



iSeries

E-mail

Version 5 Release 3





iSeries

E-mail

Version 5 Release 3

Note

Before using this information and the product it supports, be sure to read the information in Appendix A, "Notices," on page 43.

Sixth Edition (August 2005)

This edition applies to version 5, release 3, modification 0 of IBM Operating System/400 (product number 5722-SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

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E-mail

This topic provides you with concepts and procedures for configuring and administering e-mail on your iSeries^(TM) server. This information assumes that you have worked on the iSeries before and have a working knowledge of TCP/IP, Simple Mail Transfer Protocol (SMTP), and e-mail concepts. For an overview of e-mail on the iSeries, refer to the topics in Understand e-mail (See 1).

For more information about e-mail, see the following:

“Print this topic” on page 2

If you want to read this information on paper, you can print the entire topic as a PDF file.

What’s new for V5R3

Find out about new e-mail function for V5R3.

Understand e-mail

“E-mail example: Send and receive e-mail locally” on page 2

This topic provides an example of e-mail use to introduce basic concepts and configuration tasks.

“E-mail concepts” on page 4

Find information on basic e-mail concepts.

“Plan for e-mail” on page 6

This topic provides information for evaluating your e-mail needs, preparing to set up e-mail, and information about e-mail security.

Use e-mail

“Configure e-mail” on page 9

Find the basic steps for configuring your server for e-mail.

“Send and receive e-mail on iSeries” on page 19

Find instructions on how to send and receive e-mail through a Post Office Protocol (POP) client program, like Netscape Mail, Microsoft^(R) Outlook, or Eudora, or a SNADS client, like the Send Distribution (SNDDST) command.

“Manage e-mail” on page 25

Find instructions on how to work with e-mail. This topic provides information on configuring dial-up connections, using an Internet Service Provider (ISP) for e-mail delivery, securing your network, and other administrative tasks.

E-mail resources

“Troubleshoot e-mail” on page 30

Find tips and instructions on how to deal with e-mail problems.

“Related information for e-mail” on page 38

Find other information about e-mail.

Note: Read the Code example disclaimer for important legal information.

Print this topic

To view or download the PDF version, select E-mail (about 246 KB or 48 pages).

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click **Save Target As...**
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

Downloading Adobe Acrobat Reader

If you need Adobe Acrobat Reader to view or print these PDFs, you can download a copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep.html)



E-mail example: Send and receive e-mail locally



This example demonstrates how e-mail is processed between local users.

Situation

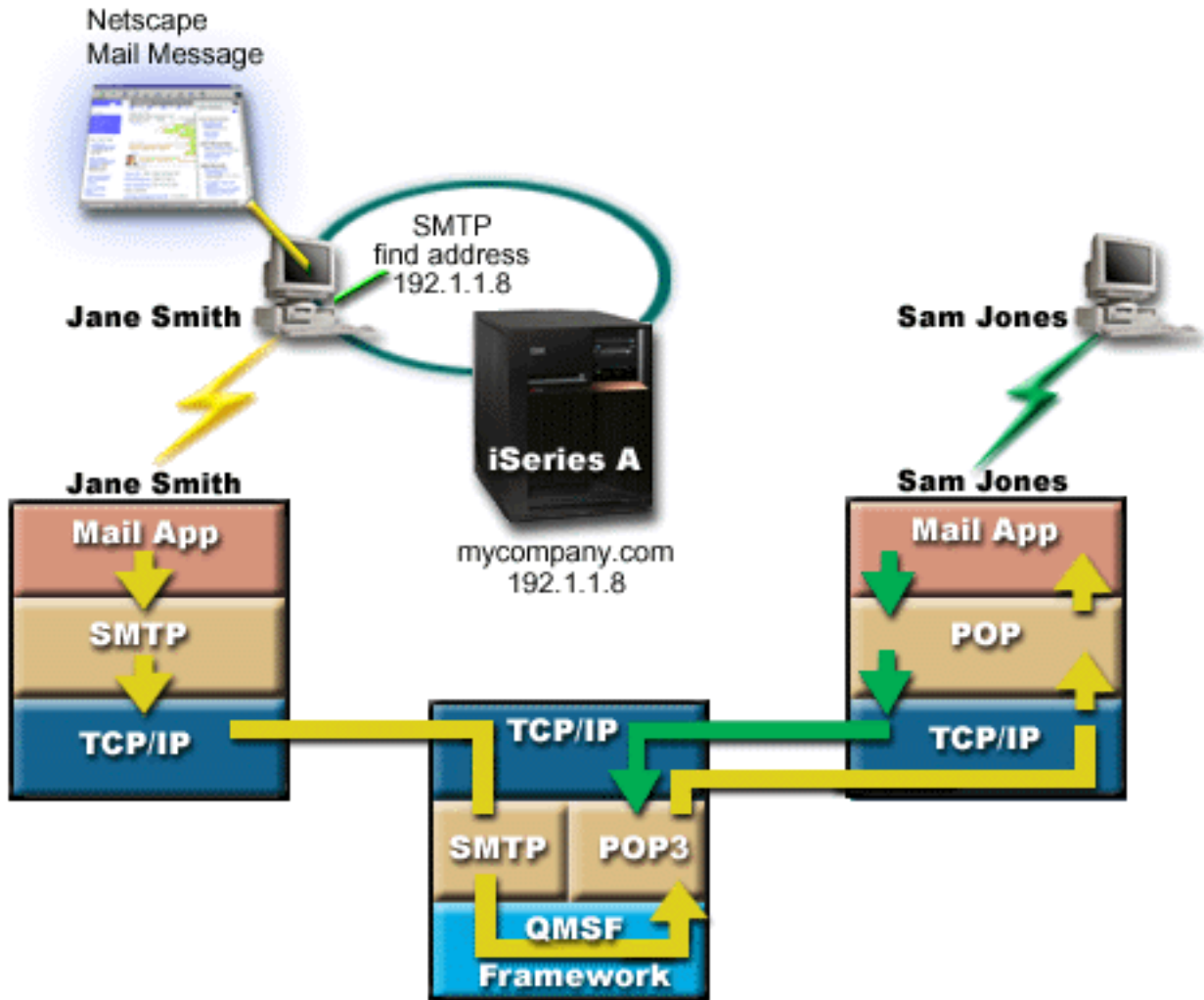
Jane Smith, the Human Resources director, needs to send a message to Sam Jones in the Legal department. They both work at MyCompany headquarters. By following this process, you will be able to see how e-mail is handled on your iSeries^(TM).

The objectives of this example are as follows:

- Demonstrate how e-mail clients and servers relate to each other, and how a message is processed.
- Use the SMTP server to send mail.
- Deliver mail to a POP user.

Details

The following image depicts the network for MyCompany and how a mail message passes through the various layers in order to get to its final destination. After the image you will find a step by step description of the path the mail message takes through this network.



Jane is using the Netscape mail client. She writes a message and sends it to SamJones@mycompany.com.

Phase 1: SMTP client to SMTP server

The SMTP client on Jane's PC uses the configuration data that was entered for the outgoing server and identity. The identity field is used for the **From** address. The outgoing server is the host that is contacted by the PC SMTP client. Because the address is entered as a domain, the SMTP client queries DNS to get the IP address of the SMTP server, and discovers it is 192.1.1.8.

The SMTP client now contacts the SMTP server on the SMTP port (Port 25 at 192.1.8). The dialog that is used between the client and the server is the "SMTP protocol" on page 39. The SMTP server accepts delivery of the mail, and the message is transmitted from the client to the server using TCP/IP.

Phase 2: SMTP server delivers the message to the POP server

The SMTP server tests the domain of the recipient to see if it is local. Because it is local, the mail is written out to an IFS file and the QMSF Framework Create Message API is used to put the message information in the QMSF queue. The QMSF framework allows the distribution of e-mail, calling exit programs or snap-ins to handle specific mail types. The message information identifies Sam's address as SMTP format, so the framework calls the SMTP Address Resolution exit program. This program again checks that the message is local. Because it is local, it uses the system distribution directory (data entered

via WRKDIRE) to find the recipient's SMTP address. It finds Sam's address, and finds the mail service level is system message store in the directory entry for this user, therefore it recognizes it as a POP account. Then SMTP Address Resolution adds his profile information to the message information. It marks the information as POP local delivery. The QMSF Framework then calls the POP Local Delivery exit program, which finds the profile information and the name of the IFS file and delivers the mail to Sam's mailbox.

Phase 3: POP Client retrieves message for Sam Jones from the POP server

At some time later, Sam decides to check his e-mail. He uses a mail client (Netscape) to check his mailbox. The POP client on his PC is configured to check the POP server at mycompany.com for username SamJones and password (*****). The domain name is again changed to an IP address (using DNS). The POP client contacts the POP server using the POP port and the "POP protocol" on page 40. The mailbox user name and password are used by the POP server on the iSeries to check that the user name and password match the profile and password of an iSeries user. After it is validated, the profile name is used to find Sam's mailbox. The POP client loads the message, and sends a request back to the POP server to delete the mail from the POP mailbox. The message is then displayed in Netscape for Sam to read.



E-mail concepts

You depend on electronic mail (e-mail) as an essential business tool. The iSeries^(TM) uses protocols, like SMTP and POP, to make your e-mail run smoothly and efficiently on the network. The following topics explain basic e-mail concepts:

"SMTP on iSeries^(TM)" on page 5

Find out how SMTP allows the iSeries server to send and receive mail.

"POP on iSeries" on page 5

Find out how the POP mail interface distributes mail.

MIME (Multipurpose Internet Mail Extensions)

MIME is a standardized method for organizing divergent file formats. SMTP is limited to 7-bit ASCII text with a maximum line length of 1000 characters. MIME was developed to support more advanced file types, such as rich text, images, and audio or video files. MIME encodes files of binary type data to appear as simple SMTP data, using headers to distinguish different file types within the message, before sending the message with SMTP. The mail client then receives the message and decodes it to the proper file types by interpreting the MIME headers to read the file. For an example of a MIME encoded message, see MIME content types.

AnyMail/400 framework

All incoming mail from SMTP for local users (users with mail accounts on this iSeries) is processed by the AnyMail/400 framework. The mail server framework is a mail distribution structure that allows the distribution of e-mail. The mail server framework calls exit programs or snap-ins to handle specific mail types.

SNADS

System Network Architecture Distribution Services (SNADS) is an IBM^(R) asynchronous distribution service that defines a set of rules to receive, route, and send electronic mail in a network of servers. In this topic, SNADS refers to a user's profile in which the **Preferred address** is set to **User ID/Address**. The preferred address tells the mail server framework what fields to use in the system distribution directory for the address. For more information about using SNADS, refer to the SNADS topics in "Send and receive e-mail on iSeries" on page 19.

SMTP on iSeries^(TM)

Simple Mail Transfer Protocol (SMTP) e-mail is the protocol that allows iSeries to send and receive e-mail. The SMTP protocol is essentially end-to-end delivery of mail from one mail server to another. There is a direct connection between an SMTP sender (the client) and the destination SMTP receiver (the server). The SMTP client keeps the mail at the sender until it transmits and copies it successfully to the SMTP receiver (server).

SMTP on iSeries supports the distribution of notes, messages, and ASCII text documents. SMTP can support formats other than plain text by using the Multipurpose Internet Mail Extensions (MIME) protocol. MIME is the Internet standard for sending mail with headers that describe the contents of the mail messages to the receiving client. These messages can contain video, audio, or binary parts.

About SMTP e-mail delivery

In order for e-mail to reach its destination, SMTP must be able to deliver it to both the correct host and user ID that resides on that host. Suppose that mail is sent to bobsmith@mycompany.com.

First, SMTP checks to see if the e-mail addressee (bobsmith) is a user on the local server. If SMTP determines that it is not, SMTP forwards the e-mail to the next host server. The next host may or may not be the final host. SMTP determines the name of the host from addressing information that is found in the SMTP protocol.



SMTP then resolves the host's address by using either the domain name server or the local host table. The host name is what people use as a part of their e-mail account (mycompany.com); the IP address is what SMTP uses to find the correct mail server to send mail to (192.1.1.10). See the DNS topic for complete information on DNS.

These topics relate DNS to SMTP:

- Setting up your DNS domain
- Mail and MX records



For inbound e-mail, the SMTP server first converts the destination host name into an Internet Protocol (IP) address. Because of the aliasing function, the server can have several host names. Therefore, the SMTP server uses the sockets interface to determine if the IP address is one of those used by the interfaces for the local host.

See "Configure e-mail" on page 9 for information on how to set up your iSeries as an SMTP server.

POP on iSeries

The **Post Office Protocol (POP) server** is the iSeries^(TM) implementation of the Post Office Protocol Version 3 mail interface. It provides electronic mailboxes on the iSeries server from which clients can retrieve mail. Any mail client that supports the POP3 protocol can use this server, such as Netscape Mail, Outlook Express, or Eudora. Clients may be running on any platform, such as Windows^(R), OS/2^(R), AIX^(R), or Macintosh.

The POP server serves as a temporary holding area for mail until it is retrieved by the mail client. When the mail client connects to the server, it queries the contents of its mailbox to see if there is any mail to retrieve. If there is, it retrieves the mail one message at a time. After a message has been retrieved, the client instructs the server to mark that message for deletion when the client session is complete. The client retrieves all of the messages in the mailbox and then issues a command that tells the server to delete all of the messages that are marked for deletion and to disconnect from the client.

POP mail clients use *verbs* to communicate with the POP server. Verbs supported by the iSeries POP server are described in “POP protocol” on page 40.

For more information about the POP protocol works, use the RFC Index



to look up RFC 1725, which defines the POP Version 3 mail interface standard.

To configure or view properties of the POP server, refer to “E-mail servers in iSeries^(TM) Navigator” on page 10.

Plan for e-mail



Before setting up e-mail, you should have a basic plan for how you will be using e-mail on your iSeries^(TM) server. Start by answering the following questions:

1. What will my e-mail addresses look like?
2. What is the IP address of my Domain Name Server (DNS)?
3. Do I have a firewall? If the answer is yes, what is its IP address?
4. Do I have a mail proxy, mail router, or mail relay? If the answer is yes, what is its IP address?
5. Will I be using Domino^(R)?
6. Will I be using iSeries POP to receive mail?

You may want to refer to the “E-mail example: Send and receive e-mail locally” on page 2 for basic information about how e-mail works.

If you will be using Domino and iSeries SMTP, refer to Hosting a Domino and SMTP server on the same iSeries. For additional information about Domino, refer to the Domino topic or the Lotus^(R) Domino on iSeries home page



When you are ready to set up e-mail, use the steps provided in “Configure e-mail” on page 9.

“Control e-mail access” provides tips for protecting your e-mail servers from flooding and spamming.

If you do not plan to use the SMTP or POP servers, disable them to ensure that they will not be used without your knowledge. Steps for securing SMTP and POP are provided in the topic “Prevent e-mail access” on page 8.



Control e-mail access



This topic provides tips for limiting e-mail access to protect your data. It is separated into two sections:

- Controlling SMTP access (See 6)
- Controlling POP access (See 7)

Tips for Controlling SMTP Access

If you want to allow SMTP clients to access your iSeries^(TM), you should protect your server from attack by doing the following:

- If possible, avoid using an *ANY *ANY entry in the system distribution directory. When your server does not have an *ANY *ANY entry, it is more difficult for someone to attempt to use SMTP to flood your server or overwhelm your network. Flooding occurs when your auxiliary storage is filled with unwanted mail that is being routed through your iSeries to another server.
- Set adequate threshold limits for your auxiliary storage pools (ASPs) to prevent a user from swamping your server with unwanted objects. You can display and set the thresholds for ASPs by using either system service tools (SST) or dedicated service tools (DST). Independent disk pools in the Backup and Recovery topic provides more information about ASP thresholds.
- Tune the maximum number of prestart jobs that will be created by doing a CHGPJE. This will limit the number of jobs created during a denial of service attack. The default is 256 for the maximum threshold.
- To prevent your server from outsiders using your connection to send unsolicited e-mail (spam), refer to “Restrict relays” on page 17 and “Restrict connections” on page 18.

AS/400^(R) Internet Security: Protecting Your AS/400 from HARM on the Internet



provides steps for cleaning up your iSeries if your server is the victim of a flooding attack.

Tips for Controlling POP Access

If you want to allow POP clients to access your iSeries, be aware of the following security issues:

- The POP mail server provides authentication for clients who attempt to access their mailboxes. The client sends a user ID and password to the server.

Note: The password is sent in the clear and can be vulnerable.

The POP mail server verifies the user ID and password against the iSeries user profile and password for that user. Because you do not have control over how the user ID and password are stored on the POP client, you might want to create a special user profile that has very limited authority on your iSeries. To prevent anyone from using the user profile for an interactive session, you can set the following values in the user profile:

Set initial menu (INLMNU) to *SIGNOFF
Set initial program (INLPGM) to *NONE
Set limit capabilities (LMTCPB) to *YES

- To prevent a malicious intruder from flooding your server with unwanted objects, be sure that you have set adequate threshold limits for your auxiliary storage pools (ASPs). The ASP storage threshold prevents your server from stopping because the operating system does not have sufficient working space. You can display and set the thresholds for ASPs by using either system service tools (SST) or dedicated service tools (DST). Independent disk pools in the Backup and Recovery topic provides more information about ASP thresholds.
- Although you need to ensure that your ASP threshold prevents your server from being flooded, you also need to ensure that your iSeries has adequate space to properly store and deliver mail. If your server cannot deliver mail because the iSeries does not have adequate storage for transient mail, this is an integrity problem for your users. When system storage use is high, mail will stop running. For information about detecting storage problems, see “Determine problems with e-mail” on page 30.

Note:

Usually storage space is not a significant problem. When a client receives mail, the iSeries deletes the mail from the server.



Prevent e-mail access



This topic provides tips for limiting e-mail access to protect your data. It is separated into two sections:

- Preventing SMTP access (See 8)
- Preventing POP access (See 9)

Tips for Preventing SMTP Access

If you do not want anyone to use SMTP to distribute mail to or from your iSeries^(TM), you should prevent the SMTP server from running. Consider the following procedures for protecting access to your iSeries:

Do not configure SMTP

SMTP is configured by default to start automatically when TCP/IP starts. If you do not plan to use SMTP at all, do not configure it on your iSeries (or allow anyone else to configure it). If you need SMTP occasionally, but you normally do not want it to run, continue with the next steps.

Prevent SMTP from starting when TCP/IP starts

To prevent SMTP server jobs from starting automatically when you start TCP/IP, follow these steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Deselect **Start when TCP/IP starts**.

Prevent access to SMTP ports

To prevent SMTP from starting and to prevent someone from associating a user application, such as a socket application, with the port that the iSeries normally uses for SMTP, do the following:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **TCP/IP Configuration** and select **Properties**.
3. In the **TCP/IP Configuration Properties** window, click the **Port Restrictions** tab.
4. On the **Port Restrictions** page, click **Add**.
5. On the **Add Port Restriction** page, specify the following:
 - **User name:** Specify a user profile name that is protected on your iSeries. (A protected user profile is a user profile that does not own programs that adopt authority and does not have a password that is known by other users.) By restricting the port to a specific user, you automatically exclude all other users.
 - **Starting port:** 25
 - **Ending port:** 25
 - **Protocol:** TCP
6. Click **OK** to add the restriction.
7. On the **Port Restrictions** page, click **Add** and repeat the procedure for the UDP protocol.
8. Click **OK** to save your port restrictions and close the **TCP/IP Configuration Properties** window.
9. The port restriction takes effect the next time that you start TCP/IP. If TCP/IP is active when you set the port restrictions, you should end TCP/IP and start it again.

Hold SNADS queues

To provide extra protection, hold the SNADS distribution queues that the SMTP application uses by typing the following commands:

```
HLDDSTQ DSTQ(QSMTPQ)PTY(*NORMAL)
HLDDSTQ DSTQ(QSMTPQ)PTY(*HIGH)
```

Tips for Preventing POP Access

If you do not want anyone to use POP to access your iSeries, you should prevent the POP server from running. Consider the following procedures for protecting access to your iSeries:

Do not configure POP

If you do not plan to use POP at all, do not configure it on your iSeries (or allow anyone else to configure it). If you need POP occasionally, but you normally do not want it to run, continue with the next steps.

Prevent POP from starting when TCP/IP starts

POP is configured by default to start automatically when TCP/IP starts. To prevent POP server jobs from starting automatically when you start TCP/IP, follow these steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **POP** and select **Properties**.
3. Deselect **Start when TCP/IP starts**.

Prevent access to POP ports

To prevent POP from starting and to prevent someone from associating a user application, such as a socket application, with the port that the iSeries normally uses for POP, do the following:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **TCP/IP Configuration** and select **Properties**.
3. In the **TCP/IP Configuration Properties** window, click the **Port Restrictions** tab.
4. On the **Port Restrictions** page, click **Add**.
5. On the **Add Port Restriction** page, specify the following:
 - **User name:** Specify a user profile name that is protected on your iSeries. (A protected user profile is a user profile that does not own programs that adopt authority and does not have a password that is known by other users.) By restricting the port to a specific user, you automatically exclude all other users.
 - **Starting port:** 109
 - **Ending port:** 110
 - **Protocol:** TCP
6. Click **OK** to add the restriction.
7. On the **Port Restrictions** page, click **Add** and repeat the procedure for the UDP protocol.
8. Click **OK** to save your port restrictions and close the **TCP/IP Configuration Properties** window.
9. The port restriction takes effect the next time that you start TCP/IP. If TCP/IP is active when you set the port restrictions, you should end TCP/IP and start it again.



Configure e-mail

Set up your iSeries^(TM) server to be an e-mail server by using these instructions. These procedures take you through basic setup tasks.

“E-mail servers in iSeries[™] Navigator”

Access e-mail server configuration tools in iSeries Navigator.

Configure e-mail on iSeries

1. “Configure TCP/IP for e-mail”: If you already have TCP/IP configured, including the local domain and host names, then proceed to the next step.
2. “Configure SMTP and POP servers for e-mail” on page 11
3. “Enroll e-mail users” on page 12
4. “Start and stop e-mail servers” on page 13

“Configure a dial-up mail connection profile” on page 14

This topic provides the procedure for setting up a profile for dialing up to an ISP. This step is not necessary if you have AT&T Global Network support.

“Configure the ISP dial-up connection wizard” on page 14

This topic provides the steps for setting up your dial-up connection.

“Schedule batch ISP e-mail jobs” on page 15

To limit your connection time, you can schedule mail dial-up jobs to connect to your ISP at regular intervals.

“iSeries[™] as an ISP e-mail server” on page 15

This topic provides steps for running your own mail server for others to dial up to.

“Support multiple domains” on page 16

This topic provides steps for configuring your SMTP server to support multiple domains in order to host ISP functions.

“Secure e-mail” on page 16

This topic provides procedures for using firewalls, restricting relays and connections, and filtering out viruses.

E-mail servers in iSeries[™] Navigator

You can complete a number of SMTP and POP configuration and administration tasks using iSeries Navigator.

To access POP or SMTP in iSeries[™] Navigator, follow these steps:

1. Double-click the **Client Access Express** folder.
2. Double-click **iSeries Navigator**. If this is your first time using iSeries Navigator, then click the **New Connection** icon to establish a connection to your iSeries server.
3. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
4. Double-click **SMTP** to open the **SMTP Properties** dialog, or double-click **POP** to open the **POP Properties** dialog.

From there, you can view the online help by clicking the **Help** button. You can also click the question mark on the title bar and drag and drop it onto a field for help.

Configure TCP/IP for e-mail

If you are setting up e-mail on your iSeries[™] for the first time, complete the following steps. If you already have TCP/IP configured on your iSeries, you can proceed directly to “Configure SMTP and POP servers for e-mail” on page 11.

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **TCP/IP Configuration**.

2. Right-click **Interfaces** and select **New Interface** and the type of network the new interface represents. The first dialog of the New TCP/IP Interface wizard appears. Follow the wizard's instructions. The wizard asks you to supply the following information:
 - Type of connection
 - Hardware resource
 - Line description
 - IP address
 - Host name
 - Domain name

Note:

The host name and domain name you use for the wizard constitute your fully qualified domain name. SMTP requires a fully qualified domain name to communicate with other SMTP hosts, from which it receives e-mail.

For example, if the local host name is ASHOST and the local domain name is DOMAIN.COMPANY.COM, the fully qualified domain name is:
ASHOST.DOMAIN.COMPANY.COM.

- Servers to start up
3. After you are finished with the wizard, right-click **TCP/IP** and select **Properties**. The **TCP/IP Properties** dialog appears.
 4. Click the **Host Table** tab.
 5. Click **Add**. The **TCP/IP Host Table Entry** dialog appears.
 6. Enter the IP address and the host name you used in the New TCP/IP Interface wizard.
 7. Click **OK** to close the **TCP/IP Host Table Entry** dialog.
 8. Click **OK** to close the **TCP/IP Properties** dialog.

What to do next:

“Configure SMTP and POP servers for e-mail”

Configure SMTP and POP servers for e-mail

Simple Mail Transfer Protocol (SMTP) and Post Office Protocol (POP) servers, make e-mail possible on your iSeries[™] server. **Both** the SMTP and the POP server must be correctly configured.

Configuring the SMTP server

When you “Configure TCP/IP for e-mail” on page 10, the server automatically configured SMTP for you. All that remains is to change a few SMTP properties to ensure that the SMTP server works correctly for e-mail.

1. In iSeries Navigator, expand **your iSeries server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Double-click **SMTP**. The **SMTP Properties** dialog appears.
3. Click the following tabs to set the following parameters.

Click on this tab...	And...
General	Select Start when TCP/IP is started .
General	Select No maximum for the Message split size field.

Click on this tab...	And...
General	If you have a mail router, enter the name of the mail router, for example, mailrouter.company.com. The mail router name is the server name where SMTP routes the mail if the e-mail is not local mail. See the iSeries Navigator help for more details.
General	If you have a firewall setup, select Forward outgoing mail to router through firewall .
General	If you exchange e-mail with Domino ^(R) servers, clear the Interpret percent sign as routing character field.
Automatic Registration	If you are using the SNDDST command to send e-mail and the RCV DST command to receive e-mail, and you are using SNADS addressing instead of internet addressing, select the Automatically add remote users to system distribution directory check box.
Automatic Registration	If you are using the the SNDDST command to send e-mail and the RCV DST command to receive e-mail, click System alias table in the Add users to field.

4. Click **OK** to accept the changes.

Configuring the POP server

The “POP on iSeries” on page 5 delivers mail, to a POP client, from the user mailbox, when requested by the POP client. You must configure the POP server to completely prepare your iSeries server for e-mail.

To configure the POP server for a mail program such as Netscape Mail or Eudora Pro, complete the following steps:

1. In iSeries Navigator, expand **iSeries server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Double-click **POP**. The **POP Properties** dialog appears.
3. Refer to the table below to set the following parameters.

Click on this tab...	And...
General	Select Start when TCP/IP is started .
General	Select Allow standard POP connection .
Configuration	Select No maximum for the Message split size field.
Configuration	If POP clients are logging on through dialup lines and receiving large pieces of mail, increase the Inactivity timeout value .
Mappings	Select Use only when unsupported CCSID is indicated .

4. Click **OK** to accept the changes.

What to do next:

“Enroll e-mail users”

Enroll e-mail users

You need to create user profiles to enroll e-mail users. User profiles are how iSeries^(TM) identifies an addressee or sender of e-mail. Any user you want as part of your e-mail system must have a user profile on the iSeries server.

By creating a user profile for each user, you enroll the users in the system distribution directory automatically. The system distribution directory is what SMTP uses to determine where to deliver local e-mail.

To create user profiles for SNADS and POP e-mail users, complete the following steps:

1. In iSeries Navigator, expand **your iSeries Server** —> **Users and Groups**.
2. Right-click **All Users** and select **New User**. The **New User** dialog appears.
3. Type a user name and password for the user.

Note: This password will be used by POP users to access their POP mailboxes.

4. Click the **Capabilities** button.
5. Click the **Privileges** tab. Ensure that the Privilege class is **User**.
6. Click **OK**.
7. Click the **Personal** button.
8. Click the **Mail** tab.
9. Choose the **Mail Service Level**.
 - If your user is a SNADS user, select **OfficeVision^(R)** or **JustMail**.
 - If your user is a POP mail user, select **Lotus^(R) Mail** or **other POP3 client**.
10. Choose the **Preferred Address type**.
 - If your user is a SNADS user, select **User ID and address**.
 - If your user is a Lotus Notes^(R), POP3 client, or Domino^(R) user, select **SMTP Name**
11. Verify that the desired domain name is displayed for the SMTP e-mail **Domain**.

Note: The default name is usually correct, but if you have multiple local domains you may need to change it.

12. Click **OK**. If you are enrolling a SNADS user, their enrollment is complete. If you are enrolling a POP user who will use the iSeries server **only** to retrieve e-mail, continue to the next step.
13. Click the **Jobs** button.
14. Click the **Session Startup** tab.
15. For the **Initial Menu** field, select **Sign off**. With this setting, any attempt to sign on iSeries, other than to retrieve e-mail or change their password, automatically signs the user off.
16. Click **OK**.
17. Click **OK**.
18. Repeat these instructions until all of the e-mail users have user profiles.

What to do next:

“Start and stop e-mail servers”

Start and stop e-mail servers

Start the required iSeries^(TM) servers to ensure that everything works properly and all the configuration changes you made take place. Sometimes, it may be necessary for you to restart the servers. This can be done by stopping the servers, and then completing the steps to start the servers again.

Starting the servers for e-mail

To start the servers, follow these steps:

1. In iSeries Navigator, expand **your iSeries Server** —> **Network**.
2. Right-click **TCP/IP Configuration** and select **Properties**. The **TCP/IP Configuration Properties** dialog appears.
 - If the TCP/IP status is **Started**, click **OK** and continue to the next step.
 - If not, click **Cancel** to close the **TCP/IP Configuration Properties** dialog; then right-click **TCP/IP Configuration** and select **Start**. Click **OK** when finished.
3. Expand **Servers** —> **TCP/IP**. If the SMTP and POP servers are not started, then follow these steps to start them:
 - a. Right-click **SMTP** and select **Start**.
 - b. Right-click **POP** and select **Start**.
4. Open an iSeries character-based interface and type STRMSF to start the Mail Server Framework.
5. If you are using SNADS, type STRSBS QSNADS to start the QSNADS subsystem.

You have started your servers, and your iSeries is now an e-mail server with enrolled e-mail users.

Stopping the servers for e-mail

To stop the servers, follow these steps:

1. In iSeries Navigator, expand **your iSeries Server** —> **Network** —> **Servers** —> **TCP/IP**. If the SMTP and POP servers are started, then follow these steps to stop them:
 - a. Right-click **SMTP** and select **Stop**.
 - b. Right-click **POP** and select **Stop**.
2. Open an iSeries character-based interface and type ENDMSF to end the Mail Server Framework.
3. If you are using SNADS, type ENDSBS QSNADS to end the QSNADS subsystem.

Configure a dial-up mail connection profile

To manually create a dial-up connection profile, complete the following steps:

Note:

If you have AT&T Global Network support, you can skip to “Configure the ISP dial-up connection wizard.”

1. In iSeries^(TM) Navigator, expand **your iSeries Server** —> **Network** —> **Remote Access Services**.
2. Right-click **Receiver Connection Profiles** and select **New Profile**.
3. Select **PPP** for the **Protocol type**.
4. Select **Switched line** for **Connection type**.
5. Expand **TCP/IP Configuration** and select **Connections**.
6. Expand **Servers** —> **TCP/IP**.
7. Right-click **SMTP** and select **Properties**.
8. Click the **Scheduler** tab. Select the **Start scheduler when SMTP is started** checkbox, and specify the connection profile that you created.
9. Click the **ETRN** page and select the **Support ETRN (Dial-up mail retrieval)** checkbox. Click **Add** to specify the domain name for your ISP’s outgoing server’s address.
10. Enable the firewall and point to the outgoing ISP’s mail server.
11. Continue with the wizard to set up a new “Configure the ISP dial-up connection wizard.”

Configure the ISP dial-up connection wizard

Before you can use the SMTP scheduler function to send large amounts of e-mail through an Internet Service Provider, you must configure a dial-up connection profile to access a server application. The

Internet Server Provider Dial-up Connection Wizard does this for you. If you do not have AT&T Global Network support, see “Configure a dial-up mail connection profile” on page 14 for a preliminary step.

The connection wizard provides you with the IP addresses of the mail servers (SMTP and POP), their assigned domain name, account name, and password.

To run the wizard and configure your SMTP scheduler, follow these steps:

1. In iSeries^(TM) Navigator expand **your iSeries Server** → **Network** → **Remote Access Services**.
2. Right-click **Originator Connection Profiles** and select **New AT&T Global Network Dial Connection**.
3. On the Welcome panel, click **Next** to get started.
4. On the **Application Type** panel, select **Mail exchange application** and click **Next**.
5. Continue with the wizard to set up a new AT&T Global Network dial connection.

When you have configured the dial-up connection, you are ready to “Schedule batch ISP e-mail jobs.”

Schedule batch ISP e-mail jobs

If your company does not want to spend money for an expensive leased line, iSeries^(TM) provides a way for you to send and receive your company’s e-mail in batches at scheduled times, through your Internet Service Provider (ISP). Use the “Configure the ISP dial-up connection wizard” on page 14 to configure the connection. Then use the SMTP scheduler to set the time intervals that you want iSeries to connect to your ISP and send your company’s e-mail.

To set the SMTP scheduler to send your e-mail to an ISP, complete the following steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Double-click **SMTP**. The **SMTP Properties dialog** appears.
3. Click the **Scheduler** tab.
4. Select the **Start scheduler when SMTP is started** checkbox.
5. Select the **Point-to-point connection profile** you configured with the AT&T Global Network Dialer Wizard, or select a manually configured **Point-to-point connection profile**.
6. Set the **Mail transfer interval** to the number of minutes you want SMTP to deliver your queued e-mail.
7. If your ISP is not with the AT&T Global Network, select the **Issue ETRN when connecting to remote server** checkbox.
8. Enter the **Server IP address** for the incoming mail server on the ISP’s network, and enter the **Registered ISP host.domain** for which this SMTP server will issue an ETRN.
9. Click **OK**.

iSeries^(TM) as an ISP e-mail server

If your company has an iSeries machine connected to the Internet and would like to receive mail for remote dial-up branch offices, the iSeries SMTP server can be used for this purpose.

The iSeries machine must have a fixed IP address and be registered with a DNS. Each host.domain for which the remote dial-up servers will be retrieving mail must also have MX entries in the DNS pointing to this iSeries machine. The iSeries machine must also have aliases for these host.domains in its local host table. If the remote dial-up servers are iSeries servers, then they must be configured for “Schedule batch ISP e-mail jobs.”

To service e-mail requests from remote dial-up mail servers, complete the following steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Double-click **SMTP**. The **SMTP Properties dialog** appears.
3. Click the **ETRN** tab.

4. Select the **Support ETRN (Dial-up mail retrieval)** checkbox.
5. Click **Add** to specify your ISP's host and domain name. This may be done multiple times if multiple mail servers are requesting their mail.
6. Click **OK**.

Support multiple domains

In order for the iSeries^(TM) SMTP server to host ISP functions, it is necessary for SMTP to appear to operate in multiple domains. The SMTP client will use this configuration information to know which interface to bind to, when it sends the e-mail, and which mail to consider local (resolve and send on its own) or forward to a configured firewall mail daemon.

1. In iSeries Navigator, expand **your iSeries Server** → **TCP/IP** → **Network**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Multiple Domains** tab.
4. Click **Add** to specify the domains and interfaces that you would like to support.
5. Click **OK**.

Secure e-mail

It is important to promote a secure environment in your iSeries^(TM) SMTP server. You must protect your SMTP server and your users from internal and external hindrances.

The following tasks can be completed to help ensure a secure e-mail environment:

- “Send e-mail through a router or firewall”
- “Restrict relays” on page 17
- “Restrict connections” on page 18
- “Filter e-mail to prevent virus proliferation” on page 18

Send e-mail through a router or firewall

An e-mail router is an intermediate system that SMTP delivers mail to when it cannot locate the recipient's exact IP address. The e-mail router routes the e-mail to the IP address or to another router. Route your outgoing e-mail to an alternative system if your local server fails to deliver the e-mail to the system. If you have a firewall, you can use the firewall as your router.

Before you follow these steps to configure a router, see the “Prerequisites for an e-mail router.”

To set the router, follow these steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Double-click **SMTP**. The **SMTP Properties** dialog appears.
3. Click the **General** tab.
4. Enter the **Mail router** name.

To route e-mail through a firewall, follow these steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Double-click **SMTP**. The **SMTP Properties** dialog appears.
3. Click the **General** tab.
4. Enter the name of the firewall, for example, FWAS400.company.com in the Mail Router field.
5. Select **Forward outgoing mail to router through firewall**.

Prerequisites for an e-mail router: Before you configure an e-mail router, consider the following:

- The intermediate server does not have to be an iSeries^(TM) server. The mail router only requires a host table that contains all host servers to which it needs to route e-mail. If an iSeries server is the mail router, it does not require any particular system level.
- You can set up only one intermediate server for routing between the source and target server. You cannot nest mail routers.
- SMTP must be able to get an IP address for the mail router when it starts, either from the local host table or through the Domain Name System (DNS) server. If SMTP cannot get an IP address for the mail router, then SMTP runs without using a router.
- The SMTP client firewall support uses the mail router to forward e-mail that is destined for a host outside the local (protected) domain. In order to deliver e-mail, the mail router must be a server that is authorized to forward e-mail through the firewall. Also, mail recipients whose domain is not on the iSeries go through the router when you turn on the SMTP firewall support. OS/400^(R) V5R1 and later support “Support multiple domains” on page 16. You can configure multiple domains that do not send mail through the firewall.

If you have met these prerequisites, see how to “Send e-mail through a router or firewall” on page 16.

Restrict relays

A common concern that you may face is protecting your server from people who try to use your e-mail server for spamming, or sending large amounts of bulk e-mail. To avoid these problems, use the relay restriction function to specify as closely as possible who can use your machine for relay. You have six options for allowing relay:

- Allow all relay messages
- Block all relay messages
- Accept relay messages for only recipients in the near domains list
- Accept relay messages from only the address relay list
- Accept relay messages using both the near domains and address relay lists
-



Accept relay messages from POP clients for a specified period of time



To specify users that can send e-mail to the Internet, follow these steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Relay Restrictions** tab.
4. Select the appropriate relay restriction from the six options offered here.

Note:

If you choose **Accept relay messages for only recipients in the near domains list** or **Accept relay messages using both the near domains and address relay lists**, then you will need to click the **General** tab to list the near domains from which you are accepting relay.

5. Click **Help** for more information.
6. Click **OK**.
7. If the SMTP server is currently running, you need to end and restart the SMTP server for the changes to take effect:
 - a. Right-click **SMTP** and select **Stop**.
 - b. Right-click **SMTP** and select **Start**.

Restrict connections

You can prevent the connection of users who may abuse your e-mail server. Unwanted users may connect to your server, and send unsolicited mail. This unsolicited e-mail takes a great amount of central processing unit (CPU) cycles and space. Also, if your server allows others to relay unsolicited mail, other servers might block the mail that comes from your server.

You can specify IP addresses of known unwanted users, or you can connect to a host that contains a Realtime Blackhole List (RBL) server. These Realtime Blackhole Lists provide a listing of known IP addresses that send unsolicited mail. See the MAPS (Mail Abuse Prevention System LLC)



web site for an example of a host that contains a Realtime Blackhole List.

To specify known IP addresses or a host with a Realtime Blackhole List, complete the following steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Connection Restrictions** page.
4. Click **Add** to add host names of servers with Realtime Blackhole Lists that you would like to use.
5. Click **Add** to add specific IP addresses to restrict attempted connections.
6. Click **Help**, for more information.
7. Click **OK**.

For more information on protecting your e-mail server, see the “Secure e-mail” on page 16 topic.

Filter e-mail to prevent virus proliferation

There are times when a well known virus may be trying to infiltrate your e-mail servers. To help prevent the spread of the virus, you can create filters to look for a particular subject, type, filename, and originator's address in incoming e-mail. The e-mail can then be quarantined or discarded.

With virus filtering, questionable e-mails are automatically saved or discarded based on parameters established by the administrator. E-mails can be 'filtered' by any or all of the following criteria:

1. **Address** - individual(s) or domain(s)
2. **Subject** - ILOVEYOU
3. **Attachment name** - lovebug.vbs or *.vbs
4. **MIME type** - image/* or image/jpg

The values can contain wildcard characters. One wildcard character is an asterisk (*), which specifies that one or more arbitrary characters can be at the position of the wildcard. For example, *.vbs could be used to check for filenames with an extension of .vbs. An originator of *@us.ibm.com would filter all mail from IBM^(R) in the United States, and a filter of image/* would filter type image for all subtypes.

To create a filter, follow these steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Select the **Filters** page.
4. Select **Keep message** or **Discard message**. Selecting **Keep message** will save a copy of the message, which will not be delivered to the recipient.
5. Click **Add** to specify the message criteria that identifies the potential virus. Messages matching this criteria will not be delivered to the recipient. Click **Help** for more information.
6. Click **OK** to save your changes.

Note:

In addition to these tools, you should implement supplemental anti-virus solutions.

Send and receive e-mail on iSeries

Your iSeries^(TM) is a mail server and has e-mail users (SNADS, POP, or Lotus^(R)) “Enroll e-mail users” on page 12 on it. Using either a POP client or a SNADS client, your e-mail users can send, receive, and read e-mail.

There are different ways to allow your users to send and receive e-mail, such as the following:

“Set up POP e-mail clients”

This topic provides instructions for setting up a standard POP mail client.

“QtmmSendMail API” on page 20

Use the Send MIME Mail (QtmmSendMail) API to send e-mail from an iSeries program.

“JavaMail” on page 22

Use JavaMail to develop e-mail client applications.

“Send spooled files as PDF files” on page 22

Output spoolfiles in Adobe Portable Document Format (PDF) and distribute the documents by e-mail.

“Use LDAP for addresses” on page 22

You can use Lightweight Directory Access Protocol (LDAP) to provide a public address book based on the system directory.

“Use SNADS to send e-mail” on page 23

You can send e-mail on an iSeries server with a SNADS client program using the Send Distribution (SNDDST) command.

“Use SNADS to receive e-mail” on page 25

You can receive mail on an iSeries server with a SNADS client program using the Receive Distribution (RCVDST) command.

Set up POP e-mail clients

iSeries^(TM) uses the POP server to store and forward e-mail. The e-mail client works with the POP server to receive and store e-mails for the users on the client side. There are a number of e-mail clients available to support POP including Eudora, Netscape Mail, and Lotus Notes^(R). The steps you must take to configure the client are specific to that client’s interface. However, the information that you must provide is the same. These steps, using Netscape Mail as an example, are as follows:

1. Gather POP e-mail client program information.
 - User ID and a fully qualified domain name (the host name plus the domain name). This is the user’s e-mail address for receiving mail and is typically in the form of userID@hostname.domainname.

Note:

On some clients, you may have to enter the host address several times: to specify the POP server’s host for receiving mail, to specify SMTP’s host for sending mail, and to identify the sender of the e-mail to the recipients.

- POP user or account name. This is the same as the iSeries user profile name.
- The user password. This password must be the same as the iSeries user profile password.

2. Identify the user and the user's preferences.
In Netscape Mail, for example, the user would look for **Edit** → **Preferences** → **Mail and News Groups** → **Identity**.
 - User name. This is the iSeries user profile name.
 - User's e-mail address. This is the user ID and fully qualified domain name.
 - Reply-to address. This can be the same as the user's e-mail address that the network administrator designates, but a user profile must be on the iSeries server.
3. Identify the outgoing mail (SMTP) server.
You need to identify the SMTP server on the e-mail client because it is the server that allows the client's users to send mail out. In Netscape Mail, for example, the user would look for **Edit** → **Preferences** → **Mail and News Groups** → **Mail Servers**.
 - POP user or account name. This is the user ID on the user's e-mail address; it is also the iSeries user profile name.
 - Outgoing mail (SMTP) server. This is the iSeries host name.
4. Identify the incoming mail (POP) server.
In Netscape Mail, for example, the user would look for **Edit** → **Preferences** → **Mail and News Groups** → **Mail Servers**.
 - Incoming mail server. This is the iSeries host name.

QtmmSendMail API

The Send MIME Mail (QtmmSendMail) API allows you to send e-mail from an iSeries^(TM) program. This API supports sending multiple mail attachments at one time, but the Send Distribution (SNDDST) command does not. The QtmmSendMail API is in the service program QTCP/QTMMMSNDM. Application programs must bind to this service program.

The QtmmSendMail API works in the following way:

1. You create an ASCII file with an entire MIME note. The headers are all in US-ASCII coded character set identifier (CCSID) 367.
2. The application calls the QtmmSendMail API and gives it both the name of the file and the addresses that the framework and SMTP must use to forward the e-mail.

Authorities:

The MIME integrated-file-system file must exist for the duration of the QMSF framework pass. The conversion and delivery exit points that are called by the QMSF job must be able to read this file. A built-in exit program removes (unlinks) the link. If this is the last link, the framework deletes the file.

Directory authority

The data authority must be *X for product QMSF.

File authority

QTCP and QMSF must have:

- Data authority *RWX
- Object authority *ALL

Required parameter group:

File name

(Input Char(*)) The character string of the integrated-file-system file name of the ASCII MIME note. You must specify the entire path. After the framework finishes processing the file, it unlinks the file. If this is the last link, the framework deletes the file. This file must contain an Internet-ready MIME note that adheres to the standards that are called Request for Comment (RFC).

Length of file name

(Input Binary(4)) The number of bytes in the file name (the absolute path name). The maximum length is 255 bytes (no NULL that is assumed at the end).

Originator address (SMTP)

(Input Char(*)) The character string of an SMTP originator address; for example, smith@myhost.mytown.com. All SMTP addresses should be in coded character set identifier (CCSID) 500.

Length of originator

(Input Binary(4)) The length of the originator address string (not including any NULL). The maximum length is 256 bytes.

First recipient address (SMTP)

(Input ADDT0100(*)) The first address structure that contains a recipient address. All SMTP addresses should be in CCSID 500.

Total number of recipients

(Input Binary(4)) The number of recipient address structures (there must be at least one).

Error code

(I/O Char(*)) The structure that returns error information.

ADDT0100 Format:

This table shows the layout for format ADDT0100:

Offset Dec	Offset Hex	Type	Field	Field description
0	0	BINARY(4)	Offset to next address structure	The number of bytes from the beginning of this address structure to the beginning of the next one. It must be at least the size of the fixed part of this address structure and the recipient address length.
4	4	BINARY(4)	Address length	The length in bytes of the SMTP address. The maximum length is 256 bytes. This maximum length is determined by Internet standards.
8	8	CHAR(8)	Address Format name	The characters that identify the particular structure. (Current value ADDT0100). It is used for level control of the structure.
16	10	BINARY(4)	Distribution type	The type of recipient. Possible values are: <ul style="list-style-type: none"> • 0 Normal • 1 Carbon copy • 2 Blind carbon copy
20	14	BINARY(4)	Reserved	This field is reserved and must be set to 0.
		CHAR(*)	Address	The actual SMTP address (no NULLS included). All SMTP addresses should be in CCSID 500.

If you have problems using the QtmmSendMail API, refer to the “Solve problems with the QtmmSendMail API” on page 37 troubleshooting topic.

JavaMail



The JavaMail^(TM) API provides a platform-independent and protocol-independent framework you can use to build Java^(TM) technology based e-mail client applications. You can use the JavaMail API to create a mail client capable of sending multimedia mail messages, as well as enabling a full fledged IMAP (Internet Mail Access Protocol) implementation supporting folders, authentication, and attachment handling.

Because SMTP only supports character data, it uses MIME to represent complex data such as formatted text, file attachments (text and binary), and multimedia content. If you use the iSeries^(TM) QTMMSENDMAIL API, your application must take care of converting the data into the appropriate content. The JavaMail implementation provides MIME processing capabilities natively.

Starting with OS/400^(R) V5R2, JavaMail components are shipped as part of the IBM^(R) Developer Kit for Java.

For more information, refer to the JavaMail topic under **IBM Developer Kit for Java** —> **Optional packages** —> **JavaMail**.

You can also refer to Mail Enabling AS/400^(R) Applications with Java in the Java Development Topics.



Send spooled files as PDF files

Using the Infoprint^(R) Server for iSeries^(TM), you can produce Adobe Portable Document Format (PDF) files from any iSeries output. You can send these generated PDF files as e-mail attachments. You can send a single spooled file to an address. You can also split up a spooled file into several PDFs and send each one to a different address. Using this method, you could output customer invoices to separate PDF files and send the appropriate invoice to each customer's e-mail address. Infoprint Server for iSeries (5722-IP1) is required to use this output method.



For more information about using the Infoprint Server to output PDF files, including examples for configuring e-mail distribution, refer to the following sources:

- Infoprint Server User's Guide



(about 200 pages)

- Chapter 4, "Using the Infoprint Server for iSeries PDF transform" in IBM^(R) iSeries Printing Redbook VI - The Output of e-business^(TM)



Use LDAP for addresses



Prior to V5R2, MAPI-enabled clients such as Microsoft^(R) Exchange could use a public address book. The address book was created by data mapping from the system distribution directory to the POP server address book cache. At V5R2, MAPI support is no longer available on the iSeries^(TM).

You can use IBM^(R) Directory Server for iSeries (LDAP) to replace the function previously served by MAPI. Using LDAP, you can provide a single address book that can be accessed by all users from the client application.

In order to use LDAP, complete the following tasks:

1. Get started with Directory Server.
2. Publish information to the directory server.
3. Configure your mail client to use LDAP.
The steps to complete this task will depend on your mail client (Netscape or Eudora, for example). Edit the properties in your mail client to specify the LDAP server as the Directory Server for mail addressing.



Use SNADS to send e-mail

The following procedure describes how to send e-mail on iSeries^(TM) using the Send Distribution (SNDDST) command. The sender of the e-mail must be a local SNADS user. A local SNADS user has a profile configured by a local system distribution directory entry. For more information, see “Enroll e-mail users” on page 12.

To send e-mail on the iSeries, follow these steps:

1. In the iSeries character-based interface, type SNDDST and press **Enter**. The **Send Distribution** display appears.
2. Press **F10** to see all the parameters.
3. At the first prompt, **Information to be Sent**, enter *LMSG and press **Enter**.
4. Enter the recipient’s user ID and server address or an Internet address.
5. Enter a message description at the **Description** prompt.
6. Press the Page Down key and type your e-mail at the **Long Message** prompt.
7. Press **Enter** to send the e-mail.

Note: You can also use “Support Internet addressing for the SNDDST command” on page 24 on SNDDST mail.

See “Set up headers to differentiate between recipients” to learn about working with headers.

You can also “Attach files” on page 24 to the e-mail.

See “Use SNADS to receive e-mail” on page 25 for information on receiving e-mail.

Set up headers to differentiate between recipients

The Change Distribution Attributes (CHGDSTA) command changes the content of message services attributes (X.400^(R) support) for mail distributions. The Keep Recipient (KEEPRCP) parameter specifies which recipient information is stored and sent within each mail distribution. The setting of this parameter affects how the MIME headers get created for a note from OfficeVision^(R).

In order for CC and BCC tags to show up in MIME headers (and client screens), you must set the KEEPRCP parameter to *ALL. BCC recipients are not shown regardless of the setting of this parameter because they are not intended to be. The TO and CC recipients will show up in the text of the OfficeVision note.

Support Internet addressing for the SNDDST command

Does your network use iSeries[™] “Use SNADS to send e-mail” on page 23 and an office application to send and receive e-mail? If so, configure your mail system so your users can use Internet addresses with the “Use SNADS to send e-mail” on page 23.

Follow these steps:

1. In the iSeries character-based interface, type:
ADDIRE USRID(INTERNET GATEWAY) USRD('Allow SNDDST to send INTERNET Mail') SYSNAME(INTERNET)
MSFSRVLVL(*USRIDX) PREFADR(NETUSRID *IBM ATCONXT)
2. Type CHGDSTA SMTPRTE(INTERNET GATEWAY) and press **Enter**.

Now your SNADS users can send e-mail to the Internet with the SNDDST command by entering an Internet e-mail address at the Internet Recipient prompt.

For more information on integrating e-mail networks, view the IBM Redbook, **AS/400[®] Electronic-Mail Capabilities**



(about 240 pages).

Attach files

When sending e-mail on the iSeries[™] server using the “Use SNADS to send e-mail” on page 23 command, you may want to send a file or document with the e-mail. SNDDST is only capable of sending a single document or file at a time. If you would like to send multiple attachments, send MIME mail with the “QtmmSendMail API” on page 20.

To attach and send a document with your e-mail, in the character-based interface, type:

```
SNDDST TYPE(*DOC) DSTD(your description) TOUSRID(anyuser) DOC(yourdoc) FLR(yourfolder)
```

To attach and send a file with your e-mail, in the character-based interface, type:

```
SNDDST TYPE(*FILE) DSTD(description) TOUSRID(any user)  
MSG(message optional) DOCFILE(youlib/yourfile) DOCMBR(yourmbr)
```

Note:

If you receive error messages, you may be attempting to send a file or document that the iSeries server does not accept. You can use the iSeries CPY commands to convert the file to a file or document that is compatible with the SNDDST command.

Converting file types to send with SNDDST

With the iSeries server playing a larger role in the Internet, a method is needed to send information easily from the OS/400[®] to e-mail clients.

Assuming that the spoolfile is already created, and the physical file and folder already exist, you must convert the file into a sendable format. The conversions are done by using iSeries commands, as shown below.

Move the spool file to a data base physical file.

```
CPYSPLF FILE(splfile) TOFILE(dbfile) JOB(job3/job2/job1) SPLNBR(splnbr) TOMBR(mbr)
```

Move data base physical file to a folder.

```
CPYTOPCD FROMFILE(lib/dbfile) TOFLR(folder) FROMMBR(mbr) REPLACE(*YES)
```

Send the document.

SNDDST TYPE(*DOC) TOUSRID(*user address*) DSTD(MAIL) DOC(*mbr*) FLR(*folder*)

Use SNADS to receive e-mail

To receive e-mail on iSeries^(TM) with a SNADS client program using the Receive Distribution (RCVDST) command, follow this procedure. The recipient of the e-mail must be a local SNADS user.

1. In the character-based interface, type QRYDST (the Query Distribution command) and press **F4**. The list of distributions appears.
2. Press **F10** to view additional parameters.
3. In the **File to Receive Output** field, type file and library names that are easy to remember and press **Enter**. The iSeries creates these physical files.
4. Type WRKF (the Work with Files command) and press **Enter**. The **Work with Files** display appears.
5. Type the file name and library you specified in step 3 and press **F4**.
6. The display lists all your distributions (e-mail). Type 5 next to the distribution you want to display and press **Enter**.
7. At the **Display Physical File Member (DSPPFM)** screen, press **Enter**.
8. On the next screen, there will be a long string of numbers for each piece of mail. Copy the seventh through twenty-sixth characters.
9. Press **F3** twice to exit.
10. Type RCVDST (the Receive Distribution command) and press **Enter**.
11. In the **Distribution Identifier** field, paste the seventh through twenty-sixth characters you copied.
12. In the **File to receive output** field, enter a new file name and the same library name you used previously and press **Enter**.
13. Type **DSPPFM** (Display Physical File Member) to display the file you just created.
14. Press **F20** (Shift + F8) to scroll left and read the message or messages.

Manage e-mail

These topics are intended for iSeries^(TM) users and mail administrators who are familiar with the architecture of e-mail and messages on the iSeries server. Follow the links for instructions on how to complete the following tasks:

“Check e-mail servers” on page 26

This topic provides instructions for verifying that e-mail servers are all running.

“Remove POP e-mail users” on page 26

This topic provides instructions for removing POP e-mail users using iSeries Navigator.

“Prevent large e-mail messages from splitting” on page 26

See what parameters need to be set to prevent your large e-mail messages from splitting, and being delivered in smaller, confusing pieces.

“Support Delivery Status Notification” on page 27

If your users would like to receive messages on the delivery status of their outgoing mail, you must approve the support of Delivery Status Notification.

“Host a Domino and SMTP server on the same iSeries” on page 27

If you are running Domino and SMTP on the same iSeries, it is recommended that you configure each one to bind to a specific IP address. This topic provides the steps for configuring the SMTP server to use a specific Internet address.

“Host Domino LDAP and Directory Services on the same iSeries” on page 28

If you are running Domino LDAP and Directory Services on the same iSeries, it is recommended that you configure each one to bind to a specific IP address. This topic provides the steps for configuring Directory Services to use a specific Internet address.

“Manage SMTP server performance” on page 28

This topic provides tips for managing a busy SMTP server.

Check e-mail servers

One of the most common problems with e-mail is that the proper servers are not started. Perform the following procedure in iSeries^(TM) Navigator to verify the status of the servers that are integral to e-mail on iSeries:

1. In iSeries Navigator, expand **your iSeries Server** —> **Work Management** —> **Server Jobs**.
2. Verify that the SMTP server is active. Find **Qtsmtp** jobs in the Job Name column of the Active Server Jobs list.
3. If there are no **Qtsmtp** jobs listed, “Start and stop e-mail servers” on page 13.
4. Verify that the Mail Server Framework server is active. Find **Qmsf** jobs in the Job Name column of the Active Server Jobs list.
5. If there are no **Qmsf** jobs listed, type STRMSF (the Start the Mail Server Framework command) in the character-based interface.
6. Verify that the POP server is active. Find **Qtpop** jobs in the Job Name column of the Active Server Jobs list.
7. If there are no **Qtpop** jobs listed, “Start and stop e-mail servers” on page 13.
8. Verify that the SNADS server is active. Find **Qsnads** jobs in the Job Name column of the Active Server Jobs list.
9. If no QSNADS jobs are listed, start SNADS. In the character-based interface, type STRSBS QSNADS.

If your e-mail servers are all started and e-mail is not working, refer to “Determine problems with e-mail” on page 30 for troubleshooting tips.

Remove POP e-mail users

To remove an e-mail user from iSeries^(TM), you must delete their system distribution directory entry.

1. In the character-based interface, type WRKDIRE (the Work with Directory Entries command). The System Distribution Directory display appears.
2. Tab down until you are in the *Opt* field by the user you want to delete.
3. Type a 4 (Remove) and press **Enter**. Press **Enter** again to confirm. This prevents any more e-mail from being delivered to the user’s POP mailbox.
4. Sign on to a POP mail client program as that user. Receive and delete any e-mail.

Prevent large e-mail messages from splitting

SMTP can be configured to split large messages into smaller pieces. However, many mail clients cannot reassemble the pieces, resulting in unreadable messages. If you find that your recipients cannot read large messages because they are broken into several pieces, you may want to disable the SMTP splitting function.

To disable SMTP e-mail splitting, follow these steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Double-click **POP**. The **POP Properties** dialog appears.
3. Click the **Configuration** tab.
4. For the **Message Split Size** field, select **No maximum**.

Note:

Turning e-mail message splitting off may cause problems when sending large e-mail to networks that cannot handle large messages.

Support Delivery Status Notification

Delivery Status Notification allows your mail clients to request to receive status messages when mail is delivered, relayed, or fails. If you want to allow your mail clients to make this request, you must enable Delivery Status Notification.

To support Delivery Status Notification, complete the following steps:

1. In iSeries^(TM) Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Additional Parameters** page.
4. Select the **Support Delivery Status Notification (DSN)** checkbox, and specify **DSN notification Responsible Person address**.
5. Click **OK**.

Notes:

Using Delivery Status Notification takes up resources that can affect the maximum number of recipients on a piece of e-mail.

You are only allowing Delivery Status Notification to be employed by your users. If a user wishes to use the Delivery Status Notification function, they must set the parameters in their mail client. The parameters vary from mail client to mail client.

Host a Domino and SMTP server on the same iSeries

When hosting Domino^(R) and SMTP server on the same iSeries^(TM), you should bind each server to an IP address. Mail is then sent to users of Domino or SMTP using the appropriate IP address and although it shares a port, the mail is only handled by the server for which it is intended.

To force the SMTP server to use a specific Internet address for V5R1 or later, follow these steps:

1. In iSeries Navigator, select **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Bindings** tab.
4. Select **Use all interfaces** radio button, to bind all interfaces to port 25.
5. Select **Select an interface** radio button, to specify the client and server bound interfaces that you would like to bind.
Note: If you want to use Network Address Translation (NAT) either on iSeries or on your firewall, you must force the iSeries SMTP client to use one specific Internet address.
6. Click **OK**.

To force the SMTP server to use a specific Internet address, prior to V5R1, follow these steps:

1. In the iSeries character-based interface, type: CRTDTAARA DTAARA(QUSRSYS/QTMSSBNDIP) TYPE(*CHAR) LEN(16) VALUE('Internet address') AUT(*USE)
This creates a data area that contains the specific Internet address.
2. Stop and start the SMTP server. In the character-based interface, type: ENDTCPVSR *SMTP
3. Type: STRTCPVSR *SMTP

To force the SMTP **client** to use a specific Internet address, prior to V5R1, follow the same steps, except in step one create the data area: DTAARA(QUSRSYS/QTMSCBNDIP)

Now SMTP receives only mail that is addressed to this Internet address. Check the Domain Name System (DNS) server, local host table, and system distribution directory to ensure that this forced Internet address is present.

What to do next:

- Refer to the Domino reference library for instructions on how to bind Domino SMTP to a specific TCP/IP address.



- “Host Domino LDAP and Directory Services on the same iSeries”

Host Domino LDAP and Directory Services on the same iSeries



When hosting Domino^(R) LDAP and Directory Services on the same iSeries, you can either set a different port number for each server or you can bind each server to an IP address. Changing the port number can be disruptive to your clients, so specifying a specific IP address for each server may be the best solution. Domino and SMTP will each use the appropriate LDAP server for e-mail addressing.

To force the Directory Services server to use a specific Internet address, follow these steps:

1. In iSeries Navigator, select **your iSeries Server**—> **Network** —> **Servers** —> **TCP/IP**.
2. Right-click **Directory** and select **Properties**.
3. Click the **Network** tab.
4. Click **IP Addresses...**
5. Select **Use selected IP addresses** and specify from the list which interfaces you want to bind.
6. Click **OK** to close the **Directory - IP Addresses** page.
7. Click **OK** to close the **Directory Properties** page.

What to do next:

- Refer to the Domino reference library



for instructions on how to bind Domino LDAP to a specific TCP/IP address.

- “Start and stop e-mail servers” on page 13



Manage SMTP server performance

Do you have a busy SMTP server that uses multiprocessing? This may be because your SMTP server uses all its capacity for adding and ending prestart jobs for each e-mail request.

If you find that the number of prestart jobs is affecting iSeries^(TM) performance, you can set the threshold lower. If you want more jobs, you can set the number of prestart jobs higher.

With prestart jobs, every e-mail request runs as its own job. This method allows each job to focus solely on its client or server program’s needs and requests. Each job can make longer time-out calls to enable the posting of host names for the purpose of not receiving unsolicited bulk e-mail.

To manage a busy SMTP server, you can change the following values:

- The number of jobs to start on initialization
- A threshold number for jobs
- The number of jobs to add when the server reaches the threshold
- A maximum for the number of running jobs to allow
- Selecting a subsystem for jobs

To manage a busy server, you need to change values on the SMTP server and the SMTP client.

The SMTP server works with the daemon and prestart jobs: QTSMTPSRVD and QTMSMTPSRVP. The SMTP client works with the daemon and prestart jobs: QTSMTPCCLTD and QTSMTPCCLTP.

To change the values on the SMTP server, follow these steps:

1. In the iSeries character-based interface, type CHGPJE (the Change Job Entries command). The Change Job Entries display appears.
2. Enter the following values at the prompt and press **Enter**:

Prompt	Value
Subsystem	QSYSWRK
Library	QSYS
Program	QMSSRCP
Library	QTCP
Start jobs	*SAME
Initial number of jobs	4
Threshold	2
Additional number of jobs	2
Maximum number of jobs	20

These values guarantee that the server will start four prestart jobs, start two additional jobs when the available jobs fall below two, and allow a maximum of twenty prestart jobs.

To change the values on the SMTP client, follow these steps:

1. In the character-based interface, type CHGPJE (the Change Job Entries command). The Change Job Entries display appears.
2. Enter the following values after the prompt and press **Enter**.

Prompt	Value
Subsystem	QSYSWRK
Library	QSYS
Program	QTMSCLCP
Library	QTCP
Start jobs	*SAME
Initial number of jobs	4
Threshold	2
Additional number of jobs	2
Maximum number of jobs	20

These values guarantee that the SMTP client will start four prestart jobs, start two additional jobs when the available jobs fall below two, and allow twenty prestart jobs as the maximum.

Selectable subsystems for jobs

You can specify a separate subsystem for the SMTP server. This should increase performance, because the need to share resources is eliminated.

To specify a separate subsystem, complete the following steps:

1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
2. Right-click **SMTP** and select **Properties**.
3. Click the **Additional Parameters** tab.
4. Select the **Subsystem description** radio button.
5. Enter the new subsystem's name and the library where the subsystem description and job queue will be created.

The program will check for existence of the specified subsystem. If it does not exist, the program will create it along with routing table entries, auto-start job entries, pre-start job entries and job descriptions. Even if the subsystem does not already exist, the library for the subsystem description and job queue must already exist. When the startup job for the server is executed, it will specify the parameters for the newly created subsystem and then submit the server jobs for batch startup in that subsystem.

Troubleshoot e-mail

This topic provides basic troubleshooting information for e-mail.

“Determine problems with e-mail”

View a list of steps to determine whether your SMTP is working correctly.

“Check component journals” on page 31

Use these instructions to check error-recording journals and determine where your SMTP problems lie.

“Track undelivered e-mail” on page 36

Use these instructions for e-mail delivery and configuration problems.

“Solve problems with the QtmmSendMail API” on page 37

Use this troubleshooting process to resolve problems you are having with the Send MIME Mail (QtmmSendMail) API.

You can also “Prevent large e-mail messages from splitting” on page 26. iSeries^(TM) SMTP splits large e-mail messages into multiple parts. Older clients sometimes receive multiple-part text e-mail messages as separate messages. This topic includes instructions on what to do about this problem.

Note: Read the Code example disclaimer for important legal information.

Determine problems with e-mail

To identify likely sources of SMTP problems, follow these steps:

Verify that “Configure TCP/IP for e-mail” on page 10.

- Go to the iSeries^(TM) Service PTF facility



to determine whether you have all the necessary PTFs.

- “Check e-mail servers” on page 26 to ensure that the necessary servers are started and running.
- Verify the local domain name.
 1. In iSeries Navigator, expand **your iSeries Server** → **Network**.

2. Right-click **TCP/IP Configuration** and select **Properties**.
 3. Click the **Host Domain Information** tab.
- Set the SMTP retry values lower.
 1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
 2. Double-click **SMTP**.
 3. Click the **Outbound Mail Retries** tab.
 - Verify that the user ID and address of the receiver are in the system distribution directory.
 1. In iSeries Navigator, expand **your iSeries Server** → **Users and Groups** → **All Users**.
 2. Right-click the **Profile** of the user ID and select **Properties**.
 3. Click **Personal**, and go to the **Mail** tab to verify the address.
 - Verify whether a host table entry is necessary for the e-mail to reach the destination address.
 1. In the character-based interface, type CHGTCPHTE (the Change TCP/IP Host Table Entry command) and enter the e-mail server's Internet address.
 2. If no host table entry appears, then enter the host name for that Internet address.
 - Ensure you have not passed your storage threshold.
 1. In iSeries Navigator, expand **your iSeries Server** → **Configuration and Service** → **Hardware** → **Disk Units** → **Disk Pools**.
 2. Right-click the source disk pool you want to view and select **Properties**.
 3. Select the **Capacity** tab.
 4. If your server usage is greater than your threshold, mail may stop working. For more information, refer to Independent disk pools in the Backup and Recovery topic.
 - Verify that e-mail splitting is disabled.
 1. In iSeries Navigator, expand **your iSeries Server** → **Network** → **Servers** → **TCP/IP**.
 2. Double-click **POP**. The **POP Properties** dialog appears.
 3. Click the **Configuration** tab.
 4. For the **Message Split Size** field, verify **No maximum** is selected.
 - Run the Trace TCP/IP Applications command. In the character-based interface, type TRCTCPAPP.
 - "Check component journals" to locate the problem.

Check component journals

Your iSeries^(TM) server uses various queues, programs, and journaling documents so you can tell why your e-mail server is not delivering your mail. The journaling function can be helpful in offering insight as to what may be going wrong with your e-mail system. Journaling uses processing unit cycles, so the machine performs best when journaling is off.

The journaling function documents the following items:

transitions: programs to queues, queues to program.

events: arrival of mail via the server, delivery of mail via the client, storage of mail on retry queues or resource busy queues.

tracking and some measurement data: 822 Message ID, MSF Message ID, size of message, originator, recipients.

Journal records are stored in journal receivers. These receivers are user managed. When the journal becomes full, issue the Change Journal (CHGJRN) command to change to a new journal receiver. The new SMTP Journaling function uses the QZMF journal.

To turn on journaling and view the journal contents, follow these steps:

1. In iSeries Navigator expand **your iSeries server** —> **Network** —> **Servers** —> **TCP/IP**.
2. Double-click **SMTP**. The **SMTP properties** dialog appears.
3. Click the **General** tab.
4. Select the **Enable journal entries** check box.
5. Open an emulation session.
6. To convert the SMTP journal entries to a viewable form, in the character-based interface, type: `DSPJRN JRN(QZMF) OUTPUT(*OUTFILE) OUTFILE(jrnlib/zmfstuff) OUTMBR(MAR2) ENTDTALEN(512)`, where *jrnlib* is the name of the library, and *zmfstuff* is the name of the physical file.
7. To view the SMTP journal entries, type the following on the command line: `DSPPFM FILE(jrnlib/zmfstuff) MBR(MAR2)`
8. Press F20 (Shift + F8) to see the journal-specific information.

See “Details: Read mail server journal entries” for information on deciphering your SMTP journals.

Details: Read mail server journal entries



This topic provides information about understanding journal entries. Use the tables below to understand the codes and messages used in journal entries.

The following table provides the definitions for abbreviations used in journal entries.

Journal Entry Abbreviations

Abbreviation	Definition
LIN	Local in, received a note for local delivery. The IP address that follows is the host that sent the note
RIN	Relay in, received a note to relay to another SMTP daemon. The IP address that sent it follows.
R	Recipient
O	Originator
U	Undelivered Recipient
QTMSINQ	Input queue of SMTP
QTMSOUTQ	Output queue of SMTP
QTMSBSSQ	Holding queue where messages are placed when system storage threshold is exceeded.
QTMSRTQ1	First level retry queue
QTMSRTQ2	Second level retry queue
RRSL	Recipient Resolved

Each journal entry has a two-character SubType/code preceding it. The first character of the code consists of the function identifier for the entry. The second character of the “SubType/code” consists of the action that this journal entry is documenting. The function identifiers are listed in the table below:

Function Identifier	Description
7	Bridge Server Entry
8	SMTP Client
9	SMTP Server
A	MSF Non Delivery
B	MSF Local Delivery
C	MSF Message Forwarding
D	POP Create Message
E	Send Mail API
F	Domino ^(R) MTA
G	Tunneling Snap-in
H	SNADS (Switcher)
I	MIME Parser (a local delivery snap-in)
L	FAX (Local Delivery)
M	SNADS
O	Filtering
P	MSF SMTP exit for Address Resolution

The following tables provide more detailed information on reading the component journal entries. They are divided as follows:

- SMTP client (Subtype/Code 8x) (See 33)
- SMTP server (Subtype/Code 9x) (See 34)
- Bridge server (Subtype/Code 7x) (See 35)
- Message Switching Facility (MSF) exits and creates functions (See 35)

Note: All of the journal entries documented here use the log entry (LG) type.

Log entries for the SMTP Client

Type	Action	SubType/Codes	Comments
LG	Dequeuing of container for processing	8B	Just after floater tag is set log dequeue of Mail
LG	Successful mail delivery	88 82	Log mail successfully sent Log each recipient
LG	Undeliverable mail	83	Log undelivered mail
LG	1st level timeout	8C	Log when adding to 1st level retry queue
LG	2nd level timeout	8D	Log when adding to 2nd level retry queue
LG	Mail is ready to be retried	8E 8F	Log when retried mail put back on QTMSOUTQ
LG	COD being sent back to originator	87	Log when COD is enqueued on BRSR queue

Type	Action	SubType/Codes	Comments
LG	Cannot process, resource busy	86	Log when mail gets put back on QTMSOUTQ because connection matrix full
LG	Examine recipient records	86	Log when mail gets put back on QTMSOUTQ because recipient status changed, ie MS record resolved ready to deliver the message.
LG	Undeliverable	87	Log transfer of mail to QTMSINQ for undelivery notice, two places
LG	MX query	8K	Log a res_send failure and errno of why if failed along with query buffer

Log entries for the SMTP Server

Type	Action	SubType/Codes	Comments
LG	Receiving mail	94 91 92 9T 99	Log reception of mail just after receiving ending sequence CRLF <.> CRLF(local) Originator and recipient are logged. Message Size nnnnn where nnnnn is the number of bytes. MSGID
LG	Receiving relayed mail	95 91 92	Log MAIL just after receiving ending sequence CRLF <.> CRLF (relayed) Originator and recipient are logged
LG	Passing off mail to Bridge server	97	Log entry of MAIL into QTMSINQ (incoming mail)
LG	Passing off mail to client for remote delivery	96	Log entry of MAIL into QTMSOUTQ (relayed mail)
LG	CONNECTION REFUSED 1.2.3.4....	9S	Log connections refused based on restricted connection settings. 1.2.3.4 is the IP address rejected
LG	RELAY REFUSED 1.2.3.4....	9V	Log relays refused based on restricted relay settings. 1.2.3.4 is the IP address rejected
➤ LG	Rejected by SMTP server	9W	The message has been rejected by the SMTP server. ⬅

Log entries for the Bridge Server

Type	Action	SubType/Codes	Comments
LG	Getting mail off of the "IN" queue	7A	Log mail being dequeue from QTMSINQ
LG	Passing off mail to SNADS	7O	Record successful transfer to QSNADS
LG	Putting container on the "BUSY" queue because of space usage.	7L	Record when mail is enqueued on QTMSBSSQ because of threshold overflow
LG	Getting mail off of "BUSY" queue	7M	Record dequeuing mail from QTMSBSSQ, space was reclaimed and the mail can now be processed.
LG	Passing message to MSF	7H 71 72	Record when message gets inserted into framework
LG	Creation of COD message	7R 7G	Record when COD message gets inserted into framework Log the MSF MSGID because the new COD message is being created.
LG	Cannot deliver this piece of mail to a recipient	7P 7G	Log the fact that you were creating an undeliverable notice Log the MSGID of the new undeliverable msg notice.

Message Switching Facility (MSF) exits and creates functions

Type	Action	SubType/Codes	Comments
LG	Creation of nondelivery message	AP A1 A2	Record non Delivery message being inserted into MSF
LG	Mail is delivered into a POP mail box	B8 B2	Record delivery of message to local pop mail box, ipaddress will be pop mailbox directory. Recipient will also be listed.
LG	Sending COD message into MSF	BR B1 B2	Record insertion of COD message into the MSF
LG	Checking availability	CN	SMTP message Forwarding MSF exit. Record MSGID that was put back on QMSF queue due to SMTP not being started.
LG	Enqueuing the mail	C6 C1 C2	Log mail being put onto QTMSOUTQ

Type	Action	SubType/Codes	Comments
LG	Use of the Sendmail API	EH E1 E2 ET	Record creation of message by SendMail API Message Size nnnnn where nnnnn is size of message (all attachments)
LG	Mail is targeted to a SNADS bridged remote system	G8 G2	Record when message is tunneled. Include system sent to. Recipient
LG	Mail tunneled through a SNADS bridge is received.	GQ G2	Record receiving tunneled message for local delivery Recipient
LG	Address resolution SNADS switches either from/to	H1	SNADS switched a message into the MSF
LG	Reinsertion of parsed MIME note into framework	IH I1 I2 IG	Log when the parsed MIME message is reinserted into the MSF.
LG	Rejected by Filtering	OW	Message has been rejected. Whether it was discarded or kept is noted. If it has been rewritten and delivered that is noted.
LG	Typed by SMTP Address Resolution MSF exit program	P2	Message has been tagged as follows: <ul style="list-style-type: none"> • POP LcIDel: Tagged for the POP local delivery exit program to deliver. • SMTP MsgFwd: Tagged for forwarding to SMTP to send. • SMTP NonDel: Marked for nondelivery notification. • Parse: Sent to the parser code • PutBk: Put back into the framework for some other exit to handle (eg. Domino or SNADS). • chg to SNADS: Changed the address type to SNADS.



Track undelivered e-mail

You can use a generic user ID to track problems with undeliverable e-mail. This tactic can be useful for both e-mail delivery and configuration problems.

1. Select or create a user ID to receive notification. In the character-based interface, type CRTUSRPRF (the Create User Profile command) and press **Enter**.
2. Type WRKDIRE (the Work with Directory Entries command) and press **Enter**.

3. Type 1 to add the user to the system distribution directory.
4. Ensure that the Mail Store value is 2 and the Preferred Address value is 3.
5. Press PF19 (Add Name for SMTP).
6. Type NONDELIVERY@localhost.domain as the SMTP address for any POP user.

This user receives a copy of the undeliverable e-mail.

Note: The user ID you enter must be an actual ID so that it can effectively monitor nondelivery notices. The sender receives a copy of the nondelivery notice with a list of the recipients who did not receive the e-mail.

See “Determine problems with e-mail” on page 30 for more information.

Solve problems with the QtmmSendMail API

The steps below will help you to assess problems with the “QtmmSendMail API” on page 20:

Check the API call.

Ensure that you are receiving error messages from the API on your workstation display. Refer to the Error message (See 38) descriptions that can be returned by this API.

If you code to return the error, then the program returns it to the program. However, if you set this value to 0, as shown below, then the error appears on your workstation display.

C Example

```
Qus_EC_t          Snd_Error_Code;
Snd_Error_Code.Bytes_Provided=0;
```

RPG Example

```
DAPIError      DS
D APIBytes      1      4B 0
D CPFID        9      15
C              Eval   APIBytes   = 0
```

Check the MIME file.

1. Check the MIME file placement. The MIME file must be in the ROOT system and start with a “/”, for example, /myfile.txt, and the file name must include the path /mydirectory/myfile.mime.
2. Check the authority levels. QMSF and QTCP profiles must have the authority to read and delete the MIME file.
 - a. In the iSeries^(TM) character-based interface, type WRKLNK (the Work with Object Links command).
 - b. Type 9 (Display) to work with the QMST and QTCP authorities. The Work with Authority display appears.

3.



Ensure that the MIME file has an end-of-header (CRLF) statement between the header and the body.



4.



Ensure that the MIME file is compliant with MIME Request for Comments (RFCs).



Note: See section 2.1 in RFC2822 (<http://rfc.net/rfc2822.html>) for more information about the end-of-header statement.



Check the mail server framework jobs (QMSF jobs in the QSYSWRK system).

1. If the MSF stopped processing the message, check the MSF jobs for error messages.
2. If the framework job completed, the MIME file should be deleted. This means that the framework processed the MIME file. Your problem is not with the API, but in your SMTP configuration. Refer to “Determine problems with e-mail” on page 30 to further investigate the problem.

Error messages

CPFA0A9	The object was not found.
CPFA0CE	The path name parameter that was specified resulted in an error.
CPF3C12	The length of data is not valid.
CPF3C17	An error occurred with input data parameter.
CPF3C21	The format name (<i>name</i>) is not valid.
CPF3C39	The value for the reserved field is not valid.
CPF3C75	An error occurred with entry lengths and offsets parameter.
CPF3C88	The number of variable length records &1 is not valid.
CPF3E0A	The resource limits were exceeded.

Related information for e-mail

For more information on using e-mail on iSeries^(TM), as well as for help on integrating Lotus Notes^(R) on iSeries, see the following sources:

Protocol information

“SMTP protocol” on page 39

“POP protocol” on page 40

Web Sites

IBM^(R) Secureway: iSeries and the Internet

See this Information Center topic to secure your iSeries network.

iSeries Technical Support Web site



Download current PTFs for your iSeries by using your workstation as a gateway to the Internet PTF page, or view iSeries solutions from the Technical Information and Databases category.

Mail enabling iSeries applications with Java^(TM)



Learn several means of SMTP mail enabling your iSeries applications.

MAPS (Mail Abuse Prevention System LLC)



This organization provides information about protecting the Internet's e-mail system from abuse by spammers.

[RFC Index](#)



The e-mail protocols are defined in RFCs (Request for Comments). RFCs are the vehicles that are used to define evolving Internet standards. For additional information about the SMTP protocol, refer to RFC 2821. For the POP protocol, refer to RFC 1725.

Comprehensive information about Domino^(R)

[Lotus^{\(R\)} Domino on iSeries home page](#)



[Domino reference library](#)



[Domino and Notes^{\(TM\)} User Assistance Documentation Library](#)



Manuals and Redbooks^(TM)

AS/400^(R) Electronic-Mail Capabilities



View this popular IBM Redbook for in-depth information about e-mail and SMTP. **AS/400 Internet Security: Protecting Your AS/400 from HARM on the Internet**



This Redbook provides security information, including steps for cleaning up your iSeries if your server is the victim of a flooding attack.

AnyMail/400 Mail Server Framework Support



Read about the framework that drives the iSeries mail server.

SMTP protocol

The table below describes the SMTP command, the command function, and whether or not iSeries^(TM) SMTP server supports the command.

SMTP commands

SMTP Command	What It Does	iSeries Supported
HELO (Hello)	Identify the SMTP sender to the SMTP receiver.	Yes
EHLO (Extension Hello)	Enables SMTP extensions.	Yes
MAIL (Mail)	Start an e-mail transaction to deliver the e-mail to one or more recipients.	Yes
RCPT (Recipient)	Identify an individual recipient of e-mail.	Yes
DATA (Data)	Consider the lines following the command to be e-mail from the sender.	Yes
SEND (Send)	Deliver e-mail to one or more workstations.	No
SOML (Send or mail)	Deliver e-mail to one or more workstations or recipients if the user is not active.	No
SAML (Send and mail)	Deliver e-mail to one or more workstations and recipients if the user is not active.	No
RSET (Reset)	End the current e-mail transaction.	Yes
VERFY (Verify)	Ask the receiver to confirm that a user has been identified.	Yes
EXPN (Expand)	Ask the receiver to confirm that a mailing list has been identified.	No
HELP (Help)	Ask the receiver to send helpful information to the sender.	Yes
NOOP (Noop)	Ask the receiver to send a valid reply (but specify no other action).	Yes
QUIT (Quit)	Ask the receiver to send a valid reply, and then close the transmission channel.	Yes
TURN (Turn)	Ask the receiver to send a valid reply and then become the SMTP sender, or else ask the receiver to send a refusal reply and remain the SMTP receiver.	No

POP protocol

The POP Version 3 mail interface is defined in RFC 1725. RFC stands for Request for Comments. RFCs are the vehicles that are used to define evolving Internet standards.

The client software uses commands called *verbs* to communicate with the POP server. The iSeries[™] POP server supports the following verbs:

Verb and parameters	Description
USER <id>	Pass user ID
PASS <password>	Password
STAT	Query mailbox
LIST <opt msg #>	Query message statistics
RETR <msg #>	Retrieve message
DELE <msg #>	Delete message
RSET	Reset message delete status
TOP <msg #> <lines>	Retrieve message header and data
UIDL <opt msg #>	Get message unique ID listing
NOOP	No operation

Verb and parameters	Description
QUIT	Quit client session

Appendix A. Notices

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