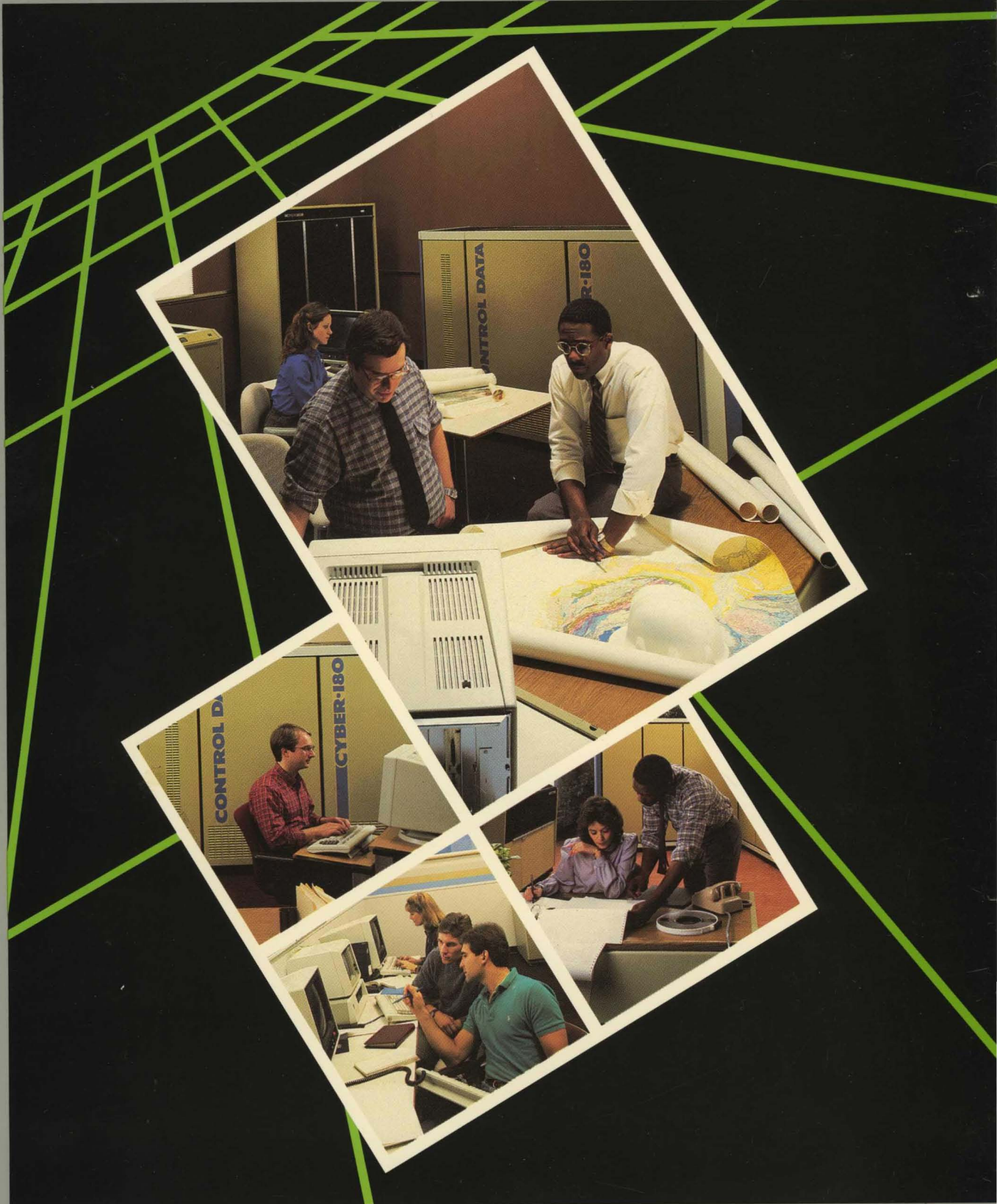


Mail/VE Version 2 Administration



Mail/VE Version 2 Administration

Usage

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features and parameters.

Manual History

Revision	System Version	PSR Level	Date
A	1.4.1	716	December 1988
B	1.4.2	727	June 1989
C <i>7/25/93</i>	1.5.1	739	December 1989

Revision C documents support of the Mail/VE gateway to map X.400 protocol to RFC822; a domain-wide directory for looking up addresses on remote hosts, notification of users (with an active job) of incoming mail, and the administrator's capability to delete and display letters in any mailbox. This revision obsoletes all previous editions.

The ADMINISTER_MAIL utility provides some new subcommands: CHANGE_DISTRIBUTION_LIST, CREATE_DISTRIBUTION_LIST, DEFINE_DEFAULT_GATEWAY_ADDRESS, DELETE_DISTRIBUTION_LIST, DELETE_LETTER, DISPLAY_DEFAULT_GATEWAY_ADDRESS, DISPLAY_DISTRIBUTION_LIST, LIST_MAIL, RETAIN_LETTER, and SELECT_LETTER. Its new mailbox and distribution list subutility subcommands are ADD_ADDRESS, ADD_PERMISSION, DELETE_ADDRESS, DELETE_PERMISSION, DISPLAY_ADDRESS_LIST, DISPLAY_PERMISSIONS, END_CHANGE_DISTRIBUTION_LIST, END_CREATE_DISTRIBUTION_LIST, and SET_ATTRIBUTES. It also supports the following new functions: \$ANY_MAIL, \$DEFAULT_MAILBOX, \$DISTRIBUTION_LIST_ATTRIBUTE, \$IDENTITY, \$LETTER, \$LETTER_ATTRIBUTE, \$LETTER_LIST, \$MAILBOX, \$MAILBOX_ATTRIBUTE, \$MAILVE_USERS, \$OWNED_DISTRIBUTION_LISTS, and \$OWNED_MAILBOXES.

The following are new Mail/VE maintenance commands: COMBINE_UPDATE_LETTERS, GENERATE_ADDRESS_UPDATES, GENERATE_REMOTE_UPDATES, INSTALL_MAIL_GATEWAY, SEND_ADDRESS_UPDATES, and UPDATE_REMOTE_ADDRESSES. ACTIVATE_MAIL_GATEWAY and DEACTIVATE_MAIL_GATEWAY are also described with the Mail/VE maintenance commands.

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About This Manual

This manual documents installation and maintenance procedures for Mail/VE Version 2 which runs on the CONTROL DATA® Network Operating System/Virtual Environment (NOS/VE).

Mail/VE Version 2 is a multihost electronic mail system that conforms to the internationally accepted standards described in the 1984 CCITT X.400 Recommendations on Message Handling Systems.

Audience

This manual provides information for the system administrator responsible for installing, configuring, and maintaining Mail/VE. In addition, the manual provides information for the system administrator responsible for managing the NOS/VE user validations that control access to Mail/VE. To use this manual, you should have a working knowledge of the NOS/VE System Command Language (SCL) as described in the NOS/VE System Usage manual.

Mail/VE Manuals

Mail/VE is supported by two manuals. This manual describes Mail/VE administration activities: installation, configuration, and maintenance.

The Mail/VE Usage manual describes how to read, write, and send letters using either screen or line mode. To use the Mail/VE Usage manual, you should be familiar with NOS/VE concepts as presented in the Introduction to NOS/VE manual.

Conventions

The following conventions are used in this manual:

Boldface	In a command format description, names and required parameters are in boldface type.
<i>Italics</i>	In a command format description, optional parameters are in italic type.
Numbers	All numbers are decimal unless otherwise noted.
Examples	Examples of user entries and computer responses are shown in a font that resembles computer output.
Terminology	This revision uses the term host instead of system and the term mail system instead of mail service.

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Mail/VE Version 2 is a multihost electronic mail system that conforms to the internationally accepted standards described in the 1984 CCITT X.400 Recommendations on Message Handling Systems.

In conforming with the X.400 Recommendations, Mail/VE Version 2 utilities, commands, subcommands, and parameters have names that refer to terms defined in the recommendations.

For readers unfamiliar with X.400 terminology, this chapter presents a brief overview of concepts and terms necessary for performing Mail/VE administration activities. The rest of this manual describes Mail/VE administration activities:

- Chapter 2 describes installation and configuration tasks:
 - Planning Mail/VE installations
 - Installing Mail/VE
 - Defining Mail/VE administrators
 - Creating organizations and routes
 - Creating mailboxes for users

In addition, it provides some procedures and examples for configuring multihost networks.

- Chapter 3 describes how to install and maintain a Mail/VE gateway.
- Chapter 4 describes Mail/VE maintenance tasks:
 - Backing up and restoring Mail/VE directory files
 - Editing a file of update subcommands
 - Converting Mail/VE Version 1 directory files
 - Maintaining a domain-wide directory

This chapter also documents the maintenance commands and subcommands.

- Chapter 5 provides reference information on the ADMINISTER_MAIL utility, and its subcommands and functions.

Mail/VE and the X.400 Recommendations

This section describes the Mail/VE implementation of X.400 addresses and message transfer agents (MTAs).

Mail/VE Addresses

In Mail/VE, each user is identified by a unique address in an address directory. To transfer messages in a worldwide electronic mail system, all Mail/VE systems provide the same hierarchy of X.400 address attributes:

- Global address attributes
- Local address attributes

Global Address Attributes

The global address attributes, also called interdomain attributes, are registered names for the following:

- Country

Worldwide, each country registers a unique country code to identify itself. The country code of the United Kingdom is UK; the country code of the United States of America is US, and so on.

- Administrative domain

Within each country, a designated authority registers the names of the administrative domains (also called administrative management domains). The administrative domain, in turn, has the authority to register the names of private domains.

In countries that have a national telephone service, such as the United Kingdom, that service usually acts as the only administrative domain and has the authority to register the names of private domains.

In countries that have competitive telephone services, such as the United States of America, the competitive telephone service will probably result in the existence of several administrative domains.

- Private domain

A private domain (also called a private management domain) can be a corporation or any other group that wants to manage a private domain of mail users. For example, Control Data Corporation could register a private domain name of CDC.

A private domain can be registered with more than one administrative domain in any number of countries.

In addition, a private domain need not be registered with any administrative domain. By mutual agreement, private domains can choose to be directly connected with one another.

Local Address Attributes

The local address attributes, also called the intradomain attributes, identify organizations within an administrative or private domain:

- Organization name
- Organization units
- Personal name

The administrative or private domain registers the names of organizations, which can consist of from one to four units. For example, Control Data, as a private domain, could register the organization name ARH for its Arden Hills Operations and the name SVO for its Silicon Valley Operation. Host names or departmental names could be assigned as organization units.

A personal name is the unique name for a mailbox within a domain and organization. A distribution list name is a unique name for a list of addresses within a domain and organization.

X.400 Message Transfer Agents (MTAs)

The software that delivers mail to mailboxes and routes it from one mail system to another is called the message transfer agent (MTA). The MTA is analogous to a post office. That is, the MTA serves a group of mailboxes in the same manner as a post office serves a group of post office boxes.

When you install Mail/VE on a host, you assign an MTA name to that Mail/VE installation.

Mail/VE Components

The Mail/VE product includes the following components:

Component	Description
EMAIL utility	Provides the user interface to Mail/VE Version 2. EMAIL is documented in the Mail/VE Version 2 Usage manual.
ADMINISTER_MAIL utility	Provides subcommands and functions for Mail/VE administration tasks. For reference information on utility usage, see chapter 5. Before accessing this utility, a user's MAILVE_ADMINISTRATION validation must be set to ANALYST, SYSTEM, or FAMILY. For information on Mail/VE validations, refer to the next chapter.
Mail/VE maintenance command library	Provides commands and utilities for maintaining Mail/VE. The commands and utilities are described in chapter 4. Before accessing the maintenance library, a user's MAILVE_ADMINISTRATION validation must be set to ANALYST. For information on Mail/VE validations, refer to the next chapter.
Mail/VE directory files	Provides directories of all mailboxes and distribution lists in the mail system. For more information on Mail/VE directory files including domain-wide directory files, see chapter 4.
Mail/VE gateway	Supports the exchange of mail between Mail/VE and other mail systems on BITNet and Internet networks.

Mail/VE Installation and Configuration 2

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Mail/VE Installation and Configuration **2**

This chapter provides step-by-step instructions for performing the following tasks:

- Planning Mail/VE installations
- Installing Mail/VE
- Creating Mail/VE administrators
- Defining organizations and routes
- Creating mailboxes for users

It then supplies more detailed procedures and examples for configuring multihost networks:

- Configuring a mail network using NOS/VE hosts
- Configuring a mail network using NOS/VE and other X.400 hosts

This chapter also provides a brief summary of ongoing maintenance tasks.

Planning Mail/VE Installations

Before beginning a Mail/VE installation, you should prepare for the tasks required during installation and configuration of Mail/VE by doing the following:

- Outline the installation and configuration steps
- Anticipate `INSTALL_MAIL` requirements
- Plan for application interdependencies

Installation and Configuration Overview

The basic Mail/VE installation and configuration steps apply to all Mail/VE configurations:

- A NOS/VE host
- Multihost NOS/VE networks
- Multihost networks with at least one NOS/VE host and one or more other X.400 hosts
- Single-host or multihost networks connected to BITNet, Internet, or another RFC822 mail system.

Execute these basic steps only after reviewing the applicable sections.

1. Review the planning material.
2. Install Mail/VE using the `INSTALL_MAIL` command.
3. If either QTF or XTF is required, install the application in accordance with the information in the planning section.
4. Activate Mail/VE using the `ACTIVATE_MAILVE` command.
5. Create at least one Mail/VE administrator.
6. Define routes and organizations using the `CREATE_ROUTE` and `CREATE_ORGANIZATION` subcommands of the `ADMINISTER_MAIL` utility. (You may omit this step on a Mail/VE configuration consisting of a single NOS/VE host.)
7. Create user mailboxes, if needed.
8. Install Mail/VE gateway, if needed. For installation and maintenance information, see chapter 3.

The following sections contain information about performing most of these steps. The sample configurations at the end of this chapter illustrate the steps and provide additional detail for specific configurations.

Anticipating INSTALL_MAIL Requirements

The INSTALL_MAIL command requires that you specify the country code, administrative domain, message transfer agent (MTA) name, and (optionally) private domain with which the installation of Mail/VE is associated. Table 2-1 explains how to select appropriate values for these parameters.

Table 2-1. INSTALL_MAIL Parameters

Parameter Value	Explanation
MTA name	<p>Specify the MTA name selected for this Mail/VE system on the MESSAGE_TRANSFER_AGENT parameter.</p> <ul style="list-style-type: none"> Specify the name as a 1- through 12-character string of alphabetic and numeric characters. Specify a unique name for each Mail/VE system within the interconnected hosts. <p>Control Data recommends that you specify MTA as the first three characters in the MTA name.</p>
Administrative domain	<p>Specify the administrative domain with which this Mail/VE installation is associated on the ADMINISTRATIVE_DOMAIN parameter. Administrative domains provide telecommunication services. In the United States, Telenet, AT&T, Western Union, MCI, and others offer administrative domain services.</p> <ul style="list-style-type: none"> If this Mail/VE installation is not associated with an administrative domain, enter a single space as the value for the administrative domain. If the installation is associated with more than one administrative domain, select one and use it as the value of the ADMINISTRATIVE_DOMAIN parameter.
Private domain	<p>Specify the private domain with which this Mail/VE installation is associated on the PRIVATE_DOMAIN parameter. If a private domain is not specified, a Mail/VE network is classified as an administrative domain.</p> <p>When installing Mail/VE, determine which set of hosts makes up your private domain and then use the same private domain name for each mail system within the group. Perhaps in the future, administrative domain authorities in each country will allot private domain names.</p>
Country code	<p>Select an appropriate country code from the list of countries and their associated codes in appendix C. Enter this code on the COUNTRY parameter.</p>

Planning for Application Interdependencies

To transfer mail successfully between hosts, you must install the Queue File Transfer Facility (QTF) and possibly the X.400 Transfer Facility (XTF), depending upon the configuration.

Application	Installation Guidelines
QTF	<p>If your mail network includes several interconnected NOS/VE hosts, use QTF to transfer mail between the hosts.</p> <p>Install QTF/QTFS (Queue File Transfer Facility/Queue File Transfer Facility Server) on each of the hosts. Refer to the NOS/VE Network Management manual for additional information about installing and activating QTF/QTFS.</p>
XTF	<p>If your mail network includes one or more X.400 hosts other than NOS/VE, use XTF to transfer mail between one or more of the NOS/VE hosts and the other X.400 hosts. (XTF is a separately priced Control Data product.) Use QTF to transfer mail between the interconnected NOS/VE hosts.</p> <p>In multihost networks with NOS/VE (at least one) and other X.400 (at least one) hosts, installation of XTF requires entry of the <code>INSTALL_X400_TRANSFER_FACILITY (INSXTF)</code> command. The value of its <code>MESSAGE_TRANSFER_AGENT</code> parameter must be the same as the value on the <code>MESSAGE_TRANSFER_AGENT</code> parameter of the <code>INSTALL_MAIL</code> command.</p> <p>Install QTF/QTFS on each of the interconnected NOS/VE hosts. Install XTF on at least one of the NOS/VE hosts.</p>

Installing Mail/VE

The NOS/VE Installation Handbook describes how to run the `INSTALL_SOFTWARE` command. After the `INSTALL_SOFTWARE` command has been executed from the system console, the Mail/VE Version 2 command library and binaries are available in the `SYSTEM.MAILVE_V2` catalog. You can now install Mail/VE from the system console.

If Mail/VE Version 2 has been previously installed, you should attempt to reinstall it only when you believe users will not be accessing Mail/VE. Before beginning the following procedure, enter the `DEACTIVATE_MAILVE` command to ensure the Mail/VE server is deactivated.

1. Add the maintenance command library to the command list:

```
/create_command_list_entry ..
../entry=$system.mailve_v2.maintenance.command_library
```

2. Execute the `INSTALL_MAIL` procedure to initialize the Mail/VE directory files and installation table file.

```
/install_mail message_transfer_agent='mtaname' ..
../private_domain='privatedomain' ..
../administrative_domain='administrativedomain' ..
../country='code'
```

For additional information on `INSTALL_MAIL`, see the Anticipating `INSTALL_MAIL` Requirements earlier in this chapter, and the command description in chapter 3.

3. Activate the Mail/VE server:

```
/activate_mailve job_class=siteclass1
```

This command initiates the Mail/VE message transfer agent as a system batch. By default, this job runs in the default batch job class of your NOS/VE system. If your default batch job class has a low priority, use the `JOB_CLASS` parameter to select a different job class for the message transfer agent.

You can add this command to the `SYSTEM.PROLOGS_AND_EPILOGS.NETWORK_ACTIVATION_EPILOG` so that Mail/VE is available when the network is activated at every deadstart. For a description of the `ACTIVATE_MAILVE` command, see Mail/VE Maintenance Commands in this chapter. For information on system prolog and epilog files, see the NOS/VE System Performance and Maintenance manual, Volume 2.

Creating Mail/VE Administrators

The NOS/VE ADMINISTER_VALIDATIONS utility controls Mail/VE validations including the creation of Mail/VE administrators. Mail/VE administrators perform administrative tasks using the ADMINISTER_MAIL utility and Mail/VE maintenance commands. You must create at least one Mail/VE administrator on each system. Only a NOS/VE system or family administrator (that is, a user whose validation includes the SYSTEM_ADMINISTRATION or FAMILY_ADMINISTRATION capability) can manage validations. In addition to being properly validated, Mail/VE administrators need permission to access files related to Mail/VE operations.

Mail/VE Validation Fields

To create a Mail/VE administrator, you use the MAILVE_ADMINISTRATION field of the NOS/VE ADMINISTER_VALIDATIONS utility. MAILVE_ADMINISTRATION is one of four validation fields that control the usage of Mail/VE Version 2.

NOS/VE Validation Field	Description
MAILVE_ADMINISTRATION	Controls access to the ADMINISTER_MAIL utility and Mail/VE maintenance commands. The following subsection describes the available access levels.
MAILVE_DISTRIBUTION_LIST_LIMIT	Controls the number of distribution lists that a user can have.
MAILVE_MAILBOX_LIMIT	Controls the number of mailboxes that a user can have.
MAILVE_RETENTION_LIMIT	Specifies the maximum amount of time that a user's letters are retained.

MAILVE_ADMINISTRATION Access Levels

MAILVE_ADMINISTRATION validation supports five access levels for a NOS/VE user:

Access Level	Description
ANALYST	Authorizes use of EMAIL, ADMINISTER_MAIL, and all Mail/VE maintenance commands.
SYSTEM	Authorizes use of EMAIL and ADMINISTER_MAIL.
FAMILY	Authorizes use of EMAIL and ADMINISTER_MAIL subcommands to create and change mailboxes for users of a specific family.
USER	Authorizes use of EMAIL, including the subcommands to create and maintain mailboxes for one's own user name.
NONE	Prevents use of EMAIL until a Mail/VE administrator creates a mailbox for the user. This access level prohibits the user from executing the EMAIL subcommands to create a mailbox for the user's user name.

Changing Validations

Using the NOS/VE ADMINISTER_VALIDATIONS utility, the NOS/VE administrator can change these validations in two ways:

- To change validations for a specific user, the administrator enters the CREATE_USER or CHANGE_USER subcommand (as appropriate).

For example, specifying the following while in the CHANGE_USER subcommand makes the user a Mail/VE administrator with an access level of ANALYST.

```
CHAU/change_mailve_administration value=analyst
```

- To change the default values that apply to all users of a family, the administrator enters the appropriate subcommand of the MANAGE_USER_FIELDS subcommand as shown in these two examples:

Entering the following while in the MANAGE_USER_FIELDS subcommand allows users to have a maximum of 4 mailboxes.

```
MANUF/change_limit_field ..
MANUF../field=mailve_mailbox_limit ..
MANUF../default_value=4
```

Entering the following while in the MANAGE_USER_FIELDS subcommand allows users to create their own mailboxes.

```
MANUF/change_name_field ..
MANUF../field=mailve_administration ..
MANUF../delete_default_names=all ..
MANUF../add_default_names=user
```

Installing Permissions

The Mail/VE administrator must be able to edit and manage the MANAGE_MAIL_DIRECTORY backup files as well as access other Mail/VE files. Entering the following NOS/VE CREATE_CATALOG_PERMIT command establishes the necessary catalog permissions.

```
/create_catalog_permit $system.mail_v2.mail ..
../group=user ..
../family=family ..
../user=username ..
../access_modes=(all cycle control)
```

In this example, family and username are the family and user names of the Mail/VE administrator.

Defining Organizations and Routes

Mail/VE uses organizations and routes to locate mailboxes and distribution lists in a multihost environment. For single host environments, organizations can be defined, but are not necessary. You use the `CREATE_ORGANIZATION` and `CREATE_ROUTE` subcommands of the `ADMINISTER_MAIL` utility to define these organizations and routes.

The `MESSAGE_TRANSFER_AGENT` parameter on the `INSTALL_MAIL` command entered during installation identifies your Mail/VE system. The `TITLE` parameter on the various `MANAGE_MAIL_DIRECTORY` and `ADMINISTER_MAIL` commands and subcommands refers to specific Mail/VE systems. In order for your mail to be routed properly, the `TITLE` parameters you specify on the `CREATE_ORGANIZATION` and `CREATE_ROUTE` subcommands must identify the appropriate Mail/VE systems.

Defining Organizations

To successfully transfer mail to all locations in a domain, all organizations in a domain must be defined on each host in that domain.

Definition

An organization is identified by an organization name and/or an ordered set of organization units. The set of organization units must be specified in ascending sequence from the least significant organization unit (lowest in organization hierarchy) to the most significant.

A Mail/VE installation may serve a number of organizations, but an organization may be served by only one Mail/VE installation. In other words, the organization definition (composed of organization name and/or an ordered set of organization units) cannot span more than one NOS/VE host. (More than one organization can be installed on a host.)

In the following example, the organizations 1 and 2 are on different hosts.

Organization	Organization Name	Organization Unit(s)
1	Marketing	(Accounting,Minneapolis,Midwest)
2	Marketing	(Accounting,Seattle,Northwest)

Since the organizations are located on different hosts, the organization name, marketing, spans the hosts. All users who are part of organization 1 are on the same host, and all users of organization 2 are on a different host. (It is possible to define two organizations on the same host. If organizations 1 and 2 were on the same host, then all users with the organization name, marketing, would be on the same host.)

Before any user can use an organization definition for a mailbox or distribution list, a Mail/VE administrator must issue a `CREATE_ORGANIZATION` subcommand specifying that organization definition.

Procedure

To define an organization on a host, use the `CREATE_ORGANIZATION` subcommand of the `ADMINISTER_MAIL` utility:

1. Log in to the host with a Mail/VE administrator user name. Then, start the `ADMINISTER_MAIL` utility:

```
/administer_mail
Admm/
```

2. For each organization on the host, use the `CREATE_ORGANIZATION` subcommand to define the organization: include an organization name and/or from one to four organization units. This subcommand associates the organization with an MTA name for intradomain routing.

For example, to define an organization with the name Marketing and three hierarchical units called Accounting, Seattle, and Northwest, and to associate it with `MTAYELLOW`, enter:

```
Admm/create_organization ..
Admm../organization_units=('accounting','seattle','northwest') ..
Admm../organization_name='marketing' ..
Admm../title='mtayellow'
Admm/
```

NOTE

The order in which you list the organization units is significant. The host preserves the order, and you must maintain that order in all subsequent references to the units. For more information on the `CREATE_ORGANIZATION` subcommand, refer to chapter 5.

3. Stop the utility by entering the following subcommand:

```
Admm/end_administer_mail
/
```


Defining Routes

When you installed Mail/VE, the installation procedure defined an initial route entry for the MTA installed on this host.

For each additional host in the network, define a route entry using the CREATE_ROUTE subcommand of the ADMINISTER_MAIL utility. The value for the TRANSFER_SERVICE parameter is either QTF or XTF and the DESTINATION_TYPE parameter is always MVE.

For example, if a Mail/VE multihost environment consisted of three hosts with the MTA names MTAYELLOW, MTAGREEN, and MTAPINK, the following routes should be defined. In this example, the Mail/VE installation is in the CDC private domain in the United States (US), and it is not associated with an administrative domain.

Because all the hosts in this example reside in the same country and private domain, Mail/VE uses these routes and the organization names and/or organization units that senders specify for the recipients. Mail/VE matches the title associated with the organization selected by a sender to a title associated with a route and then uses that route to deliver the mail.

- On host YELLOW, routes must be added for hosts PINK and GREEN:

```
Admm/create_route ..
Admm../title='mtapink' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=pink
```

```
Admm/create_route ..
Admm../title='mtagreen' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=green
```

- On host GREEN, routes must be created for hosts YELLOW and PINK:

```
Admm/create_route ..
Admm../title='mtayellow' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=yellow
```

```
Admm/create_route ..
Admm../title='mtapink' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=pink
```

- On host PINK, routes must be created for hosts YELLOW and GREEN:

```
Admm/create_route ..
Admm../title='mtayellow' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=yellow
```

```
Admm/create_route ..
Admm../title='mtagreen' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=green
```

Creating Mailboxes for Users

Mail/VE automatically registers users in the user directory at the time mailboxes are created for the user. Depending upon how you set the Mail/VE validation default, either the administrator or users create mailboxes.

User-Created Mailboxes

If you want the users at your site to be able to create and change mailboxes for their own use, change the default MAILVE_ADMINISTRATION level to USER. Only users with NOS/VE SYSTEM_ADMINISTRATION or FAMILY_ADMINISTRATION capability can change this validation.

If the default for the MAILVE_ADMINISTRATION validation is USER, users are automatically registered when they create their mailboxes.

Administrator-Created Mailboxes

You must create a mailbox for a user if that user's MAILVE_ADMINISTRATION validation is NONE. That is, a user is denied access to EMAIL until the Mail/VE administrator creates the mailbox.

The following steps describe how you create user mailboxes.

1. Start the ADMINISTER_MAIL utility:

```
/administer_mail  
Admm/
```

2. Enter a CREATE_MAILBOX subcommand for each user for whom you need to create a mailbox. For example, to create a mailbox for user USER_1 of family SALES, enter:

```
Admm/create_mailbox  
Crem/select_user  
Crem../user=user1  
Crem../family=sales  
Crem/set_attribute ..  
Crem../personal_name='Frank Smith' ..  
Crem../organization_unit=('accounting','seattle','northwest') ..  
Crem../organization_name='marketing'  
Crem/end_create_mailbox  
Admm/
```

3. Stop the utility by entering the following subcommand:

```
Admm/end_administer_mail  
/
```

Configuring a Mail Network Using NOS/VE Hosts

This section contains a general procedure for configuring a mail network using NOS/VE hosts, a detailed example, and discussion of configuration interrelationships.

General Configuration Procedure: Using NOS/VE Hosts

The following procedure describes how you configure a mail network using NOS/VE hosts.

1. Verify that you have the following information available for your hosts.

- MTA name
- Administrative domain
- Private domain
- Country code (see appendix C)
- Host name

2. Install Mail/VE.

For more installation information, see *Installing Mail/VE* in this chapter. Also see chapter 4 for a description of the `INSTALL_MAIL` command.

3. Install QTF/QTFS.

See *Planning for Application Interdependencies* in this chapter and the NOS/VE Network Management manual for additional information about installing and activating QTF/QTFS.

4. Enter the `ACTIVATE_MAILVE` command.

```
/activate_mailve job_class=siteclass1
```

On the `JOB_CLASS` parameter, specify an appropriate class for your site.

5. Create at least one Mail/VE administrator.

For more information, see *Creating Mail/VE Administrators* in this chapter.

6. Define organizations and routes.

For additional information, see *Defining Organizations and Routes* in this chapter. Also see the descriptions of the `CREATE_ORGANIZATION` and `CREATE_ROUTE` subcommands in chapter 5.

7. Create user mailboxes, if needed.

For more information, see *Creating Mailboxes for Users* in this chapter.

If your site is installing a Mail/VE gateway to exchange mail with a BITNet or Internet mail system, see chapter 3 for information on installing and maintaining a Mail/VE gateway.

Example: Using NOS/VE Hosts

Figure 2-1 shows a Mail/VE environment consisting of three NOS/VE hosts, YELLOW, GREEN, and PINK, interconnected by CDCNET. The MTA names assigned to Mail/VE on these hosts are MTAYELLOW, MTAGREEN, and MTAPINK. All three hosts are in the same private domain (CDC) in the United States (as shown by the country code US), and are not associated with an administrative domain.

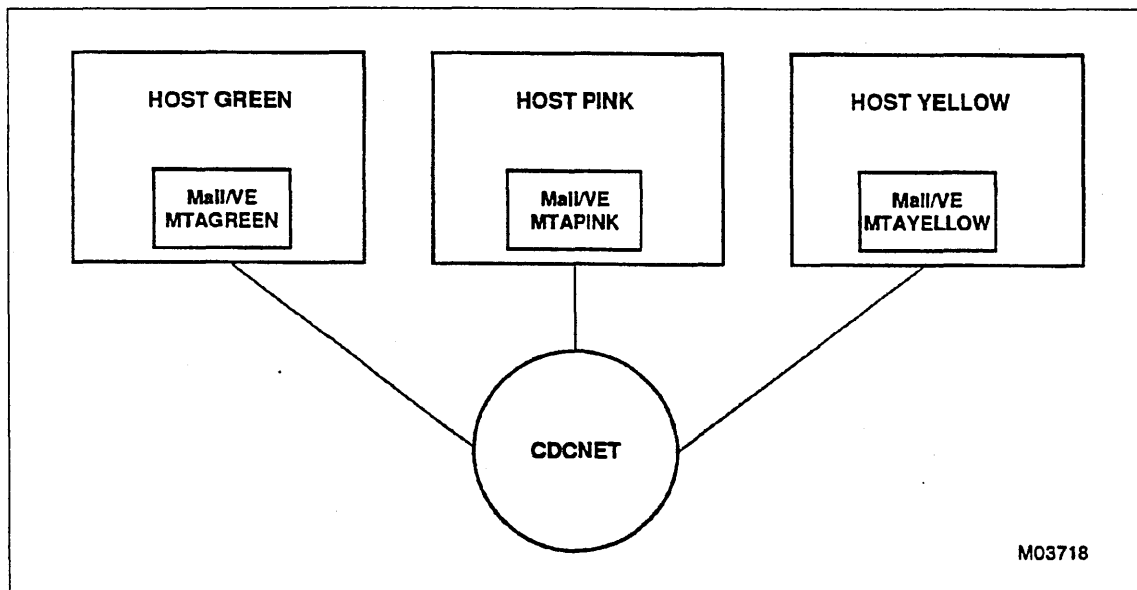


Figure 2-1. Mail Network Example with NOS/VE Hosts

The following steps illustrate how some of the general configuration procedure steps apply to host YELLOW shown in figure 2-1. The steps are repeated with appropriate parameter substitutions on the other two NOS/VE hosts. Enter the commands in these steps from the system console.

1. During installation of Mail/VE, MTAYELLOW is specified as the MTA name on the INSTALL_MAIL command.

```
/install_mail message_transfer_agent='mtayellow' ..
../private_domain='cdc' ..
../administrative_domain=' ' ..
../country='us'
```

2. Install QTF/QTFS if you have not done so previously, and define these applications to NAM/VE as follows:

```
/manage_application_definitions
mad/define_qtfs family_name=yellow
mad/define_qtf
mad/quit
/
```

3. Enter the ACTIVATE_MAILVE command.

```
/activate_mailve job_class=siteclass1
```

On the JOB_CLASS parameter, specify an appropriate class for your site.

4. Define the routes to the other hosts using the CREATE_ORGANIZATION and CREATE_ROUTE subcommands of the ADMINISTER_MAIL utility:

```
Admm/create_organization organization_unit='yellow_group' ..
Admm../title='mtayellow'
```

```
Admm/create_organization organization_unit='green_group' ..
Admm../title='mtagreen'
```

```
Admm/create_organization organization_unit='pink_group' ..
Admm../title='mtapink'
```

```
Admm/create_route title='mtagreen' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=green
```

```
Admm/create_route title='mtapink' ..
Admm../country='us' ..
Admm../administrative_domain=' ' ..
Admm../private_domain='cdc' ..
Admm../transfer_service=qtf ..
Admm../destination_type=mve ..
Admm../transfer_title=pink
```

Note that the titles specified on these CREATE_ORGANIZATION and CREATE_ROUTE subcommands correspond to MESSAGE_TRANSFER_AGENT parameters supplied in INSTALL_MAIL commands. They are MTA titles/names. They identify the message transfer agents (MTAs) that handle mail for the associated organizations.

The names of the organization units in this example are derived from the host names. Sometimes, departmental units or other names are used.

Configuration Interrelationships

As indicated by the direction of the arrows, figure 2-2 shows a user on YELLOW sending mail to a user on PINK, in the same domain. The figure highlights the correspondence between various command parameters for hosts YELLOW and PINK.

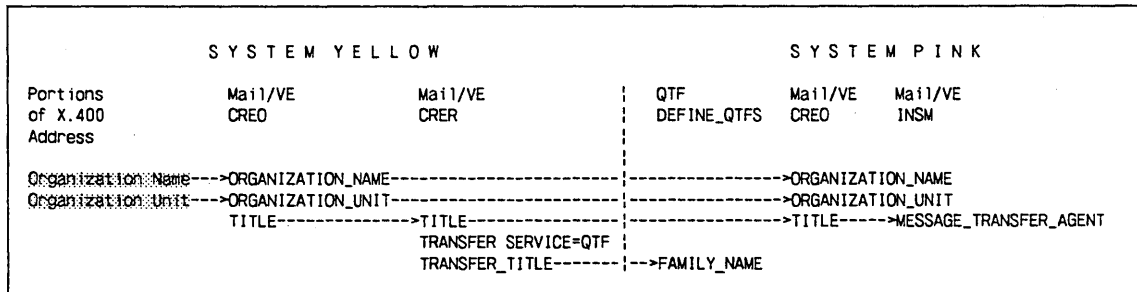


Figure 2-2. YELLOW User Sending Mail to PINK User

On YELLOW, the user specifies the destination X.400 mail address, the relevant portions of which are shaded. These portions of the X.400 address (organization name and organization unit) are associated with an MTA name through the CREATE_ORGANIZATION and CREATE_ROUTE subcommands. The MTA name identifies MTAPINK on host PINK as the one to receive the mail. The CREATE_ROUTE command indicates that MTAPINK is reached via QTF.

Mail/VE on PINK receives the mail and examines the X.400 address. Using the values of parameters specified on the CREATE_ORGANIZATION and INSTALL_MAIL commands and saved in the route and organization tables, Mail/VE determines that the mail is destined for itself and distributes the mail to the proper user.

In this figure, parameters associated by arrows must have identical values. For example, the following parameters must have the same value (mtapink in this example).

Parameter	Command or Subcommand	System
TITLE	CREATE_ORGANIZATION	YELLOW
TITLE	CREATE_ROUTE	YELLOW
TITLE	CREATE_ORGANIZATION	PINK
MESSAGE_TRANSFER_AGENT	INSTALL_MAIL	PINK

Likewise, the following parameters must have the same value (pink in this example).

Parameter	Command or Subcommand	System
TRANSFER_TITLE	CREATE_ROUTE	YELLOW
FAMILY_NAME	DEFINE_QTFS	PINK

Configuring a Mail Network Using NOS/VE and Other X.400 Systems

This section contains a general procedure for configuring a mail network using NOS/VE and other X.400 hosts. The procedure is followed by a detailed example and discussion of configuration interrelationships.

General Configuration Procedure: Using NOS/VE and Other X.400 Systems

The following procedure describes how you configure a mail network using NOS/VE and other X.400 hosts.

1. Verify that you have the following information available for your hosts.

- MTA name
- Administrative domain
- Private domain
- Country code (see appendix C)
- Host name

2. Install Mail/VE.

For more installation information, see *Installing Mail/VE* in this chapter. Also see chapter 4 for a description of the `INSTALL_MAIL` command.

3. Install QTF/QTFS and XTF.

See *Planning for Application Interdependencies* in this chapter.

NOTE

It is very important that the `INSTALL_X400_TRANSFER_FACILITY` command is executed before you define the routes.

4. Define OSI addresses.

- a. Register the addresses of other X.400 hosts (non-NOS/VE hosts) using the `ADD_OSI_ADDRESS` command.

You can add this command to the `$SYSTEM.PROLOGS_AND_EPILOGS.NETWORK_ACTIVATION_EPILOG` so that OSI addresses of the other X.400 hosts (non-NOS/VE hosts) are available when the network is activated at every deadstart. For information on system prolog and epilog files, see the *NOS/VE System Performance and Maintenance manual, Volume 2*. Also see the description of the `ADD_OSI_ADDRESS` command in the *NOS/VE Network Management Usage manual*.

- b. Specify the `ADD_NON_CDCNET_ADDRESS_PREFIX` command in the configuration file of each DI along the path to a non-NOS/VE host. For more configuration information, see the *CDCNET Configuration Guide*.

NOTE

To perform X.400 transfers using XTF, each DI on a path from XTF to a non-NOS/VE host must support the OSI protocol stack. Use the SUPPORTED_STACKS parameter of the CHANGE_PROTOCOL_STACK_SUPPORT command to establish OSI as a supported protocol stack for each DI running CDCNET 1.4.2:

```
/change_protocol_stack_support supported_stacks=all
```

or

```
/change_protocol_stack_support supported_stacks=osi
```

See the CDCNET Network Operations and Analysis manual for more information on setting or changing protocol stacks.

5. Enter the ACTIVATE_MAILVE command.

```
/activate_mailve job_class=siteclass1
```

On the JOB_CLASS parameter, specify an appropriate class for your site.

6. Create at least one Mail/VE administrator.

For more information, see Creating Mail/VE Administrators in this chapter.

7. Create a permit for the Mail/VE administrator to the catalog containing the XTF configuration file. Enter the following at the system console:

```
/create_catalog_permit ..  
../catalog=$system.xtf ..  
../group=user ..  
../family_name=family ..  
../user=username ..  
../access_mode=(all,cycle,control) ..  
../share_mode=none
```

In this example, family and username are the family and user name of the Mail/VE administrator.

8. Define organizations and routes.

For additional information, see *Defining Organizations and Routes* in this chapter. Also see the descriptions of the `CREATE_ORGANIZATION` and `CREATE_ROUTE` subcommands in chapter 5.

9. Create user mailboxes, if needed.

For more information, see *Creating Mailboxes for Users* in this chapter.

10. Activate XTF from the system console by entering `ACTIVATE_XTF`. This command is on `OSF$BUILTIN_LIBRARY`.

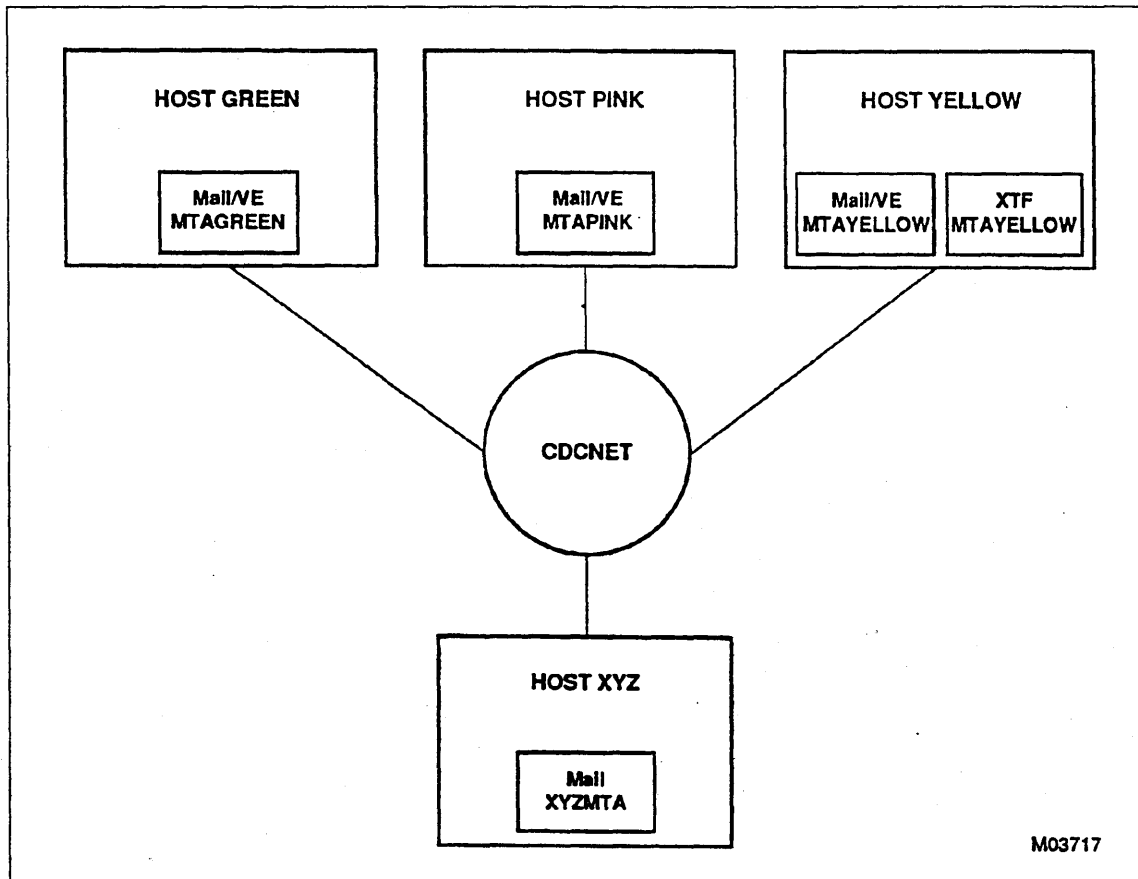
You can add this command to the `$SYSTEM.PROLOGS_AND_EPILOGS.NETWORK_ACTIVATION_EPILOG` so that XTF is available when the network is activated at every deadstart. For information on system prolog and epilog files, see the *NOS/VE System Performance and Maintenance manual, Volume 2*. Also see the description of the `ACTIVATE_XTF` command in the *NOS/VE Network Management Usage manual*.

If your site is installing a Mail/VE gateway to exchange mail with a BITNet or Internet mail system, see chapter 3 for information on installing and maintaining a Mail/VE gateway.

Example: Using NOS/VE and Other X.400 Hosts

Figure 2-3 shows a mail environment consisting of four hosts:

System	Description	MTA Name(s)
NOS/VE	The YELLOW, GREEN, and PINK systems are interconnected by CDCNET. Each host has a Mail/VE mail system. The three systems are in the same private domain (CDC) in the United States (US), and are not associated with an administrative domain. (The domains are not shown in the figure.)	MTAYELLOW MTAGREEN MTAPINK
Other X.400 system	The XYZ host has a different mail system (not Mail/VE). Its system is connected to MTAYELLOW by Ethernet and CDCNET. This system is in the private domain (XYZ) in the United States (US), and is associated with an administrative domain (abcmail). (The domains are not shown in the figure.)	XYZMTA



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Figure 2-3. Mail Network Example with NOS/VE and Other X.400 Hosts

In this example, the three Mail/VE mail systems (MTAYELLOW, MTAGREEN, and MTAPINK) are in the same domain, and the XYZMTA mail system is in a different domain. XTF is installed on only one of the NOS/VE hosts, YELLOW. The Mail/VE mail service on YELLOW acts as a mail relay between the Mail/VE mail systems on hosts GREEN and PINK and the mail system on host XYZ.

The following subsections show how some of the general configuration procedure steps apply to the three NOS/VE hosts shown in figure 2-3. Enter the commands in these steps from the system console.

Setting up Host YELLOW

To configure host YELLOW, perform the following steps:

1. Install Mail/VE. Specify MTAYELLOW as the MTA name on the INSTALL_MAIL command. In this example, The country code is the US, and the private domain is CDC. MTAYELLOW is not associated with an administrative domain.

```

/install_mail ..
../message_transfer_agent='mtayellow' ..
../private_domain='cdc' ..
../administrative_domain=' ' ..
../country='us'
  
```

2. Install QTF/QTFS if you have not done so previously, and define these applications to NAM/VE as follows:

```
/manage_application_definitions
mad/define_qtfs family_name=yellow
mad/define_qtf
mad/quit
/
```

3. Install XTF. Specify MTAYELLOW as the MTA name on the INSTALL_X400_TRANSFER_FACILITY command.

```
/install_x400_transfer_facility ..
../message_transfer_agent=mtayellow ..
../password='cdcpw'
```

4. Define OSI addresses for host XYZ.
- Define the OSI address for XYZMTA using the ADD_OSI_ADDRESS command. Obtain the values for the NETWORK_ADDRESS, TRANSPORT_SELECTOR, and SESSION_SELECTOR parameters from someone familiar with the values required by host XYZ.

```
/add_osi_address title='xyzmta' ..
../network_address='nnnnnn' ..
../transport_selector='ttttttt' ..
../session_selector='ssss' ..
../title_identifier=xyzmta
```

- Specify the ADD_NON_CDCNET_ADDRESS_PREFIX command in the configuration file of each DI along the path to a non-NOS/VE host. Coordinate the host and DI entries.

NOTE

To perform X.400 transfers using XTF, each DI on a path from XTF to XYZMTA must support the OSI protocol stack. Use the SUPPORTED_STACKS parameter of the CHANGE_PROTOCOL_STACK_SUPPORT command to establish OSI as a supported protocol stack for each DI running CDCNET 1.4.2.:

```
/change_protocol_stack_support supported_stacks=all
```

or

```
/change_protocol_stack_support supported_stacks=osi
```

5. Enter the ACTIVATE_MAILVE command.

```
/activate_mailve job_class=siteclass1
```

On the JOB_CLASS parameter, specify an appropriate class for your site.

6. Create at least one Mail/VE administrator.

7. Create a permit for the Mail/VE administrator to the catalog containing the XTF configuration file. Enter the following at the system console:

```
/create_catalog_permit catalog=$system.xtf ..  
../group=user ..  
../family_name=family ..  
../user=username ..  
../access_mode=(all,cycle,control) ..  
../share_mode=none
```

In this example, family and username are the family and user name of the Mail/VE administrator.

8. Define the routes to the other hosts using the CREATE_ORGANIZATION and CREATE_ROUTE subcommands of the ADMINISTER_MAIL utility:

```
Admm/create_organization organization_unit='yellow_group' ..  
Admm../title='mtayellow'
```

```
Admm/create_organization organization_unit='green_group' ..  
Admm../title='mtagreen'
```

```
Admm/create_organization organization_unit='pink_group' ..  
Admm../title='mtapink'
```

```
Admm/create_route title='mtagreen' ..  
Admm../country='us' ..  
Admm../administrative_domain=' ' ..  
Admm../private_domain='cdc' ..  
Admm../transfer_service=qtf ..  
Admm../destination_type=mve ..  
Admm../transfer_title=green
```

```
Admm/create_route title='mtapink' ..  
Admm../country='us' ..  
Admm../administrative_domain=' ' ..  
Admm../private_domain='cdc' ..  
Admm../transfer_service=qtf ..  
Admm../destination_type=mve ..  
Admm../transfer_title=pink
```

```
Admm/create_route title='xyzmta' ..  
Admm../country='us' ..  
Admm../private_domain='xyz' ..  
Admm../administrative_domain='abcmail' ..  
Admm../transfer_service=xtf ..  
Admm../password='xyzpw'
```

9. Create user mailboxes, if needed.
10. Activate XTF from the system console by entering the ACTIVATE_XTF command.

Setting up Host PINK

To configure host PINK, perform the following steps:

1. Install Mail/VE. Specify MTAPINK as the MTA name on the INSTALL_MAIL command. The country code, administrative domain, and private domain are the same as on MTAYELLOW since both MTA names are in the same domain.

```
/install_mail message_transfer_agent='mtapink' ..
../private domain='cdc' ..
../administrative_domain=' ' ..
../country='us'
```

2. Install QTF/QTFS.

```
/manage_application_definitions
mad/define_qtfs family_name=pink
mad/define_qtf
mad/quit
/
```

3. XTF is not installed on this host.
4. Enter the ACTIVATE_MAILVE command.

```
/activate_mailve job_class=siteclass1
```

On the JOB_CLASS parameter, specify an appropriate class for your site.

5. Create at least one Mail/VE administrator.

6. Define the routes to the other hosts using the CREATE_ORGANIZATION and CREATE_ROUTE subcommands of the ADMINISTER_MAIL utility:

```
Admm/create_organization organization_unit='pink_group' ..  
Admm./title='mtapink'
```

```
Admm/create_organization organization_unit='yellow_group' ..  
Admm./title='mtayellow'
```

```
Admm/create_organization organization_unit='green_group' ..  
Admm./title='mtagreen'
```

```
Admm/create_route title='mtayellow' ..  
Admm./country='us' ..  
Admm./administrative_domain=' ' ..  
Admm./private_domain='cdc' ..  
Admm./transfer_service=qtf ..  
Admm./destination_type=mve ..  
Admm./transfer_title=yellow
```

```
Admm/create_route title='xyzmta' ..  
Admm./country='us' ..  
Admm./administrative_domain='abcmail' ..  
Admm./private domain='xyz' ..  
Admm./transfer_service=qtf ..  
Admm./destination_type=mve ..  
Admm./transfer_title=yellow
```

```
Admm/create_route title='mtagreen' ..  
Admm./country='us' ..  
Admm./administrative_domain=' ' ..  
Admm./private_domain='cdc' ..  
Admm./transfer_service=qtf ..  
Admm./destination_type=mve ..  
Admm./transfer_title=green
```

7. Create user mailboxes, if needed.

Setting up Host GREEN

To configure host GREEN, perform the following steps:

1. Install Mail/VE. Specify MTAGREEN as the MTA name on the INSTALL_MAIL command. The country code, administrative domain, and private domain are the same as on MTAYELLOW since both MTA names are in the same domain.

```
/install_mail message_transfer_agent='mtagreen' ..
../private_domain='cdc' ..
../administrative_domain=' ' ..
../country='us'
```

2. Install QTF/QTFS.

```
/manage_application_definitions
mad/define_qtfs family_name=green
mad/define_qtf
mad/quit
/
```

3. XTF is not installed on this host.
4. Enter the ACTIVATE_MAILVE command.

```
/activate_mailve job_class=siteclass1
```

On the JOB_CLASS parameter, specify an appropriate class for your site.

5. Create at least one Mail/VE administrator.

6. Define the routes to the other hosts using the CREATE_ORGANIZATION and CREATE_ROUTE subcommands of the ADMINISTER_MAIL utility:

```
Admm/create_organization organization_unit='green_group' ..  
Admm../title='mtagreen'
```

```
Admm/create_organization organization_unit='pink_group' ..  
Admm../title='mtapink'
```

```
Admm/create_organization organization_unit='yellow_group' ..  
Admm../title='mtayellow'
```

```
Admm/create_route title='mtapink' ..  
Admm../country='us' ..  
Admm../administrative_domain=' ' ..  
Admm../private_domain='cdc' ..  
Admm../transfer_service=qtf ..  
Admm../destination_type=mve ..  
Admm../transfer_title=pink
```

```
Admm/create_route title='mtayellow' ..  
Admm../country='us' ..  
Admm../administrative_domain=' ' ..  
Admm../private_domain='cdc' ..  
Admm../transfer_service=qtf ..  
Admm../destination_type=mve ..  
Admm../transfer_title=yellow
```

```
Admm/create_route title='xyzmta' ..  
Admm../country='us' ..  
Admm../private_domain='xyz' ..  
Admm../administrative_domain='abcmail' ..  
Admm../transfer_service=qtf ..  
Admm../destination_type=mve ..  
Admm../transfer_title=yellow
```

7. Create user mailboxes, if needed.

Configuration Interrelationships

As indicated by the direction of the arrows, figure 2-4 shows a user on YELLOW sending mail to a user on XYZ, in a different domain. The figure highlights the correspondence between various command parameters for hosts YELLOW and XYZ.

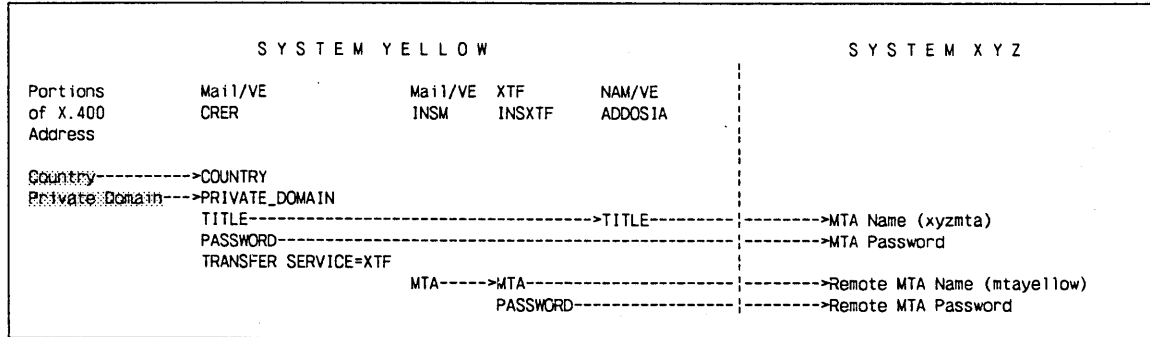


Figure 2-4. YELLOW User Sending Mail to XYZ User

On YELLOW, the user specifies the destination X.400 mail address, the relevant portions of which are shaded. These portions of the X.400 address (country and private domain) are associated with an MTA name (and corresponding password) through the CREATE_ROUTE subcommand. That MTA name identifies XYZMTA on host XYZ as the one to receive the mail.

The mail system on XYZ receives the mail and distributes it to the proper user. The remote MTA name on host XYZ identifies MTAYELLOW as a host from which it accepts mail.

In this figure, parameters associated by arrows must have identical values. For example, the following parameters must have the same value. (In this example, the value of these parameters is xyzmta.)

Parameter	Command or Subcommand	System
TITLE	CREATE_ROUTE	YELLOW
TITLE	ADD_OSI_ADDRESS	YELLOW
(MTA Name)	(host dependent)	XYZ

As indicated by the direction of the arrows, figure 2-5 shows a user on XYZ sending mail to a user on YELLOW, in a different domain. The figure highlights the correspondence between various command parameters for hosts XYZ and YELLOW.

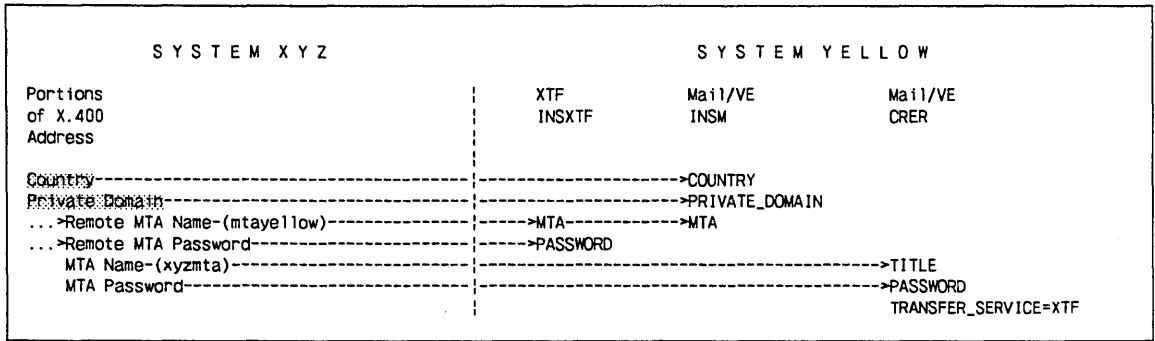


Figure 2-5. XYZ User Sending Mail to YELLOW User

On XYZ, the user specifies the destination X.400 mail address, the relevant portions of which are shaded. These portions of the X.400 address (country, and private domain) are mapped into the remote MTA name (and corresponding password) as indicated by the dotted arrows. That remote MTA name identifies MTAYELLOW on host YELLOW as the one to receive the mail.

Mail/VE on YELLOW receives the mail and examines the X.400 address. Based on the parameters on the INSTALL_MAIL command, it determines that the mail is destined for host YELLOW and distributes the mail to the proper user. The TITLE parameter on the CREATE_ROUTE subcommand identifies XYZMTA as a host from which it accepts mail.

In this figure, parameters associated by arrows must have identical values. For example, the following parameters must have the same value. (In this example, the value of these parameters is mtayellow.)

Parameter	Command	System
MESSAGE_TRANSFER_AGENT	INSTALL_X400_TRANSFER_FACILITY	YELLOW
MESSAGE_TRANSFER_AGENT (Remote MTA Name)	INSTALL_MAIL (host dependent)	YELLOW XYZ

In this figure, parameters associated by arrows must have identical values. For example, the following parameters must have the same value (mtapink in this example).

Parameter	Command or Subcommand	System
TITLE	CREATE_ORGANIZATION	YELLOW
TITLE	CREATE_ROUTE	YELLOW
TITLE	CREATE_ORGANIZATION	PINK
MESSAGE_TRANSFER_AGENT	INSTALL_MAIL	PINK

Likewise, the following parameters must have the same value (pink in this example).

Parameter	Command or Subcommand	System
TRANSFER_TITLE	CREATE_ROUTE	YELLOW
FAMILY_NAME	DEFINE_QTFS	PINK

Maintaining Mail/VE

After Mail/VE is installed, you are responsible for some ongoing maintenance tasks including monitoring output queue activity, repairing damaged database files, and accommodating terminal differences.

Output Queue Activity

Messages sent by users are put in the output queue with `OUTPUT_DESTINATION_USAGE` set to `MVE`. Depending on the volume of messages generated at your site, you may need to increase the size of the output queue. See the *NOS/VE System Performance and Maintenance Manual, Volume 1* for information on changing the size of the output queue.

If a Mail/VE user attempts to send a message when the queue is full, the user receives an error message. When this happens in screen mode, the user can save the text of the letter in progress by copying `$LOCAL.MVF$LETTER` to a file before reentering the `WRITE_LETTER` utility or Write Letter screen.

Active Message Transfer Agent

Once in the output queue, messages are processed by the message transfer agent activated by the `ACTIVATE_MAILVE` command. If the message transfer agent is not active, messages accumulate in the output queue and can possibly fill it. Mail/VE does not notify users when this situation exists.

You can remedy the situation by executing the `ACTIVATE_MAILVE` command. This command brings the message transfer agent up and processes the output queue.

Deferred Messages

If a message transfer agent cannot deliver a message, it usually sends a nondelivery notice to the sender and discards the message. Certain circumstances cause the message transfer agent to defer a message by changing the `OUTPUT_DEFERRED_BY_USER` value to `YES`. The following errors produce deferred messages:

Type of Error	Description
Internal MTA server errors	Related to database files
Data errors	Produced when the message transfer agent cannot process the message protocol

If your site has a large number of deferred messages, it indicates a serious problem requiring immediate action. Contact CYBER Software Support for assistance.

Repairing Damaged Database Files

If a system interrupt occurs while a database file is open and job recovery does not take place, the file may be damaged. You must repair a damaged file before Mail/VE can open it.

System Database Files

To repair a Mail/VE V2 system database file, execute the following commands from the system console:

```
task ring=4
copy_keyed_file i=database_file_name o=database_file_name.$next
taskend
```

For the variable `database_file_name` use the complete path name for the file. If you attempt to execute these commands from a catalog other than that in which the file resides, you must have `CYCLE` permission to the file.

If the data within the file is incomplete, you can delete and recreate the file. If your site uses `MANAGE_MAIL_DATABASE` to maintain a backup of the system database, you can use that utility to restore the database.

User Database Files

If the damaged file is a user database file (`$USER.MVF$ELECTRONIC_MAIL_DATABASE`), the user must enter the following Mail/VE command after the system prompt:

```
compress_mail_database
```

This command performs a `COPY_KEYED_FILE` of the database to a new cycle. The user must execute the command outside of Mail/VE, because it requires exclusive access to the user's database.

If the data within the database file is incomplete, the user can request that the file be restored from an archived copy. If the user is not concerned about the letter content, the user can delete the database file and Mail/VE creates a new one the next time the user enters `EMAIL`. To delete the user database, the user must have ring 4 privilege or create a file permission granting access mode of `CYCLE` and `CONTROL` to a user who does.

Terminal Differences: VT220

Sometimes, you may need to make modifications to accommodate terminal differences. For example when you are using Mail/VE, the VT220 terminal definition produces two overlapping menu rows of function keys at the bottom of the screen. To correct this problem, modify the definition by adding the following lines:

```
source_code_utility
use_library b=$system.cybil.osf$program_interface r=$null
edit_deck d=csms$dec_vt220 m=email_mod
  locate_text t="" programmable function key input information'
  replace_text t='f10' nt='f10'
quit
expand_deck d=csms$dec_vt220 c=$local.tdu_source
define_terminal i=$local.tdu_source b=tdu_binary
set_program_attributes a1=tdu_binary
quit
```


This modification blots out the F10 function key on your screen, making room for the remaining keys. To modify the master TDU (you must have READ and CYCLE permission for the libraries referenced), perform the following commands from user \$SYSTEM:

```
create_object_library
add_library l=$system.tdu.terminal_definitions
combine_module m=tdu_binary
generate_library l=$system.tdu.terminal_definitions.$next
quit
```

NOTE

Any site changes to the files \$SYSTEM.TDU.TERMINAL_DEFINITIONS or \$SYSTEM.OSF\$COMMAND_LIBRARY are eliminated by the installation of corrections to the subproducts TDU and NOSVE_INITIAL_LOAD, respectively. To determine whether you need to reapply site modifications, refer to the documentation accompanying the correction. The ring attributes of files \$SYSTEM.TDU.TERMINAL_DEFINITIONS and \$SYSTEM.OSF\$COMMAND_LIBRARY should be (3,13,13).

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A Mail/VE gateway supports the exchange of mail between Mail/VE and other mail systems on BITNet and Internet networks. A gateway performs two basic functions:

- Converts messages between the X.400 protocols used by Mail/VE and the RFC822 protocols used in the BITNet and Internet networks.
- Routes mail between a Mail/VE network and the BITNet and Internet networks.

While the Mail/VE gateway can also support the relay of mail between BITNet and Internet networks, this chapter focuses on the tasks that the Mail/VE administrator performs to support the basic functions. The chapter describes how you install and maintain a Mail/VE gateway.

Mail/VE Administrator Tasks

As Mail/VE administrator, you are responsible for installing and maintaining the Mail/VE gateway. Your MAILVE_ADMINISTRATION validation must be set to ANALYST, and you must have permission to access the \$SYSTEM.MAILVE_V2 catalog with an ACCESS_MODE of (ALL,CYCLE,CONTROL). Then you can perform the following Mail/VE gateway installation and maintenance tasks:

- Install the Mail/VE gateway using the INSTALL_MAIL_GATEWAY command
- Define the Mail/VE gateway and the networks it represents to Mail/VE using the CREATE_ORGANIZATION and CREATE_ROUTE subcommands of the ADMINISTER_MAIL utility
- Obtain and update the DOMAIN_NAMES_FILE¹

In addition to the general task descriptions in this section, this chapter provides the following to help you perform the tasks:

- Mail/VE gateway installation procedure
- Reference descriptions of the DOMAIN_NAMES_FILE entries
- Routing examples

1. DOMAIN_NAMES_FILE is the default name for the file containing domain names. It is used throughout this manual to specify this file. If you wish, you can specify a different name for the file on the DOMAIN_NAMES_FILE parameter when you issue the INSTALL_MAIL_GATEWAY command.

Installing a Mail/VE Gateway

The Mail/VE gateway must have address information for each of the X.400, Internet, and BITNet networks connected to it. During the installation of the Mail/VE gateway, you supply this information through the `INSTALL_MAIL_GATEWAY` command.

The `INSTALL_MAIL_GATEWAY` command provides the following address information for the networks:

X.400 Address	BITNet Address	Internet Address
Private domain	Mailer name	Internet domain name (subdomain.subdomain..)
Administration domain	Node name	
Country	Default NTF station name	
Organization units		
Organization name		

The command also defines:

- The name (title) of the gateway. Other mail systems use this title when routing mail to the gateway with QTF and XTF.
- The name of the file that will contain the domain names (by default, this is `$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE`).

The procedure for installing the Mail/VE gateway is described later in this chapter.

Creating Gateway Routes and Organizations

You define the gateway and its address with the `CREATE_ROUTE` and `CREATE_ORGANIZATION` subcommands in the `ADMINISTER_MAIL` utility.

Subcommand	Description
<code>CREATE_ROUTE</code>	Identifies the gateway as a Mail/VE gateway and associates its name with a specific country, administrative domain, and private domain. You specify the same value for the <code>TITLE</code> parameter of the <code>CREATE_ROUTE</code> subcommand and the <code>MAIL_GATEWAY_NAME</code> parameter of the <code>INSTALL_MAIL_GATEWAY</code> command.
<code>CREATE_ORGANIZATION</code>	<ol style="list-style-type: none"> 1. Associates an organization name and/or units with the gateway. 2. Can be used to define X.400 addresses for BITNet and Internet destinations. You must add <code>:x400.</code> entries to the <code>DOMAIN_NAMES_FILE</code> to translate these X.400 addresses to their corresponding BITNet or Internet addresses.

Maintaining a DOMAIN_NAMES_FILE

The Mail/VE gateway uses a DOMAIN_NAMES_FILE to translate addresses and route mail through the networks. How you create and maintain your DOMAIN_NAMES_FILE depends upon which mail systems you want to exchange mail with Mail/VE.² There are three possibilities:

- BITNet mail systems
- Internet mail systems
- BITNet and Internet mail systems

As Mail/VE administrator, you must supply the information that the Mail/VE gateway uses to make routing decisions and address mail to users of other mail systems in the connected networks. To do this, you create entries for the mail systems exchanging mail in a DOMAIN_NAMES_FILE.

The information you put in the DOMAIN_NAMES_FILE enables your Mail/VE users to send mail to BITNet and Internet users. They can address the mail in either of two ways:

- X.400 addresses (which the Mail/VE gateway converts to Internet or BITNet addresses via :x400. entries)
- RFC822 addresses

name@RFC822_ADDRESS

For more information on addressing mail, see the Mail/VE Version 2 Usage manual. For descriptions of the types of entries used in the DOMAIN_NAMES_FILE, see DOMAIN_NAMES_FILE Entries.

2. For installation details, see the Installation Procedure for Mail/VE Gateway section.

Installation Procedure for Mail/VE Gateway

This procedure contains three parts:

- Setting up a DOMAIN_NAMES_FILE
- Installing a Mail/VE gateway
- Adding the Mail/VE gateway address to other NOS/VE hosts

Figure 3-1 shows the addition of a Mail/VE gateway to the example (figure 2-3) of the mail network with NOS/VE and other X.400 hosts. The gateway communicates with BITNet and Internet mail systems. The gateway and related additions are unshaded.

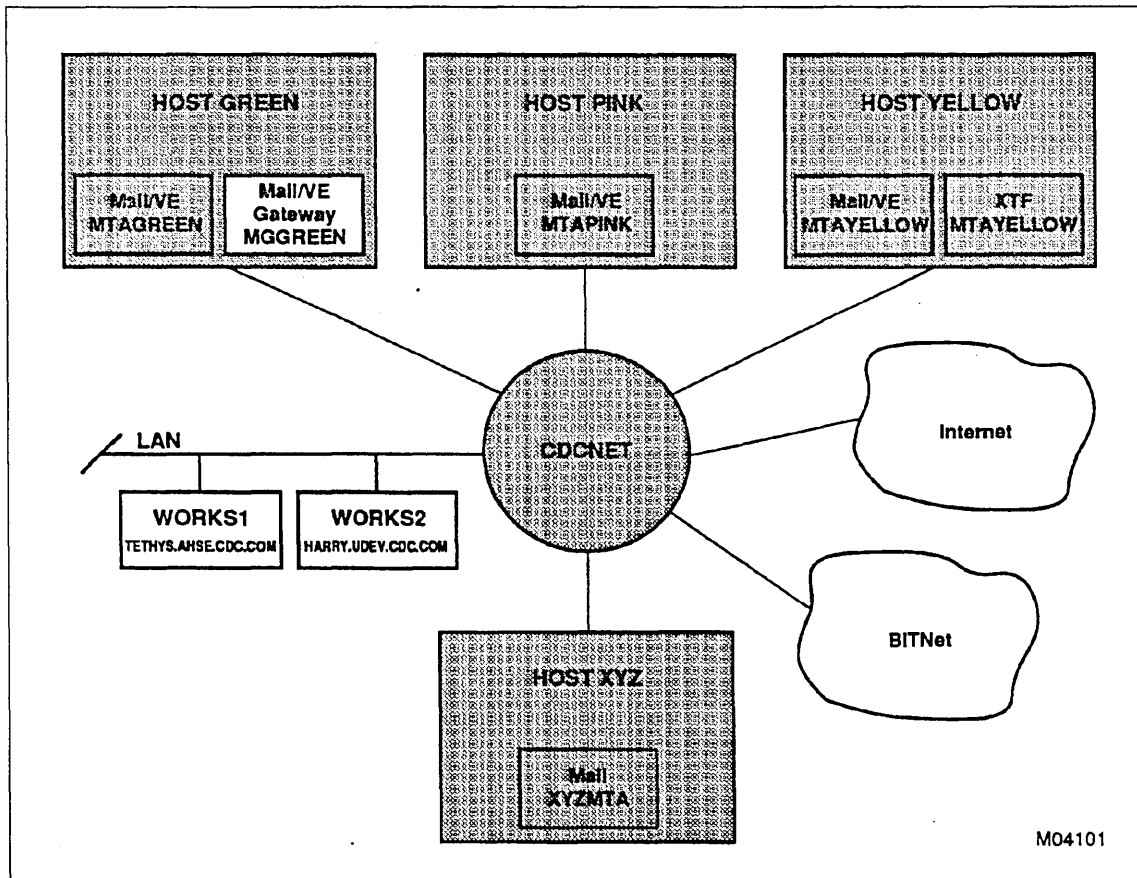


Figure 3-1. Mail Network Example with Mail/VE Gateway

Setting Up a DOMAIN_NAMES_FILE

The following procedure outlines the steps you take in setting up a DOMAIN_NAMES_FILE. How you proceed depends upon whether you want to communicate with BITNet mail systems, Internet mail systems, or both.

Establishing BITNet Communications

If you are planning to exchange mail with BITNet mail systems, take the following steps and refer to the BITNet portions of figure 3-1.

1. Create three entries in \$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE for an organization (at least one) that will communicate with the BITNet mail systems. The following examples illustrate how you create the :nick., :x400., and :internet. entries for this organization.

- a. The :nick. entry tells the Mail/VE gateway which route to take to reach the destination.

```
:nick.CDCARH ..
  :route.du=local,ou='bitnet',on='vearh',pd='cdc',c='us' ..
  X.400
```

- b. The :x400. entry translates an X.400 address into an RFC822 address.

```
:x400.ou='bitnet',on='vearh',pd='cdc',c='us' ..
  :internet.CDCARH
```

- c. The :internet. entry translates an RFC822 address into an X.400 address.

```
:internet.CDCARH ..
  :x400.ou='bitnet',on='vearh',pd='cdc',c='us'
```


2. Create `:nick.`, `:x400.`, and `:internet.` entries for each X.400 organization recognized by your Mail/VE system. The following entries are for the figure 3-1 organizations defined in chapter 2.

```

:nick.GREEN-GROUP.CDC.COM ..
  :route.du=local,ou='green-group',pd='cdc',c='us' ..
  X.400
:x400.GREEN-GROUP.CDC.COM ..
  :internet.ou='green-group',pd='cdc',c='us'
:internet.GREEN-GROUP.CDC.COM ..
  :x400,ou='green-group',pd='cdc',c='us'

:nick.YELLOW-GROUP.CDC.COM ..
  :route.du=local,ou='yellow-group',pd='cdc',c='us' ..
  X.400
:x400.YELLOW-GROUP.CDC.COM ..
  :internet.ou='yellow-group',pd='cdc',c='us'
:internet.YELLOW-GROUP.CDC.COM ..
  :x400,ou='yellow-group',pd='cdc',c='us'

:nick.PINK-GROUP.CDC.COM ..
  :route.du=local,ou='pink-group',pd='cdc',c='us' ..
  X.400
:x400.PINK-GROUP.CDC.COM ..
  :internet.ou='pink-group',pd='cdc',c='us'
:internet.PINK-GROUP.CDC.COM ..
  :x400,ou='pink-group',pd='cdc',c='us'

:nick.XYZ.COM ..
  :route.du=local,pd='xyz',ad='abcmail',c='us' ..
  X.400
:x400.XYZ.COM ..
  :internet.pd='xyz',ad='abcmail',c='us'
:internet.XYZ.COM ..
  :x400,pd='xyz',ad='abcmail',c='us'

```

3. Create `:nick.`, `:x400.`, and `:internet.` entries for the Mail/VE gateway. The domain name of the `:nick.` entry for the Mail/VE gateway must match the value of the `INTERNET_DOMAIN_NAME` parameter specified on the `INSTALL_MAIL_GATEWAY` command.

```

:nick.GREEN-GW.CDC.COM ..
  :route.du=local ..
  X.400
:x400.ou='green-gw',pd='cdc',c='us' ..
  :internet.GREEN-GW.CDC.COM
:internet.GREEN-GW.CDC.COM ..
  :x400.ou='green-gw',pd='cdc',c='us'

```

4. Add an entry which defines where to send rejected rejection notices.

```
:nick.*<>* ..
  :route.du=local,pn='postmaster',ou='green_group',pn='cdc',c='us' ..
  X.400
```

5. Add an entry which defines the default routing action.

```
:nick.*DEFAULT*           :route.du=ntf           BSMTF
```

6. Perform the procedures in Installing the Mail/VE Gateway section. When you have installed and activated the gateway, continue with the following step.

7. Obtain copies of the DOMAIN NAMES and XMAILER NAMES files from the BITNet Network Information Center by sending requests to listserv@bitnic: (If your site is an established BITNet site, you may already have these files on your NOS/VE host.)

- a. To request a copy of the DOMAIN NAMES file, send the following message:

```
send DOMAIN NAMES
```

To request a copy of the XMAILER NAMES file, send the following message:

```
send XMAILER NAMES
```

The BITNet Network Information Center replies by sending you messages containing these files.

- b. Take the following steps and copy the messages that you receive to the NOS/VE files listed below:

<u>Messages Received</u>	<u>NOS/VE File</u>
Domain names	\$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE.\$EOI
Xmailer names	\$LOCAL.XMAILER_NAMES_FILE

- 1) Copy the domain names message to the end of your existing DOMAIN_NAMES_FILE.
- 2) Reformat and append XMAILER_NAMES_FILE to DOMAIN_NAMES_FILE by entering the following:

```
/create_command_list_entry ..
../entry=$system.mailve_v2.maintenance.command_library
/format_domain_names ..
../local_bitnet_node_name=nodename ..
../input=$local.xmailer_names_file ..
../output=$system.mailve_v2.domain_names_file.$eoi
```

Establishing Internet Communications

In order for the Mail/VE gateway to communicate with Internet mail systems, SMTP must be installed on the same host as the gateway. You should verify that SMTP is installed on the host you are working with before proceeding with the Mail/VE gateway installation. For SMTP information, see the CDCNET TCP/IP Applications manual.

Creating Entries

If you are installing the Mail/VE gateway to exchange mail with Internet mail systems, take the following steps and refer to the Internet portions of figure 3-1:

1. Create a DOMAIN_NAMES_FILE which contains your local entries. For each local organization and route recognized by your Mail/VE system, add three entries to the DOMAIN_NAMES_FILE. The following examples illustrate how you create the :nick., :x400., and :internet. entries for X.400 addresses. In this procedure, the X.400 addresses are your Mail/VE addresses.

- a. The :nick. entry tells the Mail/VE gateway which route to take to reach the destination.

```
:nick.GREEN_GROUP.CDC.COM ..
   :route.du=local,ou='green_group',pd='cdc',c='us' ..
   X.400
```

- b. The :x400. entry translates an X.400 address into an RFC822 address.

```
:x400.ou='green_group',pd='cdc',c='us' ..
   :internet.GREEN_GROUP.CDC.COM
```

- c. The :internet. entry translates an RFC822 address into an X.400 address.

```
:internet.GREEN_GROUP.CDC.COM ..
   :x400.ou='green_group',pd='cdc',c='us'
```

The following entries are for the other figure 3-1 organizations defined in chapter 2.

```
:nick.YELLOW-GROUP.CDC.COM ..
   :route.du=local,ou='yellow-group',pd='cdc',c='us' ..
   X.400
:x400.YELLOW-GROUP.CDC.COM ..
   :internet.ou='yellow-group',pd='cdc',c='us'
:internet.YELLOW-GROUP.CDC.COM ..
   :x400,ou='yellow-group',pd='cdc',c='us'

:nick.PINK-GROUP.CDC.COM ..
   :route.du=local,ou='pink-group',pd='cdc',c='us' ..
   X.400
:x400.PINK-GROUP.CDC.COM ..
   :internet.ou='pink-group',pd='cdc',c='us'
:internet.PINK-GROUP.CDC.COM ..
   :x400,ou='pink-group',pd='cdc',c='us'

:nick.XYZ.COM ..
   :route.du=local,pd='xyz',ad='abcmail',c='us' ..
   X.400
```

```

:x400.XYZ.COM ..
  :internet.pd='xyz',ad='abcmail',c='us'
:internet.XYZ.COM ..
  :x400,pd='xyz',ad='abcmail',c='us'

```

2. Create :nick., :x400., and :internet. entries for the Mail/VE gateway. The domain name of the :nick. entry for the Mail/VE gateway must match the value of the INTERNET_DOMAIN_NAME parameter specified on the INSTALL_MAIL_GATEWAY command.

```

:nick.GREEN-GW.CDC.COM ..
  :route.du=local
  X.400
:x400.ou='green-gw',pd='cdc',c='us' ..
  :internet.GREEN-GW.CDC.COM
:internet.GREEN-GW.CDC.COM ..
  :x400.ou='green-gw',pd='cdc',c='us'

```

3. Add an entry which defines where to send rejected rejection notices.

```

:nick.*<>* ..
  :route.du=local,pn='postmaster',ou='green_group',pn='cdc',c='us' ..
  X.400

```

4. Add the following default entry to serve as a catchall for when none of the other entries matches an address.

```

:nick.*DEFAULT*                :route.du=smtp                BSMTTP

```

Configuring Internet Workstations

There are two basic ways to configure workstations connected by a LAN. The easiest solution is to treat all workstations as an entity. To do this, you create a :nick.*DEFAULT* entry:

```

:nick.*DEFAULT*                :route.du=smtp                BSMTTP

```

The other solution is to create a separate :nick. entry for each:

```

:nick.TETHYS.AHSE.CDC.COM      :route.du=smtp                BSMTTP
:nick.HARRY.UDEV.CDC.COM       :route.du=smtp                BSMTTP

```

Establishing Both BITNet and Internet Communications

If you are planning to exchange mail with both BITNet and Internet mail systems as shown in figure 3-1, take the following steps:

1. Perform the steps in Establishing Internet Communications.
2. Create three entries in `SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE` for an organization (at least one) that will communicate with the BITNet mail systems. The following examples illustrate how you create the `:nick.`, `:x400.`, and `:internet.` entries for this organization.

- a. The `:nick.` entry tells the Mail/VE gateway which route to take to reach the destination.

```
:nick.CDCARH ..  
  :route.du=local,ou='bitnet',on='vearh',pd='cdc',c='us' ..  
  X.400
```

- b. The `:x400.` entry translates an X.400 address into an RFC822 address.

```
:x400.ou='bitnet',on='vearh',pd='cdc',c='us' ..  
  :internet.CDCARH
```

- c. The `:internet.` entry translates an RFC822 address into an X.400 address.

```
:internet.CDCARH ..  
  :x400.ou='bitnet',on='vearh',pd='cdc',c='us'
```

3. Perform the procedures in Installing the Mail/VE Gateway section. When you have installed and activated the gateway, continue with the following step.
4. Obtain copies of the `DOMAIN NAMES` and `XMAILER NAMES` files from the BITNet Network Information Center by sending requests to `listserve@bitnic`: (If your site is an established BITNet site, you may already have these files on your NOS/VE host.)
 - a. To request a copy of the `DOMAIN NAMES` file, send the following message:

```
send DOMAIN NAMES
```

To request a copy of the `XMAILER NAMES` file, send the following message:

```
send XMAILER NAMES
```

The BITNet Network Information Center replies by sending you messages containing these files.

- b. Take the following steps and copy the messages that you receive to the NOS/VE files listed below:

Messages Received NOS/VE File

Domain names \$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE.\$EOI

Xmailer names \$LOCAL.XMAILER_NAMES_FILE

- 1) Copy the domain names message to the end of your existing DOMAIN_NAMES_FILE.
- 2) Reformat and append XMAILER_NAMES_FILE to DOMAIN_NAMES_FILE by entering the following:

```
/create_command_list_entry ..
../entry=$system.mailve_v2.maintenance.command_library
/format_domain_names ..
../local_bitnet_node_name=nodename ..
../input=$local.xmailer_names_file ..
../output=$system.mailve_v2.domain_names_file.$eoi
```

5. Delete the following BITNet Network Information Center entries from the DOMAIN_NAMES_FILE.

:nick..COM	:mailer.SMTPUSER@INTERBIT	BSMTP
:nick..EDU	:mailer.SMTPUSER@INTERBIT	BSMTP
:nick..GOV	:mailer.SMTPUSER@INTERBIT	BSMTP
:nick..MIL	:mailer.SMTPUSER@INTERBIT	BSMTP
:nick..NET	:mailer.SMTPUSER@INTERBIT	BSMTP
:nick..ORG	:mailer.SMTPUSER@INTERBIT	BSMTP

Installing the Mail/VE Gateway

When you have completed the `DOMAIN_NAMES_FILE` entries, you are ready to install the Mail/VE gateway.

1. Install the Mail/VE gateway on a NOS/VE host from the system console:

a. Add the maintenance command library to the command list:

```
/create_command_list_entry ..  
../entry=$system.mailve_v2.maintenance.command_library
```

b. Execute the `INSTALL_MAIL_GATEWAY` command. The following example uses the recommended naming conventions:

```
/install_mail_gateway ..  
../mail_gateway_name=MGGREEN ..  
../private_domain='cdc' ..  
../administrative_domain=' ' ..  
../country='us' ..  
../organization_units='green-gw' ..  
../internet_domain_name='green-gw.cdc.com' ..  
../bitnet_mailer_name=mailer ..  
../bitnet_node_name=cddcarh
```

The following defaults are assumed in the example:

```
domain_names_file=$system.mailve_v2.domain_names_file  
station=automatic
```

Be sure to record the parameter values that you enter since you cannot display them later.

If you prefer, you can enter the command in a file and execute it. To do this, use your editor to create a file, enter your `INSTALL_MAIL_GATEWAY` command in the file, and then execute it with a `NOS/VE INCLUDE_FILE` command. This method preserves a record of your parameter selections and enables you to correct typographical errors later, if necessary.

Control Data recommends a specific naming scheme for the following `INSTALL_MAIL_GATEWAY` parameters.

Parameter	Recommended Name
MAIL_GATEWAY_NAME	MG prefix and the host name: MGGREEN
INTERNET_DOMAIN_NAME	Host name with a suffix of -gw plus the domain in which the host resides: green-gw.cdc.com If you are using SMTP, you must also define the name specified for this parameter in \$SYSTEM.TCP_IP.HOSTS as the primary name of the NOS/VE host.
BITNET_MAILER_NAME	Name Mail/VE uses to identify itself to other BITNet mail systems: mailer Control Data recommends that you register this name with the BITNet Network Information Center.

For more information about the `INSTALL_MAIL_GATEWAY` command, see the description in chapter 4.

- c. Define your site's BITNet node name as a local name to the Network Transfer Facility (NTF) on the `ADD_LOCAL_NAME` subcommand of the `MANAGE_NTF_LOCAL_NAMES` utility. Specify the same name for both the `REMOTE_NAME` and `LOCAL_NAME` parameters on this subcommand as you did on the `INSTALL_MAIL_GATEWAY` command for the `BITNET_NODE_NAME` parameter as shown in the following example:

```
/use_ntf_utilities
usenu/manage_ntf_local_names
Mannln/add_local_name remote_name=cdcarh local_name=cdcarh
Mannln/quit
usenu/quit
```

This BITNet node name is the name of the Mail/VE system that your site registered with the BITNet Network Information Center when it became part of the BITNet network. For a description of the `MANAGE_NTF_LOCAL_NAME` utility, see the Network Transfer Facility Usage Manual.

2. Execute the `DEFINE_DEFAULT_GATEWAY_ADDRESS` subcommand. Specify the same values for this command as you did for the `INSTALL_MAIL_GATEWAY` command.

```
/administer_mail
admm/define_default_gateway_address ..
admm../organization_units='green-gw' ..
admm../private_domain='cdc' ..
admm../administrative_domain=' ' ..
admm../country='us'
```

For a description of the `DEFINE_DEFAULT_GATEWAY_ADDRESS` subcommand, see chapter 5.

3. Define the following organizations and routes:

a. Define an organization and route for the Mail/VE gateway.

```
admm../create_organization ..
admm../title=mggreen ..
admm../organization_unit='green-gw'
```

```
admm../create_route ..
admm../title=mggreen ..
admm../country='us' ..
admm../administrative_domain=' ' ..
admm../private_domain='cdc' ..
admm../transfer_service=local ..
admm../destination_type=mg
```

b. If you are establishing BITNet communications and created three entries in \$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE for an organization that will communicate with the BITNet mail systems, enter the CREATE_ORGANIZATION subcommand to define that organization.

```
admm../create_organization ..
admm../title=mggreen ..
admm../organization_unit='bitnet' ..
admm../organization_name='vearh'
```

For additional information, see Defining Organizations and Routes in chapter 2. Also see the descriptions of the CREATE_ORGANIZATION and CREATE_ROUTE subcommands in chapter 5.

4. Enter the ACTIVATE_MAIL_GATEWAY command from the system console.

```
/activate_mail_gateway job_class=siteclass1
```

This command establishes the Mail/VE gateway as a system job. By default, this job runs in the default batch job class of your system. If your default batch job class has a low priority, you can use the JOB_CLASS parameter to select a different class for the Mail/VE gateway job as illustrated by siteclass1 in this example.

To verify that the Mail/VE gateway job is active, enter the following command:

```
display_job_status $name('mailve_mg'//$mainframe(id))
```

You can add the ACTIVATE_MAIL_GATEWAY command to the \$SYSTEM.PROLOGS_AND_EPILOGS.NETWORK_ACTIVATION_EPILOG so that the Mail/VE gateway is available when the network is activated at every deadstart. For a description of the ACTIVATE_MAIL_GATEWAY command, see Mail/VE Maintenance Commands in chapter 4. For information on system prolog and epilog files, see the NOS/VE System Performance and Maintenance manual, Volume 2.

Adding the Mail/VE Gateway to Other NOS/VE Hosts

After you have installed the Mail/VE gateway on one host, perform the following steps on each of the other NOS/VE hosts in your network. In the network illustrated in figure 3-1, you perform this procedure on PINK and YELLOW after you install the Mail/VE gateway on GREEN.

1. Be sure Mail/VE is installed on the host.
2. Execute the `DEFINE_DEFAULT_GATEWAY_ADDRESS` subcommand. Specify the same values for this command as you did for the `INSTALL_MAIL_GATEWAY` command as shown in the following example:

```
/administer_mail
admm/define_default_gateway_address ..
admm./organization_units='green-gw' ..
admm./private_domain='cdc' ..
admm./administrative_domain=' ' ..
admm./country='us'
```

3. Define an organization and route for the Mail/VE gateway.

```
admm./create_organization ..
admm./title=mggreen ..
admm./organization_unit='green-gw'

admm./create_route ..
admm./title=mggreen ..
admm./country='us' ..
admm./administrative_domain=' ' ..
admm./private_domain='cdc' ..
admm./transfer_service=qtf ..
admm./destination_type=mg ..
admm./transfer_title=green
```




DOMAIN_NAMES_FILE Entries

A DOMAIN_NAMES_FILE contains entries that the Mail/VE gateway uses to translate addresses and route mail. There are four types of entries:

Entry	Description
:nick. (standard) entry	Supports BITNet routing only. (It is used by the BITNet Network Information Center in the DOMAIN NAMES file maintained there.)
:nick. (extended) entry	Supports local, Internet, X.400 (for example, Mail/VE), and BITNet routing, including NTF and QTF options.
:x400. (extended) entry	Translates X.400 addresses into RFC822 format.
:internet. (extended) entry	Translates RFC822 addresses into X.400 format.

Entry Format

The standard and extended :nick. entries contain three fields as shown in this typical entry:

<code>:nick.UMASS.EDU</code>	<code>:mailer.SMTP@UMASS</code>	<code>BSMTP</code>
		
domain field	routing field	format field
		M04283

The three fields (domain, routing, and format) are separated by white space. The domain and routing fields are structured as :keyword.value. With the exception of the format field, the :x400. and :internet. entries adhere to the same format as the :nick. entries and have a :keyword.value structure in the first two fields. All four entries contain lines of legible text with a case-insensitive syntax.

:nick. (Standard) Entry

The standard :nick. entry specifies a route to a mail system identified in the domain field. In the following example, the Mail/VE gateway routes mail destined for the domain SATURN.UCC.UMASS.EDU to a mail transfer agent named SMTPUSER on a BITNet node named UMASS. In addition, mail destined for SATURN.UCC.UMASS.EDU is sent in BSMTP format.

<code>:nick.SATURN.UCC.UMASS.EDU</code>	<code>:mailer.SMTPUSER@UMASS</code>	<code>BSMTP</code>
---	-------------------------------------	--------------------

Domain Field

What immediately follows :nick., in either a standard or extended :nick. entry, is the known part of a BITNet or Internet address. That is, the domain field contains the :nick. keyword followed by a full domain name or a domain suffix. The example illustrates this :keyword.value structure.

```
:nick.SATURN.UCC.UMASS.EDU
```

Given an address to which to deliver a message, the Mail/VE gateway searches the DOMAIN_NAMES_FILE sequentially for the first :nick. entry that matches the address or a suffix of it.

Subdomain Order

The mail system stops searching for an entry when it finds a standard or extended :nick. entry that matches at least a suffix of the address, in the subdomain order. The DOMAIN_NAMES_FILE is organized so that :nick. entries with more specific addresses appear before entries with less specific ones, as shown in the following example:

:nick.SATURN.UCC.UMASS.EDU	:mailer.SATURN@UMASS	BSMTP
:nick.UCC.UMASS.EDU	:mailer.UCC@UMASS	BSMTP
:nick.UMASS.EDU	:mailer.SMTP@UMASS	BSMTP
:nick..EDU	:mailer.SMTP@INTERBIT	BSMTP

Although the four entries in this example include suffixes of the same address, they identify different mail systems.

- The first is the host SATURN in the University Computing Center at UMASS (University of Massachusetts).
- The second is a catchall for any unlisted host at the University Computing Center.
- The third is any department (not just the University Computing Center) at UMASS (University of Massachusetts). This general address applies to all of the departments in the university.
- The fourth entry is any institution in the EDU domain.

If these entries do not occur in the DOMAIN_NAMES_FILE in the exact order specified, Mail/VE will route some messages incorrectly.

For example, if the order is rearranged as shown in the following example, the Mail/VE gateway matches messages addressed to the second :nick. entry to the first :nick. entry. The messages are misrouted because the address of the first entry matches a suffix of the address in the subdomain order of the second entry and that first entry occurs before the more specific one.

:nick.UCC.UMASS.EDU	:mailer.UCC@UMASS	BSMTP
:nick.SATURN.UCC.UMASS.EDU	:mailer.SATURN@UMASS	BSMTP
:nick.UMASS.EDU	:mailer.SMTP@UMASS	BSMTP
:nick..EDU	:mailer.SMTP@INTERBIT	BSMTP

Extra Periods

Some :nick. entries contain an extra period. When an address in the domain field begins with a period as does .EDU in the following entry, it indicates that the address is a proper suffix and only matches addresses that include additional subordinate subdomains.

:nick..EDU	:mailer.SMTPUSER@INTERBIT	BSMTP
------------	---------------------------	-------

The following address does not match the preceding :nick. entry because the address does not include subdomains subordinate to the domain, EDU.

bert@edu

The next address does contain a subdomain and, therefore, matches the :nick. entry:

bert@umass.edu

Routing Field

The routing field of a standard `:nick.` entry identifies the address of the mail system supporting the RFC822 address in the domain field. The routing field consists of the `:mailer.` keyword and a value equaling the user name and BITNet node name of the destination mail system.

In the following example, the routing field identifies the BITNet name and address of the mail system, `UCC@UMASS`, that supports `UCC.UMASS.EDU`:

```
:nick.UCC.UMASS.EDU           :mailer.UCC@UMASS           BSMTF
```

The `:mailer.` keyword implicitly selects NTF as a delivery service.

Format Field

The format field specifies the message format expected by the mail system receiving the mail. Both the standard and extended `:nick.` entries use this field. The translation entries, `:internet.` and `:x400.`, do not use it. The following list shows which values apply.

Entry	Format Field Value
<code>:nick.</code> (standard)	You can use either of the values described below in the format field:
	<code>BSMTF</code> Mail/VE gateway routes the message in a BSMTF envelope addressed to the recipient(s).
	<code>BITNET</code> Mail/VE gateway routes the message without a BSMTF envelope.
<code>:nick.</code> (extended)	You can use any of the values described below in the format field:
	<code>BSMTF</code> Mail/VE gateway routes the message in a BSMTF envelope addressed to the recipient(s).
	<code>BITNET</code> Mail/VE gateway routes the message without a BSMTF envelope.
	<code>X.400</code> Mail/VE gateway translates the message into X.400 format.

`:nick.` Extensions

The standard `:nick.` entries do not accommodate the routing and address translation required by a gateway supporting mail exchange between Internet and X.400 networks. The following extensions meet these requirements:

- (extended) `:nick.` entry
- `:x400.` entry
- `:internet.` entry

:nick. Entry

The extended `:nick.` entry with the `:route` keyword instead of `:mailer` in the routing field identifies the route by which a destination domain can be reached.

The full format of this entry follows:

```
:nick.domain_name ..
    :route.du=destination_usage,routing_parameters ..
    format
```

Field	Description
Domain	Contains the <code>:nick.</code> keyword plus a known RFC822 domain name.
Routing	Contains the <code>:route.</code> keyword plus an output destination usage and, if needed, routing parameters for the destination usage. Table 3-1 lists the available destination usages, and table 3-2 summarizes the NTF routing parameters.
Format	Contains one of the following: <ul style="list-style-type: none"> BITNET BSMTP X.400

The Mail/VE gateway uses the first matching standard or extended `:nick.` entry to route mail to an RFC822 address. In other words, the gateway matches the given address to the domain field, and then uses the routing field (regardless of whether the keyword is `:mailer` or `:route`) to send the mail to the appropriate mail system.

Default Entries

A default entry acts as a catchall when the Mail/VE gateway cannot match an address to any other entry. In the following example, the gateway routes messages with unmatched destination addresses through NTF.

```
:nick.*DEFAULT*           :route.du=ntf           BITNET
```

Rejected Rejection Notice Entry

The `:nick.*<>*` entry identifies an X.400 mailbox which serves as a depository for rejection notices that cannot be delivered to their senders.

```
:nick.*<>* ..
    :route.du=local,pn='postmaster',ou='green_group',pn='cdc',c='us' ..
    X.400
```

Table 3-1. :route. Destinations for Extended :nick. Entry

Option	Description										
:ROUTE.DU=SMTP	<p>Indicates that messages are delivered using the Simple Mail Transport Protocol (SMTP).</p> <p>The full form of this routing field follows. BSMTP is allowed in the format field, but is superfluous.</p> <pre>:route.du=smtp .. BSMTP</pre>										
:ROUTE.DU=LOCAL	<p>Indicates that the matching address identifies an X.400 destination to which messages are delivered using X.400 protocol. X.400 address information may be supplied to specify the destination in X.400 terms.</p> <p>The full form of this routing field follows. X.400 is allowed in the format field, but is superfluous.</p> <pre>:route.du=local,ou=('ou1','ou2','ou3','ou4'),... on='organizationname',pd='privatedomain',... ad='administrationdomain',c='country' .. X.400</pre> <table> <tr> <td>ou</td> <td>Specifies the list of organization units.</td> </tr> <tr> <td>on</td> <td>Specifies the organization name.</td> </tr> <tr> <td>pd</td> <td>Specifies the private domain.</td> </tr> <tr> <td>ad</td> <td>Specifies the administration domain.</td> </tr> <tr> <td>c</td> <td>Specifies the country code.</td> </tr> </table>	ou	Specifies the list of organization units.	on	Specifies the organization name.	pd	Specifies the private domain.	ad	Specifies the administration domain.	c	Specifies the country code.
ou	Specifies the list of organization units.										
on	Specifies the organization name.										
pd	Specifies the private domain.										
ad	Specifies the administration domain.										
c	Specifies the country code.										

(Continued)

Table 3-1. :route. Destinations for Extended :nick. Entry (Continued)

Option	Description
	<p>The Mail/VE administrator can specify the X.400 address for the matched RFC822 domain name suffix in as much detail as desired. The Mail/VE gateway applies additional procedures to map the unmatched parts of the RFC822 domain name to the X.400 format.</p> <p>For example, if the Mail/VE gateway is matching the following address and :nick. entry, the unmatched part of the domain name, vesta, automatically is mapped to the ORGANIZATION_UNIT parameter.</p> <pre> kej@vesta.ahse.cdc.com :nick.ahse.cdc.com .. :route.du=local,on='ahse',pd='cdc',c='us' .. X.400 </pre>
:ROUTE.DU=QTF	<p>Identifies a QTF path to a mail system. For example, a QTF route allows you to use existing QTF and CDCNET services to exchange mail between Mail/VE and a NOS-resident mailer.</p> <p>The full form of this routing field follows. The parameters between brackets ([..]) are optional.</p> <pre> :route.du=qtf,ode=output_destination[,rhd='nos parameters'] .. [BSMTP BITNET] </pre> <p>For descriptions of the routing parameters, see the applicable host manuals. For example, see System Commands, volume 3 of the NOS 2 Reference Set, for a description of the MFQUEUE command and the parameters accepted by the NOS routing directive.</p>

(Continued)

Table 3-1. :route. Destinations for Extended :nick. Entry (Continued)

Option	Description								
	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Description</th> </tr> </thead> <tr> <td>ODE</td> <td> <p>Specifies the QTF title which is the output destination for the message.</p> <p>For example, if the destination is a NOS-resident mailer, this name must match the title registered in CDCNET by the NP gateway. For information on configuring an NP gateway, see the CDCNET Commands Reference manual for descriptions of the DEFINE_NP_GATEWAY and ADD_GATEWAY_OUTCALL_TITLE commands.</p> </td> </tr> <tr> <td>RHD</td> <td>Specifies remote host directives containing the QTF routing parameters.</td> </tr> </table>	Parameter	Description	ODE	<p>Specifies the QTF title which is the output destination for the message.</p> <p>For example, if the destination is a NOS-resident mailer, this name must match the title registered in CDCNET by the NP gateway. For information on configuring an NP gateway, see the CDCNET Commands Reference manual for descriptions of the DEFINE_NP_GATEWAY and ADD_GATEWAY_OUTCALL_TITLE commands.</p>	RHD	Specifies remote host directives containing the QTF routing parameters.		
Parameter	Description								
ODE	<p>Specifies the QTF title which is the output destination for the message.</p> <p>For example, if the destination is a NOS-resident mailer, this name must match the title registered in CDCNET by the NP gateway. For information on configuring an NP gateway, see the CDCNET Commands Reference manual for descriptions of the DEFINE_NP_GATEWAY and ADD_GATEWAY_OUTCALL_TITLE commands.</p>								
RHD	Specifies remote host directives containing the QTF routing parameters.								
:ROUTE.DU=NTF	<p>Identifies BITNet mail systems that deliver mail directly to mailboxes without being processed by a message transfer agent. (They do not use the :mailer.)</p> <p>The full form of this routing field follows. The Network Transfer Facility (NTF) parameters between brackets ([..]) are optional.</p> <pre>:route.du=ntf [,ode=node][,s=scfs][,rhd='nje parameters'] .. [BSMTP BITNET]</pre> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Description</th> </tr> </thead> <tr> <td>ODE</td> <td> <p>Specifies the BITNet node name which is the output destination for the message.</p> <p>The default is the domain_name from the :nick.domain_name field.</p> </td> </tr> <tr> <td>S</td> <td> <p>Specifies the station name used by the Mail/VE gateway when routing files through NTF.</p> <p>The default is AUTOMATIC which directs NTF to use the AUTOMATIC_STATION_NAME specified at NTF activation via the ACTIVATE_NTF command.</p> </td> </tr> <tr> <td>RHD</td> <td> <p>Specifies remote host directives containing NTF routing parameters. Enter these parameters as name or string values:</p> <pre>Name: rhd='ddn=dataset' String: rhd='ddn=''1dataset'''</pre> <p>Table 3-2 lists the routing parameters you can use to send mail directly to BITNet users. These parameters are always sent with the mail; other NTF parameters are not sent unless you specify them. For more information about NTF parameters, see the Network Transfer Facility Usage Manual.</p> </td> </tr> </table>	Parameter	Description	ODE	<p>Specifies the BITNet node name which is the output destination for the message.</p> <p>The default is the domain_name from the :nick.domain_name field.</p>	S	<p>Specifies the station name used by the Mail/VE gateway when routing files through NTF.</p> <p>The default is AUTOMATIC which directs NTF to use the AUTOMATIC_STATION_NAME specified at NTF activation via the ACTIVATE_NTF command.</p>	RHD	<p>Specifies remote host directives containing NTF routing parameters. Enter these parameters as name or string values:</p> <pre>Name: rhd='ddn=dataset' String: rhd='ddn=''1dataset'''</pre> <p>Table 3-2 lists the routing parameters you can use to send mail directly to BITNet users. These parameters are always sent with the mail; other NTF parameters are not sent unless you specify them. For more information about NTF parameters, see the Network Transfer Facility Usage Manual.</p>
Parameter	Description								
ODE	<p>Specifies the BITNet node name which is the output destination for the message.</p> <p>The default is the domain_name from the :nick.domain_name field.</p>								
S	<p>Specifies the station name used by the Mail/VE gateway when routing files through NTF.</p> <p>The default is AUTOMATIC which directs NTF to use the AUTOMATIC_STATION_NAME specified at NTF activation via the ACTIVATE_NTF command.</p>								
RHD	<p>Specifies remote host directives containing NTF routing parameters. Enter these parameters as name or string values:</p> <pre>Name: rhd='ddn=dataset' String: rhd='ddn=''1dataset'''</pre> <p>Table 3-2 lists the routing parameters you can use to send mail directly to BITNet users. These parameters are always sent with the mail; other NTF parameters are not sent unless you specify them. For more information about NTF parameters, see the Network Transfer Facility Usage Manual.</p>								

Table 3-2. NTF Routing Parameters

Parameter	Description
DDN	<p>Specifies the data set name.</p> <p>The default is the name of the Mail/VE gateway registered with the BITNet Network Information Center. It is the value you specify on the BITNET_MAILER_NAME parameter of the INSTALL_MAIL_GATEWAY command.</p>
H	<p>Specifies the hold flag.</p> <p>The default is NO.</p>
JOB	<p>Specifies the job name.</p> <p>The default is the first 8 characters of the surname (last name) of the user sending the message.</p>
MCL	<p>Specifies the message class.</p> <p>The default is M.</p>
PGN	<p>Specifies the programmer's name.</p> <p>The default is the first 8 characters of the surname (last name) of the user sending the message.</p>
PGR	<p>Specifies the programmer's room number.</p> <p>The default is the node name of the Mail/VE system registered with the BITNet Network Information Center. It is the value you specify on the BITNET_NODE_NAME parameter of the INSTALL_MAIL_GATEWAY command.</p>
PIN	<p>Specifies the procedure invocation name.</p> <p>The default is the first 8 characters of the surname (last name) of the user sending the message.</p>
RSU	<p>Specifies the destination remote name.</p> <p>The default is the name of the user receiving the message (for example, sheryl of sheryl@timbuktu).</p>
STN	<p>Specifies the step name.</p> <p>The default is the keyword MAIL.</p>
UID	<p>Specifies the user name.</p> <p>The default is the name of the user sending the message (for example, sheryl of sheryl@timbuktu).</p>
XWI	<p>Specifies the external writer.</p> <p>The default is the name of the user receiving the message (for example, sheryl of sheryl@timbuktu).</p>

:x400. Entry

The :x400. entry defines a translation of X.400 (Mail/VE) addresses to RFC822 addresses. It is the inverse of the :internet. entry. You can use the :internet. keyword with any RFC822 address including BITNet and Internet addresses.

The full format of this entry follows:

```
:x400.ou=('ou1','ou2','ou3','ou4'),on='organizationname',pd='privatedomain',...
      ad='administrativedomain',c='country' ..
      :internet.domain_name
```

Field	Description
:x400.	Contains the :x400 keyword plus the X.400 (Mail/VE) address.
ou	Specifies the list of organization units.
on	Specifies the organization name.
pd	Specifies the private domain.
ad	Specifies the administration domain.
c	Specifies the country code.
:internet.	Contains the :internet. keyword plus the RFC822 domain name that is equivalent to the Mail/VE address given in the :x400. field. This address has the following format:

```
subdomain.subdomain.subdomain..
```

As with :nick. entries, the Mail/VE gateway uses the first :x400. entry that matches part of a given Mail/VE (X.400) address to translate the address. As a result, you must arrange the :x.400 entries in your DOMAIN_NAMES_FILE in a most specific to most general order. The following example, which shows the fields of various :x400 entries, illustrates this order; it begins with the most specific, becomes less specific, and ends with the most general.

```
:x400.ou=('ou1','ou2','ou3','ou4'),on='organizationname',pd='privatedomain',...
      ad='administrativedomain',c='country'
:x400.on='organizationname',pd='privatedomain',ad='administrativedomain',...
      c='country'
:x400.pd='privatedomain',ad='administrativedomain',c='country'
:x400.ad='administrativedomain',c='country'
:x400.c='country'
```

:internet Entries

The :internet. entry defines a translation of RFC822 addresses to X.400 addresses. It is the inverse of the :x400. entry. You can use the :internet. keyword with any RFC822 address including BITNet and Internet addresses.

The Mail/VE gateway uses this entry to assign an X.400 address to an RFC822 (Internet or BITNet) domain name. With an equivalent :x400. entry, an :internet. entry allows an X.400 user to reply to mail from an RFC822 user via an X.400 address.

The full format of this entry follows:

```
:internet.domain_name ..
    :x400.ou=('ou1','ou2','ou3','ou4'),on='organizationname',pd='privatedomain',...
    ad='administrativedomain',c='country'
```

Field	Description
:internet.	Contains the :internet. keyword plus an RFC822 domain name. This address has the following format: subdomain.subdomain.subdomain..
:x400.	Contains the :x400. keyword plus the X.400 (Mail/VE) address that is equivalent to the RFC822 domain name given in the domain field.
ou	Specifies the list of organization units.
on	Specifies the organization name.
pd	Specifies the private domain.
ad	Specifies the administration domain.
c	Specifies the country code.

Routing Examples

The routing examples in this section are based upon a Mail/VE gateway using the installation information shown in figure 3-2, the DOMAIN_NAMES_FILE fragment shown in figure 3-3, and the organizations and routes shown in figure 3-4.

```
install_mail_gateway ..
mail_gateway_name=mgcdc ..
country='us' ..
administrative_domain='attmail' ..
private_domain='cdc'
organization_name='cdc-gw' ..
internet_domain_name='cdc-gw.arhops.cdc.com' ..
bitnet_mailer_name=mailer ..
bitnet_node_name=cdcarh ..
domain_names_file=$system.mailve_v2.domain_names_file
```

Figure 3-2. Sample INSTALL_MAIL_GATEWAY Command

```

***** DOMAIN NAMES FILE *****
*
*                               Local X.400 Hosts
*
:nick.VESYS.ARHOPS.CDC.COM ..
    :route.du=local,ou='vesys',on='vearh',c='us',ad='attmail',pd='cdc' ..
    X.400
:x400.ou='vesys',on='vearh',pd='cdc',ad='attmail',c='us' ..
    :internet.VESYS.ARHOPS.CDC.COM
:internet.VESYS.ARHOPS.CDC.COM ..
    :x400.ou='vesys',on='vearh',pd='cdc',ad='attmail',c='us'
*
:nick.NETW.ARHOPS.CDC.COM ..
    :route.du=local,on='cdcnet',c='us',ad='attmail',pd='cdc' ..
    X.400
:x400.on='cdcnet',pd='cdc',ad='attmail',c='us' ..
    :internet.NETW.ARHOPS.CDC.COM
:internet.NETW.ARHOPS.CDC.COM ..
    :x400.on='cdcnet',pd='cdc',ad='attmail',c='us'
*
:nick.INTG.ARHOPS.CDC.COM ..
    :route.du=local,ou='sysc',on='vearh',ad='attmail',pd='cdc',c='us', ..
    X.400
:x400.ou='sysc',on='vearh',pd='cdc',ad='attmail',c='us' ..
    :internet.INTG.ARHOPS.CDC.COM
:internet.INTG.ARHOPS.CDC.COM ..
    :x400.ou='sysc',on='vearh',pd='cdc',ad='attmail',c='us'
*
*The following set of entries are for BITNet usage.
*
:nick.CDCARH ..
    :route.du=local,ou='bitnet',on='vearh',c='us',ad='attmail',pd='cdc' ..
    X.400
:x400.ou='bitnet',on='vearh',c='us',ad='attmail',pd='cdc' ..
    :internet.CDCARH
:internet.CDCARH ..
    :x.400.ou='bitnet',on='vearh',c='us',ad='attmail',pd='cdc' ..
*
*The following entry is for the gateway itself.
*Note this :nick. entry supplies no X.400 address information.
*
:nick.CDC-GW.ARHOPS.CDC.COM ..
    :route.du=local ..
    X.400
*
:x400.on='cdc-gw',pd='cdc',ad='attmail',c='us' ..
    :internet.CDC-GW.ARHOPS.CDC.COM
:internet.CDC-GW.ARHOPS.CDC.COM ..
    :x400.on='cdc-gw',pd='cdc',ad='attmail',c='us'

```

Figure 3-3. DOMAIN_NAMES_FILE Fragment

(Continued)

(Continued)

```

*
*           BSMTMP BITNet Sites
*
:nick..CALGARY.EDU           :mailer.CALMAIL@CALGARY           BSMTMP
*
*           Non-BSMTMP BITNet Sites
*
:nick.HQTRS                   :route.du=ntf                       BITNET
*
*           Define Default Route and Default Address
*
*By default, the Mail/VE gateway hands messages to SMTP.
*
:nick.*DEFAULT*               :route.du=smtp                       BSMTMP
*
:nick.*<>* ..
    :route.du=local,pn='postmaster',ou='sysc',on='vearh',...
    c='us',ad='atmail',pd='cdc' ..
    X.400
*

```

Figure 3-3. DOMAIN_NAMES_FILE Fragment

```

"           Define Organizations and Routes for Mail/VE Gateway
"
"
create_organization ..
  title=mgcdc ..
  organization_name='cdc-gw'
"
create_route ..
  title=mgcdc ..
  country='us' ..
  administrative_domain='attmail' ..
  private_domain='cdc' ..
  transfer_service=local ..
  destination_type=mg
"
"
create_organization ..
  title=mtacdc ..
  organization_name='vearh' ..
  organization_unit='vesys'
"
create_organization ..
  title=mtacdc ..
  organization_name='vearh' ..
  organization_unit='sysc'
"
create_organization ..
  title=mtacdc ..
  organization_name='vearh' ..
  organization_unit='bitnet'
"
create_organization ..
  title=mtacdc ..
  organization_name='cdcnet'
"
create_route ..
  title=mtacdc ..
  country='us' ..
  administrative_domain='attmail' ..
  private_domain='cdc' ..
  transfer_service=local ..
  destination_type=mve
"

```

Figure 3-4. Sample Organizations and Routes

From Internet to X.400

In this example, the Mail/VE gateway receives mail with the following Internet addresses.

```
From: bob@ahse.cdc.com
To: jane.a.smith@netw.arhops.cdc.com
```

The recipient address matches a `:nick.` entry that directs the mail to the local X.400 network, Mail/VE. The routing field of the matching `:nick.` entry directs the message to `on='cdcnet',pd='cdc',ad='attmail',c='us'`, and the `:x400.` field of the matching `:internet.` entry causes the recipient's RFC822-style address to be translated into the appropriate X.400 address before delivery to the mailbox.

From X.400 to Internet

In this example, the Mail/VE gateway receives mail with the following X.400 addresses.

```
From: pn='jane a smith',pd='cdc',ou='cdcnet',ad='attmail',c='us'
To: pn='bob@ws1.acme.com'
```

The address of the Mail/VE user sending the mail is translated to RFC822 format via the matching `:x400.` entry to:

```
jane.a.smith@netw.arhops.cdc.com
```

Since there is no `:nick.` entry which explicitly matches the destination domain name, `ws1.acme.com`, the `:nick.*DEFAULT*` entry is used. This causes the message to be queued for delivery by SMTP.

From BSMTP BITNet to X.400

In this example, the Mail/VE gateway receives mail with the following BSMTP BITNet addresses.

```
From: bob@calgary
To: john.q.adams@CDCARH
```

The recipient address matches a :nick. entry that directs the mail to the local X.400 network, Mail/VE. The routing field of the matching :nick. entry directs the message to ou='bitnet',on='vearh',c='us',ad='attmail',pd='cdc', and the :x400. field of the matching :internet. entry causes the recipient's RFC822-style address to be translated into the appropriate X.400 address before delivery to the mailbox.

From X.400 to BSMTP BITNet

In this example, the Mail/VE gateway receives mail with the following X.400 addresses.

```
From: pn='john.q.adams',pd='cdc',on='vearh',ou='bitnet'ad='attmail',c='us'
To: pn='bob@vesta.calgary.edu'
```

The address of the Mail/VE user sending the mail is translated to RFC822 format via the matching :x400. entry to:

```
John.Q.Adams@CDCARH
```

The destination domain name, vesta.calgary.edu matches a :nick. entry which causes the message to be sent in a BSMTP envelope via NTF to a mail system with the BITNet address, CALMAIL@CALGARY.

From Non-BSMTP BITNet to X.400

In this example, the Mail/VE gateway receives a non-BSMTP message from NTF, and the USER_INFORMATION output attribute of the message has the following value:

```
user_information='onn=hqtrs,orn=frank, ..  
                dnn=cddcarh,dnn=tom'
```

The Mail/VE gateway uses this information to generate the following sender and recipient addresses:

```
From: frank@hqtrs  
To:   tom@cddcarh
```

The recipient address matches a :nick. entry which maps it to the local X.400 destination:

```
ou='bitnet',on='vearh',pd='cdc',ad='attmail',c='us'
```

The recipient address also matches an :internet. entry. The :x400. field of the matching :internet. entry allows the address to be translated to X.400 format before being delivered to the recipient's mailbox.

From X.400 to Non-BSMTP BITNet

In this example, the Mail/VE gateway receives mail with the following addresses. The first line is the sender's address (in X.400 format) and the second line is the recipient's address (in RFC822 format).

```
From: pn='tom',c='us',ad='attmail',pd='cdc',on='vearh',ou='bitnet'  
To:   frank@hqtrs
```

The Mail/VE gateway finds an :x400. entry which matches the sender's address. This causes the sender's address to be translated to RFC822 format:

```
tom@cddcarh
```

The Mail/VE gateway finds a :nick. entry which matches the recipient's address, hqtrs. This causes the message to be queued without a BSMTP envelope for delivery by NTF.

Mail/VE Maintenance

4

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This chapter provides reference information for the analyst who maintains Mail/VE Version 2. This chapter discusses:

- Mail/VE files
- Backing up and restoring Mail/VE directory files
- Editing a file of update subcommands
- Converting Mail/VE Version 1 directory files
- Maintaining a domain-wide directory

The chapter also documents the following maintenance commands and subcommands:

- Mail/VE maintenance commands
- `MANAGE_MAIL_DIRECTORY` subcommands
- Mailbox and distribution list update subcommands

Mail/VE Files

The Mail/VE files include configuration files, a central directory, and a distributed database for messages.

Configuration Files

The following files are used in configuring a Mail/VE network.

- **DOMAIN_NAMES_FILE**
Contains commands that describe the translation of addresses between X.400 format and the RFC822 format used in BITNet and Internet networks. These commands also describe the destination networks for the recipients addressed by mail. In this manual, the default name, `DOMAIN_NAMES_FILE`, is used for the file.
- **MAIL_INSTALLATION_TABLE**
Contains Mail/VE Version 2 configuration parameters.
- **MAILVE_CONFIGURATION**
Contains Mail/VE gateway configuration parameters.

Central Directory Files

The following files reside in the catalog named during the Mail/VE installation:

- **ADDRESS_DIRECTORY**
Contains up to three entries for each entity defined on the database. An entity is a mailbox or a distribution list. The record definition includes a personal name, organization name, and organization units (1 to 4).
- **DISTRIBUTION_LIST_CONTENTS**
Contains the address list for each distribution list defined on a database. There is at least one entry in the directory for each distribution list.
- **ENTITY_DIRECTORY**
Contains an entry for each entity defined on this database. An entity is a mailbox or a distribution list. The record definition contains all names associated with the entity: organization name and units, description, and telephone number. For group entities, the record also contains the number of permission entries. For information on group mailboxes and distribution lists, refer to the Mail/VE Version 2 Usage manual.

- **PERMISSION_DIRECTORY**

Contains the list of permissions for each group entity on the database. A group entity is either a group mailbox or group distribution list. There is at least one entry for each group entity. For information on permissions, refer to the Mail/VE Version 2 Usage manual.

- **ROUTE_DIRECTORY**

Contains an entry for each path in the mail network. The Mail/VE administrator is responsible for adding routes to this directory.

- **USER_DIRECTORY**

Contains an entry for each user who owns a mailbox or distribution list on the host. Each entry contains the user's NOS/VE user name, family name, default mailbox, and number of owned entities (that is, number of owned mailboxes and distribution lists).

Distributed Database Files

The MVF\$ELECTRONIC_MAIL_DATABASE file resides in the master catalog of each Mail/VE Version 2 user. This file contains the user's messages, message headers, and various user options.

Directory Backup and Restore

The `MANAGE_MAIL_DIRECTORY` (`MANMD`) utility provides subcommands for backing up and restoring Mail/VE directory files that the users access. It does not process the `DOMAIN_NAMES_FILE` nor the `MVF$ELECTRONIC_MAIL_DATABASE` file. Only users whose `MAILVE_ADMINISTRATION` validation is set to `ANALYST` can access this utility.

Normally, you use the `NOS/VE BACKUP_PERMANENT_FILES` and `RESTORE_PERMANENT_FILES` utilities to back up and restore the files you modify as Mail/VE administrator before restoring the Mail/VE directory files. These files include the `DOMAIN_NAMES_FILE`, `MAIL_INSTALLATION_TABLE`, and `MAILVE_CONFIGURATION` file in the `$SYSTEM.MAILVE_V2.MAIL` catalog as well as the `XTF` configuration file in the `$SYSTEM.XTF` catalog.

To back up a directory, execute the `GENERATE_DIRECTORY_UPDATE` subcommand during a `MANAGE_MAIL_DIRECTORY` utility session. The subcommand reads the current directory entries and creates a file of update subcommands. There are four update subcommands:

- UPDATE_ORGANIZATION
- UPDATE_ROUTE
- UPDATE_DISTRIBUTION_LIST
- UPDATE_MAILBOX

If necessary, you can edit the file of update subcommands to change the value of parameters on the subcommands. For additional information, see `Editing a File of Update Subcommands` later in this chapter.

To restore a directory, execute the file of update subcommands during a `MANAGE_MAIL_DIRECTORY` utility session. The following subsections describe how to back up and restore a directory file.

WARNING

Using the `MANAGE_MAIL_DIRECTORY` utility ensures that Mail/VE directory files are properly backed up and restored. Using the `NOS/VE` permanent file backup and restore utilities may result in incorrect directory files. During a `NOS/VE` permanent file backup, one or more of the Mail/VE directory files may be busy and therefore not dumped. During a `NOS/VE` permanent file restore operation, any files that are not backed up are not restored. If Mail/VE directory files are not backed up and restored as a group, the files may be incompatible.

Backing Up Directory Files

To back up the Mail/VE directory files, you do not need exclusive access to the directory files. To back up a directory file, follow these steps:

1. Log in to the host using a Mail/VE analyst user name. Then, add the Mail/VE maintenance commands to the command list:

```
/create_command_list_entry ..  
../entry=$system.mailve_v2.maintenance.command_library
```

2. Start the MANAGE_MAIL_DIRECTORY utility by entering the following command:

```
/manage_mail_directory  
Manmd/
```

3. Execute the GENERATE_DIRECTORY_UPDATE subcommand to translate the current directory entries into MANAGE_MAIL_DIRECTORY update subcommands. For example:

```
Manmd/generate_directory_update ..  
Manmd../output=$system.mailve_v2.mail.directory_backup
```

4. Stop the MANAGE_MAIL_DIRECTORY utility session:

```
Manmd/end_manage_mail_directory  
/
```

Restoring the Mail/VE Directory Files

To restore the directory files, perform the following steps at the system console. You should attempt to restore the directory files only when you believe users will not be accessing Mail/VE.

1. Obtain exclusive access to the directory files. The following procedure is an attempt to obtain exclusive access to these files during the restoration.

- a. Attempt to attach the Mail/VE user directory with exclusive access:

```
/task ring=4
/attach_file ..
../file=$system.mailve_v2.mail.user_directory ..
../share_mode=none
/taskend
```

If the attach is not successful because the directory file is busy, you must wait until existing users have finished using Mail/VE before re-entering the above commands.

- b. Remove permits to the Mail/VE installation table file:

```
/delete_file_permit ..
../file=$system.mailve_v2.mail_installation_table ..
../group=public
```

- c. Ensure that all permits to the installation table file have been removed. The response to the following command should be NO PERMITS. If other permits are displayed, delete them.

```
/display_catalog_entry ..
../file=$system.mailve_v2.mail_installation_table ..
../display_options=permits
```

- d. Deactivate the Mail/VE server:

```
/deactivate_mailve
```

For a description of the DEACTIVATE_MAILVE command, see Mail/VE Maintenance Commands later in this chapter.

- e. Release the user directory file by entering the DETACH_FILE command:

```
/detach_file ..
../file=$system.mailve_v2.mail.user_directory
```

2. Add the Mail/VE maintenance commands to the command list:

```
/create_command_list_entry ..
../entry=$system.mailve_v2.maintenance.command_library
```

3. Start the MANAGE_MAIL_DIRECTORY utility by entering the following command:

```
/manage_mail_directory ..
../errors=$system.mailve_v2.mail.restore_errors
Manmd/
```

4. Execute the update subcommands stored in the latest backup file. For example, to execute the subcommands in file `$SYSTEM.MAILVE_V2.MAIL.DIRECTORY_BACKUP`, enter:

```
Manmd/include_file ..
Manmd../file=$system.mailve_v2.mail.directory_backup
```

For information on using the `INCLUDE_FILE` command, see the `NOS/VE System Usage` manual.

5. When the file of update subcommands has finished executing, exit the `MANAGE_MAIL_DIRECTORY` utility session.

```
Manmd/end_manage_mail_directory
```

6. Examine the error file. If there are no errors or the errors are tolerable, go to the next step. If the Mail/VE database files are not usable (that is, are missing valid mailboxes and distribution lists, routes to other mail systems, and so on), correct the problems and repeat the necessary steps.

The utility creates new high cycles for every Mail/VE Version 2 directory file. These files contain only the information provided by the file of update subcommands.

7. Allow Mail/VE users to again access Mail/VE:

```
/create_file_permit ..
../file=$system.mailve_v2.mail_installation_table ..
../group=public
```

8. Activate the Mail/VE server:

```
/activate_mailve job_class=siteclass1
```

On the `JOB_CLASS` parameter, specify a value appropriate for your site. For a description of the `ACTIVATE_MAILVE` command, see `Mail/VE Maintenance Commands` later in this chapter.

Editing a File of Update Subcommands

You may need to edit the file of update subcommands if you are restoring the Mail/VE directory files or converting Mail/VE Version 1 directory entries. If so, you can use a text editor such as the EDIT_FILE utility to change parameter values on these subcommands.

While editing a file of update subcommands, follow these guidelines:

- Do not change any GLOBAL_KEY values. You can change any other parameter values in the file.
- UPDATE_ORGANIZATION subcommands must precede all UPDATE_DISTRIBUTION_LIST and UPDATE_MAILBOX subcommands.
- When you modify any local address attributes (organization names, organization units, and personal names), make sure that the address is still unique within the private domain. For additional information on Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.
- Proofread your editing carefully.

Converting Mail/VE Version 1 Directory Files

If your site had been using Mail/VE Version 1, you can convert its directory of mailboxes and distribution lists for use with Mail/VE Version 2. (In this subsection, Mail/VE is referred to as Mail/VE Version 2 to distinguish it from Mail/VE Version 1.) Before you can perform the conversion:

- Mail/VE Version 2 must be installed.
- Your MAILVE_ADMINISTRATION level must be set to ANALYST.

To convert the Mail/VE Version 1 directory of mailboxes and distribution lists, perform the following steps from the system console:

1. Add the Mail/VE Version 2 maintenance commands to your command library by entering the following command:

```
/create_command_list_entry ..
../entry=$system.mailve_v2.maintenance.command_library
```

2. Inform all Mail/VE Version 1 users that you intend to convert the directory files for use with Mail/VE Version 2. Any changes they make after the conversion will not be included in the Mail/VE Version 2 files.
3. Obtain exclusive access to the Mail/VE Version 1 directory files. The following procedure is an attempt to obtain exclusive access to these files during the conversion. You should take these steps only when you believe users will not be accessing Mail/VE Version 1.

- a. Attempt to attach the Mail/VE Version 1 family directory file with exclusive access:

```
/task ring=4
/attach_file ..
../file=$system.mailve.mail.family_directory ..
../share_mode=none
/taskend
```

If the attach is not successful because the directory file is busy, you must wait until existing users have finished using Mail/VE Version 1 before re-entering the above commands.

- b. Remove permits to the Mail/VE Version 1 directory catalog:

```
/delete_catalog_permit ..
../catalog=$system.mailve.mail ..
../group=public
```

- c. Ensure that all permits to the directory catalog have been removed. The response to the following command should be NO PERMITS. If other permits are displayed, delete them.

```
/display_catalog ..  
../catalog=$system.mailve.mail ..  
../display_options=permits
```

- d. Release the family directory file by entering the DETACH_FILE command:

```
/detach_file ..  
../file=$system.mailve.mail.family_directory
```

4. Execute the CONVERT_MAILVE_DATABASE command and specify the catalog that contains the Mail/VE Version 1 directory files, an output file, and an error file as shown in the following example:

```
/convert_mailve_database ..  
../database_catalog=$system.mailve.mail ..  
../output=$system.mailve_v2.mail.v1_update ..  
../errors=$system.mailve_v2.mail.error_file
```

The CONVERT_MAILVE_DATABASE command reads the Mail/VE Version 1 directory entries, translates the entries into MANAGE_MAIL_DIRECTORY subcommands, and stores the subcommands in the output file.

5. Allow users to again access Mail/VE Version 1.

```
/create_catalog_permit ..  
../catalog=$system.mailve.mail ..  
../group=public ..  
../access_mode=all
```

6. If you have created organizations, you need to edit the file of update subcommands to include the organization names and/or units in the user mailbox and distribution list definitions. For information on editing the file of subcommands, refer to Editing a File of Update Subcommands earlier in this chapter.
7. Obtain exclusive access to the Mail/VE Version 2 directory files. The following procedure is an attempt to obtain exclusive access to these files during the conversion. You should take these steps only when you believe users will not be accessing Mail/VE Version 2.

- a. Attempt to attach the Mail/VE Version 2 user directory with exclusive access:

```
/task ring=4  
/attach_file ..  
../file=$system.mailve_v2.mail.user_directory ..  
../share_mode=none  
/taskend
```

If the attach is not successful because the directory file is busy, you must wait until existing users have finished using Mail/VE Version 2 before reentering the above commands.

- b. Remove permits to the Mail/VE Version 2 installation table file:

```
/delete_file_permit ..
../file=$system.mailve_v2.mail_installation_table ..
../group=public
```

- c. Ensure that all permits to the installation file have been removed. The response to the following command should be NO PERMITS. If other permits are displayed, delete them.

```
/display_catalog_entry ..
../file=$system.mailve_v2.mail_installation_table ..
../display_options=permits
```

- d. Deactivate the Mail/VE Version 2 server:

```
/deactivate_mailve
```

For a description of the DEACTIVATE_MAILVE command, see Mail/VE Maintenance Commands later in this chapter.

- e. Release the user directory file by entering the DETACH_FILE command:

```
/detach_file ..
../file=$system.mailve_v2.mail.user_directory
```

8. Start a MANAGE_MAIL_DIRECTORY utility session and execute the GENERATE_DIRECTORY_UPDATE subcommand. For example:

```
/manage_mail_directory
Manmd/generate_directory_update ..
Manmd../output=$system.mailve_v2.mail.v2_update
Manmd/end_manage_mail_directory
/
```

9. Combine the two files of update subcommands produced by the CONVERT_MAILVE_DATABASE and the GENERATE_DIRECTORY_UPDATE calls. For example:

```
/copy_file ..
../input=$system.mailve_v2.mail.v1_update ..
../output=$system.mailve_v2.mail.v2_update.$eo
```

NOTE

The Mail/VE Version 2 update subcommands must precede the Mail/VE Version 1 update subcommands in the resulting file.

10. Execute the subcommands in the output file during a `MANAGE_MAIL_DIRECTORY` utility session. For example to execute `$SYSTEM.MAILVE_V2.MAIL.V2_UPDATE`, enter:

```
/manage_mail_directory
Manmd/include_file ..
Manmd./file=$system.mailve_v2.mail.v2_update
Manmd/end_manage_mail_directory
/
```

For information on using the `INCLUDE_FILE` command, see the `NOS/VE System Usage manual`.

When the `MANAGE_MAIL_DIRECTORY` utility session is ended, a new high cycle of each Mail/VE Version 2 directory file is created. The new cycles reflect both the information from the converted Mail/VE Version 1 directory and the current Mail/VE Version 2 directory.

11. Allow users to again access Mail/VE Version 2:

```
/create_file_permit ..
../file=$system.mailve_v2.mail_installation_table ..
../group=public
```

12. Activate the Mail/VE Version 2 server:

```
/activate_mailve job_class=siteclass1
```

On the `JOB_CLASS` parameter, specify a value appropriate for your site. For a description of the `ACTIVATE_MAILVE` command, see `Mail/VE Maintenance Commands` later in this chapter.

Maintaining a Domain-Wide Directory

The `MANAGE_MAIL_DIRECTORY` utility contains commands and subcommands for maintaining a domain-wide directory. To execute these, you must have the `MAILVE_ADMINISTRATION` validation set to `ANALYST`.

A domain-wide directory provides the addresses of all mailboxes and distribution lists in a private domain. Within the central directory files on each host, the remote addresses are intermixed with local addresses so that users can look up addresses, display information about them, and address letters to them.

There are two ways to create remote addresses on each host within a private domain:

- Manually with the `ADMINISTER_MAIL` subcommands
- Semi-automatically with domain-wide maintenance commands

You create remote addresses manually with the `CREATE_MAILBOX` and `CREATE_DISTRIBUTION_LIST` subcommands. To identify an address as remote, set the `TITLE` parameter on the `SET_ATTRIBUTES` subcommand to the name of the message transfer agent that serves a mailbox or distribution list. Mail/VE recognizes an address as remote when the title does not match the name of the local message transfer agent.

Manually creating remote addresses is time-consuming and error-prone, particularly when a number of hosts share addresses. Using the domain-wide maintenance commands essentially automates the process to periodically exchange new or changed addresses between hosts. This process can be run off-line from Mail/VE execution so that the installation of remote address updates has little or no impact on Mail/VE users.

Commands for Exchanging Remote Addresses

Each of the following `MANAGE_MAIL_DIRECTORY` commands performs a step in the exchange of remote addresses. You may choose to use some or all of the commands depending upon the requirements of your Mail/VE configuration and your site.

Table 4-1. Commands for Exchanging Remote Addresses

Commands	Description
GENERATE_ADDRESS_UPDATES	Compares the old and new update files and creates a file of ADMINISTER_MAIL subcommands that define the new or changed addresses.
SEND_ADDRESS_UPDATES	Sends the file of ADMINISTER_MAIL subcommands (produced by GENERATE_ADDRESS_UPDATES) to a mailbox on another host. The file is sent as the contents of a letter.
COMBINE_UPDATE_LETTERS	Combines the letters received from other hosts into a file of ADMINISTER_MAIL subcommands and deletes the letters from the mailbox (produced by GENERATE_ADDRESS_UPDATES).
UPDATE_REMOTE_ADDRESSES	Executes the GENERATE_REMOTE_UPDATES subcommand on the file of ADMINISTER_MAIL subcommands and then executes the ADMINISTER_MAIL command to install the remote mailbox and distribution list addresses in ADDRESS_DIRECTORY and ENTITY_DIRECTORY.
GENERATE_REMOTE_UPDATES	Removes any local address definitions from the file of ADMINISTER_MAIL subcommands. This command ensures that a host does not receive its own addresses from another host.

Creating a File for Address Exchange

To create a file of ADMINISTER_MAIL subcommands for address exchange, follow these steps.

1. Add the Mail/VE Version 2 maintenance commands to the command list by entering the following command:

```
/create_command_list_entry ..
../e=$system.mailve_v2.maintenance.command_library
```

2. Start a MANAGE_MAIL_DIRECTORY utility session and execute the GENERATE_DIRECTORY_UPDATE subcommand. For example:

```
/manage_mail_directory
Manmd/generate_directory_update ..
Manmd../output=$system.mailve_v2.mail.directory_backup.$next
```

3. Stop the MANAGE_MAIL_DIRECTORY utility session by entering the following command:

```
MANMD/end_manage_mail_directory
```

4. Execute the GENERATE_ADDRESS_UPDATES command to create a file of ADMINISTER_MAIL subcommands for address exchange:

```
/generate_address_updates ..
../new_directory_update_file=$system.mailve_v2.mail.directory_backup.$high ..
../old_directory_update_file=$system.mailve_v2.mail.directory_backup.$low ..
../output=$system.mailve_v2.mail.address_updates
/
```

If the DIRECTORY_BACKUP file does not already exist, then omit the OLD_DIRECTORY_UPDATE_FILE parameter on the GENERATE_ADDRESS_UPDATES command and the following step. In this case, the file of ADMINISTER_MAIL subcommands contains all of the mailboxes and distribution lists in the DIRECTORY_BACKUP file.

5. Delete the old cycle of the DIRECTORY_BACKUP file:

```
/delete_file $system.mailve_v2.mail.directory_backup.$low
```

Sending the File to Another Host

To distribute a file of ADMINISTER_MAIL subcommands created by the GENERATE_ADDRESS_UPDATES command, follow these steps:

1. Determine the organization name and organization units for the host to receive the ADMINISTER_MAIL subcommands file for address exchange.
2. Add the Mail/VE Version 2 maintenance commands to the command list by entering the following command:

```
/create_command_list_entry ..  
../e=$system.mailve_v2.maintenance.command_library
```

3. Execute the SEND_ADDRESS_UPDATES command to send the file to the remote host. In this example, the organization name is orgname and the organization units are orgunit.

```
/send_address_updates ..  
../updates_file=$system.mailve_v2.mail.address_updates ..  
../organization_name='orgname' ..  
../organization_units='orgunit'  
/
```

By default, the remote host receives the file in a letter at the POSTMASTER mailbox. The subject of the letter is MVF\$MAIL_ADDRESS_UPDATES.

Installing Remote Addresses

To install the remote addresses received from other hosts, follow these steps:

1. Add the Mail/VE Version 2 maintenance commands to the command library by entering the following command:

```
/create_command_list_entry ..  
../e=$system.mailve_v2.maintenance.command_library
```

2. Enter the COMBINE_UPDATE_LETTERS command to combine the address exchange letters in the POSTMASTER mailbox into a file of ADMINISTER_MAIL subcommands for address exchange. The subject of each of these letters is MVF\$MAIL_ADDRESS_UPDATES.

```
/combine_update_letters ..  
../output=$system.mailve_v2.mail.remote_updates
```

3. Enter the UPDATE_REMOTE_ADDRESSES command to install the file of ADMINISTER_MAIL subcommands produced by COMBINE_UPDATE_LETTERS.

```
/update_remote_addresses ..  
../remote=$system.mailve_v2.mail.remote_updates  
/
```

This step updates the local central directory files by adding the remote mailboxes and distribution lists that are new or changed.

Administering Remote Addresses

Some of the ADMINISTER_MAIL subcommands that apply to local mailboxes and distribution lists also apply to remote mailboxes and distribution lists. These subcommands enable you to perform the following activities:

- Delete remote mailboxes and distribution lists through the DELETE_MAILBOX and DELETE_DISTRIBUTION_LIST subcommands.
- Display a remote mailbox or distribution list (by specifying its address) using the DISPLAY_MAILBOX and DISPLAY_DISTRIBUTION_LIST subcommands.

However, you cannot use the CHANGE_MAILBOX and CHANGE_DISTRIBUTION_LIST subcommands to change address attributes of remote mailboxes or distribution lists.

Displaying Address Attributes

Not all of the address attributes recorded for local mailboxes and distribution lists are recorded for their remote counterparts. The following list details the differences:

Available Address Attributes	Unrecorded Information
<ul style="list-style-type: none"> • Personal name and aliases • Organization name and organization units • Telephone number • Description • Retention period for mailboxes • Permit type • Expand option for distribution lists of FALSE 	<ul style="list-style-type: none"> • Permitted addresses for group mailboxes and distribution lists • Address list for distribution lists • User and family owning a mailbox or distribution list • Autoforward address for mailboxes

Enforcing Permissions

Mail/VE does not enforce permissions for remote mailboxes and distribution lists. Instead, the receiving Mail/VE system enforces them. For example, a user who is not permitted access to a remote group mailbox may try sending mail to the mailbox. The Mail/VE system receiving this mail does not deliver it, but returns a nondelivery notice.

Mail/VE Maintenance Commands

This section provides reference information for 13 Mail/VE maintenance commands. These commands reside on the following two libraries:

- `$$SYSTEM.MAILVE_V2.MAINTENANCE.COMMAND_LIBRARY`
 - `COMBINE_UPDATE_LETTERS` command
 - `CONVERT_MAILVE_DATABASE` command
 - `GENERATE_ADDRESS_UPDATES` command
 - `GENERATE_REMOTE_UPDATES` command
 - `INSTALL_MAIL` command
 - `INSTALL_MAIL_GATEWAY` command
 - `MANAGE_MAIL_DIRECTORY` command
 - `SEND_ADDRESS_UPDATES` command
 - `UPDATE_REMOTE_ADDRESSES` command
- `$$SYSTEM.OSF$BUILTIN_LIBRARY`
 - `ACTIVATE_MAIL_GATEWAY` command
 - `ACTIVATE_MAILVE` command
 - `DEACTIVATE_MAIL_GATEWAY` command
 - `DEACTIVATE_MAILVE` command

To access the commands, your `MAILVE_ADMINISTRATION` validation level must be set to `ANALYST`.

ACTIVATE_MAIL_GATEWAY

- Purpose** Defines and activates a job for the Mail/VE gateway, which is responsible for exchanging mail with Internet or BITNet networks.
- Format** **ACTIVATE_MAIL_GATEWAY**
JOB_CLASS=name
LOAD_MAP=file
STATUS=status variable
- Parameters** *JOB_CLASS* or *JC*
 Specifies the job class under which the Mail/VE gateway runs.
 The default is your system's default batch class.
- LOAD_MAP* or *LM*
 Specifies the file to which the load map is written.
 The default is file \$NULL.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this command.
- Remarks**
- This command is entered from the system console.
 - This command should normally be entered only once per deadstart. If you need to enter a DEACTIVATE_MAIL_GATEWAY command, then you must enter the ACTIVATE_MAIL_GATEWAY command again to reactivate the Mail/VE gateway.

ACTIVATE_MAILVE

Purpose Defines and activates a system job for the Mail/VE server, which is responsible for delivering mail.

Format **ACTIVATE_MAILVE**
JOB_CLASS=name
LOAD_MAP=file
STATUS=status variable

Parameters *JOB_CLASS* or *JC*
Specifies the job class under which Mail/VE runs.
The default is your system's default batch class.

LOAD_MAP or *LM*
Specifies the file to which the load map is written.
The default is file \$NULL.

STATUS
Special attributes: VAR, BY_NAME
Specifies the completion status for this command.

Remarks

- This command is entered from the system console.
- This command should normally be entered only once per deadstart. If you need to enter a DEACTIVATE_MAILVE command, then you must enter the ACTIVATE_MAILVE command again to reactivate the Mail/VE server.

COMBINE_UPDATE_LETTERS

Purpose Reads the letters distributed by SEND_ADDRESS_UPDATES commands to a mailbox, combines the files in them into a single file of ADMINISTER_MAIL subcommands, and deletes those letters from the mailbox.

Format **COMBINE_UPDATE_LETTERS** or **COMUL**
PERSONAL_NAME = record or string
ORGANIZATION_UNITS = string
ORGANIZATION_NAME = string
REMOTE_UPDATES = file
DELETE_UPDATE_LETTERS = boolean
STATUS = status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies the name of the mailbox receiving the letter. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

The default is POSTMASTER.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

REMOTE_UPDATES or *RU*

Specifies the output file for the combined letters.

The default is a new cycle of the file MAIL_ADDRESS_UPDATES in the current working catalog.

DELETE_UPDATE_LETTERS or *DUL*

Specifies the letters should be deleted from the mailbox after they have been copied to the file specified on the REMOTE_UPDATES parameter.

FALSE

The letters are not deleted from the mailbox.

TRUE

The letters are deleted from the mailbox.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

Remarks

The subject assigned to all letters sent to a POSTMASTER mailbox by SEND_ADDRESS_UPDATES commands is MVF\$MAILBOX_ADDRESS_UPDATES.

CONVERT_MAILVE_DATABASE

- Purpose** Translates Mail/VE Version 1 directory entries into UPDATE_MAILBOX and UPDATE_DISTRIBUTION_LIST subcommands and stores the subcommands in the output file. The file of subcommands can be executed during a MANAGE_MAIL_DIRECTORY utility session to create entries in the Mail/VE Version 2 directory files.
- Format** CONVERT_MAILVE_DATABASE or CONMD
DATABASE_CATALOG=file
OUTPUT=file
ERRORS=file
STATUS=status variable
- Parameters** *DATABASE_CATALOG* or *DC*
 Specifies the catalog that contains the Mail/VE Version 1 directory files. The default is \$SYSTEM.MAILVE.MAIL.
- OUTPUT* or *O*
 Specifies the file to which output is written. The default is file \$OUTPUT.
- ERRORS* or *E*
 Specifies the file to which errors are written. The default is file \$ERRORS.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this command.
- Remarks**
- Mail/VE Version 2 must be installed before you can execute this command.
 - To execute this command, the user must have a permit to catalog \$SYSTEM.MAILVE with an ACCESS_MODE of (ALL,CYCLE,CONTROL) and a SHARE_MODE of (NONE).
 - Letters from Mail/VE Version 1 are not converted to Mail/VE Version 2. To avoid losing these letters, users can copy them into permanent files before Mail/VE Version 1 is removed from the system.

DEACTIVATE_MAIL_GATEWAY

Purpose Deactivates and removes the job for the Mail/VE gateway.

Format DEACTIVATE_MAIL_GATEWAY
STATUS=status variable

Parameters *STATUS*
Special attributes: VAR, BY_NAME
Specifies the completion status for this command.

Remarks

- This command is entered from the system console.
- After the Mail/VE gateway is deactivated by this command, you must use the ACTIVATE_MAIL_GATEWAY command to reactivate the gateway.
- The job log is written to the file \$SYSTEM.MAILVE_V2.MAILVE_MG_JOB_LOG.

DEACTIVATE_MAILVE

Purpose Deactivates and removes the job for the Mail/VE server.

Format DEACTIVATE_MAILVE
STATUS=status variable

Parameters STATUS
Special attributes: VAR, BY_NAME
Specifies the completion status for this command.

Remarks

- This command is entered from the system console.
- After the Mail/VE server is deactivated by this command, you must use the ACTIVATE_MAILVE command to reactivate the Mail/VE server.
- The job log is written to the file \$SYSTEM.MAILVE_V2.MAILVE_JOB_LOG.

GENERATE_ADDRESS_UPDATES

Purpose Creates a file of ADMINISTER_MAIL subcommands that define the changes to the local mailboxes and distribution lists on the host.

GENERATE_ADDRESS_UPDATES or
GENAU
NEW_DIRECTORY_UPDATE_FILE = file
OLD_DIRECTORY_UPDATE_FILE = file
OUTPUT = file
STATUS = status variable

Parameters **NEW_DIRECTORY_UPDATE_FILE** or **NDUF**

Specifies the most recent file of ADMINISTER_MAIL subcommands by executing the GENERATE_DIRECTORY_UPDATES command.

OLD_DIRECTORY_UPDATE_FILE or **ODUF**

Specifies the previous file of ADMINISTER_MAIL subcommands created by executing the GENERATE_DIRECTORY_UPDATES command.

OUTPUT or **O**

Specifies the file to which output is written.

The default is file \$OUTPUT.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

Remarks

- This command compares two MANAGE_MAIL_DIRECTORY files and generates commands that define the mailbox and distribution list changes between the files. This comparison excludes remote mailboxes or distribution lists; that is, any mailbox or distribution list with a title that is different from its message transfer agent (MTA). It also excludes subcommands that define mail routes and organizations.
- If you do not specify the OLD_DIRECTORY_UPDATE_FILE parameter or if the file is empty, GENERATE_ADDRESS_UPDATES creates an output file containing the ADMINISTER_MAIL subcommands to create the mailboxes and distribution lists in the NEW_DIRECTORY_UPDATE_FILE file.
- The OUTPUT file includes all group, private, and public mailboxes and distribution lists.

GENERATE_REMOTE_UPDATES

Purpose Creates a file of ADMINISTER_MAIL subcommands that define changes to remote mailboxes and distribution lists. Any subcommands defining local mailboxes or distribution lists are removed from the file.

Format GENERATE_REMOTE_UPDATES or
GENRU
REMOTE_UPDATES = file
OUTPUT = file
STATUS = status variable

Parameters REMOTE_UPDATES or RU
Specifies a file of ADMINISTER_MAIL subcommands produced by the GENERATE_REMOTE_UPDATES command on a remote host or by the COMBINE_UPDATE_LETTERS command on the local host.

OUTPUT or *O*

Specifies the file to which output is written.

The default is file \$OUTPUT.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

INSTALL_MAIL

Purpose Installs Mail/VE Version 2 and initializes the Mail/VE Version 2 installation table and database.

Format **INSTALL_MAIL** or
INSM

MESSAGE_TRANSFER_AGENT=string or name

PRIVATE_DOMAIN=string

ADMINISTRATIVE_DOMAIN=string

COUNTRY=string

DATABASE_CATALOG=file

MTA_CLASS=integer

STATUS=status variable

Parameters **MESSAGE_TRANSFER_AGENT** or **MTA**

Specifies the message transfer agent (MTA) name to assign to this Mail/VE installation. Enter as a name or as a 1- through 12-character string composed of alphabetic and numeric characters. Control Data recommends using MTA as the first three characters of this name.

PRIVATE_DOMAIN or **PD**

Specifies the private domain name with which this Mail/VE installation is associated. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or **AD**

Specifies the administrative domain name with which this Mail/VE installation is associated. Enter the domain as a 1- through 16-character string. If the installation is not associated with an administrative domain, specify the domain as a single blank.

COUNTRY or **C**

Specifies the country code with which this Mail/VE installation is associated. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

DATABASE_CATALOG or **DC**

Specifies the catalog for the Mail/VE database files.

The default is MAILVE_V2.MAIL. You should use the default value for the DATABASE_CATALOG parameter. This causes the directory files to be placed in catalog \$SYSTEM.MAILVE_V2.MAIL.

MTA_CLASS or *MC*

Specifies the routing class used by the local MTA.

1

Organization name determines routing.

2

Organization name and organization units determine routing.

3

Organization name, organization units, and personal name determine routing.

The default is 2.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

Remarks

- *INSTALL_MAIL* must be executed from the system console.
- The Mail/VE installation table entries define this Mail/VE installation and are used as default values by the mail system.

INSTALL_MAIL_GATEWAY

Purpose Defines the installation and configuration for the Mail/VE gateway.

Format **INSTALL_MAIL_GATEWAY** or **INSMG**
MAIL_GATEWAY_NAME=string or name
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
INTERNET_DOMAIN_NAME=string
DOMAIN_NAMES_FILE=file
BITNET_MAILER_NAME=name
BITNET_NODE_NAME=name
STATION=key or name
STATUS=status variable

Parameters **MAIL_GATEWAY_NAME** or **MGN**

Specifies the name of the Mail/VE gateway. For multihost message transfer directly to the gateway, the name must be registered as a network title. Enter as a name or as a 1- through 12-character string composed of alphabetic and numeric characters. Control Data recommends using MG as the first two characters of this name.

PRIVATE_DOMAIN or **PD**

Specifies the private domain name with which this Mail/VE gateway is associated. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or **AD**

Specifies the administrative domain name with which this Mail/VE gateway is associated. Enter the domain as a 1- through 16-character string. If the gateway is not associated with an administrative domain, specify the domain as a single blank.

COUNTRY or **C**

Specifies the country code with which this Mail/VE gateway is associated. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

ORGANIZATION_UNITS or **ORGANIZATION_UNIT** or **OU**

Specifies the list of one to four organization units associated with the Mail/VE gateway. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or **ON**

Specifies the name of the organization associated with the gateway. Enter the name as a 1- through 64-character string.

INTERNET_DOMAIN_NAME or *IDN*

Specifies the Internet domain name for the Mail/VE gateway. This name is the hierarchical series of Internet domains that address the Mail/VE gateway. Enter the name as a 1- through 255-character string. Control Data recommends using the host name with a suffix of -GW.

DOMAIN_NAMES_FILE or *DNF*

Specifies the file path to the file containing the domain names and routing and translation definitions.

The default is \$SYSTEM.MAILVE_V2.DOMAIN_NAMES_FILE.

BITNET_MAILER_NAME or *BMN*

Specifies the name of the Mail/VE gateway registered with the BITNet Network Information Center. Enter the name as a 1- through 8-character name. Control Data recommends that you use the name MAILER.

BITNET_NODE_NAME or *BNN*

Specifies the node name of the host on which the Mail/VE gateway is installed. The name is registered with the BITNet Network Information Center. Enter the name as a 1- through 8-character name.

STATION or *S*

Specifies the station name used by the Mail/VE gateway when routing files through the Network Transfer Facility (NTF).

The default value is AUTOMATIC, which directs NTF to use the AUTOMATIC_STATION_NAME specified at NTF activation via the ACTIVATE_NTF command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

- Remarks
- INSTALL_MAIL_GATEWAY is entered from the system console.
 - The COUNTRY and ORGANIZATION_UNIT parameters define the X.400 address attributes that identify the Mail/VE gateway. The gateway may be located in the same private domain as other Mail/VE message transfer agents, or it may be in a different private domain. The following parameters provide routing information to the Mail/VE gateway from within a BITNet or Internet network.

Network	Parameter
BITNet	BITNET_MAILER_NAME
BITNet	BITNET_NODE_NAME
Internet	INTERNET_DOMAIN_NAME

- MAIL_INSTALLATION_TABLE entries define the Mail/VE installation and are default values for the Mail/VE gateway.
- Mail/VE must be installed before you can install the Mail/VE gateway.

MANAGE_MAIL_DIRECTORY

Purpose Starts the MANAGE_MAIL_DIRECTORY utility.

Format MANAGE_MAIL_DIRECTORY or
MANMD
OUTPUT=file
ERRORS=file
STATUS=status variable

Parameters *OUTPUT* or *O*
Specifies the file to which output is written.
The default is file \$OUTPUT.

ERRORS or *E*
Specifies the file to which errors are written.
The default is file \$ERRORS.

STATUS
Special attributes: VAR, BY_NAME
Specifies the completion status for this command.

SEND_ADDRESS_UPDATES

Purpose Creates a letter which contains the **GENERATE_ADDRESS_UPDATES** output and sends it to the specified mailbox.

Format **SEND_ADDRESS_UPDATES** or **SENAU**

UPDATES_FILE=file
RECIPIENT_PERSONAL_NAME=record or string
RECIPIENT_ORGANIZATION_NAME=string
RECIPIENT_ORGANIZATION_UNITS=string
ORIGINATOR_PERSONAL_NAME=record or string
ORIGINATOR_ORGANIZATION_NAME=string
ORIGINATOR_ORGANIZATION_UNITS=string
STATUS=status variable

Parameters **UPDATES_FILE** or **UF**

Specifies the file containing the **GENERATE_ADDRESS_UPDATES** output.

RECIPIENT_PERSONAL_NAME or **RPN**

Specifies the name of the mailbox receiving the letter. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

The default is **POSTMASTER**.

RECIPIENT_ORGANIZATION_NAME or **RON**

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

RECIPIENT_ORGANIZATION_UNITS or **RECIPIENT_ORGANIZATION_UNIT** or **ROU**

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORIGINATOR_PERSONAL_NAME or **OPN**

Specifies the name of the mailbox from which the letter is sent. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORIGINATOR_ORGANIZATION_NAME or *OON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

ORIGINATOR_ORGANIZATION_UNITS or *ORIGINATOR_ORGANIZATION_UNIT* or *OOU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

Remarks

- The subject assigned to all letters created by SEND_ADDRESS_UPDATES commands is MVF\$MAILBOX_ADDRESS_UPDATES.

- If you do not enter the PERSONAL_NAME parameter, the SEND_ADDRESS_UPDATES command sends the letter to the POSTMASTER mailbox with the specified organization name and organization units. The COMBINE_UPDATE_LETTERS command, which processes SEND_ADDRESS_UPDATES letters, expects the POSTMASTER mailbox to contain letters from one or more hosts.

You can use the PERSONAL_NAME parameter to send the letter to a distribution list whose address list consists of the POSTMASTER mailboxes at the hosts receiving the MVF\$MAIL_ADDRESS_UPDATES letter.

UPDATE_REMOTE_ADDRESSES

Purpose Adds the new and changed remote mailboxes and distribution lists to the local central directory files. This command executes the GENERATE_REMOTE_UPDATES subcommand to exclude local mailbox and distribution lists from the update and then executes the ADMINISTER_MAIL command to update the central directory files.

Format UPDATE_REMOTE_ADDRESSES or
UPDRA
REMOTE_UPDATES=file
STATUS=status variable

Parameters REMOTE_UPDATES or RU
Specifies a file of ADMINISTER_MAIL subcommands produced by the GENERATE_REMOTE_UPDATES command on a remote host or by the COMBINE_UPDATE_LETTERS command on the local host.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this command.

MANAGE_MAIL_DIRECTORY Subcommands

This section provides reference information for the MANAGE_MAIL_DIRECTORY utility subcommands. A MANAGE_MAIL_DIRECTORY session is normally a backup or restore session. If it is a backup session, only two MANMD subcommands are used:

END_MANAGE_MAIL_DIRECTORY
GENERATE_DIRECTORY_UPDATE

A restore session typically consists of a number of the following update subcommands followed by an END_MANAGE_MAIL_DIRECTORY subcommand.

UPDATE_DISTRIBUTION_LIST
UPDATE_MAILBOX
UPDATE_ORGANIZATION
UPDATE_ROUTE

The UPDATE subcommands are usually those created during an earlier backup session or a CONVERT_MAILVE_DATABASE session.

END_MANAGE_MAIL_DIRECTORY MANMD Subcommand

Purpose Stops a MANAGE_MAIL_DIRECTORY utility session.

Format END_MANAGE_MAIL_DIRECTORY or
ENDMMD or
END or
QUIT or
QUI
SAVE=boolean
STATUS=status variable

Parameters SAVE or S

Specifies whether the updates made during this utility session are saved or discarded. Enter one of the following keywords:

FALSE

Updates made during this utility session are discarded.

TRUE

Updates made during this utility session are saved. New high cycles for every Mail/VE directory file are created. The content of these new files is generated only from the update subcommands. Therefore, you must input a complete set of update subcommands or the new files will contain incomplete information.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

GENERATE_DIRECTORY_UPDATE MANMD Subcommand

Purpose Generates a file of update subcommands to back up the current directory database files. This file can be used during a subsequent MANAGE_MAIL_DIRECTORY session to restore a Mail/VE directory.

Format GENERATE_DIRECTORY_UPDATE or
GENDU
OUTPUT=file
ERRORS=file
STATUS=status variable

Parameters *OUTPUT* or *O*

Specifies the file to which output is written.

The default is the output file specified on the MANAGE_MAIL_DIRECTORY command.

ERRORS or *E*

Specifies the file to which errors are written.

The default is the error file specified on the MANAGE_MAIL_DIRECTORY command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

UPDATE_DISTRIBUTION_LIST MANMD Subcommand

- Purpose** Starts a subutility to add a distribution list entry to the mail database.
- Format** UPDATE_DISTRIBUTION_LIST or UPDDL
 GLOBAL_KEY = name
 TITLE = string
 USER = name
 FAMILY = name
 STATUS = status variable
- Parameters** GLOBAL_KEY or GK
 Specifies an identifier for the distribution list that is unique within the private domain.
- TITLE or T
 Specifies the message transfer agent (MTA) name assigned to the Mail/VE installation where this distribution list is defined. Enter the name as a 1- through 32-character string.
- USER or USER_NAME or UN or U
 Specifies the NOS/VE user name of the distribution list owner.
- FAMILY or F
 Specifies the NOS/VE family name of the distribution list owner.
- STATUS
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.
- Remarks** For information on the four subcommands of the UPDATE_DISTRIBUTION_LIST subutility, refer to the Mailbox and Distribution List Update Subcommands later in this chapter.

UPDATE_MAILBOX MANMD Subcommand

Purpose Starts a subutility to add a mailbox entry to the mail database.

Format UPDATE_MAILBOX or
UPDM
GLOBAL_KEY = name
TITLE = string
USER = name
FAMILY = name
DEFAULT_MAILBOX = boolean
STATUS = status variable

Parameters GLOBAL_KEY or GK

Specifies an identifier for the mailbox that is unique within the private domain.

TITLE or **T**

Specifies the message transfer agent (MTA) name assigned to the Mail/VE installation where this mailbox is defined. Enter the name as a 1- through 32-character string.

USER or **USER_NAME** or **UN** or **U**

Specifies the NOS/VE user name of the mailbox owner.

FAMILY or **F**

Specifies the NOS/VE family name of the mailbox owner.

DEFAULT_MAILBOX or **DM**

Specifies whether the mailbox is the owner's default mailbox. Enter one of the following keywords:

FALSE

Mailbox is not the owner's default mailbox.

TRUE

Mailbox is the owner's default mailbox.

The default is the keyword **FALSE**.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

Remarks For information on the four subcommands of the UPDATE_MAILBOX subutility, refer to the Mailbox and Distribution List Update Subcommands later in this chapter.

UPDATE_ORGANIZATION MANMD Subcommand

- Purpose** Defines an organization entry in the Mail/VE address directory.
- Format** UPDATE_ORGANIZATION or
UPDO
 TITLE = string
 ORGANIZATION_UNITS = list of string
 ORGANIZATION_NAME = string
 STATUS = status variable
- Parameters** **TITLE** or **T**
 Specifies the message transfer agent (MTA) name assigned to the destination mail system. Enter the name as a 1- through 32-character string.
- ORGANIZATION_UNITS** or **ORGANIZATION_UNIT** or **OU**
 Specifies the list of one to four organization units. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.
- ORGANIZATION_NAME** or **ON**
 Specifies the name of the organization. Enter the name as a 1- through 64-character string.
- STATUS**
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.
- Remarks**
- You must specify a value for the **ORGANIZATION_UNIT** or **ORGANIZATION_NAME** parameter or you will receive an error message.
 - UPDATE_ORGANIZATION subcommands must precede any UPDATE_DISTRIBUTION_LIST or UPDATE_MAILBOX subcommands during a restore procedure.

UPDATE_ROUTE MANMD Subcommand

Purpose Defines a route entry in the Mail/VE directory.

Format UPDATE_ROUTE or
UPDR

TITLE = string
 COUNTRY = string
 ADMINISTRATIVE_DOMAIN = string
 PRIVATE_DOMAIN = string
 TRANSFER_SERVICE = keyword or string
 DESTINATION_TYPE = keyword or string
 TRANSFER_TITLE = string
 STATUS = status variable

Parameters TITLE or T

Specifies the message transfer agent (MTA) name assigned to the destination mail system. Enter the name as a 1- through 32-character string.

COUNTRY or C

Specifies the country code of the destination mail system. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

ADMINISTRATIVE_DOMAIN or AD

Specifies the administrative domain of the destination mail system. Enter the domain as a 1- through 16-character string.

PRIVATE_DOMAIN or PD

Specifies the private domain of the destination mail system. Enter the domain as a 1- through 16-character string.

TRANSFER_SERVICE or TS

Specifies the transfer service used to route mail to the destination mail system. Enter one of the following keywords or a 1- through 31-character string.

LOCAL

The service defined by DESTINATION_TYPE is directly routed to the service, which is resident on this NOS/VE host.

QTF

The transfer service is the Queue File Transfer Facility (QTF), which transfers mail from one Mail/VE system to another Mail/VE system.

XTF

The transfer service is the X.400 Transfer Facility (XTF), which transfers mail from one Mail/VE system to another Mail/VE system or to another X.400 mail system.

The default is the keyword QTF.

DESTINATION_TYPE or *DT*

Specifies the type of destination mail system. Enter one of the following keywords or a 1- through 31-character string.

MG

The destination mail system is the Mail/VE directory.

MVE

The destination mail system is a Mail/VE system.

The default is the keyword MVE.

TRANSFER_TITLE or *TT*

Specifies the QTF title of the host through which the message transfer agent (MTA) defined by the TITLE parameter can be reached. Enter the title as a 1- through 32-character string.

The default is the value specified for the TITLE parameter.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

When entering an UPDATE_ROUTE command, specify values for the COUNTRY, ADMINISTRATIVE_DOMAIN, and PRIVATE_DOMAIN parameters. If the MTA name is not associated with an administrative domain, specify the administrative domain by entering a single space.

Mailbox and Distribution List Update Subcommands

This section provides reference information for the following subcommands of the UPDATE_DISTRIBUTION_LIST (UPDDL) and UPDATE_MAILBOX (UPDM) subutilities:

<u>UPDATE_DISTRIBUTION_LIST</u>	<u>UPDATE_MAILBOX</u>
ADD_ADDRESS	ACTIVATE_AUTO_FORWARDING
ADD_PERMISSION	ADD_PERMISSION
END_UPDATE_DISTRIBUTION_LIST	END_UPDATE_MAILBOX
SET_ATTRIBUTES	SET_ATTRIBUTES

To stop an UPDATE_MAILBOX subutility session, use the END_UPDATE_MAILBOX subcommand; to stop an UPDATE_DISTRIBUTION_LIST subutility session, use the END_UPDATE_DISTRIBUTION_LIST subcommand.

ACTIVATE_AUTO_FORWARDING UPDM Subcommand

Purpose Specifies a mailbox to which mail is automatically forwarded.

Format **ACTIVATE_AUTO_FORWARDING** or **ACTAF**

PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
UA_IDENTIFIER=string
TERMINAL_IDENTIFIER=string
X121_ADDRESS=string
DOMAIN_DEFINED_ATTRIBUTES=list of record
POSTAL_ADDRESS=list of string
POSTAL_ADDRESS_COUNTRY_NAME=string
POSTAL_ADDRESS_CODE=string
STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies the name of the mailbox to which mail is automatically forwarded. Enter the name as a 1- through 256-character string or as a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or *PD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the private domain of the mailbox. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: BY_NAME, ADVANCED

Specifies the administrative domain of the mailbox. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

UA_IDENTIFIER or *UI*

Special attributes: BY_NAME, ADVANCED

Specifies the user agent (UA) identifier of the mailbox. The UA identifier must be unique within the specified domain. Enter a string of 1 through 32 characters.

TERMINAL_IDENTIFIER or *TI*

Special attributes: BY_NAME, ADVANCED

Specifies the terminal identifier of a telematic terminal on which the mail is read. Enter a string of 1 through 24 characters.

X121_ADDRESS or *XA*

Special attributes: BY_NAME, ADVANCED

Specifies the address of the mailbox as specified in accordance with recommendation X.121. Enter a string of 1 through 15 characters composed of the digits 0 through 9.

DOMAIN_DEFINED_ATTRIBUTES or *DDA*

Special attributes: BY_NAME, ADVANCED

Specifies a list of 1 through 4 non-X.400 attributes of the mailbox. Enter each attribute as a record of the following format:

```
record
  name: string 1..8
  value: string 1..128
recend
```

POSTAL_ADDRESS or *PA*

Special attributes: BY_NAME, ADVANCED

Specifies information that describes the physical postal delivery system of the mailbox. Enter the information with a list of 2 through 6 strings of 1 through 30 characters each.

POSTAL_ADDRESS_COUNTRY_NAME or *PACN*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address country name of the mailbox. Enter a string of 1 through 30 characters.

POSTAL_ADDRESS_CODE or *PAC*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address code of the mailbox. Enter a string of 1 through 128 characters.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

ADD_ADDRESS UPDDL Subcommand

Purpose Specifies an address to add to a distribution list.

Format **ADD_ADDRESS** or **ADDA**
PERSONAL_NAME = record or string
ORGANIZATION_UNITS = list of string
ORGANIZATION_NAME = string
PRIVATE_DOMAIN = string
ADMINISTRATIVE_DOMAIN = string
COUNTRY = string
UA_IDENTIFIER = string
TERMINAL_IDENTIFIER = string
X121_ADDRESS = string
DOMAIN_DEFINED_ATTRIBUTES = list of record
POSTAL_ADDRESS = list of string
POSTAL_ADDRESS_COUNTRY_NAME = string
POSTAL_ADDRESS_CODE = string
STATUS = status variable

Parameters *PERSONAL_NAME* or *DISTRIBUTION_LIST* or *PN* or *DLN*
Specifies the name of the mailbox or distribution list to add to the distribution list. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox or distribution list. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox or distribution list. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or *PD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the private domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: BY_NAME, ADVANCED

Specifies the administrative domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox or distribution list. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

UA_IDENTIFIER or *UI*

Special attributes: BY_NAME, ADVANCED

Specifies the user agent (UA) identifier of the mailbox or distribution list. The UA identifier must be unique within the specified domain. Enter a string of 1 through 32 characters.

TERMINAL_IDENTIFIER or *TI*

Special attributes: BY_NAME, ADVANCED

Specifies the terminal identifier of a telematic terminal on which the mail is read. Enter a string of 1 through 24 characters.

X121_ADDRESS or *XA*

Special attributes: BY_NAME, ADVANCED

Specifies the address specified in accordance with recommendation X.121. Enter a string of 1 through 15 characters composed of the digits 0 through 9.

DOMAIN_DEFINED_ATTRIBUTES or *DDA*

Special attributes: BY_NAME, ADVANCED

Specifies a list of one through four non-X.400 attributes of the address. Enter each attribute as a record of the following format:

```
record
  name: string 1..8
  value: string 1..128
recend
```

POSTAL_ADDRESS or *PA*

Special attributes: BY_NAME, ADVANCED

Specifies information that describes the physical postal delivery system of the address. Enter the information with a list of 2 through 6 strings of 1 through 30 characters each.

POSTAL_ADDRESS_COUNTRY_NAME or *PACN*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address country name of the address. Enter a string of 1 through 30 characters.

POSTAL_ADDRESS_CODE or *PAC*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the postal address code of the address. Enter a string of 1 through 128 characters.

STATUS

Special attributes: *VAR*, *BY_NAME*

Specifies the completion status for this subcommand.

Remarks For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

ADD_PERMISSION UPDDL and UPDM Subcommands

Purpose Adds a mailbox to the group permitted to use the mailbox or distribution list.

Format **ADD_PERMISSION** or **ADDP**
PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
PERMISSIONS=keyword or list of keyword
STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies the name of the mailbox permitted to use this group mailbox or group distribution list. Enter the name as a 1- through 256-character string or as a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or *PD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the private domain of the mailbox. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the administrative domain of the mailbox. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

PERMISSIONS or *P*

Special attributes: BY_NAME

Specifies the access permitted to the mailbox. Enter the keyword ALL or specify one or more of the following keywords. Specifying ALL establishes READ and WRITE permission for mailboxes and READ and USE permission for distribution lists.

READ or **R**

For mailboxes, letters can be read; for distribution lists, the list can be displayed.

WRITE or **W**

For mailboxes only. Letters can be sent to the mailbox.

USE or **U**

For distribution lists only. Distribution lists can be included in a recipient list. However, without READ access, users cannot expand the distribution list.

The default is the keyword ALL.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- The wildcard character (*) can indicate parts of the address not specified.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

END_UPDATE_DISTRIBUTION_LIST UPDDL Subcommand

Purpose Stops an UPDATE_DISTRIBUTION_LIST subutility session.

Format END_UPDATE_DISTRIBUTION_LIST or
 ENDUDL or
 END or
 QUIT or
 QUI
 SAVE = boolean.
 STATUS = status variable

Parameters SAVE or S

Specifies whether the changes made during this subutility session are saved or discarded. Enter one of the following keywords:

FALSE

Changes made during this subutility session are discarded.

TRUE

Changes made during this subutility session are saved.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

END_UPDATE_MAILBOX UPDM Subcommand

Purpose Stops an UPDATE_MAILBOX subutility session.

Format END_UPDATE_MAILBOX or
ENDUM or
END or
QUIT or
QUI
SAVE=boolean
STATUS=status variable

Parameters *SAVE* or *S*

Specifies whether the changes made during this subutility session are saved or discarded. Enter one of the following keywords:

FALSE

Changes made during this subutility session are discarded.

TRUE

Changes made during this subutility session are saved.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

SET_ATTRIBUTES UPDDL Subcommand

Purpose Defines or changes distribution list attributes.

Format SET_ATTRIBUTES or
SET_ATTRIBUTE or
SETA

DISTRIBUTION_LIST_NAME = list of keyword or record or string

ORGANIZATION_UNITS = list of keyword or string

ORGANIZATION_NAME = string

DESCRIPTION = string

TELEPHONE_NUMBER = string

EXPAND = boolean

PERMIT_TYPE = keyword

TITLE = string

STATUS = status variable

Parameters *DISTRIBUTION_LIST_NAME* or *DLN*

Specifies a list of one through three elements to describe the distribution list. The first element of the list is always used in displays. The second and third elements are aliases. Each element can be the keyword NO_CHANGE or a 1- through 64-character string or a record of the following format:

record

 surname: string 1..40

 given name: string 0..16

 initials: string 0..5

 generation qualifier: string 0..3

recend

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as the keyword NO_CHANGE or a 1- through 32-character string. The order in which you specify the units is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the distribution list. Enter the name as a 1- through 64-character string.

DESCRIPTION or *D*

Special attributes: BY_NAME

Specifies a 1- through 64-character string that describes the distribution list.

TELEPHONE_NUMBER or *TN*

Special attributes: BY_NAME

Specifies the telephone number of the distribution list owner. Enter a string of 1 through 32 characters.

EXPAND or *E*

Special attributes: BY_NAME

Specifies whether or not the distribution list will be expanded when used. The EXPAND parameter applies only to distribution lists residing on the same host as the sender. Otherwise, no expansion can occur regardless of the value of the EXPAND attribute.

FALSE

Distribution list is not expanded. The distribution list name is used in the letter header.

TRUE

Distribution list is expanded. The distribution list name is replaced by the addresses contained in the distribution list.

The default is that the parameter value remains set as last specified.

PERMIT_TYPE or *PT*

Special attributes: BY_NAME

Specifies the type of distribution list permission. Enter one of the following keywords.

GROUP or **G**

A group of defined mailboxes can use the distribution list. To add mailboxes to the group, use the ADD_PERMISSION subcommand.

PRIVATE or **PR**

Only the owner of the distribution list can use the list.

PUBLIC or **PU**

Any user can use the distribution list.

The default when creating a distribution list is PRIVATE; the default for existing distribution lists is that the PERMIT_TYPE remains unchanged.

TITLE or *T*

Special attributes: BY_NAME

Specifies the message transfer agent (MTA) name assigned to the Mail/VE installation where this distribution list is defined. Enter the name as a 1-through 32-character string.

The default is the local message transfer agent (MTA).

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

SET_ATTRIBUTES UPDM Subcommand

Purpose Defines or changes mailbox attributes.

Format SET_ATTRIBUTES or
SET_ATTRIBUTE or
SETA

PERSONAL_NAME=list of keyword or record or string

ORGANIZATION_UNITS=list of keyword or string

ORGANIZATION_NAME=string

DESCRIPTION=string

TELEPHONE_NUMBER=string

RETENTION_PERIOD=keyword or integer

PERMIT_TYPE=keyword

TITLE=string

STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies a list of one through three elements to describe the mailbox. The first element of the list is always used in displays. The second and third elements are aliases. Each element can be the keyword *NO_CHANGE* or a 1- through 64-character string or a record of the following format:

record

 surname: string 1..40

 given name: string 0..16

 initials: string 0..5

 generation qualifier: string 0..3

recend

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as the keyword *NO_CHANGE* or a 1- through 32-character string. The order in which you specify the units is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

DESCRIPTION or *D*

Special attributes: *BY_NAME*

Specifies a 1- through 64-character string that describes the mailbox.

TELEPHONE_NUMBER or *TN*

Special attributes: *BY_NAME*

Specifies the telephone number of the mailbox owner. Enter a string of 1 through 32 characters.

RETENTION_PERIOD or *RP*

Special attributes: *BY_NAME*

Specifies the number of days a letter is retained in the mailbox after it has been seen. Enter the keyword *MAXIMUM* or an integer value for the number of days to retain letters.

The default is the value set by the *MAILVE_RETENTION_LIMIT* validation.

PERMIT_TYPE or *PT*

Special attributes: *BY_NAME*

Specifies the type of mailbox permission. Enter one of the following keywords.

GROUP or **G**

A group of defined mailboxes can read mail from or send mail to the mailbox. To add mailboxes to the group, use the *ADD_PERMISSION* subcommand.

PRIVATE or **PR**

Only the owner of the mailbox can read mail from the mailbox. Anyone can send mail to the mailbox.

PUBLIC or **PU**

Any user can read mail from or send mail to the mailbox.

The default when creating a mailbox is *PRIVATE*; the default for existing mailboxes is that the *PERMIT_TYPE* remains unchanged.

TITLE or *T*

Special attributes: *BY_NAME*

Specifies the message transfer agent (MTA) name assigned to the Mail/VE installation where this mailbox is defined. Enter the name as a 1- through 32-character string.

The default is the local message transfer agent (MTA).

STATUS

Special attributes: *VAR*, *BY_NAME*

Specifies the completion status for this subcommand.

Remarks

For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

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This chapter describes how to use the ADMINISTER_MAIL utility and provides reference information for the following:

- ADMINISTER_MAIL command and subcommands
- Mailbox and distribution list subutility subcommands
- Functions

Using the ADMINISTER_MAIL Utility

The following sections describe how you access the ADMINISTER_MAIL utility, stop a session, and set utility defaults.

Starting the Utility

To access the ADMINISTER_MAIL utility, your MAILVE_ADMINISTRATION validation level must be set to ANALYST, SYSTEM, or FAMILY.

To start the utility, enter:

```
/administer_mail
```

The system displays the following prompt:

```
Admm/
```

When the Admm/ prompt is displayed, the ADMINISTER_MAIL subcommands and functions are available for use.

Stopping the Utility

To stop the utility, enter:

```
Admm/end_administer_mail  
/
```

Setting Utility Defaults

The ADMINISTER_MAIL utility maintains default values for FAMILY and USER. When you start the utility, it sets the default value for FAMILY to the value you specified during login and sets the default value for USER to the value you specified during login.

When you execute a utility subcommand that provides optional FAMILY and USER parameters, the default for the FAMILY parameter is the current utility default for FAMILY; the default for USER is the current utility default for USER.

You implicitly change the default values for FAMILY and USER (that set \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER) whenever you specify values for FAMILY and USER parameters on utility subcommands, but you also implicitly change these values by specifying the PERSONAL_NAME parameter on the following subcommands:

```
CHANGE_DISTRIBUTION_LIST
CHANGE_MAILBOX
DELETE_DISTRIBUTION_LIST
DELETE_MAILBOX
DISPLAY_DISTRIBUTION_LIST
DISPLAY_MAILBOX
```

You can explicitly set the values of FAMILY and USER by using the SELECT_USER subcommand.

You can determine the current default for FAMILY and USER by using two ADMINISTER_MAIL functions:

```
$ADMINISTERED_FAMILY
$ADMINISTERED_USER
```

For example, to display the current default value for the family, enter:

```
/administer_mail
Admm/display_value $administered_family
```

ADMINISTER_MAIL Command and Subcommands

The following section describes the ADMINISTER_MAIL command and subcommands.

ADMINISTER_MAIL

- Purpose** Starts the ADMINISTER_MAIL utility.
- Format** ADMINISTER_MAIL or
ADMM
OUTPUT=file
ERRORS=file
STATUS=status variable
- Parameters** *OUTPUT* or *O*
Specifies the file to which output is written.
The default is file \$OUTPUT.
- ERRORS* or *E*
Specifies the file to which error messages are written.
The default is file \$ERRORS.
- STATUS*
Special attributes: VAR, BY_NAME.
Specifies the completion status for this command.
- Remarks**
- The ADMINISTER_MAIL utility can be used only by users whose MAILVE_ADMINISTRATION validation level is set to ANALYST, SYSTEM, or FAMILY.
 - At utility startup, the system sets the default value for FAMILY to the value you specified during login; the system sets the default for USER to the name you specified during login.
 - The OUTPUT parameter value is the default for the OUTPUT parameters of many of the ADMINISTER_MAIL subcommands.

CHANGE_DISTRIBUTION_LIST ADMM Subcommand

Purpose Initiates the CHANGE_DISTRIBUTION_LIST subutility, through which you can change the definition of any distribution list for which you have MAILVE_ADMINISTRATION validation. After you have specified the parameters for the CHANGE_DISTRIBUTION_LIST subcommand, the system displays Chad!/, prompting you to enter subutility subcommands listed below under Remarks.

Format CHANGE_DISTRIBUTION_LIST or
CHADL
DISTRIBUTION_LIST_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
STATUS=status variable

Parameters DISTRIBUTION_LIST_NAME or DLN
Specifies the name of the distribution list to be changed. Enter the name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the distribution list. Enter the name as a 1- through 64-character string.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

- Remarks**
- Use the following CHANGE_DISTRIBUTION_LIST subutility subcommands to specify new distribution list attributes, edit address lists, and edit permission lists of group distribution lists.

```
ADD_ADDRESS
ADD_PERMISSION
DELETE_ADDRESS
DELETE_PERMISSION
DISPLAY_ADDRESS_LIST
DISPLAY_ATTRIBUTES
DISPLAY_PERMISSIONS
END_CHANGE_DISTRIBUTION_LIST
SET_ATTRIBUTES
```

These subcommands are described later in this chapter under Mailbox and Distribution List Subutility Subcommands.

- Only the distribution list owner and the Mail/VE administrator can change a distribution list.
- If you change a local distribution list, \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER are set to the identity of the NOS/VE user who owns the distribution list. There is no change to \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER if the distribution list is a remote list.
- If the address parameters do not uniquely identify a distribution list you can change, the CHANGE_DISTRIBUTION_LIST subutility terminates and displays an error message.
- You cannot use the wildcard character (*) in address parameters.
- Changing a group distribution list to private or public deletes the permission list that defines the group.

Examples The following example adds an address to an existing distribution list.

```
Admm/change_distribution_list ..
Admm./distribution_list_name='project_members'
Chad1/add_address ..
Chad1./personal_name='Janet Strong'
Chad1/add_permission ..
Chad1./personal_name='Janet Strong'
Chad1/end_change_distribution_list
Admm/
```

This example changes a private distribution list to a group distribution list.

```
Admm/change_distribution_list ..
Admm ../distribution_list_name='tiger_team'
Chadl/set_attributes ..
Chadl ../permit_type=group
Chadl/add_permission ..
Chadl ../organization_name='qa department'
Chadl/add_permission ..
Chadl ../organization_name= ..
Chadl ../'Continuous Improvement Task Force'
Chadl/end_change_distribution_list
Admm/
```

CHANGE_MAILBOX ADMM Subcommand

Purpose Starts the CHANGE_MAILBOX subutility to change the definition of a mailbox for which you have MAILVE_ADMINISTRATION validation. After you have specified the parameters for the CHANGE_MAILBOX subcommand, the system displays Cham/, prompting you to enter subutility subcommands listed below under Remarks.

Format CHANGE_MAILBOX or
CHAM
PERSONAL_NAME=string or record
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
STATUS=status variable

Parameters PERSONAL_NAME or PN
Specifies the name of the mailbox to change. Enter the name as a 1-through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or ORGANIZATION_UNIT or OU

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or ON

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- Use the following CHANGE_MAILBOX subutility subcommands to change mailbox attributes and edit the access permission lists of group mailboxes.

```
ADD_PERMISSION
DELETE_PERMISSION
DISPLAY_ATTRIBUTES
DISPLAY_PERMISSIONS
END_CHANGE_MAILBOX
SET_ATTRIBUTES
```

These subcommands are described later in this chapter under Mailbox and Distribution List Subutility Subcommands.

- If you change a local mailbox, \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER are set to the identity of the NOS/VE user who owns the mailbox. There is no change to \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER if the mailbox is a remote mailbox.
- Only the mailbox owner and the Mail/VE administrator can change a mailbox.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

CREATE_DISTRIBUTION_LIST ADMM Subcommand

Purpose Initiates the CREATE_DISTRIBUTION_LIST subutility through which you create a distribution list for the \$ADMINISTERED_USER. After you have specified the parameters for the CREATE_DISTRIBUTION_LIST subcommand, the system displays Cred!/, prompting you to enter subutility subcommands listed below under Remarks.

Format CREATE_DISTRIBUTION_LIST or
CREDL
STATUS=status variable

Parameters STATUS
Special attributes: VAR, BY_NAME
Specifies the completion status for this subcommand.

Remarks

- Use the following CREATE_DISTRIBUTION_LIST subutility subcommands to define distribution lists, create address lists, and create permission lists.

```
ADD_ADDRESS
ADD_PERMISSION
DELETE_ADDRESS
DELETE_PERMISSION
DISPLAY_ADDRESS_LIST
DISPLAY_ATTRIBUTES
DISPLAY_PERMISSIONS
END_CREATE_DISTRIBUTION_LIST
SET_ATTRIBUTES
```

These subcommands are described later in this chapter under Mailbox and Distribution List Subutility Subcommands.

- The address attributes you specify for the distribution list through the SET_ATTRIBUTES subcommand must uniquely identify the list you are creating for \$ADMINISTERED_USER. If the address is not unique when you enter the END_CREATE_DISTRIBUTION_LIST subcommand, the distribution list is not created and the subutility terminates with an error message.
- Your distribution list can be made up of the addresses of mailboxes and/or other distribution lists.
- The values of \$ADMINISTERED_USER and \$ADMINISTERED_FAMILY at the time you enter the END_CREATE_DISTRIBUTION_LIST subcommand determine the user for whom the distribution list is created.

Examples The following example creates a distribution list for \$ADMINISTERED_USER.

```
Admn/create_distribution_list
Cred1/set_attribute ..
Cred1./distribution_list_name=( ..
Cred1./:'Fellow_Trainees' 'dift') ...
Cred1./expand=true
Cred1/add_address personal_name='Jim Rivers'
Cred1/add_address personal_name='Joan C Lohn-Cho'
Cred1/end_create_distribution_list true
Admn/
```

CREATE_MAILBOX ADMM Subcommand

- Purpose** Initiates the CREATE_MAILBOX subutility through which you can create a mailbox. After you have specified the parameters for the CREATE_MAILBOX subcommand, the system displays Crem/, prompting you to enter subutility subcommands listed below under Remarks.
- Format** **CREATE_MAILBOX** or **CREM**
STATUS=status variable
- Parameters** *STATUS*
Special attributes: VAR, BY_NAME
Specifies the completion status for this subcommand.
- Remarks**
- Use the following CREATE_MAILBOX subutility subcommands to define mailbox attributes and create access permission lists that define group mailboxes.
 - ADD_PERMISSION
 - DELETE_PERMISSION
 - DISPLAY_ATTRIBUTES
 - DISPLAY_PERMISSIONS
 - END_CREATE_MAILBOX
 - SET_ATTRIBUTES

These subcommands are described later in this chapter under Mailbox and Distribution List Subutility Subcommands.
 - The MAILVE_ADMINISTRATION validation determines who can create mailboxes:
 - A user whose MAILVE_ADMINISTRATION validation level is set to ANALYST or SYSTEM can create mailboxes for users of any family on the host.
 - A user whose MAILVE_ADMINISTRATION validation level is set to FAMILY can create mailboxes only for users of their family.
 - The values of \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER at the time you enter the END_CREATE_MAILBOX subcommand determine the user for whom the mailbox is created.

CREATE_ORGANIZATION ADMM Subcommand

- Purpose** Defines an organization entry in the Mail/VE address directory and associates a message transfer agent (MTA) name with the organization.
- Format** **CREATE_ORGANIZATION** or **CREO**
ORGANIZATION_UNITS = list of string
ORGANIZATION_NAME = string
TITLE = string
STATUS = status variable
- Parameters** *ORGANIZATION_UNITS* or *ORGANIZATION_UNIT* or *OU*
 Specifies the list of one to four organization units. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.
- ORGANIZATION_NAME* or *ON*
 Specifies the name of the organization. Enter the name as a 1- through 64-character string.
- TITLE* or *T*
 Specifies the message transfer agent (MTA) name assigned to the destination mail service. Enter the name as a 1- through 32-character string.
 The default is the local MTA name returned by the \$MAILVE_INSTALLATION function.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.
- Remarks**
- Each organization definition is associated with only one MTA name. That is, only one MTA name is associated with a given organization name and its ordered set of organization units. As a minimum, you must specify either the organization name and/or the ordered set of organization units.
 - The *TITLE* parameter on the **CREATE_ORGANIZATION** subcommand must match a *TITLE* parameter on a **CREATE_ROUTE** subcommand.

CREATE_ROUTE ADMM Subcommand

Purpose Defines a route entry in the Mail/VE directory.

Format **CREATE_ROUTE** or
CRER

TITLE=string
COUNTRY=string
ADMINISTRATIVE_DOMAIN=string
PRIVATE_DOMAIN=string
TRANSFER_SERVICE=keyword or string
DESTINATION_TYPE=keyword or string
TRANSFER_TITLE=string
PASSWORD=string
STATUS=status variable

Parameters **TITLE** or **T**

Specifies the message transfer agent (MTA) name assigned to the destination mail service. Enter the name as a 1- through 32-character string.

COUNTRY or **C**

Specifies the country code of the destination mail service. The code is entered as a 1- through 3-character string. Enter this code if it is different than the country code of the MTA. See appendix C for the list of countries and their associated codes.

ADMINISTRATIVE_DOMAIN or **AD**

Specifies the administrative domain of the destination mail service. The domain is entered as a 1- through 16-character string. Enter this domain if it is different than the administrative domain of the MTA.

PRIVATE_DOMAIN or **PD**

Specifies the private domain of the destination mail service. The domain is entered as a 1- through 16-character string. Enter this domain if it is different than the private domain of the MTA.

TRANSFER_SERVICE or **TS**

Specifies the residency of the **DESTINATION_TYPE** service which routes the mail to the destination mail service. Enter one of the following keywords or a 1- through 31-character string.

LOCAL

The service defined by **DESTINATION_TYPE**. Mail is directly routed to the service, which is resident on this NOS/VE host.

QTF

A transfer service called the Queue File Transfer Facility (QTF), which transfers mail from one Mail/VE system to another Mail/VE system. It is not resident on this NOS/VE host.

XTF

A transfer service called the X.400 Transfer Facility (XTF), which transfers mail from one Mail/VE system to another Mail/VE system or to another X.400 mail system. It is not resident on this NOS/VE host.

The default is the keyword QTF.

DESTINATION_TYPE or **DT**

Specifies the type of destination mail service. Enter one of the following keywords or a 1- through 31-character string.

MG

The destination mail service is the Mail/VE gateway.

MVE

The destination mail service is a Mail/VE system.

The default is the keyword MVE.

TRANSFER_TITLE or **TT**

Specifies the QTF title of the host through which the message transfer agent (MTA) defined by the TITLE parameter can be reached. Enter the title as a 1- through 32-character string.

The default is the value specified for the TITLE parameter.

PASSWORD or **PW**

Specifies the password of the destination X.400 mail service transferring mail through XTF. Enter the 1- through 64-character string as specified in uppercase or lowercase.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- The CREATE_ROUTE subcommand can be used only by users whose MAILVE_ADMINISTRATION validation level is set to ANALYST. If you are specifying the XTF option on the TRANSFER_SERVICE parameter, you must have a permit to the XTF configuration file. For additional information, see General Configuration Procedure: Using NOS/VE and Other X.400 Hosts in chapter 2.
- If the ENABLE_PASSWORD_CHECKING parameter is TRUE on the ACTIVATE_XTF command, MTA names and passwords are checked when mail systems establish associations. The MTA name and password specified on this CREATE_ROUTE command must match the MTA name and password that the destination mail system sends. The check for password is case-sensitive; the check for MTA name is not case-sensitive.
- When entering a CREATE_ROUTE command, specify values for the COUNTRY, ADMINISTRATIVE_DOMAIN, and PRIVATE_DOMAIN parameters. If the MTA name is not associated with an administrative domain, specify the administrative domain by entering a single space.

DEFINE_DEFAULT_GATEWAY_ADDRESS ADMM Subcommand

- Purpose** Defines the X.400 address of the default Mail/VE gateway. Mail/VE uses the address when a user enters an RFC822-formatted address as the recipient of a letter, but does not enter the X.400 address of the Mail/VE gateway to reach that recipient.
- Format** **DEFINE_DEFAULT_GATEWAY_ADDRESS** or **DEFDGA**
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
STATUS=status variable
- Parameters** *ORGANIZATION_UNITS* or *ORGANIZATION_UNIT* or *OU*
 Specifies the list of one to four organization units for the default Mail/VE gateway address. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names must be the same order you specified when you created the organization.
- ORGANIZATION_NAME* or *ON*
 Specifies the name of the organization for the default Mail/VE gateway address. Enter the name as a 1- through 64-character string.
- PRIVATE_DOMAIN* or *PD*
 Specifies the private domain name with which the default Mail/VE gateway address is associated. Enter the domain as a 1- through 16-character string.
- ADMINISTRATIVE_DOMAIN* or *AD*
 Specifies the administrative domain name with which the default Mail/VE gateway address is associated. Enter the domain as a 1- through 16-character string. If the Mail/VE gateway is not associated with an administrative domain, enter the domain as a single blank.
- COUNTRY* or *C*
 Specifies the country code with which the default Mail/VE gateway address is associated. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.

DELETE_DISTRIBUTION_LIST

ADMM Subcommand

Purpose Deletes a distribution list from the Mail/VE directory.

Format **DELETE_DISTRIBUTION_LIST** or **DELDL**
DISTRIBUTION_LIST_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
STATUS=status variable

Parameters **DISTRIBUTION_LIST_NAME** or **DLN**

Specifies the name of the distribution list to be deleted. Enter the name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the distribution list. Enter the name as a 1- through 64-character string.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- The name of the distribution list is not deleted from other distribution lists that contain it. If you or another user attempts to send letters to nonexistent addresses on remote hosts, nondelivery notices are returned. On a local host, such attempts are ignored.
- If you delete a local distribution list, \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER are set to the identity of the NOS/VE user who owned the distribution list.

- Only the distribution list owner and the Mail/VE administrator can delete a distribution list.

A Mail/VE administrator always has administrator privileges for a remote distribution list. To delete a remote distribution list, you must specify its address. Neither \$ADMINISTERED_FAMILY nor \$ADMINISTERED_USER change when you delete a remote distribution list.

- If the address specified by the address attribute parameters does not uniquely identify a distribution list owned by \$ADMINISTERED_USER, the command terminates with an error message.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

Examples The following example deletes a distribution list from the Mail/VE directory.

```
Admm/delete_distribution_list ..  
Admm../distribution_list_name='ad_hoc_committee'
```

DELETE_LETTER ADMM Subcommand

Purpose Deletes a letter from a mailbox.

Format **DELETE_LETTER** or
DELL
LETTER=integer or string
STATUS=status variable

Parameters *LETTER* or *L*

Specifies the letter to be deleted. Enter the letter either by letter number as an integer, or by letter identifier as a string.

The letter number is the number assigned to the letter on the letter list. The letter list is displayed when you enter the LIST_MAIL subcommand. It can change each time you use LIST_MAIL. The letter identifier is permanently assigned to the letter by Mail/VE when it is delivered to the mailbox.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

- Remarks**
- Only the mailbox owner and the Mail/VE administrator can delete letters from a mailbox.
 - Deleting letters does not affect the letter list assembled by LIST_MAIL or the value of \$LETTER.
 - If no letter corresponds to the letter number or letter identifier, you receive an error message.

Examples The following example deletes letter number 1 in the letter list.

```
Admm/delete_letters letter=1
```

This example deletes the letter using its letter identifier (GW14).

```
Admm/delete_letters letter='GW14'
```

DELETE_MAILBOX ADMM Subcommand

Purpose Deletes a mailbox and the contents of the mailbox belonging to the \$ADMINISTERED_USER.

Format **DELETE_MAILBOX** or **DELM**
PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
STATUS=status variable

Parameters **PERSONAL_NAME** or **PN**

Specifies the name of the mailbox to delete. Enter the name as a 1-through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- Only the mailbox owner and the Mail/VE administrator can delete a mailbox.
- If you delete a local mailbox, \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER are set to the identity of the NOS/VE user who owned the mailbox. There is no change to \$ADMINISTERED_USER or \$ADMINISTERED_FAMILY if you delete a remote mailbox.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

DELETE_ORGANIZATION ADMM Subcommand

- Purpose** Deletes an organization entry from the Mail/VE directory.
- Format** **DELETE_ORGANIZATION** or **DELO**
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
TITLE=string
STATUS=status variable
- Parameters** *ORGANIZATION_UNITS* or *ORGANIZATION_UNIT* or *OU*
 Specifies the list of one to four organization units. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names must be the same order you specified when you created the organization.
- ORGANIZATION_NAME* or *ON*
 Specifies the name of the organization to delete. Enter the name as a 1- through 64-character string.
- TITLE* or *T*
 Specifies the message transfer agent (MTA) name assigned to the destination mail service. Enter the name as a 1- through 32-character string.
 The default is the local MTA name returned by the \$MAILVE_INSTALLATION function.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.
- Remarks** Although all parameters for this subcommand are optional, you must specify a value for either the organization units or the organization name parameter to identify the organization entry you want to delete.

DELETE_ROUTE ADMM Subcommand

Purpose Deletes a route entry from the Mail/VE directory.

Format **DELETE_ROUTE** or
DELR
TITLE=string
COUNTRY=string
ADMINISTRATIVE_DOMAIN=string
PRIVATE_DOMAIN=string
STATUS=status variable

Parameters **TITLE** or **T**

Specifies the message transfer agent (MTA) name assigned to the destination mail service. Enter the name as a 1- through 32-character string.

COUNTRY or **C**

Specifies the country code of the destination mail service. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

ADMINISTRATIVE_DOMAIN or **AD**

Specifies the administrative domain of the destination mail service. Enter the domain as a 1- through 16-character string.

PRIVATE_DOMAIN or **PD**

Specifies the private domain of the destination mail service. Enter the domain as a 1- through 16-character string.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

Remarks The **DELETE_ROUTE** subcommand can be used only by users whose **MAILVE_ADMINISTRATION** validation level is set to **ANALYST**. If you are deleting XTF routes, you must have a permit to the XTF configuration file. For additional information, see General Configuration Procedure: Using NOS/VE and Other X.400 Hosts in chapter 2.

DELETE_USER ADMM Subcommand

- Purpose** Deletes one or more user entries from the Mail/VE directory. When a user is deleted, all the user's mailboxes, distribution lists, and letters are also deleted. If the MAILVE_ADMINISTRATION level of the user is set to NONE, the user can no longer access Mail/VE.
- Format** **DELETE_USER** or **DELU**
USER=list of name
FAMILY=name
STATUS=status variable
- Parameters** **USER** or **U**
 Specifies the NOS/VE user name(s) to delete from the Mail/VE directory.
- FAMILY** or **F**
 Specifies the name of the NOS/VE family to which the user or users belong.
- STATUS**
 Special attributes: **BY_NAME**
 Specifies the completion status for this subcommand.
- Remarks**
- Neither \$ADMINISTERED_FAMILY nor \$ADMINISTERED_USER are referenced or changed by this command.
 - To delete users, you must be the users' administrator. For example, a user whose MAILVE_ADMINISTRATION is set to FAMILY can delete only users in the same family.

DISPLAY_DEFAULT_GATEWAY_ADDRESS ADMM Subcommand

Purpose Displays the X.400 address of the default Mail/VE gateway. Mail/VE uses the address when a user enters an RFC822-formatted address as the recipient of a letter but does not enter the X.400 address of the Mail/VE gateway to reach that recipient.

Format **DISPLAY_DEFAULT_GATEWAY_ADDRESS** or **DISDGA**
OUTPUT=file
STATUS=status variable

Parameters *OUTPUT* or *O*

Special attributes: **BY_NAME**

Specifies the file to which the display is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

Examples The following example displays the X.400 address of the default Mail/VE gateway.

```
Admm/disdga
Organization units: MGARH
Organization name:
Private domain: ARH
Administrative domain: ATTMAIL
Country: US
```

DISPLAY_DISTRIBUTION_LIST ADMM Subcommand

Purpose Displays information about one or more distribution lists owned by a specific user.

Format **DISPLAY_DISTRIBUTION_LIST** or **DISDL**
DISTRIBUTION_LIST_NAME=keyword or record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
DISPLAY_OPTIONS=keyword
OUTPUT=file
STATUS=status variable

Parameters **DISTRIBUTION_LIST_NAME** or **DLN**

Specifies the name of the distribution list to display. Enter the keyword **ALL** to display all distribution lists of the default user. Otherwise, enter the distribution list name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or **ORGANIZATION_UNIT** or **OU**

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or **ON**

Specifies the name of the organization associated with the distribution list. Enter the name as a 1- through 64-character string.

DISPLAY_OPTIONS or *DISPLAY_OPTION* or *DO*

Special attributes: BY_NAME

Specifies the information to be displayed. Enter one of the following keywords.

BRIEF or **B**

Displays only local address attributes of the distribution list, the distribution list type, and the expand attribute.

CONTENTS or **C**

Displays the address list.

FULL or **F**

Displays all distribution list attributes.

PERMITS or **PERMIT** or **P**

Displays only the type of permit. For group distribution lists, displays the list of distribution lists with **READ** or **USE** privilege.

The default is the keyword **BRIEF**.

OUTPUT or *O*

Special attributes: BY_NAME

Specifies the file to which the display is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- If you omit the address parameters, you are prompted for the **DISTRIBUTION_LIST_NAME** parameter.
- If you display a local distribution list, **\$ADMINISTERED_FAMILY** and **\$ADMINISTERED_USER** are set to the identity of the **NOS/VE** user who owns the distribution list.
- A Mail/VE administrator always has administrator privileges for a remote distribution list. To display a remote distribution list, you must specify its address. Neither **\$ADMINISTERED_FAMILY** nor **\$ADMINISTERED_USER** changes when you display a remote distribution list.

Examples This example asks for a brief display of a distribution list.

```
Admm/display_distribution_list ..  
Admm../distribution_list_name='project_members'
```

The following example requests a display of all the addresses in the distribution list.

```
Admm/display_distribution_list ..  
Admm../distribution_list_name='project_members'..  
Admm../display_options=contents
```

DISPLAY_MAILBOX ADMM Subcommand

Purpose Displays information about one or more mailboxes owned by \$ADMINISTERED_USER or a single mailbox specified by the PERSONAL_NAME parameter.

Format **DISPLAY_MAILBOX** or **DISM**
PERSONAL_NAME=keyword or record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
DISPLAY_OPTIONS=keyword
OUTPUT=file
STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies the name of the mailbox to display. Enter the keyword ALL to display all mailboxes of the default user. Otherwise, enter the mailbox name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

DISPLAY_OPTIONS or *DISPLAY_OPTION* or *DO*

Special attributes: BY_NAME

Specifies the information to be displayed. Enter one of the following keywords.

BRIEF or **B**

Displays only local address attributes.

FULL or **F**

Displays all mailbox attributes.

PERMITS or **PERMIT** or **P**

Displays only the type of permit. For group mailboxes, display the list of mailboxes with read or write privilege.

The default is the keyword **BRIEF**.

OUTPUT or *O*

Special attributes: BY_NAME

Specifies the file to which the display is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- If you display a local mailbox by specifying the **PERSONAL_NAME** parameter, **\$ADMINISTERED_FAMILY** and **\$ADMINISTERED_USER** are set to the identity of the **NOS/VE** user who owns the mailbox.
- A Mail/VE administrator always has administrator privileges for a remote mailbox. To display a remote mailbox, you must specify its address. Neither **\$ADMINISTERED_FAMILY** nor **\$ADMINISTERED_USER** change when you display a remote mailbox.

DISPLAY_ORGANIZATIONS ADMM Subcommand

Purpose Displays one or more organizations registered in the Mail/VE address directory.

Format **DISPLAY_ORGANIZATIONS** or
DISPLAY_ORGANIZATION or
DISO
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
DISPLAY_OPTIONS=keyword
FORMAT=keyword
OUTPUT=file
STATUS=status variable

Parameters **ORGANIZATION_UNITS** or **ORGANIZATION_UNIT** or **OU**
Specifies the list of one to four organization units to display. Enter each unit as a 1- through 32-character string. The order in which you enter the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or **ON**

Specifies the name of the organization to display. Enter the name as a 1-through 64-character string.

DISPLAY_OPTIONS or **DISPLAY_OPTION** or **DO**

Special attributes: **BY_NAME**

Specifies the information to display. Enter one of the following keywords.

ALL

Displays all organizations registered in the directory.

LOCAL or **L**

Displays only organizations that reside on this host.

NON_LOCAL or **NL**

Displays only organizations that reside on remote hosts.

The default is the keyword **LOCAL**.

FORMAT or **F**

Special attributes: **BY_NAME**

Specifies the format for the display. Enter one of the following keywords.

DEFINITION or **D**

Displays the organization information in a labeled format.

SOURCE or **S**

Displays the organization information as a list of **CREATE_ORGANIZATION** subcommands.

The default is the keyword **DEFINITION**.

OUTPUT or *O*

Special attributes: BY_NAME

Specifies the file to which output is written.

The default is the output file specified on the ADMINISTER_MAIL command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks If a user omits all parameters (other than OUTPUT), the display lists all local organizations.

DISPLAY_ROUTES ADMM Subcommand

Purpose Displays the contents of the route directory.

Format **DISPLAY_ROUTES** or
DISPLAY_ROUTE or
DISR
TITLE=string
COUNTRY=string
ADMINISTRATIVE_DOMAIN=string
PRIVATE_DOMAIN=string
FORMAT=keyword
OUTPUT=file
STATUS=status variable

Parameters *TITLE* or *T*

Specifies the message transfer agent (MTA) name of route entries to display. Enter the name as a 1- through 32-character string.

COUNTRY or *C*

Specifies the country code of route entries to display. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

ADMINISTRATIVE_DOMAIN or *AD*

Specifies the administrative domain of the route entries to display. Enter the domain as a 1- through 16-character string.

PRIVATE_DOMAIN or *PD*

Specifies the private domain of the route entries to display. Enter the domain as a 1- through 16-character string.

FORMAT or *F*

Special attributes: *BY_NAME*

Specifies the format for the display. Enter one of the following keywords.

DEFINITION or *D*

Displays the route information in a labeled format.

SOURCE or *S*

Displays the route information as a list of *CREATE_ROUTE* subcommands.

The default is the keyword *DEFINITION*.

OUTPUT or *O*

Special attributes: BY_NAME

Specifies the file to which output is written.

The default is the output file specified on the ADMINISTER_MAIL command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks If a user omits all parameters (other than OUTPUT), the display lists all routes.

DISPLAY_USERS ADMM Subcommand

Purpose Displays the contents of the user directory.

Format **DISPLAY_USERS** or
DISPLAY_USER or
DISU
USER=keyword or list of name
FAMILY=name
DISPLAY_OPTIONS=keyword or list of keyword
OUTPUT=file
STATUS=status variable

Parameters *USER* or *U*

Specifies the NOS/VE user names for which information is displayed. Enter a list of names or the keyword **ALL** to display information on all users.

The default is the keyword **ALL**.

FAMILY or *F*

Specifies the name of the NOS/VE family to which the users belong.

The default is the value returned by **\$ADMINISTERED_FAMILY**.

DISPLAY_OPTIONS or *DISPLAY_OPTION* or *DO*

Special attributes: **BY_NAME**

Specifies the amount of information to display. Enter the keyword **ALL** to display all information about the specified Mail/VE user or enter one or more of the following keywords:

DEFAULT_MAILBOX or **DM**

Displays the default mailbox of the specified user.

NAME or **N**

Displays the the user and family names of the specified users.

OWNED_ENTITIES or **OE**

Displays the mailboxes and distribution lists owned by the specified user.

STATISTICS or **S**

Displays the mail usage statistics for the specified user.

The default is the keyword **ALL**.

OUTPUT or *O*

Special attributes: **BY_NAME**

Specifies the file to which output is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

Remarks If you specify the DISPLAY_USER subcommand, \$ADMINISTERED_FAMILY is set to the name of the NOS/VE family from which user information is being displayed, and \$ADMINISTERED_USER is set to the NOS/VE user name of the last user for which a display was produced.

END_ADMINISTER_MAIL ADMM Subcommand

Purpose Stops an ADMINISTER_MAIL utility session.

Format END_ADMINISTER_MAIL or
ENDAM or
END or
QUIT or
QUI
STATUS=status variable

Parameters STATUS
Special attributes: VAR, BY_NAME
Specifies the completion status for this subcommand.

LIST_MAIL ADMM Subcommand

Purpose Displays the number of letters in one or more mailboxes owned by the \$ADMINISTERED_USER, or a numbered list of letters for one mailbox identified by address.

Format LIST_MAIL or
LISM or
LIST
PERSONAL_NAME=keyword or record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
MAIL_OPTIONS=keyword or list of keyword
DISPLAY_OPTIONS=keyword
OUTPUT=file
STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies the name of the mailbox for which you want to display a letter list. Enter the keyword OWNED to display the mailboxes owned by the \$ADMINISTERED_USER. Otherwise, enter the mailbox name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

The default is all owned mailboxes for the \$ADMINISTERED_USER.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

MAIL_OPTIONS or *MAIL_OPTION* or *MO*

Specifies the type of letters to be included in the letter list. You can enter ALL or one or more keywords options for each type.

If you select more than one option for a type, all of your selections apply. If you select all of the options for any type, the effect is the same as if you had selected none of the options for that type.

Letter types:

If you do not select any letter type options, all letters are listed.

LETTER or L

Includes letters.

RECEIPT or R

Includes messages generated upon receipt or nonreceipt of a letter.

Read Status types:

These options apply only to owned mailboxes.

SEEN or S

Includes letters that were previously displayed using READ_LETTER.

UNSEEN or US

Includes letters that have not been displayed.

Sensitivity options:

PRIVATE or PR

Includes letters that the sender classified as private.

PERSONAL or PE

Includes letters that the sender classified as personal.

CONFIDENTIAL or CO

Includes letters that the sender classified as confidential.

Receipt Certification types:

CERTIFIED or C

Includes letters that the sender classified as certified.

UNCERTIFIED or UC

Includes letters that are not classified as uncertified.

Importance types:

LOW_IMPORTANCE or LI

Includes letters that the sender classified low importance.

NORMAL_IMPORTANCE or NI

Includes letters that the sender classified normal importance.

HIGH_IMPORTANCE or HI

Includes letters that the sender classified high importance.

Delivery Priority types:

NORMAL_PRIORITY or **NP**

Includes letters that the sender classified for normal delivery.

URGENT_PRIORITY or **UP**

Includes letters that the sender classified for urgent delivery.

NON_URGENT_PRIORITY or **NUP**

Includes letters that the sender classified for nonurgent delivery.

Other types:

REPLY_REQUESTED or **RR**

Includes letters for which the sender requested a reply.

AUTOFORWARDED or **A**

Includes letters that were autoforwarded to the mailbox for which the letter list is being produced.

The default is the keyword **UNSEEN** if you own the mailbox. Otherwise, the default is the keyword **ALL**.

DISPLAY_OPTIONS or **DISPLAY_OPTION** or **DO**

Special attributes: **BY_NAME**

Specifies the information that appears in the letter list display. Enter one of the following keywords:

BRIEF or **B**

Displays a one-line description of each letter that specifies the date/time received, the sender's mailbox name (truncated when necessary), the length in bytes, and a flag if the letter has high importance or a reply is requested.

FULL or **F**

Displays a multiline description of each letter that specifies the letter identifier, the date/time received, the sender's mailbox name and organization, the subject, the length of the letter in bytes, and a flag if the letter has high importance or a reply is requested.

The default is **BRIEF**.

OUTPUT or **O**

Special attributes: **BY_NAME**

Specifies the file to which the display is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

- Remarks**
- If the mailbox specified does not contain any mail that meets the mail option criteria, the letter list is empty.
 - If a mailbox address is specified, \$ADMINISTERED_USER changes to the owner of that mailbox.

Examples The following example checks the \$ADMINISTERED_USER default mailbox for unseen mail.

```
Admm/list_mail $default_mailbox.personal_name
Hanson, Tyler contains the following letters:
1. 1989-07-31.11:12:45 Johnson, Gar NOS/VE interfa 474
```

The following example displays a brief listing showing the receipts in a mailbox.

```
Admm/list_mail 'Tyler Hanson' ..
Admm ../mail_options=receipt ..
Admm ../display_option=brief
Mailbox 'Tyler Hanson' contains 2 letters.
06/08/88 15:31:Barnes, Larry:RECEIPT
06/08/88 10:21:Lang, Emily:RECEIPT
```

LOOKUP_ADDRESS ADMM Subcommand

Purpose Displays information about one or more addresses that meet the search criteria specified by the address parameters (*PERSONAL_NAME*, *ORGANIZATION_UNITS*, and *ORGANIZATION_NAME*).

Format *LOOKUP_ADDRESS* or *LOOA*
PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
ADDRESS_OPTIONS=keyword or list of keyword
DISPLAY_OPTIONS=keyword or list of keyword
OUTPUT=file
STATUS=status variable

Parameters *PERSONAL_NAME* or *DISTRIBUTION_LIST_NAME* or *PN* or *DLN*
 Specifies the name of the mailbox or distribution list. Enter the name as a 1- through 64-character string or as a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox or distribution list. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox or distribution list. Enter the name as a 1- through 64-character string.

ADDRESS_OPTIONS or *ADDRESS_OPTION* or *AO*

Special attributes: *BY_NAME*

Specifies keywords to control the search operation. Enter the keyword *ALL* to display all types of addresses (distribution lists and group, public, and private mailboxes) or specify one or more of the following keywords:

DISTRIBUTION_LIST or *DL*

Displays only distribution lists.

GROUP or *G*

Displays only group mailboxes and distribution lists.

MAILBOX or *M*

Displays only mailboxes.

PRIVATE or *PR*

Displays only private mailboxes and distribution lists.

PUBLIC or *PU*

Displays only public mailboxes and distribution lists.

The default is the keyword *ALL*.

DISPLAY_OPTIONS or *DISPLAY_OPTION* or *DO*

Special attributes: *BY_NAME*

Specifies the amount of information to display. Enter the keyword *ALL* to display all information about the address or specify one or more of the following keywords:

ALIAS_NAME or *AN*

Displays the alias name or names of the mailbox or distribution list, if any, for each address.

DESCRIPTION or *D*

Displays the description, if any, for each address.

ORGANIZATION_NAME or *ON*

Displays the organization name, if any, for each address.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Displays the organization units, if any, for each address.

PERSONAL_NAME or *PN*

Displays the primary mailbox or distribution list name for each address.

TELEPHONE_NUMBER or *TN*

Displays the telephone number, if any, for each address.

The default is the keyword *PERSONAL_NAME*.

OUTPUT or *O*

Special attributes: BY_NAME

Specifies the file to which output is written.

The default is the output file specified on the ADMINISTER_MAIL command.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- At least one of the addressing parameters (PERSONAL_NAME, ORGANIZATION_UNITS, and ORGANIZATION_NAME) must be specified. For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.
- The wildcard character * can indicate parts of the address not specified. For information on using the wildcard character in address searches, see Mail/VE Version 2 Usage manual.
- The search is not case-sensitive. That is, searching for Ziggy finds ziggy, ZIGGY, Ziggy, and so on.
- A LOOKUP_ADDRESS search can handle up to 500 addresses at a time. If the search criteria are so broad that the search identifies more than 500 addresses, the search terminates.
- You can change the retention period to any value. The validation limits of the \$ADMINISTERED_USER are not enforced.

RETAIN_LETTER ADMM Subcommand

Purpose Changes the length of time before a letter in the current letter list is deleted from the mail system. The length of time is called the retention period.

Format **RETAIN_LETTER** or **RETL**
LETTER=keyword or integer or string
DAYS=keyword or integer
STATUS=status variable

Parameters *LETTER* or *L*

Specifies the letter for which the retention period is to be changed. Identify the letter by letter identifier, letter number, or keyword.

The letter number is the number assigned to the letter on the letter list generated when you enter the LIST_MAIL subcommand. This number is subject to change each time you use LIST_MAIL. The letter identifier is permanently assigned to the letter by Mail/VE when it is delivered to the mailbox. Enter one or more of the following keywords:

CURRENT or **C**

Selects the current letter from the letter list. (The current letter is the letter most recently displayed.)

FIRST or **F**

Selects the first letter in the letter list.

NEXT or **N**

Selects the letter following the current letter in the letter list.

LAST or **L**

Selects the last letter in the letter list.

PREVIOUS or **P**

Selects the letter preceding the current letter in the letter list.

The default is the keyword **CURRENT**.

DAYS or **DAY** or **D**

Special attributes: **BY_NAME**

Specifies the retention period as the number of days (1 to 365) from today to retain the letter in the mailbox. If the keyword **MAXIMUM** is specified, the retention period is the maximum retention period supported by Mail/VE (approximately 99 years).

The default is **MAXIMUM**.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

- Remarks**
- If the letter you specify on the LETTER parameter is not in the letter list or has been deleted, Mail/VE displays an error message.
 - The \$LETTER function always returns the value of the letter last displayed (called the current letter).
 - The NOS/VE system administrator sets retention period limits for each user. The Mail/VE administrator uses the RETAIN_LETTER subcommand to change the retention period to any value. The validation limits installed for the \$ADMINISTERED_USER are not enforced.

Examples The following example changes the retention period of letter number 7 in the current letter list to 14 days from today:

```
Admm/retain_letter letter=7 days=14
```

This example changes the retention period of the current letter in the letter list to 10 days from today:

```
Admm/retain_letter days=10
```

This example increases the retention period of the letter with letter identifier JA42 to the maximum number of days the user is allowed to retain letters:

```
Admm/retain_letter letter='ja42'
```

SELECT_LETTER ADMM Subcommand

Purpose Specifies the value returned when you use the \$LETTER function.

Format **SELECT_LETTER** or
SELL
LETTER=keyword or integer or string
STATUS=status variable

Parameters *LETTER* or *L*

Specifies the letter to be selected and makes it the current letter. The value returned when you use the \$LETTER function is set to the letter identifier of the letter selected. Enter a letter number, letter identifier, or keyword.

The letter number is the number assigned to the letter on the letter list. It can change each time you enter the LIST_MAIL subcommand. The letter identifier is permanently assigned to the letter by Mail/VE when it is delivered to the mailbox.

The following keyword options are available:

CURRENT or **C**

Selects the current letter from the letter list. (The current letter is the letter most recently displayed.)

FIRST or **F**

Selects the first letter in the letter list.

NEXT or **N**

Selects the letter following the current letter in the letter list.

LAST or **L**

Selects the last letter in the letter list.

PREVIOUS or **P**

Selects the letter preceding the current letter in the letter list.

The default is NEXT.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- If no letter list exists or the specified letter is not included in the letter list, Mail/VE displays an error message.
- If no letter is selected, an empty string is returned when you use the \$LETTER function.

SELECT_USER ADMM Subcommand

- Purpose** Changes the values returned by the \$ADMINISTERED_FAMILY and \$ADMINISTERED_USER functions.
- Format** **SELECT_USER** or **SELU**
 USER = name
 FAMILY = name
 STATUS = status variable
- Parameters** **USER** or **U**
 Specifies the NOS/VE user name to assign to \$ADMINISTERED_USER.

 FAMILY or **F**
 Specifies the NOS/VE family name to assign to \$ADMINISTERED_FAMILY.

 STATUS
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.
- Remarks** Only users whose MAILVE_ADMINISTRATION validation level is set to ANALYST, SYSTEM, or FAMILY can assign a value to \$ADMINISTERED_FAMILY. Users whose MAILVE_ADMINISTRATION level is set to FAMILY can assign only the name of their family on the FAMILY parameter.

Mailbox and Distribution List Subutility Subcommands

To use the subcommands described in this section, you must be in one of the following subutilities: CHANGE_DISTRIBUTION_LIST, CHANGE_MAILBOX, CREATE_DISTRIBUTION_LIST, or CREATE_MAILBOX. The subcommands with which you initiate these subutilities have the same names as the utilities and are described earlier in this chapter. The following table summarizes the subutilities and their applicable subcommands.

Subutility/Subcommand	Prompt	Applicable Subcommands
CHANGE_DISTRIBUTION_LIST	Chadl/	ADD_ADDRESS ADD_PERMISSION DELETE_ADDRESS DELETE_PERMISSION DISPLAY_ADDRESS_LIST DISPLAY_ATTRIBUTES DISPLAY_PERMISSIONS END_CHANGE_DISTRIBUTION_LIST ¹ SET_ATTRIBUTES
CHANGE_MAILBOX	Cham/	ADD_PERMISSION DELETE_PERMISSION DISPLAY_ATTRIBUTES DISPLAY_PERMISSIONS END_CHANGE_MAILBOX ¹ SET_ATTRIBUTES
CREATE_DISTRIBUTION_LIST	Credl/	ADD_ADDRESS ADD_PERMISSION DELETE_ADDRESS DELETE_PERMISSION DISPLAY_ADDRESS_LIST DISPLAY_ATTRIBUTES DISPLAY_PERMISSIONS END_CREATE_DISTRIBUTION_LIST ¹ SET_ATTRIBUTES

1. These subcommands stop the applicable subutility.

Subutility/Subcommand	Prompt	Applicable Subcommands
CREATE_MAILBOX	Crem/	ADD_PERMISSION DELETE_PERMISSION DISPLAY_ATTRIBUTES DISPLAY_PERMISSIONS END_CREATE_MAILBOX ² SET_ATTRIBUTES

The subcommands are listed in alphabetical order. The line under the subcommand name lists the ADMINISTER_MAIL subcommands that call the subutilities in which you can use that subcommand. For example:

ADD_ADDRESS
CHADL and CREDL Subcommands

means that you can use the ADD_ADDRESS subcommand while in the CHADL and CREDL subutilities.

2. These subcommands stop the applicable subutility.

ADD_ADDRESS CHADL and CREDL Subcommands

Purpose Adds an address to a distribution list.

Format **ADD_ADDRESS** or
ADDA

PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
UA_IDENTIFIER=string
TERMINAL_IDENTIFIER=string
X121_ADDRESS=string
DOMAIN_DEFINED_ATTRIBUTES=list of record
POSTAL_ADDRESS=list of string
POSTAL_ADDRESS_COUNTRY_NAME=string
POSTAL_ADDRESS_CODE=string
STATUS=status variable

Parameters *PERSONAL_NAME* or *DISTRIBUTION_LIST* or *PN* or *DLN*

Specifies the name of the mailbox or distribution list to add to the distribution list. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox or distribution list. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox or distribution list. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or *PD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the private domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: BY_NAME, ADVANCED

Specifies the administrative domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox or distribution list. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

UA_IDENTIFIER or *UI*

Special attributes: BY_NAME, ADVANCED

Specifies the user agent (UA) identifier of the mailbox or distribution list. The UA identifier must be unique within the specified domain. Enter a string of 1 through 32 characters.

TERMINAL_IDENTIFIER or *TI*

Special attributes: BY_NAME, ADVANCED

Specifies the terminal identifier of a telematic terminal on which the mail is read. Enter a string of 1 through 24 characters.

X121_ADDRESS or *XA*

Special attributes: BY_NAME, ADVANCED

Specifies the address specified in accordance with recommendation X.121. Enter a string of 1 through 15 characters composed of the digits 0 through 9.

DOMAIN_DEFINED_ATTRIBUTES or *DDA*

Special attributes: BY_NAME, ADVANCED

Specifies a list of one through four non-X.400 attributes of the address. Enter each attribute as a record of the following format:

```
record
  name: string 1..8
  value: string 1..128
recend
```

POSTAL_ADDRESS or *PA*

Special attributes: BY_NAME, ADVANCED

Specifies information that describes the physical postal delivery system of the address. Enter the information with a list of 2 through 6 strings of 1 through 30 characters each.

POSTAL_ADDRESS_COUNTRY_NAME or *PACN*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address country name of the address. Enter a string of 1 through 30 characters.

POSTAL_ADDRESS_CODE or *PAC*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the postal address code of the address. Enter a string of 1 through 128 characters.

STATUS

Special attributes: *VAR*, *BY_NAME*

Specifies the completion status for this subcommand.

Remarks

- If you add a BITNet or Internet address to a distribution list, use the *PERSONAL_NAME* parameter with a commercial at sign (@):

```
personal_name='jdsmith@xyz.abc.com'
```

The commercial at sign distinguishes a BITNet or Internet address from an X.400 (Mail/VE) address.

- Addresses are added to a distribution list exactly as they are entered. No verification or validation of any form occurs.
- You cannot use the wildcard character (*) in address parameters.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

Examples

The following example adds two addresses to an existing distribution list.

```
Admm/change_distribution_list ..  
Admm../'Technical_Review_Board'  
Chadl/add_address 'Ellen Gray'  
Chadl/add_address 'Malcolm Boswell'  
Chadl/end_change_distribution_list  
Admm/
```

ADD_PERMISSION CHADL, CHAM, CREDL, and CREM Subcommands

Purpose Adds an address to the list of addresses permitted to use the group mailbox or distribution list.

Format **ADD_PERMISSION** or **ADDP**
PERSONAL_NAME = record or string
ORGANIZATION_UNITS = list of string
ORGANIZATION_NAME = string
PRIVATE_DOMAIN = string
ADMINISTRATIVE_DOMAIN = string
COUNTRY = string
PERMISSIONS = keyword or list of keyword
STATUS = status variable

Parameters *PERSONAL_NAME* or *PN*
 Specifies the name of the mailbox permitted to use this group mailbox or group distribution list. Enter the name as a 1- through 256-character string or as a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or *PD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the private domain of the mailbox. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: *BY_NAME*, *ADVANCED*

Specifies the administrative domain of the mailbox. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

PERMISSIONS or *P*

Special attributes: BY_NAME

Specifies the access permitted to the mailbox. Enter the keyword ALL or specify one or more of the following keywords. Specifying ALL establishes READ and WRITE permission for mailboxes and READ and USE permission for distribution lists.

READ or R

For mailboxes, letters can be read; for distribution lists, the list can be displayed.

WRITE or W

For mailboxes only. Letters can be sent to the mailbox.

USE or U

For distribution lists only. Distribution lists can be included in a recipient list. However, without READ access, users cannot expand the distribution list.

The default is the keyword ALL.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

- Addresses are added to a distribution list exactly as they are entered. No verification or validation of any form occurs.
- The wildcard character (*) can indicate parts of the address not specified.
- For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

DELETE _ADDRESS CHADL and CREDL Subcommands

Purpose Adds an address to a distribution list.

Format **DELETE _ADDRESS** or **DELA**
PERSONAL _NAME = record or string
ORGANIZATION _UNITS = list of string
ORGANIZATION _NAME = string
PRIVATE _DOMAIN = string
ADMINISTRATIVE _DOMAIN = string
COUNTRY = string
UA _IDENTIFIER = string
TERMINAL _IDENTIFIER = string
X121 _ADDRESS = string
DOMAIN _DEFINED _ATTRIBUTES = list of record
POSTAL _ADDRESS = list of string
POSTAL _ADDRESS _COUNTRY _NAME = string
POSTAL _ADDRESS _CODE = string
STATUS = status variable

Parameters *PERSONAL _NAME* or *DISTRIBUTION _LIST* or *PN* or *DLN*

Specifies the name of the mailbox or distribution list to add to the distribution list. Enter the name as a 1- through 256-character string or a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION _UNITS or *ORGANIZATION _UNIT* or *OU*

Specifies the list of one to four organization units associated with the mailbox or distribution list. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION _NAME or *ON*

Specifies the name of the organization associated with the mailbox or distribution list. Enter the name as a 1- through 64-character string.

PRIVATE _DOMAIN or *PD*

Special attributes: *BY _NAME*, *ADVANCED*

Specifies the private domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or *AD*

Special attributes: BY_NAME, ADVANCED

Specifies the administrative domain of the mailbox or distribution list. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox or distribution list. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

UA_IDENTIFIER or *UI*

Special attributes: BY_NAME, ADVANCED

Specifies the user agent (UA) identifier of the mailbox or distribution list. The UA identifier must be unique within the specified domain. Enter a string of 1 through 32 characters.

TERMINAL_IDENTIFIER or *TI*

Special attributes: BY_NAME, ADVANCED

Specifies the terminal identifier of a telematic terminal on which the mail is read. Enter a string of 1 through 24 characters.

X121_ADDRESS or *XA*

Special attributes: BY_NAME, ADVANCED

Specifies the address specified in accordance with recommendation X.121. Enter a string of 1 through 15 characters composed of the digits 0 through 9.

DOMAIN_DEFINED_ATTRIBUTES or *DDA*

Special attributes: BY_NAME, ADVANCED

Specifies a list of one through four non-X.400 attributes of the address. Enter each attribute as a record of the following format:

```
record
  name: string 1..8
  value: string 1..128
recend
```

POSTAL_ADDRESS or *PA*

Special attributes: BY_NAME, ADVANCED

Specifies information that describes the physical postal delivery system of the address. Enter the information with a list of 2 through 6 strings of 1 through 30 characters each.

POSTAL_ADDRESS_COUNTRY_NAME or *PACN*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address country name of the address. Enter a string of 1 through 30 characters.

POSTAL_ADDRESS_CODE or *PAC*

Special attributes: BY_NAME, ADVANCED

Specifies the postal address code of the address. Enter a string of 1 through 128 characters.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

Examples The following example deletes an address from an existing distribution list.

```
Admm/change_distribution list 'Photo_Club_News'
Chad/delete_address 'Mary Parker' ..
Chad../organization_name='Public Relations'
Chad/end_distribution_list
Admm/
```

DELETE_PERMISSION CHADL, CHAM, CREDL, and CREM Subcommands

Purpose Deletes a mailbox address from the list of mailboxes permitted to use the distribution list or mailbox you are changing or creating. This subcommand applies only to group mailboxes and distribution lists.

Format **DELETE_PERMISSION** or **DELP**
PERSONAL_NAME=record or string
ORGANIZATION_UNITS=list of string
ORGANIZATION_NAME=string
PRIVATE_DOMAIN=string
ADMINISTRATIVE_DOMAIN=string
COUNTRY=string
STATUS=status variable

Parameters **PERSONAL_NAME** or **PN**

Specifies the name of the mailbox permitted to use this group mailbox or group distribution list. Enter the name as a 1- through 256-character string or as a record of the following format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or **ORGANIZATION_UNIT** or **OU**

Specifies the list of one to four organization units associated with the mailbox. Enter each unit as a 1- through 32-character string. The order in which you specify the unit names is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or **ON**

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

PRIVATE_DOMAIN or **PD**

Special attributes: **BY_NAME**, **ADVANCED**

Specifies the private domain of the mailbox. Enter the domain as a 1- through 16-character string.

ADMINISTRATIVE_DOMAIN or **AD**

Special attributes: **BY_NAME**, **ADVANCED**

Specifies the administrative domain of the mailbox. Enter the domain as a 1- through 16-character string.

COUNTRY or *C*

Special attributes: BY_NAME, ADVANCED

Specifies the country code of the mailbox. Enter the code as a 1- through 3-character string. See appendix C for the list of countries and their associated codes.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

- Remarks**
- The wildcard character (*) can indicate parts of the address not specified.
 - For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.
- Examples**
- The following example deletes two mailbox addresses from the list of permissions for a group mailbox.

```
Admm/change_mailbox ..
Admm../'Demo_Log'
Chadl/delete_permission 'Jack Holland'
Chadl/delete_permission 'Laura Phillips'
Chadl/end_change_mailbox
Admm/
```

DISPLAY_ADDRESS_LIST CHADL and CREDL Subcommands

Purpose Displays the addresses that make up a distribution list.

Format **DISPLAY_ADDRESS_LIST** or
DISAL
DISPLAY_OPTIONS=keyword
OUTPUT=file
STATUS=status variable

Parameters *DISPLAY_OPTIONS* or *DISPLAY_OPTION* or *DO*

Special attributes: *BY_NAME*

Specifies the information to be displayed. Enter one of the following keywords.

BRIEF or **B**

Displays only local address attributes.

FULL or **F**

Displays all address attributes.

The default is the keyword **BRIEF**.

OUTPUT or **O**

Special attributes: *BY_NAME*

Specifies the file to which output is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: *VAR*, *BY_NAME*

Specifies the completion status for this subcommand.

- Remarks**
- If there are no addresses in the distribution list, the command terminates and the system displays an informative message.
 - For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

DISPLAY_ATTRIBUTES CHADL, CHAM, CREDL, and CREM Subcommands

- Purpose** Displays the attributes of a mailbox or distribution list.
- Format** **DISPLAY_ATTRIBUTES** or
DISPLAY_ATTRIBUTE or
DISA
OUTPUT=file
STATUS=status variable
- Parameters** *OUTPUT* or *O*
Special attributes: **BY_NAME**
Specifies the file to which output is written.
The default is the output file specified on the **ADMINISTER_MAIL** command.
- STATUS*
Special attributes: **VAR, BY_NAME**
Specifies the completion status for this subcommand.

DISPLAY_PERMISSIONS CHADL, CHAM, CREDL, and CREM Subcommands

Purpose Displays the list of permitted mailboxes for a group mailbox or distribution list.

Format **DISPLAY_PERMISSIONS** or
DISPLAY_PERMISSION or
DISP
DISPLAY_OPTIONS = keyword
OUTPUT = file
STATUS = status variable

Parameters *DISPLAY_OPTIONS* or *DISPLAY_OPTION* or *DO*
Specifies the information to be displayed. Enter one of the following keywords.

BRIEF or **B**

Displays the address attributes of each permission entry.

FULL or **F**

Displays all of the address attributes and permissions granted.

The default is the keyword **BRIEF**.

OUTPUT or *O*

Special attributes: **BY_NAME**

Specifies the file to which output is written.

The default is the output file specified on the **ADMINISTER_MAIL** command.

STATUS

Special attributes: **VAR**, **BY_NAME**

Specifies the completion status for this subcommand.

END_CHANGE_DISTRIBUTION_LIST CHADL Subcommand

- Purpose** Stops a CHANGE_DISTRIBUTION_LIST subutility session.
- Format** END_CHANGE_DISTRIBUTION_LIST or
 ENDCDL or
 END or
 QUIT or
 QUI
 SAVE=boolean
 STATUS=status variable
- Parameters** SAVE or S
 Specifies whether or not the changes made during this subutility session should be saved.
- FALSE
 Changes made during this subutility session are discarded.
- TRUE
 Changes made during this subutility session are saved.
 The default is TRUE.
- STATUS*
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.

END_CHANGE_MAILBOX CHAM Subcommand

Purpose Stops a CHANGE_MAILBOX subutility session.

Format END_CHANGE_MAILBOX or
ENDCM or
END or
QUIT or
QUI
SAVE = boolean
STATUS = status variable

Parameters *SAVE* or *S*
Specifies whether or not the changes made during this subutility session should be saved.

FALSE

Changes made during this subutility session are discarded.

TRUE

Changes made during this subutility session are saved.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

END_CREATE_DISTRIBUTION_LIST CREDL Subcommand

- Purpose** Stops a CREATE_DISTRIBUTION_LIST subutility session.
- Format** END_CREATE_DISTRIBUTION_LIST or
 ENDCDL or
 END or
 QUIT or
 QUI
 SAVE = boolean
 STATUS = status variable
- Parameters** *SAVE* or *S*
 Specifies whether or not the distribution list created during this subutility session is saved.
- FALSE**
 The distribution list created during this subutility session is discarded.
- TRUE**
 The distribution list created during this subutility session is saved.
 The default is TRUE.
- STATUS**
 Special attributes: VAR, BY_NAME
 Specifies the completion status for this subcommand.

END_CREATE_MAILBOX CREM Subcommand

Purpose Stops a CREATE_MAILBOX subutility session.

Format END_CREATE_MAILBOX or
ENDCM or
END or
QUIT or
QUI
SAVE=boolean
STATUS=status variable

Parameters SAVE or S

Specifies whether or not the mailbox created during this subutility session is saved.

FALSE

The mailbox created during this subutility session is discarded.

TRUE

The mailbox created during this subutility session is saved.

The default is TRUE.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

SET_ATTRIBUTES CHADL and CREDL Subcommands

Purpose Defines or changes distribution list attributes.

Format SET_ATTRIBUTES or
SET_ATTRIBUTE or
SETA

DISTRIBUTION_LIST_NAME = list of keyword or record or string
ORGANIZATION_UNITS = list of keyword or string
ORGANIZATION_NAME = string
DESCRIPTION = string
TELEPHONE_NUMBER = string
EXPAND = boolean
PERMIT_TYPE = keyword
TITLE = string
STATUS = status variable

Parameters *DISTRIBUTION_LIST_NAME* or *DLN*

Specifies a list of one through three elements to describe the distribution list. The first element of the list is always used in displays. The second and third elements are aliases. Each element can be the keyword NO_CHANGE, or a 1- through 64-character string, or a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is specified as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Special attributes: BY_NAME

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as the keyword NO_CHANGE or a 1- through 32-character string. The order in which you specify the units is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Special attributes: BY_NAME

Specifies the name of the organization associated with the distribution list. Enter the name as a 1- through 64-character string.

DESCRIPTION or *D*

Special attributes: BY_NAME

Specifies a 1- through 64-character string that describes the distribution list.

TELEPHONE_NUMBER or *TN*

Special attributes: *BY_NAME*

Specifies the telephone number of the distribution list owner. Enter a string of 1 through 32 characters.

EXPAND or *E*

Special attributes: *BY_NAME*

Specifies whether or not the distribution list will be expanded when used. The *EXPAND* parameter applies only to distribution lists residing on the same host as the sender. Otherwise, no expansion can occur regardless of the value of the *EXPAND* attribute.

FALSE

Distribution list is not expanded. The distribution list name is used in the letter header.

TRUE

Distribution list is expanded. The distribution list name is replaced by the addresses contained in the distribution list.

The default is that the parameter value remains set as last specified.

PERMIT_TYPE or *PT*

Special attributes: *BY_NAME*

Specifies the type of distribution list permission. Enter one of the following keywords:

GROUP or **G**

A group of defined distribution lists can read mail from or send mail to the distribution list. To add or delete distribution lists from the group, use the *EMAIL ADD_PERMISSION* and *DELETE_PERMISSION* subcommands.

PRIVATE or **PR**

Only the distribution list owner can read mail from the distribution list. Anyone can send mail to the distribution list.

PUBLIC or **PU**

Any user can read mail from or send mail to the distribution list.

The default for new distribution lists is *PRIVATE*; the default for existing distribution lists is that *PERMIT_TYPE* remains unchanged.

TITLE or *T*

Special attributes: *BY_NAME*, *HIDDEN*

Specifies the message transfer agent name (MTA) assigned to the Mail/VE installation where this distribution list is defined. The *GENERATE_REMOTE_UPDATES* command uses this parameter to denote the residency of distribution lists. When using the *CREATE_DISTRIBUTION_LIST* subutility, you specify this parameter to show that the distribution list is remote.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

- Remarks**
- The DESCRIPTION and TELEPHONE_NUMBER parameters provide additional information and are not used in evaluating distribution list addresses for uniqueness.
 - For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

Examples The following example creates a distribution list.

```
Admm/create_distribution_list
Cred1/set_attributes ..
Cred1../distribution_list_name=('Market_Research' 'MRDL') ..
Cred1../organization_unit=('Consumer Surveys' 'Interior Products') ..
Cred1../telephone_number='402-981-6743' ..
Cred1../expand=false ..
Cred1../permit_type=public ..
Cred1/add_address Barry Fisher'
Cred1/add_address Lonnie Merrill'
Cred1/add_address Shirley Dreckman'
Cred1/end_create_distribution_list
Admm/
```

This example changes an address attribute, the organization unit, of an existing distribution list.

```
Admm/change_distribution_list 'Market_Research'
Cred1/set_attribute ..
Cred1../organization_unit=(nc,nc, 'Home Furnishings')
Cred1/end_change_distribution_list
Admm/
```

SET_ATTRIBUTES CHAM and CREM Subcommand

Purpose Defines or changes mailbox attributes.

Format SET_ATTRIBUTES or
SET_ATTRIBUTE or
SETA
PERSONAL_NAME=list of keyword or record or string
ORGANIZATION_UNITS=list of keyword or string
ORGANIZATION_NAME=string
DESCRIPTION=string
TELEPHONE_NUMBER=string
RETENTION_PERIOD=keyword or integer
PERMIT_TYPE=keyword
TITLE=string
STATUS=status variable

Parameters *PERSONAL_NAME* or *PN*

Specifies a list of one through three elements to describe the mailbox. The first element of the list is always used in displays. The second and third elements are aliases. Each element can be the keyword *NO_CHANGE*, or a 1- through 64-character string, or a record in the format:

```
record
  surname: string 1..40
  given name: string 0..16
  initials: string 0..5
  generation qualifier: string 0..3
recend
```

If the name is entered as a record, the surname is required and the other record elements are optional.

ORGANIZATION_UNITS or *ORGANIZATION_UNIT* or *OU*

Specifies the list of one to four organization units associated with the distribution list. Enter each unit as the keyword *NO_CHANGE* or a 1- through 32-character string. The order in which you specify the units is significant; address lookup procedures determine a match based on the order.

ORGANIZATION_NAME or *ON*

Specifies the name of the organization associated with the mailbox. Enter the name as a 1- through 64-character string.

DESCRIPTION or *D*

Special attributes: *BY_NAME*

Specifies a 1- through 64-character string that describes the mailbox.

TELEPHONE_NUMBER or *TN*

Special attributes: *BY_NAME*

Specifies the telephone number of the mailbox owner. Enter a string of 1 through 32 characters.

RETENTION_PERIOD or *RP*

Special attributes: BY_NAME

Specifies the number of days a letter is retained in the mailbox after it has been seen. Enter the keyword MAXIMUM or an integer value from 1 through 365 for the number of days to retain letters.

The default is the value set by the MAILVE_RETENTION_LIMIT validation.

PERMIT_TYPE or *PT*

Special attributes: BY_NAME

Specifies the type of mailbox permission. Enter one of the following keywords:

GROUP or G

A group of defined mailboxes can read mail from or send mail to the mailbox. To add or delete mailboxes from the group, use the EMAIL_ADD_PERMISSION and DELETE_PERMISSION subcommands.

PRIVATE or PR

Only the mailbox owner can read mail from the mailbox. Anyone can send mail to the mailbox.

PUBLIC or PU

Any user can read mail from or send mail to the mailbox.

The default for new mailboxes is PRIVATE; the default for existing mailboxes is that PERMIT_TYPE remains unchanged.

TITLE or *T*

Special attributes: BY_NAME, HIDDEN

Specifies the message transfer agent name (MTA) assigned to the Mail/VE installation where this mailbox is defined. The GENERATE_REMOTE_UPDATES command uses this parameter to denote the residency of mailboxes. When using the CREATE_DISTRIBUTION_LIST subutility, you enter this parameter to show that the mailbox is remote.

STATUS

Special attributes: VAR, BY_NAME

Specifies the completion status for this subcommand.

Remarks

For detailed information on specifying Mail/VE addresses, see chapter 2 of the Mail/VE Version 2 Usage manual.

Functions

This section describes the Mail/VE functions. The functions are listed in alphabetical order.

Functions can be used in procedures, for example, to return values for various Mail/VE attributes. See the NOS/VE System Usage manual for information on functions and procedures.

\$ADMINISTERED_FAMILY
ADMM Function

Purpose Returns the current ADMINISTER_MAIL utility default for FAMILY as a name.

Format \$ADMINISTERED_FAMILY

Remarks \$ADMINISTERED_FAMILY does not change if the Mail/VE administrator displays a remote mailbox or distribution list.

\$ADMINISTERED_USER
ADMM Function

Purpose Returns the current ADMINISTER_MAIL utility default for USER as a name.

Format \$ADMINISTERED_USER

Remarks \$ADMINISTERED_USER does not change if the Mail/VE administrator displays a remote mailbox or distribution list.

\$ANY_MAIL ADMM Function

Purpose Returns a boolean value telling you whether there is mail for the mailbox identified by the address that meets the criteria you specify.

Format **\$ANY_MAIL**
(*ADDRESS: string or record*
MAIL_OPTIONS: keyword or list of keyword)

Parameters *ADDRESS*

Specifies the mailbox to be checked for mail. Only the personal name is required. Specify the organization unit(s) and organization name associated with the mailbox to further define the address. Enter the address as a string or as a record in the format:

```
record
  personal_name: record
    surname: string 1..40
    given_name: string 0..16
    initials: string 0..5
    generation_qualifier: string 0..3
  recend
  organization_units: list 0..4 of string 0..32
  organization_name: string 0..64
recend
```

See chapter 2, Mail/VE Addresses, of the Mail/VE Version 2 Usage manual if you need more information on specifying mailbox names.

The default is the value returned by the \$IDENTITY function.

MAIL_OPTIONS

Specifies the types of letters to be included in the letter list from the mailbox checked for mail. You can specify one or more options for each option type.

If you select more than one option for each type, each selection applies. Selecting all options for any type has the same effect as selecting none of the options for that type.

Letter types:

LETTER or **L**

Lists all letters.

RECEIPTS or **R**

Displays letters generated upon receipt or nonreceipt of a letter.

Read Status types:

These options apply only to owned mailboxes.

SEEN or S

Lists letters that have been displayed using LIST_MAIL or COPY_LETTER_PARTS by the \$ADMINISTERED_USER.

UNSEEN or US

Lists letters that have not been displayed.

Sensitivity types:

PRIVATE or PR

Lists private letters.

PERSONAL or PE

Lists personal letters.

CONFIDENTIAL or CO

Lists confidential letters.

Receipt Certification types:

CERTIFIED or C

Lists certified letters.

UNCERTIFIED or UC

Lists letters not classified as certified.

Importance types:

LOW_IMPORTANCE or LI

Lists letters the sender assigned low importance.

NORMAL_IMPORTANCE or NI

Lists letters the sender assigned normal importance.

HIGH_IMPORTANCE or HI

Lists letters the sender assigned high importance.

Delivery Priority types:

NORMAL_PRIORITY or NP

Lists letters the sender assigned normal delivery priority.

URGENT_PRIORITY or UP

Lists letters the sender assigned urgent delivery priority.

NON_URGENT_PRIORITY or NUP

Lists letters the sender assigned nonurgent delivery priority.

Other types:

REPLY_REQUEST or RR

Lists letters for which the sender requested a reply.

AUTOFORWARDED or A

Lists letters that have been automatically forwarded from another mailbox.

ALL

Lists all mail.

The default is ALL.

- Remarks** The \$ANY_MAIL function returns TRUE if any mail is found that satisfies the criteria specified by the function parameters.
- Examples** In the following example, \$ANY_MAIL is used to check for mail prior to executing LIST_MAIL:
- ```
Admm/if $any_mail('margaret olson' unseen) then
Admm/list_mail
Admm/ifend
```

## \$DEFAULT\_MAILBOX ADMM Function

**Purpose** Returns a record containing the default mailbox for \$ADMINISTERED\_USER.

**Format** \$DEFAULT\_MAILBOX

**Parameters** None.

**Remarks** The \$DEFAULT\_MAILBOX function returns the local address record in the format:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list of 0..4 of string 0..32
 organization_name: string 0..64
recend

```

**Examples** This example uses the NOS/VE command DISPLAY\_VALUE to display the default mailbox data structure:

```

Admm/select_user user=jjj ..
Admm../display_value $default_mailbox ..
Admm../display_option=data_structure
display_option=DATA_STRUCTURE

"RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'Jones'
 GIVEN_NAME: "STRING" 'John'
 INITIALS: "STRING" 'J'
 GENERATION_QUALIFIER: "STRING" ''
 "RECORD END"
 ORGANIZATION_UNITS: "LIST"
 1: "STRING" 'CDCNET'
 "LIST END"
 ORGANIZATION_NAME: "STRING" ''
"RECORD END"

```

## **\$DISTRIBUTION\_LIST\_ATTRIBUTE** ADMM Function

**Purpose** Returns the value of a specified distribution list attribute.

**Format** **\$DISTRIBUTION\_LIST\_ATTRIBUTE**  
(**ADDRESS:** string or record  
**OPTION:** keyword )

**Parameters** **ADDRESS**

Specifies a distribution list address.

**\$ADMINISTERED\_USER** must own the distribution list you specify or an empty string will be returned when you use this function.

Only the distribution list name is required. Specify the organization unit(s) and organization name associated with the distribution list to further define the address. Enter the address as a string or as a record in the format:

record

personal\_name: record  
surname: string 1..40  
given\_name: string 0..16  
initials: string 0..5  
generation\_qualifier: string 0..3

recend

organization\_units: list 0..4 of string 0..32  
organization\_name: string 0..64

recend

### **OPTION**

Specifies the attribute whose value is to be returned. Enter one of the following keywords.

**ADDRESS** or **A**

Returns the local address record.

**ADDRESS\_LIST** or **AL**

Returns the list of addresses that make up the distribution list. The value is returned as a list of global address records.

**ADDRESS\_LIST\_SIZE** or **ALS**

Returns an integer specifying the number of entries in the distribution list.

**EXPAND** or **E**

Returns a boolean value that indicates whether the distribution list will be expanded in the letter header.

**PERMISSION\_LIST** or **PL**

Returns the permission list entries that define a group distribution list. The value is returned as a list of global address records.



**PERMISSION\_LIST\_SIZE or PLS**

Returns an integer specifying the number of entries in the permission list for a group distribution list.

**PERMIT\_TYPE or PT**

Returns a string containing PRIVATE, PUBLIC, or GROUP.

**DESCRIPTION or D**

Returns a string of 1 to 64 characters that describes the distribution list.

**TELEPHONE\_NUMBER or TN**

Returns a string of up to 32 characters that contains the telephone number associated with the distribution list.

- Remarks
- Distribution list attributes that have not been defined return an empty value.
  - This function returns address records in the following formats.  
Local address records:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
recend

```

Global address records:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
 private_domain: string 0..16
 administrative_domain: string 0..16
 country: string 0..3
 x121_address: string 0..15
 terminal_identifier: string 0..24
 ua_identifier: string 0..32
 domain_defined_attributes: list 0..4
 record
 name: string 1..8
 value: string 1..128
 recend
 recend
recend

```

Permission\_records:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
 private_domain: string 0..16
 administrative_domain: string 0..16
 country: string 0..3
recend

```

**Examples** The following example uses the \$DISTRIBUTION\_LIST\_ATTRIBUTE function with the NOS/VE DISPLAY\_VALUE command to display the number of addresses in the list.

```
Admm/display_value $distribution_list_attribute ..
Admm../('pubs_group', als)
15
```

The following example displays the distribution list address record using the DATA\_STRUCTURE option of the DISPLAY\_VALUE command.

```
Admm/display_value $distribution_list_attribute ..
Admm../('defect_free_team' address) do=ds
display option: DATA_STRUCTURE

"RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'DEFECT FREE TEAM'
 GIVEN_NAME: "STRING" ''
 INITIALS: "STRING" ''
 GENERATION_QUALIFIER: "STRING" ''
 "RECORD END"
 ORGANIZATION_UNITS: "LIST"
 1: "STRING" 'PINK'
 "LIST END"
 ORGANIZATION_NAME: "STRING" ''
"RECORD END"
```

This example uses the DATA\_STRUCTURE option of the DISPLAY\_VALUE command to display the address list record of the specified distribution list.

```

Admm/display_value $distribution_list_attribute ..
Admm./('defect_free_team' address_list) do=ds
display option: DATA_STRUCTURE
"LIST"
 1: "RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'RODRIGUEZ'
 GIVEN_NAME: "STRING" 'VOLNEY'
 INITIALS: "STRING" ''
 GENERATION_QUALIFIER: "STRING"
 "RECORD END"
 ORGANIZATION_UNITS: "LIST"
 1: "STRING" 'PINK'
 "LIST END"
 ORGANIZATION_NAME: "STRING" ''
 PRIVATE_DOMAIN: "STRING" ''
 ADMINISTRATIVE_DOMAIN: "STRING" ''
 COUNTRY: "STRING" ''
 X121_ADDRESS: "STRING" ''
 TERMINAL_IDENTIFIER: "STRING" ''
 UA_IDENTIFIER: "STRING" ''
 DOMAIN_DEFINED_ATTRIBUTES: "EMPTY LIST"
"RECORD END"
2. "RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'BEDIENT'
 GIVEN_NAME: "STRING" 'CONRAD'
 INITIALS: "STRING" 'K.'
 GENERATION_QUALIFIER: "STRING"
 "RECORD END"
 ORGANIZATION_UNITS: "LIST"
 1: "STRING" 'COBALT'
 "LIST END"
 ORGANIZATION_NAME: "STRING" ''
 PRIVATE_DOMAIN: "STRING" ''
 ADMINISTRATIVE_DOMAIN: "STRING" ''
 COUNTRY: "STRING" ''
 X121_ADDRESS: "STRING" ''
 TERMINAL_IDENTIFIER: "STRING" ''
 UA_IDENTIFIER: "STRING" ''
 DOMAIN_DEFINED_ATTRIBUTES: "EMPTY LIST"
"RECORD END"

```

## **\$IDENTITY** **ADMM Function**

**Purpose** Returns a record that contains the address by which the \$ADMINISTERED\_USER is known to the mail system.

**Format** \$IDENTITY

**Parameters** None.

**Remarks** • The \$IDENTITY function returns a local address record in the format:

```
record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list of 0..4 of string 0..32
 organization_name: string 0..64
recend
```

- Within ADMINISTER\_MAIL, \$IDENTITY always returns the value of the default mailbox for the user specified by \$ADMINISTERED\_USER.
- Within ADMINISTER\_MAIL, \$IDENTITY and \$DEFAULT\_MAILBOX functions return the same information.

**Examples** The following example uses the NOS/VE command DISPLAY\_VALUE to display \$IDENTITY.

```
Admm/display_value $identity
Johnson
Paul
I
JR
PUBS
HQTRS
```

## **\$LETTER**

### **ADMM Function**

**Purpose** Returns a string containing the letter identifier of the current letter (that is, the most recently displayed letter).

**Format** **\$LETTER**

**Parameters** None.

**Remarks** Use LIST\_MAIL to establish a letter list in the mailbox before you use the \$LETTER function. If a letter list does not exist, an empty string is returned.

**Examples** This example uses the NOS/VE command DISPLAY\_VALUE to display \$LETTER:

```
Admm/display_value $letter
JA27
```

## **\$LETTER\_ATTRIBUTE** **ADMM Function**

**Purpose** Returns the value of a selected letter attribute.

**Format** **\$LETTER\_ATTRIBUTE**  
(**OPTION: keyword**  
*LETTER: keyword or integer or string*)

**Parameters** **OPTION**

The attribute whose value is to be returned. Enter one of the following keywords.

### **AUTO\_FORWARDED**

Returns the boolean value TRUE if the letter was automatically forwarded from another mailbox; otherwise, returns FALSE.

### **CERTIFIED**

Returns the boolean value TRUE if the sender requested certified delivery; otherwise, returns FALSE.

### **DATE\_TIME\_EXPIRES**

Returns a record containing the date and time that sender specifies as the expiration of the letter.

### **DATE\_TIME\_RECEIVED**

Returns a record containing the date and time the letter was received.

### **DATE\_TIME\_SENT**

Returns a record containing the date and time the letter was sent.

### **DELIVERY\_PRIORITY**

Returns a string that specifies the sender's rating of the urgency of the letter as URGENT or NON\_URGENT.

### **IMPORTANCE**

Returns a string specifying the sender's rating of the the importance of the letter as NORMAL, LOW, or HIGH.

### **LETTER\_PARTS**

Returns a list of one or more strings specifying the type(s) of information contained in the message.

### **MESSAGE\_IDENTIFIER**

Returns the X.400 message identifier in a string of 0 to 64 characters.

### **MESSAGE\_SIZE**

Returns the size of the message (in bytes) as an integer.

### **MESSAGE\_TYPE**

Returns a string containing LETTER or RECEIPT.

**NUMBER\_OF\_LETTER\_PARTS**

Returns an integer specifying the number of parts in the letter body. The number can be zero if the subject is the entire letter body.

**ORIGINATOR**

Returns the sender's address in a global address record.

**REPLY\_REQUEST**

Returns the boolean value **TRUE** if the sender requested a reply; otherwise, returns **FALSE**.

**RETAIN\_UNTIL**

Returns the date and time until which the letter is retained in the system.

**SEEN**

Returns a boolean value specifying whether the letter has been displayed. Applies only to owned mailboxes.

**SENSITIVITY**

Returns a string specifying the sender's rating of the sensitivity of the letter as **PERSONAL**, **PRIVATE**, or **CONFIDENTIAL**.

**SUBJECT**

Returns the subject of the letter in a string of up to 128 characters.

**LETTER**

Specifies the letter for which an attribute is returned. Specify the letter by letter number (integer), identifier (a string of 1 to 6 characters), or keyword.

The letter number is the number from the previous letter list. It can change each time you enter the **LIST\_MAIL** subcommand.

The letter identifier is permanently assigned to the letter and is not related to previous execution of any command.

Keyword options:

**CURRENT or C**

Displays a value from the current letter in the letter list. (The current letter is the letter most recently displayed.)

**FIRST or F**

Displays an attribute value from the first letter in the list.

**LAST or L**

Displays an attribute value from the last letter in the list.

**NEXT or N**

Displays an attribute value from the next letter in the list.

**PREVIOUS or P**

Displays an attribute value from the previous letter in the list.

The default is **CURRENT**.



- Remarks**
- If a letter list does not exist, an empty string is returned.
  - The \$LETTER function returns the value of the current letter from the letter list (that is, the letter most recently displayed).

**Examples** This example displays the subject of the current letter.

```
Admm/create_variable letter subject
Admm/letter_subject=$letter_attribute (subject)
Admm/display_value letter_subject
Reply TO: How about lunch on Monday?
```

This example displays the DATE\_TIME\_EXPIRES for a letter using the DATA\_STRUCTURE option of the DISPLAY\_VALUE command.

```
Admm/display_value $letter_attribute(date_time_expires)
do=ds
display option: DATA_STRUCTURE
```

```
"DATE_TIME"
 DAY: "INTEGER" 2088
 MONTH: "INTEGER" 6
 DAY: "INTEGER" 12
 HOUR: "INTEGER" 9
 MINUTE: "INTEGER" 50
 SECOND: "INTEGER" 26
 MILLISECOND: "INTEGER" 907
"DATE_TIME END"
```

This example displays the originator for a letter using the DATA\_STRUCTURE option of the DISPLAY\_VALUE command.

```
Admm/display_value $letter_attribute(originator) do=ds
display option: DATA_STRUCTURE
```

```
"RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'Albrecht'
 GIVEN_NAME: "STRING" 'Bruce'
 INITIALS: "STRING" 'G'
 GENERATION_QUALIFIER: "STRING" ''
 "RECORD END"
 ORGANIZATION_UNITS: "LIST"
 1: "STRING" 'CDCNET'
 "LIST END"
 ORGANIZATION_NAME: "STRING" ''
 PRIVATE_DOMAIN: "STRING" ''
 ADMINISTRATIVE_DOMAIN: "STRING" 'ATTMAIL'
 COUNTRY: "STRING" 'US'
 X121_ADDRESS: "STRING" ''
 TERMINAL_IDENTIFIER: "STRING" ''
 UNIQUE_UA_IDENTIFIER: "STRING" ''
 DOMAIN_DEFINED_ATTRIBUTES: "EMPTY LIST"
"RECORD END"
```

## **\$LETTER\_LIST** ADMM Function

**Purpose** Returns the letter list as a list of strings containing letter identifiers.

**Format** **\$LETTER\_LIST**

**Parameters** None.

**Remarks** Use LIST\_MAIL to establish a letter list in the mailbox before using the \$LETTER\_LIST function. If a letter list does not exist, an empty list is returned.

**Examples** The following example is a procedure that searches a letter list for letters received on or before a specified month and deletes those letters.

```

Admm/date_to_find=$now
Admm/if date_to_find.month > 1 then
if/date_to_find.month = date_to_find.month -1
if/else
if/date_to_find.month = 12
if/ifend
Admm/list_mail 'newswire' output = $null
Admm/for each ltr in $letter_list do
for/date = $letter_attribute(..
for../date_time_received ltr)
for/if date.month = date_to_find.month then
if/read_letter ltr o=new_letters.$eoi
if/ifend
for/forend
Admm/

```

## \$MAILBOX ADMM Function

**Purpose** Returns a local address record containing the address of the mailbox selected for read operations.

**Format** \$MAILBOX

**Parameters** None.

**Remarks**

- Use LIST\_MAIL to establish a letter list before using the \$MAILBOX function. \$MAILBOX returns the local address of the mailbox for which a letter list is created. If a letter list does not exist, \$MAILBOX returns an empty value.

- The format of the local address record:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
recend

```

**Examples** The following example displays the name associated with the mailbox selected for read operations.

```

Admm/selu pij
Admm/lism o=$null
Admm/display_value $mailbox
Johnson
Paul
I
JR
PUBS
HQTRS

```

## **\$MAILBOX\_ATTRIBUTE ADMM Function**

**Purpose** Returns the value of a specified mailbox attribute for a mailbox identified by its address.

**Format** **\$MAILBOX\_ATTRIBUTE**  
(**ADDRESS: record or string**  
**OPTION: keyword** )

**Parameters** **ADDRESS**

Specifies the address of the mailbox for which an attribute value is to be returned. Only the personal name is required. Specify organization unit(s) and organization name to further define the address.

The mailbox must be owned by the \$ADMINISTERED\_USER or an empty string is returned.

Enter the address as a 1- to 64-character string or as a record in the format:

record

personal\_name: record

surname: string 1..40

given\_name: string 0..16

initials: string 0..5

generation\_qualifier: string 0..3

recend

organization\_units: list 0..4 of string 0..32

organization\_name: string 0..64

recend

## OPTION

Specifies the name of the attribute value to be returned. Enter one of the following keywords:

### ADDRESS or A

Returns the mailbox address. If the mailbox is not owned by the \$ADMINISTERED\_USER, an empty string is returned. The address is returned as a list of local address records in the following format:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list of 0..4 of string 0..32
 organization_name: string 0..64
recend

```

### PERMISSION\_LIST or PL

Returns the permission list entries. The value is returned as a list of access permission records.

### PERMISSION\_LIST\_SIZE or PLS

Returns an integer specifying the number of entries in the permission list.

### PERMIT\_TYPE or PT

Returns a string containing PRIVATE, PUBLIC, or GROUP.

### DESCRIPTION or D

Returns a string of 1 to 64 characters that describes the mailbox.

### RETENTION\_PERIOD or RP

Returns an integer (from 1 to 365) specifying how long a letter that has been displayed remains in the mailbox to which it was sent before being deleted from the system.

### TELEPHONE\_NUMBER or TN

Returns the phone number associated with the mailbox in a string of up to 32 characters.

- Remarks
- Mailbox attributes that have not been defined return an empty string.
  - This function returns address records in the following formats.  
Local address records:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
recend

```

Global address records:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
 private_domain: string 0..16
 administrative_domain: string 0..16
 country: string 0..3
 x121_address: string 0..15
 terminal_identifier: string 0..24
 ua_identifier: string 0..32
 domain_defined_attributes: list 0..4
 record
 name: string 1..8
 value: string 1..128
 recend
 recend
recend

```

- Examples
- The following example displays the `permission_list` for a mailbox using the `DATA_STRUCTURE` option of the `DISPLAY_VALUE` command.

```

Admm/display_value $mailbox_attribute(permission_list)
do=ds
display option: DATA_STRUCTURE

"LIST"
1: "RECORD"
 PERSONAL_NAME: "RECORD"
 SURNAME: "STRING" 'HOWARD'
 GIVEN_NAME: "STRING" 'FRANK'
 INITIALS: "STRING" ''
 GENERATION_QUALIFIER: "STRING"
 "RECORD END"
ORGANIZATION_UNITS: "LIST"

```

## **\$MAILVE\_INSTALLATION** **ADMM Function**

**Purpose** Returns the values assigned to Mail/VE during installation as a string.

**Format** **\$MAILVE\_INSTALLATION**  
(NAME: keyword)

**Parameters** **NAME**

Specifies the Mail/VE installation information to retrieve. Enter one the following keywords:

**ADMINISTRATIVE\_DOMAIN** or **AD**

Returns the name of the administrative domain assigned to this Mail/VE installation.

**COUNTRY** or **C**

Returns the country code assigned to this Mail/VE installation. See appendix C for the list of countries and their associated codes.

**DATABASE\_CATALOG** or **DC**

Returns the database catalog path name assigned to this Mail/VE installation.

**MESSAGE\_TRANSFER\_AGENT** or **MTA**

Returns the message transfer agent (MTA) name assigned to this Mail/VE installation.

**PRIVATE\_DOMAIN** or **PD**

Returns the name of the private domain assigned to this Mail/VE installation.

**STATUS**

Special attributes: VAR, BY\_NAME

Specifies the completion status for this subcommand.

**Remarks** If no value was assigned during installation, the system returns an empty string.

## \$MAILVE\_USERS ADMM Function

**Purpose** Returns a list of NOS/VE users within a family that have been registered with Mail/VE.

**Format** \$MAILVE\_USERS  
FAMILY: name

**Parameters** FAMILY  
Specifies the family for which a list of users is to be returned.  
The default is \$ADMINISTERED\_FAMILY.

**Examples** The following example displays the Mail/VE users list using the DATA\_STRUCTURE option of the DISPLAY\_VALUE command.

```
Admm/display_value $mailve_users do=ds
display option: DATA_STRUCTURE
```

```
"LIST"
 1: "RECORD"
 FAMILY: "NAME" PINK
 USER: "NAME" AAS
 "RECORD END"
 2: "RECORD"
 FAMILY: "NAME" PINK
 USER: "NAME" ABELSET
 "RECORD END"
 3: "RECORD"
 FAMILY: "NAME" PINK
 USER: "NAME" ACSDTIM
 "RECORD END"
 :
 386: "RECORD"
 FAMILY: "NAME" PINK
 USER: "NAME" YCJ
 "RECORD END"
"LIST END"
```



## **\$OWNED\_DISTRIBUTION\_LISTS** **ADMM Function**

**Purpose** Returns a list of records containing the addresses of the distribution lists owned by \$ADMINISTERED\_USER.

**Format** \$OWNED\_DISTRIBUTION\_LISTS

**Parameters** None.

**Remarks** • The local address record is returned in the following format:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 rcend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
recend

```

- If \$ADMINISTERED\_USER does not own any distribution lists, an empty list is returned.

**Examples** The following example is a procedure that lists the length of owned distribution lists.

```

Admm/for each dl in $owned_distribution_list
for/display_value dl.distribution_list_name//
for..' contains '// ..
for..$strrep(..
for..$distribution_list_attribute ..
for.. (dl,address_list_size)// ..
for..' addresses'
for/forend
DTEAM contains 6 addresses
DEPT_LIST contains 9 addresses
Admm/

```

## \$OWNED\_MAILBOXES ADMM Function

**Purpose** Returns a list of records containing the local address of all of the mailboxes owned by \$ADMINISTERED\_USER.

**Format** \$OWNED\_MAILBOXES

**Parameters** None.

**Remarks** • The local address record is returned in the following format:

```

record
 personal_name: record
 surname: string 1..40
 given_name: string 0..16
 initials: string 0..5
 generation_qualifier: string 0..3
 recend
 organization_units: list 0..4 of string 0..32
 organization_name: string 0..64
recend

```

- If \$ADMINISTERED\_USER has no mailboxes, an empty list is returned.

**Examples** The following example is a procedure that checks all owned mailboxes for mail.

```

Admm/mailbox_list = $owned_mailboxes
Admm/for each box in mailbox_list do
for/read_mail personal_name = ..
for../box.personal_name mail_options = all
for/forend
Admm/

```







# Glossary

---

# A

## A

### Address

Defines the location of a mailbox or distribution list in a mail system. An address is composed of attributes that define a unique entry in the mail directory.

### Administrative Domain

Under X.400 mail system standards, an administrative domain manages electronic mail services. In countries that have a national telephone service, such as the United Kingdom, that service would be likely to act as the administrative domain. In countries that have a competitive telephone industry, such as the United States, there can be several administrative domains.

### Attributes

Characteristics assigned to a mailbox or distribution list by the user or Mail/VE administrator. Characteristics include name, associated organization units, associated organization name, description, owner's telephone number, and type of access permitted.

## B

### BITNet

An economical, low speed network (meaning Because It's Time Network). It consists of mainframe computers (primarily IBM) interconnected by 9600-bps leased lines. The network, developed by City University in New York, connects universities across the country and attaches to the European network, EARN.

## C

### CCITT

Consultative Committee on International Telephony and Telegraphy. This international organization establishes standards for interconnection of telephone equipment.

### Country Code

Alpha or numeric code representing a country in X.400 addresses. The ISO Standard 3166 provides the alpha codes for participating countries, and the CCITT Recommendation gives the numeric codes for these countries.

## D

### Default Mailbox

Identity mailbox under which a user begins a mail session. The first mailbox created by or for a user is that user's default mailbox. Users can change the default mailbox to any mailbox they own anytime during a mail session.

### Directory

List of all mailbox and distribution list addresses registered with a mail system.

**Distribution List**

Named recipient list that is addressable. A distribution list can contain both mailbox and other distribution list addresses. It cannot contain its own address.

**Domain**

Within each country in a worldwide electronic mail network, designated authorities manage the electronic mail systems. Under X.400 mail system standards, these authorities are called domains.

There are administrative and private domains:

- Administrative domains are usually the telephone services in a country.
- Private domains can be corporations or any other group that wants to manage a private domain of mail users. A private domain can be associated with more than one administrative domain. Also, a private domain need not be registered with any administrative domain. By mutual agreement, private domains can choose to be directly connected with one another.

**Domain Name File**

A translation table that enables Mail/VE users to enter BITNet and Internet addresses. It includes BITNet address information from BITNIC (BITNet Information Center) and local entries that associate X.400 addresses with Internet addresses.

**Domain-Wide Directory**

A directory that contains some or all of the local and remote addresses in a private domain.

**E****EARN**

European Academic Research Network. This network, which connects European universities and research laboratories, attaches to the American network, BITNet.

**G****Global Address**

Address that contains attributes that allow users on different mail systems anywhere in the world to communicate.

The global address attributes specify the Administrative Domain, Private Domain, and Country where the mail system resides. Addresses identify mailboxes or distribution lists.

**Global Key**

An identifier for a mailbox or distribution list that is unique within a private domain.

## I

### Identity

The first mailbox created by or for a user is that user's initial identity. The identity mailbox is used:

- As the From address for sending letters.
- To determine which mailboxes the user can read from, which mailboxes can be delivered mail, and which distribution lists can be used.

Users can change their identity any number of times during the mail session.

### Internet

A collection of networks and gateways that use the TCP/IP protocols and act as a single network. The collection includes:

- ARPANET, an early network developed by the Advanced Research Projects Agency (now called the Defense Advanced Research Projects Agency)
- MILNET, (MILitary NETwork) the network used by military installations, institutions doing military research, and national laboratories.
- NSFnet (National Science Foundation NETwork), the network and associated (midlevel and supercomputer) networks that were originally funded by the National Science Foundation

## L

### Letter

Message generated by a mail system user. The letter contains a header and a body. The address on the letter directs the letter through the mail system.

The letter header contains origination and delivery information and the subject of the letter.

The letter body is the content of the letter. The letter body can include ASCII text or nontext characters, such as binary code and/or graphics.

### Local Address

Associates a mailbox or distribution list with a particular mail system. The local address attributes are the personal name of the mailbox or distribution list, and the organization name and organization unit(s) associated with the address.

## M

### Mail

See Message.

### Mailbox

Used to send and receive mail. Mailboxes can be private, group, or public.

### Mail/VE Administrator

The systems administrator responsible for installing, configuring, and maintaining Mail/VE.



## Mail/VE Gateway

The software that supports the exchange of mail between Mail/VE and mail systems on Internet (using SMTP) and BITNet/EARN (using NJE) networks. It specifies the mapping between X.400-430 (CCITT Draft Recommendations on Message Handling Systems) and RFC822 (Standard for the Format of Internet Text Messages) protocols.

The gateway performs the following tasks:

- Converts messages between the X.400 protocol and those used in the BITNet and Internet networks.
- Routes mail between these networks.

## MTA

See Message Transfer Agent.

## Message

A letter, notice, or receipt.

## Message Transfer Agent (MTA)

Software that transfers messages to and from user agents on a mail system.

## N

### Network Job Entry (NJE)

An IBM protocol used as the communication link between BITNet nodes.

### Network Transfer Facility (NTF)

A NOS/VE application that supports the IBM Network Job Entry protocol.

## NJE

See Network Job Entry.

## Notice

Message generated by the mail system specifying whether or not a letter has been delivered to the address. The letter sender must request a delivery notice when composing a letter. Nondelivery notices are generated unless the sender specifies otherwise.

## NTF

See Network Transfer Facility.

## O

## Organization

Any group defined on a CREATE\_ORGANIZATION subcommand by a Mail/VE administrator. The administrator can define an organization as one of the following:

- An organization name
- An ordered set of organization units
- An organization name and an ordered set of organization units

**Organization Name**

Under X.400 addressing standards, the name of a particular organization or company within a domain. See also Domain.

**Organization Units**

Under X.400 addressing standards, the organization units specify the internal structure of an organization within a domain. See also Organization Name and Domain. A maximum of four organization units can be specified for an address; for example, task group, project, department, division.

**Owner**

Mail/VE user who creates a mailbox or distribution list. Only the owner and Mail/VE administrator can delete or alter a mailbox or distribution list even though others may be permitted to use them.

**P****Personal Name**

Under X.400 addressing standards, the name of a mailbox or distribution list. Mailbox and distribution list names are the primary identification of an address in Mail/VE.

**Private Domain**

Under X.400 mail system standards, a corporation or any other group that manages a private domain of mail users. A private domain can be associated with more than one administrative domain. Also, a private domain need not be registered with any administrative domain. By mutual agreement, private domains can choose to be directly connected with one another.

**R****Request for Comments (RFC)**

Name of a series of notes available across the Internet. The notes cover many communication topics including Internet protocol standards.

**RFC**

See Request for Comments.

**Receipt**

Message generated by the mail system to indicate whether or not the user displays a letter. The letter sender must request a receipt when composing a letter.

**Recipient**

Mailbox or distribution list address to which a letter is sent.

**Retention Period**

Integer between 1 and 365 specifying the number of days letters sent to a mailbox are kept before the system deletes them. Users can specify the retention period when they create or change the mailbox definition.

## S

### Simple Mail Transport Protocol (SMTP)

A mail transfer protocol described in RFC821 Simple Mail Transport Protocol. SMTP sends and receives mail in the Internet community.

### SMTP

See Simple Mail Transport Protocol.

## T

### TCP/IP

See Transmission Control Protocol/Internet Protocol.

### Title

Name of the message transfer agent.

### Transmission Control Protocol/Internet Protocol (TCP/IP)

A suite of protocols that support the Internet community.

## U

### UA

See User Agent.

### User Agent (UA)

Address identifier from which X.400 messages are sent and received.

## W

### Wildcard Character

Character used in lookup procedures to represent omitted parts of an address. The asterisk (\*) is recognized as the wildcard character in Mail/VE. It matches from 0 to 256 other characters.

For example, entering

```
lookup_address '* Hanson' ..
.. address_options=(mailbox)
```

lists all mailbox addresses with HANSON as the surname component of the mailbox name.

## X

### X.400 Mail System

An electronic mail system that conforms to the internationally accepted standards described in the X.400-430 CCITT Draft Recommendations on Message Handling Systems. For example, Mail/VE is an X.400 mail system.

# Related Manuals

---

**B**

|                                  |      |
|----------------------------------|------|
| Ordering Printed Manuals .....   | B-1  |
| Accessing Online Manuals .....   | B-1  |
| Mail/VE Gateway References ..... | B-17 |

**E**



All NOS/VE manuals and related hardware manuals are listed in table B-1. If your site has installed the online manuals, you can find an abstract for each NOS/VE manual in the online System Information manual. To access this manual, enter:

```
/help manual=nos_ve
```

### Ordering Printed Manuals

To order a printed Control Data manual, send an order form to:

Control Data  
Literature and Distribution Services  
308 North Dale Street  
St. Paul, Minnesota 55103-2495

To obtain an order form or to get more information about ordering Control Data manuals, write to the above address or call (612) 292-2101. If you are a Control Data employee, call (612) 292-2100.

### Accessing Online Manuals

To access the online version of a printed manual, log in to NOS/VE and enter the online title on the HELP command (table B-1 supplies the online titles). For example, to see the NOS/VE Commands and Functions manual, enter:

```
/help manual=scl
```

or, because SCL is the default for the MANUAL parameter, simply enter

```
/help
```

An online Examples manual contains examples that reside in printed manuals. From within the online Examples manual, you can copy, print, and execute the examples it contains. To access this manual, enter:

```
/help manual=examples
```

When EXAMPLES is listed in the Online Manuals column in table B-1, that manual is represented in the online Examples manual.

**Table B-1. Related Manuals**

| Manual Title                                                                                                                                                                                           | Publication Number | Online Manuals <sup>1</sup> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------|
| <b>NOS/VE Site Manuals:</b>                                                                                                                                                                            |                    |                             |
| CYBER 930 Computer System<br>Guide to Operations<br>Usage                                                                                                                                              | 60469560           |                             |
| CYBER Initialization Package (CIP)<br>CYBER 180 Model 810, 830, 815, 825;<br>CYBER 810A, 830A Computer<br>Systems Reference Manual                                                                     | 60000417           |                             |
| CYBER Initialization Package (CIP)<br>CYBER 180 Model 835, 845, 855;<br>CYBER 840, 850, 860 Computer<br>Systems with IOU AB115A<br>Reference Manual                                                    | 60000418           |                             |
| CYBER Initialization Package (CIP)<br>CYBER 180 Model 845, 855;<br>CYBER 840, 850, 860 with IOU<br>AT478/AT481A; CYBER 840A, 850A,<br>860A, 870A, 990, 990E, 995E<br>Computer Systems Reference Manual | 60000419           |                             |
| CYBER Initialization Package (CIP)<br>CYBER 960, 994 Computer Systems<br>Reference Manual                                                                                                              | 60000420           |                             |
| CYBER Initialization Package (CIP)<br>CYBER 962, 992 Computer Systems<br>Reference Manual                                                                                                              | 60000421           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

*(Continued)*

Table B-1. Related Manuals (Continued)

| Manual Title                                                                                                                     | Publication Number | Online Manuals <sup>1</sup>    |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|
| <b>NOS/VE Site Manuals (Continued):</b>                                                                                          |                    |                                |
| CYBER Initialization Package (CIP)<br>CYBER 170 Model 865, 875;<br>Non-Model 8XX/9XX Series<br>Computer Systems Reference Manual | 60000422           |                                |
| Desktop/VE Host Utilities<br>Usage                                                                                               | 60463918           |                                |
| Mail/VE Version 2<br>Administration                                                                                              | 60464515           | MAILVE_<br>ADMINISTRA-<br>TION |
| MAINTAIN_MAIL (Version 1) <sup>2</sup><br>Usage                                                                                  |                    | MAIM                           |
| NOS/VE Accounting Analysis System<br>Usage                                                                                       | 60463923           |                                |
| NOS/VE Accounting and Validation Utilities for Dual<br>State<br>Usage                                                            | 60458910           |                                |
| NOS/VE File Server<br>for STORNET and ESM-II<br>Usage                                                                            | 60000190           |                                |
| NOS/VE<br>LCN Configuration and Network Management<br>Usage                                                                      | 60463917           |                                |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

2. To access this manual, you must be the administrator for Mail/VE Version 1.

(Continued)



**Table B-1. Related Manuals (Continued)**

| <b>Manual Title</b>                                                   | <b>Publication Number</b> | <b>Online Manuals<sup>1</sup></b> |
|-----------------------------------------------------------------------|---------------------------|-----------------------------------|
| <b>Site Manuals (Continued):</b>                                      |                           |                                   |
| NOS/VE Network Management Usage                                       | 60463916                  |                                   |
| NOS/VE Operations Usage                                               | 60463914                  |                                   |
| NOS/VE System Performance and Maintenance Volume 1: Performance Usage | 60463915                  |                                   |
| NOS/VE System Performance and Maintenance Volume 2: Maintenance Usage | 60463925                  |                                   |
| NOS/VE Security Administration Usage                                  | 60463945                  |                                   |
| NOS/VE User Validation Usage                                          | 60464513                  |                                   |
| <b>NOS/VE User Manuals:</b>                                           |                           |                                   |
| EDIT_CATALOG Usage                                                    |                           | EDIT_CATALOG                      |
| EDIT_CATALOG for NOS/VE Summary                                       | 60487719                  |                                   |
| Introduction to NOS/VE Tutorial                                       | 60464012                  | EXAMPLES                          |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

Table B-1. Related Manuals (Continued)

| Manual Title                                        | Publication Number | Online Manuals <sup>1</sup> |
|-----------------------------------------------------|--------------------|-----------------------------|
| <b>NOS/VE User Manuals (Continued):</b>             |                    |                             |
| NOS/VE<br>Advanced File Management<br>Tutorial      | 60486412           | AFM_T                       |
| NOS/VE<br>Advanced File Management<br>Usage         | 60486413           | AFM                         |
| NOS/VE<br>Commands and Functions<br>Quick Reference | 60464018           | SCL                         |
| NOS/VE File Editor<br>Tutorial/Usage                | 60464015           | EXAMPLES                    |
| NOS/VE<br>Object Code Management<br>Usage           | 60464413           | OCM and<br>EXAMPLES         |
| NOS/VE Screen Formatting<br>Usage                   | 60488813           | EXAMPLES                    |
| NOS/VE<br>Source Code Management<br>Usage           | 60464313           | SCM and<br>EXAMPLES         |
| NOS/VE System Usage                                 | 60464014           | EXAMPLES                    |
| NOS/VE Terminal Definition<br>Usage                 | 60464016           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| <b>Manual Title</b>                                          | <b>Publication Number</b> | <b>Online Manuals<sup>1</sup></b> |
|--------------------------------------------------------------|---------------------------|-----------------------------------|
| <b>NOS/VE User Manuals (Continued):</b>                      |                           |                                   |
| Screen Design Facility/Screen Formatting Usage               | 60488613                  | SDF                               |
| Screen Design Facility/Data Management Usage                 | 60488618                  |                                   |
| <b>CYBIL Manuals:</b>                                        |                           |                                   |
| CYBIL for NOS/VE File Management Usage                       | 60464114                  | EXAMPLES                          |
| CYBIL for NOS/VE Keyed-File and Sort/Merge Interfaces Usage  | 60464117                  | EXAMPLES                          |
| CYBIL for NOS/VE Language Definition Usage                   | 60464113                  | CYBIL and EXAMPLES                |
| CYBIL for NOS/VE Sequential and Byte-Addressable Files Usage | 60464116                  | EXAMPLES                          |
| CYBIL for NOS/VE System Interface Usage                      | 60464115                  | EXAMPLES                          |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

Table B-1. Related Manuals (Continued)

| Manual Title                                                   | Publication Number | Online Manuals <sup>1</sup> |
|----------------------------------------------------------------|--------------------|-----------------------------|
| <b>FORTRAN Manuals:</b>                                        |                    |                             |
| FORTTRAN Version 1 for NOS/VE<br>Language Definition<br>Usage  | 60485913           |                             |
| FORTTRAN Version 1 for NOS/VE<br>Quick Reference               |                    | FORTTRAN                    |
| FORTTRAN Version 2 for NOS/VE<br>Language Definition<br>Usage  | 60487113           |                             |
| FORTTRAN Version 2 for NOS/VE<br>Quick Reference               |                    | VFORTRAN                    |
| FORTTRAN for NOS/VE<br>Tutorial                                | 60485912           | FORTTRAN_T                  |
| FORTTRAN for NOS/VE<br>Topics for FORTRAN Programmers<br>Usage | 60485916           |                             |
| FORTTRAN for NOS/VE<br>Summary                                 | 60485919           |                             |
| FORTTRAN Keyed-File<br>and Sort/Merge Interfaces<br>Usage      | 60485917           | FORTTRAN                    |
| <b>COBOL Manuals:</b>                                          |                    |                             |
| COBOL for NOS/VE<br>Summary                                    | 60486019           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| <b>Manual Title</b>                      | <b>Publication Number</b> | <b>Online Manuals<sup>1</sup></b> |
|------------------------------------------|---------------------------|-----------------------------------|
| <b>COBOL Manuals (Continued):</b>        |                           |                                   |
| COBOL for NOS/VE Tutorial                | 60486012                  | COBOL_T                           |
| COBOL for NOS/VE Usage                   | 60486013                  | COBOL and EXAMPLES                |
| <b>Other Compiler Manuals:</b>           |                           |                                   |
| Ada for NOS/VE Usage                     | 60498113                  | ADA                               |
| Ada for NOS/VE Reference Manual          | 60498118                  | EXAMPLES                          |
| APL for NOS/VE File Utilities Usage      | 60485814                  |                                   |
| APL for NOS/VE Language Definition Usage | 60485813                  |                                   |
| BASIC for NOS/VE Summary Card            | 60486319                  |                                   |
| BASIC for NOS/VE Usage                   | 60486313                  | BASIC                             |
| LISP for NOS/VE Usage Supplement         | 60486213                  |                                   |
| Pascal for NOS/VE Summary Card           | 60485619                  |                                   |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

Table B-1. Related Manuals (Continued)

| Manual Title                                          | Publication Number | Online Manuals <sup>1</sup> |
|-------------------------------------------------------|--------------------|-----------------------------|
| <b>Other Compiler Manuals (Continued):</b>            |                    |                             |
| Pascal for NOS/VE Usage                               | 60485618           | PASCAL and EXAMPLES         |
| Prolog for NOS/VE Usage                               | 60486713           | PROLOG                      |
| <b>VX/VE Manuals:</b>                                 |                    |                             |
| C/VE for NOS/VE Quick Reference                       |                    | C                           |
| C/VE for NOS/VE Usage                                 | 60469830           |                             |
| DWB/VX Introduction and User Reference Tutorial/Usage | 60469890           |                             |
| DWB/VX Macro Packages Guide Usage                     | 60469910           |                             |
| DWB/VX Preprocessors Guide Usage                      | 60469920           |                             |
| DWB/VX Text Formatters Guide Usage                    | 60469900           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| Manual Title                                                 | Publication Number | Online Manuals <sup>1</sup> |
|--------------------------------------------------------------|--------------------|-----------------------------|
| <b>VX/VE Manuals (Continued):</b>                            |                    |                             |
| VX/VE<br>Administrator Guide and Reference<br>Tutorial/Usage | 60469770           |                             |
| VX/VE<br>An Introduction for UNIX Users<br>Tutorial/Usage    | 60469980           |                             |
| VX/VE<br>Programmer Guide<br>Tutorial                        | 60469790           |                             |
| VX/VE<br>Programmer Reference<br>Usage                       | 60469820           |                             |
| VX/VE<br>Support Tools Guide<br>Tutorial                     | 60469800           |                             |
| VX/VE<br>User Guide<br>Tutorial                              | 60469780           |                             |
| VX/VE<br>User Reference<br>Usage                             | 60469810           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

*(Continued)*

Table B-1. Related Manuals (Continued)

| Manual Title                                                    | Publication Number | Online Manuals <sup>1</sup> |
|-----------------------------------------------------------------|--------------------|-----------------------------|
| <b>Data Management Manuals:</b>                                 |                    |                             |
| DM Command Procedures Reference Manual                          | 60487905           |                             |
| DM Concepts and Facilities Manual                               | 60487900           |                             |
| DM Error Message Summary for DM on CDC NOS/VE                   | 60487906           |                             |
| DM Fundamental Query and Manipulation Manual                    | 60487903           |                             |
| DM Report Writer Reference Manual                               | 60487904           |                             |
| DM System Administrator's Reference Manual for DM on CDC NOS/VE | 60487902           |                             |
| DM Utilities Reference Manual for DM on CDC NOS/VE              | 60487901           |                             |
| IM/DM for NOS/VE Installation and User Guide                    | 60487907           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)



**Table B-1. Related Manuals (Continued)**

| Manual Title                            | Publication Number | Online Manuals <sup>1</sup> |
|-----------------------------------------|--------------------|-----------------------------|
| <b>Information Management Manuals:</b>  |                    |                             |
| IM/Control for NOS/VE Quick Reference   | L60488918          | CONTROL                     |
| IM/Control for NOS/VE Usage             | 60488913           |                             |
| IM/Fast for NOS/VE Administration Usage | 60487513           |                             |
| IM/Fast for NOS/VE Programming Usage    | 60487514           |                             |
| IM/Quick for NOS/VE Tutorial            | 60485712           |                             |
| IM/Quick for NOS/VE Summary             | 60485714           |                             |
| IM/Quick for NOS/VE Online Help         |                    | QUICK                       |
| IM/Smart for NOS/VE Usage               | 60488513           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

Table B-1. Related Manuals (Continued)

| Manual Title                           | Publication Number | Online Manuals <sup>1</sup> |
|----------------------------------------|--------------------|-----------------------------|
| <b>CDCNET Manuals:</b>                 |                    |                             |
| CDCNET Access Guide                    |                    | CDCNET_<br>ACCESS           |
| CDCNET Batch Device User Guide         | 60463863           | CDCNET_<br>BATCH            |
| CDCNET Commands Reference              | 60000414           |                             |
| CDCNET Conceptual Overview             | 60461540           |                             |
| CDCNET Configuration Guide             | 60461550           |                             |
| CDCNET DI Dump Analyzer                |                    | ANACD                       |
| CDCNET Diagnostic Messages             | 60461600           | CDCNET_<br>MSGs             |
| CDCNET Network Configuration Utility   |                    | NETCU                       |
| CDCNET Network Operations and Analysis | 60461520           |                             |
| CDCNET Product Descriptions            | 60460590           |                             |
| CDCNET Terminal Interface              | 60463850           |                             |
| CDCNET TCP/IP Applications             | 60000214           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| <b>Manual Title</b>                                                                | <b>Publication Number</b> | <b>Online Manuals<sup>1</sup></b> |
|------------------------------------------------------------------------------------|---------------------------|-----------------------------------|
| <b>Migration Manuals:</b>                                                          |                           |                                   |
| Migration from IBM to NOS/VE Tutorial/Usage                                        | 60489507                  |                                   |
| Migration from NOS to NOS/VE Tutorial/Usage                                        | 60489503                  |                                   |
| Migration from NOS/BE to NOS/VE Tutorial/Usage                                     | 60489505                  |                                   |
| Migration from NOS/BE to NOS/VE Standalone Tutorial/Usage                          | 60489506                  |                                   |
| Migration from VAX/VMS to NOS/VE Tutorial/Usage                                    | 60489508                  |                                   |
| <b>Miscellaneous Manuals:</b>                                                      |                           |                                   |
| ANALYZE_DUMP Utility                                                               |                           | ANALYZE_DUMP                      |
| Applications Directory                                                             | 60455370                  |                                   |
| Control Data CONNECT User's Guide                                                  | 60462560                  |                                   |
| Control Data CONNECT Plus for the IBM Personal Computer (Version 1.0) User's Guide | 60000388                  |                                   |
| Control Data CONNECT VIEW for the IBM Personal Computer Version 2.0 User's Guide   | 60463946                  |                                   |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

Table B-1. Related Manuals (Continued)

| Manual Title                              | Publication Number | Online Manuals <sup>1</sup> |
|-------------------------------------------|--------------------|-----------------------------|
| <b>Miscellaneous Manuals (Continued):</b> |                    |                             |
| Debug for NOS/VE<br>Quick Reference       | 60488218           | DEBUG                       |
| Debug for NOS/VE<br>Usage                 | 60488213           |                             |
| Desktop/VE for Macintosh<br>Usage         | 60464503           |                             |
| FTAM/VE<br>Usage                          | 60000455           |                             |
| Mail/VE (Version 1)<br>Summary Card       | 60464519           |                             |
| Mail/VE (Version 1)<br>Usage              |                    | MAIL_VE                     |
| Mail/VE Version 2<br>Usage                | 60464514           | MAILVE_V2                   |
| Math Library for NOS/VE<br>Usage          | 60486513           |                             |
| NOS/VE Build Utility<br>Usage             | 60487413           |                             |
| NOS/VE Diagnostic Messages<br>Usage       | 60464613           | MESSAGES                    |
| NOS/VE Examples<br>Usage                  |                    | EXAMPLES                    |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| Manual Title                                                    | Publication Number | Online Manuals <sup>1</sup> |
|-----------------------------------------------------------------|--------------------|-----------------------------|
| <b>Miscellaneous Manuals (Continued):</b>                       |                    |                             |
| NOS/VE Global Index Reference                                   | 60464010           |                             |
| NOS/VE Online Manual Systems                                    | 60488403           | TOPICS_<br>CONTEXT          |
| NOS/VE System Information                                       |                    | NOS_VE                      |
| Programming Environment for NOS/VE Usage                        |                    | ENVIRON-<br>MENT            |
| Programming Environment for NOS/VE Summary                      | 60486819           |                             |
| Professional Programming Environment for NOS/VE Quick Reference | 60486618           | PPE                         |
| Professional Programming Environment for NOS/VE Usage           | 60486613           |                             |
| Remote Host Facility Usage                                      | 60460620           |                             |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

(Continued)

**Table B-1. Related Manuals (Continued)**

| <b>Manual Title</b>                                                                                 | <b>Publication Number</b> | <b>Online Manuals<sup>1</sup></b> |
|-----------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------|
| <b>Hardware Manuals:</b>                                                                            |                           |                                   |
| CYBER 170 Computer Systems<br>Models 825, 835, and 855<br>General Description<br>Hardware Reference | 60459960                  |                                   |
| HPA/VE Reference                                                                                    | 60461930                  |                                   |
| Virtual State Volume II<br>Hardware Reference                                                       | 60458890                  |                                   |

1. This column lists the title of the online version of the manual and indicates whether the examples in the printed manual are in the online Examples manual.

## Mail/VE Gateway References

The manuals listed in table B-2 are referenced in chapter 3 and are not listed in table B-1.

**Table B-2. Mail/VE Gateway References**

| <b>Manual Title</b>                                      | <b>Publication Number</b> | <b>Online Manuals</b> |
|----------------------------------------------------------|---------------------------|-----------------------|
| Network Transfer Facility<br>Usage Manual                | 15190150                  |                       |
| NOS Version 2 Reference Set, Volume 3<br>System Commands | 60459680                  |                       |



# Country Codes

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C

C





# Country Codes

C

Mail/VE allows you to specify the country codes used in X.400 addresses in either alpha or numeric code. The ISO Standard 3166 defines the alpha code for each country; the CCITT Recommendation X.121 defines the numeric code for each country. Table C-1 presents the countries, in alphabetic order, with associated alpha and numeric codes.

Table C-1. Country Codes

| Country                                            | Alpha Code | Numeric Code |
|----------------------------------------------------|------------|--------------|
| AFGHANISTAN (Democratic Republic of)               | AF         | 412          |
| ALBANIA (Socialist People's Republic)              | AL         | 276          |
| ALGERIA (Algerian Democratic and Popular Republic) | DZ         | 603          |
| AMERICAN SAMOA                                     | AS         | 544          |
| ANDORRA                                            | AD         |              |
| ANGOLA (People's Republic of)                      | AO         | 631          |
| ANGUILLA                                           | AI         | 356          |
| ANTARCTICA                                         | AQ         |              |
| ANTIGUA AND BARBUDA                                | AG         | 344          |
| ARGENTINE REPUBLIC                                 | AR         | 722          |
| ARUBA                                              | AW         |              |
| AUSTRALIA                                          | AU         | 505          |
| AUSTRIA                                            | AT         | 232          |
| BAHAMAS (Commonwealth of the)                      | BS         | 364          |
| BAHRAIN (State of)                                 | BH         | 426          |
| BANGLADESH (People's Republic of)                  | BD         | 470          |
| BARBADOS                                           | BB         | 342          |
| BELGIUM                                            | BE         | 206          |
| BELIZE                                             | BZ         | 702          |
| BENIN (People's Republic of)                       | BJ         | 616          |
| BERMUDA                                            | BM         | 350          |
| BHUTAN                                             | BT         |              |

(Continued)

Table C-1. Country Codes (Continued)

| Country                                       | Alpha Code | Numeric Code |
|-----------------------------------------------|------------|--------------|
| BOLIVIA (Republic of)                         | BO         | 736          |
| BOTSWANA (Republic of)                        | BW         | 652          |
| BOUVET ISLAND                                 | BV         |              |
| BRAZIL (Federative Republic of)               | BR         | 724          |
| BRITISH INDIAN OCEAN TERRITORY                | IO         |              |
| BRUNEI DARUSSALAM                             | BN         | 528          |
| BULGARIA (People's Republic of)               | BG         | 284          |
| BURKINA FASO                                  | BF         | 613          |
| BURMA (Socialist Republic of the Union of)    | BU         | 414          |
| BURUNDI (Republic of)                         | BI         | 642          |
| BYELORUSSIAN SSR                              | BY         | 250          |
| CAMEROON (Republic of)                        | CM         | 624          |
| CANADA                                        | CA         | 302          |
| CAPE VERDE (Republic of)                      | CV         | 625          |
| CAYMAN ISLANDS                                | KY         | 346          |
| CENTRAL AFRICAN REPUBLIC                      | CF         | 623          |
| CHAD (Republic of)                            | TD         | 622          |
| CHILE                                         | CL         | 730          |
| CHINA (People's Republic of)                  | CN         | 460          |
| CHRISTMAS ISLAND                              | CX         |              |
| COCOS (KEELING) ISLANDS                       | CC         |              |
| COLOMBIA (Republic of)                        | CO         | 732          |
| COMOROS (Federal and Islamic Republic of the) | KM         | 654          |
| CONGO (People's Republic of the)              | CG         | 629          |
| COOK ISLANDS                                  | CK         | 548          |
| COSTA RICA                                    | CR         | 712          |
| COTE D'IVOIRE (See Ivory Coast)               | CI         | 612          |

(Continued)

Table C-1. Country Codes (Continued)

| Country                           | Alpha Code | Numeric Code |
|-----------------------------------|------------|--------------|
| CUBA                              | CU         | 368          |
| CYPRUS (Republic of)              | CY         | 280          |
| CZECHOSLOVAK SOCIALIST REPUBLIC   | CS         | 230          |
| DENMARK                           | DK         | 238          |
| DJIBOUTI (Republic of)            | DJ         | 638          |
| DOMINICA                          | DM         | 366          |
| DOMINICAN REPUBLIC                | DO         | 370          |
| EAST TIMOR                        | TP         |              |
| ECUADOR                           | EC         | 740          |
| EGYPT (Arab Republic of)          | EG         | 602          |
| EL SALVADOR (Republic of)         | SV         | 706          |
| EQUATORIAL GUINEA (Republic of)   | GQ         | 627          |
| ETHIOPIA                          | ET         | 636          |
| FALKLAND ISLANDS (MALVINAS)       | FK         |              |
| FAROE ISLANDS                     | FO         | 288          |
| FIJI                              | FJ         | 542          |
| FINLAND                           | FI         | 244          |
| FRANCE                            | FR         | 208          |
| FRENCH ANTILLES                   |            | 340          |
| FRENCH POLYNESIA                  | PF         | 547          |
| FRENCH SOUTHERN TERRITORIES       | TF         |              |
| GABON REPUBLIC                    | GA         | 628          |
| GAMBIA (Republic of the)          | GM         | 607          |
| GERMAN DEMOCRATIC REPUBLIC (East) | DD         | 218          |
| GERMAN FEDERAL REPUBLIC (West)    | DE         | 262          |
| GHANA                             | GH         | 620          |
| GIBRALTAR                         | GI         | 266          |

(Continued)

Table C-1. Country Codes (Continued)

| Country                       | Alpha Code | Numeric Code |
|-------------------------------|------------|--------------|
| GILBERT AND ELLICE ISLANDS    |            | 545          |
| GREECE                        | GR         | 202          |
| GREENLAND                     | GL         | 290          |
| GRENADA                       | GD         | 352          |
| GUADELOUPE                    | GP         |              |
| GUAM                          | GU         | 535          |
| GUATEMALA (Republic of)       | GT         | 704          |
| GUIANA (French Department of) | GF         | 742          |
| GUINEA (Republic of)          | GN         | 611          |
| GUINEA-BISSAU (Republic of)   | GW         | 632          |
| GUYANA                        | GY         | 738          |
| HAITI (Republic of)           | HT         | 372          |
| HEARD AND MCDONALD ISLES      | HM         |              |
| HONDURAS (Republic of)        | HN         | 708          |
| HONG KONG                     | HK         | 454          |
| HUNGARIAN PEOPLE'S REPUBLIC   | HU         | 216          |
| ICELAND                       | IS         | 274          |
| INDIA (Republic of)           | IN         | 404          |
| INDONESIA (Republic of)       | ID         | 510          |
| IRAN (Islamic Republic of)    | IR         | 432          |
| IRAQ (Republic of)            | IQ         | 418          |
| IRELAND                       | IE         | 272          |
| ISRAEL (State of)             | IL         | 425          |
| ITALY                         | IT         | 222          |
| IVORY COAST (Republic of the) | CI         | 612          |
| JAMAICA                       | JM         | 338          |
| JAPAN                         | JP         | 440          |

(Continued)

Table C-1. Country Codes (Continued)

| Country                                           | Alpha Code | Numeric Code |
|---------------------------------------------------|------------|--------------|
| JORDAN (Hashemite Kingdom of)                     | JO         | 416          |
| KAMPUCHEA, DEMOCRATIC                             | KH         | 456          |
| KENYA (Republic of)                               | KE         | 639          |
| KIRIBATI                                          | KI         |              |
| KOREA (Democratic People's Republic of)           | KP         | 467          |
| KOREA (Republic of)                               | KR         | 450          |
| KUWAIT (State of)                                 | KW         | 419          |
| LAO PEOPLE'S DEMOCRATIC REPUBLIC                  | LA         | 457          |
| LEBANON                                           | LB         | 415          |
| LESOTHO (Kingdom of)                              | LS         | 651          |
| LIBERIA (Republic of)                             | LR         | 618          |
| LIBYA (Socialist People's Libyan Arab Jamahiriya) | LY         | 606          |
| LIECHTENSTEIN (Principality of)                   | LI         |              |
| LUXEMBOURG (Grand Duchy of)                       | LU         | 270          |
| MACAO                                             | MO         | 455          |
| MADAGASCAR (Democratic Republic of)               | MG         | 646          |
| MALAWI                                            | MW         | 650          |
| MALAYSIA                                          | MY         | 502          |
| MALDIVES (Republic of)                            | MV         | 472          |
| MALI (Republic of)                                | ML         | 610          |
| MALTA                                             | MT         | 278          |
| MARSHALL ISLANDS (Republic of)                    | MH         |              |
| MARTINIQUE                                        | MQ         |              |
| MAURITANIA (Islamic Republic of)                  | MR         | 609          |
| MAURITIUS                                         | MU         | 617          |
| MEXICO                                            | MX         | 334          |
| MICRONESIA (Federated States of)                  | FM         |              |

(Continued)

Table C-1. Country Codes (Continued)

| Country                           | Alpha Code | Numeric Code |
|-----------------------------------|------------|--------------|
| MONACO                            | MC         | 212          |
| MONGOLIAN PEOPLE'S REPUBLIC       | MN         | 428          |
| MONTSERAT                         | MS         | 354          |
| MOROCCO (Kingdom of)              | MA         | 604          |
| MOZAMBIQUE (People's Republic of) | MZ         | 643          |
| NAMIBIA                           | NA         | 649          |
| NAURU                             | NR         | 536          |
| NEPAL                             | NP         | 429          |
| NETHERLANDS                       | NL         | 204          |
| NETHERLANDS ANTILLES              | AN         | 362          |
| NEUTRAL ZONE                      | NT         |              |
| NEW CALEDONIA AND DEPENDENCIES    | NC         | 546          |
| NEW HEBRIDES                      |            | 541          |
| NEW ZEALAND                       | NZ         | 530          |
| NICARAGUA                         | NI         | 710          |
| NIGER (Republic of the)           | NE         | 614          |
| NIGERIA (Federal Republic of)     | NG         | 621          |
| NIUE                              | NU         |              |
| NORFOLK ISLAND                    | NF         |              |
| NORTHERN MARIANA ISLANDS          | MP         |              |
| NORWAY                            | NO         | 242          |
| OMAN (Sultanate of)               | OM         | 422          |
| PAKISTAN (Islamic Republic of)    | PK         | 410          |
| PALAU                             | PW         |              |
| PANAMA (Republic of)              | PA         | 714          |
| PAPUA NEW GUINEA                  | PG         | 537          |
| PARAGUAY (Republic of)            | PY         | 744          |

(Continued)

Table C-1. Country Codes (Continued)

| Country                                        | Alpha Code | Numeric Code |
|------------------------------------------------|------------|--------------|
| PERU                                           | PE         | 716          |
| PHILIPPINES (Republic of)                      | PH         | 515          |
| PITCAIRN ISLANDS                               | PN         |              |
| POLAND (People's Republic of)                  | PL         | 260          |
| PORTUGAL                                       | PT         | 268          |
| PUERTO RICO                                    | PR         | 330          |
| QATAR (State of)                               | QA         | 427          |
| REUNION (French Department of)                 | RE         | 647          |
| ROMANIA (Socialist Republic of)                | RO         | 226          |
| RWANDA (Republic of)                           | RW         | 635          |
| SAINT HELENA                                   | SH         |              |
| SAINT KITTS AND NEVIS                          | KN         | 356          |
| SAINT LUCIA                                    | LC         | 358          |
| SAINT PIERRE AND MIQUELON                      | PM         | 308          |
| SAINT VINCENT AND THE GRENADINES               | VC         | 360          |
| SAMOA, WESTERN                                 | WS         | 549          |
| SAN MARINO                                     | SM         |              |
| SAO TOME AND PRINCIPE (Democratic Republic of) | ST         | 626          |
| SAUDI ARABIA (Kingdom of)                      | SA         | 420          |
| SENEGAL (Republic of the)                      | SN         | 608          |
| SEYCHELLES                                     | SC         | 633          |
| SIERRA LEONE                                   | SL         | 619          |
| SINGAPORE                                      | SG         | 525          |
| SOLOMON ISLANDS                                | SB         | 540          |
| SOMALIA DEMOCRATIC REPUBLIC                    | SO         | 637          |
| SOUTH AFRICA (Republic of)                     | ZA         | 655          |
| SPAIN                                          | ES         | 214          |

(Continued)



Table C-1. Country Codes (Continued)

| Country                                                 | Alpha Code | Numeric Code |
|---------------------------------------------------------|------------|--------------|
| SRI LANKA (Democratic Socialist Republic of)            | LK         | 413          |
| SUDAN (Democratic Republic of the)                      | SD         | 634          |
| SURINAME (Republic of)                                  | SR         | 746          |
| SVALBARD & JAN MAYEN ISLANDS                            | SJ         |              |
| SWAZILAND (Kingdom of)                                  | SZ         | 653          |
| SWEDEN                                                  | SE         | 240          |
| SWITZERLAND (Confederation of)                          | CH         | 228          |
| SYRIAN ARAB REPUBLIC                                    | SY         | 417          |
| TAIWAN, PROVINCE OF CHINA                               | TW         | 460          |
| TANZANIA (United Republic of)                           | TZ         | 640          |
| THAILAND                                                | TH         | 520          |
| TOGOLESE REPUBLIC                                       | TG         | 615          |
| TOKELAU                                                 | TK         |              |
| TONGA                                                   | TO         | 539          |
| TRINIDAD AND TOBAGO                                     | TT         | 374          |
| TUNISIA                                                 | TN         | 605          |
| TURKEY                                                  | TR         | 286          |
| TURKS AND CAICOS ISLANDS                                | TC         | 376          |
| TUVALU                                                  | TV         |              |
| UGANDA (Republic of)                                    | UG         | 641          |
| UKRAINIAN SSR                                           | UA         | 250          |
| UNION OF SOVIET SOCIALIST REPUBLICS                     | SU         | 250          |
| UNITED ARAB EMIRATES                                    | AE         | 424          |
| UNITED ARAB EMIRATES (Abu Dhabi)                        | AE         | 430          |
| UNITED ARAB EMIRATES (Dubai)                            | AE         | 431          |
| UNITED KINGDOM OF GREAT BRITAIN AND<br>NORTHERN IRELAND | GB         | 234 or 235   |

(Continued)

Table C-1. Country Codes (Continued)

| Country                                 | Alpha Code | Numeric Code |
|-----------------------------------------|------------|--------------|
| UNITED STATES OF AMERICA                | US         | 310 to 316   |
| UNITED STATES MINOR OUTLYING ISLANDS    | UM         |              |
| UPPER VOLTA                             | HV         |              |
| URUGUAY (Oriental Republic of)          | UY         | 748          |
| VANUATU                                 | VU         |              |
| VATICAN CITY STATE                      | VA         |              |
| VENEZUELA (Republic of)                 | VE         | 734          |
| VIET NAM (Socialist Republic of)        | VN         | 452          |
| VIRGIN ISLANDS (British)                | VG         | 348          |
| VIRGIN ISLANDS (United States)          | VI         | 332          |
| WALLIS AND FUTUNA ISLANDS               | WF         | 543          |
| WESTERN SAHARA                          | EH         |              |
| YEMEN (Arab Republic)                   | YE         | 421          |
| YEMEN (People's Democratic Republic of) | YD         | 423          |
| YUGOSLAVIA (Socialist Republic of)      | YU         | 220          |
| ZAIRE (Republic of)                     | ZR         | 630          |
| ZAMBIA (Republic of)                    | ZM         | 645          |
| ZIMBABWE                                | ZW         | 648          |



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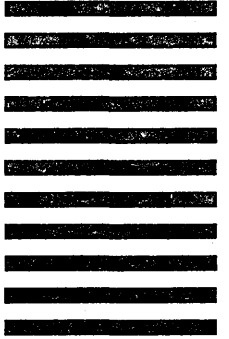
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