

Tru64 UNIX

Planning Mail Services Using Internet Express

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Product Version: **Internet Express Version 5.6**

This Best Practice provides overview information that helps you plan your mail service using the latest mail server components provided in Compaq™ Internet Express (formerly, Open Source Internet Solutions). It points to additional Best Practices documentation that provides specific information on configuring a given mail server component.

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Planning Mail Services Using Internet Express

A mail server is any machine that services mail. Typically, it refers to the machine where e-mail clients connect when reading or sending mail. The mail server environment is configured to send, distribute, and deliver mail; access mail; or both.

Internet Express is a collection of popular Open Source software contained on a single CD-ROM. Internet Express gives you the latest versions of mail server components, including updates to components installed as part of the Tru64™ UNIX operating system. Using Internet Express, you can install mail servers on your Tru64 UNIX system and use the default configuration values provided.

See the Tru64 UNIX Best Practices Web page for more information about Best Practices documentation.

Is This Best Practice Right for You?

Not all Best Practices apply to all configurations, so you must be sure that this Best Practice is appropriate for your system and circumstances. To use this Best Practice, you must meet the requirements described in the following table.

Requirement	Description
Operating System	Tru64 UNIX Version 5.0A or higher
Product Version	Internet Express Version 5.6 or higher
System Configuration	High-speed network interface. Consider multiple network interfaces for very high volumes.

If you do not meet the previous requirements, see *Alternative Practices* for information.

Before You Begin

Before you apply the Best Practice for Planning Mail Services Using Internet Express, you must understand some background information and perform some preliminary tasks.

If you have not already done so, register the IP address and any IP aliases for the system and configure the network. The Internet Express installation procedure will lead you through the network configuration, if necessary.

Understanding the Mail Server Environment

There are two basic functions in Mail:

- **Sending, distributing, and delivering mail**—You can configure an e-mail server to send, distribute, and deliver mail. The Simple Mail Transport Protocol (SMTP) is the primary protocol used for sending and distributing mail messages. The Tru64 UNIX operating system and Internet Express provide the Sendmail Mail Transport Agent. Internet Express, which releases frequently, provides the latest version of Sendmail. See *Sending, Distributing, and Delivering Mail* for more information.
- **Accessing mail**—You can configure mail servers to access local and remote mail.

Local access is through the file system, using UNIX mail clients such as `dtmail`, `xmh`, `mailx`, and `binmail`.

Shared file systems via Network File System (NFS) or Server Message Block (SMB) can provide remote access. The Post Office Protocol (POP) and Internet Message Access Protocol (IMAP) are the two most commonly used protocols for accessing remote mail. The Tru64 UNIX Version 5 operating system provides the Qualcomm POP3 Mail Server and the Cyrus IMAP Server, at the version available when the operating system shipped. Internet Express provides the latest released versions of Qualcomm POP3 and Cyrus IMAP4 and the University of Washington IMAP Servers. See *Accessing Remote Mail* for more information.

Sending, Distributing, and Delivering Mail

The Tru64 UNIX operating system and Internet Express provide the Sendmail Mail Transport Agent. Sendmail supports mail transport using SMTP, typically over TCP/IP but also over other transports such as UUCP and DECnet. It also handles mail delivery, forwarding, aliases, and error handling.

Install the Sendmail Mail Transport Agent from Internet Express to get the latest version of Sendmail. See the *Internet Express for Tru64 UNIX Installation Guide* for information.

See the Best Practice document, *Configuring SMTP Mail Servers Using Internet Express*, for information on configuring Sendmail.

You can set up or modify the SMTP mail server configuration in any of the following ways:

- **Standalone system**—A standalone system does not send or receive mail from any other system. It can send and receive mail from other users on the same system only. Standalone systems are useful for configurations of from one to six systems. In small LAN configurations of two or more systems, one system serves the mailbox to the other systems using the Network File System (NFS). In this case, NFS must be configured on all systems.
- **Client system**—A client system depends on a mail server for all mail processing. It must be connected to the same network as its mail server. If the addressee is on the client system, the mail is delivered there. If not, the mail is forwarded to the destination system.
- **Server system**—A server system is a central host that performs all mail processing, such as forwarding, routing, addressing, aliasing, and mail delivery. It receives mail from clients in a local domain for processing and delivery to other domains, the Internet, or other networks. In addition, the server also receives mail from other domains for delivery.

When implementing a client/server mail environment, you need to decide how to:

- Direct outgoing mail to the servers
- Handle incoming mail to the domain
- Deliver mail to clients

See the Tru64 UNIX network administration documentation for information on implementing an SMTP client/server mail environment.

Accessing Remote Mail

There are three different types of access mode for remote e-mail access:

- **Offline mode**—The mail client program fetches messages from a mail server to the machine where the client is running and then deletes them from the server. Thereafter, all message processing is local to the client machine and environment. This mode is used extensively by Internet Service Providers (ISPs) to provide e-mail services for their customers. Typically incoming mail sits on the ISP mail server until a customer dials in to retrieve it. The Post Office Protocol (POP) is the most common protocol for offline access.
- **Online mode**—Messages are left on the mail server and manipulated remotely by mail client programs, possibly more than one at a time. The Internet Message Access Protocol (IMAP) provides online access.
- **Disconnected mode**—An e-mail client connects to the mail server, makes a cache copy of selected messages, and disconnects from the server. Later, it reconnects and resynchronizes with the server. IMAP provides the best disconnected access. POP provides only limited disconnected access.

Post Office Protocol (POP)

POP is a client/server protocol that allows users to download their e-mail from a mail server to a remote client. It is intended for users who mainly access e-mail in offline mode. In offline mode, messages are delivered to a server and reside there until the user connects to the server and downloads the incoming messages to the client machine (a desktop or laptop computer running Windows, Macintosh, UNIX, or another operating system). Thereafter, all message processing is performed on the client. Offline mode is widely used by Internet Service Providers (ISPs).

Configure a POP server when:

- Users will mainly access e-mail in offline mode.
- Users want to manage their own mail folders on their local machine.
- Your requirements call for an e-mail processing system that is inexpensive, reliable, and in common use. For example, you do not want to supply large amounts of disk space to store user's mail.

Internet Message Access Protocol (IMAP)

IMAP supports online, offline, and disconnected remote access modes. Folders and messages can be stored on the server and remotely manipulated. A user can connect from different computers in different locations and still have access to all stored mail folders as well as new

mail messages. As a result, IMAP puts a much greater demand on disk space than POP.

Support for IMAP in clients is becoming standard. Netscape Communicator 4.0, Microsoft Outlook Express (in Internet Explorer 4.0 and higher), and Microsoft Outlook all support IMAP.

Configure an IMAP server when:

- Users want to access e-mail in offline, online, or disconnected modes.
- Users want to access their mail folders from different machines and locations.
- Users want to optimize the use of the available network bandwidth by downloading only what they want to see. (For example, only mail headers instead of entire messages can be downloaded or only the body headers of a large multipart message.)
- Administrators want to manage users' mail folders from the server. (Backups are much easier.)

Other Mail Server Components

Internet Express provide other e-mail components that complete a mail server environment.

- The Majordomo Automated Internet Mailing Lists Server is a set of programs that automate the operation and maintenance of Internet mailing lists. Install the latest version of Majordomo from the Internet Express CD-ROM and use the Administration utility (IAEADM) for configuration. See the *Internet Express Administration Guide*
- Procmail Mail Filtering Language is a mail-processing utility that lets you filter incoming mail messages according to a predefined set of rules. Procmail understands the details about most UNIX mail transport and delivery agents and facilitates the writing of custom mail filtering scripts. Procmail can be invoked from Sendmail or by a user's `.forward` file.

See `procmail(1)`, `procmailrc(5)`, and `procmailsc(5)` for more information on using `procmail`. Extensive examples are provided in `procmailex(5)`.

Applying the Best Practice

Before you configure mail servers, be sure to follow the recommendations in *Before You Begin*.

The Internet Express CD-ROM contains Sendmail, Qualcomm POP, Cyrus IMAP, and UW-IMAP, as well as other Internet software. This Best Practice recommends that you:

1. Obtain the CD-ROM from the Internet Express kit.

Compaq includes the Internet Express CD-ROM with Tru64 UNIX and AlphaServer systems. If you need a copy of the kit, you can contact your Compaq representative.

2. Install the desired mail server subsets. (To determine which subsets to install, first see *Planning Your Mail Service*.)

The Internet Express kit includes the following software:

- Sendmail Mail Transport Agent (IAESMTP)—Depends on the Netscape LDAP Runtime subset (IAELDRT)
- Cyrus IMAP4 mail server (IAECYRS)—Depends on the Tcl runtime components (IAETCRT) which are automatically selected and installed. Install Cyrus IMAP4 when you can afford additional administrative overhead in favor of better scalability and performance.
- University of Washington IMAP4 (UW-IMAP) Mail Server Version 4.6 (IAEIMAP)—Install UW-IMAP when you want to use native UNIX mail storage formats and need to keep administrative overhead costs down.
- Majordomo Automated Internet Mailing Lists Server (IAEMAJD)
- Procmail Mail Filtering Language (IAEPROC)

3. Use the Internet Express Administration utility to tailor the component settings for your site, and to manage the installed component. Refer to the *Internet Express Administration Guide* for complete information on managing users and managing components.

To configure a given mail server component for your site, see any of the following Best Practices documents:

- *Configuring IMAP Mail Servers Using Internet Express*
- *Configuring SMTP Mail Servers Using Internet Express*
- *Configuring POP Mail Servers Using Internet Express*

Planning Your Mail Service

To plan your mail service, consider the following issues:

- Volume and capacity of your computer—If your server is robust enough to handle the number of anticipated mail clients, you can perform all mail server functions from one machine. For example, you could run multiple servers: Sendmail for distribution and delivery of mail, and University of Washington IMAP for cost-effective access.

If you anticipate a large number of clients, consider running separate servers for better response time. For example, run Sendmail on one machine and a POP or IMAP server on another.

Consider disk storage capacity and related overhead when selecting an access method. A POP server allows remote clients to save and manage their mail.

- When to use POP or IMAP for mail access—If you are an ISP and your users will dial in from home, use POP mail. POP allows users to manage their e-mail locally and reduces storage overhead at the ISP.

If you are a business enterprise where users must access mail from various locations and you have sufficient storage capacity, use IMAP. Internet Express offers two IMAP implementations. Consider the following points when planning which IMAP server to configure:

- Cyrus IMAP4 Server is provided with Version 5.0 of the Tru64 UNIX operating system and Internet Express. Internet Express, which releases frequently, always has the latest released version of the Cyrus IMAP Server. Use the Cyrus IMAP Server for its superior performance and scalability features, especially for sites with a large number of users who store a large volume of mail. (A large-scale mail system can support more than 50,000 subscribers.) Cyrus also provides automated disk quota management, which is a benefit to ISPs who need to control the disk space consumed by users' mail. The Cyrus IMAP Server requires slightly more administration overhead than other IMAP implementations.
- The University of Washington IMAP server (UW-IMAP), provided with Internet Express, supports all major UNIX mailbox formats and is easy to administer. Mail folders can be shared with UNIX mail applications such as dtmail, mh, mailx, and binmail. Use UW-IMAP if you service a small number of clients, if your scalability and performance requirements are low, and if you want low administrative overhead. Otherwise, use the Cyrus IMAP Server.

Verifying Success

After you apply the Best Practice for Planning Mail Services Using Internet Express, you can verify whether it was successful.

- You successfully installed the desired mail server subsets and related subsets, including the Internet Express Administration utility.
- You understood the function of a mail service and can make decisions on implementing your e-mail server environment.

Alternative Practices

This document provides overview information intended to help you plan your e-mail service.

You can find additional information about setting up Internet mail at Compaq's ActiveAnswers site. This site is especially helpful if you are an ISP and plan to set up a full line of Internet services. To use this site, follow the registration procedure at this location:

<http://www.compaq.com/activeanswers>

Comments and Questions

We value your comments and questions on the information in this document. Please mail your comments to us at this address:

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