
HP X.400

Technical Data

Product Numbers
32031A 32032A, 32055A,
32056A, J2162A

HP X.400 is based on the CCITT X.400 1988 standards and offers multivendor electronic messaging for HP 9000 and HP 3000 computers. With HP X.400, users of HP OpenMail, HP Desk, and UNIX® Mail can exchange electronic mail messages worldwide by using a single HP X.400 Server. Additionally, the HP X.400 high level API

and X/OPEN API can be used to develop other messaging applications such as EDI, FAX, and TELEX. HP X.400 can also provide the foundation upon which an entire X.400 backbone network can be built.

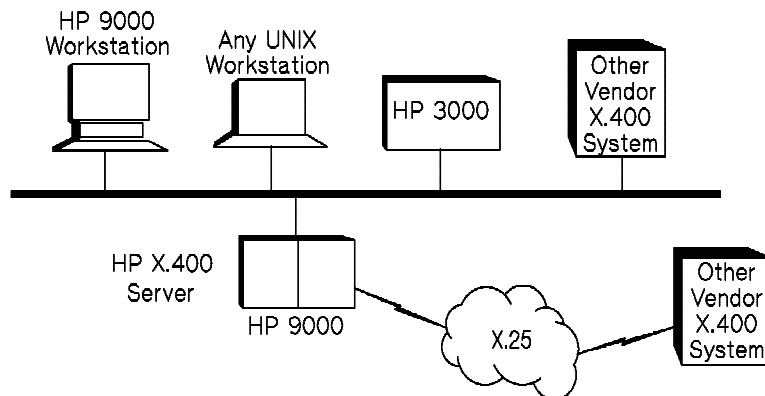
Features

Integrated with HP OpenMail:

HP OpenMail provides a native X.400 electronic mail system. Together, HP X.400 and HP OpenMail/UX enable users to exchange text and binary file types (e.g. spreadsheet, word processing, and graphics) with other X.400 electronic mail systems. The addressing scheme in HP OpenMail is consistent with the X.400 standard. HP OpenMail also enables HP Desk users to exchange information with other users on X.400 networks.

Email Gateways:

HP X.400 supports gateways to OpenMail, UNIX Mail, and HP DeskManager networks. HP X.400 can transform one node of an OpenMail, UNIX (ARPA) and/or HP Desk network into the gateway node to an X.400 environment.



HP X.400 high-level API:

HP's X.400 API allows application developers to create their own X.400 applications for both HP-UX and MPE operating systems. EDI, FAX, Telex and other store-and-forward applications can be built on top of X.400. HP also supports the X.400 X/OPEN APIs for selected developers.

X.400 Network Management:

HP X.400 nodes can be configured and managed from remote nodes within the network. Network administrator tools can automatically warn the network administrator if remote X.400 nodes are encountering potential error conditions. HP X.400 also includes logging facilities for billing and troubleshooting.

Binary File Support:

HP X.400 allows OpenMail and HP Desk users to send binary files such as spreadsheets, graphics, and word processing files in addition to ASCII text messages. Users can send and receive these binary files using the X.400 "unidentified body part."

Interoperability and Troubleshooting Tools:

HP provides a full set of tools to help simplify the interoperability and troubleshooting process. HP's OSI tools allow the network administrator to check the interoperability of the network at various layers of the OSI

stack, isolating problems quickly and easily.

PC to X.400 Access:

Users of HP AdvanceMail and NewWave Mail for the PC can also create X.400 messages. AdvanceMail and NewWave Mail provide remote user agent capabilities. Users can compose messages on their PCs and later transfer them to HP OpenMail or HP Desk for distribution within the X.400, OpenMail, HP Desk, and UNIX environments.

X.25 and 802.3 with Transport Classes 0, 2, and 4:

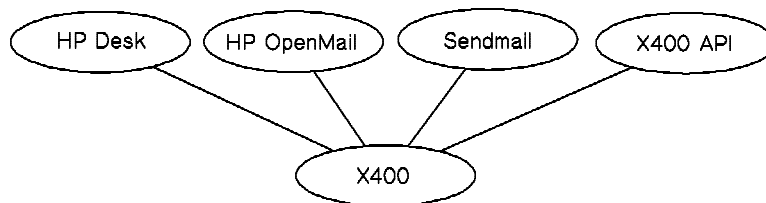
HP X.400 runs over OTS/9000, HP's Session and Transport layers, on top of X.25 or LAN. OTS allows the network administrator to configure transport class 0 (TP0), 2 (TP2), or 4 (TP4) with negotiation from a higher class down to a lower class when running over X.25.

Functional Description

HP X.400 provides a foundation for electronic messaging. HP X.400 can be used for the implementation of electronic mail gateways, X.400 backbone networks, or the development of store-and-forward applications with the X.400 high-level API. Electronic Mail Gateways.

HP Desk to X.400 Gateway:

HP X.400 when used in conjunction with HP X.400/HPDesk (P/N 32055A or 32056A) can transform a single node or multiple nodes of an HP DeskManager network into connecting nodes to an X.400 environment. Through these nodes, users anywhere in the HP DeskManager network can access the X.400 environment.



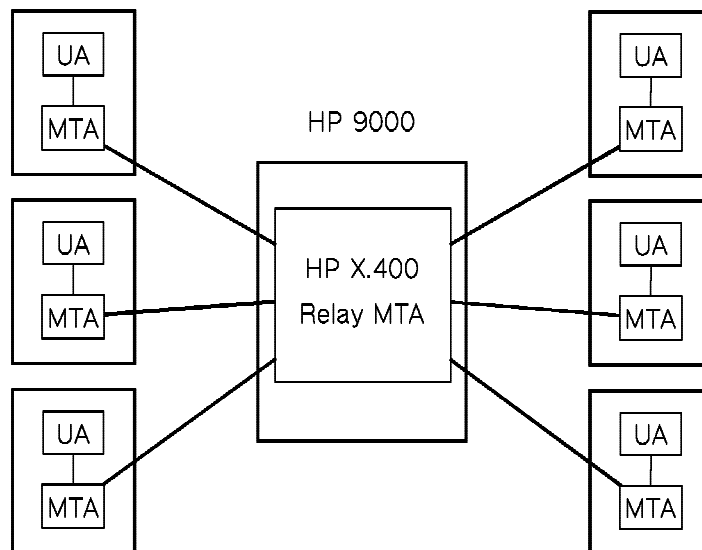
HP Desk to X.400 gateway requires two components: An HP X.400 server and the HP X.400/HP Desk Gateway software. An HP X.400 server consists of any HP 9000 with 802.3 and/or X.25 links along with the HP X.400 software and OSI Transport Services software.

The X.400/HP Desk Gateway software runs on an HP 3000 and links HP DeskManager to an HP X.400 server. Multiple HP DeskManager nodes, each with their own X.400/HP Desk Gateway, can talk directly to a single HP X.400 server.

HP DeskManager nodes without the Gateway software can also send X.400 messages using the X.400/HP Desk nodes as a common gateway to the X.400 server.

HP 3000 systems communicate with the X.400 server using NS over a LAN or X.25.

Sendmail Gateway to X.400: HP X.400 can send and receive messages between Sendmail based electronic mail and X.400 networks.



Messages are submitted to Sendmail from UNIX Mail (MailX or Elm). Sendmail then routes the message to either SMTP, UUCP, or X.400 based on the recipient's address.

When the message is X.400 bound, HP X.400 maps the address to an X.400 format, then sends the message to the appropriate destination.

X.400 Backbone

HP's X.400 can be used as a high-performance message switch. As an X.400 backbone, HP X.400 acts as a relaying MTA, routing messages from other MTAs throughout an X.400 network.

HP's flexibility in routing and our easy-to-use configuration interface make it ideal for X.400 backbones. Additionally, HP's network management

tools simplify the maintenance of X.400 networks making implementation of large X.400 networks possible.

HP OpenMail can also run directly on top of X.400. This allows for the creation of an entire electronic mail network based on an X.400 backbone

Conformance

HP's X.400 is certified with NIST as U.S. GOSIP I compliant.

HP supports the leading X.400 implementor's agreements from the U.S. and Europe: CCITT X.400, X.402, X.411, X.420, X.200, X.208, X.209, X.218, and X.228; and ENV 41201 and 41202.

Interoperability

HP supports interoperability with the following X.400 vendors: AT&T, CDC, Data General, Digital, IBM, NCR, Nixdorf, Olivetti, Prime, Retix, Siemens, SoftSwitch, Sun Microsystems, Touch, Wang, and Xerox.

HP has certified interoperability with the following public carriers: AT&T Mail, British Telecom, Canadian PTT, DialCom, Dutch PTT, EasyLink, Finnish PTT, France Telecom, MCI Mail, and SprintMail.

X.400 Application Programmatic Interface (API)

A simple X.400 API allows application developers to create X.400 store-and-forward applications. Applications such as FAX and TELEX to X.400 gateways along with EDI applications are easily integrated with X.400 using six basic programmatic calls:

```
X4_BEGIN_SEND ()
X4_PUT_ATTRIBUTE()
X4_SEND () X4_RECEIVE ()
X4_GET_ATTRIBUTE ()
X4_END_RECEIVE ()
```

HP also offers the X.400 X/OPEN API for select customers.

X.400 Performance

SPU	S/807	S/827	S/837	S/857	S/870
Number of Messages per hour	1200	2300	5000	8000	12000

Performance

Performance for HP X.400 is measured in messages per hour over a LAN. A message is 1K byte long with one recipient. A single X.400 node can route X.400 messages at the above maximum rates.

Documentation

For detailed usage and technical information, please consult the following Hewlett-Packard manuals:

32055-90001

HP X.400/HP Desk Node Administrator's Guide

32055-90002 Using HP DeskManager Connected to HP X.400

32034-90005 Installing and Administering HP X.400

32043-90006 Managing HP X.400

32034-90007 Using HP X.400 with Elm and MailX

32034-90008 HP X.400 High-Level API

Installation and Support Policy

The HP X.400 software and the X.400 server bundle are customer installable and configurable. Installation and configuration can also be performed by HP through the purchase of consulting services.

Interoperability testing can be purchased from HP on a time-and-materials basis. The HP X.400/HP Desk Gateway software for MPE systems is also customer installable.

HP X.400 works with most UNIX Mail user agents, which Interface to Sendmail. HP currently supports only the HP OpenMail, Elm, and MailX user interfaces when used with supported configurations of Sendmail. Support services for HP X.400 are available through standard HP support channels.

HP X.400 version C.03.00 requires HP-UX Version 8.0. A 132 Mb (or larger) disk drive is also required. HP X.400/HP Desk requires MPE V Version V delta 8 or MPE XL Version 2.0 (or later), NS services, and the LAN Link product for the HP 3000. It also requires Version B.03.B0 (or later) of HPDesk.

The X.400 server may be any HP 9000 system running HP-UX Version 8.0 (or later).

Ordering Information

HP X.400 includes email gateways for Sendmail and OpenMail. HP X.400 also includes the HP X.400 API. The HP X.400/HP Desk Gateway must be purchased separately.

HP X.400 for the Series 300/400 (HP 32031A)

HP X.400 for the Series 600/800 (HP 32032A)

HP X.400 for the Series 700 (HP J2162A)

Required Products

HP OSI Transport Services/9000 for the Series 300/400 (HP 32069A)

HP OSI Transport Services/9000 for the Series 600/800 (HP 32070A)

ARPA Services/9000 is also required for use of X.400 with Sendmail.

Software is available on magnetic tape, DAT, and cartridge tape.

HP X.400 requires concurrent or prior purchase of HP X.25 Link/9000 or HP LAN Link/9000.

HP Desk to X.400 Gateway to connect HP Desk to X.400 requires the purchase of at least one copy of the HP X.400/HP Desk Gateway for MPE.

32055A HP X.400/HPDesk for MPE XL

Options:

320 For Series 925 or 925LX

330 For Series 935

340 For Series 950 or 955

32056A HP X.400/HP Desk for MPE V

Options:

310 For use on MICRO 3000

320 For Series 39-58

330 For Series 6x-70

The following is a suggested minimum configuration for creating an X.400 server for HP Desk:

Model 807 server (HP A1751A)
HP-UX on DDS (Opt. AAH)
16 MB memory (Opt. 501)
328 MB disk drive (Opt. 001)
ThinLAN, ARPA, NFS I/F (Opt. 1F7)
X.25 RS232 Link (Opt. 030)

HP X.400 (HP 32032A)
DDS tape (Opt. AAH)
For use on 807 (Opt. AH0)

HP OSI transport (HP 32070A)
DDS tape (Opt. AAH)
For use on 807 (Opt. AH0)

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