

## **Other ARPA Services**

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## The GET Program

The “GET” program (GET.SYS.THREEK) provides a simple interface to some ARPA protocols. This program, which is provided with NetMail/3000 and DeskLink, allows users on HP3000s to poll systems which support the ARPA “QUOTE OF THE DAY” and “DAYTIME” protocols.

To run the program, you enter:

```
:RUN GET.SYS.THREEK,QUOTE
      or
:RUN GET.SYS.THREEK,DAYTIME
```

The program then prompts you for a node name (NS format) or an Internet style “IP” address. The system can be reached by entering a node name that NS/3000 recognizes, or by entering the “IP” address of the machine in the format “mmm.nnn.ooo.ppp”, where each portion of the address is denoted by a three digit (decimal) number, with leading zeros if necessary. If the IP address format is used, the system does not need to be one recognized by NS/3000 -- it must merely be on a network that NS/3000 knows how to get to.

Additionally, you may enter the node name or IP address in the “INFO=” string of the RUN command. For example,

```
:RUN GET.SYS.THREEK,DAYTIME;INFO=”node.domain.org”
      or
:RUN GET.SYS.THREEK,QUOTE;INFO=”192.006.001.002”
```

The GET program sets a JCW (Job Control Word) to aid batch and UDC processing. The “TCPERROR” JCW is set to zero if successful, or a non-zero value (the IPC error number) if it encountered an error. See the description of the “Daytime” protocol for an example.

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### Daytime Socket

NetMail/3000 and DeskLink background jobs responds to the ARPA protocol called “DAYTIME” (per RFC 867). This is a “socket” that when connected to, responds by sending the date and time of the host system, then closing the connection. While this does not seem novel, this does provide a simple and effective means of verifying that a remote system is up and its network software is functioning. A simple script of job stream can be set up to “POLL” systems in your network and let you know if your systems and network links are functioning. This method has the advantage of not needing to have any logon information for the remote system(s) while still being able to determine if the system is up and functioning properly (at least in so far as the communications links are up and the Mailman job is functioning).

For example, the following job stream checks several computer systems, and sends MAIL to the system manager if any of the systems does not respond. (This could just as easily incorporate an external alarm or other means of error notification.)

```
!JOB user.acct
!CONTINUE
!RUN GET.SYS.THREEK,DAYTIME;INFO="192.001.001.001"
!IF TCPERROR<>0 THEN
! COMMENT
! COMMENT Error reading the time from the remote system
! COMMENT (the file "errmsg" is an ascii file containing an
! COMMENT error message describing the network outage)
! COMMENT
! RUN NETMAIL.SYS.THREEK;INFO="SEND errmsg;URGENT"
Error message

MANAGER
//
!ENDIF
!EOJ
```

Since this protocol is globally defined in the international community, many different computer systems will respond to the “DAYTIME” protocol. It is therefore possible to use your HP3000 as a central controlling system to monitor the availability of other systems in your network.

The “GET.SYS.THREEK” program provided allows you to poll compliant systems (including all HP3000s running NetMail/3000 or DeskLink) using the QUOTE and DAYTIME protocols.

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### Quote of the Day Socket

NetMail/3000 and DeskLink also provide an ARPA defined protocol called the “QUOTE OF THE DAY” (per RFC 865). This protocol is merely a reserved “socket” that responds to connection requests by sending back a clever quip.

The QUOTE can be retrieved by using the program “GET.SYS.THREEK” with the “QUOTE” entry point. Any machine on your network can retrieve a quote (as long as they have access to the system NetMail is on, and they have a program to retrieve it).

The QUOTE OF THE DAY protocol reads responses from a data file which is provided with the package. The file is named “QUOTECAT.SOURCE.THREEK” and is in the format of a NATIVE LANGUAGE message catalog. The message catalog source is provided which can be modified to incorporate your own messages, and then compiled to replace the runtime message catalog

“QUOTECAT.DATA.THREEK”.

See the “NATIVE LANGUAGE SUPPORT” manual (from HP) if you have questions on the message catalog format, though looking at the examples provided may give you enough information to add your own messages. The only important points are that you 1) be sure to number your messages(quotes) sequentially without skipping any messages, and 2) be sure to update the first message which is the number of messages in the catalog (NOT including itself).

If you modify or replace the quote data file, be sure to keep copies of the files under different names as any subsequent 3k software updates will replace the current files. (You will need to replace the files each time you receive a new software update.)

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### The TCPAcces Program

The "TCPAcces" program (TCPACCES.SYS.THREEK) provides a simple client interface to poll systems which provide a HOSTNAME, FINGER, or WHOIS server.

The "HOSTNAME" protocol is defined in RFC 953. It provides a client/server lookup capability to retrieve host computer names and IP addresses. For Internet users, the DDN NIC (Network Information Center) provides free access to a HOSTNAME server.

The "FINGER" protocol (also known as the "NAME" protocol) is described in RFC 742. This server is common in the Unix community, and if you have HP9000 systems on your network they support this protocol (though it has to be enabled). (The fingerd daemon is provided with HP-UX 8.0.) The "FINGER" protocol allows remote users to query a system to find out who is logged on to the system, and if desired, specify a particular user to determine if that user is logged on or not. A finger server is now also included with all NetMail/3000 distributions, so you can utilize the TCPACCES program to "finger" NetMail/3000 users - IF the mail administrator has enabled this feature. To finger a remote user, run the TCPACCES program as follows, providing the real user (or mailbox) name and host name in the info string:

```
:RUN TCPACCES.SYS.THREEK,FINGER;INFO="username@remotehost"
```

The "WHOIS" or "NICNAME" protocol is defined in RFC 954 and defines a client/server protocol that provides information on computer users from a server based database. Keyed access and subset searches are supported. For Internet users, the DDN NIC (Network Information Center) provides their "WHOIS" server to any connected users.

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### The List Server

Bundled with both NetMail/3000, the POP Server, and DeskLink is the List Server system. List Servers are programs used on the Internet to manage mailing lists. In our case, the List Server lets you initially set up a mailing list and then let individual users (both local and remote) join (or remove themselves) from the list without any manual intervention.

The List Server is bundled with all 3k Associates mail system products though you will need to set up a special mailbox to enable it. A special mailbox (called "listserv") which passes incoming mail messages to a special (included) command file (called "LISTSERV.DATA.THREEK") handles all the list management automatically for those lists you allow it to control.

The "listserv" mailbox needs to be created as follows:

Using NETMAINT add a mailbox; use "LISTSERV" as the name of the mailbox, fill in some name in the "Realname" field and make up a logon string "X,X.X" is fine (it won't actually be used in this case so it needn't be a real logon), and finally jump down to the "On node" field at the bottom of the screen and enter "|LISTSERV.DATA.THREEK LISTSERV" (note the vertical bar character at the beginning and the space after THREEK - they are required).

Once setup, you can allow Listserv to control the list (allow remote users to join the list or unsubscribe themselves automatically via e-mail messages) by modifying the list (in NETMAINT) so that the "List Security" field is set to "G" (for global) access.

#### **Talking to the List Server**

Users work with the listserv by sending messages to it. Listserv messages must be specially formatted as the listserv program scans the body of these messages for commands it is programmed to recognize (message subjects are ignored). A single listserv message can contain several commands, and all commands are entered one per line. Listserv also automatically determines your e-mail address by the return-address or From/Sender headers in the mail message you send it. This listserv program recognizes the following commands:

ADDRESS  
EXPAND  
HELP  
QUIT  
REVIEW  
SET  
SHOW  
SUBSCRIBE  
UNSUBSCRIBE  
VERIFY

For example, a sample message to a listserv to subscribe to the mailing list "friends"

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(assuming "friends" is a global/listserv accessible list) and to verify one's membership in the list might look like the following:

```
SUBSCRIBE friends John Doe
REVIEW friends
QUIT
```

### **The Address Command**

Since the listserver automatically determines your email address based on the return address in the message you send it, there are times when you may need to control or adjust your listserv subscription to a given mailing list but do it from an address different than the address you normally use to receive mail from the listserv (say you have a business e-mail account but want to change the a setting from your Compuserve account from home). By including an address command in the message to listserv (it must be BEFORE any other commands) you can specify that you wish to make changes for the other address. Obviously this can be a security problem, so as a precaution, whenever someone makes a listserv change to another address, BOTH addresses will receive a confirmation message stating the change and who requested it. The syntax of the address command is simply:

```
ADDRESS emailaddress
```

For example:

```
ADDRESS 12345.678@Compuserve.com
```

### **The Expand Command**

Expand (and Review) allow you to view the membership list of a mailing list. Both commands are equivalent (either works) and you must specify which list you want to expand, i.e.:

```
EXPAND friends
QUIT
```

This would send you back a message containing a list of all the members of the mailing list called "friends" (assuming of course this is a valid list name and that the list is accessible to listserv). To get a list of all the mailing lists listserv controls, see the "SHOW" command.

### **The Help Command**

You can send the listserv program a "HELP" command and it will return you information on how to use listserv. If you send it "HELP" (with no parameters) you will receive a summary of the commands supported by listserv. You can also send "HELP command", for instance:

```
HELP SUBSCRIBE
```

and listserv will return you a message with more detailed instructions on the specific com-

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mand - in the above case, listserv will send you more detailed instructions on using the subscribe command.

### **The Quit Command**

The QUIT command causes listserv to stop reading your message at that point. You probably noticed in the previous examples using listserv we always add a QUIT command at the end of our commands. Strictly speaking QUIT is not needed, as listserv just reads your message text looking for commands. However, many peoples' mailers are configured to automatically add a signature (.sig) file to their outgoing messages. If that occurs, listserv will assume your signature file is part of your message and try to process the lines of text as if they were listserv commands. Most likely you will get several error messages back. In any case, it's good practice to just add the quit command at the end of your listserv commands so listserv will stop processing there (just in case).

### **The Review Command**

The REVIEW command is identical to the EXPAND command mentioned earlier.

### **The Set Command**

Once you have subscribed to a listserv controlled mailing list, there are various settings related to your subscription which you can control via the SET listserv command. The SET command accepts a mailing list name followed by an option. All settings are related to the user sending the message (unless an ADDRESS command has been received redirecting listserv to another address). Valid SET options are:

hidden | unhidden  
active | inactive

By default, when you subscribe to a mailing list, your subscription is both "active" and "unhidden". Active users actually receive messages sent to the lists they subscribe to (inactive users, though they stay on the distribution list, do not receive messages while they are inactive). Hidden users do not display when users "review" the mailing list, while "unhidden" users do appear in listings. As an example, say you wanted your subscription to the "friends" mailing list to be hidden, you could send the following command to the listserv:

SET friends hidden

### **The Show Command**

The SHOW command instructs listserv to return to you (in a mail message) a list of all the mailing lists which listserv can access.

### **The Subscribe Command**

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This is how you tell listserv that you want to join a specific mailing list. Subscribe adds the sending user (or the user specified in a previous ADDRESS command) to the mailing list specified. Note that the subscribe command also requires you to provide your real name (or a pseudonym if you prefer) that will also be visible to other users (if your subscription is not hidden). For example, to subscribe to the mailing list called “friends” you might send the following command (if your name is John Doe):

```
SUBSCRIBE friends John Doe
```

### **The Unsubscribe Command**

Users can have themselves removed from a listserv controlled mailing list by simply sending an UNSUBSCRIBE command to the listserver. The UNSUBSCRIBE command requires only the name of the mailing list that you want to be removed from. This command also assumes that you wish to unsubscribe the mailbox address from which you send the message; if you need to unsubscribe another address, use the ADDRESS command before your UNSUBSCRIBE command. An example of unsubscribing your compuserve address from a mailing list (say you switched Internet accounts) could be:

```
ADDRESS 12345.678@Compuserve.com  
UNSUBSCRIBE friends
```

### **The Verify Command**

The VERIFY listserv command, when passed the name of a mailing list, returns a message to the sender (or the destination of a previous ADDRESS command) describing the mailing list named (it’s owner, number of subscribers, etc.). For example:

```
VERIFY friends
```

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### RFCs

RFC's are "Request for Comment" documents created in the Internet community. Standards developed in the Internet community begin as ideas written down and passed around the electronic network community for comments and suggestions. Once an idea has been formalized and agreed upon by the community in general (or designated committees in particular) these "RFC"s become filed for future reference, and depending on the usefulness or importance of the document, sometimes become "standards", encouraged or enforced by the Internet community, and in turn by vendors throughout the world.

The Internet community has been working collectively on standards ranging from low level communications protocols to the rules for electronic message contents since the 1960s. RFCs often become the basis for later official standards from the IEEE or CCITT organizations. "SMTP" is the electronic mail standard that has been used on the Internet since the early 1980s -- this is the mail standard which NetMail/3000 and DeskLink adhere to.

If you are interested in obtaining or viewing the RFC library (there are well over 1000 RFCs) you may obtain a hardcopy of the documents in book form from:

The DDN Network Information Center  
SRI International  
333 Ravenswood Ave, Room EJ291  
Menlo Park, CA 94025

Military activities can obtain them from:  
The Defense Technical Information Center (DTIC)  
Cameron Station  
Alexandria, VA 22314

The published set was about \$250 last we checked. You may also obtain any RFCs directly off the Internet (if you have access to it) for FREE, by electronically mailing requests to:

`SERVICE@NIC.DDN.MIL`

Send "HELP" in the "SUBJECT" heading line of your message for details.

RFCs can be obtained via anonymous FTP from DS.INTERNIC.NET, NIS.NSF.NET, NISC.JVNC.NET, VENERA.ISI.EDU, WUARCHIVE.WUSTL.EDU, SRC.DOC.IC.AC.UK, FTP.CONCERT.NET, or FTP.SESQUI.NET.

Directory and Database Services also provides a mail server interface. Send a mail message to `mailserv@ds.internic.net` and include any of the following commands in the message body:

`document-by-name rfcnnnn` where 'nnnn' is the RFC number  
The text version is sent.

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file /ftp/rfc/rfcnnnn.yyy where 'nnnn' is the RFC number.  
and 'yyy' is 'txt' or 'ps'.

help to get information on how to use  
the mailserv.

The InterNIC Directory and Database Services Collection of Resource Listings, Internet Documents such as RFCs, FYIs, STDs, and Internet Drafts, and Publicly Accessible Databases are also now available via Gopher. All our collections are well indexed and can be searched from the Gopher menu. To access the InterNIC Gopher Servers, please connect to "internic.net" port 70.

contact: admin@ds.internic.net

| To obtain RFCs from NIS.NSF.NET via FTP, logon with username "anonymous" and password "guest"; then connect to the directory of RFCs with cd /internet/documents/rfc. The file name is of the form  
rfcnnnn.txt (where "nnnn" refers to the RFC number).

For sites without FTP capability, electronic mail query is available from NIS.NSF.NET. Address the request to NIS-INFO@NIS.NSF.NET and leave the subject field of the message blank. The first text line of the message must be "send rfcnnnn.txt" with nnnn the RFC number.

contact: rfc-mgr@merit.edu

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