sets *Wildcat!*'s Telnet protocol to "transparent" mode, allowing 8 bit characters to be transmitted. By default, Telnet protocol strips the high bit for compatibility with 7-bit UNIX systems (and some others), and this could cause problems with binary file transfers.

If your callers have difficulty connecting to certain sites when they enter addresses manually, or if they are unable to transfer files, you may want to provide an informational bulletin recommending they use this parameter.

Telnet User security

The security setting for outbound Telnet access is in the **Access Profiles** icon. The **Internet** tab for each access profile has a setting for "Allow any Telnet address."

When a caller requests an outbound Telnet connection, their choices are normally limited to the selections you enter in the @LINK menu. If you would like callers to be able to enter any Telnet address, turn this option **on**.

What is HTTP?

HTTP stands for "HyperText Transfer Protocol", the language of the World Wide Web. HTTP allows your BBS to display files encoded in HTML (HyperText Markup Language) to callers who connect using suitable World Wide Web browsers, including the *Wildcat! Navigator*.

Callers from the outside world can visit your "public" World Wide Web page using any web browser, while callers connecting over the Internet with *Wildcat! Navigator* can log on and access all parts of your BBS, just as if they dialed in. The *Connectivity Pack* adds the ability for callers using *Wildcat! Navigator* to surf the World Wide Web beyond your own BBS.

Wildcat!'s built-in web services provide basic HTTP access, and support the most commonly-used HTML tags in the HTML 2.0, HTML 3.0 (proposed), Netscape 2.0 and Microsoft Internet Explorer specifications. CGI scripts, including fill-in forms, are not supported.

Configuring *Wildcat!* for HTTP access: Incoming HTTP

To set up *Wildcat!* for incoming HTTP (World Wide Web) access:

1. Verify that *wcServer* is running, and start *wcConfig*.
2. Open the **Node Settings** icon.
3. Select a node that is not currently being used for dial-in access, and click the **Edit** button.
4. Under **Call types,** turn on **HTTP.**
5. You only need to do this for one node - since HTTP connections from the Internet do not take a node number, it doesn't matter which node you choose.

Creating a "Public" home page

Callers who use *Wildcat! Navigator* to connect to your BBS from the Internet will be able to log on and see your regular home page.

You will also need to create a home page for callers who connect using other web browsers, for instance Netscape Navigator or Microsoft's Internet Explorer. Since these callers do not log onto the BBS, they will see only your "Public" home page.

To create a "Public" home page:

1. Create a subdirectory named PUBLIC below your HTTP directory. The HTTP directory is located in your WILDCAT home directory (normally C:\WC5).
2. Use a text editor or an HTML editor to create a DEFAULT.HTM file. You can use standard HTML tags to display graphics, link to other files or other pages on the Internet, but you *cannot* start *Wildcat! Navigator* client programs from your "public" page, since these clients require a caller to be logged onto the BBS from the *Wildcat! Navigator*.

Outgoing HTTP

No special configuration besides your regular Internet connection is required to allow outgoing HTTP access from *Wildcat!*.

You can control access in each Access Profile to outgoing HTTP "proxy" services.

Tip: Because *Connectivity Pack* allows two-way World Wide Web access, you can add links to other World Wide Web pages from your BBS home pages.

HTTP User security

The security setting for outbound HTTP access is in the **Access Profiles** icon. The **Internet** tab for each access profile has a setting for "Allow HTTP proxy."

Turn this option **on** to allow callers to use the *Wildcat! Navigator* to browse other sites on the World Wide Web.

Configuring your UUCP account

Once you have located a UUCP host provider and set up an account, you will need to configure your newsgroup selections and other account information. Because no two host systems are alike, it is impossible to discuss here all the variations you might encounter. When you logon to your UUCP account, it's a good idea to turn on your capture file so you can review your session after you disconnect. This may save some connect time on future calls.

At the core of every UUCP host provider is the UNIX operating system. Depending on how your host is set up, you may or may not have to interact directly with UNIX. Many will offer a menu-driven "shell", somewhat like the BBS systems you're accustomed to calling. In this case, simply follow the menu prompts and make use of the on-line help and voice technical support available on most commercial systems.

If your host offers only a UNIX prompt, our best advice is to make use of the help files. To get help for any UNIX command, type "man" followed by a space, then the command you need help with. The command "man" is short for "manual". For instance, to see help on the UNIX command "ls" (equivalent to the DIR command), type

```
man ls [ENTER]
```

UNIX highlights

UNIX has some features and commands in common with DOS, and comes in two main "flavors": Berkeley UNIX (most popular on the west coast) and AT&T System V (popular on the east coast and Europe). The more comfortable you are using DOS commands, the easier it will be to learn enough UNIX to navigate your host system. This isn't the place for a comprehensive list of UNIX commands, however we will go over some of the highlights briefly here.

UNIX commands, and file and directory names are case-sensitive, meaning that commands may well have different meanings depending on whether they're typed in lower case or caps. File and directory names are not subject to the eight plus three character limitation of DOS, and paths and subdirectories are delimited with a forward slash character rather than a backslash. Command line switches are indicated with a hyphen rather than a forward slash.

UNIX offers very little feedback on whether a command has been executed successfully, or even if you typed it correctly. Be careful — if you type "rm *" (remove everything), that's exactly what UNIX will do. It won't even ask "are you sure?" before deleting all your files.

Don't just hang up on a UNIX system if you can possibly avoid it - it might not notice you're gone for some time, and you may continue to build up connect charges. To logout, type "logout" or [CTRL] [D]. The first command works on some UNIX flavors, the second command on the rest. If you use the wrong command to logout, UNIX will usually tell you the correct one.

Wildcat! configuration

To configure *Wildcat!* for downline UUCP support:

1. Verify that *wcServer* is running, and start *wcConfig*.
2. Open the **Access Profiles** icon.
3. Create a new access profile called UUCP. Turn on **Allow Quick Logon.** This is the only item you need to set.
4. Log onto *Wildcat!* using *wcLocal*
5. Go to the Sysop Menu User Edit screen.
6. Create a user record for each downline node. On the **Extra Info** page, enter the downline node's SITENAME in comment field #5. Add "UUCP" to the list of access profiles.
7. The information in the user record is passed by *Wildcat!* to UUCICO as %1 to identify the current user. This SITENAME must match the information in the nodes own UUCICO configuration file (for instance STATIC for Waffle UUCICO, or FXUUCP.CFG for the version of UUCICO supplied with *Connectivity Pack)*..

Create a door called UUCICO

When a caller logs on, *Wildcat!*'s logon procedure checks for the UUCP access profile, and the site name in the Comment 5 field in the user record. If both conditions are true, it immediately starts UUCICO as a door.

To add UUCICO to your door menu:

1. Verify that *wcServer* is running, and start *wcConfig*.
2. Open the **Doors** icon.
3. Click the ADD button. In the **Settings** tab, enter the **Door name** as UUCICO. The **Door Type** is **Generic 32-bit.** The Door Batch File is UUCICO.BAT.
4. In the **Access Profiles** tab, select UUCP from the list, and toggle it **on.** No other profiles should be able to access this door.
5. You should **not** add this door to your Doors Menu.

Create UUCICO.BAT

UUCICO.BAT is a batch file that executes UUCICO in "slave" mode, and exchanges UUCP mail with the downline node. You can find an example UUCICO.BAT file in your GATEWAY directory. Copy this file to the directory for BATCH files, defined in *wcConfig.*

Here is an example of a proper UUCICO.BAT file:

```
cd \WC5\gateway
uucico.exe -r0 -dCOM1 -u%1 -b38400
```

The -u%1 parameter contains the user's site name, which UUCICO compares with site names in your PERMITS file to see if the user currently logged on is a valid site for downline feeds.

Modifying the PERMITS file

Your next step is to modify the sample PERMITS file in your GATEWAY directory to add the site names and access "permits" for your downline nodes. Two examples (commented out) are shown in the file provided with *wcUUCP* — add your own downline nodes in the same manner, without the comment lines.

Here is an example of a valid PERMITS file

```
default /system=known
edge    /account=edge
        /system=edge
kaos    /account=kaos
        /system=kaos
```

Scripting

Your downline UUCP nodes will be logging into *Wildcat!* with their name, preceded by the quick logon switch (the * character). This will trigger the logon routine that detects whether the caller has the UUCP access profile, then either resumes the logon process for normal callers, or starts UUCICO.BAT for UUCP mail transfers.

Callers with the special UUCP access profile can still log onto the BBS normally, by not using the "*" quick logon switch.

A proper script file for UUCICO to log into a *Wildcat!* BBS this way would look like this:

```
tomustang name? /L word /?
```

The SYSTEMS file for a downline node would look like this:

```
mustang Any g modem14400 tomustang 805-873-2400 *12345 secret
```

Troubleshooting

Q: The "To", "From " and "Subject" fields in the message headers in off-line reader allow a maximum of 25 characters of input. How can I send a message to someone whose e-mail address is longer than 25 characters? How can I use a subject longer than 25 characters?

A: Text entered in the first two lines of the message *text* in the format

```
To: j.r.bob.dobbs@ultimate.slack.org
Subj: instant answers to everything!
```

allows you to enter full-length address and subject information for your messages, and overrides whatever is in the message header.

Q: I get a message that says something like: "Remote end does not have an entry for you".

A: Either your provider has not yet configured your account for UUCP, or your UUCP Site Name was not entered correctly.

Q: The chat script in my SYSTEMS file doesn't finish.

A: The chat script in your system file must not contain any carriage returns — the entire script must be on a single line of text.

Q: I have a 9600 baud connection, but I'm getting less than 500 CPS throughput, and the transmission reports many errors and retransmissions.

A: Hardware handshaking may not be properly configured for your modem or system. This results in dropped characters and retransmissions. If you need help setting up your modem, feel free to call MSI Technical Support. Try using a fossil driver such as BNU or X00 to improve throughput.