

Installation

Hardware and Software Requirements

DeskLink requires an HP3000. Any model (classic or HPPA), running MPE/V or MPE/iX, and with the Image/TurboImage database system available. It must also reside on a system equipped with HP DeskManager or HP OpenDesk Manager.

For a networked mail system, you will also need the hardware to link the computers and system software to support it. Systems running MPE/iX version 5.0 or later have all the hardware and software they need for network communications (all necessary hardware and software are included with every MPE/iX 5.0 system). For MPE/V systems, this requires a network interface card (LANIC or INP) and Lanlink/3000 software. For HPPA (MPE/iX) systems, a network interface card is required, though if the operating system is at least version 3.1, you can use the LANIC interface that is used to support your DTCs for network connections. For older HPPA systems where network usage is anticipated to be very heavy, a second (dedicated) LANIC may be recommended. For HPPA systems, the system software required is the LanLink/iX software. This software comes with NS/3000 services or ARPA services, but can also be obtained separately (much cheaper) if the other capabilities of NS or ARPA are not required.

DeskLink supports any NS/3000 or ARPA/3000 compatible network links. This includes 802.3 or Ethernet LANs, point-to-point or Router links, or public data network X.25 or DDN X.25 links. (NS/3000 is the data communications software for the HP3000 computer systems, called Network Services). DeskLink does not in fact use or interfere with either NS/3000 or ARPA Services products but uses the low-level procedures provided with the "Link" products, which normally come in combination with these products and network hardware.

DeskLink must be present on at least one HP3000 system running HPDesk in a network where the SMTP gateway capability is required. If there are multiple systems running HPDesk, and they can all exchange mail currently, you only need the DeskLink software on one of the systems (any one you choose).

Though not required, HPPA systems are much more manageable and network capable if running on MPE/iX version 4.0 or better. As of release 4.0, MPE/iX supports a default gateway configured in NMMGR, as well as the utilization of a Domain Name Server (DNS) if available to resolve system names to internet addresses. This takes a tremendous load off the HP3000 network administrator and allows a much more efficient and capable mail system. MPE/iX version 5.0 and later adds even more useful network capabilities, including the ability to run other network services including ftp, telnet, and even the free world wide web server - httpd - from NCSA.

Required System Configuration

This information is not necessarily part of the DeskLink installation, but is provided to aid you in communicating with other computer systems in general. Chances are, if you're not already planning to communicate with other systems, you will need to at some point. The following guidelines give you background information on getting your system to communicate with other systems. Once you've got the systems talking, e-mail will usually flow easily. Again, this information is not part of the required installation for the electronic mail system, so if all you are doing is the software installation, skip past to the section titled "Installation Process".

To communicate between an HP3000 computer system and any other computer system (HP3000 or not), the networking software on the HP3000 must know about the other system. Depending on the type of physical connection you have between the boxes, the complexity of defining the systems varies. **An easy guideline however, is that if you can already communicate between the systems from your HP3000 (via DSLINE or DSCOPY or TELNET) then no additional data communications definitions are necessary for DeskLink.** If you are not already communicating between the systems, the following basic guidelines may help you in setting up the configuration information you need. All data-communications definitions (aside from physically configuring INPs or LANICs) are done with HP's NMMGR program, and detailed instructions for actually performing the configurations are found in HP's Network Manager Reference Manual(s), and are beyond the scope of this manual.

Local Area Networks

If the system(s) you wish to communicate with are located on the same local area network segment (i.e. all have the same network address), AND the other system(s) support TCP/IP via ethernet or 802.3 then you likely will require no configuration of the system(s) at all on your HP3000. This is because when a user enters a mail address (with another system name in it), the Link (TCP/IP) software will try to find the proper system via low-level network protocols. For other HP systems (HP3000s or HP9000s), and even many other brands of systems, DeskLink will have the LanLink software issue a "PROBE" command on the lan to retrieve the address for a machine name which anyone tries to send mail to. "PROBE" is a part of LAN protocol, and allows any compliant system to merely ask "MACHINE joe.admin.company - where are you?". Machines that support "PROBES" will respond to any probe that references their name and send back a response with their network address. In some cases, you may even designate a machine on your LAN to respond to probes for other machines on your LAN that don't know how to do it themselves. The HP3000 will perform this if you configure it to do so -- this is called "PROBE PROXY". See the Network Manager reference manual for details on how to do this.

A note for users of networked HP3000s that need to communicate with non-HP hosts; you will need to set the "ETHERNET ENABLED" flag in your network configuration. Failure to do this will prevent mail communication with some non-HP hosts, though you may still be able to communicate with HP hosts.

Also, for users communicating with other LAN based e-mail systems (PC systems like cc:Mail, WordPerfect Office, Microsoft Mail, or even other Unix or mainframe-based systems, if you have a nameserver available it will save you effort and maintenance in the long run. MPE/iX systems on MPE/iX 4.0 or later can be configured to know about a nameserver (see the MPE/iX Network Planning and Configuration Guide). For older systems or networks where there is no nameserver available, communicating with non-HP hosts may require adding hostnames to a table or to the NS directory (via NMMGR). A note for users accessing the Internet; ALL Internet service providers we know of provide access to (at least one) nameserver as part of their service, and you can just configure your HP3000 to point to it, so you don't HAVE to manage your own nameserver if you don't want to.

Router Links and Gateways

To establish a "ROUTER" type connection between systems you will have to configure each end point system to know about the other. Having done this, DeskLink will be able to route mail between the two systems without any further data entry or configuration modification. If, however, the other end of the "ROUTER" connection has network connections to other networks (of any type), you will need to designate that system as a "GATEWAY" to NS/3000 (see the Network Manager Reference Manuals). This information is required for any network service to access any remote system this system is connected to -- in this respect DeskLink requires no additional configuration -- you need to do this anyway if you plan on talking to these systems at all.

Where you can save some time, however, is that NS/3000 does not need to know about EVERY single machine on that network if your HP3000 will not be otherwise communicating with them (PCs or non-HP CPUs for example). In these cases, all NS/3000 needs to know are the network portions of the addresses that it can get to.

For those unfamiliar with network addressing, any machine's address on a network is typically made up of four (4) parts, each part typically a number in the range of 0 to 255, and by convention addresses are written with a period (.) between the digits. For example:

10.0.0.1 or 126.18.0.109

Without getting too in-depth, usually either the first number, first two numbers, or first three numbers are the "network address", with the remaining numbers being left to define host systems on that network ("host addresses"). The rules for defining how much of an address is a network address, and how much is a host address are beyond the scope of this manual, but keep in mind that as you enter "reachable nodes" in NMMGR (see the Network Manager Reference manual), you need only define the network portion of the address (not each unique combination of network and host) *IF* you are only going to communicate via DeskLink and not with other NS/3000 services. (This may not sound very useful, but if you are tied to a large public or private network this can be a tremendous time saver).

X.25 Networks for MPE/iX 4.0+ systems

If your system is a 900 series (HPPA) system and you are running version 4.0 or later of MPE/iX, the operating system will support both a Domain Name Server (DNS) and a default gateway. If you have access to a system that will provide these services for you, then you will find that wide-area network communications (including electronic mail) will be quite painless.

A Domain Name Server is a computer (typically either a Unix system or a workstation or PC running a DNS package) which can dynamically “look up” the internet address for any valid internet-style computer name. MPE/iX systems running release iX 4.0 or later will automatically use such a computer to find computers on a network if it has been configured. (The service is configured via a configuration file in the NET.SYS group which defines the name of your “domain” and the internet address of the machines that provide domain name services for your domain.) If you configure your HP3000 to use a DNS, then you don’t need to configure any machines (except for systems which have mail redirected by MX records).(The DNS client on the HP3000 only finds “A” records.)

Also, for iX 4.0 or later systems, a “default gateway” configuration in the NMMGR reachable networks is supported. Consult your NS/3000 configuration manuals (specifically the Network Planning and Configuration Guide) for details on how to set this up. Basically, this tells the 3000 to automatically route any outbound network communications through the specified system if the 3000 doesn’t already know how to get to whatever destination system is specified. A “default gateway” can be a Unix system running BGP, HELLO, RIP, EGP, or similar protocols, or a dedicated router or some similar network device familiar with the network routing/resolution protocols.

X.25 Networks for MPE/V or pre iX 4.0 systems

For X.25 networks or other wide area networks (such as the Internet) where your system is either a “classic” HP3000, or a HPPA system running an operating system prior to 4.0, you have to define all the remote systems with which you wish to access NS/3000 services in your NMMGR configuration. If you already have an existing network, you have probably already done this. Unlike LANs, X.25 networks don’t support “PROBE’s, so all systems need to be defined if you wish NS/3000 to be able to find them. However, as mentioned before, if the only communications path you will have with a given system is via DeskLink, you need not define its individual address to NS/3000. You will however, have to enter the name and address of the system in DeskLink’s database (which doesn’t require any kind of network or system interruption). Note however that once a system calls your system, it’s name and address is recorded for you, so that if a system contacts yours before you have entered its name and address, it will have been done for you.

For systems on a public network that require routing through some gateway on the public network, you will need to configure the gateway system in NS/3000, and define the network address on the list of “reachable nodes” in your NMMGR screens for that gateway.

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If you communicate with a large number of remote systems via X.25, an undocumented feature of NS/3000 (available to most MPE/V as well as MPE/iX systems prior to 4.0) is available known as a “default gateway”. A default gateway configuration can save you from entering potentially thousands of network addresses in your system configuration. (As of this writing the feature is available on both MPE/V and MPE/iX but not documented in NS manuals. If you wish to find out about this feature, contact HP’s response center or 3k Associates tech support.)

Installation Process

All 3k software products install automatically by simply restoring one job stream from the installation tape, inserting appropriate passwords into it and streaming it. The installation job automatically determines whether you are installing the software for the first time or are updating to a new software release. The steps are:

1) If this is an update (you already have existing DeskLink software) verify that there are no users accessing the DeskLink software. Then mount a **blank** tape or DAT and **:STORE @.@.THREEK** before you begin the new installation.

2) Log on as **MANAGER.SYS**

3) Issue a file equation for your tape drive: **:FILE THREEK;DEV=TAPE** (for magnetic tape or DAT users) (or) **:FILE THREEK;DEV=CTAPE** (for cartridge tape systems)

4) **:RESTORE *THREEK;THREEKLD.PUB.SYS;SHOW** (You should see one file restored.)

5) Use your favorite text editor and modify the first line of the file (**THREEKLD.PUB.SYS**) to include the appropriate passwords, -OR- simply remove the passwords from **MANAGER.SYS,PUB** for the duration of the installation process and replace them when done. If you have a third party security system installed, make sure you have enabled logon access for **MGR.THREEK** and **MANAGER.SYS**.

6) **:STREAM THREEKLD.PUB.SYS** (You will see informative messages on the console reporting the progress of the software installation or update.)

When the job(s) have completed, you will see a message reporting that the software was successfully installed. **If this is a DEMO version you downloaded over the Internet, you now need to ACTIVATE your software.** Note, all tapes shipped directly from 3k Associates are pre-validated for 45 days. If your tape lists an expiration date on it, then your software has been pre-validated through that date and you are ready to run it (no need to call and have it validated). If the demo expires and you would like an extension to evaluate the product, you may call the number(s) listed and get an extended validation code.

7) (If your software is not pre-validated) call your software distributor. In the U.S. or Canada call (800) Net-Mail or (703) 569-9189. In Europe, call +44 (1480) 414131. In any other countries, call +1 703 569-9189 (9AM-8PM Eastern (US) time). Your distributor will provide you with the instructions to validate your software over the phone. You may also request the information by fax; in Europe +44 (1480) 414134; any other country +1 703 451-3720. Let them know you have the DeskLink product demonstration and need it validated.

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If this is a new installation, you will probably want to review some of DeskLink's control settings and set them according to your site's preferences before "opening up" the mail system for your users. See section 3 for the various management options and settings.

The installation process will restore all the files from the "THREEKX" account on your tape into the "THREEK" account on your system. If the "THREEK" account does not exist, the installation job will set it up with all the required attributes for you.

Note; you must start the background job before e-mail transfers between systems will work. See instructions below on how to start the background job.

Configuration of DeskLink using NetMaint

After installing the software, there are a few items you need to specify in DeskLink using the netmaint.pub.threek program. The Internet-style nodename of your computer, your time zone, and the message attachment and outgoing address format used by the gateway need to be specified. Configuration is simple, start by logging on as MGR.THREEK and running the netmaint program. See the DeskLink Installation Supplement for instructions.

Configuration in HPDesk

Before you can actually start up the gateway process, there are some special configuration settings you need to establish in HPDesk. **See the DeskLink Installation Supplement for instructions.**

Starting the Mailman Job

To allow inter-system electronic mail transfers, local mailing list processing, and/or the other ARPA services that DeskLink supports, you will need to launch the “DESKLINK.JOB.THREEK” job stream. This job logs on as “NETMAIL.HPOFFICE”, and will need to be logged on at all times while any of the above services might be used (shutting down the job for system backups is a good idea however so that the mail database gets backed up).

You will need to copy this job to a secure location and insert the proper passwords if you do not have a system security package that allows submission of job streams without embedded passwords. Also be sure to add this job to any system start-up procedures you may have at your site so the job will be launched whenever the system is restarted. Remember, when DeskLink installs on your system, it places random passwords on all the users and groups it creates, so be sure to look up the necessary passwords (or change them) so you will be able to stream the background job and possibly log on as MGR.THREEK.

Though this job stream will be active almost all the time your system is up, you will find that it uses very little cpu time. This is by design, as the DeskLink processes are interrupt driven, so they stay “asleep” most of the time waiting for an external action to awaken them.

NOTE

An important note for users with a network link: for the background job to operate properly, you must have a “LOOPBACK” network interface configured and started. DeskLink uses the “LOOPBACK” service to shut down its network drivers (when you run the SHUT-DOWN.SYS.THREEK program). If it is not configured, the job will not shut down (it would have to be aborted, which while usually safe, may interrupt any mail processing in progress).

To start up your loopback interface, type

```
:NETCONTROL START;NET=LOOP
```

To configure a “LOOPBACK” interface, consult your NMMGR reference manuals.

Stopping the Mailman Job

When you need to stop the mailman job, use the program supplied: SHUTDOWN.SYS.THREEK. This program will halt the background job without interrupting any active process (if a mail message is coming in, the job will wait until the complete message is processed.)

```
: RUN SHUTDOWN.SYS.THREEK
```

The background job may take a few minutes to log completely off, as it does complete whatever transaction is in progress before shutting down.

You must have “SM”, “PM”, “OP”, “NA” or “NM” capability to run the shutdown program, or you must be logged on as MGR.THREEK.

Note; This should become part of your system shutdown and full backup procedures. The DeskLink gateway should normally be shut down during full backups (you should really shut down the network services on your system during a full backup so your network configuration files get backed up -- the DeskLink job will abort if network services are shut down while it is logged on). Running the shutdown program will start an orderly shutdown process of the background job and all its son processes, insuring the integrity of its data structures and database.

To automate the shutdown process, running the shutdown program in a batch job, (preferably followed by a pause of up to 2 minutes to allow the background job to terminate normally), then possibly followed by your NSCONTROL and NETCONTROL stop commands, which will force the background job to terminate if it was stuck for any reason. Following the backup or during system start-up procedures, re-stream the background job (AFTER the network services have been restarted). For example:

```
!JOB BACKUP,MANAGER.SYS
...
!RUN SHUTDOWN.SYS.THREEK
!PAUSE 120
!CONTINUE
!NSCONTROL STOP
!PAUSE 60
!CONTINUE
!NSCONTROL ABORT
!PAUSE 120
!CONTINUE
!NETCONTROL STOP
!FILE T;DEV=7
!STORE @.@.*T;SHOW=LONG,OFFLINE
...
```