NAME

qpage − SNPP client/server for sending messages to an alpha-numeric pager

SYNOPSIS

qpage [**−dhimQv**] [**−a** *[+][dd+]hhmm* **|** **−a** *YYMMDDHHMMSS*] [**−c** *coverage*] [**−f** *from*] [**−l** *level*] [**−p** *pagerid*] [**−P** *pagerid*] [**−s** *server*] [*message*]

qpage [**−d**] [**−C** *config*] **−q** *interval*

DESCRIPTION

QuickPage sends messages to a paging terminal using the SNPP and IXO (also known as TAP) protocols. It is normally used with no options other than a recipient and the message text, in which case the message is sent to the SNPP server where it is submitted to a page queue to be sent by a separate daemon process. Page groups and duty schedules are supported. Status notification messages indicating the success or failure of a page are sent via e-mail to submitters of high-priority (level 0) pages.

If no message is specified on the command line, the user is prompted for the message text. Characters are read from standard input until a line containing only a period is received, or until EOF is received. All occurrences of whitespace within the message text are reduced to a single space character.

Messages received by the **QuickPage** daemon that are longer than the maximum page length (see below) are split into multiple segments and sent as separate pages. Each message segment is prefixed with its segment number. The maximum number of segments a into which a message will be split is configurable. If a message exceeds this limit, the last allowed segment will be prefixed with 't', indicating that the message is truncated; otherwise, the last segment is prefixed with 'e' to indicate the end of the message. Messages that fit into a single page are not prefixed with segment numbers. All message segments are prefixed with CALLerid information (see RFC-1861), if available.

OPTIONS

The following options are supported:

−a Send the page at the specified time. A time specification prefixed with a plus sign (+) is added to the current time. The **QuickPage** daemon will not send any pages with a timestamp newer than the current time. This feature may be used to provide a simple alarm clock function for meeting reminders, etc. This option applies only to the pagerid(s) specified by the next **−p** option. If the specified time is in the format YYMMDDHHMMSS, the two-digit year is interpreted as follows: if the last two digits of the specified year are in the range 00-49 and the last two digits of the current year are in the range 50-99, assume the specified time is in the next century. Otherwise assume the specified time is in the current century.

−c Use a different coverage area or paging service. This option is only useful if the recipient has more than one pager and/or more than one paging service. This option applies only to the pagerid(s) specified by the next **−p** option.

−C Specify an alternate configuration file. This option may only be used on the **QuickPage** server.

−d Debug mode. Very verbose and probably not interesting for the normal user. This option is provided for debugging purposes only.

−f Specify who the page is from. This option specifies the argument to the SNPP **CALLerid** command. Every message segment will be prefixed with the value specified by this option unless disabled by the msgprefix keyword in the configuration file. A null argument (**−f** "") may be specified to suppress the message prefix for a particular message. However, this will also suppress e-mail status notification. The default is the userid of the person running **QuickPage.**

−h Help. Print a brief summary of the command line options.

−i Use interactive mode. The page is sent immediately and summary messages are printed during the course of the transaction. This option may only be used on a machine with a physically attached modem. This option is intended for debugging purposes only and should not be used in a production environment. The **−d** option, when used in conjunction with this option, can be very effective in troubleshooting problems between the SNPP server and the remote paging terminal.

−l Specify the service level for this page. The service level must be a number between 0 and 11, inclusive. The TME protocol specifies service level as follows:

0 - Priority
1 - Normal (default)
2 - Five minutes
3 - Fifteen minutes
4 - One hour
5 - Four hours
6 - Twelve hours
7 - Twenty Four hours
8 - Carrier specific ’1’
9 - Carrier specific ’2’
10 - Carrier specific ’3’
11 - Carrier specific ’4’

With the exception of level zero, service levels have no meaning to **QuickPage** but they are accepted for compatibility with other programs. Any service level specified by the user is passed on to the SNPP server. For pages submitted with a service level of zero, the **QuickPage** daemon will send an e-mail message to the submitter notifying them whether the page succeeded (i.e. it was successfully transmitted to the paging service) or failed. This option applies only to the pagerid(s) specified by the next **−p** option.

−m This option tells **QuickPage** to read an e-mail message from standard input. A page is constructed by concatenating the From: header (XXX), the Subject: header (YYY), and lines from the message body (ZZZ) as follows:

XXX (Subj: YYY) ZZZ ...

Minimal support is provided for multipart MIME messages. The first part with a Content-Type: of text/plain will be processed. The remaining parts will be discarded. This will reduce the problems associated with people accidentally mailing binaries to their pagers.

The X-sun-attachment type is not supported and should not be used. MIME is a documented standard. The X-sun-attachment type is neither documented nor standard. However, **QuickPage** will still use the From: and Subject: lines (but no message body) from such messages for those people who insist on using it anyway.

A line starting with two dashes (--) in the message body (or in a MIME text part) is assumed to be the start of a signature and will cause **QuickPage** to stop processing the e-mail message at that point.

−p Specify the pagerid of the intended recipient. Multiple recipients may be specified by separating their pager IDs with commas (e.g. pagerid1,pagerid2,pagerid3). No spaces are permitted between recipients and the comma separator characters. Any **−a, −c,** or **−l** options previously encountered on the command line are reset to their default values after this option is processed. This option may occur multiple times on the command line, each possibly preceded by different **−a, −c,** or **−l** options.

−P Like **−p** but does not reset **−a, −c,** or **−l** options previously encountered on the command line.

−q Start a **QuickPage** daemon. This option causes **QuickPage** to detach itself from the controlling terminal and run as a daemon process. This option requires a numerical argument. If the argument is greater than zero, it specifies the number of seconds **QuickPage** should sleep between queue runs. An argument less than zero signals **QuickPage** to accept incoming SNPP connections and write new pages to the page queue, but to never process the page queue. An argument of zero signals **QuickPage** not to listen for incoming SNPP connections, but to process the page queue one time and then exit. See the NOTES section below for more information.

−Q Print the current contents of the page queue. This option may only be used on the **QuickPage** server. Unless invoked by root or DAEMONUSER, this option will probably fail because of insufficient permissions.

−s Specify the name(s) of the SNPP server(s). The hostnames used by a client to contact a server are determined by checking the following in this order:

the **−s** option
the environment variable SNPP_SERVER
the contents of the compiled in filename
the compiled in hostname

Multiple hostnames are permitted by separating them with commas. If multiple servers are used, it is assumed that they all have identical copies of the configuration file.

−v Print the version of **QuickPage** and exit.

The **QuickPage** server requires a configuration file. This file is read one time during startup and again upon receipt of SIGHUP. The configuration file is made up of major and minor keyword=value pairs. Major keywords must start at the beginning of a line. Minor keywords must contain leading whitespace. All keywords must be immediately followed with an equal sign (=). Spaces are permitted between the equal sign and the value. The value may not contain whitespace. Keywords may appear in any order with the following four exceptions:

Minor keywords must be grouped together under their respective major keyword.

Modems must be defined before any services that reference them.

Services must be defined before any pagers that reference them.

Pagers must be defined before any groups that reference them.

The major keywords are:

administrator The e-mail address of the **QuickPage** administrator. If defined, e-mail notification will be sent to the **QuickPage** administrator whenever a page fails (i.e. when **maxtries** has been exceeded). This address is also used in the Reply-To: header for status notification messages sent to users who submit high-priority pages.

forcehostname (true, false, or @mailhost) Force the destination address to be qualified with a hostname when sending e-mail status notification to users. This option can be used when the **QuickPage** daemon is running on a machine that does not handle unqualified e-mail addresses correctly. If the value of this keyword starts with the ’@’ character, it will be appended as-is to unqualified e-mail addresses. If the value of this keyword is "true" then the submitter’s hostname will be appended to such addresses. The default is false (do not append hostnames).

identtimeout The number of seconds to wait for a reply before giving up on RFC-1413 queries. An integer less than or equal to zero disables ident functionality. The default is 10 seconds.

include If present, this keyword specifies the name of another configuration file that should be processed at this point. Processing of the current file resumes after the specified file has been processed. **QuickPage** makes no attempt to prevent infinite recursion; do not use this keyword in multiple files that point at each other.

pidfile — If present, this keyword specifies a file into which the server should write its process ID. The file is is not opened until after root permissions have been dropped. If DAEMONUSER cannot open the file for writing (or if the file does not exist and DAEMONUSER does not have permission to create it), this keyword is silently ignored.

sigfile — If present, this keyword specifies a file containing an alternate signature that **QuickPage** should append to e-mail status notification messages sent to page submitters. Use sigfile=/dev/null to suppress the signature completely.

synchronous — (true or false) Whether or not queue runs are synchronized with new pages. If true, the submission of a new page initiates a queue run without waiting for the normal sleep counter (set by the −q option). If false, the page is queued and the server waits for the time remaining on the sleep counter (if any) before starting another queue run. The default is true.

lockdir — The location of the lock directory. This keyword may be used to override the compiled in location of the lock directory. It should rarely be necessary to specify this keyword.

snpptimeout — The number of seconds to wait for an SNPP command before terminating the connection. The default is 60 seconds.

queuedir — The location of the page queue. There is no default queue directory; this option must be specified in the configuration file.

modem — The start of a modem definition. The argument to this keyword is the name of a modem device (e.g. hayes). This keyword has the following minor keywords:

- text — Optional text specified by the administrator. This text may not contain whitespace. However, underscores are converted to spaces when the value of this keyword is read. This keyword is not interpreted by **QuickPage** and is only provided for the administrator's convenience.
- device — The name of the device the modem is physically connected to, such as /dev/cua/a. There is no default device; this option must be specified in the configuration file.
- initcmd — The initialization command for this modem. The initialization command must cause the modem to respond with OK. The default initialization command is ATZ.
- dialcmd — The dial command for this modem. The dial command specified here should not include a phone number. The default dial command is ATDT.

service — The start of a paging service definition. The argument to this keyword is the name of the paging service. If a service named **default** exists, the values of its minor keywords are used as defaults for all other service definitions. This keyword has the following minor keywords:

- text — Optional text specified by the administrator. This text may not contain whitespace. However, underscores are converted to spaces when the value of this keyword is read. This keyword is not interpreted by **QuickPage** and is only provided for the administrator's convenience.
- device — One or more names of modem definitions. Multiple modems may be specified by separating them with

commas. During a queue run, **QuickPage** will try each modem in the list until it finds one that can be opened successfully (i.e. it is not already being used by a dialin user or by some other process). The remaining modems in the list will be ignored until the next queue run when the list will be searched again. In no event will **QuickPage** ever have more than one modem open at any given time; pages queued for different services are not processed concurrently. For backward compatibility with previous releases, a physical device path may be specified here. However, this will not be supported in future releases. Modem definitions should be used instead.

dialcmd
: [obsolete] The command that the modem should use to connect to the remote paging service. This keyword is accepted for backward compatibility and will not be supported in future releases. If specified, this keyword overrides the dialcmd keyword in all modem specifications used by this service.

phone
: The phone number of the paging service. The specified phone number will be appended to the modem's dialcmd when calling the paging service.

password
: The password to use when logging into the remote paging service. The IXO specification defines the password as an optional six character alphanumeric string. Most paging services in the United States do not require a password. The default is an empty string ("").

baudrate
: The speed to use while talking to the modem. The default is 300 baud.

parity
: The parity to use (even, odd, or none) while talking to the modem. The default is even.

maxmsgsize
: The maximum number of characters allowed in a single page segment. This size includes the message prefix and 9 bytes of protocol overhead. The default is 80 characters.

maxpages
: The maximum number of page segments to send when a message exceeds **maxmsgsize.** The value of this option must be between 1 and 9, inclusive. The default is 9 page segments.

maxtries
: The number of times to attempt sending a page before giving up. If the modem is busy (i.e. tip or cu is currently using it) or if the modem returns BUSY in response to the dial command, the counter is not incremented. Thus a busy service will cause **QuickPage** to retry the page forever. The default is 6.

identfrom
: (true or false) This keyword specifies whether to use the ident response as the message prefix if no CALLerid SNPP command is received. The default is true.

allowpid
: (true or false) This keyword specifies whether the **QuickPage** daemon will accept numeric pagerids for pagers not specified in the configuration file. The default service is

used for such pagerids unless the user explicitly chooses a different service. The default for this keyword is false.

msgprefix (true or false) Whether to prepend the sender's name (the CALLerid information) to the beginning of each page segment. This keyword should be set to false for service definitions used for numeric pagers. The default for this keyword is true.

pager The start of a pager definition. The argument to this keyword is the username associated with the pager. This username will be specified by the **−p** option on the command line when running **QuickPage** in client mode. This keyword has the following minor keywords:

text Optional text specified by the administrator. This text may not contain whitespace. However, underscores are converted to spaces when the value of this keyword is read. Pager specifications containing this keyword will be listed by the XWHO SNPP command. See the NOTES section below for more information.

pagerid The pagerid sent to the remote paging service for this pager.

service The default service to use for this pager.

group The start of a group definition. The argument to this keyword is the name of a new page group. This keyword has the following minor keywords:

text Optional text specified by the administrator. This text may not contain whitespace. However, underscores are converted to spaces when the value of this keyword is read. Group specifications containing this keyword will be listed by the XWHO SNPP command. See the NOTES section below for more information.

member A member of this group. The member must have a valid **pager** entry before this group definition. An optional duty schedule (see below) may be specified. This keyword may appear multiple times within a single group.

The service named "default" always exists (even if not specified in the configuration file) and has the default values listed above. However, the default service may be redefined in the configuration file if desired.

Member definitions within a page group have the syntax:

member=name[/DayStart-End]

Where the square brackets indicate an optional duty schedule. The duty schedule has the same syntax as the **Time** parameter in the UUCP **Systems** file: **Day** is a list of case-sensitive weekday abbreviations (e.g. MoTuTh), **Start** is the start time (e.g. 800), and **End** is the end time (e.g. 1700). The word **Any** is synonymous with **SuMoTuWeThFrSa.** Midnight may be represented as either 0 or 2400. The time range must not span across midnight. A slash is required to separate the duty schedule from the member name. Multiple member definitions for the same person with different duty schedules are permitted (see the example below). Overlapping duty schedules for the same person within a group will not cause duplicate pages to be sent to that person. See the following example configuration file:

```
#
# QuickPage configuration file
#
```

```
administrator=tomiii@qpage.org
identtimeout=5
queuedir=/var/spool/qpage

modem=ttya
        device=/dev/cua/a

# use the S7 modem register to set a connection timeout
modem=ttyb
        device=/dev/cua/b
        initcmd=ATS7=45V1Q2&K0&M0

service=airtouch
        device=ttya,ttyb
        phone=9,9500572
        baudrate=1200
        allowpid=yes
        maxtries=6

service=skytel
        device=ttya
        phone=9,18007596366

service=supercom
        device=ttya
        phone=9,4879889

pager=tomiii
        pagerid=1234567
        service=skytel

pager=ginger
        pagerid=5551212
        service=skytel

pager=tony
        pagerid=711
        service=supercom

group=sysadmin
        member=tomiii/MoWeFr800-1700
        member=tony/TuTh800-1700
        member=tony/SaSu900-1600
```

NOTES

The order of the command line options is important. The **−a, −c,** and **−l** options must precede the pagerids they refer to.

The **−p** option resets **−a, −c,** and **−l** to their default values after it is processed. If this behavior is not desired, use **−P** instead.

All 8-bit characters are stripped to 7 bits before they are transmitted to the paging service, regardless of the parity setting defined in the configuration file. Also, all control characters (ASCII values between 0x00 and 0x20) are "escaped" as specified by the IXO/TAP protocol. Escaping is done by converting each control character into two bytes consisting of a SUB (0x1A) character followed by the printable

ASCII character formed by adding 0x40 to the ASCII value of the control character. Thus, Ctrl-A is transmitted as the two-byte sequence 0x1A, 0x41.

The **QuickPage** daemon listens for incoming SNPP connections and periodically processes the page queue. A separate child process is created on demand to handle each incoming request and each queue run.

After a page is accepted, the child sends SIGUSR1 to its parent forcing it to start a queue run immediately without waiting for the time specified by −q. If desired, this signal can be suppressed using the "synchronous" keyword described above.

The page queue is locked during queue runs to prevent multiple processes from competing for modem resources.

The **QuickPage** SNPP daemon supports a proprietary XWHO command not documented in the official SNPP protocol as described in RFC-1861. XWHO takes no arguments and returns a multi-line response of the form:

```
214 pager1 text1
214 pager2 text2
214 pager3 text3
 .
 .
 .
214 pagerN textN
250
```

where the first word after the 214 response code is the name of a pager or page group, followed by the value of the corresponding text keyword (with underscores converted to spaces) from the configuration file. Pager and group specifications that do not have the text keyword defined in the configuration file will not be included in the XWHO response. The purpose of the XWHO command is to allow SNPP clients to present users with a list of possible recipients and their names or descriptions. XWHO is supported by **QuickPage** in an attempt to overcome the current SNPP protocol's deficiency. If the protocol is ever revised in the future to include this functionality, support for the XWHO command will be dropped in favor of whatever facilities are specified at that time. Software developers writing their own SNPP clients should be advised that the XWHO command is not stable and may be removed from future releases of **QuickPage** without notice.

If the CALLerid information received by the **QuickPage** daemon contains the '@' character, it is truncated at that character before being prepended to messages. However, it is used as-is for the destination address when sending e-mail notification for high-priority recipients.

Due to the protocol limitations of SNPP, **QuickPage** derives e-mail notification addresses from the **CALLerid** information. Since the **CALLerid** information might be bogus, all e-mail notifications are sent using a null reverse path. This will prevent error messages from being generated by the mail system if a bogus address is used for e-mail notification.

If the server does not receive a **CALLerid** command (sent by the **QuickPage** client unless −f"" is specified on the command line) notification messages will not be sent, regardless of the specified service level.

When the **−m** flag is used to send a high-priority page, the status notification is sent to the return address in the original e-mail message unless overridden by the **−f** option.

The length of SNPP commands is limited only by the amount of memory available to **QuickPage.**

QuickPage uses a timeout of 255 seconds while waiting for a connection from the remote modem. This allows the administrator to specify an appropriate timeout by setting the modem's S7 register in the dial command.

The modem must control the CD (carrier-detect) line. Otherwise, the on/off hook status of the modem cannot be determined. This is especially important if more than one paging service is used since **QuickPage** must be able to detect when it's safe to send dial commands to the modem.

FILES

/etc/qpage.cf

SEE ALSO

RFC-1861

KNOWN BUGS

Pages are not queued on the client side. As a result, if no servers are available to the client at the time a page is submitted, an error message is printed and the page is discarded.

Pages received after a queue run has started will not be processed until the following queue run.

The default service requires a phone keyword (just like the rest of the service definitions), even if no pager entries specifically reference the default service.

Because **QuickPage** must read the configuration file to determine the location of the page queue, the −Q option will only work for users with appropriate access to the modems, page queue, and lock directory.

Please send additional bug reports to tomiii@qpage.org.

AUTHOR

QuickPage was written by Thomas Dwyer III <tomiii@qpage.org> and is provided to the internet community free of charge for non-commercial use (i.e. **QuickPage** may not be used for profit in any way without prior written permission.)