UUPC/extended Configuration Files

Overview

This section describes the UUPC/extended configuration files. It assumes you have installed the programs and configured them as described in **Installation**, page 15, and that you have access to the Nutshell Handbook *Using UUCP and Usenet*.

The UUPC/extended UUPC.RC and *[userid]*.RC files

Introduction

The UUPC.RC file provides the basic configuration information required to initialize the various UUPC/extended programs. It provides information which applies to the entire local system. It can also provide defaults for individual users. These defaults can then be overridden by the values in each user's *[userid]*.RC file[29].

Blank lines and lines beginning with a pound sign (#) are ignored. Entries in the file are of the form:

prefix.**keyword**=value

If multiple lines exist with the same keyword , the last line is used. An exception to this rule is the **options=** line; if multiple **options=** lines exist, the options are processed individually and the last occurrence of each option is used.

The *prefix* is optional, and if present must be DOS, 32BITOS2 (for OS/2 2.x), 16BITOS2 (for OS/2 1.x), WIN16(for Windows 3.x), or WIN32(for Windows NT) and must be followed by a period. Case is not significant for the *prefix* or **keyword**. If the *prefix* is present, the line is only used if the current environment matches the keyword. This allows multiple lines in the same configuration file for different environments, such as:

```
DOS.Editor=edit %s
OS2.Editor=epm %s
WIN16.Editor=notepad %s
WIN32.Editor=notepad %s
```

This allows the use of three different editors in four different environments. This could also be specified as:

```
Editor=notepad %s
DOS.Editor=edit %s
OS2.Editor=epm %s
```

In the latter example, the program notepad is the editor specified for all environments, but it is superseded for both the DOS and OS/2 environments.

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[29]Note that text fields which are supplied in the UUPC.RC file cannot be cleared in the *[userid]*.RC file. For example, a user cannot remove the organization field from her mail's headers if the UUPC.RC supplied a default one. However, the user could change the organization name by adding an "Organization=[name]" line to her *[userid]*.RC file.

Note: If the DOS versions of UUPC/extended programs are invoked under OS/2 or Windows NT, they will use the DOS environment keywords rather than attempting to determine the native environment.

The fields are described in the tables below as being of several types, most of which are self-explanatory. Of special note, however, are fields described as **tokens**, **path names** or **file names**. Tokens are single words with no spaces. Any tab or space terminates the value. As for path and file names:

- Path and file names must be valid names under the host operating system.
- Path and file names without drive letters are presumed to reside on the same drive as the UUPC/extended configuration directory.
- Slashes (/) and back slashes (\) are considered equivalent in paths. Back slashes are translated to slashes internally and translated back when opening files and for external commands such as editors.[30]
- Relative path and file names (except for those listed in the next paragraph) are presumed to be relative to the UUPC/extended configuration directory.
- The files defined by **Aliases**, **AltSignature**, and **FileSent** fields are assumed to be relative to the user's home directory. In addition, **only** these files may use the ~userid convention defined for files in the section on MAIL in **UUPC/extended Command Reference**, see page 40.

Keywords valid in individual or system configuration files

The following are the valid fields for the UUPC.RC or *[userid]*.RC file. They are normally placed in the UUPC.RC if applicable to all users of local system, and otherwise put in each *[userid]*.RC file as needed.

Keyword	**Type**	**Description**	**Default**[31]	**Example**[32]
Aliases	File name	**User** aliases (nicknames) file. **Note:** If the path is omitted, this file is presumed to reside in the current user's home directory.	**None**.	aliases.txt
AltSignature	File name	Name of alternative file included in response to ~A command when sending mail.	**None.**	*omitted*

[30]Forward slashes are not translated to backslashes for the compress program invoked from RNEWS, which is technically a bug but not a problem in practice since most compress programs are derived from UNIX programs which don't care about the difference.

[31]Required fields must appear in one of the two files, but need not appear in both.

[32]For *omitted* entries, the entire entry would be omitted to allow the default to be in effect.

BackupExt	File Extension	Extension used for files renamed by backup processing. **Note:** See **backup** option, below.	BAK	*omitted*
Editor	String	Command string including the name of the editor used for editing outgoing mail. **Note:** %s must appear in the string to define where the file name should be substituted.	**None.**	edit %s
FileSent	File name	Name of file in which all mail sent by local user is saved.	**None.** **Note:** If this parameter is omitted, no copy is saved.	outgoing
Folders	Path name	Included for use by MUSH (Mail User's Shell). Not used by UUPC/extended.	N/A	*omitted*
Home	Path name	Home directory of current user. This directory is the directory in which FORWARD files are searched for, and the default directory for the files defined by **FileSent**, **Aliases**, and **Signature** files.	**None.** **Note:** This field is required.	C:\u\snuffles
MailBox	User id	Name (userid) of the currently active user. Should be 1-8 characters and only contain valid alphanumerics.	**Note:** This field is required.	snuffles
Name	String	Full name of the user	**Note:** This field is required.	Snuffles P. Bear
Organization	String	Name of the organization to be listed in the Organization field in headers of outgoing mail.	**None.**	Itty-Bitty Machines Corporation
Pager	String	Command string including the name of the pager used for displaying incoming mail. **Note:** %s must appear in the string to define where the file name should be substituted.	**None.**	list %s
ReplyTo	Token	Address to which replies to outgoing mail is to be sent.	Replies are send the originator of the mail.	*omitted*

Signature	File name	Name of signature file included in response to ~a command or by the **autosign** option when sending mail.	**None.**	*omitted*
Version	Token	UUPC/extended version file was last updated for. **Note:** This field is for documentation purposes only.	**None.**	1.12b

Keywords valid only in system configuration files

The follow keywords are **only** valid in the UUPC.RC configuration file, and always apply to all users of the local system.

Keyword	**Type**	**Description**	**Default**	**Example**[33]
Anonymous-Login	Token	Specifies times (using same format as time field in **SYSTEMS** file, see page 96) when anonymous login is allowed.	**None.** (No anonymous logins are allowed.)	Any Night Evening
ArchiveDir	Path name	Directory to which the **EXPIRE** command moves archived news articles. **Note:** Must be on same disk partition as the **NewsDir**	*[ConfDir]*/ARCHIVE	*omitted*
BackupExt	File Extension	Extension used for files renamed by backup processing. **Note:** See **backup** option, below.	BAK	*omitted*
Banner	File name	File displayed before login prompt by UUCICO.	**None.**	
CharSet	String	Valid characters allowed in file names and used for mapping UNIX names to local names.	a-z, 0-9, !#$%&'()-@^_`{}~	*omitted*
ConfDir	Path name	Base UUPC/extended configuration directory. Location of various files (SYSTEMS, PERMISSNS, PASSWD) and default parent directory for **ArchiveDir**, **MailDir**, **NewsDir**, **PubDir**, **SpoolDir**, and **TempDir**.	Taken from path component of UUPCSYSRC environment variable.	C:\UUPC

[33]For *omitted* entries, the entire entry would be omitted to allow the default to be in effect.

Domain	Token	Fully-Qualified Domain name of the local system, included in headers of all mail sent.	**None.** **Note**: This parameter is required.	kew.com nodename.UUCP
FromDomain	Token	Fully-qualified Domain name of system which overrides the **Domain** field for the RFC-822 **From:** field. Used in site hiding. See **The Ever So English Sport of Site Hiding**, page 110. **Note:** This option should *only* be used when site hiding. Omit it otherwise.	**None.**	*omitted*
InModem	Simple file name	Simple name (without path or extension) of *[modem]*.MDM file to use for when UUCICO is invoked with the -r 0 (accepting incoming calls) option.	**None.** **Note:** This field is required for using the UUCICO -r 0 option.	HAYES24
Internal-Commands	List of commands	List of commands processed by UUXQT as internal commands.	break cd chdir copy ctty date del dir echo erase for md mkdir rd rem ren rename rmdir time ver verify vol	*omitted*
LocalDomain	Token	Domain name which is automatically appended to simple system names being searched for during host table look-ups. See also the sections on mail routing in **Advanced Installation and Configuration Topics**, page 103.	If the **Domain** has one or two parts (x.y or UUCP), the entire domain name. Otherwise, all but the left most word of the domain name (y.z out of x.y.z.)	*omitted*
MailDir	Path name	Directory to which RMAIL delivers mail.	*[ConfDir]*/MAIL	*omitted*
MailExt	Token	Extension used for mailbox files.	**None.**	SPB[34]

[34]Snuffles will feel hurt if you don't use this.

MailServ	Host name	Simple host name of system to handle default mail forwarding. **Note:** This system must be listed in your **SYSTEMS** file. The systems file is discussed in **The UUPC/extended SYSTEMS file**, page 96.	**None.** **Note:** This parameter is required.	myserv
Maximum-Hops	Integer	Maximum number of Received: lines allowed in remote mail before it is rejected by RMAIL because of looping.	20	*omitted*
MOTD	File name	File name with text to be displayed after successful login of **non-**UUICICO shells.	**None.**	*omitted*
MushDir	Path name	Included for use by MUSH (Mail User's Shell). Not used by UUPC/extended.	N/A	*omitted*
NewsDir	Path name	Directory into which RNEWS writes news. **Note:** Must be on same disk partition as the **ArchiveDir**	*[ConfDir]*/NEWS	*omitted*
NewsServ	Host name	Host to which posted news is sent for distribution to the outside world. **Note:** Posting news is currently not supported. This field is included for future expansion only.	Value of **MailServ**.	*omitted*
NodeName	Host name	Simple UUCP host name of the local system.	**None.**	toscis
Options	List of tokens	List of Boolean options from list below.	All options off.	askcc autoedit autoinclude autosign backup doskey expert pager purge suppresscopyright verbose undelete multitask multiqueue symmetricgrades
Passwd	File name	File name of PASSWD file containing name and directory information for local users and passwords for remote systems logging in.	*[ConfDir]*/PASSWD	*omitted*

Path	Path String	Semi-colon delimited list of directories for UUXQT to search for external programs.	Value of PATH variable when UUXQT is invoked.	*omitted*
Postmaster	User id	Name (userid) of the user to receive bounced mail and all other mail addressed to local user **Postmaster**. Should be 1-8 characters and only contain valid alphanumerics.	**None.** **Note:** This field is required.	postmast
PubDir	Path name	Default file upload directory for files sent to the local system via remote UUCP commands.	*[ConfDir]*/PUBLIC	*omitted*
SpoolDir	Path name	Directory used for log files, files queued for other systems, and incoming mail/news files.	*[ConfDir]*/SPOOL	*omitted*
Systems	File name	File name of SYSTEMS file containing names and dialing information for all remote systems.	*[ConfDir]*/-SYSTEMS	*omitted*
TempDir	Path name	Path of directory for temporary files generated by MAIL, UUXQT, and other programs. The drive this directory resides on must have space for **twice** the largest mail or news file you expect to receive. **Note:** If possible, this directory should be located on a RAM drive or a drive with a lazy disk cache.[35]	*[ConfDir]*/TMP	*omitted*
Uncompress	String	Command string including the name of the program used for uncompressing incoming news. **Note:** %s must appear in the string to define where the input file name should be substituted. A second %s must appear to define the output file name if the default output file name is not the input name minus the extension,	uncompre %s	compress -d %s gzip -d %s

Boolean options in either UUPC.RC or *[userid]*.RC

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[35]On the other hand, if you don't know what a RAM disk or lazy disk cache is, you don't want to use them.

The following are Boolean options, which can be set by the user in the UUPC.RC file, their *[userid]*.RC file, or via the MAIL **set** command (See **UUPC/extended Command Reference**, page 40.):

Note: All options default to False.

Option name	Default operation	Operation if set
askcc	The user must enter all addresses when invoking **mail** or **forward**. Additional addresses cannot be added to mail generated by **reply**.	After composing, reply to, or forwarding mail, the user is prompted for carbon copy (Cc:) addresses.
autoedit	When sending mail, the user is presented with the line oriented send mail interface. To use a full screen editor, the user must use the **~e** (edit) command or exit line oriented data entry to invoke his editor.	If the user has defined an editor, when sending mail, the editor is immediately invoked for the user to enter mail with.
autoinclude	Do not automatically include the text of mail being replied to.	When the reply command is invoked, automatically include the text of the mail being replied to as if the **~m** command was issued.
autosign	When sending mail, the user's signature file is not appended to outgoing mail automatically. If defined, the user may still include the file via the **~a** (include autograph) command.	If defined in the user's configuration file, the signature file is automatically appended to all outgoing mail.
backup	Do not create a backup of the mailbox being processed before rewriting or deleting it.	Before updating or deleting the current file when exiting mail, rename the existing file to the same file name with the extension defined by the UUPC.RC variable **BackupExt**. **Note:** If no extension is defined, a default extension of "BAK" is used.
doskey	Under DOS, interactive input is read from the console using standard DOS services (INT 21H function 0AH). DOSKEY, if installed, is ignored. Empty input lines are processed normally.	If installed, the MS-DOS 5.0 DOSKEY program is used to read input from the console; normal DOSKEY functions, including the ability to edit and scroll input, along with macro expansion, is available. Empty lines (which can be generated by DOSKEY macro processing) are ignored at the command prompt unless the **expert** option is also set. **Note:** If DOSKEY is not installed, when the user is first prompted for input the **doskey** option is reset to **nodoskey** with a warning message.
dot	When sending mail, interactive input must be terminated by the DOS end of file character (Ctrl-Z).	When sending mail, interactive input can be terminated by a single period (.) in column one.

expert	All informational messages are displayed, and if the **doskey** option is also set, empty input lines are ignored in response to the command prompt.	Boiler plate messages, such as the initial help prompt, are suppressed, and empty input lines are not ignored when the **doskey** option is set.
forwardsave	Mail sent via the **forward** command is not saved in the user's outgoing mailbox.	If the user has defined an outgoing mailbox, then mail sent via the **forward** command is saved in the same fashion as other outgoing mail.
fromsep	Items in the mailbox must be separated by a line of binary ones (1). (If you use the DOS **type** command to look at your mailbox, these look like smiley faces.) **Note:** This option is provided for compatibility with other RMAIL versions.	Items in the mailbox can be separated only by UUCP format **From** lines. The line of binary ones (1) required between items by the default operation of **nofromsep** is still generated when updating mailboxes. **Note:** This option must be set in the UUPC.RC or [*userid*].RC file, because it is only examined at start up.
pager	**help**, **print** and **type** use the external pager if one is defined, and **Print** and **Type** use the internal pager.	**help**, **print** and **type** use the internal pager, and **Print** and **Type** use the external pager if one is defined
purge	Empty mailboxes are left in place when the user exits mail.	Empty mailboxes are deleted when the user exits mail.
save	Mail is left in the user's system mailbox after reading.	If mail is not deleted from the user's system mailbox after reading, it is automatically saved in his **~/mbox** file when the user exits mail.
speedover-memory	Strings are allocated favoring low memory usage. Specifically, when allocating fixed permanent strings, strings already allocated are examined to determine if a pointer to existing duplicate string can be used.	Strings are allocated favoring speed over memory usage. Specifically, permanent strings are allocated without examining if a copy of the string already exists.
suppress-copyright	Display the UUPC/extended copyright notice at program startup.	Suppress the copyright notice at program startup. Of course, this does not suppress the associated responsibility. **Note:** This option must be set in a system or user configuration file, because it is only examined at start up.

undelete	*OS/2 only.* The environment variable **DELDIR** is reset to a null string by **UUPOLL**, causing files deleted by its children (**UUCICO**, **UUPOLL**, and **UUCLEAN**) to not be archived by the OS/2 operating system for later recovery.	The **DELDIR** environment variable is left alone, causing OS/2 to copy all deleted files to a hidden directory. This causes a performance and free disk space impact by saving files which the user should never have to access, much less recover. **Note:** This option must be set in the UUPC.RC or [*userid*].RC file, because it is only examined at **UUPOLL** start up.
verbose	When invoked from mail, **RMAIL** only displays error messages.	When invoked from mail, RMAIL displays both error messages and nominal status messages, including the addresses mail was delivered to. **Note:** This option must be set in a system or user configuration file, because it is only examined at start up.

Options only used in the UUPC.RC file

The following system-oriented options must apply to all users on a system and can **only** be set in the UUPC.RC file:

Option name	Default operation	Operation if set
bang	RFC-822 headers are generated with a "User name" <user@node> format.	RFC-822 headers are generated with UUCP style (User name) node!user format.
bounce	Undeliverable mail is delivered directly to the local postmaster mail with no additional header or text generated.	Undeliverable mail is sent to the originator of the mail (as determined by the UUXQT requester information) and to the local postmaster via a newly generated mail message from UUCP which explains why the mail failed.
collect	The size of mail is not reported by RMAIL.	The RMAIL delivery and spooling messages include the size of the files delivered.
directory	Mail for "user" is delivered to the file *user* in the directory specified by the **maildir=** line in the system configuration file.	Mail for "user" is delivered to the file **newmail** in the *user* sub-directory of the directory specified by the **maildir=** line in the UUPC.RC configuration file.

escape	Only Ctrl-Break can be used to exit from UUPOLL or UUCICO.	If the Esc (Escape) key is pressed, then the next time UUPOLL or UUCICO polls the type-ahead buffer the program will act as if Ctrl-Break was pressed. **Note:** Enabling this option effectively disables type-ahead, since all characters except Esc are discarded with an error message.
history	No news history is maintained.	**Note:** This option is currently ignored if enabled.
honordebug	When UUCICO is called by another system, it ignores any debugging level transmitted by the caller.	When UUCICO is called by another system, it uses any debugging level transmitted by the remote system to set its own debugging level.
kanji	No translation of characters takes place during RMAIL processing.	Mail which originates locally is translated from a 2 byte Kanji code called Shift-JIS (Japanese ideogram) to Kanji in a 7-bit subset of ISO 2022 which can be transmitted via SMTP. Mail from remote systems which is delivered locally is translated from JIS 7bit back to Shift-JIS.
longname	Under OS/2 and Windows NT, file names for incoming files are made to conform to the DOS 11 character name limit even if the file system supports longer names.	Under OS/2 and Windows NT, file names are not made to conform to DOS name 8 + 3 naming conventions.
monocase	Job sequence ids are generated in base 62 using numerics and upper and lower case alphabetics.	Job sequence ids are generated in base 36 using numerics and upper case alphabetics.
multiqueue	When queuing mail for other hosts, each addressee is delivered separately.	When queuing mail for other hosts, a single file delivered via the remote UUCP can have multiple addressees.
multitask	Processing is optimized for speed over system integrity. **Note:** We strongly recommend that you enable this option in all environments except DOS.	Additional processing is performed to insure system integrity. This additional processing includes creating lock files to prevent concurrent access to system spool directories, writing program logs to temporary files and then appending the file to the permanent log file at program termination, and moving new mail from the user's system mailbox into the user's home directory when **MAIL** is first run after the new mail's arrival.
senddebug	When UUCICO calls another system, it does not report its debugging level to the remote system.	When UUCICO calls another system, its debugging level is transmitted to the remote system.

snews	Incoming news is written to separate files in directories based on the news group names listed in the ACTIVE file located in the **NewsDir** directory.	Incoming news is written to a file in the **NewsDir** directory without examining the ACTIVE file.
symmetric-grades	When actively polling, **UUCICO** does not transmit the maximum grade for file transfers allowed by the **SYSTEMS** file to the remote system at startup.	**UUCICO** transmits the maximum grade for file transfers allowed by the **SYSTEMS** file to the remote system at startup.
syslog	No record is made of files transferred.	The file SYSLOG is written in the spool directory with a record for each file transferred to or from the local system.

Modem (*[modem].MDM)* Files

Introduction

Modem files (.MDM) define the strings used to command a modem when dialing out. They allow commands always used with a particular modem to be written once rather than being placed everywhere they are used, and also allow different modems to be used by changing only the modem file (or changing the reference to the modem file in the SYSTEMS or UUPC.RC files).

All strings defined in a modem file are standard scripts as described in **The Fine Art of Chat Scripts**, page 29, with the exception of the dial prefix and dial suffix strings. The dial prefix and suffix strings are combined with the phone number listed in the SYSTEMS file and sent as one string to the modem when dialing out. Most modems have behavior similar to one of the sample modems, so minor changes to one of these files should get you up and running.

> **Note:** If you make changes to a modem file, copy it to a new name to avoid confusion with the distributed version.

The syntax of a modem file is the same as the UUPC.RC and *[userid]*.RC files described in **The UUPC/extended UUPC.RC and [userid].RC files**, page 75. The keywords accepted in modem files are described below.

Modem File Guidelines

There are several things to keep mind when writing a modem file, especially for an error correcting modem. Not all of the following apply to all modems, but as a general rule:

1. Initialize the modem from factory defaults as opposed to simply resetting the modem. Starting with factory defaults allows the modem configuration to be shared between modems that may not have been initialized the same way.

   > **Note:** Do **not** have the modem file rewrite the modem defaults to non-volatile RAM (often done with a AT&W command). This may confuse other programs which use the modem.

2. Initialize the speaker to off. (Typically ATM0)[36]

3. Have the modem hang-up and reset to factory defaults when Data Set Ready (DTR) is lowered.

4. Write a unique modem file for dialing out with error correction only, rather than taking a modem default which accepts error or non-error correcting connections. Rejecting a remote connection if the expected speed or protocol is not available insures that a long distance connection does not run at a sub-par rate.

5. Likewise, write a modem file with error correction disabled, to bypass attempts at modem-to-modem protocol negotiations with modems which do not support them.[37]

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[36] You may want the speaker enabled for initial testing, but UUCICO is designed to run unattended, and waking house mates up to hear a modem dial at 3 AM will not make you popular.

[37] Phone calls to the system *nbstime listed in the sample systems file will fail if error correction is not disabled, because otherwise an expected string is lost from the remote system while the modem is still trying enable error correction.

6. Disable auto-answer unless you actually want to have the modem ready to answer the phone.

7. Disable software (XON/XOFF) flow control, and enable hardware (CTS/RTS) flow control.[38]

8. Enable the modem inactivity time-out to automatically hang up the modem after two minutes if no data is sent or received. If **no** data is send by UUCICO in two minutes with the modem off hook, the program and/or operating system has crashed.

9. Some modems have a time delay to insure all data buffered for the remote system is sent. Set this delay to zero (no delay), as UUCICO will have insured data delivery via software protocols.

10. Disable remote loop back testing.

Valid Fields in Modem Files

The following fields are valid in a modem file.

Keyword	**Type**	**Description**	**Default**	**Example**[39,40]
Answer	Script	Script to pick up phone (if **Ring** script did not enable auto-answer) and determine an incoming call has been answered.	**None**. This field is required for answering the phone.	CONNECT
Answer-Timeout	Integer	Time in seconds for last response expected by **Answer** script.	30 seconds	*omitted*
BigGPacketSize	Integer	Maximum number of bytes the remote host may send the local host per packet when using the "G" protocol. Must be a power of 2 between 32 and 512.	512 bytes	*omitted*
bigGWindowSize	Integer	Number of packets active at a time when using the "G" protocol. Must in range 1 to 7.	7	*omitted*
CharDelay	Integer	Delay in milliseconds between characters sent to the modem when processing dialing scripts.	0	*omitted*

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[38]Sample in older releases of UUPC/extended explicitly turned off hardware flow control. Enabling it is a change from the previous suggestions, and is required for many high speed modems.

[39]Examples are for a ZOOM VFX v32bis modem. Your mileage will vary.

[40]For *omitted* entries, the entire entry would be omitted (blank) to allow the default to be in effect.

Connect	Script	Script used to determine if modem has connected to remote host.	**None**. This field is required for dialing the modem.	CONNECT
Description	String	One line description of the modem file. This field is for documentation purposes, and is extracted to build the list of modems on page 93.	**None.**	Zoom v32bis with v.42 and v.42bis enabled
Device	Token	Communications Port Name This field is ignored by the TCP/IP and named pipe suites.	**None.** This field is required.	COM1
DialPrefix	String	String prepended to the phone number in SYSTEMS file to dial modem.	**None**. This field is required for dialing the modem.	ATDT
DialSuffix	String	String appended to the phone number in SYSTEMS file to dial modem.	**None.** Normally not needed.	*omitted*
DialTimeout	Integer	Time in seconds last string in **Connect** script is allowed to wait for a respond.	40	20 (local calls) 60 (long distance)
fPacket-Timeout	Integer	Time in seconds allowed for responses by the remote host under "f" protocol.	20	*omitted*
fPacketSize	Integer	Bytes processed at a time by the "f" protocol.[41]	512	*omitted*
gPacketSize	Integer	Maximum number of bytes the remote host may send the local host per packet when using "g" protocol. Must be a power of 2 between 32 and 512. **Note:** Due to kernel buffer sizes, most UNIX systems cannot handle a **gpacketSize** larger than 128.	64 bytes	*omitted*

[41] This parameter is used only for an internal buffer size and does not affect the transmitted stream of data.

gPacket-Timeout	Integer	Time in seconds allowed for responses by the remote host under "g", "G" , and "v" protocols.	10	*omitted*
gWindowSize	Integer	Number of packets active at a time when using "g" protocol. Must in range 1 to 7.	7	*omitted*
Transfer-Buffer	Integer	Size in bytes of internal disk I/O buffer in bytes. **Note:** If the specified value is less than the default, the default is used.	The larger value of 512 or four times the largest packet size in use.	*omitted*
Hangup	Script	Script to hang-up modem. **Note:** Before this script is executed, the modem Dataset Ready (DTR) line is dropped for 0.5 seconds to request a modem hang-up.	**None.**	ATH OK
Initialize	Script	Script to initialize modem.	**None.** This field is required.	AT &F OK ATEM OK
InSpeed	Integer	Speed at which modem is initialized for remote login.	**None.** This field is required for answering the phone.	2400 38400
Maximum-Errors	Integer	For all protocols except "t", the number of consecutive errors allowed before the connection is dropped. **Note:** Consecutive errors are defined as errors occurring with no data successfully transmitted between the errors.	10	*omitted*
Modem-Timeout	Integer	Number of seconds allowed for modem command responses in scripts **except** for the **last** responses to the **Answer** and **Connect.**	3	*omitted*
NoConnect	One or more strings	Modem responses, which, if given, indicate that dialing or answering has failed and the call should be given up on.	**None.**	"NO DIALTONE" "NO CARRIER" ERROR

Options	List of Boolean options	See below for individual options.	nocarrierdetect nodirect nofixedspeed novariablepacket	carrierdetect fixedspeed
Priority	Integer	Magic number to set OS/2 and Windows NT execution priority for UUCICO. **Note:** This field is ignored under DOS and currently not supported under Windows NT. **Note:** Under OS/2, may be 1-4.	Under OS/2, 4 (PRTYC_FOREGROUNDSERVER)	*omitted*
PriorityDelta	Integer	Fine tuning value for UUCICO priority. **Note:** This field is ignored under DOS and currently not supported under Windows NT. **Note:** Under, OS/2, 0 - 30 lowers priority, 32 - 62 raise the priority.	Under OS/2, 31 (no change from **Priority**)	*omitted*
Ring	Script	Script to initialize modem for answering and to detect ring.	**None**. This field is required for answering the phone.	ATS0=1 OK "" RING
Script-Timeout	Integer	Time allowed for responses to scripts specified in SYSTEMS file.	30	*omitted*

Suite	Token	Name of communications software driver suite. All systems can use the default, **internal**, which drives the serial port using internal and Operating System support. DOS systems can also use the **fossil**, or **ArtiComm** suites. Windows 3.x and Windows NT systems can also use the **TCP/IP** suite if they have TCP/IP support installed.[42] OS/2 2.x systems can also use the **NamedPipes** suite, although this support is primarily of use for testing on a single system.	internal	*omitted*
tPacket-Timeout	Integer	Time in seconds allowed for responses by the remote host under the 't' protocol.	60	*omitted*
Version	Token	Program version number the file was last updated for. This field is for documentation purposes and is extracted to build the list on page 93.	**None.**	1.12b
vPacketSize	Integer	Bytes sent per packet when using "v" protocol. Must be a power of 2 between 32 and 4096.	512 bytes	*omitted*
vWindowSize	Integer	Number of packets active at a time when using "v" protocol. Must in range 1 to 7.	7	*omitted*

Boolean Options In Modem Files

The following option flags can be set on the **options** line of the modem file.

Option name	Default operation	Operation if set

[42]Windows 3.1 systems must have the **WINSOCK.DLL** installed to use TCP/IP support. Contact your TCP/IP vendor to see if they this library for their product. Windows NT natively supports TCP/IP for many ethernet cards, but does not support dial-up TCP/IP.

CarrierDetect	UUCICO processing ignores the state of the modem status lines.	If the modem Terminal Ready (DTR) or Carrier Detect (DCD) lines drop after a connection is established, the connection is aborted.
FixedSpeed	After the **Connect** or **Answer** script executes, UUCICO reads the serial port for the connect speed of the modem and changes the port speed to match this reported speed.	The modem speed is fixed at the value specified by the **InModem** keyword or **Systems** file speed.
Variable-Packet	Data Packets sent by the "g" and "G" protocol are always padded to the full packet length negotiated at startup.	Data Packets sent by the "g" and "G" protocols are padded only to the nearest power of 32 (32, 64, 128 ...) and these short packets are sent. **Note:** Most UNIX systems **cannot** handle variable length packets, and connections to such will fail in mysterious ways if this option is enabled.[43]
Direct	The modem Dataset Ready (DSR) line is used for hardware flow control: When the modem lowers this signal, UUCICO stops transmitting data until the signal is raised again.	The modem Dataset Ready line is ignored.

Supplied Modem files

The follow table lists the sample modem files supplied with UUPC/extended. As these files have been collected from a number of sources previous to the above guidelines being written, the modes and setups vary. Most of the files do not exactly conform to the above guidelines.

Note: Please mail new and updated modem files to **modems@kew.com**. Please verify the file is updated to conform with the guidelines on page 87, supply **Description=** and **Version=** fields, and include instructions as to whether the file modifies an existing modem file or should be added to the collection as a new file.

File name	Version	Description
CODEX		CODEX Modem with MNP Protocol enabled
DIR		Direct connection, between two systems connected by a null modem cable.
GVCV32		GVC 9600 V.32/V.42bis with smart options, serial port speed locked

[43]Systems running Ian Taylor's Taylor UUCP are a notable exception, but virtually all UUCP programs shipped with various UNIX systems will die if fed short packets. Just because UNIX developers invented the UUCP 'g' protocol doesn't mean they implemented it properly.

GVCV32G		GVC V.32/V.42bis with autobaud, for answering calls from 2400 baud modems
HAYES12		Hayes Smartmodem 1200
HAYES24		Generic Hayes Smartmodem at 2400 baud, disabling command echo
HAYES241		Generic Hayes Smartmodem at 2400 baud
HAYES24D		Generic Hayes Smartmodem at 2400 baud
INSATFAX		Intel SatisFAXtion modem
INTEL24E		Intel 2400ex modem
PPI-V32B		PPI 14400FX V.32bis/V.42bis modem
QBLAZER		Telebit QBlazer Modem - v32 mode with port locked at 9600
QBLAZER2		Telebit QBlazer Modem - v32 mode with speed shifting
SAMPLE	1.12a	Generic sample modem file with verbose comments
SUPRA		Supra V.32bis FAX modem with MNP 2, 5, and 10
SUPRA12		Supra V.32bis FAX modem with MNP disabled, 1200 baud only
SUPRA24		Supra V.32bis FAX modem with MNP disabled
SX1200		Microcom SX1200 MNP/4 modem with MNP 4 enabled
SX1200D		Microcom SX1200 MNP/4 modem with MNP disabled
TB1000		Telebit Trailblazer T1000
TB2500		Telebit Trailblazer T2500 (V.32/V.42bis) with 7.x PROM upgrade
TB2500A		Telebit Trailblazer T2500 (V.32/V.42bis) with 7.x PROM upgrade
TBPLUS		Telebit Trailblazer Plus with 7.x PROM upgrade
TBPMNP5		Telebit Trailblazer Plus with 4.x PROMs -- MNP5, but no V.42bis
TBPPEP		Telebit Trailblazer Plus locked into PEP mode
TBW56K		Telebit WorldBlazer (V.32bis/V.42bis) modem, at 57.6 Kbaud
TBWORLD		Telebit WorldBlazer (V.32bis/V.42bis) modem
TELEPATH		Gateway 2000 Telepath modem
USRCV32B		U. S. Robotics V.32bis/V.42bis Courier Dual Standard

USRSPORT		U. S. Robotics Sportster V.32/V.42bis
USRSPRT2		U. S. Robotics Sportster V.32/V.42bis
WBDUMB		Telebit WorldBlazer modem with MNP/5 and V.42bis disabled
ZOOM2400		Zoom 2400/V.42bis, with V.42bis disabled
ZOOM4BIS		Zoom 2400/V.42bis with v.42/v.42bis options enabled
ZOOMDUMB	1.12a	Zoom VFX 14400 with V.42bis and MNP5 disabled
ZOOMVFX	1.12a	Zoom VFX 14400 modem locked into V.32/V.42bis mode
ZOOMVFXB	1.12a	Zoom VFX 14400 modem with smart options enabled
ZOOMVFXT		Zoom Turbo V.32/V.42bis modem
ZYXEV32B		ZyXEL U-1496E+ V.32bis/V.42bis modem

The UUPC/extended SYSTEMS file

Introduction

The SYSTEMS file contains the names of your UUCP neighbors, and describes how and when to communicate with them.

The SYSTEMS file contains comments and system descriptions. As in the other system configuration files, any line beginning with "#" is treated as a comment. The system descriptions lines look like the following:

hostname Time MODEM speed phone protocol expect-string send-string expect-string send-string...

Example: Toscis's SYSTEMS file entry for kewgate looks like this:

kewgate Any TB2500 19200 1-617-641-4817 g gin:--gin: Utoscis ssword:--ssword: AppleJuice

The SYSTEMS file may contain several entries for the same remote system. If UUPC/extended can't connect to a system using the first entry in the SYSTEMS file, it tries the others. See **Multiple entries in the SYSTEMS file**, page 100, for more details.

Each of the fields in the SYSTEMS file is described in the table below.

Field name	Description	Example
hostname	Name of the system to call. Any system you call or are called by must be listed at least once in this file. You may include the same system more than once if you have multiple phone numbers for it.	vanilla
Time and grade	When calls may be made to this system. **Any** allows calls 24 hours a day, **Night** and **Evening** refer to night and evening phone rates[44] respectively. **Never** is used for a system which you never dial, and usually used for systems which only call you. **Note:** See below under "Time" for a further explanation.	Any
MODEM	Name of the modem file (without the .MDM extension) used to call this system.	TB2500

[44]Specifically, the AT&T night rate is in effect from 11 PM to 8 AM every day, and from 11 PM Friday to Sunday at 5 PM. The UUCICO definition for Evening includes the times allowed for Night plus 5 PM to 11 PM everyday.

Telephone, host name, or pipe name	Telephone number to call, host name to connect to over the network (when using **TCP/IP** suite). or named pipe to connect to (when using **NamedPipes** suite).[45]	1-617-641-4817 mailserver.domain.name \\servername\pipe\uucp
p (protocol)	Protocol to use when calling. If you don't know what protocols available, then leave the "g" alone. **Note:** See below under "Protocols" for a full list of available protocols.	g
script	Login script for the system. **Note:** See below under "Scripts" for a further explanation.	gin:--gin: Utoscis ssword:--ssword: AppleJuice

Time

The Time field allows you to restrict the hours that your machine calls your neighbors. You can combine several different times to call into the Time field. When you do so, the times your machine is permitted to call is the or-combination of all of the times entered.

Note: Time fields are ignored (treated as if you specify **Any**) if the -n option is used on the UUCICO command line.

The entries in the time field are combinations of labels and times. The labels represent days of the week, or groups of days, or combinations of days and times that match U. S. telephone rate schedules, like **Evening** or **Night**. The times are on a 24 hour clock, and must use four digits. The specified times are logically and-ed together with the times for the labels listed in the table below.

Example: Mo0800-1700,Night

In this example, the machine would be permitted to call out on Mondays between 8 AM and 5 PM, or at any time that night rates are in effect. (The exact time is in the table below.)

Example: ROA0800-1700

In this example, the times listed below for ROA are and-ed with the times listed in the table, so in practice, the system will only be permitted to call out between 8 AM and 5 PM on Saturdays.

If you don't care what time your machine calls your neighbors, put "Any" in the Time field. If you never want to call your neighbor (if they want to call you instead, for example), then put "Never" in the Time field. The other possible entries are:

Keyword in Systems File	**Days of the week dialing can occur**	**Time of day dialing can occur**

[45] When UUCICO listens on a named pipe, it always listens to the hard coded name **\pipe\uucp**.

Any	Any time at all	24 hours a day
Never	**Never**	
Wk	Weekdays only	24 hours a day
Mo	Mondays only	24 hours a day
Tu	Tuesdays only	24 hours a day
We	Wednesdays only	24 hours a day
Th	Thursdays only	24 hours a day
Fr	Fridays only	24 hours a day
Sa	Saturdays only	24 hours a day
Su	Sundays only	24 hours a day
Evening	Monday through Friday Weekends	5 PM until 8 AM 24 hours a day
Night	Monday through Friday Saturday Sunday	11 PM until 8 AM 24 hours a day Midnight until 5 PM and after 11 PM
NonPeak[46]	Weekdays Weekends	6 PM until 7 AM 24 hours a day
ROA[47]	Weekdays Saturday Sunday	10 PM until 8 AM 24 hours a day midnight until 5 PM and after 10 PM

Call grades

Each job which is queued for UUCICO to transfer has a call grade associated with it. This is simply the first letter of the job name after the system name as shown by the UUSTAT command. Grade **0** has highest priority, and **z** has the lowest. Overall, the priorities from highest to lowest are **0**-**9**, **A**-**Z**, and **a**-**z**, in that order. RMAIL queues jobs at class **C** by default, and UUCP queues jobs at class **n** by default.

Normally these classes are of no concern to the end user, but if the local system must call long distance or has other reasons to restrict traffic processed at particular hours, then each time field in the SYSTEMS file may

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[46]These are the permitted hours for non-peak use of the Telenet PC-Pursuit network as of summer, 1989. Your mileage and network vendor may vary.

[47]These are the permitted hours for use of AT&T's "Reach Out America" program. Some program features exist mainly because the program's author has a specific use for them.

modified by appending a slash and the lowest call grade to processed at that time. For example, to process only mail during the day and all other files to a system at night, the SYSTEMS file time entry would like this:

Any/C,Night

Note: The processing of call grades is affected by both the grades used by the remote system, the use of the **symmetricgrades** option in the UUPC.RC file as described in **The UUPC/extended UUPC.RC and [userid].RC files**, page 75, and use of the -g option on the UUCICO command line.

Protocols

Two machines which talk to one another using UUCP can use one of several protocols to do so. Some of these protocols are more efficient than others, depending on the how fast and reliable the modem connection is, and whether or not 7- or 8- data bits are used in transmitting messages and files between them. UUPC/extended supports several different protocols, any of which might be used for talking to a remote system, depending on the circumstances.

In addition, the protocols have tunable parameters, set in the [*modem*].MDM file, which can improve their performance, depending on the circumstances. The protocols, the names of their tunable parameters, and the circumstances under which you might choose a particular protocol are described in the table below.

Protocol	**Tunable parameters**	**When to use the protocol**
*	**none**	This flag denotes the entry is not for a UUCP system at all, but rather for calling the U.S. National Institute for Standards and Technology (NIST) atomic clock to set the local system time.[48] **Note:** The NIST clock can be reached at 1-303-494-4774 at 1200 characters per second with no error correction.
f	fPacketSize fPacketTimeout MaximumErrors	This is intended for use over reliable 7-bit links such as X.25, where XON/XOFF (software) flow control is used instead of RTS/CTS (hardware). It is also only a 7-bit protocol, which means that it will be inefficient on binary data.
G	BigGPacketSize BigGWindowSize GPacketTimeout MaximumErrors	For supported systems, G protocol allows for higher performance on high-speed modems by increasing the number of bytes between packet checksums and acknowledgments. Its drawback is that the UNIX implementation of the G protocol is only available on newer implementations (System V Release 4), and is hard to configure.

[48]The NIST was formerly called the National Bureau of Standards (NBS). The sample SYSTEMS file includes an entry for calling NIST under the entry *nbstime. (A rose by any other name . . .)

g	gPacketSize gWindowSize GPacketTimeout MaximumErrors	When attempting to make the FIRST connection to another system, use g protocol with the default packet size of 64 bytes. It is widely supported. The 'g' protocol is it is slow because its default configuration requires six bytes of overhead data to be transmitted for every sixty-four bytes of user data. The 'g' protocol also requires an acknowledgment after sending only 448 bytes of data, which is smaller than the internal buffer of many error correcting modems. This protocol should be also used with Telebit Modems and other modems which spoof the UUCP 'g' protocol for additional performance boosts. Spoofing modems generally only support 'g' protocol but have better performance compared to non-spoofing modems.
t	tPacketTimeout	This protocol is for use over reliable network connections, such as TCP/IP or named pipes. With this protocol, files are transferred with no checksums to detect errors, which improves transfer speeds. Because no error correction is performed, this protocol is **not** available for modem connections.[49] **Note:** If a network level error occurs, this protocol aborts with no retries.
v	vPacketSize vWindowSize MaximumErrors	When two UUPC/extended systems are connecting over high-speed, use v protocol. The 'v' protocol supports larger packet sizes, while more flexible and easier to configure than 'g' or 'G' protocols. The main disadvantage to the 'v' protocol is that only UUPC/extended supports it.[50]

Scripts

Finally, the last few fields of the system description are the strings that UUPC/extended expects, and will send, when it has successfully connected to the remote system, while it is trying to log in. The example above is a typical simple example. If you need something more complicated, then read **The Fine Art of Chat Scripts**, page 29.

Multiple entries in the SYSTEMS file

It is possible to have more than one entry in the SYSTEMS file for the same remote system. (See the example at the beginning of this section.) You might want to do this if one of your UUCP neighbors has several phone lines, or several ways of logging in.

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[49]To prevent use of the 't' protocol over a modem connection, UUPC/extended UUCICO will not present it as an available protocol when another system logs in.

[50]If you use or connect to a system running Taylor UUCP, send a note to Ian Taylor (taylor@airs.com) asking him to add 'v' protocol support to his package.

If the SYSTEMS file has multiple lines for one remote system in it, UUPC/extended uses the entries for the system in the order they appear until it gets connects to the remote system and completes the call. The call will not complete if:

- The time field specifies an entry should not be used
- The modem fails to initialize
- Your system doesn't connect to the remote system because of a busy signal or other dialing error
- The connection fails, because of trouble with the log-in script or an excessive number of bad packets.

In other words, the later lines in the SYSTEMS file for the system will only be used if the first connection is not *completely* successful.

Example: A system has SYSTEMS file entries for kewgate that looks like this:

```
kewgate Any TB2500 19200 1-617-555-4817 g gin:--gin: Utoscis ssword:--ssword: AppleJuice
kewgate Any TB2500 19200 1-617-555-4817 g gin:--gin: Utoscis ssword:--ssword: AppleJuice
kewgate Night HAYES24 2400 1-617-555-4817 v gin:--gin: Utoscis ssword:--ssword: AppleJuice
```

In the example, kewgate will be dialed up to three times until the call completes, twice using the TB2500 modem file and once using the HAYES24 modem file. Both TB2500 attempts are made at any hour, but the HAYES24 is only attempted at night.