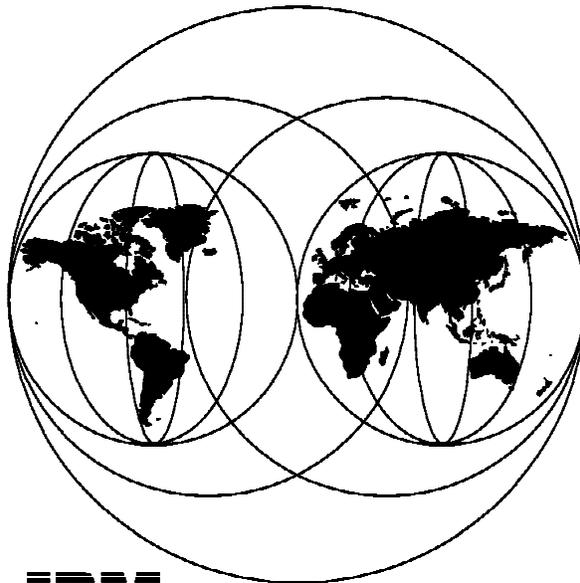# Mail Integration for Lotus Domino 4.5 on the IBM Integrated PC Server for AS/400 V3R2 or V3R7

July 1997

IBM

International Technical Support Organization
Rochester Center

International Technical Support Organization

**Mail Integration for Lotus Domino 4.5 on the
IBM Integrated PC Server for AS/400 V3R2 or V3R7**

July 1997

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Second Edition (July 1997)

This edition applies to Version 3 Release 2 of OS/400 (5763-SS1) or Version 3 Release 7 of OS/400 (5716-SS1) for use with the Lotus Domino 4.5.

Contents

Preface

This redbook describes how to install, configure, and use the Simple Mail
Transport Protocol/Message Transfer Agent 1.06 (SMTP/MIME MTA) in
combination with a Lotus Domino Server 4.5a or 4.51 installed on the
Integrated PC Server (IPCS) of an AS/400 system having OS/400 Version 3
Release 2 (V3R2) or Version 3 Release 7 (V3R7) installed.

At the time of writing this redbook, there was no printed manual available
covering all the information necessary to install and configure Lotus Notes
Mail integration on an Integrated PC Server. The goal of this redbook is to
fill that gap.

This redbook was written for administrators of Lotus Notes servers installed
on an Integrated PC Server for an AS/400 system who need to install and
manage the integration of Lotus Notes mail with AS/400 based mail, such as
OfficeVision for OS/400.

Several practical examples are presented to demonstrate the necessary
configuration tasks.

Some knowledge of OS/400, Lotus Notes, OfficeVision for OS/400 as well as
TCP/IP communication is assumed. The reader should be able to install
and manage a Lotus Notes server on an Integrated PC Server of an AS/400
system.

Summary of Major Revisions to this Redbook.

Note that this is a revision of the original SG24-4977-00 redbook. The major
changes in this revision include:

- A simplified approach to the AS/400 TCP/IP configuration requirements.
  This TCP/IP configuration is also used to support the MTA on single port
  Integrated PC Servers.

- A new and simpler install method that uses the SMTP/MIME MTA
  software included with Domino 4.5 on CD-ROM. The new method can be
  used to install this software directly from the CD-ROM drive of an
  AS/400 system unit, if it is a RISC system (V3R7 or later) Customers with
  a non-RISC system (V3R2) should copy the contents of the CD-ROM from
  a PC to the OS/400 Integrated File System (IFS) and then use the same
  installation process as on a RISC system.

  There are also instructions on how to obtain the 1.06 version of the
  SMTP/MIME MTA software from the Lotus Web site. This is no longer
  necessary given the SMTP/MIME CD-ROM included in the Domino 4.51

package or later includes the OS/2 1.06 version of the SMTP/MIME MTA on a separate CD-ROM. However, customers using the Domino 4.5a (or earlier) package need to obtain the MTA software from the lotus home page

`http://www.lotus.com/notesmta/2222.htm`

as described in Appendix A, "Downloading the SMTP/MIME MTA" on page 75.

- The book that documents other aspects of Lotus Notes on the Integrated PC Server, *OS/400 Integration of Lotus Notes*, has been revised and renumbered as part of its being reissued for OS/400 Version 4 Release 1. The new publication number referenced in this redbook is SC41-5431.

The Team That Wrote This Redbook

This redbook was produced by a team of specialists from around the world working at the International Technical Support Organization Rochester Center.

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Thanks to the following people for their invaluable contributions to this project:

Corey Carlson
Dennis Charland

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- Send us a note at the following address:

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Chapter 1. Lotus Notes Mail Integration on the Integrated PC Server

Lotus Notes integration for OS/400 allows you to use all server functions of a Lotus Notes server installed on the IBM Integrated PC Server (often called IPCS) for the AS/400 system, also known as *File Server Input/Output Processor (FSIOP)*, within an AS/400 system unit.

In addition to the standard Lotus Notes capabilities, a set of functions is provided to allow a tight integration of Lotus Notes with OS/400. These integration functions are:

- Notes administration from an AS/400 user interface
- Directory shadowing
- Database integration with DB2/400
- Backup and restore with ADSM
- Integration of Lotus Notes mail with AS/400 mail

The subject of this book is *mail integration*; therefore, it covers only the last of the functions previously listed. You can use a combination of the *Install Notes Server (INSNTSSVR)* and *Configure Notes Server (CFGNTSSVR)* commands to install the SMTP MTA support on a Notes or Domino server that runs on an Integrated PC Server, to enable the mail integration function.

All other aspects of Lotus Notes on an Integrated PC Server are described in *OS/400 Integration of Lotus Notes*, SC41-5431, and in the redbook *Using Lotus Notes on the Integrated PC Server for AS/400*, SG24-4779. Note, when SG24-4779 was published, no information was available about mail integration. Therefore, this chapter can be used as a supplement to that book.

After giving a high-level overview of the installation steps in "A Fast Road Map to Mail Integration" on page 3, the following sections explain:

- "Connecting Two Worlds of Electronic Mail" on page 4: What mail integration actually means.

- "Implementation Overview" on page 6: How mail integration was implemented.

- Chapter 2, "Preparing For and Installing the Mail Integration" on page 9: What steps need to be done to install this support for a Lotus Notes 4.1 server on the Integrated PC Server.

- "Description of the Lotus Notes SMTP MTA Components" on page 71: Describes in more detail the *Message Transfer Agent (MTA)*.

1

Important: Do not attempt to install the Lotus SMTP/MIME (MTA) on a Notes server on the Integrated PC Server unless you perform all of the steps summarized in "A Fast Road Map to Mail Integration" on page 3.

The descriptions in this chapter cover only Lotus Notes mail integration with AS/400 for a Domino Server Release 4.5a or 4.51 installed on an Integrated PC Server. The descriptions apply to the 1.0.6 version of the Lotus SMTP/MIME MTA.

The environment covered in this chapter does <u>not include</u> support for:

- Lotus Notes Server Release 4.0 or 4.1: Although the MAT 1.06 may work with older Notes servers (for example 4.1) all the tests have been performed with a Domino 4.5 server.

- Lotus Domino Releases later than 4.5.2: The procedure described in this chapter (as well as all the PTFs for the AS/400 system) apply only to Domino Release 4.5.

  PTFs for the AS/400 licensed products (along with revised instructions) are provided within 90 days after general availability of later releases for Lotus Notes to provide support for the integration of Lotus Notes on the Integrated PC Server.

- Any Lotus Notes server installed on other systems: For example, this includes a stand-alone PC.

- Lotus Notes-based mail: This is part of the standard Lotus Notes functions. That is, as long as a direct connection (using a common protocol) between the Notes servers is provided, no special considerations are needed to support Notes mail being exchanged between users on:

  - The same Domino server
  - Different Domino servers within the same Notes domain
  - Domino servers in different Notes domains

Useful Publications

The following list contains publications we found useful and relevant to the information on this topic. For a complete listing of publications used in producing this book, refer to Appendix E, "Related Publications" on page 99.

- *OS/400 Integration of Lotus Notes*, SC41-5431
- *Using Lotus Notes on the Integrated PC Server for AS/400*, SG24-4779
- *Lotus Notes 4.5 Administrator′s Guide*, 12755
- *OS/400 TCP/IP Configuration and Reference*, SC41-3420-04

The documentation for the SMTP/MIME MTA is provided in the form of Lotus Notes databases:

- *SMTP MTA Release Notes*, RN_SMTP.NSF
- *SMTP/MIME System Administration Guide*, SMTPAG.NSF

A Fast Road Map to Mail Integration

The following list provides a high-level road map to guide you on your way to integrate Lotus Notes mail with AS/400-based mail:

1. **Configure and install the Lotus Domino server** on the Integrated PC Server as described in Chapter 2 of *OS/400 Integration of Lotus Notes*, SC41-5431, and in Chapter 3 of *Using Lotus Notes on the Integrated PC Server for AS/400*, SG24-4779. The Notes server has to be started successfully at least once.

2. **Ensure a correct TCP/IP configuration** for the AS/400 system and the Integrated PC Server as described in Chapter 2, "Preparing For and Installing the Mail Integration" on page 9. Mainly, this means that the IP host names and domain names of the AS/400 system and the Integrated PC Server, as well as all other users' SMTP domain names, have to be resolved correctly either by using a domain name server (recommended) or the host table on the AS/400 system.

3. **Load and apply the latest PTFs** for the AS/400 licensed programs; for V3R2, this is **SF37478**; for V3R7, you can use either **SF35096** or **SF37489**. Make sure you also load and apply all prerequisites for those PTFs.

   A complete, up-to-date list of PTFs is available on the "Web" site

   http://www.as400.ibm.com/products/software/notes/homepage.htm

   This "Web" site should also be referred to for information about additional changes to the installation or configuration instructions of the SMTP/MIME MTA.

   Note: You may have to vary off and vary on all network server descriptions (*NWSD) on your AS/400 system several times to activate all of those PTFs (see "Special PTF Instructions for PTFs in Pending Status (PND)" on page 20).

4. **(Optionally) Download the Lotus SMTP/MIME MTA** from the Lotus home page on the Internet World Wide Web.

   Note: This download should *not* be required with Domino 4.5 as it includes a CD-ROM that has the OS/2 version 1.06 of the Notes SMTP/MIME MTA. If you do have this CD-ROM, see Appendix A, "Downloading the SMTP/MIME MTA" on page 75 for details on how to download the MTA.

5. **Install MTA from the AS/400 system**. Use a combination of the INSNTSSVR and CFGNTSSVR commands to install the SMTP MTA, as described in "Installing SMTP MTA on the Integrated PC Server" on page 25. These commands install and automatically configure the MTA for you.

6. **Verify** that the SMTP MTA is installed successfully as described in "Verifying Successful Configuration" on page 33.

7. **Adjust the system directory** if Notes users were already added to the AS/400 system distribution directory. Their entries should be updated using program `QYNMUNTS` as described in "Adjust System Directory after SMTP MTA is Installed" on page 34.

8. **Start mail integration** using the Start Network Server Application (STRNWSAPP) command. Refer to "Start the Mail Integration" on page 37 for more information.

9. **Use Lotus Mail integration**. Now your Notes server on the Integrated PC Server is ready to send mail from Notes users to OfficeVision/400 users and vice versa. "How to Send and Receive Mail through the SMTP MTA" on page 42 explains how to set up the directory entries and address the recipients.

Connecting Two Worlds of Electronic Mail

The mail integration for Lotus Notes on the Integrated PC Server provides a link between two big worlds of electronic mail:
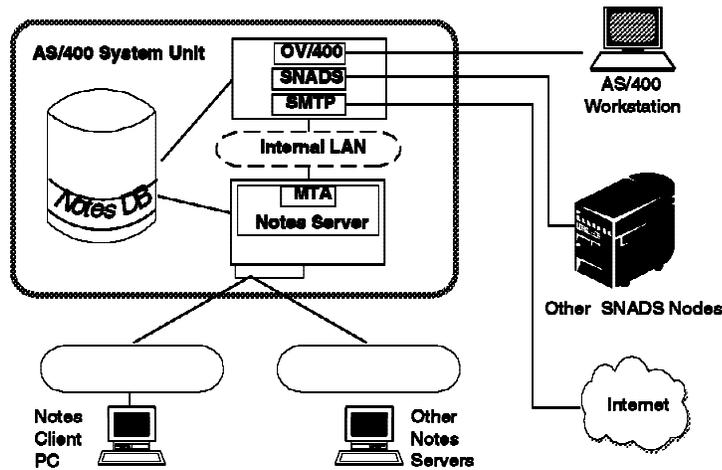
Figure 1. Mail Integration for Lotus Notes on the Integrated PC Server

- Users of *OfficeVision for OS/400* are able to exchange mail with:

  - OfficeVision users on the same AS/400 system
  - OfficeVision users on other AS/400 systems connected through SNADS
  - OfficeVision users on other platforms such as MVS or VM
  - Users of any other mail applications, including users on the Internet or any TCP/IP connected intranet, connected to the AS/400 system through SNADS, SMTP(TCP/IP) , or X.400

- Lotus Notes users connected to a Notes server on the Integrated PC Server can exchange mail with:

  - Notes users on the same server
  - Notes users on the other servers in the same Notes domain
  - Notes users on the other servers in other Notes domains
  - Users of any other mailing applications, including the users on the Internet or any TCP/IP connected intranet, that can be reached through a mail gateway or Lotus Notes SMTP/MIME message transfer agent (MTA)

When you use the mail integration for Lotus Notes on the Integrated PC Server, all users previously listed are able to exchange electronic mail with each other.

Implementation Overview

Several components have to work together to allow mail exchange between a Notes server on the AS/400 system's Integrated PC Server and OS/400 on the same AS/400 system.

The components involved are:

- The Lotus Notes server running under OS/2 on the Integrated PC Server

- The SMTP/MIME MTA, an "add-in" that is an installable extension to a Lotus Notes server providing *message routing* capabilities to exchange mail with SMTP/MIME based networks. "Lotus SMTP/MIME Message Transfer Agent (MTA)" describes the Lotus SMTP/MIME MTA in more detail.

- The SMTP/MIME support for OS/400 provided by the *TCP/IP Connectivity Utilities for the AS/400* licensed program 5763-TC1 (for V3R2) or 5716-TC1 (for V3R7)

- The AnyMail/400 Mail Server Framework (MSF) provided by OS/400

- The OS/400 Mail Integration for Lotus Notes (a part of option 24 of OS/400) allows the installation and automatic configuration of the SMTP/MIME MTA for a Lotus Notes server installed on the Integrated PC Server. A set of PTFs is needed to provide this function for V3R2 and V3R7; you can get these PTFs by ordering `SF37478` for V3R2 (`SF35096` or `SF37489` for V3R7) and all prerequisite PTFs.

Lotus SMTP/MIME Message Transfer Agent (MTA)

The acronym *MTA* stands for *Message Transfer Agent*. In the terminology used for Lotus Notes, an *Agent* is a program running under control of a Lotus Notes server or client with no direct interactions with the users. Generally speaking, it may be compared with a batch program on the AS/400 system.

The Lotus Notes SMTP/MIME MTA provides advanced messaging features and extensions to Domino 4.5 servers:

- Transfers SMTP between SMTP networks (both Internet and intranet) and Lotus Notes users.

- The implementation of MIME extends SMTP to support the transfer of:
  - Rich text
  - Images
  - Binary data
  - Audio
  - Video

It is a separate product from Lotus, but it is included with Domino 4.51 or later on a CD-ROM. If required, it can also be downloaded free of charge from the Lotus home page on the World Wide Web (see Appendix A, "Downloading the SMTP/MIME MTA" on page 75 for details).

The documentation for the MTA is provided as part of the product in the form of Notes databases.

The SMTP/MIME MTA is a Notes "Add-In" task. Because of this, the MTA is configured by adding information to some documents in the Public Address Book (PAB). However, within the context of using a Notes server on the Integrated PC Server of an AS/400 system, the MTA is configured for you automatically by the MTA installation program. See "What Happens When SMTP MTA Is Automatically Configured" on page 64 for more detailed information about what kind of information is added when you run the installation program.

Normally, the MTA on a stand-alone Notes server can be managed (started and stopped) from the Notes server console. The Notes server on an Integrated PC Server can also be started and stopped using the Start Network Server Application (STRNWSAPP) command.

Chapter 2. Preparing For and Installing the Mail Integration

The following sections follow the road map to mail integration presented earlier. Each step tells you where to get instructions to perform the task, gives the instructions to verify that the task has been successfully performed, or gives instructions to do the task.

Verify Configuration and Installation of Domino Server

To configure and install the Domino server on the Integrated PC Server, use the instructions as described in Chapter 2 of *OS/400 Integration of Lotus Notes*, SC41-5431, and in Chapter 3 of *Using Lotus Notes on the Integrated PC Server for AS/400*, SG24-4779. Start the Notes server successfully at least once.

Ensure Correct TCP/IP Configuration

Before you can install and (automatically) configure the support for the SMTP/MIME MTA, you need to ensure that the TCP/IP configuration was completed correctly. "Why Do We Need TCP/IP Host Names?" gives some theoretical background on why this is necessary. Later, "TCP/IP Configuration for Mail Integration" on page 12 provides the steps to verify the TCP/IP configuration of your AS/400 system, the Integrated PC Server, and the **DNS name server** (if one exists in your IP network).

Why Do We Need TCP/IP Host Names?

It must be possible to resolve the TCP/IP *host names* to numeric *Internet addresses* (also called *IP addresses*). Note that this is true even if you do not use any TCP/IP communication at all such as the simple scenario shown in Figure 2 on page 10.

Regardless whether NetBIOS or TCP/IP is used as communication protocol between a Lotus Notes client and the Notes server, the format of the mail being sent or received as well as the sender's and recipient's address format is always in the form of Notes mail. However, the SMTP/MIME MTA converts both addresses as well of the format of the mail into SMTP/MIME format before sending it to OS/400 (see "Sending Mail from Notes to OfficeVision for OS/400" on page 42 for more details).

```
                          AS/400 System Unit
              Integrated PC Server
                                                    OS/400

  ┌────────┐      ┌────────┬────────┐      ┌────────┬──────────┐      ┌────────┐
  │ Notes  │      │ Domino │SMTP/MIME│      │ OS/400 │AnyMail/400│     │ OV/400 │
  │ Client │───▶  │ Server │  MTA   │─────▶│SMTP Server│  MSF   │────▶│  User  │
  └────────┘      └────────┴────────┘      └────────┴──────────┘      └────────┘
       ▲                        ▲
       │                        │
  External LAN            Internal LAN
(NetBIOS or TCP/IP)        (TCP/IP)
```
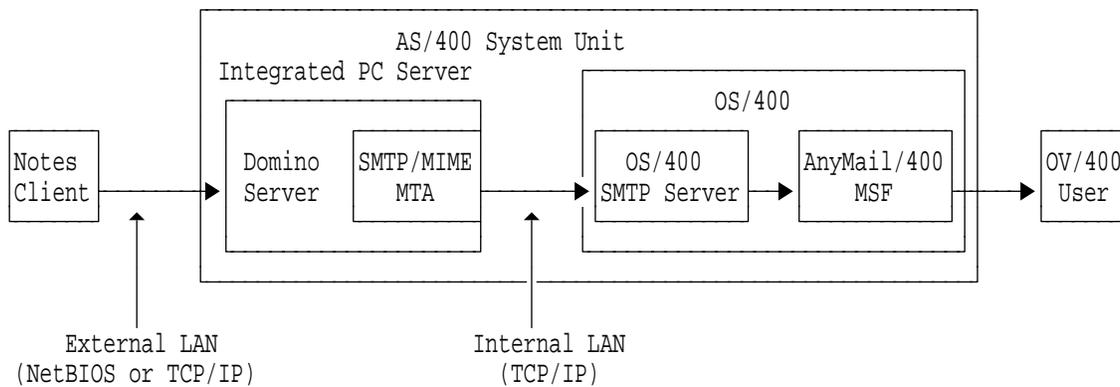
Figure 2. Message Flow between a Lotus Notes Client and an OV/400 User

Likewise, all mail is sent and received by OV/400 users in DCA/DIA[1] format, and the SMTP functions of OS/400 transform mail format and the format of the addresses to and from SMTP/MIME format. (See "Sending Mail from OfficeVision for OS/400 to Notes" on page 50 for more details.) This is because to transfer mail between the Notes server on the Integrated PC Server and the AS/400 system, the messages are not only converted to SMTP/MIME format, but the addressing scheme is also defined by SMTP, and the communication between the Notes server and OS/400 uses the TCP/IP protocol.

SMTP Addresses

The SMTP addressing scheme dictates that a part of each mail user's address is the IP host name of the computer system on which the user's SMTP based mail application is running.[2] Actually, the part at the right of the *at sign (@)* shows the IP host name, while the left side identifies the specific user. For example, if your SMTP address were:

`Wilfried_Blankertz@SYSASV32.OURLAN.ACME.COM`

it shows you that `SYSASV32.OURLAN.ACME.COM` is your system's host name (or better, the *full host name* or *fully qualified host name*). This part of the SMTP address is also called the *SMTP domain*.

---

[1] Document Contents Architecture/Document Interchange Architecture

[2] Although this goes a bit beyond the scope of this chapter, it should be noted that in the case of a POP3 server, this is the system the POP3 server is running on rather than the client system.

By the Way, What is a Domain?

Unfortunately, the term *domain* is used multiple times with different meanings, depending on the context. Throughout this book and specially in this chapter, make sure you understand exactly what *domain* we are talking about. There are three different environments where we talk about a domain name:

SMTP Domain

> This is the partial SMTP address on the right of the at sign (@) describing the IP host name of the computer where the SMTP user's mail application is running.

TCP/IP Domain

> This is the right part of the of the *fully qualified host name* used to identify the TCP/IP network your computer is part of. For example, if the full host name is `SYSASV32.OURLAN.ACME.COM`, the domain name is `OURLAN.ACME.COM`.

Lotus Notes Domain

> This term has absolutely nothing to do with TCP/IP. A *Notes Domain* consists of one or more Lotus Notes servers where all share the same *Public Address Book (PAB)*. Therefore, each server knows the home mail server for all users in the same domain.

> The Notes *domain name* should not be confused with the *organizational unit*. When installing a new Lotus Notes server, the default for domain name is identical to the organizational unit name; however, they do not *have* to be the same. In Notes terminology, the domain name is specified by a preceding at sign (@), while the organizational unit is preceded by a forward slash (/). For example, `WBL/ITSO@itsc respop` specifies a user `WBL` in the organizational unit `ITSO` on Notes domain `itsc respop`.

Resolve a Host Name to an IP Address

To send mail, the recipient's SMTP domain (the host name) must be resolved to a numeric *IP address*. This can be done in two ways:

- By using a domain name server, the preferred method,
    - or -
- By means of host tables on each system.

TCP/IP applications normally identify hosts by their names rather than by their Internet addresses. The IP protocol, on the other hand, requires the host's Internet address. The conversion from host name to Internet address can be performed by using the host table on the local system to map the

host name to an IP address, or by defining this mapping on a remote name server (also known as a *domain name server*).

In large networks with large numbers of TCP/IP host names, it is more convenient to have name servers than to have a complete copy of the host table on every host in the network. Using name servers means that the host name to IP address mapping need only be configured on the name server. When host names are added, changed, or removed, only the mapping on the name server has to be updated.

For SMTP mail routing, using a domain name server is the better solution. However, OS/400 does not have the support to allow it to be a name server. Therefore, if you do not have a domain name server in your network (for example, such as in the scenario shown in Figure 2 on page 10), you have to use the *host table*.

With or without a domain name server, it is **absolutely necessary to configure your network to allow correct name resolution**. The following section provides a checklist to verify and (if necessary) correct your network configuration.

TCP/IP Configuration for Mail Integration

This section provides the step-by-step instructions to allow you to do the TCP/IP configuration of your AS/400 system and the Integrated PC Server that is required to support mail integration. There are many ways of configuring TCP/IP to connect to the Integrated PC Server. The following procedure is designed to simplify the TCP/IP configuration required for mail integration. The target of this procedure can be summarized as setting up the TCP/IP configuration of the Integrated PC Server so that the Internal LAN is used when sending mail to and from the Integrated PC Server. Other TCP/IP related functions on the Integrated PC Server such as "Web serving" may require further TCP/IP configuration.

It is important to understand that for the purposes of configuring TCP/IP for mail integration, the OS/400 and the Integrated PC Server must be seen as *two different IP hosts* even though they both reside within the same AS/400 system unit.

As shown in Figure 3 on page 13, we are dealing with two IP host names: one for OS/400 and one for the Integrated PC Server. Each of them has an Internet address assigned to the external and the internal port; therefore, we

AS/400 System Unit

OS/400

SYSASV32.OURLAN.ACME.COM

10.1.23.177   192.168.3.1

Addresses not known outside the AS/400.

Internal LAN

192.168.3.2   **Integrated PC Server**   1 NTSSERV

3   4   5

NTSSERV.OURLAN.ACME.COM

2   10.1.23.270

Token-Ring LAN

Ethernet LAN

10.1.20.176

Domain Name Server

Figure 3. TCP/IP Configuration Parameters Relationship

have four[3] different Internet addresses, and depending on whether or not your TCP/IP configuration allows the usage of name servers, each of the two host names must be able to resolve correctly to either the external or the internal Internet address.

Note: Figure 3 shows a *domain name server* to illustrate the purpose of its address. Although the usage of a name server is recommended, it is not absolutely necessary.

---

[3] However, the external ports may or may <u>not</u> have an IP interface assigned for the following reasons:

- The Notes server may use only NetBIOS to connect to Notes workstations (unlikely, but possible).
- If the AS/400 system does not use any kind of TCP/IP communication (other than to control the NWS).

To verify your configuration, first gather the following information (the numbers used are from Figure 3):

.**1**. The name of your *network server description* (*NWSD) object. This should be the same as the name of the Notes server,[4] and is usually the same as the TCP/IP host name of the Integrated PC Server (.**4**.).

.**2**. Internet Address for the Integrated PC Server on an external port

.**3**. Internet Address for the Integrated PC Server on the internal port

.**4**. TCP/IP local host name for the Integrated PC Server This name should be the same as the *NWSD name as well as the name of the Notes server.

.**5**. TCP/IP local domain name for the Integrated PC Server

.**6**. Fully qualified host name for the Integrated PC Server

Table 1 provides example values along with free space to record the values of your configuration, and Figure 3 on page 13 shows how all of the parameters relate to each other.

		Table 1. Summary of Parameters to Verify the TCP/IP Configuration		
Ref	**Parameter Name**	**Our Example**	**Value in Your Configuration**
.**1**.	*NWSD Name	`NTSSERV`	
.**2**.	External IP Addr.	`10.1.23.270`	
.**3**.	Internal IP Addr.	`192.168.3.2`	

.**4**.	Host Name	`*NWSD`
		in our case this represents:
		`NTSSERV`	

.**5**.	Domain Name	`*SYS`
		in our case this represents:
		`OURLAN.ACME.COM`	

.**6**.	Fully qualified name for the Integrated PC Server (Values from .**4**. and .**5**.)	`NTSSERV.OURLAN.ACME.COM`	

---

[4] The Name of the Notes server is defined when you run the *Configure Notes Server (CFGNTSSVR)* command.

The last parameter (*fully qualified host name*) can be obtained easily by concatenating the values for **4** and **5** with a dot (.) as delimiter to get the value for **6**.

```
                    Display Network Server Desc                          Page    1
5763SS1 V3R2M0  960517                              SYSASV32  12/17/96  22:20:20
 Network server description . . . . :   NWSD       NTSSERV  1
 Option . . . . . . . . . . . . . . :   OPTION     *ALL
 Resource name  . . . . . . . . . . :   RSRCNAME   CC03
 Network server type  . . . . . . . :   TYPE       *BASE
                                   :
                    (some less important lines removed here)
                                   :
 Text . . . . . . . . . . . . . . . :   TEXT       E-mail redbook Notes R411 server.
 Ports  . . . . . . . . . . . . . . :   PORTS
 -----Attached lines------
 Port          Attached
 number        line
 1             NTSSERV01
 *INTERNAL     NTSSERV00
 Storage space links  . . . . . . . :
 --------------------------Storage space links--------------------------
 Network
 server
 storage        Drive    Text
 NTSSERV00      K        E-mail redbook (4703) LN r411 storage
 TCP/IP port configuration  . . . . :
 --------------------TCP/IP port configuration--------------------
                                                       Maximum
                Internet            Subnet           transmission
 Port           address             mask                unit
      1         10.1.23.270  2       255.255.255.0        15400
 *INTERNAL      192.168.3.2  3       255.255.255.0        15400
 TCP/IP route configuration . . . . :
 --------------TCP/IP route configuration---------------
 Route            Subnet              Next
 destination      mask                hop
 *DFTROUTE        *NONE               10.1.23.139
                    Display Network Server Desc                          Page    2
5763SS1 V3R2M0  960517                              SYSASV32  12/17/96  22:20:20
 Network server description . . . . :   NWSD       NTSSERV
 Option . . . . . . . . . . . . . . :   OPTION     *ALL
 TCP/IP local host name . . . . . . :   TCPHOSTNAM *NWSD  4
 TCP/IP local domain name . . . . . :   TCPDMNNAME *SYS   5
 TCP/IP name server system  . . . . :   TCPNAMSVR  *SYS
              * * * * *  E N D   O F   L I S T I N G  * * * * *
```

Figure 4. Display Network Server Description

How to Find the Configuration Values?
Use the reference symbols (for example, **1**) to relate to the same parameters in the following tables and descriptions, and write down the values of your own configuration in the column at the right of the example we used in this chapter.

Remember, a prerequisite for the procedures described here is that Lotus Notes is already installed on the Integrated PC Server and has been started successfully at least once.

TCP/IP Configuration for the Integrated PC Server: The starting point for gathering the configuration data for the Integrated PC Server is the *network server description* (*NWSD) object stored on the AS/400 system. Enter WRKNWSD on any OS/400 command line.

The Work with Network Server Descriptions (WRKNWSD) command allows you to select the correct network server description object. Option 5 (=Display) or Option 6 (=Print) shows you all the configuration values for the Integrated PC Server you need.

Figure 4 on page 15 shows the printed result of Option 6 (=Print). Using Option 5 (=Display) provides you with the same information.

Note: If you use Option 5 (=Display), press **Enter** to advance to the different subsections of the displays.

Use the reference symbols .**1**. to .**5**. to find out where to record the values of your configuration in Table 1 on page 14.

Check the value you recorded for .**4**. (TCP/IP local host name for the Integrated PC Server); if that was `*NWSD`, the name is the same as the *NWSD name (.**1**.). Use this value for .**4**. in Table 1 on page 14.

Check the value you recorded for .**5**. (TCP/IP local domain name for the Integrated PC Server); if that was `*SYS`, the name is the same as the AS/400 system's local domain name. (You can locate this value using CFGTCP, option 12.) Use this value for .**5**. in Table 1 on page 14.

TCP/IP Configuration of Name Server "Searched first" Attribute
Enter the following command on any AS/400 command line:

`CFGTCP`

From the *Configure TCP/IP (CFGTCP)* main menu, select Option 13 (Change remote name server) and press the Enter key. A display similar to the one in Figure 5 on page 17 is shown.

These fields can:

- Be all empty; this means you do not have (or do not use) any name server in your network,
  - or -
- Contain one, two, or three Internet addresses.

If all values for the Server address are empty, this means either no *domain name server* exists in your network, or it was not defined to your AS/400

```
                        Change Remote Name Server
                                              System:   SYSASV32
     Type choices, press Enter.

        Server address  . . . .   10.1.20.176___        Internet address
                                  10.1.20.175___
                                  _____
        Server port . . . . . .   53               1-65535
        Server protocol . . . .   *UDP             *UDP, *TCP
        Retries . . . . . . . .   3_               1-99
        Retry interval  . . . .   2_               1-99 (seconds)
        Searched first  . . . .   *LOCAL_          *REMOTE, *LOCAL

                                                             Bottom
     F3=Exit   F12=Cancel
```

Figure 5. Change Remote Name Server

configuration. If you plan to send and receive SMTP mail through the
intranet or Internet, we recommend that you use a *domain name server*.

Important: In any case, the *Searched first* value should be set to ***LOCAL** as
shown in Figure 5 and press Enter on this display.

If OS/400 Has Access to Remote Name Server: If there was a value for
Server address (IP address of the name server for OS/400), it indicates that
OS/400 does have access to a *domain name server*. In this case, you need
to check with the administrator of your TCP/IP network to make sure that the
fully qualified host name of the Integrated PC Server (.◢6◣.) is recorded with
its correct *External Internet Address* (.◢2◣.). In our example, this is:

> 10.1.23.270 = NTSSERV.OURLAN.ACME.COM

To make sure the name server has actually defined a correct entry for your
Integrated PC Server, from any system in your network (PC, AS/400 system,
or others) that does <u>not</u> have an entry for the Integrated PC Server in its
host table, issue the command:

> PING NTSSERV.OURLAN.ACME.COM

If you receive a response, the name server is correctly set up to locate the
Integrated PC Server by its TCP/IP host name.[5]

---

[5] If a domain name server is available in your network, you also should check with the administrator of your
TCP/IP network to make sure that the fully qualified host name of OS/400 is recorded with its correct *External
Internet Address*. In our example, this is:

10.1.23.177 = SYSASV32.OURLAN.ACME.COM

Chapter 2. Preparing For and Installing the Mail Integration **17**

Configuring Host Table Entry on the AS/400 System: You need to add an entry to the AS/400 host table to allow the AS/400 system to communicate with the Integrated PC Server. This can be done by using either the *Add TCP/IP Host Table Entry (ADDTCPHTE)* command or Option 10 (Work with TCP/IP host table entries) of the *Configure TCP/IP (CFGTCP)* menu. To do the latter:

1. Enter the following command on any AS/400 command line:

   CFGTCP

2. Enter 10 on the command line of the Configure TCP/IP (CFGTCP) menu. The *Work with TCP/IP Host Table Entries* panel as in Figure 6 is shown.

```
                     Work with TCP/IP Host Table Entries
                                                      System:   SYSASV32
 Type options, press Enter.
   1=Add   2=Change   4=Remove   5=Display   7=Rename

       Internet           Host
 Opt   Address            Name
   _   _____
   _   192.168.3.2  3     NTSSERV.OURLAN.ACME.COM  6
                          NTSSERV  4
   _   127.0.0.1          LOOPBACK
                          LOCALHOST

                                                             Bottom
  F3=Exit   F5=Refresh   F6=Print list   F12=Cancel   F17=Position to
```

Figure 6. Work with TCP/IP Host Table Entries

Verify the values for .3., .4., and .6. in Figure 6 and make sure they *exactly* match the values you recorded earlier.

3. If the host table entry is not present, enter Option 1 (Add) in the option field of the first line, enter the value for .3. in the *Internet Address* field, and press Enter. The Add TCP/IP Host Table Entry (ADDTCPHTE) display in Figure 7 on page 19 is shown.
   Enter the values for .6. and .4. (.4. is not shown on the display) as *host names*.

   If you find the correct *Internet Address* (.3.) and a misspelled host name, you must change the host name. Enter Option 2 (Change) in the option field to left of the *Internet Address* .3. and press Enter. Change the host name accordingly on the Change TCP/IP Host Table Entry (CHGTCPHTE) display.

   If you find the correct *host name* (.6.) and a misspelled *Internet Address*, you have to delete the entry and add a new one. Enter Option 4 (Delete) in the option field to the left of the wrong *Internet Address* and press Enter. Enter Option 1 (Add) in the option field of the first line, enter the value for .3. in the *Internet Address* field, and press Enter.

```
                Add TCP/IP Host Table Entry (ADDTCPHTE)


  Type choices, press Enter.

  Internet address . . . . . . . . >  '192.168.3.2' .3
  Host names:                      +
    Name . . . . . . . . . . . .    NTSSERV.OURLAN.ACME.COM .6
  _____
  _____
  _____
                  + for more values _
  Text 'description' . . . . . . .  _____
  _____

                                                              Bottom
  F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
  F24=More keys
```

Figure 7. Work with TCP/IP Host Table Entries

The Add TCP/IP Host Table Entry (ADDTCPHTE) display in Figure 7 on
page 19 is shown.

Configuring TCP/IP Route on the AS/400 System: You also need to add an
entry to the AS/400 TCP/IP Route table allow the AS/400 system to
communicate with the Integrated PC Server. This can be done by using
either the ADDTCPRTE command or Option 2 (Work with TCP/IP routes) of
the Configure TCP/IP (CFGTCP) menu. To do the latter:

1. Enter the following command on any AS/400 command line:

   CFGTCP

2. Enter 2 on the command line of the Configure TCP/IP (CFGTCP) menu.
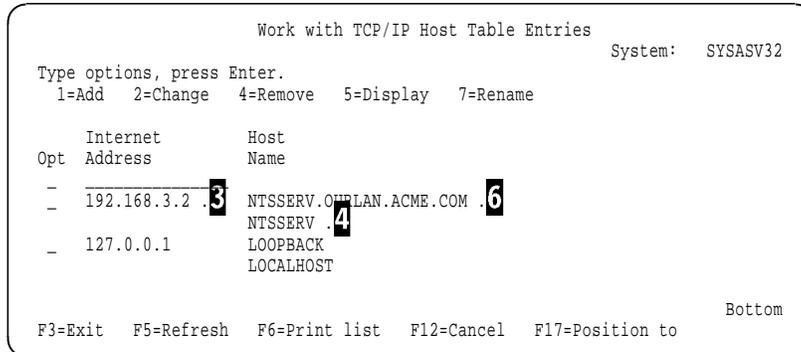   The *Work with TCP/IP Routes* display in Figure 8 is shown.

```
                WORK WITH TCP/IP ROUTES
                                            System:   DUBLIN
  Type options, press Enter.
    1=Add   2=Change   4=Remove   5=Display

                                    Type
        ROUTE            SUBNET      OF            NEXT
  OPT   DESTINATION      MASK        SERVICE       HOP
  _     _____    _____  _____      _____
  _     *DFTROUTE        *NONE       *NORMAL       10.1.27.93
  _     192.168.3.0      255.255.255.0  *NORMAL    192.168.3.2
                                                      .3

                                                         Bottom
  F3=Exit   F5=Refresh   F6=Print list   F12=Cancel   F17=Top   F18=Bottom
```

Figure 8. Work with TCP/IP Routes

Add a TCP/IP route for the *NWSD using the *internal* IP address (.3). The
Route destination added has to be the same as the *NWSD's internal IP

| address but with a "0" (zero) replacing the digits following the right most
| period (for example: If the internal IP address .**3**. is 192.168.3.2, the Route
| destination is 192.168.3.0). Subnet mask is always 255.255.255.0. Next hop
| should be the *NWSD's internal IP address .**3**. (for example, 192.168.3.2).
| Everything else should default.

| What this does is route all traffic for IP addresses starting with 192.168.3 to
| the Integrated PC Server. Since all of the internal IP addresses are in the
| range of 192.168, any route outside of the AS/400 system cannot route traffic
| to those addresses.[6]

Verify If Latest PTFs Are Loaded and Applied

As mentioned earlier, applying PTF SF37478 (SF35096 or SF37489 for V3R7)
| and their prerequisites ensures that you have the set of changes necessary
| for Notes Mail integration. You should always check the Lotus Notes
| SMTP/MIME MTA Mail Integration "Web" page at:

| `http://www.as400.ibm.com/products/software/notes/homepage.htm`

| to verify that you have the latest PTFs available.

You can verify if all PTFs are installed by using the Display Temporary Fix
(DSPPTF) command. For V3R2, on any AS/400 command line, enter the
following command:

```
DSPPTF LICPGM(5763SS1)
```

or for V3R7:

```
DSPPTF LICPGM(5716SS1)
```

Page forward until you see the required PTF.

Special PTF Instructions for PTFs in Pending Status (PND)

Some of the PTFs necessary to implement the mail integration (including
SF37478, SF35096, and SF37489) need some special actions to become
active. To activate the changes, you must first **vary off all network server
descriptions**. As you vary on the first network server description for each
national language installed, the changes are activated for that network
server description.

| [6] A TCP/IP host table entry and TCP/IP route must be added for each Notes server of your AS/400 system. Each
| Integrated PC Server must have a unique destination route. (Again, this is ensured in the way INSNTSSVR
| assigns the internal IP addresses.)

After applying or removing such a PTF, the status of the PTF on the *Display PTF Status* display has the value `PND` at the end. This indicates that the PTF has required actions that may or may not have been met. To determine if actions have been met, select Option 5 (Display details) and Option 1 (General information). The bottom of the General Information display has the field *Action pending*, which indicates if actions are still pending to make the PTF fully active on the system. Once this value is updated to `NO`, the PTF status on the Display PTF Status display is updated to remove the `PND` value. This value is also updated when an IPL of OS/400 is performed.

Also, after applying the PTF listed previously, you have to ensure that you start and end the Notes server at least once before installing the SMTP MTA.

Avoiding Object Locks on the Distribution Directory

Before applying SF37478 for V3R2M0 or SF35096 (or SF37489) for V3R7M0 and all of their prerequisite PTFs, verify that the `QAOKL9XA` and `QAOKLSRA` files are not locked by another process. Enter the following AS/400 commands:

```
WRKOBJLCK OBJ(QUSRSYS/QAOKL9XA) OBJTYPE(*FILE)
WRKOBJLCK OBJ(QUSRSYS/QAOKLSRA) OBJTYPE(*FILE)
```

If either of these two files are locked when applying this PTF, user-defined fields[7] that are required for Mail Integration are not added to the system.

If either of these files are locked, end the job that has locked these files. A common cause of a lock on these files is having a second session active that is using the WRKDIRE command.

However, if you already applied all necessary PTFs, you should also check whether the user-defined fields required for mail integration are added to the system distribution directory. These fields are:

QYNMALWSHD

> This field can be set to `NO` to indicate that this particular directory entry should not be shadowed to any Notes address books.

QYNMMAILTY

> This field stores the mail type used by this Notes user.

QYNMNTSDMN

> This field stores the Notes domain of this Notes user.

---

[7] Note that the term *user-defined* might be misleading. These fields are not supposed to be defined by the user; they are actually defined when the product (or in this particular case, the PTF) is installed. The *Lotus Notes Integration with OS/400* uses this facility to define new system distribution directory fields that are not present on an AS/400 system where this product is not installed.

You can check that these user-defined fields have been added by prompting the Change System Directory Attributes (CHGSYSDIRA) command. That is, type on any command line:

```
CHGSYSDIRA
```

Press **F4** (Prompt) and press the **PgDn** (Page Down) key.

If these fields do not exist after the Mail Integration PTFs are installed, you can manually add them using the Change System Directory Attributes (CHGSYSDIRA) command.

```
CHGSYSDIRA USRDFNFLD((QYNMALWSHD QNOTES *ADD *DATA 5)
                     (QYNMFADDR  QNOTES *ADD *DATA 512)
                     (QYNMHOME   QNOTES *ADD *DATA 079)
                     (QYNMMAILTY QNOTES *ADD *MSFSRVLVL 010)
                     (QYNMNTSDMN QNOTES *ADD *DATA 032)
                     (QYNMORGU   QNOTES *ADD *DATA 032)
                     (QYNMSHORT  QNOTES *ADD *DATA 010)
                     (QYNMSVR    QNOTES *ADD *DATA 008))
```

Note: Some or all of the preceding user-defined fields may be missing.

Installing the SMTP/MIME MTA

Assuming you already verified the TCP/IP configuration as described in Chapter 2, "Preparing For and Installing the Mail Integration" on page 9 and you applied all of the necessary PTFs, you can install the SMTP/MIME MTA on the Notes server on the Integrated PC Server.

The following sections describe:

- Considerations for Multiple MTAs installed in the same Lotus Notes Domain ("Multiple MTAs in the Same Notes Domain")
- How to prepare the SMTP/MIME MTA software so you can install it ("Preparing MTA Software for Installation" on page 23)
- Doing the software installation on the Integrated PC Server ("Installing SMTP MTA on the Integrated PC Server" on page 25)
- How to verify the installation was successful ("Verifying Successful Configuration" on page 33)
- Adjustments you might have to make to the system directory ("Adjust System Directory after SMTP MTA is Installed" on page 34)

Multiple MTAs in the Same Notes Domain

As part of installing the SMTP MTA, the first MTA you install on an Integrated PC Server is automatically configured in the Address Book for the Notes domain. (For details on what happens during the configuration, see

"What Happens When SMTP MTA Is Automatically Configured" on page 64.)
However, if you install more than one SMTP MTA on Integrated PC Servers
in the same Notes domain,[8] the Notes administrator must manually
configure these additional MTAs for the Notes domain.

Note: In such a case, it may also be necessary to reconfigure the first
SMTP MTA. Therefore, be careful when installing more than one SMTP
MTA in a Notes domain; make sure you understand completely the
considerations in the *SMTP/MIME System Administration Guide*, (SMTPAG.NSF)
as well as the descriptions given in "What Happens When SMTP MTA Is
Automatically Configured" on page 64.

Preparing MTA Software for Installation

If you have the Domino 4.51 version, you should have a CD-ROM disk that
has the 1.06 OS/2 version of the SMTP/MIME MTA. If you do not have this
CD-ROM or the SMTP MTA software is not on the CD-ROM disk (for
example, Domino versions prior to 4.51), see Appendix A, "Downloading the
SMTP/MIME MTA" on page 75 for instructions on how to download and use
this software from the Lotus Web site.

Note: At the time of publication for this book, IBM is supporting only
version 1.06 (v1.06) of the Lotus SMTP/MIME MTA for use on an Integrated
PC Server in an AS/400 system. Because the Integrated PC Server uses the
OS/2 operating system, ensure that you use the OS/2 version of the
SMTP/MIME MTA.

If both of the following are true:

- Your AS/400 system has a CD-ROM drive.
  and
- You have the SMTP MTA software on a CD-ROM disk.

Skip the next section and go to "Installing SMTP MTA on the Integrated PC
Server" on page 25 since the MTA can be installed directly from its
CD-ROM using the AS/400 CD-ROM drive.

Copying SMTP MTA Files to AS/400 Folder or IFS Directory

If the SMTP MTA software is on a CD-ROM disk but your AS/400 system
does not have a CD-ROM drive,[9] you must copy the software to an AS/400
folder from a workstation that has a CD-ROM drive or copy the software
from where you downloaded the MTA.

---

[8] Remember, *same Notes domain* means all servers use the same PAB. This means that the recipient must be in
the PAB. See also "By the way, what is a domain?" on page 11.

[9] Or you do not have a CD-ROM disk that has the 1.06 version of the OS/2 SMTP MTA and you had to download
from the Lotus Web page. (See also Appendix A, "Downloading the SMTP/MIME MTA" on page 75)

You can copy the SMTP MTA files to a folder on your AS/400 system by using either of the following methods:

- TCP/IP File Transfer Protocol (FTP) support
  or
- Client Access/400 shared folder support

Using FTP or one of the optimized clients for Client Access/400, you can copy the files to any directory within the OS/400 *Integrated File System* (IFS).

```
C:\WINDOWS>ftp sysasv32                    ; Start FTP and connect to AS/400
User (sysasv32.ourlan.acme.com:(none)):  ;
myas4id                                    ; Enter you AS/400 user ID
331 Enter password.                        ;
Password:                                  ; Enter your password
ftp> binary                                ; Switch to binary
ftp> prompt                                ; Switch of prompting off
ftp> quote cwd /                           ; Set directory on AS/400 to root
ftp> quote mkd mta                         ; Create new directory mta in IFS
ftp> quote cwd mta                         ; Set directory on AS/400 to mta
ftp> lc d:\os2                             ; Set directory on PC to d:\os2
ftp> mput *.*                              ; Send all files in directory
```

The semicolon (;) in the example above and the text at the right of it is not part of the commands and only added here to explain the function each command performs

Note: Depending on the type of operating system or TCP/IP support used, the commands may vary slightly. However, the subcommands at the right of the word QUOTE are actually commands supported by the FTP server in OS/400 and not dependent on the type of FTP client you are using.

Using a slash (/) in the line ftp> quote cwd/ (that is, when you specify the first file name or path name in this FTP session) also makes sure that the name format 1 is used in this session. This is necessary to specify file and directory within OS/400 IFS. Also see the paragraph *FTP Server NAMEFMT* in Chapter 10 of *OS/400 TCP/IP Configuration and Reference*, SC41-3420-04.

This example assumes you copy the MTA from the CD-ROM drive of you PC workstation and the drive is accessible as drive G:. The correct subdirectory on the CD-ROM is OS2.

If you downloaded the MTA from the Web as explained in Appendix A, "Downloading the SMTP/MIME MTA" on page 75, you have to replace d:\os2 with the drive and subdirectory where you downloaded and extracted the files to.

Using other versions of Client Access/400, you must copy the files to an AS/400 folder (that is, to a location in the /QDLS directory). Here is an example of a path in the /QDLS directory:

/QDLS/QNOTES/OS2/SMTPMTA

Installing SMTP MTA on the Integrated PC Server

After you have acquired the SMTP MTA software and have either the CD-ROM or have copied it to the AS/400 system, you are ready to install the SMTP MTA.

Use a combination of the Install Notes Server (INSNTSSVR) command and the Configure Notes Server (CFGNTSSVR) command. You already used those commands earlier to install the Notes server. However, some of the options that you specify are different. To ensure that you have all of the information you need to successfully complete the installation, fill out the worksheet shown in Table 2 on page 27. Before doing that, you need to understand what the *Notes source directory* means when installing the MTA with the new[10] AS/400 based installation process.

What is Your Notes Source Directory

The basic idea of the new AS/400 based installation process is that the Notes software distributed by Lotus on CD-ROM or through the Internet, is first copied to a shared network storage space that is linked to all *network server descriptions* (*NWSD) as drive G:.

The Install Notes Server (INSNTSSVR) command is used to copy the software to the G: drive. The media (CD-ROM or IFS directory) where the software is copied *from* is called the *Notes Source Directory*.

If the software is on a CD-ROM disk in the AS/400 CD-ROM drive, the path consists of /QOPT followed by the volume ID of the CD-ROM disk and the directory path to the MTA files on the disk. Here is an example:

/qopt/SMTPMTA_106/OS2TPMTA

You can find the volume ID of the CD-ROM disk in the AS/400 CD-ROM drive by using the Work with Object Links (WRKLNK) command. Enter the following command on any OS/400 command line:

WRKLNK QOPT

Now perform the following steps:

---

[10] Versus the original installation process available before May 1997, which is based on the usage of an *administration PC* to perform the installation.

1. Enter a 5 beside the name `QOPT` and you see the volume ID (`SMTPMTA_106`) of the CD-ROM mounted in the AS/400 system's CD-ROM drive.

2. Entering a 5 beside the name of the volume ID shows you the highest level of directories on the CD-ROM.

3. Enter a 5 next to the name `OS2`.

   As shown in Figure 9, you see all files within the directory to be copied.

The field *Directory* on the top left of the display now shows the full path name to be used as the Notes source directory in the Install Notes Server (INSNTSSVR) command.

Tip: Use *Copy and Paste* to copy the path name from this field before you perform the Install Notes Server (INSNTSSVR) command (described in Step 2 on page 28) to avoid typing errors for the path name.

If you downloaded the MTA software from the Internet or you need to use a CD-ROM drive on a PC workstation to read the CD-ROM, you must copy the files to an AS/400 folder (that is, to a location in the `/QDLS` directory) or any other directory in the IFS as described in "Copying SMTP MTA Files to AS/400 Folder or IFS Directory" on page 23. You can use Client Access or the TCP/IP File Transfer Protocol (FTP) to copy the files to a /QDLS directory. Here is an example of a path in the /QDLS directory:

`/QDLS/QNOTES/OS2/SMTPMTA`

```
                      Work with Object Links

 Directory . . . . :   /qopt/SMTPMTA_106/OS2

 Type options, press Enter.
   3=Copy   4=Remove   5=Next level   7=Rename   8=Display attributes
  11=Change current directory ...

 Opt   Object link         Type     Attribute    Text
 __    CSO60503.DL_        DSTMF
 __    EPFIDLDS.EXE        DSTMF
 __    EPFIEXTS.DLL        DSTMF
 __    EPFIHOOK.DLL        DSTMF
 __    EPFIHPLB.HLP        DSTMF
 __    EPFIICIS.ICO        DSTMF
 __    EPFIMSG.MSG         DSTMF
 __    EPFINSTS.EXE        DSTMF
 __    EPFIPII.DLL         DSTMF
                                                              More...
 Parameters or command
 ===> _____
 F3=Exit   F4=Prompt   F5=Refresh   F9=Retrieve   F12=Cancel   F17=Position to
 F22=Display entire field          F23=More options
```
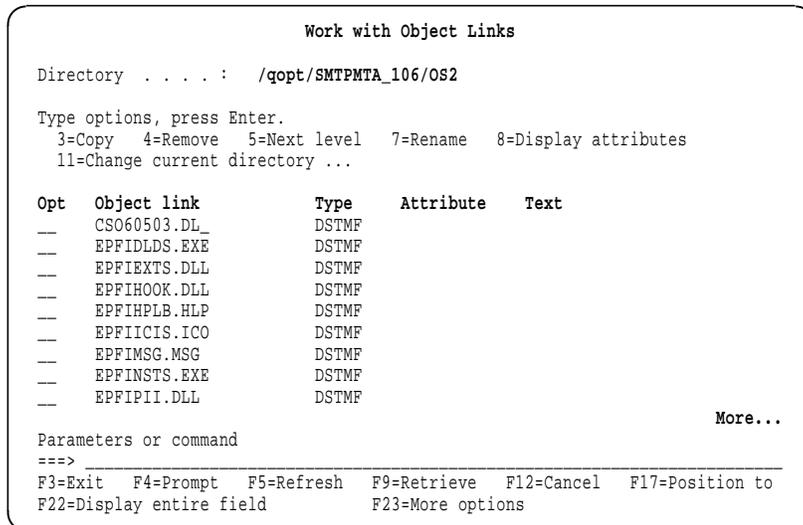
Figure 9. Work with Object Links to Show CD-ROM Contents

You can use the Work with Object Links (WRKLNK) command to display path information about AS/400 directories. Enter WRKLNK to display the highest level directory, such as QDLS or QOPT. Then enter a 5 beside one of those directories to display the next lower level of directories. You can enter a 5 again as many times as you need to display successive lower levels.

Using FTP or one of the optimized clients for Client Access/400, you can also create a new directory in the root of the IFS (see the example on using FTP in "Copying SMTP MTA Files to AS/400 Folder or IFS Directory" on page 23). Since the path consists only of a single name, this is easier to specify.

For an example of specifying the path, see .**2**. in Figure 11 on page 29.

Table 2. Worksheet for Setting Up SMTP MTA on a Notes Server

Field	Description	Write Value Here
Network server description	Specifies the name of the network server that is being used by the Notes server. The Notes server usually has the same name. For an example, see .**1** in Figure 14 on page 32.	
Notes source directory	Specifies the directory path to the OS/2 version of the MTA software. See "What is Your Notes Source Directory" on page 25 how t determine the name of it. For an example of specifying the path, see .**2** in Figure 11 on page 29.	
Server name	Specifies the name of the Notes server on which you want to install SMTP MTA. If the Notes server has the same name as the network server, you can use the default value *NWSD. For an example, see .**5** in Figure 15 on page 32.	

Now follow the steps in the following checklist to copy and install the MTA software to the AS/400 Integrated PC Server:

Note: You must be signed on the AS/400 system with *ALLOBJ, *IOSYSCFG, and *JOBCTL special authorities.

__ 1. You have to copy the MTA software to the "G:" drive and then install it from there. If you have any existing Notes servers that are running on network servers in your AS/400 system, you must end the Notes servers and vary off the network servers. The G: drive is shared by all active network servers that contain Notes servers. Therefore, you cannot copy the MTA software to the drive while it is being used by one of these network servers.

Note: The Domino server where the MTA is being installed must be started at least one time before the MTA is installed.

You can use options on the Lotus Notes Administration menu to end a Notes server and vary off its network server. Enter GO NOTES to display this menu. In our example company, we have two Notes servers: Notes server SERVER1 running on network server SERVER1 and Notes server SERVER2 running on network server SERVER2. Therefore, on the Lotus Notes Administration menu, we do the following steps:

___ a. Use option 4 (End Notes server application) to end the Notes server named SERVER1.

___ b. Use option 2 (Vary off (End) a Notes network server) to vary off the network server named SERVER1.

___ c. Use option 4 again to end the Notes server named SERVER2.

___ d. Use option 2 again to vary off the network server named SERVER2.

___ 2. Do either of the following steps:

- Type INSNTSSVR on any OS/400 command line and press the F4 (Prompt) key.
  - or -
- Enter GO NOTESCFG on any OS/400 command line to display the Install/Configure Tasks for Notes menu. Then select the Install Notes server option if the option is available on the menu. Depending on the version of OS/400 that you are using, this option may not be on the menu.

A display appears that prompts you for the values of the *Install Notes Server (INSNTSSVR)* command. The first part of the display is shown in Figure 10.
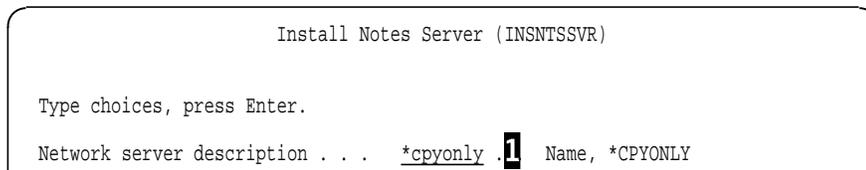
```
                    Install Notes Server (INSNTSSVR)

 Type choices, press Enter.

 Network server description . . .    *cpyonly .1   Name, *CPYONLY
```

Figure 10. Install Notes Server Prompt — Copying Only

___ 3. Specify *CPYONLY in the Network server description field .**1**.. Press Enter.

The display expands to request additional details as shown in Figure 11 on page 29.

```
                  Install Notes Server (INSNTSSVR)

 Type choices, press Enter.

 Network server description . . . > *CPYONLY      Name, *CPYONLY
 Notes source directory . . . . . /qopt/SMTPMTA_106/OS2_____
 _____ .2
 Notes language . . . . . . . . . *NAMERICAN_____ .3
 Copy to location . . . . . . . . 1 .4            1, 2
 Replace Notes source . . . . . . *YES .5         *YES, *NO
```

Figure 11. Install Notes Server Prompt — Copying MTA Software from CD-ROM

Figure 12 shows what you need to specify if you copied the contents
of the CD-ROM to the shared folder QNOTES (actually the subfolder
OS2/SMTPMTA within QNOTES).

```
                  Install Notes Server (INSNTSSVR)

 Type choices, press Enter.

 Network server description . . . > *CPYONLY      Name, *CPYONLY
 Notes source directory . . . . . /QDLS/QNOTES/OS2/SMTPMTA_____
 _____ .2
 Notes language . . . . . . . . . *NAMERICAN_____ .3
 Copy to location . . . . . . . . 1 .4            1, 2
 Replace Notes source . . . . . . *YES .5         *YES, *NO
```

Figure 12. Install Notes Server Prompt — Copying MTA Software from CD-ROM

Figure 13 shows what you need to specify if you copied the contents
of the CD-ROM to directory MTAS in the root of the IFS.

```
                  Install Notes Server (INSNTSSVR)

 Type choices, press Enter.

 Network server description . . . > *CPYONLY      Name, *CPYONLY
 Notes source directory . . . . . /MTA_____
 _____ .2
 Notes language . . . . . . . . . *NAMERICAN_____ .3
 Copy to location . . . . . . . . 1 .4            1, 2
 Replace Notes source . . . . . . *YES .5         *YES, *NO
```

Figure 13. Install Notes Server Prompt — Copying MTA Software from IFS Directory

__ 4. Use the worksheet (Table 2 on page 27) and the following field
      descriptions to complete the display. Press Enter.

      .2. **Notes source directory (NTSSRCDIR):** Specify the directory path
         to the Notes software that you want to copy. Use the path from the

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worksheet instead of the example path (/qopt/SMTPMTA_106/OS2) that is shown here.

.**3**. **Notes language (NTSLNG):** Specify the language (and encryption type) that is used to describe the contents of the *Copy to* location (see .**4**.). The default value is *NAMERICAN (North American English). Press the F4 (=Prompt) key to display a list of available languages and **make sure you enter the correct language type** according to your system.

.**4**. **Copy to location (CPYTOLOC):** Specify location 1 or 2 in the storage space (G: drive) on the AS/400 system. The Notes source is copied to this location. You can press the F4 (=Prompt) key to determine what, if anything, is in the location. *EMPTY means that there is nothing in the location. In this example, we determine that both locations contain software, but location 1 contains an earlier version of Notes server software. Therefore, we specify location 1.

.**5**. **Replace Notes source (REPLACE):** Specify *YES if you want the source to replace any source that already exists in the copy location. Use *NO if you want the source to be copied only if the copy location is empty. In this example, we specify *YES because we want to replace the contents of location 1.

To set up SMTP MTA on a Notes server:

You must be signed on the AS/400 system with at least *ALLOBJ or *SECADM special authority.

___ 1. Start (vary on) the network server for the Notes server on which you want to install the SMTP MTA. You can start the network server from the Lotus Notes Administration menu:

    ___ a. Enter GO NOTES to display the menu.

    ___ b. Use option 1 to start the network server.

___ 2. Ensure that the Notes server is started and then ended at least once after it is installed. You can also start and end the Notes server from the Lotus Notes Administration menu:

    ___ a. Use option 3 to start the Notes server.

    ___ b. Use option 4 to end the Notes server. The Notes server cannot be active when you install the SMTP MTA.

___ 3. Ensure that the internal TCP/IP interface is active. This interface is added when you use the INSNTSSVR command to set up the Integrated PC Server and AS/400 system. (See footnote on page 69 on how to determine the correct internal IP address.). To determine

if the interface is active, enter `NETSTAT` on any OS/400 command line and select option 1.

__ 4. Make sure you wait until the integration code running on the IPCS is up and running. There are three ways to check for that:

- If you specified a message queue when you created the *NWSD (using the INSNTSSVR command), you can just display that message queue:

  `DSPMSG NTSSERV`

  (assuming the name of the message queue is `NTSSERV`) and wait until you see message NTS1026:

  `YNASFRTR process started successfully on network server NTSSERV.`

  - or -
- If you did not create a message queue, watch for message NTS1026 in the monitor job's job log:
  a. Enter the following command:

     `WRKJOB JOB(NTSSERV) OPTION(*JOBLOG)`

  b. Select the *active* job if more than one is shown.
  c. Press F10 (=Display detailed messages).
  - or -
- Enter the following command:

  `sbmnwscmd 'PSTAT /C' NTSSERV SVRTYPE(*BASE)`

  Search the second level messages in your job log for the line containing:

  `F:\FSNOTES\ADMIN\YNASFRTR.EXE`

__ 5. Do either of the following steps:

- Type `CFGNTSSVR` on any OS/400 command line and press the F4 (=Prompt) key.
  - or -
- Enter `GO NOTESCFG` on any OS/400 command line to display the Install/Configure Tasks for Notes menu. Then select the Configure Notes server option if the option is available on the menu. Depending on the version of OS/400 that you are using, this option may not be on the menu.

A display appears that prompts you for the values of the *Configure Notes Server (CFGNTSSVR)* command. The first part of the display is shown in Figure 14 on page 32.

```
                     Configure Notes Server (CFGNTSSVR)

 Type choices, press Enter.

 Network server description . . .   server2_ .1    Name
 Option . . . . . . . . . . . .    *mta____ .2    *FIRST, *ADD, *UPGRADE, *MTA
```

Figure 14. Initial Configure Notes Server Display—Installing SMTP MTA

___ 6. Specify the following values:

- The name of the network server .1. that is used by the Notes server on which the SMTP MTA should be installed. Use the name from the worksheet (Table 2 on page 27) instead of the example name (NTSSERV) that is shown here.

- A configuration type .2. of *MTA.

When you press Enter, the display expands as shown in Figure 15.

```
                     Configure Notes Server (CFGNTSSVR)

 Type choices, press Enter.

 Network server description . . . > NTSSERV_       Name
 Option . . . . . . . . . . . . > *MTA            *FIRST, *ADD, *UPGRADE, *MTA
 Replace existing configuration    *NO_ .3        *NO, *YES
 Delete user database . . . . . .  *NO_ .4        *NO, *YES
 Server name . . . . . . . . . .   *NWSD_____
 _____ .5
 Copy from location . . . . . . .  1 .6           1, 2
```

Figure 15. Expanded Configure Notes Server Display—Installing SMTP MTA

___ 7. Use the worksheet (Table 2 on page 27) and the following field descriptions to complete the display. Press Enter.

.3. **Replace existing configuration (RPLCFG):** Ignore this field. It does not apply to the SMTP MTA software.

.4. **Delete user database (DLTUSRDB):** Ignore this field. It does not apply to the SMTP MTA software.

.5. **Server name (SERVER):** Specify the name of the Notes server on which to install the SMTP MTA. If the Notes server has the same name as the network server (NTSSERV in this example), use *NWSD. As needed, replace *NWSD with the name from the worksheet.

.6. **Copy from location (CPYFRMLOC):** Specify the location that contains the source for the SMTP MTA software. While the cursor is on this field, you can press the F4 (Prompt) key for information about

what each location contains. Choose the location that contains MTA.
In our example, we specify location 1.

When you press Enter, the MTA install begins. Depending on your
system, it might take from two up to 15 minutes to complete.

Verifying Successful Configuration

As part of installing the SMTP MTA software, the system configures one
MTA for the Notes domain (see "What Happens When SMTP MTA Is
Automatically Configured" on page 64). To determine if the SMTP MTA was
configured without error, check the YNMSFMTI.LOG file on the E: drive of
the Integrated PC Server that contains the newly installed SMTP MTA.

You can determine the contents of this file by entering the following
command from any OS/400 command line:

```
SBMNWSCMD CMD('TYPE E:YNMSFMTI.LOG') SERVER(NTSSERV)
          SVRTYPE(*BASE) CMDTYPE(*OS2)
```

Substitute the name of your network server for the name NTSSERV that is
used in this example.

The contents of the YNMSFMTI.LOG file is returned as messages to your job
log. The messages indicate either that the MTA was configured successfully
or that errors occurred. If errors occurred, the error messages indicate
what failed.

If the MTA that you installed is not the first MTA in the Notes domain, a
message in this log indicates that the subsequent MTA was not configured.
Note that the first MTA may have been installed on another Notes server
(not necessarily installed on an Integrated PC Server) in the same Notes
domain. The term "same Notes domain" means that both servers use
replicas of the same Public Address Book.

If you cannot find the YNMSFMTI.LOG file, the attempt to install the MTA
may have failed. Look for and display the contents of the following files:

- The file YNMSFINS.LOG. This file is created on the Integrated PC Server
  E: drive if an AS/400 error occurs in installing the SMTP MTA.

- The file SMTPERR.LOG. This file is created on the Integrated PC Server
  E: drive if a Notes-related error occurs while the SMTP MTA is being
  installed.

- The monitor job log

Another way to verify that the MTA was installed correctly is to start the
Notes server and mail integration function. Then look for an indication that

the MTA was started. For details, see "Description of the Lotus Notes SMTP MTA Components" on page 71.

If an error occurred and further problem analysis is needed, you can search for all log files by entering the following command:

```
sbmnwscmd 'DIR E:*.LOG /S /O-D' NTSSERV SVRTYPE(*BASE)
```

You see all log files in all subdirectories of the E: drive sorted by creation time in descending sequence (that is, the newest log file is shown on top for each directory).

Adjust System Directory after SMTP MTA is Installed

Two program tools are provided with the PTFs for mail support that can be started manually if needed:

QYNMUNTS

This program updates several AS/400 system distribution directory fields for <u>all</u> users who previously were added to Notes by the Add Notes User (ADDNTSUSR) command. If you have not previously added any Notes users, you do not need to use this program.

QYNMUDMN

This program updates the *Notes Domain* (QYNMNTSDMN) user-defined field in the AS/400 system distribution directory.

Using Program QYNMUNTS

If the Add Notes User (ADDNTSUSR) command was used to register Notes users before the mail integration PTF was installed, you should run the AS/400 program QYNMUNTS in library QFSNOTES. The QYNMUNTS program updates several AS/400 system distribution directory fields for users who were added to Notes by the ADDNTSUSR command. The fields that are updated are:

QYNMMAILTY   *Notes Mail Type* is set to Notes.

MSFSRVLVL   *Mail Service Level* is set to QYNMMAILTY QNOTES.

PREFADR   *Preferred Address* is set to the SMTP name.

No parameters are required to run this program.

Example:

```
CALL QFSNOTES/QYNMUNTS
```

All system distribution directory entries that have a value in the user-defined field QYNMSVR (*Notes server*) are updated with the values previously mentioned.

Using Program QYNMUDMN

Program QYNMUDMN in library QFSNOTES is provided as a tool to update the user-defined field `QYNMNTSDMN` (Notes Domain) in the AS/400 system distribution directory. You must have *SECADM or *ALLOBJ special authority to call this program.

You must pass two parameters to the QYNMUDMN program:

- The name of the *Notes Registration Server* (system distribution directory user-defined field QYNMSVR) that has updated entries. This should be the name of network server for which you are updating or correcting the Notes Domain name. The name can be up to eight characters in length.

- The *Notes Domain* name. This parameter can be up to 32 characters in length and the value is case-sensitive. To maintain case-sensitivity, use quoted notation for this parameter. If the parameter passed is not quoted, the value is converted to uppercase format automatically by the system.

Example:

```
CALL PGM(QFSNOTES/QYNMUDMN) PARM(NTSSERV  'NewNotesDomainName')
```

In this example, the QYNMUDMN program searches for all entries in the AS/400 system distribution directory where the Notes Registration Server name (user-defined field QYNMSVR) is equal to the value `NTSSERV`. Each matching entry is updated (using the CHGDIRE command) with a Notes domain name (user-defined field QYNMNTSDMN) of `NewNotesDomainName`.

Depending on whether the QYNMUDMN completed successfully, partially successful, or unsuccessfully, it sends one of the following escape or completion messages:

NTS2090

> QYNMUDMN program did not complete successfully.

> Cause: An error occurred that prevented the QYNMUDMN program from completing successfully. No (n) directory entries were updated and (n) directory entries were not updated.

> Recovery: See previously listed messages on this display or in the job log. Use the DSPJOBLOG command to display the job log. Correct the error and try the request again.

NTS2091

> QYNMUDMN program completed; however, errors occurred.

> Cause: Directory entries were updated and (n) directory entries were not updated.

Recovery: See previously listed messages on this display or in the job log. Use the DSPJOBLOG command to display the job log. Correct the error and try the request again.

NTS2092

QYNMUDMN program completed successfully.

Cause: The QYNMUDMN program completed successfully with n directory entries updated. To determine which entries were changed, see previously listed messages on this display or in the job log. Use the Display Job Log (DSPJOBLOG) command to view the job log.

Replicating Address Book

After you have successfully installed and configured the SMTP MTA, replicate the Public Address Book to all Address Books in your Notes domain. Replicating the Address Book ensures mail interoperability with other Notes servers.

Chapter 3. Using The Integration of Notes and OS/400 Mail

The following topics explain how you can start and stop the mail integration functions and how you can use them to exchange mail between users of OfficeVision for OS/400 and users of the Lotus Notes sever running on an Integrated PC Server for the AS/400 system.

Start the Mail Integration

When you start the server the first time after installing the MTA, we recommend *not* starting the server and all of the integration function at once, but rather start them individually. That is, first enter the command:

```
STRNWSAPP *NOTES NTSIPCS NTSFCN(*NTSSVR)
```

This starts only the Notes server, no mail integration or any other of the integration functions. Now make sure the server runs correctly by opening a database (for example, `LOG.NSF`) from any Notes client or submit a Notes console command using the Submit Network Server Command (SBMNWSCMD) command.

After you verify that the Domino server runs correctly, you can start the Mail integration by using Option 3 (Start Notes server application) on the Lotus Notes Administration menu (enter GO NOTES on an AS/400 command line to display this menu). Alternatively, you can type the full command on a command line:

```
STRNWSAPP NWSAPP(*NOTES) NWS(NTSSERV) NTSFCN(*MAIL)
```

Note: This command performs several functions:

- The SMTP/MIME MTA is started on the Domino server by issuing the notes console command `LOAD SMTPMTA` under the covers.

- The YNMSFSWP process obtains information needed to update the AS/400 system directory entries based on the notes mail integration configuration on the Integrated PC Server. Message NTS2083 is sent to the message queue associated with the *NWSD after this process completes successfully.

- A "sweeper program" in job `NOTESSMTP` under user profile `QFSNOTES` is started on the AS/400 system. It is a server job that updates the AS/400 system directory entries based on the notes mail integration configuration on the Integrated PC Server. Use the Work with Spooled

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Files (WRKSPLF) command to find out whether the sweeper program completed successfully or not:[11]

```
WRKSPLF QFSNOTES
```

- The parameter `NTSFCN(*MAIL)` also starts the Notes Server if this is not already started, but only starts the mail integration on the Integrated PC Server if the Notes Server has been started.

For more details, see the *Managing Mail Integration* chapter of *OS/400 Integration of Lotus Notes*, SC41-5431.

Because starting the SMTP MTA is an asynchronous process, there is no way for OS/400 to determine if the MTA was successfully started. Instead, wait a few minutes and try one of these two methods to determine if the MTA was started. You can determine if the MTA was started by:

- Submitting the Notes Show Tasks command; for example:

```
SBMNWSCMD CMD('SHOW TASKS') SERVER(NTSSERV)
          SVRTYPE(*BASE) CMDTYPE(*NOTES)
```

- Working from a Lotus Notes client on a PC, you can examine the latest Mail Routing Event document in the Notes Log database (LOG.NSF). See Figure 32 on page 83 for more information on using the Notes log.

Using any of the two methods previously explained, look for an indication that the following tasks started successfully:

- OMSGCNV
- OSESCTL
- IMSGCNV
- ISESCTL
- DRT

For example, the information returned by the Show Tasks command should include messages similar to the ones shown in Figure 16 on page 39.

---

[11] You may need to the change the default job description to see those job logs:

```
CHGJOBD JOBD(QDFTJOBD) LOG(4 00 *SECLVL)
```

```
                          Command Entry                     SYSASV32
                                              Request level:   4
All previous commands and messages:
           Task              Description
     Database Server     Perform console commands
     Database Server     Listen for connect requests on FSNOTES_LAN0
     Database Server     NetBIOS name server for FSNOTES_LAN0
     Database Server     Listen for connect requests on FSNOTES_TCPIP
     Database Server     Server for NTSSERV/itsc respop on FSNOTES_LAN0
     Database Server     Idle task
     WEB Retriever       Process(3): Idle
     WEB Retriever       Process(2): Idle
     WEB Retriever       Process(1): Idle
     SMTPMTA drt         Idle
     SMTPMTA isesctl     Listening on SMTP port 25
                                                              More...
Type command, press Enter.
===> _____
     _____
     _____
     _____
 F3=Exit   F4=Prompt   F9=Retrieve   F10=Exclude detailed messages
 F11=Display full      F12=Cancel    F13=Information Assistant   F24=More keys
```

Figure 16 (Part 1 of 2). Example of SBMNWSCMD 'Show Tasks' Output

```
                          Command Entry                     SYSASV32
                                              Request level:   4
All previous commands and messages:
     SMTPMTA imsgcnv     Idle
     SMTPMTA osesctl     Idle
     SMTPMTA omsgcnv     Idle
     SMTPMTA            Idle
     Admin Process      Idle
     Agent Manager      Executive '1': Idle
     Agent Manager      Idle
     Indexer            Idle
     Router             Idle
     Replicator         Idle
     AS/400 Server Task
     Command submitted to network server NTSSERV.
                                                              Bottom
Type command, press Enter.
===> _____
     _____
     _____
     _____
 F3=Exit   F4=Prompt   F9=Retrieve   F10=Exclude detailed messages
 F11=Display full      F12=Cancel    F13=Information Assistant   F24=More keys
```

Figure 16 (Part 2 of 2). Example of SBMNWSCMD 'Show Tasks' Output

If the SMTP MTA was not successfully started, you are notified in the
following ways:

- If a mail integration error occurred while trying to start the SMTP MTA,
  messages are logged to the requester's job log and the message queue
  or job log associated with the Integrated PC Server on which the SMTP
  MTA is installed.

- If a Notes SMTP MTA error occurred while trying to start the SMTP MTA, the error information is logged to the Notes Log database (LOG.NSF). See "Mail Routing Events in the Notes Log (LOG.NSF)" on page 83 for more information and examples.

Verifying That SMTP MTA is Ended

You can end the SMTP MTA by using Option 4 (End Notes server application) on the Lotus Notes Administration menu (enter GO NOTES on an AS/400 command line to display this menu). Alternatively, you can type the full command on a command line:

```
ENDNWSAPP NWSAPP(*NOTES) NWS(NTSSERV) NTSFCN(*MAIL)
```

The same as starting the SMTP MTA, ending it is an asynchronous process, and there is no way for the end function to determine if it was successfully ended. You can use the same two methods to determine if the MTA was ended:

- Submit the Show Tasks command to the Notes server.

- Working from a Lotus Notes client on a PC, you can examine the latest *Mail Routing Event* document in the Notes Log database (LOG.NSF).

In this case, the tasks *omsgcnv, osesctl, imsgcnv, isesctl*, and *drt* should not exist if the MTA was ended successfully.

If the SMTP MTA was not successfully ended, the user is notified in the following ways:

- If a mail integration error is encountered while trying to end the SMTP MTA, messages are logged to the requester's job log and the message queue or job log associated with the Integrated PC Server on which the SMTP MTA is installed.

- If a Notes SMTP MTA error is encountered while trying to end the SMTP MTA, the error information is logged to the Notes Log database.

According to our tests with the SMTP MTA, the latter case seems to be the more likely one.

Note: You have to use a Notes client workstation to see any error messages. Some examples are given in "Mail Routing Events in the Notes Log (LOG.NSF)" on page 83.

Updating System Distribution Directory Entries for Mail Interoperability

When the SMTP MTA is started (see "Start the Mail Integration" on page 37), an AS/400 batch job named NOTESSMTP is started. This job communicates with a job on the Integrated PC Server that extracts SMTP

addressing information from the following documents out of the Public Address Book (PAB):

- The Global domain document
- The Foreign domain document
- The Connection document
- The Server document

The SMTP addressing information that is extracted includes values for the following fields:

- Internet domain suffix
- Local part formed from (common name or short name)
- Space replacement character

The space replacement character defaults to the underscore. However, you can reconfigure this value by using the `SMTPMTA_Space_Repl_Char` environment variable in the `NOTES.INI` file. Valid values for this environment variable are the underscore (_) and the period (.).

Once this information is obtained, the values are passed back to the AS/400 NOTESSMTP batch job. If it is determined that one or more of the addressing values have been changed since the last time the SMTP MTA was started, the SMTP address is changed for all Notes users in the AS/400 system distribution directory who are also a part of the Notes domain in which this reconfigured SMTP MTA is installed.

If you want to reconfigure one or more of these addressing values on an Integrated PC Server SMTP MTA without having the changes reflected in the system distribution directory entries, create a data area on the AS/400 system. This data area must be created in library QUSRSYS and have the same name as that of the Integrated PC Server on which the SMTP MTA is installed. Once this data area exists, no updates to the configuration are performed by the NOTESSMTP job.

```
CRTDTAARA  DTAARA(QUSRSYS/NTSSERV) TYPE(*CHAR) +
           LEN(5) TEXT('SMTP DATA AREA')
```

In addition to this automatic updating that is done when the SMTP MTA is started, you can also maintain system distribution directory entries by using two utility programs that are provided with this mail integration support:

- The program QYNMUNTS (see "Adjust System Directory after SMTP MTA is Installed" on page 34).
- The program QYNMUDMN (see "Using Program QYNMUDMN" on page 35).

Replicate the Public Address Book

Once the SMTP MTA has been successfully installed and configured on an Integrated PC Server, replicate the Notes Address Book to all address books in your Notes domain. This ensures mail interoperability with the other Notes servers and the newly installed SMTP MTA.

How to Send and Receive Mail through the SMTP MTA

Now that you have successfully set up the mail integration between Lotus Notes on the Integrated PC Server and OS/400, you need to know how users can send mail across this connection.

This section describes how OfficeVision/400 users can send mail items to Lotus Notes users and vice versa (that is, how they have to specify the address of a *foreign* recipient).

The examples given here also serve as a description of how all configuration parameters described earlier relate to each other.

Sending Mail from Notes to OfficeVision for OS/400

The following sections describe what happens when a Notes user sends mail to a person using *OfficeVision for OS/400* (OV/400).

What is the Recipient's Address on the AS/400 System?

Before you can send mail to an OV/400 user, you must know what address you have to specify. All OV/400 users have a mail address of one to eight characters called the *User ID and Address* (sometimes also called DEN/DGN, which stands for *Distribution Element Name/Distribution Group Name*). Assume in our example that this pair of values is:

```
WBL SYSASV32
```

It is a good practice (as in our example) that the *Address* part is identical to the AS/400 system name (and the TCP/IP host name). This is not mandatory.

However, this type of address cannot be used if users of other mailing systems (for example, SMTP based systems) want to send mail to an AS/400 user. Therefore, each OV/400 user needs to be known to the system also by an SMTP address according to RFC 822 in the form of *localpart@domainpart* where the *domainpart* must always be the TCP/IP host name of the AS/400

system (<u>not</u> the Integrated PC Server). This name appears in Figure 3 on page 13 (not numbered), this parameter (fully[12] qualified name for OS/400):

```
SYSASV32.OURLAN.ACME.COM
```

The *localpart* of the SMTP address defaults to *UserID?Address* or just to *UserID* (only if *Address* equals *System Name*). In our example, these names are both correct:

```
WBL?SYSASV32@SYSASV32.OURLAN.ACME.COM
```

- or -

```
WBL@SYSASV32.OURLAN.ACME.COM
```

In addition, you can define an *alias* for your name (local part only), using the Work with Names for SMTP (WRKNAMSMTP) command.

The *delimiter* between User ID and Address can be changed to a different character with the Change SMTP Attributes (CHGSMTPA) command. In our example, we used the default question mark (?). Possible values for the delimiter are:

```
? = . & $ # / + _ - *
```

How the Sender on Notes Specifies the Recipient's Address

The Lotus Notes user cannot specify the OV/400 user's *"native"* address directly, but has to use the derived (or alias) SMTP address as described in "What is the Recipient's Address on the AS/400 System?" on page 42. To understand how this has to be done, let's examine first how mail recipients have to be specified in general on a Notes workstation.

For Sending Mail to Users in the Same Notes Domain: There are flexible rules on how to specify the recipient's address in the *To:*, *cc:*, or *bcc:* fields of the *New Memo* form. You just need to specify one of the user's names as they appear in the *public address book (PAB)*. Remember, *same Notes*

---

[12] Testing several different possibilities, we found out that it does not need to be the *fully* qualified name, a partial name such as `SYSASV32.OURLAN` worked as well, provided all of the following statements are true:

- The MTA can resolve to the correct IP address (by default all mail will be sent to the internal IP address of OS/400).
- At least two parts of the host name appear at the right of the @ sign. (that is, `WBL@SYSASV32` is not enough for an SMTP address because of the way Lotus Notes distinguishes between other Notes domains and Internet (SMTP) addresses). See "How the Lotus Notes Server Routes Mail" on page 45.
- The *domainpart* is at least a part of the AS/400 system's host name (that is, while the combinations `SYSASV32.OURLAN`, `SYSASV32.OURLAN.ACME`, `SYSASV32.OURLAN.ACME.COM` are all correct) but the name `SYSASV32.OURLAN.COM` does <u>not</u> work. See topic *How SMTP Receives Mail* in Chapter 11 of *OS/400 TCP/IP Configuration and Reference*, SC41-3420-04.

domain means all servers use the same PAB; that is, the recipient <u>must</u> be in the PAB. See also "By the way, what is a domain?" on page 11.

For Sending Mail to Users Not in the Same Notes Domain: The address must contain an at sign (@). For example:

        Wilfried Blankertz@NTSSERV

Note that the presence of @ does <u>not</u> mean that Notes interprets this as an SMTP address. Actually the contrary is true; even if your TCP/IP configuration was set up correctly so that `WBL@SYSASV32` forms a valid SMTP address, Lotus Notes searches for a Notes domain called `SYSASV32`, and rejects the mail if there is no such Notes domain.

Now, how do we specify an SMTP address in Lotus Notes? The criteria is that there must be at least one period (.) to the right of the @ sign. For example, `WBL@SYSASV32` is considered as a user in Notes domain `SYSASV32`, where as `WBL@SYSASV32.OURLAN` is recognized as an SMTP address by Lotus notes. From a pure TCP/IP standpoint, both addresses identify the same addressee.

A Lotus Notes user has three different ways to enter a recipient's address:

- Type the complete address manually into the *To:*, *cc:*, or *bcc:* fields.

- Use the *Recipient name type-ahead* function, that is, while the user types the first letters of the name, Lotus Notes searches the address book for entries matching the partially entered name.

- Address book look up, where the user clicks on the **Address** button and selects a recipient directly out of any private address book or the public address book.

While in the first case, the user is fully responsible to type the correct address, the other two possibilities allow you to set up **person documents** in the public or private address books for each OV/400 user (or other foreign users) to avoid typing errors and improve the ease of use.

That is, you can add person documents in the public or a private address book for mail recipients who can be reached only through the Internet (which actually means through TCP/IP). This includes all OfficeVision/400 users and all other users who can be reached through the AS/400 system because the SMTP/MIME MTA uses a TCP/IP connection to send mail to OV/400. Figure 17 on page 45 shows such a person document.
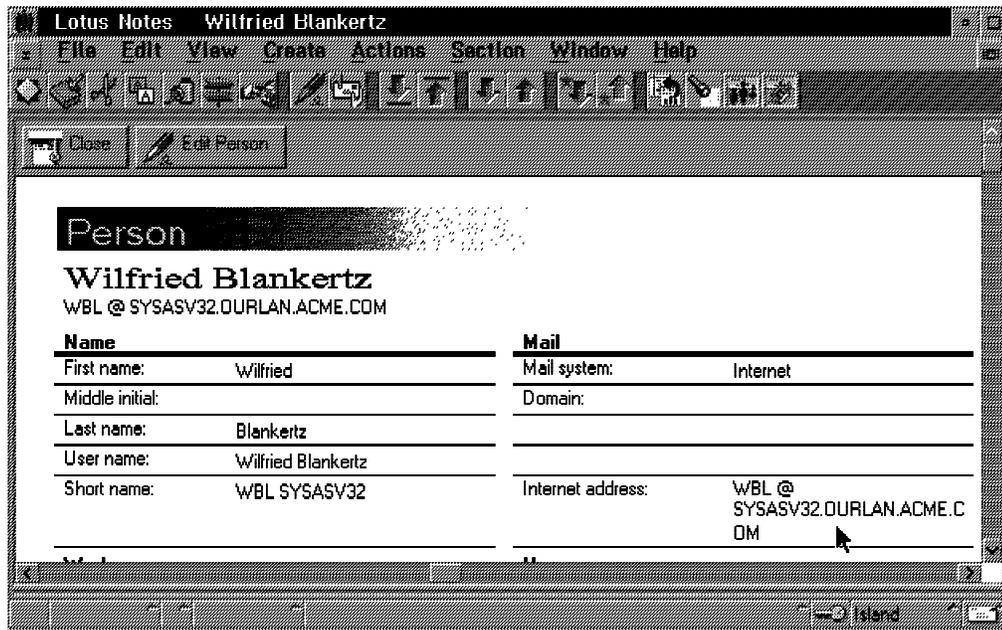
Figure 17. Person Document for Internet Addressee

The *Internet Address* field must be filled with a correct SMTP address according to the preceding rules.

Note: Make sure you never specify such an Internet address for a Notes user of this domain. This results in an endless loop when you try to send mail to that user.

Actually, the **Notes directory shadowing** function can be used here to shadow the addresses of all OV/400 users to a Notes address book. Refer to "Changes Made to Directory Shadowing" on page 60 for information on how the *MailAddress* field is filled ("mapped") with values from the system distribution directory, depending on whether or not the entry describes a Notes user and whether or not a user-provided mapping exists.

How the Lotus Notes Server Routes Mail

Now that you understand how to specify an SMTP address when sending mail from a Notes workstation, see how Lotus Notes treats such a piece of mail.

Your Lotus Notes server recognizes a piece of mail in your outgoing mail box as mail to be sent through SMTP when all of the following conditions are true:

- The address contains a *commercial at sign* (@).

- and -

- There is at least one period (.) on the right of the at sign (@).

If this is the case, the Notes server searches all *foreign SMTP domain* documents (see "Foreign SMTP Domain Document" on page 66) and compares the right part of the SMTP address with the contents of the *Internet Domain* field.

An asterisk (*) in the *Internet Domain* field is treated as a wildcard. That is, if the foreign SMTP domain document contains `*.*`, it always matches what the automatic configuration creates. For example, if it contains `*.ACME.COM`, only addresses ending with `.ACME.COM` match; `WBL@SYSASV32.OURLAN.ACME.COM` matches while `WBL@SYSASV32.OURLAN` does not match.

Note that this allows you to:

- Specify more than one foreign SMTP domain document to be able to route certain addresses to MTAs on different Notes servers.

- Restrict to which SMTP domains you allow mail to be sent.

Once the Notes server has found a foreign SMTP domain document with a matching entry, it looks for the *Domain name* field within that document. The name specified here is called the *hypothetical Internet domain name*; it is neither a real Notes domain nor an SMTP or TCP/IP domain. It just serves as a link to the *Server Connection document*.

The name chosen by the automatic configuration is *servername*`_SMTPMAIL`. Using our example values, this is:

```
NTSSERV_SMTPMAIL
```

Having found the hypothetical Internet Domain name, the Notes server now searches all *SMTP-MTA Connection Documents* to find the same entry there in the field *Destination domain* (see Figure 26 on page 68).

Having found the proper server connection document, the Notes server compares the value in *Source server* field with its own name. This value indicates on which Notes server the SMTP/MIME MTA is installed. If it is the same server, the mail is placed into the `SMTP.BOX` database. If it is a different server, the mail is routed to the server registered in that field, which in turn places the mail on its own `SMTP.BOX` database.

How the SMTP/MIME MTA Sends Mail

The Outbound Conversion Handler (its name is `OMSGCN`) task polls SMTP.BOX at regular intervals for new messages as configured in the *Poll for new messages every:* field on the Server document. When it finds a message, it

converts it from Notes format to RFC822 format and writes it to the Outbound Work Queue (SMTPOBWQ.NSF). It also updates the message in SMTP.BOX to indicate that it is pending transmission.

The Outbound Session Controller (OSESCTL) reads the message from the Outbound Work Queue (SMTPOBWQ.NSF) and notifies (or creates) an Outbound Session Handler task passing it the message ID. The Outbound Session Controller can launch up to three handlers by default; however, you can configure it to launch a maximum of eight handlers. If possible, the controller groups messages for the same host to reduce overhead.

The Outbound Session Handler (*OSESHLRn*) retrieves the message from the work queue. It resolves the destination host to an IP address, opens a connection to the destination, and sends the message through the SMTP protocol driver. It then changes the state of the message in the Outbound Work Queue to *Sent*.

The *destination host* is the part of the SMTP address on the right of the at sign (@). However, if the SMTP-MTA Connection document contains a value in the *Optional network address:* field, the mail is sent to that host directly, no matter what destination host is specified in the SMTP address.

How OS/400 SMTP Support Receives Mail

Once the SMTP server on the AS/400 system receives mail, it must perform two tasks:

1. "Determine If this AS/400 System Is the Final Destination," otherwise, mail is forwarded to another SMTP host.

2. "Convert Sender and Recipient Address to SNADS Format" on page 48 to allow AnyMail/400 to handle the mail locally (or even remotely using the SNADS network).

Determine If this AS/400 System Is the Final Destination: For mail to reach its destination, it must be sent to both the correct host and user ID residing on that host. For the AS/400 system to assure that mail was meant for a local user, it checks the incoming mail to see if it was addressed to this system. If SMTP determines that the mail is not addressed to its local host, it forwards the mail to the next hop, which may or may not be the final hop. SMTP determines the name of the addressee from addressing information in the SMTP protocol.

For inbound mail, the SMTP server first converts the destination host name, extracted from the protocol's RCPT (Recipient) command, into an Internet (IP) address. The SMTP server uses the sockets interface to determine if the IP address is one of those used by the interfaces for this host.

This allows the AS/400 system to be known by several host names and to use several IP addresses.

Convert Sender and Recipient Address to SNADS Format: Remember, every AS/400 user who wants to send or receive mail using OS/400 must be described by an entry in the system distribution directory. Any entry in the system distribution directory is identified by a pair of names which can be one to eight characters long. So before the AnyMail/400 framework can hand over the mail item to the SNA Distribution Services (SNADS), it must first convert the recipient's as well the sender's SMTP address to a SNADS address. This is done in the following way:

1. Determining the SNADS user ID and address of the recipient:

   - If the SMTP user ID of the recipient <u>contains a delimiter character</u> as defined in the *USRIDDELIM* parameter of the Change SMTP Attributes (CHGSMTPA) command, up to the first eight characters before the delimiter are used as the SNADS user ID and up to the first eight characters after the delimiter (but before the @ or %) are used as the SNADS address.

   - If the SMTP user ID of the recipient does not contain a delimiter character, the system alias table is searched for a match on the SMTP user ID and SMTP domain of the recipient:

     – <u>If there is a match</u>, the SNADS user ID and address for that entry are used.

     – <u>If there is not a match</u>, up to the first eight characters of the SMTP user ID of the recipient are used as the SNADS user ID and up to the first eight characters of the recipient's SMTP system name (found after the first @ character but before the first period) are used as the SNADS address.

   In addition to truncating the SMTP user ID and SMTP domain name, if these fields are received in either mixed or lowercase, they are converted to uppercase.

   Note: If the SNADS user ID and address of the recipient are not known to the AS/400 system, the mail is returned as undeliverable. If a mail router is specified, the mail is forwarded to that system and that system tries to send the mail.

2. Determining the SNADS user ID and address of the sender:

   - The system alias table is searched for the SMTP user ID and domain of the sender.

     – <u>If there is a match</u>, the SNADS user ID and address for that entry are used for the sender.

- If there is not a match and the SNADS user ID and address of the remote sender are not known to the AS/400 system, the reply to mail can be rejected as undeliverable mail. You can indicate with the *Change SMTP Attributes (CHGSMTPA)* command that you want to automatically add a remote sender to the system distribution directory. The system generates a default SNADS user ID (QSMnnnnn) and default address (QSMRMTAD). The SNADS user ID and address are added to the system distribution directory. The SMTP user ID and domain and the SNADS user ID and address are added to a specified alias table.

- If there is not a match and you specify *NO for the *Automatic registration* (AUTOADD) parameter of the Change SMTP Attributes (CHGSMTPA) command, up to the first eight characters of the SMTP user ID of the sender is used as the SNADS user ID and up to the first eight characters of the SMTP system name of the sender (found after the first @ character but before the period) is used as the SNADS address.

In addition to truncating the SMTP user ID and SMTP domain name, if these fields are received in either mixed or lowercase, they are converted to uppercase.

For more information, see *How SMTP Receives Mail* in Chapter 11 of the *OS/400 TCP/IP Configuration and Reference*, SC41-3420-04.

How AnyMail/400 MSF Routes Mail
According to the information of the recipient's system distribution directory entry, the mail server framework does the following steps:

1. Converts the text based parts of the MIME message to a *Final Form Text (FFT)* document and, if present, any binary attachments into documents with a type of *IBM Personal Computer file*. However, depending on the value of the *Address Type* in the *PREFADR* field of the system distribution directory, this conversion might not take place (for example, when you configure this entry for *SNADS Tunneling* (TNDENDGN)).

2. Depending on the contents of the *System name* (SYSNAME) field in the system distribution directory, the mail is:

   - Forwarded to a remote SNADS node.
   - Delivered to OfficeVision/400 if the use is enrolled with OV/400.
   - Kept in the system message store to allow a user not enrolled in OV/400 to access the mail through the Receive Distribution (RCVDST) command.

Sending Mail from OfficeVision for OS/400 to Notes

This topic describes what happens when an OV/400 user sends mail to a Notes user using the server on the Integrated PC Server.

What Is the Recipient's Address?

Similar to the opposite situation described in "Sending Mail from Notes to OfficeVision for OS/400" on page 42, before you can send mail to a Notes user, you must know what address you have to specify. Again, you have to use an SMTP address in the form *localpart@domainpart*.

The *domainpart* must always be the TCP/IP host name of the Integrated PC Server. Relating that to our example in Table 1 on page 14, this is the parameter .6. (fully-qualified name of the Integrated PC Server): NTSSERV.OURLAN.ACME.COM. This value should also appear in the *Internet domain suffix* of the *Global Domain Document* shown in Figure 24 on page 65 within the Notes server's PAB.

Note that the *Local Part Formed From* field in the same document is used only to specify how you want to represent the sender's name for <u>return addresses</u> in outbound (from the Integrated PC Server's point of view) SMTP mail.

When you send mail *to* a Notes user on (or through) the Integrated PC Server, the local part of the SMTP address can be *any one* of the fields in the name section of the user's person document in the PAB (for example, in Figure 18 on page 51):

- *First name*, that is, the complete SMTP address is:

  Wilfried@NTSSERV.OURLAN.ACME.COM

- *Last Name*, that is, the complete SMTP address is:

  Blankertz@NTSSERV.OURLAN.ACME.COM

- *Short name*, that is the complete SMTP address is:

  wblanker@NTSSERV.OURLAN.ACME.COM

- Any one of the values in *User Name*, that is, either of the following examples are correct:

  - Wilfried_Blankertz@NTSSERV.OURLAN.ACME.COM
  - Wilfried_Blankertz/itsc_respop@NTSSERV.OURLAN.ACME.COM

By default, the MTA replaces spaces between first name and last name with the underline character (_). The only other space replacement character option is a period (.). You can enable this option with the variable SMTPMTA_SPACE_REPL_CHAR in the NOTES.INI file. The period (.) replacement
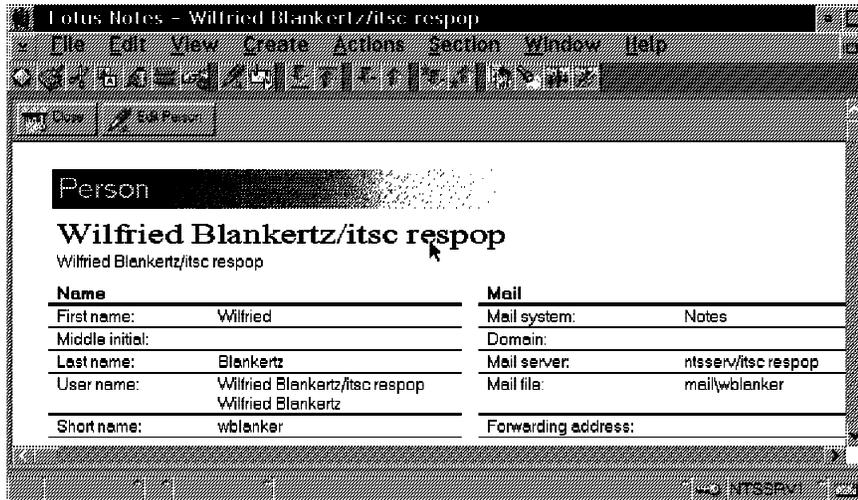
Figure 18. Person Document for Notes User

character is enabled by a NOTES.INI variable because there are significant restrictions entailed when using this option.

Important: Even though you are flexible in choosing any of the fields previously mentioned to build the local part of the SMTP address, the name chosen **must be unique within the PAB**. For example, assume both of the person documents shown in Figure 18 and Figure 17 on page 45 exist in the same public address book; the only valid SMTP address is the one using the *Short name*, that is: `wblanker@NTSSERV.OURLAN.ACME.COM`. This is true even if the person shown in Figure 17 on page 45 does not describe a Notes user, but points to an Internet address instead. For example, when trying to send mail to `Wilfried@NTSSERV.OURLAN.ACME.COM`, you receive a failure indication from Lotus Notes such as the one shown in Figure 19 on page 52.

```
 View Mail          ]Skip                    ]    ]    ]Adapted    ]Pg 1
 KBGR215514,*INTDOC                           ]Typestyle 86 (12p)    ]Ln 1
 <2....:....3....:....4....:....5....v....6....:....7....:....8....:....9>...:.
 .
 From: POSTMASTER@NTSSERV.OURLAN.ACME.COM
 To: WBL@SYSASV32.OURLAN.ACME.COM
 Date: Sun, 5 Jan 1997 13:24:53 -0600
 Subject: Undeliverable message


 ----------------------------------------------------------------------

 ------- Failure Reasons  --------

 Recipient user name  not unique.  Several matches found in Name & Address Book
 Wilfried@NTSSERV.OURLAN.ACME.COM



   F3=Exit        F8=Reset         F13=Edit options      F17=Functions
   F5=Goto        F10=Forward mail F14=Delete mail       F19=Print
   F6=Find        F11=Reply        F15=File local        F21=Nondisplay keys
   F7=Window      F12=Cancel       F16=File remote
```

Figure 19. Undeliverable Message from Lotus Note "Recipient User Name Not Unique"

In fact, this is a likely situation if a user chooses to use Notes mail <u>as well as</u> OV/400 based mail.

How the Sender on OV/400 Specifies the Recipient's Address

This section applies to sending mail from OfficeVision for OS/400 or using the OS/400 Send Distribution (SNDDST) command to <u>any</u> SMTP based user. This includes the user of a Lotus Notes server on the Integrated PC Server having the mail integration properly installed, but this applies as well to recipients using OS/400's POP server support and any other users whose mailing systems are connected to the AS/400 system through TCP/IP and conforming to the SMTP protocol.

However, this section does <u>not</u> apply to sending mail to users of IBM OV/400 Support for Lotus Notes Clients.

Whenever a user of OfficeVision for OS/400 wants to send mail, no matter what mail system the recipient uses, the address has to be specified in the SNADS format:

> *User ID   Address*[13]

---

[13] Note that the complete SNADS address also contains a *system name*, but this part never has to be specified by the user sending mail. The system name is actually assigned to each User Id/Address pair when the administrator adds an entry to the system distribution directory and is normally not even known to the users.

Where each field cannot be more than eight characters long and must not contain spaces or special characters (except $, #, or &). This is different from Notes mailing addresses and the local part of SMTP addresses.

While an AS/400 user's SNADS address can easily be mapped to an SMTP address (see "What is the Recipient's Address on the AS/400 System?" on page 42), the reverse is not so straightforward. In fact, an entry <u>must be added</u> to the system distribution directory to allow sending mail to SMTP users (which includes Notes users on the Integrated PC Server). In addition (in most cases), this entry must be linked to either a *personal alias table* or the *system alias table*.

Different methods are available, using one or many system distribution directory entries to specify a remote[14] SMTP user's mail address.

Add a System Directory Entry and Alias Name for Each SMTP Recipient:
One way to assign an SMTP address to the persons you want to send SMTP based mail to is to add a system distribution directory entry for each person and assign an SMTP alias address to it.

The minimum parameters of the Add Directory Entry (ADDDIRE) command are:

```
 ADDDIRE USRID(WBLNTS NTSSERV) USRD('Wilfried Blankertz on Lotus Notes')
|           SYSNAME(NTSSERV) USER(*NONE) PREFADR(*SMTP)
```

| Note, that the *system name* `SYSNAME(NTSSERV)` is not (and must not be!)
| defined as a SNADS system when performing the Configure Distribution
| Service (CFGDSTSRV) command; it rather serves as a dummy name to
| allow this entry to be defined as a "remote user" in the system distribution
| directory (that is, a mail recipient who does not have to have an AS/400
| user profile assigned to).

Use the Work with Names for SMTP (WRKNAMSMTP) command:

```
 WRKNAMSMTP *SYSTEM
```

Instead of using the system alias table as in our example, you can also use
| a personal alias table, however, this is not recommended. Using Option 1
(Add) brings up the *Add Name for SMTP* display. Enter the values for *User ID* and *Address* as well as the *SMTP user ID* and *SMTP domain* shown in Figure 20 on page 54 to create an alias.

---

[14] The term *remote* may be somewhat misleading because it also includes users on the Integrated PC Server of this AS/400 system as well as POP clients connected to the same AS/400 system. But it is certainly remote from SNADS as the sender's mailing system perspective.

```
                        Add Name for SMTP
                                                System:   SYSAS040
   Type choices, press Enter.

     User ID . . . . . . . . .  WBLNTS__   Character value, *ANY, F4 for list
     Address . . . . . . . . .  NTSSERV_   Character value, F4 for list



     SMTP user ID . . . . . .   WBLANKER_____
     SMTP domain . . . . . . .  NTSSERV.OURLAN.ACME.COM_____
   _____
   _____
   _____

     SMTP route  . . . . . . .   _____
   _____
   _____
   _____

   F3=Exit    F4=Prompt    F12=Cancel
```

Figure 20. Add Specific Name to System Alias Table

Note: The latter step (Add Name for SMTP) is done automatically for you if
you create the notes user from an AS/400 interface using the Add Notes
User (ADDNTSUSR) command. However, the *Common Name*
(`Wilfried_Blankertz`) is used instead of the *Short Name* (`WBLANKER`) used in
the example.

Add a System Directory Entry and Alias Name for a Target System: Instead
of adding a system distribution directory entry for each individual user, you
can also have a generic entry for an entire target system (for example, for
all users on the Notes server on your Integrated PC Server). While the
advantage of this method is much less configuration effort, the disadvantage
is that you can only handle those SMTP addresses where the local part
(SMTP user ID):

- Is no longer than eight characters.
- Does not contain any special characters other than $, #, or &.

To do so, just create a generic (*ANY) entry in your system distribution
directory by entering the following command on any AS/400 command line:

```
 ADDDIRE USRID(*ANY NTSSERV) USRD('All Users on Notes Server NTSSERV')
         PREFADR(*SMTP)
```

Use the Work with Names for SMTP (WRKNAMSMTP) command:

```
 WRKNAMSMTP *SYSTEM
```

Enter *ANY for *User ID* and preferably the host name for *Address* as well as
the *SMTP domain* as shown in Figure 21 on page 55 to create an *alias*.

```
                        Add Name for SMTP
                                                  System:   SYSAS040
   Type choices, press Enter.

     User ID . . . . . . . . .  *ANY_____   Character value, *ANY, F4 for list
     Address . . . . . . . . .  NTSSERV_    Character value, F4 for list



     SMTP user ID  . . . . . .  _____
     SMTP domain . . . . . . .  NTSSERV.OURLAN.ACME.COM_____
   _____
   _____
   _____

     SMTP route  . . . . . . .  _____
   _____
   _____
   _____

    F3=Exit   F4=Prompt   F12=Cancel
```

Figure 21. Add Generic Name to System Alias Table

Automatically Add Directory Entry and Alias for Incoming Mail: For any
mail coming into the AS/400 system, you can indicate with the Change
SMTP Attributes (CHGSMTPA) command that you want to automatically add
a remote sender to the system distribution directory. The system generates
a default SNADS user ID (QSMnnnnn) and default address (QSMRMTAD). The
SNADS user ID and address are added to the system distribution directory.
The SMTP user ID and domain and the SNADS user ID and address are
added to either the system alias table or the personal alias table of the mail
recipient, depending on the contents of the TBLTYPE parameter specified with
the Change SMTP Attributes (CHGSMTPA) command.

This function provides an easy way to respond to SMTP mail from senders
that are not yet registered in the system distribution directory on your
AS/400 system. However, because the generated user IDs are not
meaningful and difficult to remember, this is probably not a good solution for
recipients you send mail to often.

A good combination is to assign a *nickname* to addresses that are
generated this way. Use the Work with Nicknames (WRKNCK) command to
assign a public or private nickname (up to eight characters long) to any
SNADS address you need.

Use Ad Hoc Addressing (PTF SF33896 or SF33943): A new function was
recently added to OS/400 V3R2 and V3R7 that allows you to enter the SMTP
address of the recipient within the body of the note you send. You normally
do not need to use this function to send mail to Notes users registered on
the Domino server running on the Integrated PC Server. However, it is an

easy method to send SMTP mail from OfficeVision/400 to users who are not defined in the system distribution directory because:

- They do not belong to your company.
- They were already Notes users before the server on the Integrated PC Server was installed.
- They are Notes users in a different Notes domain.

See Appendix C, "Ad Hoc Internet Addressing with OV/400" on page 89 for more information about this PTF.

Chapter 4. Helpful Hints

The following sections contain a collection of helpful hints and techniques.

Notes Administrator Not Authorized to Public Address Book

Note: If you have applied PTF SF35752, the following instructions can be ignored. However, if the PTF has not been applied, follow these instructions.

To submit Notes commands (SBMNWSCMD) or start the mail integration function once it is installed, the *Administrators* field of the *Server* document within the public address book must contain the name of the server. Under certain circumstances when PTF SF35752 was not installed, this was not the case. To verify this and, if necessary, modify the *Public Address Book*, follow these instructions:

1. Start the Lotus Notes client on your workstation.
2. Open the Public Address Book on Notes server.
3. Click on **Folders and Views**.
4. Click on **Server**.
5. Click on the server name to highlight it and click on **Edit Server** at the top of the display.
6. Go to the first part (Basics) and, in the *Administrators* field, add the hierarchical name of the Notes server if it has not already been added (for example: *Notesserver1/Organization name*).
7. Save the document.
8. End Notes server application by using Option 4 (GO NOTES menu).

Ensure a Correct Name Server Configuration

Read the "TCP/IP Configuration for Mail Integration" on page 12 closely! Not setting up the AS/400 system and Integrated PC Server correctly with regards to the domain name server prevents your SMTP MTA from operating correctly.

Only One SMTP MTA Should Be Installed in a Notes Domain

If more than one is installed, each of the SMTP MTAs should be manually configured. Refer to the SMTP MTA Release Notes and SMTP/MIME System Administration Guide databases included with the SMTP MTA for instructions on how to configure the MTAs.

Repeat the Automatic Configuration

An SMTP MTA configuration can be set up incorrectly because:

- The Notes administrator has been manually changing it.
  - or -
- The AS/400 system or Integrated PC Server configurations have been changed since the SMTP MTA was last installed.

In either of these cases, the Notes administrator can request the automatic configuration of the SMTP MTA again by doing the following steps:

1. End the Notes SMTP MTA (see "Verifying That SMTP MTA is Ended" on page 40).

2. Use a Notes workstation to delete the global domain document that was created in NAMES.NSF when the SMTP MTA was installed (see "What Happens When SMTP MTA Is Automatically Configured" on page 64 to determine which global domain document).

3. Use a Notes workstation to delete the foreign SMTP domain document that was created in NAMES.NSF when the SMTP MTA was installed (see "What Happens When SMTP MTA Is Automatically Configured" on page 64 to determine the foreign SMTP domain document).

4. Use a Notes workstation to delete the SMTP connection document that was created in NAMES.NSF when the SMTP MTA was installed.

5. Use the Submit Network Server (SBMNWSCMD) command to submit the OS/2 command:

```
SBMNWSCMD ('F:\FSNOTES\MAIL\YNMSFMTI.EXE')
              SERVER(NTSSERV) SVRTYPE(*BASE) CMDTYPE(*OS2)
```

6. Check the contents of the YNMSFMTI.LOG file. If errors occurred, they are probably logged here. If the installation was successful, you see completion messages.

7. Start the Notes SMTP MTA (see "Start the Mail Integration" on page 37).

Reinstall the SMTP MTA

If an SMTP MTA is reinstalled, the configuration is not changed. If a new configuration is desired, reinstall the SMTP MTA and follow the preceding directions to reconfigure the SMTP MTA.

SMTP MTA Not Working Correctly

If the SMTP MTA is not operating correctly, look for information in the following places:

- SMTP MTA Release Notes help database (RNTMPL.NSF)

- SMTP/MIME Sys. Admin. Guide help database (SMTPAG.NSF)
- Notes Log database (LOG.NSF):
  - *Mail Routing Events* view:
    Logs messages regarding the SMTP MTA processes, mail conversions, the Notes mail router, and the SMTP MTA mail router.
  - *Miscellaneous Events* view:
    Some SMTP MTA messages are logged here.
- SMTP MTA Inbound Work Queue (SMTPIBWQ.NSF):

  Mail messages sent through SMTP that are coming from the AS/400 system or Internet are placed in this database until they are processed.
- SMTP MTA Outbound Work Queue (SMTPOBWQ.NSF):

  Mail messages that are to be sent to the AS/400 system or Internet through SMTP are placed in this database until they are processed.
- SMTP Mail Box (SMTP.BOX):

  Holds mail in transit to the AS/400 system or the Internet.

See also Appendix B, "SMTP MTA Problem Determination" on page 79 for examples of the Notes logs.

Changes Made to the Add Notes User (ADDNTSUSR) Command

One of the PTFs for the mail integration support modifies the Add Notes User (ADDNTSUSR) command to provide better mail integration. The modifications are as follows:

- When a Notes user is added using the Add Notes User (ADDNTSUSR) command, and the mail type (NTSMAILTYP) has a value other than `*NONE`, the following fields are updated in the AS/400 system distribution directory:
  - User-defined field QYNMMAILTY QNOTES (which stores the Mail Type used by this user) is set to a value corresponding to the NTSMAILTYP value of the Add Notes User (ADDNTSUSR) command.
  - The Preferred address field (PREFADR) is set to `SMTP name` to specify that mail intended for this user should be forwarded to Notes through SMTP.
  - The Mail service level field (MSFSRVLVL) is set to `QYNMMAILTY QNOTES`.
  - The user-defined field `QYNMNTSDMN QNOTES` (which stores the Notes domain of this user) is set to the Notes domain of the registration server.

- When a Notes user is added using the Add Notes User (ADDNTSUSR) command, and the Mail type (NTSMAILTYP) has a value of *NONE, the following fields are updated in the AS/400 system distribution directory.
  - User-defined field QYNMMAILTY QNOTES (which stores the mail type used by this Notes user) is set to None.
  - User-defined field QYNMNTSDMN QNOTES (which stores the Notes domain of this user) is set to the Notes domain of the registration server.

Note: The latter users are handled as AS/400 mail users. This is how AS/400 mail users are registered as Notes users but continue to use the AS/400 system as their mail system.

Changes Made to Directory Shadowing

To synchronize information about Notes users stored in the AS/400 system distribution directory with the *Person* documents in the public address book (PAB) on the Integrated PC Server correctly, some changes had to be implemented in the way the system distribution directory fields are mapped to the PAB fields when *Notes Directory Shadowing* is used.

The modifications to the default mapping described in the following sections are not necessarily applied to your system if you used Notes directory shadowing prior to installing the mail integration PTFs. Therefore, we recommend that you verify the field mapping by using the Configure Notes Directory Shadowing (CFGNTSSHD) command. To do so, follow these steps:

1. Type the following command on any AS/400 command line:

   CFGNTSSHD NWS(NTSSERV)

   Do not press Enter.

2. Press **F4**.

3. Press **Enter** two times. A display similar to the one in Figure 22 on page 61 is shown.

4. Press the **PgDn** key several times and compare with Figure 23 on page 61. If you find a mapping for the *SMTPUSRID* field as shown in Figure 23 on page 61, remove it by entering a *less than* sign (<) in the small field on the left above the word SMTPUSRID and press Enter.

   If you found a mapping similar to the one shown in Figure 23 on page 61 and have already used directory shadowing, you should also make sure that the person documents for Notes users in the public address book **do not contain an Internet address** in the *Forwarding address* field.

The following topics provide details about the changed field mappings.

```
                   Configure Notes Dir Shadowing (CFGNTSSHD)

 Type choices, press Enter.

 Network server . . . . . . . . . > NTSSERV_     Name
 Name and Address Book file . . .   NAMES.NSF___  Character value, NAMES.NSF
 Path to Name and Address Book  .   *NOTES_____
 _____
 Status of synchronization  . . .   *DISABLED   *ENABLED, *DISABLED
 Directory entries owned  . . . .   *ALL_       *ALL, *RULE
 Days to synchronize  . . . . . .   *DAILY      *DAILY, *SUN, *MON, *TUE...
             + for more values      _____
 Time of day to synchronize . . .   080000__    Time
 Extract type . . . . . . . . . .   *ALL        *CHG, *ALL


                                                               More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

Figure 22. Configure Notes Dir Shadowing (CFGNTSSHD)

Mapping to MailSystem and MailAddress Fields
The IBM-provided default mapping that is used for directory shadowing has
changed. The following mapping to the MailAddress field in the Notes
Address Book was removed:

```
                   Configure Notes Dir Shadowing (CFGNTSSHD)

 Type choices, press Enter.


                                         _
   AS/400 field . . . . . . . . .      'SMTPUSRID *IBM'_____
                                       '@'_____
             + for more values         'SMTPDMN *IBM'_____
   Name and Address Book field  .      'MailAddress'_____
   Type of field  . . . . . . . .      *NORMAL      *KEY, *REQUIRED, *NORMAL
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

Figure 23. Old Mapping of SMTPUSRID Field

During Notes directory shadowing, the *MailSystem* and *MailAddress* fields
are always shadowed to the Notes address book. The way these two fields
are shadowed is different for a system distribution directory entry that
represents a Notes user than for an entry that represents a non-Notes user.

Field Mapping for Non-Notes Users: For a system distribution directory
entry that represents a non-Notes user (an entry that has not been modified
by the Add Notes User (ADDNTSUSR) command), the MailSystem field is set

by the user-defined mapping (if such a mapping is specified when a directory shadowing configuration is created).

If a user-defined mapping does not exist for the MailSystem field, the value in the *QYNMMAILTY QNOTES* user-defined field is mapped. If the value in the *QYNMMAILTY QNOTES* field is None or is blank, the *MailSystem* field is set to Internet. The *MailSystem* field is shadowed as a normal field if the default mapping is used.

Also, for a system distribution directory entry that represents a non-Notes user, the *MailAddress* field is set by the user-defined mapping (if it exists).

If a user-defined mapping does not exist for the MailAddress field, the user's SMTP address is mapped. If the user does not have an SMTP address, an SMTP address is formed from the *user ID*, *user address*, and *TCP/IP domain name*.

Field Mapping for Notes Users: For a system distribution directory entry that represents a Notes user (an entry that has been modified by the ADDNTSUSR command), the *MailSystem* field is set by the user-defined mapping, if it exists.

If a user-defined mapping does not exist for the *MailSystem* field and the user has *mail service level* (system distribution directory field *MSFSRVLVL*) set to QYNMMAILTY QNOTES, the value from the *QYNMMAILTY QNOTES* field is mapped to *MailSystem*. If the mail service level is not QYNMMAILTY QNOTES, or *QYNMMAILTY QNOTES* is None or blank, MailSystem is set to Internet.

Also, for a Notes user that does not use Notes-related mail (system distribution directory entry modified by the ADDNTSUSR command with a *mail type* of *NONE), the MailAddress field is set by the user-defined mapping (if it exists). If a user-defined mapping does not exist for the *MailAddress* field, the user's SMTP address is mapped.

If the user does not have an SMTP address, an SMTP address is formed from the *user ID, user address,* and *TCP/IP domain name*. For a Notes user that does use Notes-related mail (a system distribution directory entry modified by the ADDNTSUSR command with a mail type other than *NONE), the *MailAddress* is not set.

The procedure previously described allows the Notes directory shadowing function to convert Notes users having a mail type of None to be AS/400 mail users (Notes users that use the AS/400 system as their mail system).

Mapping to the "FullName" Field

When a value is mapped to the *FullName* field in the Notes Address Book, the existing value or values are no longer *replaced*. The existing values remain and the mapped value is *added* (if it does not already exist).

The IBM-provided default mapping that is used for directory shadowing has changed. The following mapping to FullName field in the Notes Address Book was removed:

```
   AS/400 field . . . . . . . .   'FSTNAM *IBM'
                                  '" "'
                + for more values  'LSTNAM *IBM'
   Name and Address Book field .  'FullName'
   Type of field . . . . . . . .  *NORMAL
```

The new default mapping to FullName uses the middle initial:

```
                  Configure Notes Dir Shadowing (CFGNTSSHD)

 Type choices, press Enter.

 AS/400 fields mapped to Notes:       _
   AS/400 field . . . . . . . .   'FSTNAM *IBM'_____
                                  '" "'
                                  'MIDNAM *IBM'_____
                                  '" "'
                                  'LSTNAM *IBM'_____
                                  _____
   Name and Address Book field .  'FullName'_____
   Type of field . . . . . . . .  *NORMAL____    *KEY, *REQUIRED, *NORMAL

                                       _
                                                                 More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

Mapping of Field MIDNAM

Whenever the middle name is mapped from the system distribution directory entry (field MIDNAM) to a Notes Address Book field, only the initial letter is mapped. This applies even if MIDNAM is one of many fields mapped to a Notes Address Book field (for example, assume the following mapping is specified for the *AS/400 fields mapped to Notes* fields in the directory shadowing configuration):

```
    AS/400 field . . . . . . . .    'FSTNAM *IBM'
                                    '" "'
                                    'MIDNAM *IBM'
                                    '" "'
                                    'LSTNAM *IBM'
    Name and Address Book field .   'FullName'
    Type of field  . . . . . . .    *NORMAL
```

Assume that the system distribution directory entry being mapped has the
value John for *FSTNAM*, the value Adam for *MIDNAM*, and the value Doe for
LSTNAM. The value mapped to the *FullName* field is John A Doe.

What Happens When SMTP MTA Is Automatically Configured

The automatic SMTP MTA configuration involves creating and updating four
different Notes documents in the Public Address Book (PAB) for the Notes
domain. These documents are:

- The Global domain document
- The Foreign SMTP domain document
- The Connection document
- The Server document

It is important to note that these documents are automatically configured by
the installation procedure.

Further configuring of the MTA is beyond the scope of this book. Refer to
the Notes databases *SMTP MTA Release Notes*, (RNTMPL.NSF) and
SMTP/MIME System Administration Guide, (SMTPAG.NSF) for further
information on this subject.

The Global Domain Document

The global domain document (see example in Figure 24 on page 65) is used
to group Notes domains under a single Internet domain. For instance, Notes
domains sales1, sales2, and sales3 can be grouped under a single Internet
domain by specifying .acme.com in the global domain document.

When mail items are sent from any of the domains, the Internet domain
.acme.com is appended to the Notes Domain name, (for example,
sales1.acme.com, sales2.acme.com, and sales3.acme.com).

In the global domain document, you specify:

- The Internet domain suffixes from which you accept inbound SMTP mail.
- Restrictions on what member domains can send outbound SMTP mail.
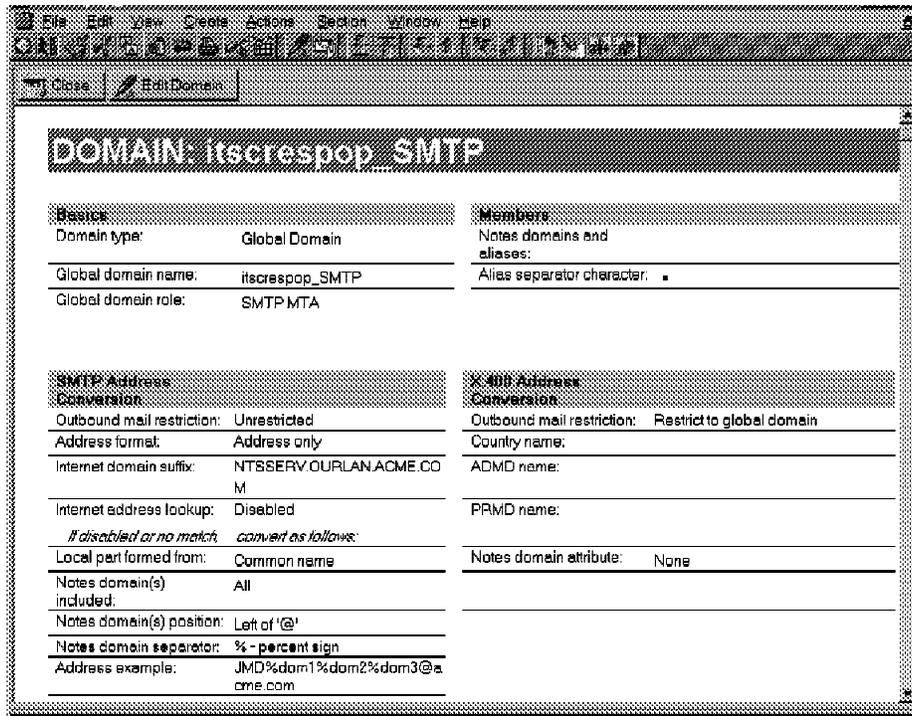- The format of the sender's name (if included) in outbound SMTP mail.

Figure 24. Notes Global Domain Document

- How the sender's return address appears to the recipient.
- The position (to the left or right of the at sign (@) of the Notes domain name in outbound address.
- The Notes domain separator character (for example, "." or "%") for outbound addresses.

When this document is created by the Mail integration support, the name of the global domain consists of _SMTP concatenated to the end of the name of the Notes domain in which the SMTP MTA is installed (see the *Global Domain name* field in Figure 24). The *Global domain tasks* field is set to SMTP MTA, and its *Internet domain suffix* field should be set to the Integrated PC Server's TCP/IP host name and TCP/IP domain name (<NWS's TCP/IP host name>.<NWS's TCP/IP domain name>). According to the examples given in Table 1 on page 14, this is the *fully-qualified name* for the Integrated PC Server (see .6. in Table 1 on page 14 and Figure 6 on page 18) with the sample value of NTSSERV.OURLAN.ACME.COM.
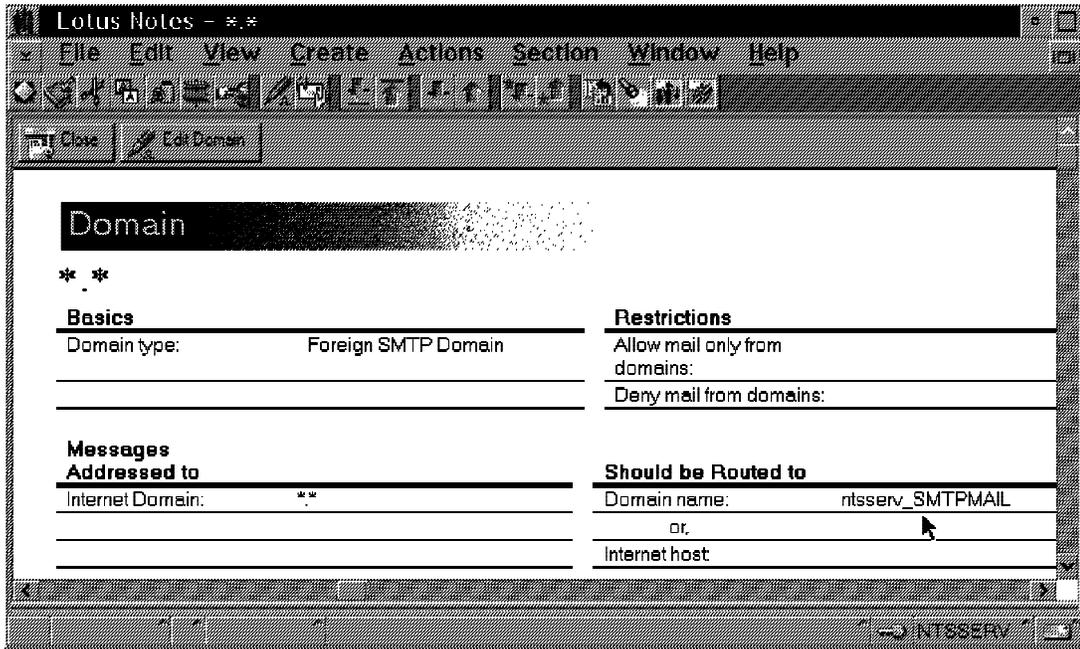
Figure 25. Notes Foreign SMTP Domain Document

Finally, the *Local part formed from* field defaults to `Common name`. If you want to change this field, the only other option available is `Short name` because the mail integration product does not support `FullName`.

Foreign SMTP Domain Document

This document (see example in Figure 25) controls which Internet domains outbound mail can be sent to. This is achieved by specifying the Internet domain name in the *Internet domain* field.

In the example, the wildcard characters *.* are used. This allows outbound mail to be sent to all Internet domains. You can also specify *.`com`; in this case, outbound mail is sent to the Internet domains that end in .`com`. If you specify *.`acme.com`, for example, only mail destined for Internet domains ending in .`acme.com` is sent. This allows the foreign domain document to act as a filter. Only Internet domains you want mail to be sent to need be specified.

The outbound mail items are sent to SMTP.BOX.

A foreign SMTP domain document must be created for each Internet domain that outbound mail is sent to and the *Destination domain* field of this connection document (Figure 26 on page 68) and the *Domain name* field of

the foreign SMTP domain document need to be the same value. This field is called a *hypothetical Internet domain name* in the documentation for the SMTP/MIME MTA.

When this document is created by the mail integration support, the *Internet domain* field is set to *.*, and the *Domain name* field is set to `_SMTPMAIL` concatenated to the end of the Integrated PC Server name (`NTSSERV_SMTPMAIL`).

If you want to change the *Internet domain* field from something other than *.*, refer to the *SMTP MTA Release Notes* and *SMTP/MIME System Administration Guide* databases included with the SMTP MTA for more information regarding this field.

Note: Do not enter anything into the *Internet host* field.

The Connection Document

In Lotus Notes, the Connection Document provides server and domain information for connecting servers for mail routing and replication. In our case, the connection between the SMTP MTA server and the (hypothetical) *Internet domain name* specified in the *foreign SMTP domain* document is defined by the *SMTP Connection Document* (see example in Figure 26 on page 68).

Remember, the name used in the *Destination domain* field of this document must be the same as the name used in the *Domain name:* of the *foreign SMTP domain* document.

The connection document is created with the connection type of SMTP. The *Source server* and *Source domain* fields are set to this Notes server's hierarchical name and this Notes server's domain, respectively.

The *Destination server* field is set to `SMTP-MTA`; however, this field is not used by the SMTP MTA or the Notes server and is set for documentation purposes only.

The *Destination domain* field is set to `_SMTPMAIL` concatenated to the end of the Integrated PC Server name (`NTSSERV_SMTPMAIL`). Note that the *Destination domain* field of this connection document and the *Domain name* field of the foreign SMTP domain document (Figure 25 on page 66) need to be the same value. This field is called a *hypothetical Internet domain name* in the documentation for the SMTP/MIME MTA.
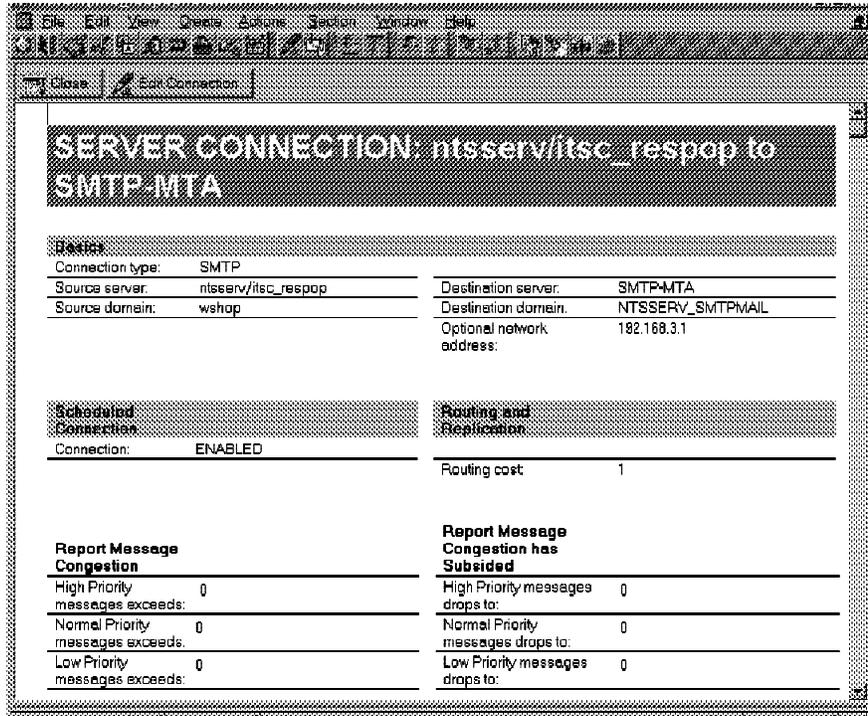
Figure 26. SMTP Connection Document in the Notes Server's Public Address Book

The contents of the *Optional network address* field is set automatically[15] to the IP address of the AS/400 system when the Connection Document is configured during the installation of the MTA. This field is set to the AS/400 system's internal LAN Internet address used to connect the AS/400 system and Integrated PC Server through the *internal* LAN. By using OS/400's IP address on the *internal* LAN, two advantages are achieved:

- The MTA does not involve the help of a remote name server to try to find a direct route to each individual mail recipient.

- The faster internal LAN is always used to forward mail to OS/400. (A name server knows OS/400's internal IP address and, therefore, mail is routed through the IPCS's and OS/400's *external* network ports).

---

[15] With the previous solution documented in the first edition of this book (SG24-4977-00), this field was not automatically set, leaving it up to the administrator to set it only if no name server exists in the network. Not having any address in this field means that the MTA tries find a direct route to each mail recipient (normally involving a name server). Meanwhile, it was found that in most cases, it is better to force all mail to be sent through OS/400.

The value used in this field is found in the `QFPAS400IPADDR` environment variable in E:\CONFIG.SYS. Note that this Internet address[16] must always be active on the AS/400 system whenever the Notes mail integration function is started.

Since the SMTP MTA is configured this way, all mail that is handled by the Integrated PC Server Notes SMTP MTA is automatically sent to the AS/400 system to get routed by its SMTP support. With this design in mind, take note of the following points:

- The *Optional network address* is <u>not updated accordingly</u> if one of the following situations happen:
    - The AS/400 Internet address is changed.
    - The external Integrated PC Server port 1 or port 2 Internet addresses are removed or added.
    - If name servers are removed from or added to the Integrated PC Server configuration.

    This is because the automatic configuration occurs only at the SMTP MTA installation. However, this is the only field that needs to be manually set based on these possible configuration changes. All the Notes administrator must do is change this *Optional network address* manually, based on the configuration change.

The SMTP-MTA Section in the Server Document

Successful installation of the integration code adds the *Internet Message Transfer Agent (SMTP MTA)* section to the Notes Server document (see example in Figure 27 on page 70).

The *server* document for the Notes server installed on this Integrated PC Server is updated in the following way:

- *SMTP Mail Routing* is added to the list of routing tasks in this Notes server's *Routing tasks* field.

- The *Internet Message Transfer Agent (SMTP MTA)* portion of the Server document is updated with the following information:
    - The *Global domain name* field is set to the name of the global domain document just created (remember, this name is constructed

---

[16] In some cases (for example, if you ran the *Install Notes Server (INSNTSSVR)* command multiple times), there is more than one internal IP address associated with the same *NWSD. To find out which is the correct interface to be started, issue the following command:

`SBMNWSCMD 'ECHO %QFPAS400IPADDR%' NTSSERV SVRTYPE(*BASE)`

The detailed messages in your job log show a single line with the correct IP address.

by concatenating _SMTP to the end of the name of the notes domain in which the SMTP MTA is installed).

– The *fully-qualified Internet host name* field is the same as *Internet domain suffix* field of the global domain document: <NWSD TCP/IP host name>.<NWSD TCP/IP domain name>. The *MTA administrator* field contains the same names as those listed in the *administrators* field of this server document unless the lengths of all the administrator names are greater than 1024 characters. If that is the case, an error is logged in a file on the E drive of the Integrated PC Server (E:\YNMSFMTI.LOG) and the configuration continues. However, you need to update this field manually. The directory
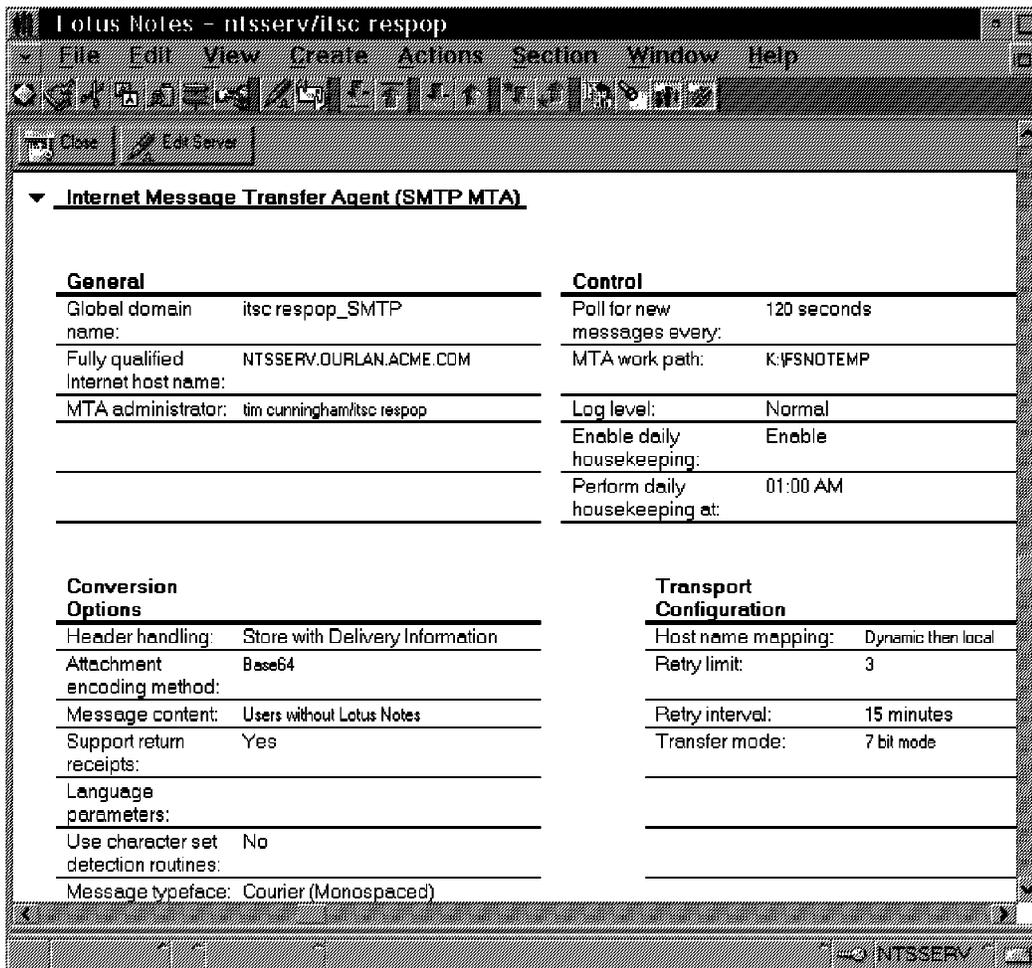
Figure 27. Internet Message Transfer Agent (SMTP MTA) Section of Server Document

`K:\FSNOTEMP` is created (where `K` is the drive on which the notes server is installed) and this directory name is placed in the *MTA work path* field. Do not delete this directory!

Description of the Lotus Notes SMTP MTA Components

When the SMTP/MIME MTA is running on a Notes server, it consists of a number of Notes tasks and child processes as well as a number of databases that it uses to process messages. This topic provides a brief description of each SMTP MTA component. Figure 28 on page 72 shows how the eight different tasks relate to each other and the four Notes databases.

You can list these tasks using the AS/400 command:

```
SBMNWSCMD CMD('SHOW TASKS') SERVER(NTSSERV) SVRTYPE(*BASE) CMDTYPE(*NOTES)
```

Note: You can also use the *remote console* on a Lotus Notes client to submit the SHOW TASKS command to the Notes server running on the Integrated PC Server.

Add-In Controller (SMTPMTA)

The Add-in Controller (task name: SMTPMTA) is the Notes task that is loaded on the Notes server when you start the MTA. It acts as a control point for all the other tasks. All commands for the MTA are sent to the Add-in Controller and it notifies the necessary child processes.

Outbound Message Conversion (SMTPMTA omsgcnv)

The Outbound Message Conversion task (task name: SMTPMTA omsgcnv) converts Notes messages into an SMTP/MIME format ready for transmission. The format of the SMTP message and the conversion of Notes addresses to SMTP Addresses is fully configurable.

Outbound Session Controller (SMTPMTA osesctl)

The Outbound Session Controller (task name: SMTPMTA osesctl) controls transporting the converted messages to their respective SMTP destinations. It launches or notifies one or more session handlers to transport the message or messages to a particular destination.

Outbound Session Handlers (SMTPMTA oseshlr*n*)

The Outbound Session Handlers (task name: SMTPMTA oseshlr*n*) are child processes of the Outbound Session Controller. The handlers perform the actual tasks of connecting to the destination or next hop in the SMTP system, delivering the messages and passing back any errors, either temporary or permanent.
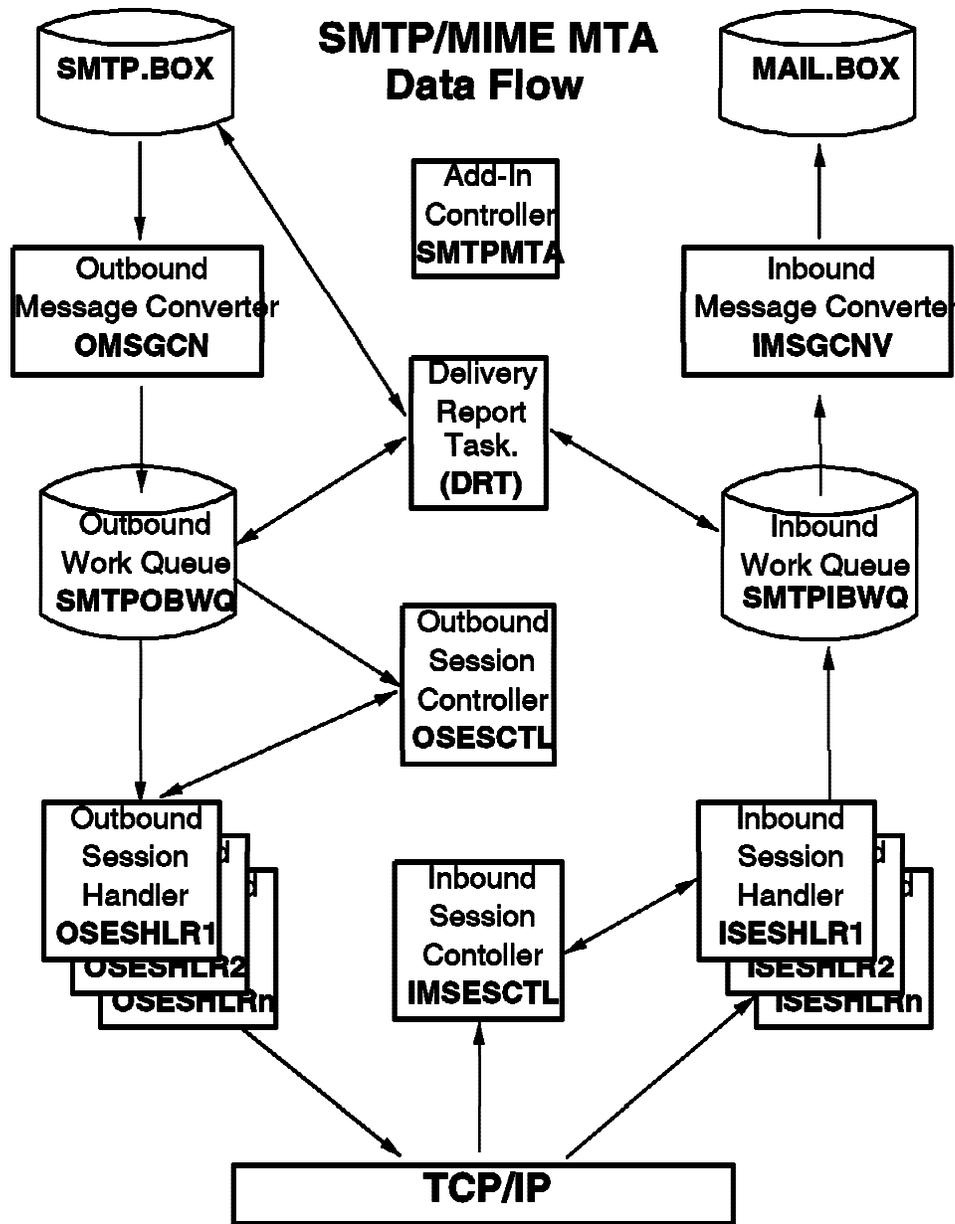
Figure 28. Outbound and Inbound Mail Flow

Inbound Message Conversion (SMTPMTA imsgcnv)

The Inbound Message Conversion (task name: SMTPMTA imsgcnv) converts messages received by the Inbound Sessions Handlers to a Notes format. It

also converts the destination user address to a Notes format and checks that this address is deliverable. If the message is not convertible or the address is not deliverable, it indicates that the message has failed delivery so a Non-delivery Report can be generated. If the message is not destined for Notes, it puts the message into the work queue for the Outbound Transport.

Inbound Session Controller (SMTPMTA isesctl)

The Inbound Session Controller (task name: SMTPMTA isesctl) controls receiving messages from other SMTP systems. It listens on the SMTP port 25 and accepts the initial incoming connection. It launches or notifies an Inbound Session Handler to take the connection so that it can listen for a new connection.

Inbound Session Handlers (SMTPMTA iseshlr*n*)

The Inbound Sessions Handlers (task name: SMTPMTA iseshlr*n*) accept incoming connections from the Inbound Session Controller. They perform the SMTP protocol handshaking with the sending system and write the incoming data to the work queue.

Delivery Report Task (SMTPMTA drt)

All of the preceding SMTP MTA tasks perform specific functions. For each message, each task indicates whether or not that task was successful and whether a temporary or permanent error occurred. It is the job of the Delivery Report Task to process the messages in the work queues depending on their status. The Delivery Report Task deletes all messages that have been successfully sent or received. For messages that have experienced some kind of permanent failure, the Delivery Report Task generates a Non-delivery Report or Undeliverable Message Notification back to the sender and also notifies the administrator of any dead mail. **Dead mail** is mail that fails to route within one day. The failure might be the result of a server or gateway being down.

Appendix A. Downloading the SMTP/MIME MTA

This appendix contains instructions on how to obtain the 1.06 version of the SMTP/MIME MTA software from the Lotus Web site. This is no longer necessary because the SMTP/MIME CD-ROM included in the Domino 4.51 package or later includes the OS/2 1.06 version of the SMTP/MIME MTA on a separate CD-ROM. However, customers using the Domino 4.5a (or earlier) package need to obtain the MTA software from the Lotus home page.

Find and Download the SMTP/MIME MTA Package

Note: Download only the OS/2 version of SMTP/MIME MTA 1.06 to a workstation that can communicate with the AS/400 system through Client Access/400 shared folder support or FTP (File Transfer Protocol).

To get the SMTP MTA software:

__ 1. Connect the workstation so that you can access the World Wide Web.

__ 2. Create a directory on the workstation for the SMTP MTA software. For example:

```
MD C:\SMTP-MTA
```

__ 3. Access the Lotus Web site at the following URL address:

`http://www.lotus.com/notesmta/2222.htm`

At the time of writing this redbook, there were many versions of the SMTP/MIME MTA available:

- Release 1.0 (7/25/96) and Release 1.00.01 (9/6/96).
- Release 1.05
- Release 1.06 (For OS/2)
- Release 1.1 (For NT servers)

Of these, **only the 1.06 version is supported** on the Integrated PC Server.

The download appears as a single self-extracting file that is named as `SMTPOS2.EXE`.

Next load the package into the new subdirectory `SMTP-MTA` on your workstation.

Extracting SMTP MTA Files

Before proceeding, you must extract the installable files from the file that you downloaded. The procedure is simple:

__ 1. Change to the directory that contains the downloaded file. For example:

    CD C:\SMTP-MTA

__ 2. Enter the name of the downloaded file. For example:

    SMTPOS2

The `SMTPOS2.EXE` program expands to the individual SMTP MTA files.

Check Correct Release Level

Just to make sure you downloaded the correct software, you can type `TYPE READ.ME` to see the date and release of the package.

```
Lotus Notes (TM) SMTP/MIME MTA Release 1.06 February 27, 1997

Refer to the Release Notes (rn_smtp.nsf) of the SMTP/MIME MTA for
Install instructions and important information about this release.

Refer to the Administrator's Guide (smtpag.nsf) for information
on configuration and operation of the SMTP/MIME MTA.

Note:  These two files should be copied over to your hard disk to
open them in Notes. For updates to Release Notes and Administration
Guide, go to http://www.lotus.com/notesmta/
```

Note: Only the U.S. English version of the SMTP/MIME MTA Release 1.06 is supported on the Integrated PC Server. Newer or older MTAs cannot be used with a Notes server on the Integrated PC Server.

Other national language versions and other releases have not been tested with the *Lotus Notes Integration for OS/400* installation and configuration support.

The 1.06 SMTP/MIME MTA software's "Localized Versions" (other national language versions) must be downloaded from the Lotus home Web page:

http://www.lotus.com/notesmta/224e.htm

Now that you have downloaded and extracted the SMTPMTA software, you have to copy the entire directory (in our example) that you extracted into to the AS/400 system. Return to "Copying SMTP MTA Files to AS/400 Folder or IFS Directory" on page 23 for an explanation of how to do this copy and then proceed to install the downloaded MTA from that point on by following

the instructions in "Installing SMTP MTA on the Integrated PC Server" on page 25.

Appendix B. SMTP MTA Problem Determination

The following sections describe some techniques to find out why the SMTP MTA installed on the Integrated PC Server is not working as intended.

SMTP MTA Related Entries in the Notes Log

Since the SMTP/MIME MTA is fully integrated with the Notes server, it uses the server's log database (NOTES.LOG) to record its normal or abnormal functions. You can select the amount of information to be logged by changing the *Log level* field in the SMTP MTA section of the server document.

How to Find the Notes Log Database LOG.NSF

For less experienced Notes users, we briefly show how you can find the Notes log database `NOTES.LOG`:

1. On your Notes client workstation, select from the menu bar:
   a. **File**
   b. **Database**
   c. **Open**

   (A short cut for the preceding three steps is **Ctrl O**).
2. Enter the name of your Notes server in the *Server* field (upper left of the dialog box).
3. In the *Filename* field (bottom left of the dialog box), type:

       LOG.NSF

4. Click on the **Open** or simply press Enter.
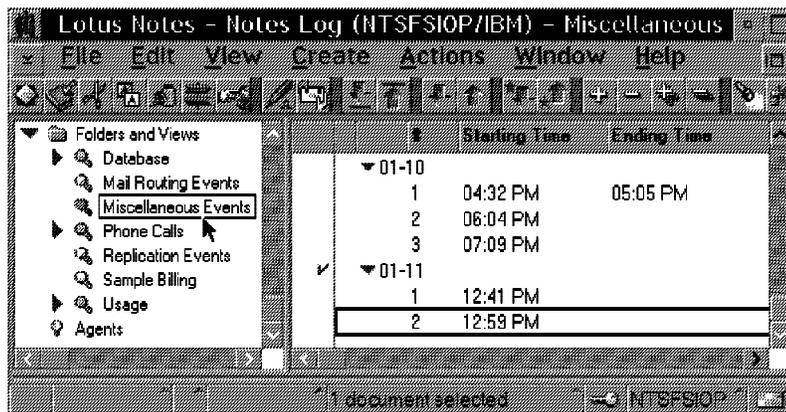
Figure 29. Selecting the Miscellaneous Events View in the Notes Log (LOG.NSF)

5. The *About Notes Log* document is shown. Press the **Esc** (Escape) key and the Notes log navigator window in Figure 29 is shown.

The navigator window is the starting point for the following examples.

Miscellaneous Events in the Notes Log (LOG.NSF)

High level information about starting and ending the SMTP MTA, (also about abnormal terminations of the components), can be found in the *Miscellaneous Events* view.

The *Mail Routing Events* view described in "Mail Routing Events in the Notes Log (LOG.NSF)" on page 83 normally provides more details about the tasks performed by each of the SMTP MTA's components, but the *Miscellaneous Events* view should not be ignored as our example in Figure 31 on page 82 shows.

Looking at the Miscellaneous Events

To see the *Miscellaneous Events* view, click on *Miscellaneous Events* in the navigator pane,[17] to see the miscellaneous log entries in the view pane.

Note, that each item shown in the view (sorted by date and time) contains many log entries that have been logged within the interval between the *starting time* and *ending time*. If the Notes server was stopped abnormal, the log entry for that timer interval does not contain an *ending time*.

Double-click on the time where you suspect there is a problem and the *Event Log Entry* is shown.

The log in Figure 30 on page 81 shows a normal situation:

1. The LOAD SMTPMTA command was generated by the mail integration code because a `STRNWSAPP ... NTSFCN(*MAIL)` or `STRNWSAPP ... NTSFCN(*ALL)` was issued. `LOAD SMPMTA` is used to start the MTA and, subsequently, this Notes agent starts the other components as described in "Description of the Lotus Notes SMTP MTA Components" on page 71. However, normally you do not see any of the other components in the *Miscellaneous Events* view.

2. The entry at `01:01:34 PM` shows that the SMTP mail box (SMTP.BOX) has been created. This a normal process whenever the SMTP.BOX database has been deleted. Deleting the SMTP.BOX database may be necessary to recover from certain error conditions (for example, see Figure 31 on page 82).

---

[17] The term *pane* in Lotus Notes terminology refers to a part of a window.
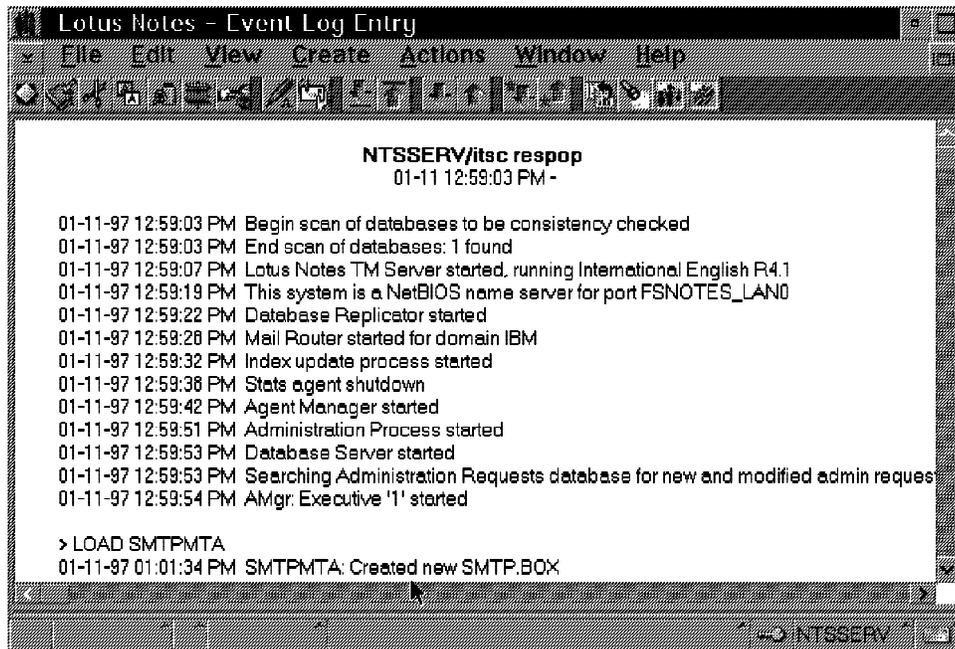
Figure 30. Miscellaneous Events after Starting the SMTP MTA

> **Note:** However, this causes the loss of all mail that was stored in the SMTP.BOX but was not sent yet.

Example of a Problem Visible Through the Miscellaneous Events View

Figure 31 on page 82 shows a situation where the SMTP MTA fails to start successfully because the SMTP mail box was damaged.

The error message `07:10:43 PM` in Figure 31 on page 82 is the only one that came up in this situation. However, if you check the active tasks on the Notes server, as suggested in "Start the Mail Integration" on page 37, you see that the `omsgcnv` task is not active.

After this happens, you cannot end the mail function (that is, the SMTP MTA) or the Notes server itself orderly. However, the *End Network Server Application (ENDNWSAPP)* command does complete successfully, even though some tasks running under Notes never end and, therefore, any subsequent attempt to start the Notes server again fails.

A way to clean up this situation is :

1. Vary off the network server (*NWSD).
2. Vary on the *NWSD again.
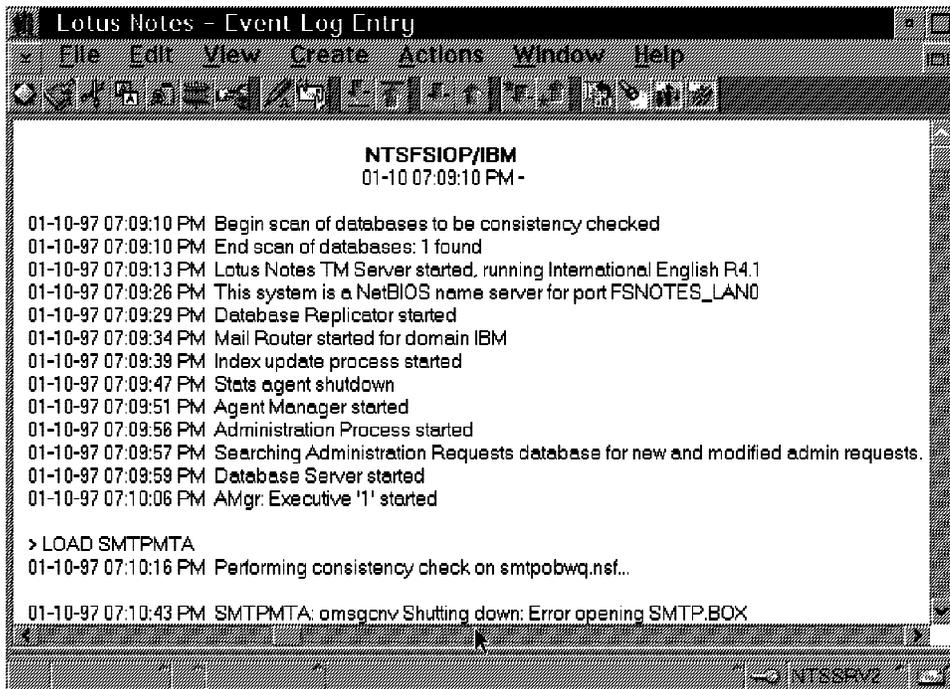
Figure 31. Miscellaneous Events with Error Situation

3. Start the Notes server <u>without starting the mail function</u> (that is, do <u>not</u> use the default `*ALL` for the parameter NTSFCN):

        STRNWSAPP *NOTES NTSSERV NTSFCN(*NTSSVR)

4. Use a Notes client workstation to delete the SMTP.BOX database.
5. Start the mail function.

Important: If you follow these instructions and delete the SMTP.BOX database, all of the mail items stored in there are lost.

However, it might be worth trying to end the Notes server (through varying off the *NWSD) and starting again <u>without</u> deleting `SMTP.BOX`. In one case, we were successful with this approach because we saw a different error message (but now in the *Mail Routing Events*) when we started the server the second time:[18]

    01-20-97 11:57:24 AM SMTPMTA:
                          'MTA Startup failed during database initialization: '
                          I:268 File is in use by another program

This situation is now handled much more gracefully. Even though the SMTP MTA terminated, we were able to start it again without bringing down the Notes server or varying off the *NWSD. After that, we sent and received mail without any problem.

Mail Routing Events in the Notes Log (LOG.NSF)

The following examples show how you can use the *Mail Routing Events* view of the Notes log LOG.NSF to do more detailed problem determination.
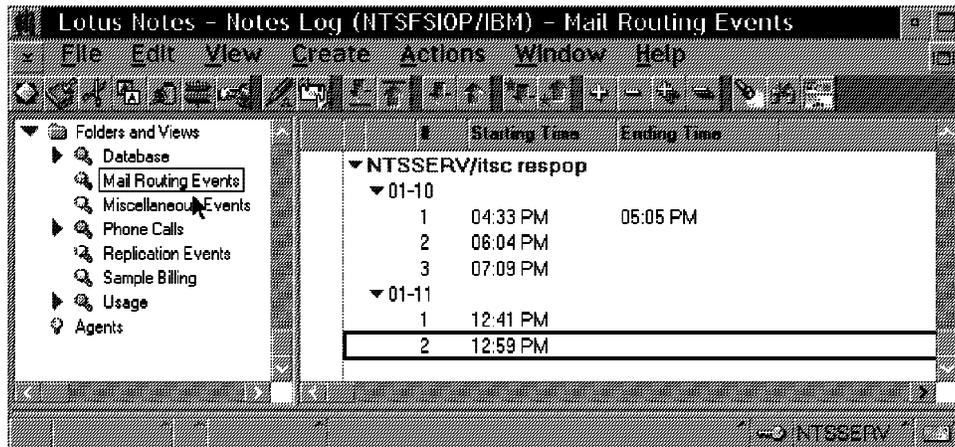
Figure 32. Selecting the Mail Routing Events View

Looking at the Mail Routing Events

To see the *Mail Routing Events* view, click on *Mail Routing Events* in the navigator pane (see the mouse pointer in Figure 32), to see the mail routing log entries in the view pane.

Note: The view pane shown in Figure 32 looks similar to the one shown in Figure 29 on page 79; therefore, make sure you see *Mail Routing Events* in the window title.

Double-clicking an item shows you the individual log entry as shown in Figure 33 on page 84.

Normal Sending Sequence as Shown in Mail Routing Events

The situation shown in Figure 33 on page 84 reflects the normal start up process of the SMTP MTA. You can also easily determine which version of the MTA you are using (Release 1.0.1, in our case).

Note: You must see five entries saying *Startup completed*, one for each of the main MTA components. Seeing the *SMTPMTA: MTA Startup Completed*
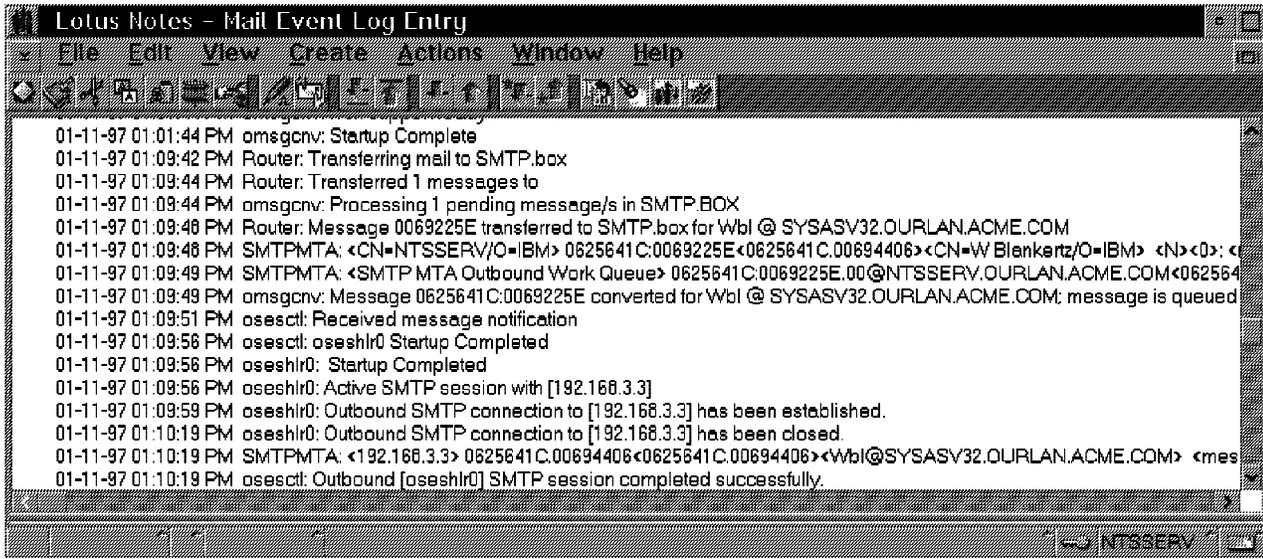
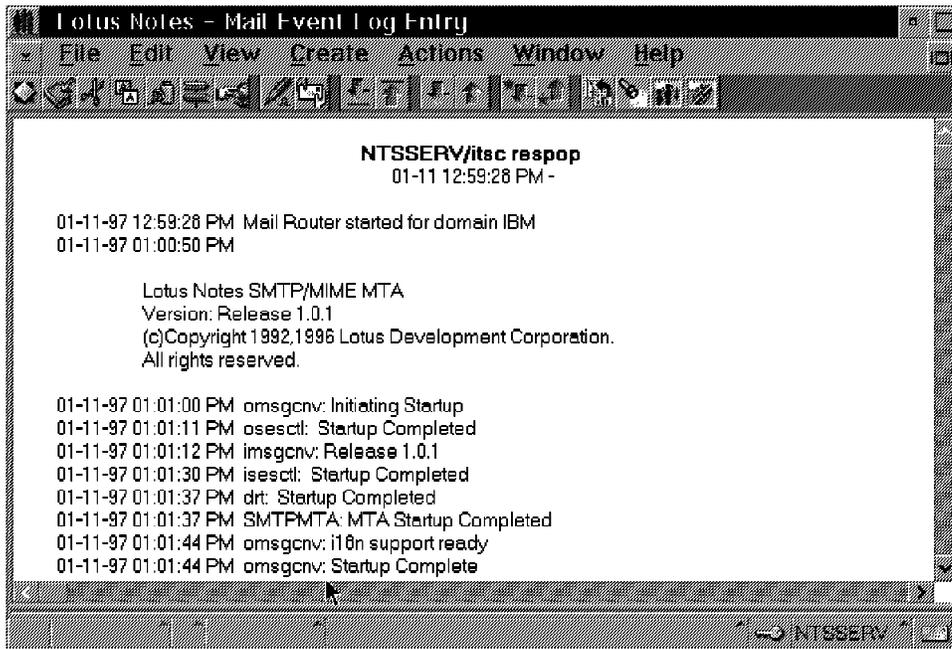*Figure 34. Routing Events after Sending Mail Successfully*

Figure 33. Routing Events after Starting the MTA

entry (at `01:01:37 PM` in our example) is not sufficient to assume the SMTP MTA is running. See the explanation for Figure 31 on page 82; in that case, you see all "completed" entries except the last one.

Figure 34 on page 84 shows the mail routing log entries after successfully sending mail. The sequence starts at `01:09:42 PM` when the Notes mail router (not the MTA yet!) detects mail to be sent to an SMTP address (see "How the Lotus Notes Server Routes Mail" on page 45).

You may compare all the log entries starting with the one logged by *omsgcnv* at `01:09:44 PM` in Figure 28 on page 72 and the description in "Description of the Lotus Notes SMTP MTA Components" on page 71.

While all messages have the name of the issuing component (`SMTPMTA`, `omsgctl`, and so on) on the right of the time stamp, the remaining information can either be just informational text or actual data about the mail item being processed. Some of the messages (for example, at `01:09:49 PM`) are long and you have to scroll to the right side to see the full length of the message.

In some cases, the right part of the message (following the characters >:) describes the structure of the data on the left of it. Figure 35 shows the contents of a detailed log entry. We edited that entry to make its content easier to understand by placing the descriptive part underneath the actual data.

```
01-11-97 01:09:49 PM  SMTPMTA:

<CN=NTSSERV/O=itsc respop> 0625641C:0069225E <0625641C.00694406>   <CN=W Blankertz/O=itsc respop>     <N>     <0>:
<message received from>    input message id  <internal message id> <originator>               subject <priority> <size>
```

Figure 35. Entry in the Mail Routing Event Log

Example of Problem Visible Through Mail Routing Events
The events mail routing shown in Figure 36 on page 86 reflects a problem that may not be obvious. The reason why it is not so easy to detect is the fact that no real error message is coming up.

If you compare the sequence of log entries in Figure 36 on page 86 starting at `06:43:43 PM` with those in Figure 34 on page 84 at `01:09:42 PM`, you can see that the *Outbound Session Handler 0 (oseshlr0)* only shows one log entry at `06:43:58 PM`:

```
oseshlr0: Active SMTP session with [SYSASV32.OURLAN.ACME.COM]
```
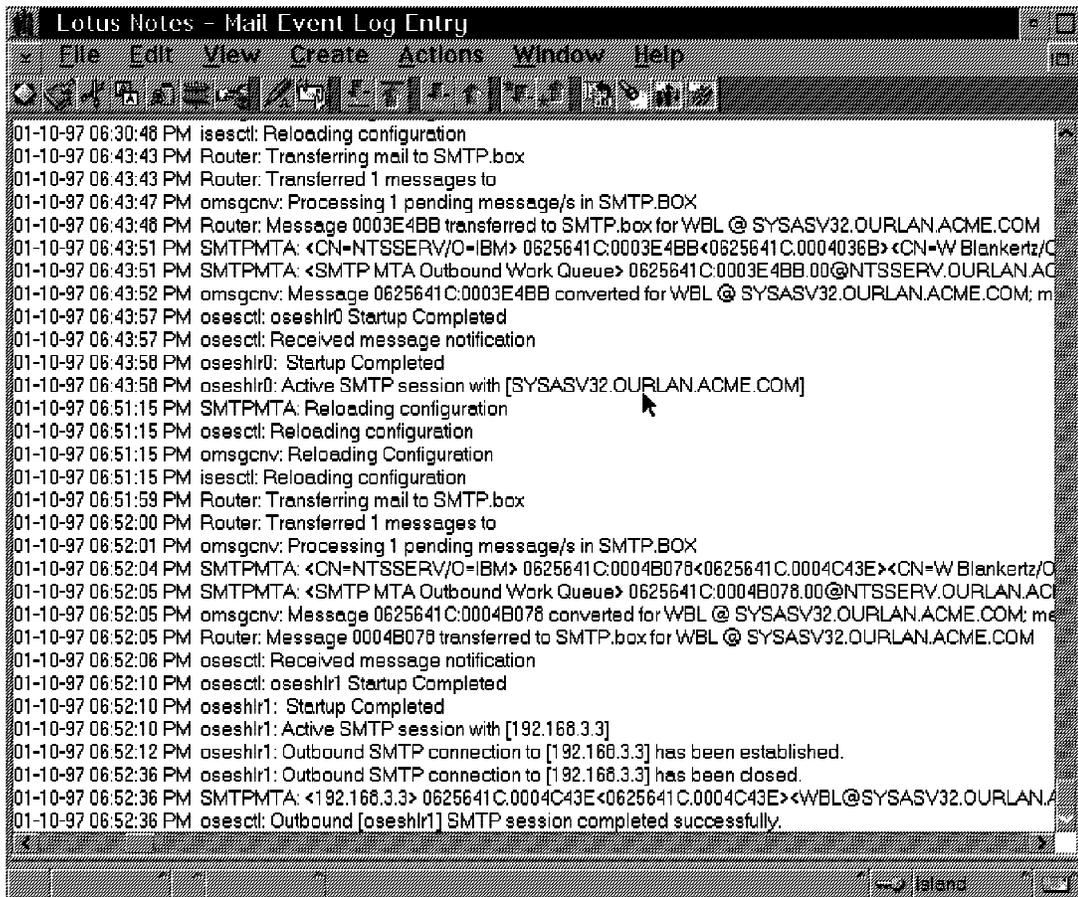
Figure 36. Routing Events after Problem with Sending

This "active" session never completes successfully (actually it never connected to an SMTP host) because these entries never appear in the log:

```
oseshlr0: Outbound SMTP connection to [SYSASV32.OURLAN.ACME.COM] has been established.
oseshlr0: Outbound SMTP connection to [SYSASV32.OURLAN.ACME.COM] has been closed.
SMTPMTA: <SYSASV32.OURLAN.ACME.COM> 0625641C.0004C43E<0625641C.0004C43E><WBL@...
osesctl: Outbound [oseshlr0] SMTP session completed successfully.
```

However, there *is* a sequence of such entries starting at 06:52:10 PM visible in Figure 36, but that is a *different* situation for three reasons:

1. A different *Outbound Session Handler* (*oseshlr1* instead of *oseshlr0*) was logging these entries. (Remember, more than one *Outbound Session Handler* can be active at the same time to be able to send mail to different systems.)

2. A different system was contacted: `[192.168.3.3]` instead of `[SYSASV32.OURLAN.ACME.COM]`.

3. A different mail item was handled: `0625641C:0004C43E` instead of `0625641C:0004036B`.

The nasty part of this problem is that the *Outbound Session Handler 0 (oseshlr0)* stays active for ever as you can tell by using the `SHOW TASKS` Notes server console command:

At this point, the SMTP MTA cannot be ended orderly any more. Furthermore, the entire Notes server, although still functioning properly at this time, cannot be ended in a normal way.

What Caused This Problem?: The reason why *oseshlr0* was hanging was because no name server was defined to be used by the Integrated PC Server. That is, parameter .**7**. in Table 1 on page 14 was set to **NONE*, or the default **SYS* was used, thus referring to the name server defined for OS/400, but the TCP/IP configuration for OS/400 did not contain any name servers (.**12**. in Table 1 on page 14).

Not using any name servers is not a problem. However, if that is the case, you **must specify the AS/400's IP address** in the *Optional network address* field in the SMTP connection document. As described in "The Connection Document" on page 67, this address should have been set automatically by the installation process, but there might be conditions where this situation still could occur:

- The MTA was installed by the old process (that is, not all PTfs were applied).
- The contents of this field was changed by an administrator.
- The wrong internal IP interface was started.

Accessing the SMTP Mail Box and Work Queues

Normally the SMTP Mail box (`SMTP.BOX`) as well as the inbound (`SMTPIBWQ.NSF`) and the outbound (`SMTPOBWQ.NSF`) work queues cannot be accessed by any Lotus Notes user other than the server itself. However, for problem determination, it may be helpful to look at the contents of those databases or delete an entry that cannot be processed. To grant the necessary authority to the Notes administrator, proceed as described here:

1. Stop the Notes server on the Integrated PC Server using the *End Network Server Application (ENDNWSAPP)* command:

```
ENDNWSAPP *NOTES NTSSERV
```

2. Start the SRVIFS file server on the Integrated PC Server by using the command:

```
SBMNWSCMD 'START SERVICE' NTSSERV SVRTYPE(*BASE)
```

3. On the administration client (with SRVIFS installed), on any OS/2 command line, enter:

```
SRVATTCH K: \\NTSSERV\K
```

4. Start the Lotus Notes Client.

5. Select from the menu bar:

   a. **File**
   b. **Database**
   c. **Open**

6. Leave LOCAL in the *Server* field.

7. Click on **Browse**.

8. Select Drive K:.

9. Enter SMTP.BOX in the *File name* field.

10. Click on **Select**.

11. Click on **Add Icon**.

12. Repeat step 7 to step 11 for SMTPOBWQ.NSF and SMTPIBWQ.NSF databases.

13. Click on **Done**.

14. On your workspace, look for the icon for *SMTP Mail Box on local* and click on it with the **right mouse button**.

15. Click on **Access Control...**

16. Click on **Ad**d**...**

17. Enter the name of the administrator into the *Person, server, group:* field.

18. Select *Manager* in the Access field.

19. Click on **Delete Documents**.

20. Click on **Ok**.

Make absolutely sure the Notes Server is not active while performing the preceding steps; otherwise, it may result in a damaged database. When it happened once to us, the *Miscellaneous Events* in Notes Log showed after trying to start the SMTP MTA:

```
01-10-97 07:10:43 PM  SMTPMTA: omsgcnv Shutting down: Error opening SMTP.BOX
```

This caused the MTA to hang without any additional error messages!

Appendix C. Ad Hoc Internet Addressing with OV/400

Previously, when you used IBM OfficeVision for OS/400 to send mail to an internet address, the recipient's address had to be added to the system distribution directory before you actually sent the mail. The reason was that IBM OfficeVision for OS/400 was only able to accommodate a recipient's address in the form of a *user ID address* (also called *DEN/DGN*).

A PTF has been developed (SF33896 for V3R7 and SF33943 for V3R2)[19] to allow for *context addressing*, also known as *business card addressing*, or *ad hoc* addressing. It allows you to specify any internet address in the body of your note.

Using an internet address does not necessarily mean the Internet has to be used to reach the recipient, it rather includes all users who can be reached by an SMTP address, even if the recipient is a POP3 client or a Lotus Notes client on the same AS/400 system.

To implement these changes, a new exit program for AnyMail, *QZMFCTXT*, is shipped with the PTFs. The program must be registered as an exit program in the mail server framework list expansion point (QIBM_QZMFMSF_LST_EXP) to activate the function. It can be in any position in that exit point but it should be *after* the QSYS/QZDSNPLE program (exit program 1000). Register the program after you apply the PTF.

Implement PTF SF33896 or SF33943

Applying the PTF to your AS/400 system is not enough to make this new function available to you. Follow the instructions given here to enable ad hoc internet addressing for your OfficeVision/400 users:

1. Load and apply the PTF or its supersede following the instructions in the cover letter.
2. Register the exit program using the following command:

   ```
   WRKREGINF QIBM_QZMFMSF_LST_EXP
   ```

3. Select option **8**, *Work with exit programs*.
4. On the next display, enter Option **1** (*Add*), and enter QZMFCTXT as the Exit Program and QSYS as the library and press **Enter**.

   Press **PF10** (*Additional parameters*) and **page down** to the second display. Fill in the displays as shown in Figure 37 on page 90:

---

[19] Meanwhile the two PTFs have been superseded by SF36483 and SF36105 respectively.

```
                     Add Exit Program (ADDEXITPGM)

Type choices, press Enter.

Exit point . . . . . . . . . . . > QIBM_QZMFMSF_LST_EXP
Exit point format  . . . . . . . > MSFF0100      Name
Program number . . . . . . . . . > 2000          1-2147483647,
Program  . . . . . . . . . . . . > QZMFCTXT      Name
  Library  . . . . . . . . . . . >   QSYS        Name, *CURLIB
Text 'description' . . . . . . . > Context switching exit


                         Additional Parameters

Replace existing entry . . . . . > *NO           *YES, *NO
Create exit point  . . . . . . .   *NO           *YES, *NO




                                                      More...
```

Figure 37 (Part 1 of 2). Add Exit Program for PTF SF33896 or SF33943

5. End the mail server framework by using the *End Mail Server Framework (ENDMSF)* command:

   ENDMSF

6. Restart the mail server framework by using the *End Mail Server Framework (ENDMSF)* command:

   STRMSF

7. A system directory entry must be added that causes the *context switching* program to be executed. The user ID you add is the recipient you enter in the *addressee* field of the OfficeVision note. Use the following command to add the directory entry:

   ```
   ADDDIRE USRID(INTERNET GATEWAY)         +
           USRD('Context switching entry') +
           SYSNAME(INTERNET)               +
           MSFSRVLVL(*USRIDX)              +
           PREFADR(NETUSRID *IBM ATCONTXT)
   ```

   Note: When you prompt (F4) for the *Add Directory Entry (ADDDIRE)* command, you have to press command key **F9** (All parameters) and the **Page Down** key to show the *MSFSRVLVL* and *PREFADR* parameters.

   Another approach to add this directory entry is to use the *Work with Directory Entries (WRKDIRE)* command. Use option 1 to add the entry INTERNET with address GATEWAY. Press **Enter** and use the **Page Down** key several times. Then insert the parameters as shown in Figure 38 on page 91.

```
                       Add Exit Program (ADDEXITPGM)

   Type choices, press Enter.

   Exit program data:
     Coded character set ID . . . . > 37      Number, *NONE, *JOB
     Length of data . . . . . . . . > 12      0-2048, *CALC
     Program data . . . . . . . . . > SPCL010001CX


                                                     Bottom
```

Figure 37 (Part 2 of 2). Add Exit Program for PTF SF33896 or SF33943

```
                        Add Directory Entry

 Type changes, press Enter.

   Mail service level  . .   1                   1=User index
                                                 2=System message store
                                                 3=Other mail service
     For choice 3=Other mail service:
       Field name  . . . .  _____  _____    F4 for list

   Preferred address . . .   4                    1=User ID/Address
                                                  2=O/R name
                                                  3=SMTP name
                                                  4=Other preferred address
     Address type  . . . .  ATCONTXT             F4 for list
     For choice 4=Other preferred address:
       Field name  . . . .  NETUSRID__  *IBM___  F4 for list

                                                          More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F18=Display location details
 F19=Add name for SMTP   F20=Specify user-defined fields
```

Figure 38. Change Directory Entry Display for Context Switching Entry

You can make up your own names for user ID/address, system name, and
description. All other parameters must be entered exactly as shown
previously.

Example of Context Addressing

The following example shows an OfficeVision note sent to an internet
recipient:

1. After typing the STROFC command, select option 4 (*Send note*).

```
                    Send Note

 Type mailing information, press F6 to type note.
   Subject  . . . . . . . . . .   E-mail example_____

   Reference  . . . . . . . .   nada_____


 Type distribution list and/or addressees, press F10 to send.
   Distribution list  . . . . . _____ F4 for list

 -----Addressees------
 User ID     Address     Description
 INTERNET    GATEWAY     Context switching entry


                                              More...

 F3=Exit    F6=Type note    F9=Attach memo slip   F10=Send
 F12=Cancel   F13=Change send instructions   F14=Specify list
```

Figure 39. Send a Note Using Context Addressing

2. Press **F6** to type the body of the note.

```
NOTE        P:12                Edit
<.:....2...T:..T.3..T.:..T.4..T.:..T.5..T.:..T.6..T.:..T.7..
 F
TO:        . INTERNET GATEWAY   Context switching entry

FROM:      . XZS2025  RS003     T Bliss - Rochester

DATE:      .date
SUBJECT:   . E-Mail example
REFERENCE: . nada
 F


/internet
/to nobody@some.domain.com
/to santa@north.pole.com
/end
This is the text of the note. After coding "/end" above,
I can enter other "/to userid@domain.names" and they will
not be used to route the note. Scanning stopped at "/end".
"/end" is optional but recommended
in case you want "/to" included in the body
of the document and don't
want to send to the string following it.
The "/" keywords can be placed anywhere in the body of the note.
 F
COPY LIST: .
 F

 F1=Copy       F10=Send          F16=Adjust/Paginate
 F2=Move       F12=Cancel        F17=Functions
```

Figure 40. Send a Note Using Context Addressing

3. Press **F10** to send the note.

The QZMFCTXT program finds the Attachment (document or note) and scans it for the following keywords:

- `/internet`
- `/to`
- `/end`

The keywords can be upper or lower case. There can be more than one `/internet` in the document, but only one is processed. A valid internet (SMTP) address must follow each `/to` keyword because all non-blank characters following `/to` until a blank or end-of-line is encountered are regarded as the e-mail address. The program allows from one to 256 bytes of non-blank data for an SMTP address. You can have up to 32K `/to`s and SMTP addresses in the document. The first `/end` encountered stops the scan.

After the internet addresses are found, the addresses are added to the mail server framework recipient List with the Mail Server Framework Change API.

If no keywords or addresses are found in the attachment, the distribution is marked "non-delivery" with an invalid user ID code and the recipient address is changed to *ATCNTXT *UNKNOWN, which is shown in the *ERR entry in the distribution log (DSPDSTLOG).

If you specify Confirmation of Delivery on the note, you do not receive any confirmation of delivery to INTERNET GATEWAY, as it is not a "real" recipient.

No confirmation is received for recipients listed in the context of the note that are not registered in the system distribution directory.

Appendix D. Special Notices

This publication is intended to help administrators for AS/400 systems or
Lotus Notes to understand, install, configure, and manage the mail
integration for a Lotus Domino server Release 4.5 on the Integrated PC
Server on an AS/400 system having either OS/400 Version 3 Release 2 or
Version 3 Release 7 installed. The information in this publication is not
intended as the specification of any programming interfaces that are
provided by OS/400 or Lotus Notes. See the PUBLICATIONS section of the
IBM Programming Announcement for OS/400 Version 3 Release 2 or Version
3 Release 7 for more information about what publications are considered to
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Appendix E. Related Publications

Prerequisite Information

We strongly recommend that you read the following books before installing Lotus Notes on the Integrated PC Server:

- *Using Lotus Notes on the Integrated PC Server for AS/400*, SG24-4779

- *OS/400 Integration of Lotus Notes*, SC41-5431

- *Integration Services for the FSIOP*, SC41-3123

- *Lotus Notes 4 Install Guide for Servers*, Lotus Part No. AB05021

- *Lotus Notes 4 Install Guide for Workstations*, Lotus Part No. AB05011

- *Lotus Notes 4 Administrator's Guide*, Lotus Part No. 12389

More AS/400 Books

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

- *AS/400 System Concepts*, GC41-9802
- *Integrated File System Introduction*, SC41-3711
- *OS/400 Server Concepts and Administration*, SC41-3740
- *OS/400 TCP/IP Configuration and Reference*, SC41-3420-04
- *Office Services Concepts and Programmer's Guide*, SH21-0703
- *AS/400 National Language Support*, SC41-3101
- *System Operation for New Users*, SC41-3200
- *System Operation*, SC41-3203
- *Security - Basic*, SC41-3301
- *Security - Reference*, SC41-3302
- *OS/400 Backup and Recovery - Basic V3R2*, SC41-3304
- *OS/400 Backup and Recovery - Advanced V3R2*, SC41-3305
- *Work Management*, SC41-3306
- *DataPropagator Relational Capture and Apply/400*, SC41-3346
- *Communications Configuration Guide*, SC41-3401
- *SNA Distribution Services*, SC41-3410
- *LAN Server/400 Administration Guide*, SC41-3423
- *TCP/IP Fastpath Setup*, SC41-3430
- *DB2 for OS/400 SQL Reference*, SC41-3612
- *Database -- Getting Started*, SC41-3700
- *Lotus Notes Release 4.5: A Developer's Handbook*, SG24-4876
- *Data Management*, SC41-4710

- *CL Programming*, SC41-4721
- *AS/400 Advanced Series Handbook*, GA19-5486
- *AS/400 Advanced Series System Builder*, ZU21-8078
- *Lotus Notes Server Up and Running!*, AB0540
- *LAN Configuration, Installation, and Distribution Utility Guide*, S10H-9742
- *ADSM V2R1 AS/400 Administrator*, SC35-0197
- *ADSM V2 OS/2 Backup - Archive Client*, SH26-4053
- *ADSM V2 Using the Lotus Notes Backup Agent*, SH26-4047

Lotus Notes Publications

Lotus publications can be ordered directly from Lotus or Lotus authorized resellers. The part numbers mentioned below are for reference only, they are not IBM order numbers and may be different for future versions of the product.

- *Lotus Notes 4 Install Guide for Servers*, Part No. AB0502
- *Lotus Notes 4 Install Guide for Workstations*, Part No. AB0501
- *Lotus Notes 4 Administrator's Guide*, Part No. 12389
- *Lotus Notes 4 Application Developer's Guide*, Part No. 12387
- *Lotus Notes 4 Programmer's Guide Part 1*, Part No. 12388
- *Lotus Notes 4 Programmer's Guide Part 2*, Part No. 12393
- *Lotus Notes 4 Deployment Guide*, Part No. 12391
- *Lotus Notes 4 Database Manager's Guide*, Part No. AB0500
- *InterNotes WEB Navigator User's Guide*, Part No. AB0504
- *InterNotes WEB Navigator Administrator's Guide*, Part No. AB0505
- *InterNotes WEB Publisher Guide*, AB0578
- *Lotus Notes 4 Release Notes*, AB05271
- *LotusScript 3 Language Reference*, Part No. 12382
- *LotusScript 3 Programmer's Guide*, Part No. 12383

New books for Lotus Notes Release 4.1:

- *Lotus Notes Server Up and Running!*, AB0540
- *Lotus Notes 4 Step by Step*, Part No. 123921
- *Lotus Notes 4 Migration Guide*, Part No. AB05031
- *Lotus Notes 4.1 Release Notes*, Part No. AB05272
- *Lotus Notes 4 Network Configuration Guide*, 123901
- *Lotus Notes 4 Step by Step*, 123921
- *Lotus Notes 4 Install Guide for Servers*, AB05021

International Technical Support Organization Publications

For information on ordering these ITSO publications see "How to Get ITSO Redbooks" on page 103.

- *Setting Up and Implementing ADSTAR Distributed Storage Manager/400*, GG24-4460
- *Using ADSM to Back Up Lotus Notes*, SG24-4534
- *Lotus Notes Release 4.5: A Developer's Handbook*, SG24-4876
- *Lotus Notes Release 4 in a Multiplatform Environment*, SG24-4649
- *Lotus Notes Release 4 on AIX Systems*, SG24-4694

Publications Not by IBM or Lotus

These publications are also relevant as further information sources.

On AS/400 system architecture:

- *Inside the AS/400 by Frank G. Soltis*, Duke Press, IBM Order Number SR28-5910

On Lotus Notes:

- *How to Plan, Develop, and Implement- Lotus Notes in Your Organization*, Que Corporation, IBM Order Number SR23-7262
- *10 Minute Guide to Lotus Notes 4*, Que Corporation, IBM Order Number SR23-7339
- *Easy - Lotus Notes Release 4.0*, Que Corporation, IBM Order Number SR23-7340
- *PC Learning Labs Teaches - Lotus Notes Release 4*, Ziff Davus Press, IBM Order Number SR23-7341
- *Special Edition - Using Lotus Notes 4 by Cate Richards*, Que Corporation, IBM Order Number SR23-7342
- *Lotus Notes Network Design*, McGraw-Hill, IBM Order Number SR23-7378
- *Lotus Notes 4 - Plain and Simple*, SYBEX, IBM Order Number SR23-7423
- *Lotus Notes 4 Administrators's Survival Guide*, SYBEX, IBM Order Number SR23-7450
- *Lotus Notes Application Development*, Prentice-Hall, IBM Order Number SR28-5824

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