MERVA ESA Components

MERVA USE & Branch for Windows NT User's Guide

Version 4 Release 1

SH12-6334-02

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Note!
Before using this information and the product it supports, be sure to read the general information under "Appendix D. Notices" on page 83.

Third Edition, May 2001

This edition applies to

Version 4 Release 1 of IBM MERVA ESA Components (5648-B30)

and to all subsequent releases and modifications until otherwise indicated in new editions.

Changes to this edition are marked with a vertical bar.

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Contents

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About This Book

Read this book to find out how to use the IBM licensed programs:

- MERVA USE & Branch for Windows NT
- MERVA USE & Branch for Windows NT with SWIFT Link

Both programs are part of MERVA ESA Components Version 4 Release 1. They are referred to as MERVA in this book.

The book describes how to:

- Use the MERVA Main Menu window.
- Process and retrieve messages.

  With the MERVA Message Processing Client for Windows NT you can also process messages for MERVA using a Windows NT workstation that is connected to the MERVA servers. For more information refer to the *MERVA Message Processing Client for Windows NT User's Guide*.
- Print messages automatically.
- Administer user access rights.
- Administer correspondent information.
- Operate SWIFT Link and MERVA Link communication components.
- Identify and diagnose problems.

How to install and customize MERVA is described in the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

The tasks of the SWIFT User Security Officer and User Key Management Officer are described in the *MERVA USE Administration Guide*.

Who Should Read This Book

This book is written for users of MERVA. It is intended for message-processing personnel who works with messages. It is also intended for application programmers and system administrators who want to access and customize MERVA.

It is assumed throughout this book that you are familiar with the SWIFT messages and SWIFT terminology as defined in the *S.W.I.F.T. User Handbook*, published by the Society for Worldwide Interbank Financial Telecommunication s.c., La Hulpe, Belgium.

How This Book is Organized

The first part of this book provides general information about MERVA by giving an overview of the product and by describing what you do when you use it for the first time. The second part describes message-processing, the automatic print function, and the administration of users and correspondents. Part 3 tells you how to operate different links and how to access diagnosis information. The appendixes describe user rights and the password user exit.

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This book also contains a glossary of terms and abbreviations, a bibliography, and an index.

Part 1. General Introduction to MERVA

This part of the book gives you an overview of MERVA functions. It also tells you how to start MERVA.

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Chapter 1. Functions of MERVA

This chapter shows the functional areas of MERVA. It also describes how message routing works and what a message reference number (MRN) is.

The Functional Areas of MERVA

MERVA is a message queuing and routing system that allows you to process financial messages. With the standard communication link, you have also access to the SWIFT financial network.

MERVA offers you the following functions:

- Message Processing and Retrieval

  With the MERVA Message Processing Client for Windows NT, you can create, verify, edit, and authorize different message types, such as SWIFT Financial (FIN) messages. For more information refer to the *MERVA Message Processing Client for Windows NT User's Guide*.
- Automatic Message Print

  You can print messages automatically at any stage on different printers depending on the specified routing criteria.
- Customization

  With MERVA, you can define the message flow according to your needs. With its customization program, you can also specify the message routing and other installation-specific values.
- User Administration

  You can control user access to MERVA with the MERVA User Administration function. This function controls the access to functions, subfunctions, message queues, and message types.
- Correspondents Administration

  You can import and process correspondents data from the Bank Identifier Code (BIC) file or the BIC Database Plus (BIC+) file. This file is delivered by SWIFT in a compressed format.
- SWIFT User Security Enhancement (USE) Administration

  MERVA helps you handle the User Security Officer (USOF) and the User Key Management Officer (UKMO) administrator. You can automate the Bilateral Key Exchange (BKE) service. MERVA allows you to distribute the results of USE operations, session keys, and bilateral keys. You can also use it as a USE server for other systems.
- SWIFT Link

  The interface to the SWIFT network is based on the X.25 protocol. MERVA provides easy-to-use functions for the SWIFT operator.
- MERVA Link

  With the MERVA Link service, you can connect a MERVA system to any other MERVA system. MERVA Link allows you the distribution of MERVA functions and message flows in a network across different systems and locations. After the network is configured, you only have to monitor the MERVA Link connections, and start or stop them, if required.
- Application Programming Interface (API)

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The API allows you to integrate financial applications in MERVA. You can use the API and the message-routing definitions to implement different extensions or specific functions for your message-processing steps. Connectivity features are provided for programs running on Windows NT and OS/400® to access the MERVA API.

The API also supports telex messages.

- Audit Logging

  MERVA provides a complete audit trail of all system and user actions. The data is stored in relational tables where it can be easily accessed.

- System Maintenance

  The installation of MERVA and any system updates are based on the software Installshield Version 5.1 International West.

- Database Maintenance

  The installation and maintenance of the MERVA databases is supported by the MERVA Control Center.

MERVA is a multi-user application that allows you to start several functions on a single workstation and use it from several workstations at the same time.

Message Routing in MERVA

In MERVA, messages are stored in queues and moved from one queue to another for further processing.

All messages in message queues are stored in a message database. Messages are stored in the database through the API or through the communication links.

After a message is processed, it is routed to the next message queue. The queue to which the message is forwarded is determined by the routing table of your installation.

Each message queue belongs to a purpose group. A purpose group is a logical collection of one or more message queues. Specific MERVA functions, such as **Manual Authentication**, are associated with a purpose group. The functions process all messages stored in one or more queues of that purpose group.

Assume, for example, that two different users should be responsible for the manual authentication of different message types. You can then customize the system in the following way:

1. Define two manual authentication queues and assign both to the **Manual Authentication** purpose group.
2. Set up a routing condition that routes messages of a certain type to one queue, others to the second queue.
3. Authorize both users to use the **Manual Authentication** function but assign different queues to each of them.

This configuration is transparent to both users. One user automatically receives one group of message types, the other the rest.

MERVA Instance

Each MERVA system on a Windows NT machine is called a MERVA instance. A MERVA instance consists of several MERVA databases that contain, for example, customization data, message queues, user access rights, and correspondents data.

To identify a MERVA instance, define a name for it.

Note that you have to authorize users to work with a MERVA instance.

The MERVA Message Reference Number (MRN)

All MERVA functions that store new messages in the MERVA databases, such as the **Create SWIFT System Messages** function or the **API Create New Message** function, assign MRNs to messages.

The MRN consists of two parts:

- The first part is 8 characters long and denotes the MERVA instance. This lets you identify messages that are created in other MERVA instances or on other machines and transferred to your system via the MERVA Link component.
- The second part is an 8-character sequential number that uniquely identifies each message within a single MERVA instance. The sequential number is continuously incremented. It starts from 1 after installation of the MERVA Message Database and ends with 99999999. The MRN is then reset to 1.

Together, the two parts of the MRN uniquely identify each message within MERVA with the following exception: Copies of messages that are created with the routing facility have the same MRN as the original message.

MERVA Authority

The following authorities are valid in MERVA:

- MERVA System Administration (SYSADM) Authority
- MERVA User Administration (USERADM) Authority
- MERVA End User Administration (USER) Authority

System Administration Authority

The SYSADM authority is the highest level of administrative authority.

With SYSADM authority you can:

- Start and stop the MERVA control process as a Windows NT service
- Start and stop MERVA in multiple user mode
- Start and stop MERVA in customization mode
- Create and remove a MERVA instance
- Create and remove a MERVA database
- Access each data in each table of each MERVA database

You have SYSADM authority only if you are a member of all of the following groups:

- Local administrator group
- MERVA administrator group **mervasys**
- MERVA user group, for example, **umerva1**

User Administration Authority

The USERADM authority is the second highest level of administrative authority.

With USERADM authority you can:

- Start and stop MERVA in multiple user mode
- Start and stop MERVA in customization mode
- Administer MERVA user rights

You have USERADM authority only if you are a member of all of the following groups:

- Users group
- MERVA administrator group **mervasys**
- MERVA user group, for example, **umerva1**

End User Authority

The USER authority is the lowest level of administrative authority.

With USER authority you can:

- Log on to MERVA
- Use MERVA functions depending on your access right
- Access and process MERVA messages depending on your access right

You have USER authority only if you are a member of all of the following groups:

- Users group
- MERVA program group **mervalpp**
- MERVA user group, for example, **umerva1**

Chapter 2. Getting Started

This chapter shows how to start a MERVA instance. It also describes some features with which you should be familiar before you start using MERVA.

Starting and Stopping a MERVA Instance

The following figure gives you an overview of how to start and stop a MERVA instance.

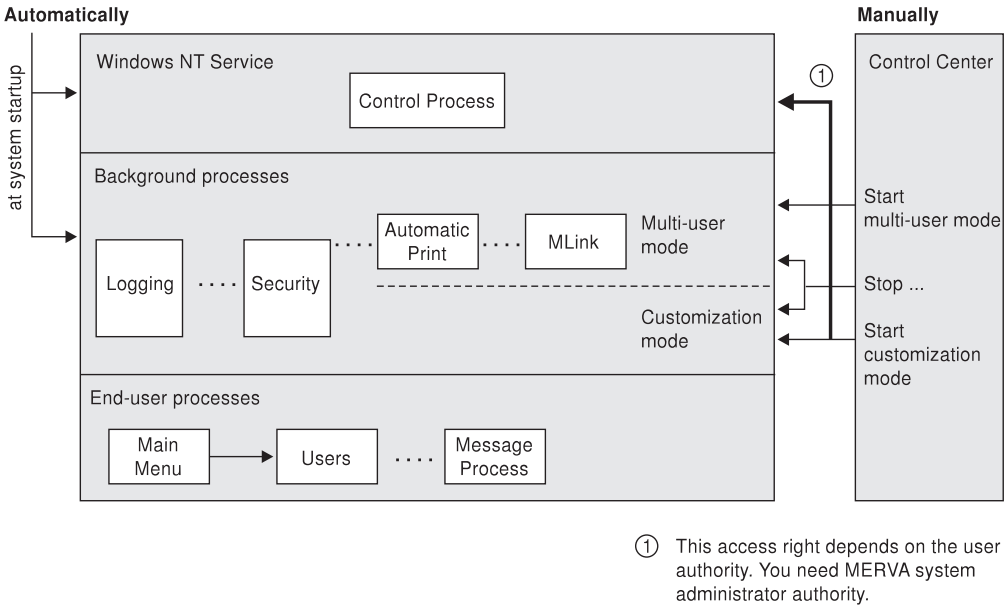

Figure 1. Overview of How to Start and Stop a MERVA Instance

By default, MERVA is started automatically when Windows NT is started. If you want to start or stop MERVA in any mode:

1. Log on to Windows NT with the user ID of the MERVA system administrator, for example, **mervaadm**.
2. In **Programs**, select **MERVA USE & Branch**. Then select **Control Center**.

   Note that the name **MERVA USE & Branch** can be different according to your own settings during the installation.

   You then get the MERVA Control Center window. The following figure shows an example of this window.

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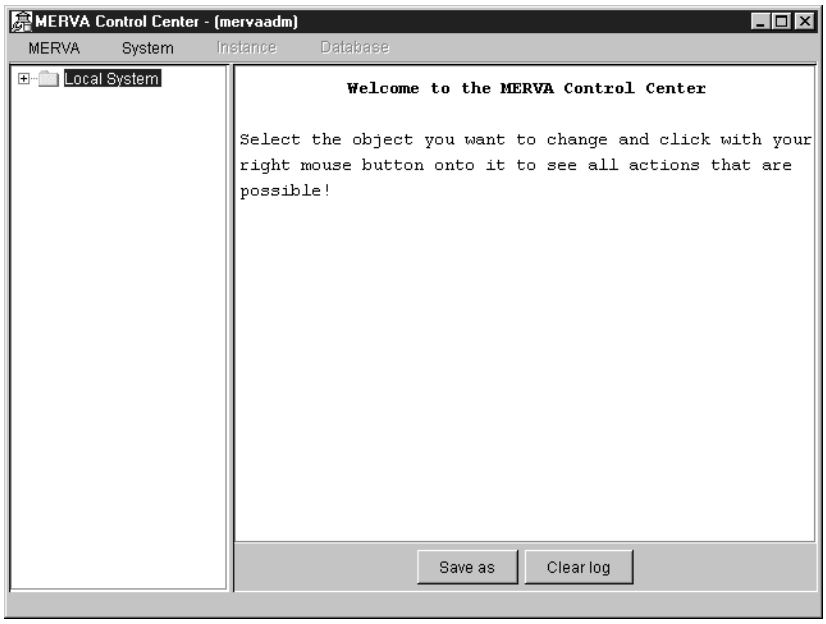

Figure 2. The MERVA Control Center Window

3. Double-click **Local System**.
4. Select the MERVA instance that you want to start or stop.
5. Right-click the selected MERVA instance.
6. You can select one of the following choices:

   Start multi user mode
   The MERVA control process and the background processes that are necessary to run a MERVA instance are started. If the MERVA instance is running, you can log on to start the MERVA Main Menu. For more information refer to "Logging On to or Logging Off from a MERVA Instance" on page 9.

   Start customization mode
   The MERVA control process and the background processes that are necessary to customize your installation or to change customized data are started. You can log on but you can only start the customization program.

   Stop The MERVA control process and all background processes are stopped only if no user is logged on. If one or more users are still logged on, you get a warning. In this case, the MERVA control process and all background processes are not stopped.

   Forced stop
   The MERVA control process and all background processes are stopped even if one or more users are still logged on.

   Show status
   The status of the MERVA instance is displayed. The status can be **running**, **not running**, or **running in customization mode**. Important characteristics of the instance configuration are also shown.

Switching between Multi-User and Customization Mode

To switch from the multi-user mode to the customization mode in a running MERVA system:

1. Log on to Windows NT with the user ID of a MERVA user administrator, for example, **merva1**.
2. In **Programs**, select **MERVA USE & Branch**. Then select **Control Center**.
3. Double-click **Local System**.
4. Select your MERVA instance, for example, **merva1**.
5. Right-click the selected MERVA instance.
6. Select **Start customization mode**.

The selected MERVA instance is stopped and restarted in customization mode.

To switch from the customization mode to the multi-user mode in a running MERVA system:

1. Repeat the procedure above except for the last step.
2. Select **Start multi user mode**.

The selected MERVA instance is stopped and restarted in multi-user mode.

Logging On to or Logging Off from a MERVA Instance

To log on to a MERVA instance:

1. In **Programs**, select **MERVA USE & Branch**. Then select **Main Menu**.

   You then get the MERVA Logon window. This window contains the user ID of the user who is currently logged on to the selected Windows NT machine. You cannot change this user ID.
2. Enter your Windows NT password.

   You then get the MERVA Main Menu window.

If your Windows NT password is different from your MERVA password, you get a new window to enter your MERVA password.

The password can be different for one of the following reasons:

- Your user ID has been newly added to MERVA.
- You do not have a MERVA password.
- Your MERVA password has been reset.
- You or your Windows NT administrator have changed your Windows NT password.

Note: Your current Windows NT password will be the new MERVA password.

If you have forgotten your MERVA password or if it is revoked, ask your MERVA user administrator to reset it.

Note: You can log on to a specific MERVA instance only once at the same time. To log off from a MERVA instance, close the MERVA Main Menu window. All open windows are then closed.

Using the MERVA Main Menu Window

After you log on to MERVA, you get the MERVA Main Menu window. In this window you can select and start the MERVA programs.

This window is the main starting point for actions that you want to perform. Many sections of this book refer to the window as shown in the following figure.

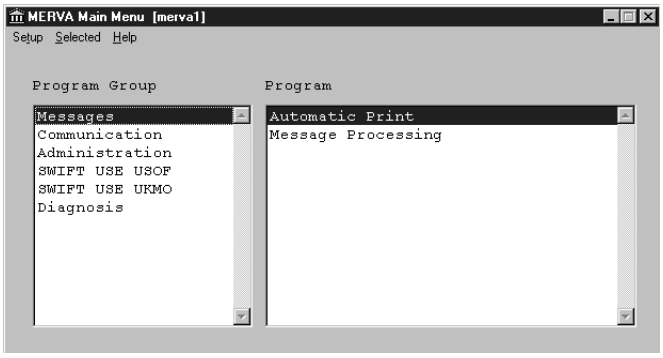

Figure 3. The MERVA Main Menu Window

The lists **Program Group** and **Program** show you the programs that you are allowed to use. To start a program:

1. Select a program group from the **Program Group** list.
2. Select a program from the **Program** list.
3. To start the program, select **Start** from the **Selected** menu or double-click on the selected program.

The **Setup** menu provides the following choices:

Logging Level To change the customized logging level for your MERVA instance temporarily. For detailed information, refer to "Changing the Logging Level Temporarily" on page 11.

Default Printer
To change the default printer that is specified for your user ID. For detailed information, refer to "Changing the Default Printer" on page 12.

Window Titles
To change the settings for the user information in the title bar of the main application windows. For detailed information, refer to "Changing the Window Title Settings" on page 13.

The following table shows a complete list of program groups and programs in the MERVA Main Menu window:

Program Group	Program
Messages	Automatic Print (See page 25.) Message Processing (See page 21.)
Communication	MERVA Link (See page 59.) SWIFT Link (See page 45.) SWIFT SLS Administration

Administration	Correspondents (See page 37.) Customization Logged-on User Operating (See page 35.) Users (See page 29.)
SWIFT USE USOF	Card Reader Maintenance ICC Card Maintenance ICC Set Maintenance
SWIFT USE UKMO	Bilateral Key Exchange BK Backup/Restore Certificate Handling Incoming MT 960/MT 966 RSA Key Generation Secure Transmission Key
Diagnosis	Display Diagnosis Log (See page 67.) Message Console (See page 68.)

Changing the Logging Level Temporarily

To display the logging level or change it temporarily, select **Logging Level** from the **Setup** menu in the MERVA Main Menu window. Note that you can only change the logging level if you are authorized to use the Customization - System Configuration. For a detailed description of the user rights, refer to "Appendix A. User Rights Description" on page 73.

You then get the Logging Level window. This window looks like the following. You can set the level of the **Programmer's Trace Log** from logging level **1** to **4**. The

Figure 4. The Logging Level Window

logging levels are:

1 Only errors are logged.

2 Errors and warnings are logged.

3 Errors, warnings, and information messages are logged.

4 Errors, warnings, information messages, and additional report information are logged.

Note: You should change this logging level only at the direction of your IBM representative.

You can set the **Queue Trace** level to one of the following values:

No Trace By default, the queue trace level is not set.

Small Trace The queue trace record lists parameters and return codes of queue management requests.

Large Trace The queue trace record lists parameters, return codes of queue management requests, the contents of the message, and all related information.

With the **Routing Trace** you can test newly customized routing tables. When you set the value to **Trace ON**, the execution of each routing table entry and the parameter values that determine the routing are recorded in the file **enmroute.trc** that is located in the **\Traces\Routing** subdirectory of the defined logging path. This information can be useful if routing table problems occur.

Note: Each trace level that exceeds the standard level affects system performance and requires large amounts of disk storage space.

For a description of how to set the logging level permanently, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

For a detailed description of the log files and traces, refer to the *MERVA USE & Branch for Windows NT Diagnosis Guide*.

Changing the Default Printer

To assign a printer other than the customized default printer, select **Default Printer** from the **Setup** menu in the MERVA Main Menu window.

You then get the Default Printer window in which you can select a printer. The window looks like the following:

Figure 5. The Default Printer Window

The printer that you select is then stored as the default printer for your user ID. The setting specifies the print device on which information is to be printed, such as:

- User data printed with the **Users** program.

- USE data printed with a **SWIFT USE USOF** or **UKMO** program.
- Customization report printed with the Customization program.

  Note that the name of the printer must be shorter than 65 characters.

Changing the Window Title Settings

To specify the title settings of the main application windows, select **Window Titles** from the **Setup** menu in the MERVA Main Menu window.

Select one or more of the following items to display them in the title bar of the main application windows:

- Your user ID
- Name of the MERVA instance with which you work
- Host name of the system on which the MERVA instance runs

The following example shows a title bar of the main application window of the MERVA Main Menu application. It contains all items that you can select.

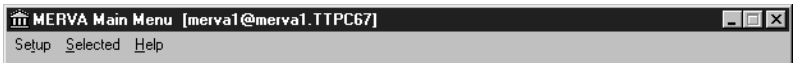

Figure 6. Title Bar with All Items Selected

Select **OK** to save the specified settings as defaults for your user ID.

Getting Help

Several types of help are available:

- Press F1 (Help) to get information about the function that you use.
- Select **Help** from the menu bar to get **Help** menu choices.
- In **Programs**, select **MERVA USE & Branch**. In **Documents** then select **Messages and Codes**.
- Enter the following command to get information about *Messages and Codes*:

  ```
  iview enmm0v40.inf
  ```

  The iview program then locates the **.inf** file via the environment variable **BOOKSHELF**.

  Note that your user environment variable **HELP** must contain the following entry:

  ```
  Variable: HELP
  Value:    ...;%HELP%
  ```

Part 2. Administrating Messages, Users, and Correspondents

This part of the book explains to you in detail how to export messages from a MERVA API queue to an external file and viceversa, how to purge or move messages on specified days, and how to print messages automatically. It also tells you how to work with the Users and Correspondents programs.

For a detailed description of how to use the message-processing functions of MERVA, refer to the *MERVA Message Processing Client for Windows NT User's Guide*.

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Chapter 3. Exporting and Importing Messages

This chapter shows how to export messages from an API queue to an external file and how to import messages from an external file to an API queue.

Note: The export and import of messages is based on the API program **sample4**. For more information on API program samples, refer to the *MERVA USE & Branch for Windows NT Application Programming Guide*.

Exporting messages

To export messages from an API queue to a file, do the following:

1. In **Programs**, select **MERVA USE & Branch**. Then select **Control Center**.
2. Double-click **Local System**.
3. Select your MERVA instance, for example, **merva1**.
4. Right-click the selected MERVA instance.
5. Select **Message tools**. Then select **Export messages ...**

   You then get the Export Messages Tool... window. The following figure shows an example of this window.

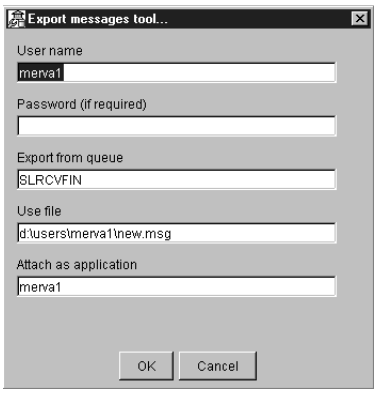

Figure 7. The MERVA Export Messages Tool... Window

In the Export Messages Tool... window, provide values for the following parameters:

User name
Specify the user ID with which you log on to the MERVA instance.

Password
Specify the password with which you log on to the MERVA instance. You need the password only if you do not have the user right **API - Without password**.

Export from queue
Specify the API queue from which the messages are to be exported.

Use file
Specify the name of the external file (including drive and path name) in which the exported messages are to be stored.

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Attach as application
Specify a unique name for the export process. This is only necessary if you start more than one export process at the same time.

6. Click **OK** to start the export.

Importing messages

To import messages from an external file to an API queue, do the following:

1. In **Programs**, select **MERVA USE & Branch**. Then select **Control Center**.
2. Double-click **Local System**.
3. Select your MERVA instance, for example, **merva1**.
4. Right-click the selected MERVA instance.
5. Select **Message tools**. Then select **Import messages ...**

   You then get the Import Messages Tool... window.

   In the Import Messages Tool... window, provide values for the following parameters:

   User name
   Specify the user ID with which you log on to the MERVA instance.

   Password
   Specify the password with which you log on to the MERVA instance. You need the password only if you do not have the user right **API - Without password**.

   Import to queue
   Specify the API queue in which the messages are to be stored.

   Use file
   Specify the name of the external file (including drive and path name) in which the messages to be imported are located.

   Attach as application
   Specify a unique name for the import process. This is only necessary if you start more than one import process at the same time.

6. Click **OK** to start the import.

Exporting messages in OS/2 format

To export messages from an API queue to a file in OS/2 format, do the following:

1. In **Programs**, select **MERVA USE & Branch**. Then select **Control Center**.
2. Double-click **Local System**.
3. Select your MERVA instance, for example, **merva1**.
4. Right-click the selected MERVA instance.
5. Select **Message tools**. Then select **Export messages (OS/2 format)...**

   You then get the Export Messages Tool (OS/2 format)... window. The following figure shows an example of this window.

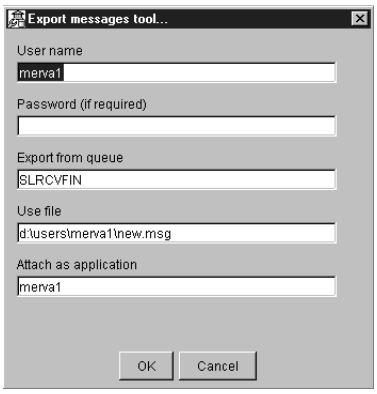

Figure 8. The MERVA Export Messages Tool (OS/2 Format)... Window

In the Export Messages Tool (OS/2 format)... window, provide values for the following parameters:

User name
Specify the user ID with which you log on to the MERVA instance.

Password
Specify the password with which you log on to the MERVA instance. You need the password only if you do not have the user right **API - Without password**.

Export from queue
Specify the API queue from which the messages are to be exported.

Use file
Specify the name of the external file (including drive and path name) in which the exported messages are to be stored. To differentiate between the formats, the default filename extension is **mxu**.

Attach as application
Specify a unique name for the export process. This is only necessary if you start more than one export process at the same time.

6. Click **OK** to start the export.

Chapter 4. Purging or Moving Messages on Specified Days

To purge or move messages on specified days, use the **enmcqpur** command.

Purging Messages

The main purpose of the purge function is to delete messages. You can purge the following kind of messages from the database:

- Messages that contain Cyclic Redundancy Check (CRC) errors. When a message contains a CRC error, it is routed to the CRC error queue.
- Messages that cause routing errors.
- Messages that do not match specified routing conditions.

You can also purge messages from queues that are associated with SWIFT Link or MERVA Link.

Do not purge messages from queues that belong to one of the following purpose groups:

- Ready to Send (SWIFT Link)
- Message Control (MERVA Link)
- Message Ack Wait (MERVA Link)
- Message Ready to Send (MERVA Link)

If you purge these messages:

- SWIFT Link cannot correlate received acknowledgments or negative acknowledgments with previously sent messages.
- MERVA Link cannot correlate the status information with the deleted messages.

Moving Messages

The main purpose of the move function is to move messages from a MERVA queue to an API queue.

To do this, you must have the following rights:

- For the MERVA queue: **Delete**
- For the API queue: **Move**

After you move messages to an API queue, you can unload the messages for reference.

Purpose of the ENMCQPUR Command

With the **ENMCQPUR** command, you can:

- Purge messages contained in the defined queue on specified days.

  ```
  enmcqpur -q queue [ -d days ] [ -v ] [ -u user ] [ -p password ]
  ```

- Move messages contained in the defined queue on specified days.

  ```
  enmcqpur -q queue [ -d days ] [ -v ] [ -a APIQueue ] [ -u user ] [ -p password ]
  ```

- Display all messages contained in a queue.

  ```
  enmcqpur -q queue [ -v ] [ -m ] [ -u user ] [ -p password ]
  ```

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- List all messages to be deleted on specified days.

  ```
  enmcqpur -q queue [ -d days ] [ -v ] [ -t ] [ -u user ] [ -p password ]
  ```

- List all messages to be moved on specified days.

  ```
  enmcqpur -q queue [ -d days ] [ -v ] [ -t ] [ -a APIQueue ] [ -u user ] [ -p password ]
  ```

Working with the ENMCQPUR Command Parameters

The following command parameters are available for the **ENMCQPUR** command:

-q *queue* Specifies the queue that you want to use. This parameter is mandatory.

-a *APIQueue* Specifies the name of the API queue to which the message is to be moved. This option specifies the move action.

-t Marks old messages for deletion. This is indicated by the **?del?** status. The messages are listed but not deleted.

Note: This is a **test** option.

-v Provides additional information for each processed message, such as the MRN and date information.

Note: If you are not authorized to display messages, you cannot use the **-v** parameter to display the MRN or date information. You can, however, delete the messages contained in the specified queue. Messages that are used by another process are not deleted.

-m Displays all messages contained in the specified queue.

-d *days* Specifies the number of days. Messages that are older than or as old as the specified days are deleted from the queue. Messages that are used by another process are not deleted.

-u *user* Specifies the user ID which is to be used to log on to MERVA. If this parameter is not defined, the logged-on Windows NT user ID is used.

-p *password* Specifies the logon password. If you do not specify this parameter, the user exit **ENMXUPUX** is called to obtain a valid password for the specified or logged on user ID. If the user ID does not supply a valid password, MERVA prompts you to enter your Windows NT password. For a detailed description of this user exit, refer to "Appendix B. Purging Messages – Password User Exit" on page 77.

You are informed of how many messages are moved or deleted. The information looks like the following:

0 All deletions completed successfully.

>0 An error occurred. Refer to the diagnosis log for more information.

Examples of the ENMCQPUR Command

The following list shows examples on how to use this command:

- List all messages in the queue **SMINCMPT**

  ```
  enmcqpur -q SMINCMPT -vm
  ```

This command lists all messages in the specified queue and additional information for each processed message.

- Delete all messages in the queue **SMINCMPT**

```
enmcqpur -q SMINCMPT -d 0 -v
```

This command deletes all messages with the current or an older date. Messages used by another process are not deleted. Additional information, such as the MRN and date information, is displayed for each processed message.

- View all messages to be deleted from the queue without deleting them.

```
enmcqpur -q SMINCMPT -d 0 -vt
```

This command lists all messages that can be deleted and marks them as **?del?**. The messages are not yet deleted because of the **-t** parameter.

- Delete messages that are 30 days old or older from the queue **SMINCMPT**

```
enmcqpur -q SMINCMPT -d 30 -v
```

This command deletes messages that are 30 or more days old from the specified queue. It also provides information for each message and a summary.

- Delete all messages that are older than the messages of the current day from the queue **SMINCMPT**

```
enmcqpur -q SMINCMPT -d 1
```

This command deletes messages that have an older date than the current date.

- View all messages that are to be moved from a MERVA queue to an API queue without moving them

```
enmcqpur -q SMINCMPT -d 0 -a APISave -vt
```

- Move all messages that are older than the messages of the current day from the **SMINCMPT** queue to the API queue **APISave**

```
enmcqpur -q SMINCMPT -a APISave -d 1
```

Chapter 5. Printing Messages Automatically

With the **Automatic Print** program, you can start and stop automatic printing of messages in the queues that belong to the **Print** purpose group. Messages that are in these queues, and messages that arrive in these queues, are printed until you stop automatic printing. The messages are sent to a print device or a specified file. If the file already exists, new messages are appended.

When you start MERVA, all queues for which **Autostart** is specified are automatically printed.

Starting the Automatic Print Program

In the MERVA Main Menu window, select **Messages** from the **Program Group** list and **Automatic Print** from the **Program** list. You then get the Automatic Print - List Queues window. It can be used by several users at the same time. The following figure shows an example of this window.
The Automatic Print - List Queues window shows the following information:

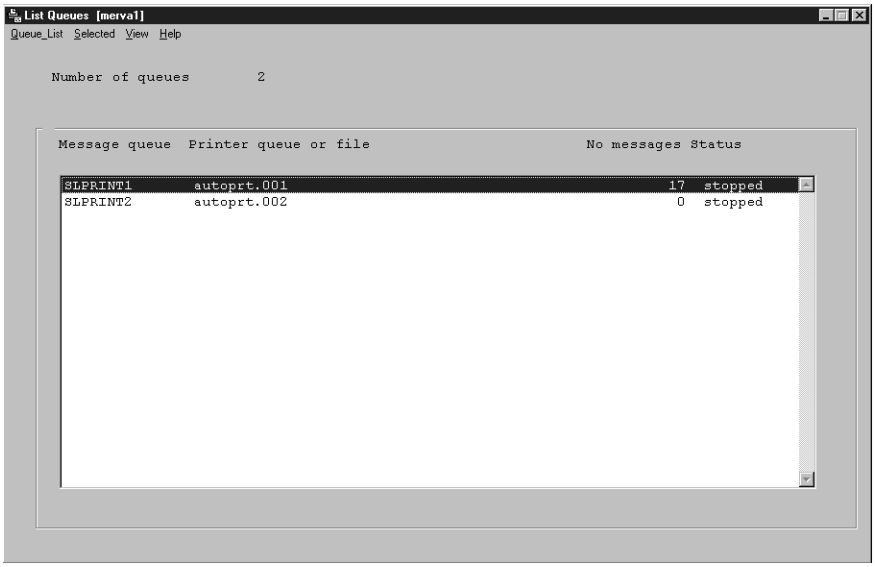

Figure 9. The Automatic Print - List Queues Window

Number of queues
Indicates the number of MERVA message queues in the **Print** purpose group.

Message queue
Indicates the name of the message queue with messages to be printed.

Printer or file
Indicates print details.

The following values are possible:

a.....a Denotes the **printer name** of your operating system.

autoprt.*xxx* **(where** *xxx* **is a 3-digit sequential number starting with 001)**
The message contents are printed to a file. The file is stored

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in the instance home directory that is specified at the time when the MERVA instance is defined. For further information refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

invalid A printer that is no longer defined in your operating system is assigned to the MERVA queue. A file is also not specified.

No messages
Indicates the number of messages contained in the MERVA queue.

Status Indicates the status of printing.

The following values are possible:

start pending
The background process is informed to start printing of this queue.

started
Messages that arrive in this queue are immediately printed.

stopped
The messages are collected in the MERVA queue but not printed.

The pull-down menus offer you the following choices:

- The **Queue_List** menu contains:
  - **Select all**

    To select all message queues to be printed.
  - **Deselect all**

    To unselect all message queues.
- The **Selected** menu contains:
  - **Start**

    To start printing of the selected queue or queues.
  - **Stop**

    To stop printing of the selected queue or queues.
- The **View** menu contains:
  - **Refresh**

    To set the refresh rate in seconds for the Automatic Print - List Queues window.

    1. Specify a value for the time period.
    2. Select **OK** to save the time period.
  - **Refresh now**

    To update the Automatic Print - List Queues window to its current status.

Automatic Printing for Selected Queues

To start or stop automatic printing of selected queues:

1. Select one or more message queues in the Automatic Print - List Queues window.
2. Select **Start** or **Stop** from the **Selected** menu or double-click on the selected queues.

When printing several messages from a queue, you can customize message separation on the printer. To specify the separator, select **System Configuration** and **Message Print Separator** from the Customization program. Specify one of the following:

Carriage return	Each message starts on a new line
New page	Each message starts on a new page
Line consisting of periods (.)	Each message is followed by a line of dot characters (.) across the page

For further details, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

Chapter 6. Administrating Users

This chapter describes how to work with the Users program. With this program, you can define the MERVA access rights for a user. You can also restrict these rights to specific queues or to the creation of specific message types.

In the MERVA Main Menu window, select **Administration** from the **Program Group** list and **Users** from the **Program** list. The Users program is then started and you get the User Administration - List Users window. The following figure shows an example of this window.

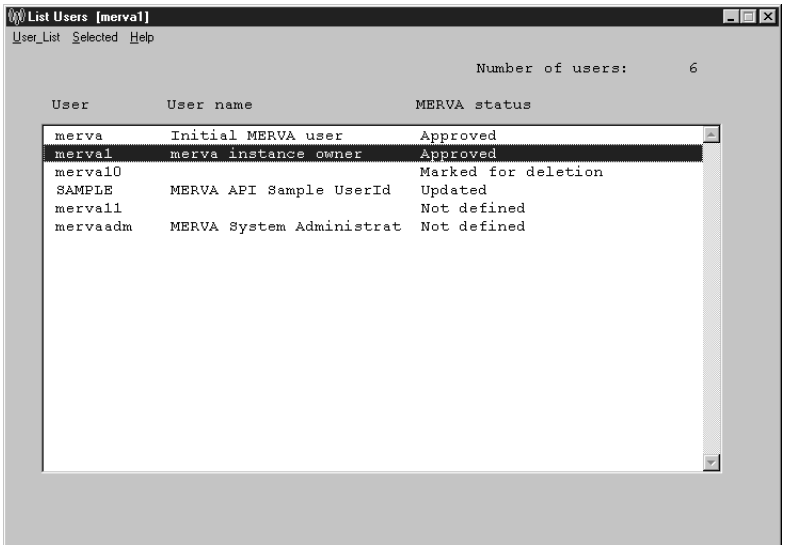

Figure 10. The User Administration - List Users Window

The User Administration - List Users window shows the user IDs and user names of the user group. This group is specified at the time the MERVA instance is created. For more information, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

The **MERVA status** field shows the status regarding MERVA. The status for a user can be one of the following:

Not defined The user is a member of the user group but has no access rights to MERVA.

Added Initial MERVA access rights are defined but not approved. The user cannot yet work with MERVA functions.

Approved MERVA access rights are approved. The user can work with the assigned functions.

Updated MERVA access rights are changed but not approved. The user can still work with the functions according to previous access rights.

Marked for deletion
The user ID is marked for deletion but the action is not approved. The user can still work with the functions according to previous access rights.

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Revoked The user is no longer allowed to log on to MERVA. Select **Set User Password** to reset the **Revoked** status and to define a new password.

Note: For security reasons, another person should approve creation, deletion, or changes of the access rights of a user separately.

Use the **User_List** menu to print a list of all users, their access rights, and the associated queues and message types.

Use the **Selected** pull-down menu to:

- Update user access rights.
- Approve user access rights.
- Delete users.
- Revoke users.
- Print user definitions.
- Change the user password.

Updating User Access Rights

In the User Administration - List Users window, select **Update User Rights** from the **Selected** menu. You then get the Access Rights - Update window. The following figure shows an example of this window.

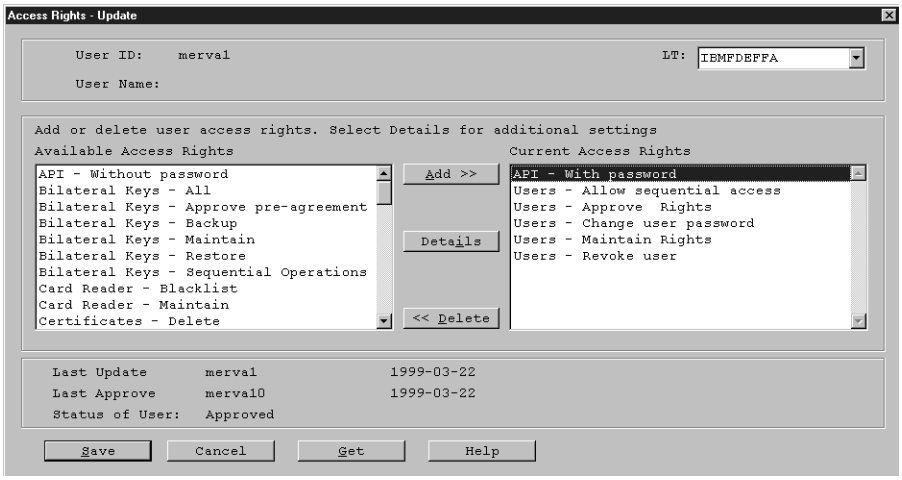

Figure 11. The Access Rights - Update Window

In this window, you can define the following:

- SWIFT Logical Terminal (LT)

  The LT is used, for example, as the address of the user who creates a SWIFT message.
- User access rights

  Each access right belongs to a function, for example, **Messages - Display/Print** belongs to the function that lets you display and print messages.
- Restriction of access rights to specific message queues and functions
- Restriction of the **Messages - Create** access right to specific message types

To save the definitions, select **Save**.

To close the window without changing user definitions, select **Cancel**.

Adding and Deleting MERVA Access Rights

You can add and delete user access rights.

To add a user access right:

1. Select an access right from the **Available Access Rights** list.
2. Select **Add**.

To delete a user access right:

1. Select an access right from the **Current Access Rights** list.
2. Select **Delete**.

You can also copy user definitions. This action is described in "Copying Definitions from Existing Users" on page 33.

Restricting Access Rights to MERVA Queues

You can restrict specific access rights to specific queues. For example, if you add an access right to the list of **Current Access Rights**, the user is authorized to use all queues that are associated with that function.

To restrict access rights to MERVA queues:

1. Select **Details** to display the list of appropriate queues.
2. Deselect the queues for which you do not want to give user authorization.
3. Select **Save**.

Restricting the Messages - Create Access Right to Specific Message Types

When you add the **Messages - Create** access right to the list of **Current Access Rights**, the user is authorized to create all message types and access all queues that are associated with this function.

To restrict this right to specific messages:

1. Select **Messages - Create** from the **Current Access Rights** list.
2. Select **Details** to get the list of available message applications, categories, and types.

You then get the Access Rights - Details window. The following figure shows an example of this window.

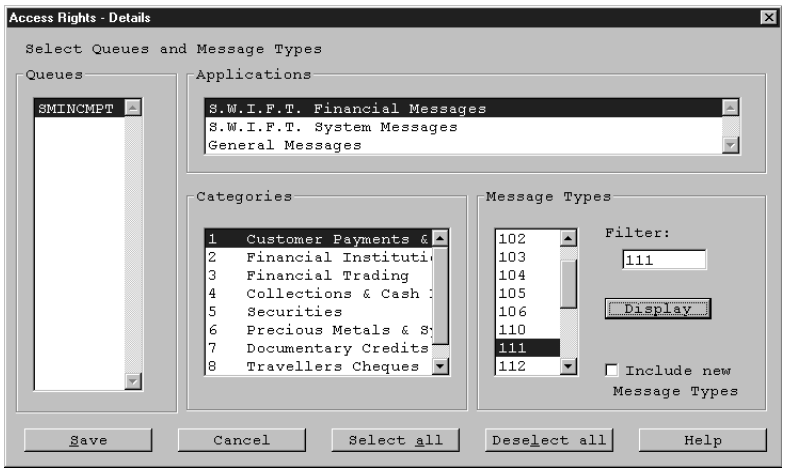

Figure 12. The Access Rights - Details Window

In this window, you do the following:

1. From the **Applications** list, select the message application that denotes the application the message belongs to.
2. From the **Categories** list, select the corresponding message category for the application.
3. From the **Message Types** list, select the corresponding message types for the category. The list shows all message types of the currently selected category. To exclude specific message types from the list, deselect them.
4. In the **Filter** field, you specify message groups for the user. The following generic characters are valid:

   ***** Denotes any number of characters or none, for example:

   ***1** Displays **101**, **111**, **121**, and **191**

   2 Displays **102**, **112**, **121**, and **192**

   ? Denotes a single character, for example:

   ?1? Displays **110**, **111**, and **112**
5. Select **Display** to get the list of message types that result from the selection criteria specified in the **Filter** field.
6. Select **Include New Message Types** to allow the user automatic access to any new message type that is added to this category. You also match the criteria that are specified in the **Filter** field. If you do not select this option, you must explicitly authorize the user for each new message type that is added to this category.

   Note that this option is only available if a filter is specified.
7. The **Queues** list contains queues for incomplete messages. Select the queues for which the user is authorized to complete unfinished or incomplete messages.

   Select **Select all** to authorize the user to use all incomplete queues and all message types. To remove all selections for a user, select **Deselect all**.
8. To save the definitions, select **Save**. To close the window without changing user definitions, select **Cancel**.

Copying Definitions from Existing Users

Select **Get** in the Access Rights - Update window. You then get the Access Rights - Templates window in which you can copy the definitions from existing users. The window looks like the following:

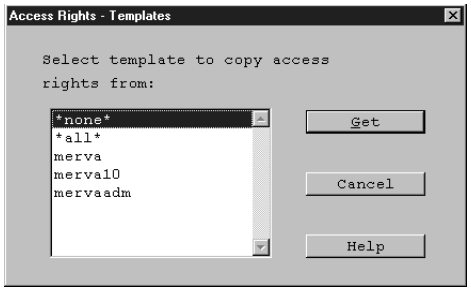

Figure 13. The Access Rights - Templates Window

This window shows all existing users with the following entries:

none The user does not have access rights.

all The user is authorized to access all functions, queues, and message types.

all+i The user is authorized to access all functions, queues, and message types. In addition, the **include new message types** feature is enabled with the filter argument '*'.

To copy access right definitions of a user:

1. Select an existing user.
2. Select **Get** to copy the access user rights, such as authorized functions, queues, and message types.

You can also use copy access right definitions from a user ID that does not work with MERVA but is used as a template within the Users program. You can, for example, create the user ID *SLUSER1* with access rights for SWIFT Link Operating and any other related functions and leave this user ID unapproved. You can then use this user ID as a template to create a real user ID that operates the SWIFT Link.

Creating New Users

To create a new MERVA user:

1. Define the Windows NT user ID. To do this, select **Administrative Tools** from **Programs**, then select **User Manager**. For a detailed description, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.
2. Start the Users program as described in “Chapter 6. Administrating Users” on page 29. You then see the new user ID in the user list. The status of this user ID is **Not defined**.
3. Select **Update User Rights** from the **Selected** menu.
4. Select the necessary access rights as described in “Updating User Access Rights” on page 30. Then select **Add**.
5. Select **Save** to save the definitions.
6. Select **Set User Password** from the **Selected** menu to define the initial password for the new user.

Approving Users

You must approve user IDs that are newly created, changed, or marked for deletion before the new definitions come into effect.

To approve the access rights of a selected user, select **Approve User Rights** from the **Selected** menu. You then get the Access Rights - Approve window.

The following figure shows an example of this window.

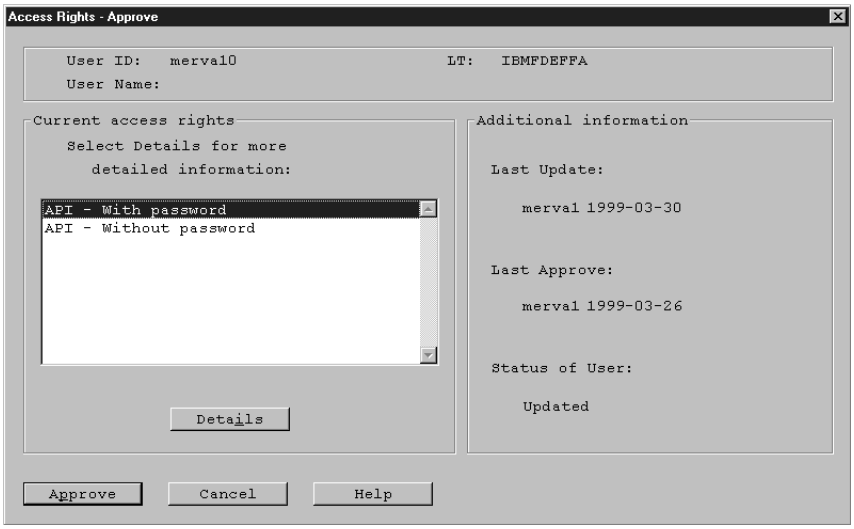

Figure 14. The Access Rights - Approve Window

The Access Rights - Approve window shows the current status of the user. The status indicates whether the user ID is newly created, changed, or marked for deletion. Review the definitions, then select one of the following:

- To approve the user, select **Approve**.
- To cancel the changes or definitions, select **Cancel**.
- To check the queues, functions, and message types assigned to the selected access right, select an item from the **Current access rights** list, then select **Details**.

Setting the User Password

Select **Set User Password** from the **Selected** menu to define the MERVA password for a new user or a user who has forgotten the current MERVA password. You also use this choice to reactivate a revoked user.

Revoking Users

Select **Revoke User** from the **Selected** menu to immediately prevent a user ID from logging on to MERVA. A user ID is automatically revoked if the user tries to log on to MERVA more than 5 times with an incorrect password.

To reset the status **Revoked**, select **Set User Password**.

Deleting Users

To delete a selected user, select **Delete User** from the **Selected** menu. You are asked to confirm the deletion.

The user ID is then marked for deletion. After you approve the change, the user ID is deleted, and the status of the user ID changes to **Not defined**.

Printing User Details

To print the details of a selected user, select **Print** from the **Selected** menu. The printed data contains the following details:

- User ID
- User name
- Status and update information
- Authorized functions, queues, and message types

Working with Users That Are Logged On

In the MERVA Main Menu window, select **Administration** from the **Program Group** list and **Logged-on User Operating** from the **Program** list. You then get the MERVA - Logged On User Operating window. The following figure shows an example of this window.

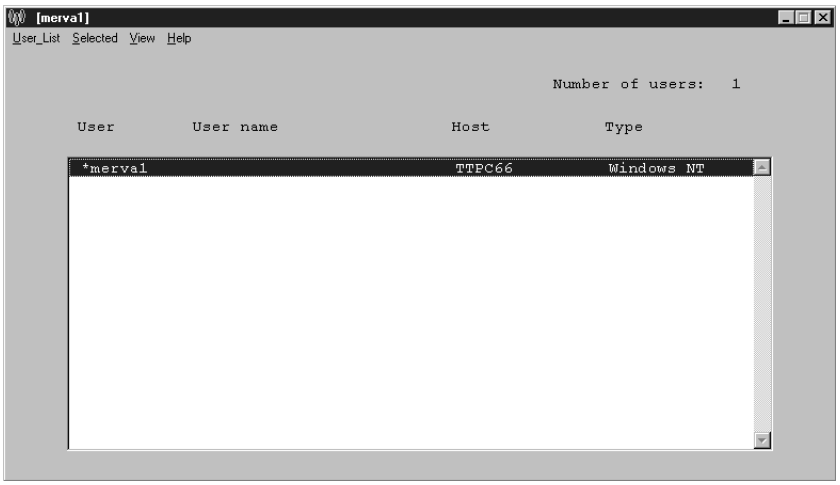

Figure 15. The MERVA - Logged On User Operating Window

This window shows the following details about the currently logged on users:

User Identifies the user ID on the workstation.

Note: The asterisk (*) denotes the user ID of the operator. If you select **Select all** and **Logoff**, all users except the operator are logged off.

User name Identifies the name of the user on the workstation.

Host Identifies the name of the machine on which a user is logged on to MERVA.

Type Indicates if the user is a client user.

The pull-down menus offer you the following choices:

- The **User_List** menu contains:
  - **Select all**

    To select all MERVA users that are logged on.
  - **Deselect all**

    To deselect all MERVA users that are logged on.
- The **Selected** menu contains:
  - **Logoff**

    To log off the selected users.
- The **View** menu contains:
  - **Refresh**

    To set the refresh rate for the MERVA - Logged On User Operating window. The rate is defined in minutes.
  - **Refresh now**

    To update the MERVA - Logged On User Operating window to its current status.

Chapter 7. Administrating Correspondents

With the Correspondents program, you can:

- Create a new correspondent
- Display and change correspondent details
- Import correspondents
- Delete correspondents
- Select BIC ranges to import or delete them
- Enable automatic deletion or reporting

To start the Correspondents program:

In the MERVA Main Menu window, select **Administration** from the **Program Group** list and **Correspondents** from the **Program** list. You then get the Correspondents Administration window. The following figure shows an example of this window.

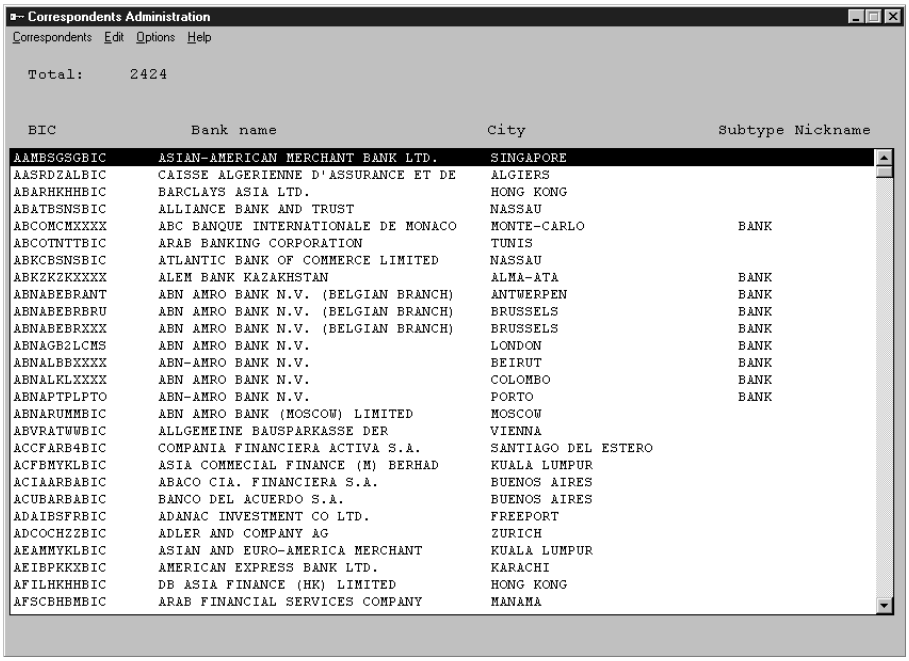

Figure 16. The Correspondents Administration Window

The correspondents database contains the address of financial institutions. You can view the information stored in the database when you display or print messages, or when you work with the USE Bilateral Key Exchange program. To use this information within these functions, load BIC records from a BIC file into the correspondents database. For more information refer to "Importing Correspondents" on page 41.

The BIC record contains the following details:

Total Number of correspondents in the correspondents database

BIC Bank identifier code

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Bank name	Descriptive name for the financial institution
City	City where the financial institution resides
Subtype	Type of financial institution, such as Bank or Broker
Nickname	User-defined nickname for commonly used correspondents

Displaying and Changing Correspondent Details

To display or change the details of a correspondent, double-click on the corresponding entry in the list. You then get the Details Information window. The following figure shows an example of this window.

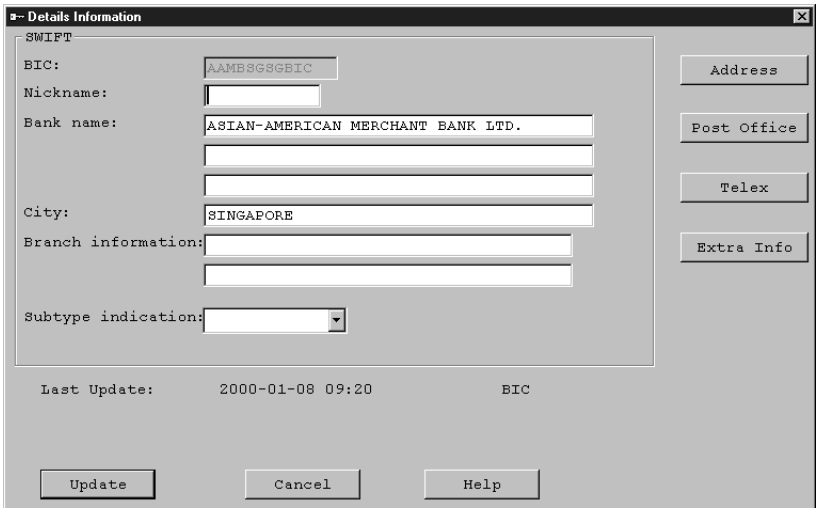

Figure 17. The Details Information Window

The **BIC** field, **Bank name** field, and **City** field are mandatory fields.

You can add, delete, or modify any of this data except the BIC. To save your changes, select **Update**. To close the window without changes, select **Cancel**.

To view the corresponding windows, select **Address**, **Post Office**, **Telex**, or **Extra Info**.

Note: If you change imported information, this data will be overwritten when the BIC records are loaded during the next update of your BIC data.

Creating a New Correspondent

To create correspondents entries manually, select **New** from the **Correspondents** menu. You then get an empty Details Information window in which you can enter your data.

To save the new record, select **Save**. To delete the new record, select **Cancel**.

Finding Specific Correspondents

When the Correspondents Administration window is displayed for the first time, it shows all available entries. To search for specific entries, select **Find** from the **Edit** menu. You then get the Find window. The following figure shows an example of this window.

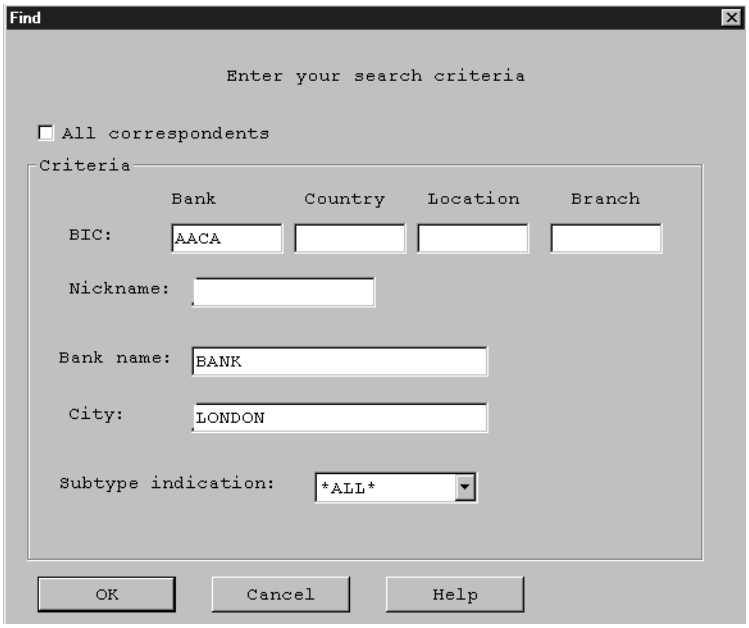

Figure 18. The Find Window

You can combine any fields to search for correspondents. You can, for example, search for all correspondents with the bank name **BANK** and the city **LONDON**, as shown in the example.

Note that you can add a single wildcard symbol that represents a single character, or a multiple wildcard symbol that represents several characters:

- The underscore symbol (_) represents a single character.
- The percent symbol (%) represents any sequence of zero or more characters.

  For example, you can search for all correspondents the bank name of which contains the word *CREDIT* by entering **%CREDIT%** in the **Bank name** field.

After you fill in the search criteria, select **OK**. The search criteria are saved automatically. The Correspondent Administration window always contains the data that is specified in the Find window until you change the search criteria.

Selecting BIC Ranges to Import or Delete

To select a BIC or a BIC range, select **Select literals** from the **Edit** menu. You then get the Literal Group Selection window.

In this window, you can select the following options:

- Import only specific BICs or ranges of BICs.
- Delete only specific BICs or ranges of BICs.
- Maintain a list of named groups of which each group contains a list of complete BIC identifiers or partial BIC specifications.

- Import a group of BIC records at a time.
- Delete a group of BIC records at a time.

BICs must have the SWIFT address format *AAAAAABB* or *AAAAAABBBBB*, where *A* is an alphabetic character and *B* an alphanumeric character. Partial BICs can be from one to 11 characters long, where the first six characters must be alphabetic and the other characters alphanumeric.

The list box in the Literal Group Selection window shows the last definition of the BIC groups. The line **Current group** shows the name of the currently selected group.

In this window, you can do the following:

- Select a name from the list of names, then select **OK** to reuse one of the previously saved groups.
- Select **New List** to create a new literal group.
- Double-click on a name of the list to update an existing group.
- Select **Delete** to delete an existing group.

In the Literals List window you can enter a literal in the **Literal** field. The literal is then added to the list of specified literals. Select **Save** to save the new or updated literal group. You then get the Save Group window, in which you can specify a name for the new or updated literal group.

Literals are used for the import or delete procedure. The records that match each of the complete BICs and the records with a BIC of which the first characters match the partial specified BIC are imported or deleted.

If your list contains, for example, *XXXX*, *YYYY*, and *ZZZZ*, only records with the bank codes *XXXX*, *YYYY*, and *ZZZZ* are processed. Matching BICs are, for example, *XXXXUS33CAY*, *YYYYDEFF*, or *ZZZZGB22*.

Enabling Automatic Deletion and Reporting

Before you start to import BIC data, select **Settings** from the **Options** menu. You can choose between one of the following:

Report To get a detailed activity report from the import procedure.

Autodelete To automatically delete all records that are marked for deletion in the BIC file.

Specifying the Report File Options

Select **Report File...** from the **Options** menu to get the Report File window. In this window you can:

- Specify the name of the report file. To do this, select **Specify...**, then select a file in the displayed file dialog.
- Specify that the information is appended at the end of the file, or that the file is overwritten if the specified file name already exits.

To save the settings, select **OK**.

Importing Correspondents

The BIC data is delivered by SWIFT in a compressed form. You must expand the file before you can import the data with the function supplied by SWIFT The result is a BIC file.

Note: You can also import the BIC Database Plus file (BIC+ file). Before you import these correspondents, you must convert the BIC+ file to a BIC file. To do this, enter the following command in the command line:

```
enmcbbic  input filename  output filename
```

The *input filename* is the name of the BIC+ file and the *output filename* is the name of the BIC file.

For a detailed description of how to import the BIC Database Plus file, refer to "Appendix C. Importing Correspondent Records from the BIC Database Plus" on page 81.

The **Correspondents** menu offers you the following options:

Import all	To import all records from the BIC file.
Import selective	To import only those records that are specified with the **Select literals** option of the **Edit** menu. For details refer to "Selecting BIC Ranges to Import or Delete" on page 39.

You can restrict the import procedure to banks with which you currently or most frequently correspond. This can save a large amount of disk space.

During the import procedure:

- Records are added to the database.
- Existing records are updated.
- Records marked for deletion are deleted if **Autodelete** is selected. If **Autodelete** is not selected, these records are ignored.

A progress indicator informs you about the current status.

You can stop the import procedure at any time by selecting **Stop**. Note that this action does not affect records that are already imported to the correspondents database.

After the import process is complete, the Correspondents Administration - Import Completed window shows the following information:

- First BIC contained in the BIC file to be imported
- Last BIC contained in the BIC file to be imported
- Number of records contained in the BIC file
- Number of records added to the database
- Number of records modified in the database
- Number of records deleted from the database
- The name of the report file

Note: The records that are marked for deletion in the BIC file are ignored if they are not found in the database during the import process. The records are not displayed in the summary or in the protocol.

Deleting Correspondents

You can delete correspondents in one of the following ways:

- During an import operation, as described in "Importing Correspondents" on page 41.

  To delete all records that are marked for deletion in the BIC file, select **Autodelete** from the **Options** menu. These records are then deleted from your correspondents database during the next import operation.
- Delete all records from the database.

  To delete all records from the database, select **Delete all** from the **Correspondents** menu.
- Delete records that are specified with the **Select literals** option of the **Edit** menu. For details see "Selecting BIC Ranges to Import or Delete" on page 39.
- Delete single records, selected from the list.

  To delete a single record from the correspondent database, select the record from the list in the main window. Then select **Delete** from the **Edit** menu.

Note: You are always asked to confirm the deletion. Only upon confirmation of the delete request is the record deleted.

Part 3. Operating Different Links and Accessing Diagnosis Information

This part explains to you in detail how to work with the SWIFT Link and the MERVA Link of MERVA. It also tells you how to access diagnosis information.

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Chapter 8. Operating the SWIFT Link

This chapter explains how to operate the SWIFT Link of MERVA.

Understanding the SWIFT Link Protocol

The architecture of the SWIFT II network uses layers that are derived from the Open Systems Interconnect (OSI) reference model of the International Organization for Standardization (ISO). The architecture of the OSI reference model is described in the *S.W.I.F.T. User Handbook*. The SWIFT Link function of MERVA appears to the SWIFT II regional processor as a Computer-Based Terminal (CBT).

Working with Logical Terminals (LTs)

SWIFT Link can handle different SWIFT master LTs, or SWIFT addresses. Therefore, several financial institutions can share one MERVA installation.

With master LTs you can log on to the SWIFT network. Each master LT has its own range of the following session numbers:
- Login Sequence Number (LSN)
- Input Sequence Number (ISN)
- Output Sequence Number (OSN)

For each master LT, a financial application is available. This application has its own range of the following session numbers:
- Select Sequence Number (SSN)
- ISN
- OSN

You can define one or more synonym logical terminals for each master LT. Synonym LTs share the following numbers for the SWIFT General Purpose Application (GPA) and SWIFT Financial Application (FIN) application with their master LT:
- LSN
- SSN
- ISN
- OSN

After a master LT is logged on and has selected the financial application, its synonyms share the **LOGIN** status of the GPA and the **OPEN** status of the FIN. Synonym LTs also share the same set of queues with the master LT.

Displaying the SWIFT Link Operating Window

To start the SWIFT Link operating program, select **Communication** from the **Program Group** list and **SWIFT Link** from the **Program** list in the MERVA Main Menu window.

The following figure shows an example of this window.

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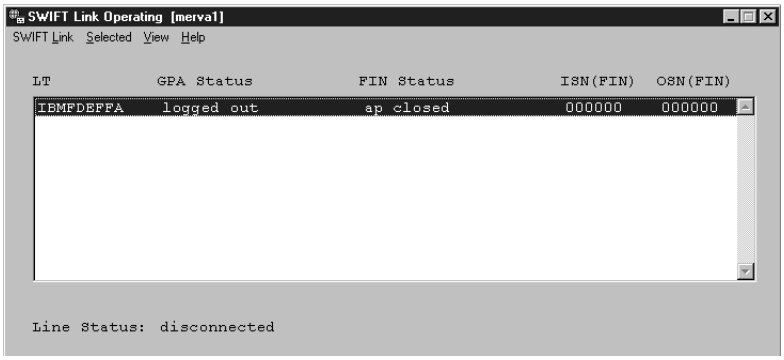

Figure 19. The SWIFT Link Operating Window

The SWIFT Link Operating window lists all master logical terminals (LTs) that are defined for your installation. It shows their status, ISN, and OSN.

The following menus are available:

The **SWIFT Link** menu contains the following choices:

Display Messages
Provides a continuously updated list of SWIFT Link information and error messages.

Network Data Lists the customized network data for the SWIFT Link and allows you to change it for the current session if required.

Abort CBT Stops the connection of a SWIFT application, LT, or CBT with the SWIFT network in case of a problem.

Start SWIFT Link
Starts SWIFT Link processing after previous termination.

Terminate SWIFT Link
Stops SWIFT Link processing.

The **Selected** menu contains the following choices:

LT Status Gives you detailed information about the status of the selected LT.

SWIFT Login Sends a Login message to the SWIFT GPA.

SWIFT Logout
Sends a SWIFT Logout message.

Select Application
Sends a select message to the SWIFT FIN.

Quit Application
Sends a SWIFT Quit message.

Open as Settings
Allows you to:

- Select paper tables instead of USE technology.
- Define default data for the operating commands.
- Customize the operating windows. Windows for which defaults are defined are not shown.

Abort LT Stops the connection of the selected LT if a Logout cannot be performed.

Abort AP Disconnects the application of the selected LT if a Quit cannot be performed.

The **View** menu contains the following choices:

Refresh To set the refresh rate for the message list.

Refresh now To update the message list to its current status.

The **Line Status** can be:

connected The line is established.

disconnected The connection to SWIFT is not available.

Changing Settings for Selected LTs

Select **Open as Settings** from the **Selected** menu to view or change the following settings for the selected LT:

Dialog behavior
To define that MERVA displays the dialog window for a Login, Select, Logout, or Quit operation. By default, dialogs are displayed for Login and Select, but not for Quit and Abort.

For paper table technology, the Login and Select dialog must always be displayed because you must enter the random and response keys.

Technology (ICC or paper table)
To switch to the use of paper tables for session keys.

Login parameters and Select parameters
To define default settings for the Login window and the Select Applications window.

Delivery subsets for Select
To specify the mnemonic names of up to 30 delivery subsets. Each delivery subset specification must be six characters long. It must be specified in an MT 047 message before you can use it. SWIFT Link does not check if the mnemonics are correct.

Select state
To specify that SWIFT input messages can be sent or output messages can be received from the selected application. The window contains the fields **Input Messages**, **Output Messages**, and **LT-directed queue state**. From each field you can select one of the following values:

Y Yes

N No

The previous settings are displayed on the right-hand side. You must specify that either input or output messages are allowed.

Refer to the SWIFT documentation on how to use the **LT-directed queue state** field.

Displaying SWIFT Link Messages

SWIFT Link activities and events are stored in an information message window. To display this window, select **Display Messages** from the **SWIFT Link** menu.

The following figure shows an example of this window.

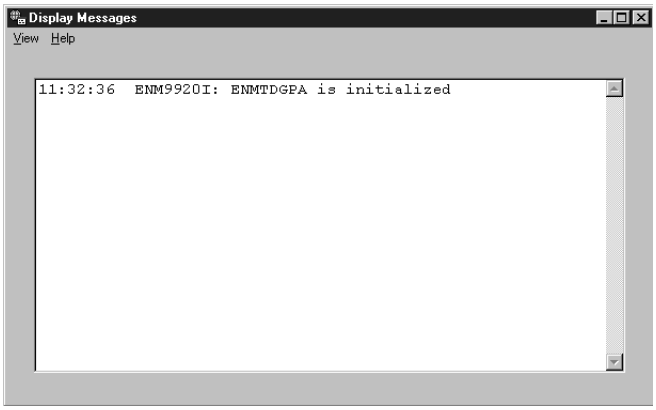

Figure 20. The SWIFT Link Operating - Display Messages Window

You can leave this window open to get the current status of the SWIFT Link while you use other functions.

The last 200 messages of the current operating session are stored. To display older messages, select **Diagnosis** from the **Program Group** list and **Display Diagnosis Log** from the **Program** list in the MERVA Main Menu window.

Displaying and Changing the SWIFT Link Network Data

Select **Network Data** from the **SWIFT Link** menu to display the SWIFT Link network data. You then get the Network Data window.

The following figure shows an example of this window.

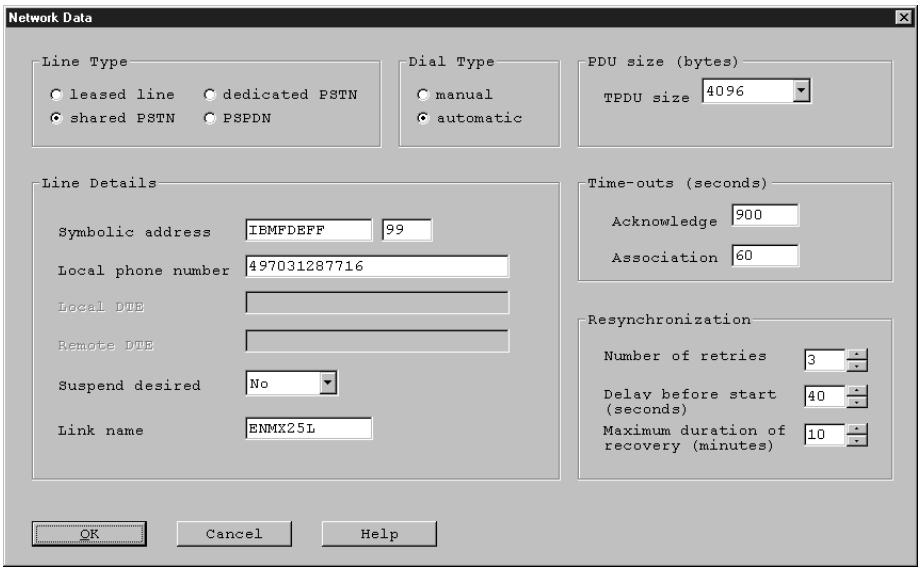

Figure 21. The Network Data Window

The Network Data window contains the following fields:

Line Type Defines the type of connection between your computer and the SWIFT transport network.

Dial Type Defines that automatic or manual dialing is used.

PDU Size You can change the default protocol data unit (PDU) size that is to be used by the Transport Layer for messages that are sent via the SWIFT network. The default value is 4096 bytes. A larger data unit size can increase the line throughput but also storage requirements.

Line Details The **Symbolic address** is the destination name for your system, delivered to you by SWIFT

The **Local phone number** is required for a shared PSTN.

The **Local DTE** address and the **Remote DTE** are required for a PSPDN network. Enter your own address and the respective SWIFT address.

Suspend desired defines that the SWIFT line is suspended if the line is not busy.

The **Link name** is the reference to the X.25 profile.

Time-outs You should change these values only at the request of your SWIFT or IBM representative.

The acknowledgment timeout is the allowed period of time for the acknowledgment by the SWIFT network that a message has been received. The default value is 900 seconds.

The association timeout is the allowed period of time to establish a session with the remote partner. The default value is 60 seconds.

Resynchronization
Specifies the following values:

Number of retries defines the maximum number of retry attempts. The default value is 3. If 0 is specified, resynchronization is not active.

Delay before start defines the delay before retry is started in seconds. The default value is 40.

Maximum duration of recovery defines the time limit for recovery in minutes. When the specified time limit is exceeded, the retry attempts are stopped. The default value is 10.

For more details on these fields refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

Displaying the Status of a Selected LT

Select **LT Status** from the **Selected** menu or double-click **LT** to get the Logical Terminal Status window. This window shows details about the current status of the selected LT.

The following figure shows an example of this window.

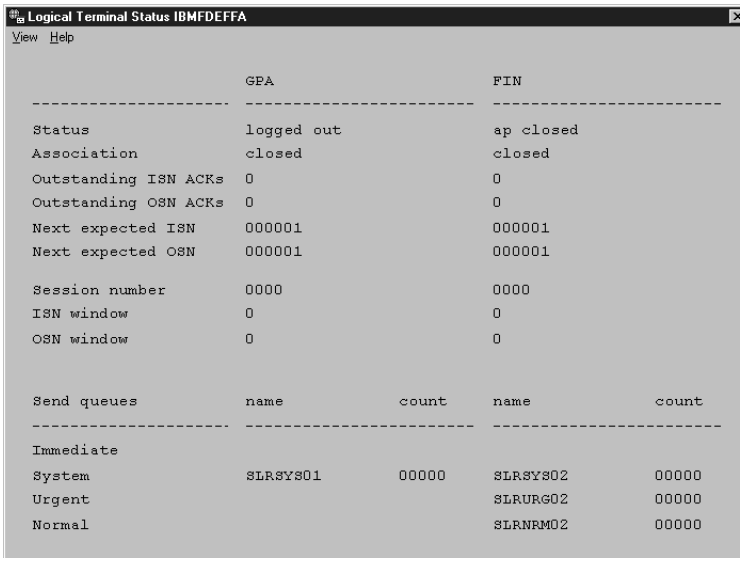

Figure 22. The Logical Terminal Status Window

The window shows details on GPA and FIN applications:

Status Contains the status of the selected LT as displayed in Figure 19 on page 46.

Association Displays the status of the logical connection to SWIFT The status can be one of the following:

closed Initial status

association proceeding
The connection will be established.

open The connection is established.

suspension proceeding
The connection will be suspended.

suspended The connection is suspended.

resumption proceeding
The connection will be reopened.

Outstanding ISN ACKs
Shows you the number of acknowledgments not yet sent to SWIFT

Outstanding OSN ACKs
Shows you the number of acknowledgments not yet received from SWIFT

Next expected ISN
Shows you the input sequence number that is expected by MERVA for the next SWIFT input message.

Next expected OSN
Shows you the output sequence number that is expected by MERVA for the next SWIFT output message.

Session number
Shows you the current number of the established session to SWIFT The number is provided by SWIFT

ISN window Shows you the window size that is used by MERVA. The window size specifies the number of messages that can be sent before an acknowledgment must be processed.

OSN window Shows you the window size that is used by MERVA. The window size specifies the number of messages that can be received before an acknowledgment must be processed.

Send queues Lists the names of the sending queues that are customized for the selected LT with the count of messages to be sent in each queue.

You can specify up to four queues for the ready-to-send queues. The sequence of the queues defines the priority of the messages. First, all messages are read from the first queue and sent to the SWIFT network. If the first queue is empty, messages from the second queue are sent.

The **View** menu contains the following choices:

Refresh To set the refresh rate for the message list.

Refresh now To update the message list to its current status.

Sending Login, Select, Quit, Logout, and Abort Messages

The SWIFT Link programs generate Login, Select, Quit, Logout, and Abort messages in the following cases:

- When you enter a login, select, quit, abort FIN, or abort LT command.
- After a protocol error or timeout for an acknowledgment message, the relevant master LT or the FIN application is aborted according to the SWIFT specifications.
- After receiving a request-to-quit message (APDU 01, message type 008), the respective financial application must quit.
- After receiving a request-to-logout message (APDU 01, message type 009), the respective master logical terminal must log out.

Login is a prerequisite to send messages of the GPA to the SWIFT network. Select is a prerequisite to send messages of the financial application to the SWIFT network.

Starting the Connection to the SWIFT Network

Select **SWIFT Login** from the **Selected** menu of the SWIFT Link Operating window. You then get the SWIFT Login window. Note that this window is only displayed if it is specified in the dialog behavior settings.

The following figure shows an example of this window.

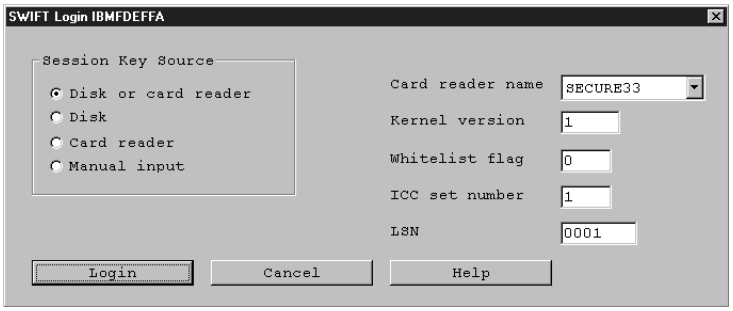

Figure 23. The SWIFT Login Window

To send the login request, specify the correct settings and values, then select **Login**.

MERVA must establish the physical connection to the SWIFT network before you can log on. If you use a switched line, and if manual dialing is specified in the SWIFT Link customization, the telephone number that you have to dial is displayed. The number is specified during customization and is displayed only for information purposes. You can also use a different number given to you by SWIFT The number that you dial is not checked by MERVA.

Select **Display Messages** from the **SWIFT Link** menu to check if the Login attempt completes successfully.

The SWIFT Login window allows you to change the fields with the default settings and values from the last login.

Session Key Source
Specifies from where MERVA gets the required session key. By default, MERVA tries to read a pregenerated session key from the disk. If a pregenerated key is not available, it requests it from the card reader. Alternatively, MERVA can get the key directly from the card reader or from the disk without trying the card reader. If there is no connection between the card reader and MERVA, you can also enter the key manually as shown in the card reader display.

Card reader name
Contains the name of the card reader associated with this LT. MERVA uses this information to determine the system and port to which the card reader is connected, and to set the line characteristics.

Kernel version
Displays the currently used kernel version. You can increase the kernel version at any time. Note that you must inform SWIFT about this change.

Whitelist Flag Displays the current value of the whitelist flag. You can increase the whitelist flag at any time. Note that you must inform SWIFT about this change.

ICC set number
Displays the currently used set number. You can use a different ICC set at any time. Note that you must inform SWIFT about this change.

LSN Is filled with the next login sequence number (LSN) to be used for the selected LT. MERVA keeps track of the last used LSN. Check the displayed default LSN and change it if necessary.

Selecting Applications in the SWIFT Network

Select **Select Application** from the **Selected** menu of the SWIFT Link Operating window to display the Select Application window. Note that this window is only displayed if it is specified in the dialog behavior settings.

The following figure shows an example of this window.

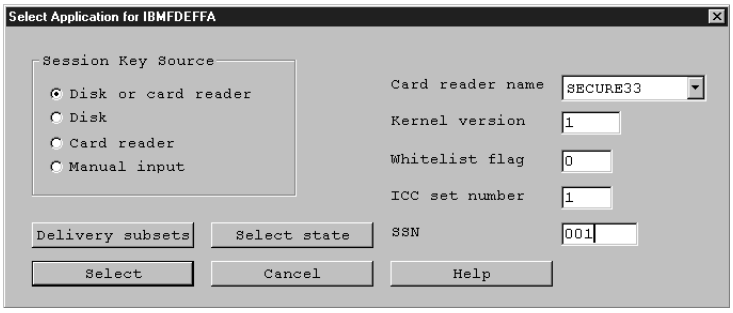

Figure 24. The Select Application Window

In this window, you can change the fields that contain the default settings and values from the last Select operation.

For a detailed description of the fields, refer to "Starting the Connection to the SWIFT Network" on page 51, except for the following field that is not described there:

SSN Must be filled with the next select sequence number (SSN). MERVA keeps track of the last used SSN. Check the displayed default SSN and change it if necessary.

For a detailed description of **Delivery subsets** and **Select state**, refer to "Changing Settings for Selected LTs" on page 47.

After you enter the necessary data, click **Select**.

Select **Display Messages** from the **SWIFT Link** menu to check if the Select attempt completes successfully.

To select an application, you must have issued a login request to the SWIFT network. MERVA performs an automatic Login and Select without displaying the dialogs for the Login and Select parameters if you have:

- Pregenerated session keys
- A connected card reader for session keys
- Defined defaults for the Login and Select windows and changed the dialog behavior

Ending Applications in the SWIFT Network

To end an application, select **Quit Application** from the **Selected** menu of the SWIFT Link Operating window. MERVA then immediately sends a Quit message to the SWIFT network.

If you have changed the dialog behavior to display the Quit dialog, a window is displayed that allows you to set the date and time before another Select request is accepted by SWIFT The date can be a maximum of seven days ahead of the current date. You can also cancel Quit in this window.

Note: Quit the selected application before you log off from or shut down the system unless a serious system error requires an immediate shutdown.

Ending the Connection to the SWIFT Network

To end the connection to the SWIFT network, select **Logout** from the **Selected** menu of the SWIFT Link Operating window. MERVA then immediately sends a Logout message to the SWIFT network.

If you have changed the dialog behavior to display the Logout dialog, a window is displayed that allows you to set the date and time before another Login request is accepted by SWIFT. The date can be a maximum of seven days ahead of the current date. You can also cancel Logout in this window.

If you have set the dialog behavior for Quit and Logout to bypass the dialogs, and if the FIN status of the selected LT is **AP open**, MERVA performs an automatic Quit and Logout if you select **Logout**.

Note: Log off from the SWIFT network before you shut down the system unless a serious system error requires an immediate shutdown.

If you enter **Quit** or **Logout**, the connection to SWIFT is established to process the quit or logout procedure. If your SWIFT Link connection was in suspension mode, the resumption process is started and the regular quit and logout procedure starts.

Aborting Applications and Connections in the SWIFT Network

Select **Abort** from the **Selected** menu of the SWIFT Link Operating window only if problems occur during the Logout or Quit process of an application. **Abort** causes the termination of an application, logical terminal, or connection at fault. It is always accepted by SWIFT, regardless of the current status of the application.

When you select **Abort LT** or **Abort AP**, you are asked to confirm your request.

Sending Acknowledgments for Received Messages

If messages received from the SWIFT network are APDUs 01, SWIFT Link must acknowledge them. The acknowledgment message is an APDU 21 (user acknowledgment). The acknowledgments are sent before SWIFT Link sends messages from the ready-to-send queues. The acknowledgments are written to the message audit log before they are passed to the OSI layers for sending. For details of the audit log, refer to “Audit Log” on page 58.

Dial-Up Connections

There are differences in the protocol between leased and switched lines (dial-up connections). The regional processor requests suspension after an *Idle timeout*. When the suspend request is received, the CBT initiates the suspension process for all active applications. After all applications are suspended, the physical connection is released.

The resumption process can be initiated at any time by the regional processor or the CBT. The CBT starts the resumption if:

- Messages are put into the ready-to-send queues
- The operator sends a request (for example, Quit) to S.W.I.F.T.

If the regional processor initiates the resumption, no action is necessary at the terminal. If the CBT starts the resumption, the physical connection must be reestablished. If manual dial was selected, the message **ENM9955I Dial SWIFT at...** is displayed at the terminal. A dial-up attempt must then be made within two hours, otherwise the resumption process is terminated. If the dial-up is successful, the CBT resumes the necessary applications.

Processing SWIFT Input Messages

Before SWIFT Link sends messages to SWIFT, it takes the following steps:

1. Locate a message in the ready-to-send queue of a master logical terminal that is logged on or in the ready-to-send queue of a financial application that is logged on and successfully selected for sending.
2. Check that the message is a SWIFT input message.
3. Provide the session number and the input sequence number.
4. Check that the master logical terminal and the application identifier are correct.
5. Authenticate the message if it is a FIN message that requires authentication.
6. Add a Possible Duplicate Emission (PDE) trailer to the message in the ready-to-send queue if no acknowledgment is received from SWIFT and the message must be resent.
7. Provide the checksum trailer (CHK).
8. Provide a training trailer (TNG) if a training logical terminal is used.
9. Record the message in a table of outstanding acknowledgments (ACK table) for the master logical terminal or the financial application.
10. Write the message to the message audit log.

SWIFT Link then sends the message to the SWIFT network.

If an error is found in one of these steps, an error message is written to the MSGACK field in the internal message buffer. The message is not sent but routed according to the corresponding routing conditions.

Receiving SWIFT Output Messages

When output messages (APDU 01) are received from the SWIFT network, SWIFT Link takes the following steps:

1. Write the output message to the message audit log.

2. Verify the master logical terminal, the application identifier, and the session number. If they do not match, the message is not processed further. The master logical terminal or financial application is abended by MERVA because of an OSN gap or by SWIFT because MERVA does not send an acknowledgment message (APDU 21).
3. Verify that the OSN is in the correct sequence. If not, an error message is written to the diagnosis log. The master LT or the financial application is then abended.
4. Verify that the output message fits in the window as specified during the login or selection process. If the window size is exceeded, an error message is written to the diagnosis log and the master LT or financial application is abended.
5. Calculate the checksum and compare it with the value in the checksum trailer.
6. Authenticate the message if required. A diagnosis message is written to the MSGACK field indicating whether authentication was successful, unsuccessful, or unnecessary.
7. For the message type 008 (request to quit), quit the corresponding financial application.
8. For the message type 009 (request to logout), log out the corresponding master LT.
9. For all other messages, generate the acknowledgment message (APDU 21) to be sent to the SWIFT network.
10. Route the message according to the routing conditions for incoming messages.

Receiving Acknowledgment Messages for Sent Messages

When acknowledgment messages (APDU 21, ISN ACK) are received from the SWIFT network for each APDU 01 that is sent to the SWIFT network, SWIFT Link takes the following steps:

1. Write the acknowledgment message to the message audit log.
2. Verify that the master logical terminal, the application identifier, and the session number match. If not, the message is not processed further.
3. Verify that the acknowledgment is in the correct sequence. If not, the message is written to the diagnosis log, and the master LT or the financial application is abended.
4. Read the message from the ready-to-send queue.
5. Write the ACK message to the MSGACK field of the internal message buffer.
6. Remove the temporary PDE trailer from the message.
7. Clear the entry in the ISN ACK table.
8. Route the message according to the routing conditions for the ready-to-send queue.

Field 451 in the message indicates whether the acknowledgment is positive or negative.

Receiving APDU Messages Other Than 01 and 21

When APDU messages other than 01 and 21 are received from the SWIFT network, SWIFT Link takes the following steps:

1. Write the APDU message to the message audit log.

2. Verify that the master logical terminal, application identifier, and session number match depending on the APDU type. If not, the message is not processed further.
3. Process the APDU according to its purpose:
   - If an APDU 12 (remove-AP request) is received, the financial application is immediately closed.
   - If an APDU 13 (abort-AP ACK) is received, the financial application is immediately closed. An APDU 13 is the response to an APDU 33 (abort-LT request).
   - If an APDU 14 (remove-LT request) is received, the master logical terminal is immediately set to the **LOGOUT** status.
   - If an APDU 15 (abort-LT ACK) is received, the master logical terminal is immediately set to the **LOGOUT** status. An APDU 15 is the response to an APDU 35 (abort-LT request).
   - If an APDU 22 (login ACK or LAK) is received, the message authentication field is verified. An APDU 22 is the response to an APDU 02 (login message). If it is correct, the master logical terminal is set to the **LOGIN** status and the tables for the ISN and OSN ACKs are created.
   - If an APDU 23 (select ACK or SAK) is received, the message authentication field is verified. An APDU 23 is the response to an APDU 03 (select message). If it is correct, the financial application is set to the **OPEN** status and the tables for the ISN and OSN ACKs are created.
   - If an APDU 25 (quit ACK) is received, the financial application is set to the **CLOSED** status. An APDU 25 is the response to an APDU 05 (quit message).
   - If an APDU 26 (logout ACK) is received, the master logical terminal is set to the **LOGOUT** status. An APDU 26 is the response to an APDU 06 (logout message). After all master logical terminals are logged out, traffic on the SWIFT network is stopped. The public switched network line is disconnected.
   - If an APDU 42 (login NAK or LNK) is received, the master logical terminal is set to the **LOGOUT** status. An APDU 42 is the response to an APDU 02 (login message). After all master logical terminals are logged out, traffic on the SWIFT network is stopped. The public switched network line is disconnected.

     If an ICC is used for the session key generation, an additional message is logged. The message contains the whitelist flag, the kernel version, and the ICC set number that SWIFT expects. The values are stored in the database and used as default values for the next login.
   - If an APDU 43 (select NAK or SNK) is received, the financial application is set to the **CLOSED** status. An APDU43 is the response to an APDU 03 (select message).

     If an ICC is used to generate the session key, an additional message is logged. The message contains the whitelist flag, the kernel version, and the ICC set number that SWIFT expected. The values are stored in the database and used as default values for the next select.
4. Route the message according to the routing conditions for the Incoming GPA Messages queue.

Processing of Internally Generated Events

Internally generated events are generated by the OSI layer programs. The following events can occur:

- Protocol errors found by the application interface (AI), the transport layer, and the link layer. Master logical terminals or financial applications might be abended because of these errors.
- Errors on the X.25 line or a disconnect by SWIFT All traffic on the line to the SWIFT network is stopped. All financial applications are set to the **CLOSED** status. All master logical terminals are set to the **LOGOUT** status.
- Internal processing errors or protocol errors between the layers. The SWIFT Link programs are abnormally terminated. An error message is generated. Restart is possible with a new login.

Audit Log

All messages generated by the SWIFT Link programs are written to the message audit log before they are passed to the OSI layers to be sent.

Chapter 9. Operating the MERVA Link

This chapter explains how to operate the MERVA Link component of MERVA. MERVA Link connects different MERVA systems and enables them to exchange messages independently of the SWIFT or telex networks.

The *MERVA USE & Branch for Windows NT Installation and Customization Guide* provides an overview of the MERVA Link communications protocol and describes how to use MERVA Link to communicate with other components on remote MERVA systems.

Displaying the MERVA Link Operating Window

To start the MERVA Link Operating program, select **Communication** from the **Program Group** list and **MERVA Link** from the **Program** list in the MERVA Main Menu window.

The following figure shows an example of this window.

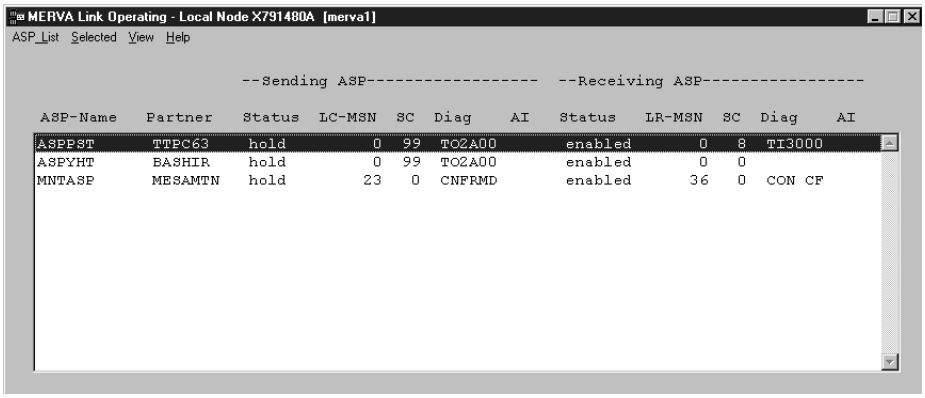

Figure 25. The MERVA Link Operating Window

The MERVA Link Operating window displays all MERVA Link connections defined for your MERVA instance during customization. Connections are established between a local Application Support Process (ASP) and a partner ASP.

The title of the MERVA Link Operating window contains the local MERVA Link node name. The window contains the following information:

- The name of the ASP and its partner:

  ASP Name The name of a local application support process customized for the connection to a partner ASP. An instance of a local ASP can be a sending or a receiving ASP.

  Partner The name of the partner MERVA Link node where the partner ASP resides.

- Sending ASP Information:

  Status The status of a sending ASP can be:

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nohold An ASP in **nohold** status can process messages that have been routed to one of the ASPs send queues.

hold An ASP in **hold** status cannot process messages that have been routed to one of the ASPs send queues. The messages remain in the send queues until the ASP is set to **nohold**.

LC-MSN The sequence number of the last outbound message that is confirmed by the partner ASP.

SC Status code of the last sending ASP instance. The values 0 and 4 indicate successful processing. The values 8 and 12 indicate an error in the local system. The values 9 and 13 indicate an error in the partner system.

Diag Diagnostic code of the last sending ASP instance.

If the SC field contains 0 or 4, the following diagnostic codes can occur:

CON RQ Connection to the partner ASP is requested.

CON CF A connect request has been confirmed by the partner ASP.

SUB RQ A message is submitted.

QEMPTY The send queues are empty and a Kickoff was processed.

CNFRMD The last submitted message has been confirmed by the partner ASP.

AI The activity indicator can be:

S An instance of the sending ASP is active.

- Receiving ASP Information:

Status The status of a receiving ASP can be:

Enabled The ASP can receive messages from the partner ASP.

Disabled The ASP cannot receive messages from the partner ASP.

LR-MSN The sequence number of the last message that was received from the partner ASP.

SC Status code of the last receiving ASP instance. Value 0 indicates successful processing. Value 8 indicates an error in the local system.

Diag Diagnostic code of the last receiving ASP instance.

If the SC field contains 0, the following diagnostic codes can occur:

CON RQ A connect request from the sending ASP of the partner is in process.

CON CF A connect request from the sending ASP of the partner is confirmed.

DEL RQ An inbound message is being delivered.

DEL CF Delivery of an inbound message is confirmed by the receiving ASP.

AI The activity indicator can be:

R An instance of the receiving ASP is active.

The ASP_List Pull-Down Menu

The following choices are available from the **ASP_List** menu:

Select all To select all ASPs.

Deselect all To deselect all ASPs.

Set inbound trace

To specify the amount of trace information produced by a receiving MERVA Link process. You can set the trace for messages received via SNA or TCP/IP, or via both.

A window is displayed in which you can specify a trace level from 0 (no trace) to 3 (maximum trace) for the incoming transaction. The default trace level is 0. For more information, refer to the *MERVA USE & Branch for Windows NT Diagnosis Guide*.

Set trace directory

To specify the trace directory path name. The trace directory applies to all MERVA Link sending and receiving processes.

The Selected Pull-Down Menu

The following choices are available from the **Selected** menu:

Detailed Information

Displays details of the selected ASP.

Start ASP

Starts the sending ASP. The sending ASP status is set to **nohold**. The messages in the send queue are processed.

Stop ASP

Stops the sending ASP. The sending ASP status is set to **hold**. Messages remain in the send queue until the ASP is started again.

Kickoff

Starts the sending ASP. The ASP status is not set to **nohold** if it is in **hold** status.

A message that was to be sent at the time when the sending process terminated abnormally is processed again to bring the ASP in a consistent state.

Reset sender MIP

Resets the message integrity protocol (MIP) information of the sending ASP. The next time when you start the system, the sending ASP generates an initial sequence number and sends a message integrity reset indication to its partner ASP.

Enable receive

Enables receiving messages for the selected ASP. The ASP accepts messages from its partner ASP.

Disable receive
Disables the receipt of messages for the selected ASP. The ASP rejects messages from its partner ASP.

Reset receiver MIP
Resets the message integrity protocol (MIP) information of the receiving ASP. The next time when you start the system, the receiving ASP accepts a message with any message sequence number from its partner ASP.

Set outbound trace level
Specifies the amount of trace information produced by a sending ASP instance of the selected ASP.

A window is displayed in which you can specify a trace level from 0 (no trace) to 3 (maximum trace) for the outgoing transaction. The default trace level is 0. For more information, refer to the *MERVA USE & Branch for Windows NT Diagnosis Guide*.

The View Pull-Down Menu

The **View** menu contains the following choices:

Refresh	To set the refresh rate for the message list.
Refresh now	To update the message list to its current status.

Displaying ASP Details

Select **Detailed Information** from the **Selected** menu of the MERVA Link Operating window to display the ASP Details window.

The following figure shows an example of this window.

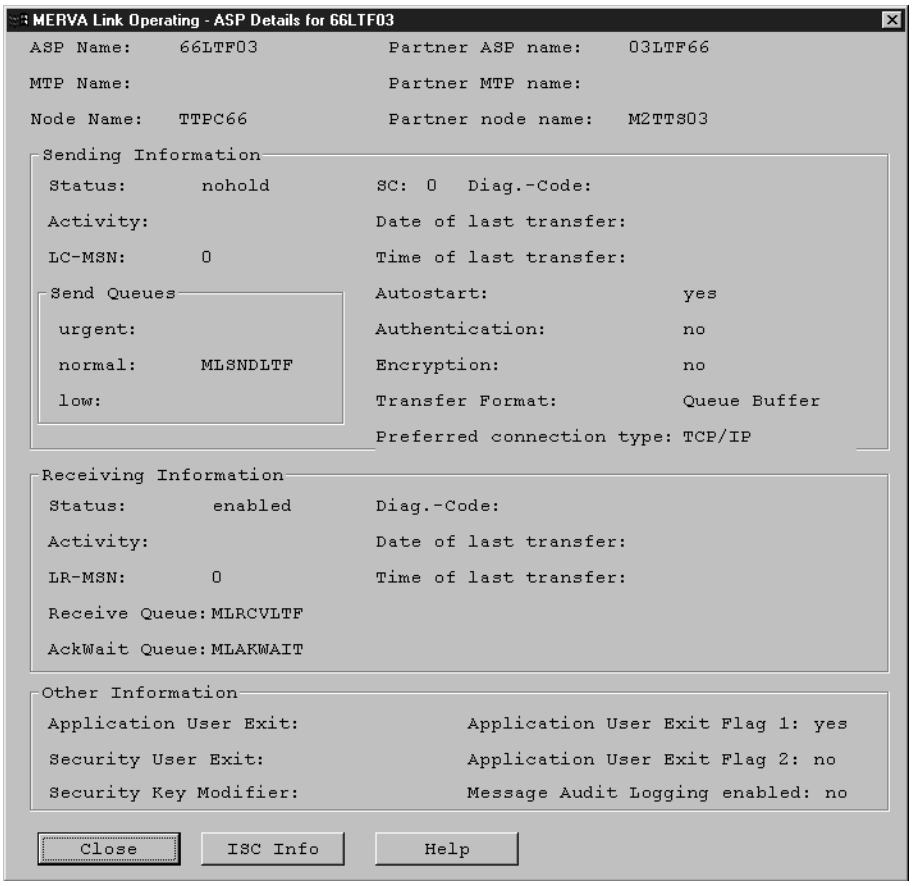

Figure 26. The ASP Details Window

This window shows the parameters and the current status of the selected ASP. For more information, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.

The window shows the following information:

- Names:

  ASP Name
  Name of the local ASP that you selected in the MERVA Link Operating window.

  Partner ASP Name
  Name of the ASP in the partner system that is associated with the local ASP.

  MTP Name
  Message Transfer Process (MTP) name of the local system.

  Partner MTP Name
  Name of the MTP in the partner system.

  Node Name
  Local MERVA Link node name.

  Partner Node Name
  MERVA Link node name of the partner system.

- Sending ASP Information:

Refer to “Sending ASP Information” on page 59 for a description of the following fields:
– **Status**
– **Activity**
– **LC-MSN**
– **SC**
– **Diag.-Code**

Send queues (Urgent/Normal/Low)
Indicates the queues from which “ready-to-send” messages are sent to the partner ASP. Up to three send queues with different priorities can be defined for each ASP.

Autostart
Yes starts the sending process automatically when a message is routed to one of its ready-to-send queues.

No indicates that the status of a send queue must be explicitly changed from **hold** to **nohold**.

Authentication
Yes indicates that authentication of the message is required.

No indicates that authentication of the message is not required.

Encryption
Yes indicates that encryption of the message is required before it is sent.

No indicates that encryption of the message is not required.

Transfer Format
This field contains one of the following:

Line EBCDIC
The message text is transferred in EBCDIC format.

Line ASCII
The message text is transferred in ASCII format.

Queue Buffer
The message data (message text and additional information) is transferred in ASCII format.

Preferred Connection Type
Shows the preferred connection type: SNA APPC or TCP/IP.

• Receiving ASP Information:

Refer to “Receiving ASP Information” on page 60 for a description of the following fields:
– **Status**
– **Activity**
– **LR-MSN**
– **Diag.-Code**

Receive Queue
Shows you the name of the queue to which the receiving ASP sends messages received from its partner ASP.

AckWait Queue
The receiving ASP searches in this queue for messages with which a status report received from the specified partner is to be merged. After adding the information contained in the status report, the message is routed.

- Other Information:

  Application User Exit
  Displays the name of the application user exit.

  Security User Exit
  Displays the name of the security user exit.

  Security Key Modifier
  Displays the security key modifier.

  Application User Exit Flag (1 and 2)
  When you use the default application user exit, these flags let you create status reports for a remote front-end application. You can use the flags as indicators within your own user exits.
  – Flag 1 enables the status report for SWIFT messages.
  – Flag 2 is not used.

  Message Audit Logging Enabled
  Yes indicates that all incoming and outgoing MERVA Link messages are logged in the message audit log.

  No indicates that messages are not logged.

Displaying the ISC Information

Select **ISC Info** in the ASP Details window to get the ISC Information window. This window contains the Intersystem Communication (ISC) information that applies to the partner node.

The following figure shows an example of the ISC Information window.

Figure 27. The ISC Information Window

The ISC Information window shows the parameters of the intersystem connections to a MERVA Link partner system.

If SNA and TCP/IP parameters are defined in the MERVA customization, the preferred connection is tried first. If the preferred connection cannot be established, the other one is used.

- SNA APPC Information:

  Symbolic Destination
  Indicates the name of the Side Information Profile defined in the SNA Server for an SNA APPC connection to the partner system.

Transaction Program Name
Indicates the name of the Transaction Program. If this parameter is empty, the Transaction Program name in the Side Information Profile applies.

- TCP/IP Information:

  Host Name
  Indicates the TCP/IP host name of the partner system.

  Port Number
  Indicates the TCP/IP port number assigned to the MERVA Link message transfer server in the partner system.

- Conversation Security Information:

  User ID
  Indicates the client user ID that is passed to the partner system for client user authorization. For an SNA APPC connection, the user ID is optional. For a TCP/IP connection, the user ID is mandatory.

  Password
  Indicates whether a client user password is specified. For an SNA APPC connection, the user password is optional. For a TCP/IP connection, the user password is mandatory.

  The value **specified** indicates that a password is defined. Otherwise **not specified** is shown in this field.

  Select **Change** to change the password.

Chapter 10. Accessing Diagnosis Information

MERVA provides the following functions that support diagnosis tasks for your system:

- Display Diagnosis Log
- Message Console

The functions are described in the following sections.

Displaying the Diagnosis Log Window

The diagnosis log contains diagnostic messages generated by MERVA. The messages inform you, for example, about an internal status, give a warning, or point to specific errors. They also help you determine problems.

Select **Diagnosis** from the **Program Group** list and **Display Diagnosis Log** from the **Program** list in the MERVA Main Menu window. You then get the Display Diagnosis Log window that contains the messages of the diagnosis log.

The following figure shows an example of this window.

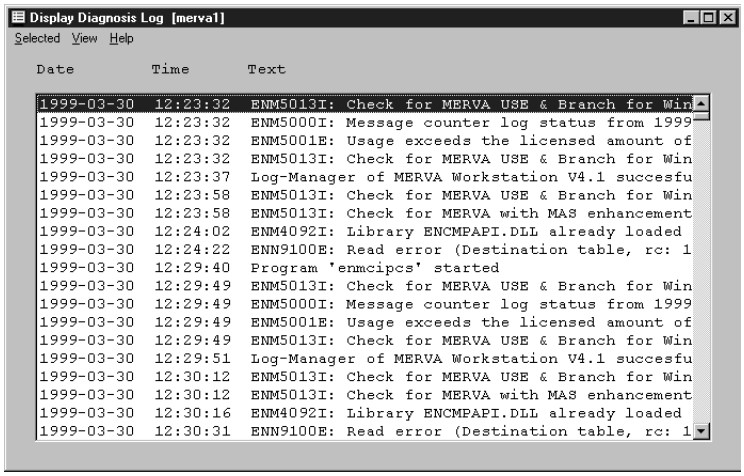

Figure 28. Display Diagnosis Log Window

The Display Diagnosis Log window shows all records with date and time that are contained in the MERVA diagnosis log file at the time when you start the program.

Note: The time period for which the messages are shown depends on the logging period that is specified during customization. For detailed information on the logging period, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*. For detailed information on the diagnosis log file, refer to the *MERVA USE & Branch for Windows NT Diagnosis Guide*.

Viewing the Details

Because of the size limitations of the list box, the records shown are truncated. To display the entire record with more details double-click on a record. You can also

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select a record, then select **Details** from the **Selected** menu. The Log Records Details window shows the entire records in a clear format.

To display a description of the log record, select **Description** in the Details window. You then get information as contained in *MERVA Messages and Codes*, such as explanation, system action, and user response.

Specifying Messages for Display

You can specify the records that are to be displayed in the Display Diagnosis Log.

To do this:

1. Select **Include** from the **View** menu of the Display Diagnosis Log window. You then get the Include window.
2. Define the message records that you want to view in the list box.
3. Select **Display all records** to see all records or deselect this option to use the current list box selection.
4. Select **OK**.

The selections are stored and reused until you change them.

Displaying the Message Console Window

With the message console function, you can monitor the MERVA instance and determine problems. Select **Diagnosis** from the **Program Group** list and **Message Console** from the **Program** list in the MERVA Main Menu window. You then get the Message Console window. This window shows messages recently received in the diagnosis log and new messages as they come up.

The following figure shows an example of this window.

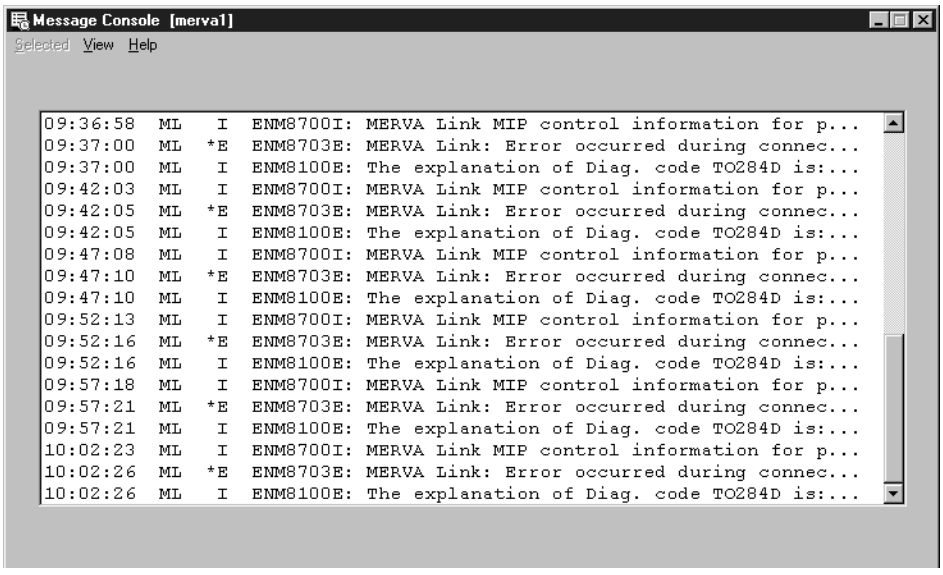

Figure 29. Message Console Window

The message records appear in a list box and contain the following details:

- Time at which they are created
- MERVA component that causes the message, such as:

ML MERVA Link

SL SWIFT Link

M MERVA base

RT Routing

AP Application Program

UE User Exit

- Console message identifier:

  I Information

  E Error

  F Fatal error

  To select or deselect the message console identifiers to be displayed, click on the corresponding check boxes. Then select **OK**. Your selections are stored and reused until you change them.

  If the console message identifier starts with an asterisk (*), an intervention is required.
- Message description

Viewing the Details

Because of the size limitations of the list box, the records shown are truncated. To display the entire record with more details, double-click on a record. You can also select a record, then select **Details** from the **Selected** menu. The Log Records Details window shows the entire records in a clear format.

To display a description of the log record, select **Description** in the Details window. You then get information as contained in *MERVA Messages and Codes*, such as explanation, system action, and user response.

Specifying Console Message Identifiers

You can specify the console message identifiers that are to be displayed in the Message Console window.

To do this:

1. Select **Include** from the **View** menu of the Message Console window.

   You then get the Include window.
2. In the Include window, define the console message identifiers that you want to view in the **Displayed messages** list box. An *x* identifies that the console message identifier is selected.

   To change the selection, select a component. Then select **Details** from the **Selected** menu. You can also double-click on a component.

The selections are stored and reused until you change them.

The following console message identifiers for each MERVA component are valid:

Info Information

Error Recoverable error

Fatal error Nonrecoverable error

Intervention Operator intervention required to clear problem status

Part 4. Appendixes

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Appendix A. User Rights Description

The following appendix lists all available rights that can be assigned to a user. The access rights are described in the order in which they appear in User Administration.

API - With password
To run customer-written API programs with password.

API - Without password
To run customer-written API programs without the use of a password.

Bilateral Keys - All
This right is an addition to the Bilateral Keys - Maintain and Bilateral Keys - Approve pre-agreement. It allows you to work with all correspondent relationships. Otherwise, you can only work with the relationships for which the own Key Management Authority (KMA) is equal to the destination (LT) defined in User Administration.

Bilateral Keys - Approve pre-agreement
To approve a previously created pre-agreement.

Bilateral Keys - Backup
To back up the existing bilateral keys in a file using a specified format.

Bilateral Keys - Maintain
To record the necessary details about each correspondent with which bilateral keys are exchanged. The list of correspondents contains only those relationships of which the own Key Management Authority (KMA) destination is equal to the destination (LT) defined in User Administration. The right to approve pre-agreements and to maintain the BKs and the pre-agreements for all destinations are separate user rights and are therefore not included here.

Bilateral Keys - Restore
To restore previously backed up bilateral keys in the following formats:

- MERVA ESA Version 3.3
- SWIFT key distribution format Version 1
- SWIFT key distribution format Version 2
- SWIFT pre-agreement distribution format

Bilateral Keys - Sequential Operations
To run consecutive operations with correspondent relationships:

- Create or change pre-agreement, then approve pre-agreement.
- Set delete pending, then approve delete pending.
- Set suspend or reactivate pending, then approve suspend or reactivate.

Card Reader - Blacklist
To blacklist a card reader. Use this function of the Card Reader Maintenance program if you suspect that the security of the card reader is compromised.

Card Reader - Maintain
To administer card readers and functions, such as record card reader details or carry out an interface test.

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Certificates - Delete
To delete certificates from the corresponding card readers and the database, or only from the database.

Certificates - Maintain
To administer the certificates that are used by SWIFT to prove that a public key is genuine and valid. The functions to revoke and delete certificates are separate user rights and are therefore not included here.

Certificates - Revoke
To revoke valid certificates. Use this function if you suspect that the security of the respective secret key is compromised.

Console Application
To monitor status information for a MERVA instance by using the message console.

Correspondents - Delete
To delete BIC records from the correspondents database.

Correspondents - Import BIC diskettes
To load BIC records from the BIC file in the correspondents database.

Correspondents - Maintain
To view and maintain BIC records stored in the MERVA database. This includes maintenance of telex information for the correspondent.

Customization - Components
To customize the MERVA components MERVA Link, SWIFT Link, SWIFT USE, and automatic print.

Customization - Routing
To define parameters such as message queues, fields, and constants.

To view and update the MERVA routing table.

To specify the message flow within the system.

Customization - System Configuration
To view and to update system parameters, such as the date format or the logging level.

To change the logging level in the **Setup** menu.

IC Cards - Maintain
To administer USOF, UKMO, and USER cards that belong to ICC sets.

ICC Sets - Activate
To activate available card sets.

ICC Sets - Maintain
To administer the sets of Integrated Circuit Cards supplied by SWIFT that allow you to use Secure Login and Select (SLS), and Bilateral Key Exchange (BKE) services. The right to activate an ICC Set is a separate user right and is therefore not included here.

Incoming MT960/MT966
To process MT960 (BKE initiation request) messages from correspondents for which a pre-agreement does not yet exist in the database, or for which the pre-agreement is not yet approved.

Logged On Users - Operating
To display information about the users that are logged on to MERVA.

To log off users from MERVA.

MERVA Link - Display/Kickoff local ASPs
To start a local application support process.

To display the status of a local application support process.

MERVA Link - Operate local ASPs
To operate local application support processes.

MERVA Link - Operating
To operate the MERVA Link to connect different MERVA systems.

MERVA Link - Set ISC information
To set Intersystem Communication information.

Messages - Authorize
To authorize messages after you check the message content carefully.

Messages - Automatic Print
To start or stop automatic printing of messages held in queues that belong to the print purpose group.

Messages - Create
To create new messages, for example, SWIFT FIN, SWIFT system, or telex messages.

To complete unfinished messages.

Messages - Delete
To delete messages from queues.

Messages - Display/Print
To display and print messages.

Messages - Edit
To edit messages that have failed verification or authorization.

Messages - Manual Authentication
To manually authenticate messages that have failed automatic authentication.

Messages - Move
To move messages to the specified target queue.

Messages - Retype
To retype the data of the message as it was originally entered after checking the contents by reading through the message.

Messages - Sequential Operations
To perform consecutive message-processing operations, such as create, verify, and authorize a message without involving a second user.

Public Key (RSA)
To generate a new public key that is sent to correspondents as part of the BKE process.

Secure Transmission Key
To administer the generation, installation, and activation of Secure Transmission Keys (STK) in the SCR and on the database. An STK must be generated for BKE. It must be installed and activated on each new SCR. The STK must also be renewed periodically.

SLS Keys - Pregeneration
To perform tasks that are related to the administration of the Secure Login and Select (SLS), such as register logical terminals, pregenerate session keys, or change the technology flag.

SWIFT Link - Operating
To operate the SWIFT Link.

Telex - Maintain Envelope
To add telex envelope information to a message.

To remove telex envelope information from a message.

Telex - Process NAKed
To correct the telex addressing information of a negatively acknowledged telex message that is to be retransmitted.

Telex - Route
To route SWIFT messages that are ready to be sent to the SWIFT network to a telex send queue. From there, the messages are sent to the public telex network.

Templates - Maintain
To display, edit, or delete a template.

USER_R1 - User Right 1 ... USER_R10 - User Right 10
To work with user-defined rights.

Users - Allow sequential access
To maintain and approve user rights consecutively without involving a second user.

Users - Approve Rights
To approve newly created or modified users and to delete users.

Users - Change user password
To change MERVA user passwords.

Users - Maintain Rights
To update a MERVA user.

To assign the logical terminal, user rights, and message queues that can be used with specific functions to a MERVA user.

To assign the SWIFT message types to a MERVA user.

Users - Revoke user
To revoke users from MERVA.

Appendix B. Purging Messages – Password User Exit

The password user exit is called to get a valid password for the specified or logged on user ID.

Generating a Password User Exit

To generate a password user exit for the **ENMCQPUR** program, you can use, for example, the VisualAge® for C++ for Windows Compiler Version 3.5.4.

The following files are located in the directory **\samples\userexit** of your MERVA installation directory:

enmxupux.c	The default user exit source code
enmxupux.mak	The default user exit make file

The file **enmxupux.c** contains a sample of the default user exit source code. To create your own user exit, copy this file, change the user exit function, and use the make file supplied. To start the make process, enter the following command:

```
nmake -f enmxupux.mak
```

For more information about the make file and the command, refer to the corresponding compiler documentation.

To locate a user exit in MERVA:

1. Specify the path for the user exits when you create the MERVA instance. For more information on how to create a MERVA instance, refer to the *MERVA USE & Branch for Windows NT Installation and Customization Guide*.
2. Copy the user exit module to the specified directory.

If a user exit is not defined, the default user exit of **ENMCQPUR** in the library **enmxupux.dll** is called.

Using the Default Password User Exit

The password user exit must contain only the function **ENMPwdUserExit**. This function is described in detail in the following section.

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ENMPwdUserExit - Obtain a Password for a Specified User ID

Purpose

This function allows you to get a valid password for a specified user ID and a specified calling program. It also lets you run ENMCQPUR in a batch file without setting the parameter **-p** for ENMCQPUR.

Format

```
iRc = ENMPwdUserExit( pszUserID, pszPrg, pszPwd );
```

Parameters

The following parameters are valid:

iRc(int) - return
Values are:

0 If no error occurs.

Other If one or more errors occur.

pszUserID(char*) - input
Pointer to a string that contains the specified user ID.

pszPrg(char*) - input
Pointer to a string that contains the name of the calling module. The string is always ENMCQPUR because ENMCQPUR is the only module that calls this user exit. Check this parameter to avoid that other programs call the user exit.

pszPwd(char*) - output
Pointer to a string that contains a valid password for the specified user ID. The memory for pszPwd is allocated to ENMCQPUR (8+1 chars).

Example

```
int   ENMPwdUserExit( char * pszUserID,
                      char * pszPrg,
                      char * pszPwd
                    )
{
   int   iRc      = 0;
   int   iFound   = 0;

   strcpy( pszPwd,"" );
   /*-------------------------------------------------------------------------*/
   /*   check, if calling program is ENMCQPUR                                 */
   /*-------------------------------------------------------------------------*/
   if ( !strcmp( pszPrg, "ENMCQPUR" ) )
   {
      /*----------------------------------------------------------------------*/
      /*   own Password Handling: fill pszPwd with valid password if user ID  */
      /*   is valid. Otherwise leave pszPwd empty => in ENMCQPUR the user has */
      /*   to enter his password manually                                     */
      /*----------------------------------------------------------------------*/
      if( !strcmp( pszUserID,"hugo" ) )      /* individual code */
      {                                      /* individual code */
         strcpy( pszPwd,"pwdhugo" );         /* individual code */
         iFound = 1;                         /* individual code */
      }                                      /* individual code */
      /*       .
               .
               .       */
   }

   return( iRc );
}
```

Appendix C. Importing Correspondent Records from the BIC Database Plus

SWIFT supplies a CD that contains BIC records with additional information and a Query Manager that allows you to export all or a range of BIC records.

The format of the generated export text file is different from the normal BIC diskettes. Therefore, you must convert it before you can import the records to MERVA. To do this, use the **enmcvbic.rex** program.

To import the BIC Database Plus information to MERVA:

1. If not already done, run **INSTALL.EXE** from the BIC Database Plus CD.
2. In **Start**, select **Programs**. In **BICPlus** select **BIC+QueryTools**.
3. After BIC Database Plus starts, create a BIC Database Plus Query. For help click F1 or refer to your BIC documentation.
4. From the menu bar, select **Query**, then **New Query**.
5. After the query starts, select **File**, **Export**, and **No header** from the menu bar.

   Note: Ensure that you have enough free disk space to create the output file. For the complete database BIC Plus, you need approximately 60 MB.
6. You then get the Locate File window. In this window:
   a. Type the name of the file.
      Note that the default extension is **txt**.
   b. Select the destination path.
   c. Click **OK**.
7. Close Bic Database Plus.
8. Run the following program:

   ```
   rexx enmcvbic.rex <input filename> <output filename>
   ```
9. Import the output file to MERVA as described in "Importing Correspondents" on page 41.

You should now reorganize the control database with the following program:

```
rexx enmcwopt.rex
```

Note: With the **enmcvbic** program, you get the same data from the BIC DB Plus database as from the BIC database. Other data is not used and cannot be stored in the correspondents database.

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This glossary defines terms as they are used in this book. If you do not find the terms you are looking for, refer to the *IBM Dictionary of Computing*, New York: McGraw-Hill, and the *S.W.I.F.T. User Handbook*.

A

ACB. Access method control block.

ACC. MERVA Link USS application control command application. It provides a means of operating MERVA Link USS in USS shell and MVS batch environments.

Access method control block (ACB). A control block that links an application program to VSAM or VTAM.

ACD. MERVA Link USS application control daemon.

ACT. MERVA Link USS application control table.

address. See *SWIFT address*.

address expansion. The process by which the full name of a financial institution is obtained using the SWIFT address, telex correspondent's address, or a nickname.

AMPDU. Application message protocol data unit, which is defined in the MERVA Link P1 protocol, and consists of an envelope and its content.

answerback. In telex, the response from the dialed correspondent to the WHO R U signal.

answerback code. A group of up to 6 letters following or contained in the answerback. It is used to check the answerback.

APC. Application control.

API. Application programming interface.

APPC. Advanced Program-to-Program Communication based on SNA LU 6.2 protocols.

APPL. A VTAM definition statement used to define a VTAM application program.

application programming interface (API). An interface that programs can use to exchange data.

application support filter (ASF). In MERVA Link, a user-written program that can control and modify any data exchanged between the Application Support Layer and the Message Transfer Layer.

application support process (ASP). An executing instance of an application support program. Each application support process is associated with an ASP entry in the partner table. An ASP that handles outgoing messages is a *sending ASP*; one that handles incoming messages is a *receiving ASP*.

application support program (ASP). In MERVA Link, a program that exchanges messages and reports with a specific remote partener ASP. These two programs must agree on which conversation protocol they are to use.

ASCII. American Standard Code for Information Interchange. The standard code, using a coded set consisting of 7-bit coded characters (8 bits including parity check), used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

ASF. Application support filter.

ASP. (1) Application support process. (2) Application support program.

ASPDU. Application support protocol data unit, which is defined in the MERVA Link P2 protocol.

authentication. The SWIFT security check used to ensure that a message has not changed during transmission, and that it was sent by an authorized sender.

authenticator key. A set of alphanumeric characters used for the authentication of a message sent via the SWIFT network.

authenticator-key file. The file that stores the keys used during the authentication of a message. The file contains a record for each of your financial institution's correspondents.

B

Back-to-Back (BTB). A MERVA Link function that enables ASPs to exchange messages in the local MERVA Link node without using data communication services.

bank identifier code. A 12-character code used to identify a bank within the SWIFT network. Also called a SWIFT address. The code consists of the following subcodes:

- The bank code (4 characters)
- The ISO country code (2 characters)
- The location code (2 characters)
- The address extension (1 character)

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- The branch code (3 characters) for a SWIFT user institution, or the letters "BIC" for institutions that are not SWIFT users.

Basic Security Manager (BSM). A component of VSE/ESA Version 2.4 that is invoked by the System Authorization Facility, and used to ensure signon and transaction security.

BIC. Bank identifier code.

BIC Bankfile. A tape of bank identifier codes supplied by S.W.I.F.T.

BIC Database Plus Tape. A tape of financial institutions and currency codes, supplied by S.W.I.F.T. The information is compiled from various sources and includes national, international, and cross-border identifiers.

BIC Directory Update Tape. A tape of bank identifier codes and currency codes, supplied by S.W.I.F.T., with extended information as published in the printed BIC Directory.

body. The second part of an IM-ASPDU. It contains the actual application data or the message text that the IM-AMPDU transfers.

BSC. Binary synchronous control.

BSM. Basic Security Manager.

BTB. Back-to-back.

buffer. A storage area used by MERVA programs to store a message in its internal format. A buffer has an 8-byte prefix that indicates its length.

C

CBT. SWIFT computer-based terminal.

CCSID. Coded character set identifier.

CDS. Control data set.

central service. In MERVA, a service that uses resources that either require serialization of access, or are only available in the MERVA nucleus.

CF message. Confirmed message. When a sending MERVA Link system is informed of the successful delivery of a message to the receiving application, it routes the delivered application messages as CF messages, that is, messages of class CF, to an ACK wait queue or to a complete message queue.

COA. Confirm on arrival.

COD. Confirm on delivery.

coded character set identifier (CCSID). The name of a coded set of characters and their code point assignments.

commit. In MQSeries, to commit operations is to make the changes on MQSeries queues permanent. After putting one or more messages to a queue, a commit makes them visible to other programs. After getting one or more messages from a queue, a commit permanently deletes them from the queue.

confirm-on-arrival (COA) report. An MQSeries report message type created when a message is placed on that queue. It is created by the queue manager that owns the destination queue.

confirm-on-delivery (COD) report. An MQSeries report message type created when an application retrieves a message from the queue in a way that causes the message to be deleted from the queue. It is created by the queue manager.

control fields. In MERVA Link, fields that are part of a MERVA message on the queue data set and of the message in the TOF. Control fields are written to the TOF at nesting identifier 0. Messages in SWIFT format do not contain control fields.

correspondent. An institution to which your institution sends and from which it receives messages.

correspondent identifier. The 11-character identifier of the receiver of a telex message. Used as a key to retrieve information from the Telex correspondents file.

cross-system coupling facility. See *XCF*.

coupling services. In a sysplex, the functions of XCF that transfer data and status information among the members of a group that reside in one or more of the MVS systems in the sysplex.

couple data set. See *XCF couple data set*.

CTP. MERVA Link command transfer processor.

currency code file. A file containing the currency codes, together with the name, fraction length, country code, and country names.

D

daemon. A long-lived process that runs unattended to perform continuous or periodic systemwide functions.

DASD. Direct access storage device.

data area. An area of a predefined length and format on a panel in which data can be entered or displayed. A field can consist of one or more data areas.

data element. A unit of data that, in a certain context, is considered indivisible. In MERVA Link, a data

element consists of a 2-byte data element length field, a 2-byte data-element identifier field, and a field of variable length containing the data element data.

datagram. In TCP/IP, the basic unit of information passed across the Internet environment. This type of message does not require a reply, and is the simplest type of message that MQSeries supports.

data terminal equipment. That part of a data station that serves as a data source, data link, or both, and provides for the data communication control function according to protocols.

DB2. A family of IBM licensed programs for relational database management.

dead-letter queue. A queue to which a queue manager or application sends messages that it cannot deliver. Also called *undelivered-message queue*.

dial-up number. A series of digits required to establish a connection with a remote correspondent via the public telex network.

direct service. In MERVA, a service that uses resources that are always available and that can be used by several requesters at the same time.

display mode. The mode (PROMPT or NOPROMPT) in which SWIFT messages are displayed. See *PROMPT mode* and *NOPROMPT mode.*

distributed queue management (DQM). In MQSeries message queuing, the setup and control of message channels to queue managers on other systems.

DQM. Distributed queue management.

DTE. Data terminal equipment.

E

EBCDIC. Extended Binary Coded Decimal Interchange Code. A coded character set consisting of 8-bit coded characters.

ECB. Event control block.

EDIFACT. Electronic Data Interchange for Administration, Commerce and Transport (a United Nations standard).

ESM. External security manager.

EUD. End-user driver.

exception report. An MQSeries report message type that is created by a message channel agent when a message is sent to another queue manager, but that message cannot be delivered to the specified destination queue.

external line format (ELF) messages. Messages that are not fully tokenized, but are stored in a single field in the TOF. Storing messages in ELF improves performance, because no mapping is needed, and checking is not performed.

external security manager (ESM). A security product that is invoked by the System Authorization Facility. RACF is an example of an ESM.

F

FDT. Field definition table.

field. In MERVA, a portion of a message used to enter or display a particular type of data in a predefined format. A field is located by its position in a message and by its tag. A field is made up of one or more data areas. See also *data area*.

field definition table (FDT). The field definition table describes the characteristics of a field; for example, its length and number of its data areas, and whether it is mandatory. If the characteristics of a field change depending on its use in a particular message, the definition of the field in the FDT can be overridden by the MCB specifications.

field group. One or several fields that are defined as being a group. Because a field can occur more than once in a message, field groups are used to distinguish them. A name can be assigned to the field group during message definition.

field group number. In the TOF, a number is assigned to each field group in a message in ascending order from 1 to 255. A particular field group can be accessed using its field group number.

field tag. A character string used by MERVA to identify a field in a network buffer. For example, for SWIFT field 30, the field tag is **:30:**.

FIN. Financial application.

FIN-Copy. The MERVA component used for SWIFT FIN-Copy support.

finite state machine. The theoretical base describing the rules of a service request's state and the conditions to state transitions.

FMT/ESA. MERVA-to-MERVA Financial Message Transfer/ESA.

form. A partially-filled message containing data that can be copied for a new message of the same message type.

G

GPA. General purpose application.

H

HFS. Hierarchical file system.

hierarchical file system (HFS). A system for organizing files in a hierarchy, as in a UNIX system. OS/390 UNIX System Services files are organized in an HFS. All files are members of a directory, and each directory is in turn a member of a directory at a higher level in the HFS. The highest level in the hierarchy is the root directory.

I

IAM. Interapplication messaging (a MERVA Link message exchange protocol).

IM-ASPDU. Interapplication messaging application support protocol data unit. It contains an application message and consists of a heading and a body.

incore request queue. Another name for the request queue to emphasize that the request queue is held in memory instead of on a DASD.

InetD. Internet Daemon. It provides TCP/IP communication services in the OS/390 USS environment.

initiation queue. In MQSeries, a local queue on which the queue manager puts trigger messages.

input message. A message that is input into the SWIFT network. An input message has an input header.

INTERCOPE TelexBox. This telex box supports various national conventions for telex procedures and protocols.

interservice communication. In MERVA ESA, a facility that enables communication among services if MERVA ESA is running in a multisystem environment.

intertask communication. A facility that enables application programs to communicate with the MERVA nucleus and so request a central service.

IP. Internet Protocol.

IP message. In-process message. A message that is in the process of being transferred to another application.

ISC. Intersystem communication.

ISN. Input sequence number.

ISN acknowledgment. A collective term for the various kinds of acknowledgments sent by the SWIFT network.

ISO. International Organization for Standardization.

ITC. Intertask communication.

J

JCL. Job control language.

journal. A chronological list of records detailing MERVA actions.

journal key. A key used to identify a record in the journal.

journal service. A MERVA central service that maintains the journal.

K

KB. Kilobyte (1024 bytes).

key. A character or set of characters used to identify an item or group of items. For example, the user ID is the key to identify a user file record.

key-sequenced data set (KSDS). A VSAM data set whose records are loaded in key sequence and controlled by an index.

keyword parameter. A parameter that consists of a keyword, followed by one or more values.

KSDS. Key-sequenced data set.

L

LAK. Login acknowledgment message. This message informs you that you have successfully logged in to the SWIFT network.

large message. A message that is stored in the large message cluster (LMC). The maximum length of a message to be stored in the VSAM QDS is 31900 bytes. Messages up to 2MB can be stored in the LMC. For queue management using DB2 no distinction is made between messages and large messages.

large queue element. A queue element that is larger than the smaller of:

- The limiting value specified during the customization of MERVA
- 32KB

LC message. Last confirmed control message. It contains the message-sequence number of the application or acknowledgment message that was last confirmed; that is, for which the sending MERVA Link system most recently received confirmation of a successful delivery.

LDS. Logical data stream.

LMC. Large message cluster.

LNK. Login negative acknowledgment message. This message indicates that the login to the SWIFT network has failed.

local queue. In MQSeries, a queue that belongs to a local queue manager. A local queue can contain a list of messages waiting to be processed. Contrast with *remote queue*.

local queue manager. In MQSeries, the queue manager to which the program is connected, and that provides message queuing services to that program. Queue managers to which a program is not connected are remote queue managers, even if they are running on the same system as the program.

login. To start the connection to the SWIFT network.

LR message. Last received control message, which contains the message-sequence number of the application or acknowledgment message that was last received from the partner application.

LSN. Login sequence number.

LT. See *LTERM*.

LTC. Logical terminal control.

LTERM. Logical terminal. Logical terminal names have 4 characters in CICS and up to 8 characters in IMS.

LU. A VTAM logical unit.

M

maintain system history program (MSHP). A program used for automating and controlling various installation, tailoring, and service activities for a VSE system.

MCA. Message channel agent.

MCB. Message control block.

MERVA ESA. The IBM licensed program Message Entry and Routing with Interfaces to Various Applications for ESA.

MERVA Link. A MERVA component that can be used to interconnect several MERVA systems.

message. A string of fields in a predefined form used to provide or request information. See also *SWIFT financial message.*

message body. The part of the message that contains the message text.

message category. A group of messages that are logically related within an application.

message channel. In MQSeries distributed message queuing, a mechanism for moving messages from one queue manager to another. A message channel comprises two message channel agents (a sender and a receiver) and a communication link.

message channel agent (MCA). In MQSeries, a program that transmits prepared messages from a transmission queue to a communication link, or from a communication link to a destination queue.

message control block (MCB). The definition of a message, screen panel, net format, or printer layout made during customization of MERVA.

Message Format Service (MFS). A MERVA direct service that formats a message according to the medium to be used, and checks it for formal correctness.

message header. The leading part of a message that contains the sender and receiver of the message, the message priority, and the type of message.

Message Integrity Protocol (MIP). In MERVA Link, the protocol that controls the exchange of messages between partner ASPs. This protocol ensures that any loss of a message is detected and reported, and that no message is duplicated despite system failures at any point during the transfer process.

message-processing function. The various parts of MERVA used to handle a step in the message-processing route, together with any necessary equipment.

message queue. See *queue*.

Message Queue Interface (MQI). The programming interface provided by the MQSeries queue managers. It provides a set of calls that let application programs access message queuing services such as sending messages, receiving messages, and manipulating MQSeries objects.

Message Queue Manager (MQM). An IBM licensed program that provides message queuing services. It is part of the MQSeries set of products.

message reference number (MRN). A unique 16-digit number assigned to each message for identification purposes. The message reference number consists of an 8-digit domain identifier that is followed by an 8-digit sequence number.

message sequence number (MSN). A sequence number for messages transferred by MERVA Link.

message type (MT). A number, up to 7 digits long, that identifies a message. SWIFT messages are identified by a 3-digit number; for example SWIFT message type MT S100.

MFS. Message Format Service.

MIP. Message Integrity Protocol.

MPDU. Message protocol data unit, which is defined in P1.

MPP. In IMS, message-processing program.

MQA. MQ Attachment.

MQ Attachment (MQA). A MERVA feature that provides message transfer between MERVA and a user-written MQI application.

MQH. MQSeries queue handler.

MQI. Message queue interface.

MQM. Message queue manager.

MQS. MQSeries nucleus server.

MQSeries. A family of IBM licensed programs that provides message queuing services.

MQSeries nucleus server (MQS). A MERVA component that listens for messages on an MQI queue, receives them, extracts a service request, and passes it via the request queue handler to another MERVA ESA instance for processing.

MQSeries queue handler (MQH). A MERVA component that performs service calls to the Message Queue Manager via the provided Message Queue Interface.

MRN. Message reference number.

MSC. MERVA system control facility.

MSHP. Maintain system history program.

MSN. Message sequence number.

MT. Message type.

MTP. (1) Message transfer program. (2) Message transfer process.

MTS. Message Transfer System.

MTSP. Message Transfer Service Processor.

MTT. Message type table.

multisystem application. (1) An application program that has various functions distributed across MVS systems in a multisystem environment. (2) In XCF, an authorized application that uses XCF coupling services. (3) In MERVA ESA, multiple instances of MERVA ESA that are distributed among different MVS systems in a multisystem environment.

multisystem environment. An environment in which two or more MVS systems reside on one or more processors, and programs on one system can communicate with programs on the other systems. With XCF, the environment in which XCF services are available in a defined sysplex.

multisystem sysplex. A sysplex in which one or more MVS systems can be initialized as part of the sysplex. In a multisystem sysplex, XCF provides coupling services on all systems in the sysplex and requires an XCF couple data set that is shared by all systems. See also *single-system sysplex*.

MVS/ESA. Multiple Virtual Storage/Enterprise Systems Architecture.

N

namelist. An MQSeries for MVS/ESA object that contains a list of queue names.

nested message. A message that is composed of one or more message types.

nested message type. A message type that is contained in another message type. In some cases, only part of a message type (for example, only the mandatory fields) is nested, but this “partial” nested message type is also considered to be nested. For example, SWIFT MT 195 could be used to request information about a SWIFT MT 100 (customer transfer). The SWIFT MT 100 (or at least its mandatory fields) is then nested in SWIFT MT 195.

nesting identifier. An identifier (a number from 2 to 255) that is used to access a nested message type.

network identifier. A single character that is placed before a message type to indicate which network is to be used to send the message; for example, **S** for SWIFT

network service access point (NSAP). The endpoint of a network connection used by the SWIFT transport layer.

NOPROMPT mode. One of two ways to display a message panel. NOPROMPT mode is only intended for experienced SWIFT Link users who are familiar with the structure of SWIFT messages. With NOPROMPT mode, only the SWIFT header, trailer, and pre-filled fields and their tags are displayed. Contrast with *PROMPT mode*.

NSAP. Network service access point.

nucleus server. A MERVA component that processes a service request as selected by the request queue handler. The service a nucleus server provides and the way it provides it is defined in the nucleus server table (DSLNSVT).

O

object. In MQSeries, objects define the properties of queue managers, queues, process definitions, and namelists.

occurrence. See *repeatable sequence*.

option. One or more characters added to a SWIFT field number to distinguish among different layouts for and meanings of the same field. For example, SWIFT field 60 can have an option F to identify a first opening balance, or M for an intermediate opening balance.

origin identifier (origin ID). A 34-byte field of the MERVA user file record. It indicates, in a MERVA and SWIFT Link installation that is shared by several banks, to which of these banks the user belongs. This lets the user work for that bank only.

OSN. Output sequence number.

OSN acknowledgment. A collective term for the various kinds of acknowledgments sent to the SWIFT network.

output message. A message that has been received from the SWIFT network. An output message has an output header.

P

P1. In MERVA Link, a peer-to-peer protocol used by cooperating message transfer processes (MTPs).

P2. In MERVA Link, a peer-to-peer protocol used by cooperating application support processes (ASPs).

P3. In MERVA Link, a peer-to-peer protocol used by cooperating command transfer processors (CTPs).

packet switched public data network (PSPDN). A public data network established and operated by network common carriers or telecommunication administrations for providing packet-switched data transmission.

panel. A formatted display on a display terminal. Each page of a message is displayed on a separate panel.

parallel processing. The simultaneous processing of units of work by several servers. The units of work can be either transactions or subdivisions of larger units of work.

parallel sysplex. A sysplex that uses one or more coupling facilities.

partner table (PT). In MERVA Link, the table that defines how messages are processed. It consists of a header and different entries, such as entries to specify the message-processing parameters of an ASP or MTP.

PCT. Program Control Table (of CICS).

PDE. Possible duplicate emission.

PDU. Protocol data unit.

PF key. Program-function key.

positional parameter. A parameter that must appear in a specified location relative to other parameters.

PREMIUM. The MERVA component used for SWIFT PREMIUM support.

process definition object. An MQSeries object that contains the definition of an MQSeries application. A queue manager uses the definitions contained in a process definition object when it works with trigger messages.

program-function key. A key on a display terminal keyboard to which a function (for example, a command) can be assigned. This lets you execute the function (enter the command) with a single keystroke.

PROMPT mode. One of two ways to display a message panel. PROMPT mode is intended for SWIFT Link users who are unfamiliar with the structure of SWIFT messages. With PROMPT mode, all the fields and tags are displayed for the SWIFT message. Contrast with *NOPROMPT mode*.

protocol data unit (PDU). In MERVA Link a PDU consists of a structured sequence of implicit and explicit data elements:
- Implicit data elements contain other data elements.
- Explicit data elements cannot contain any other data elements.

PSN. Public switched network.

PSPDN. Packet switched public data network.

PSTN. Public switched telephone network.

PT. Partner table.

PTT. A national post and telecommunication authority (post, telegraph, telephone).

Q

QDS. Queue data set.

QSN. Queue sequence number.

queue. (1) In MERVA, a logical subdivision of the MERVA queue data set used to store the messages associated with a MERVA message-processing function. A queue has the same name as the message-processing function with which it is associated. (2) In MQSeries, an

object onto which message queuing applications can put messages, and from which they can get messages. A queue is owned and maintained by a queue manager. See also *request queue*.

queue element. A message and its related control information stored in a data record in the MERVA ESA Queue Data Set.

queue management. A MERVA service function that handles the storing of messages in, and the retrieval of messages from, the queues of message-processing functions.

queue manager. (1) An MQSeries system program that provides queueing services to applications. It provides an application programming interface so that programs can access messages on the queues that the queue manager owns. See also *local queue manager* and *remote queue manager*. (2) The MQSeries object that defines the attributes of a particular queue manager.

queue sequence number (QSN). A sequence number that is assigned to the messages stored in a logical queue by MERVA ESA queue management in ascending order. The QSN is always unique in a queue. It is reset to zero when the queue data set is formatted, or when a queue management restart is carried out and the queue is empty.

R

RACF. Resource Access Control Facility.

RBA. Relative byte address.

RC message. Recovered message; that is, an IP message that was copied from the control queue of an inoperable or closed ASP via the **recover** command.

ready queue. A MERVA queue used by SWIFT Link to collect SWIFT messages that are ready for sending to the SWIFT network.

remote queue. In MQSeries, a queue that belongs to a remote queue manager. Programs can put messages on remote queues, but they cannot get messages from remote queues. Contrast with *local queue*.

remote queue manager. In MQSeries, a queue manager is remote to a program if it is not the queue manager to which the program is connected.

repeatable sequence. A field or a group of fields that is contained more than once in a message. For example, if the SWIFT fields 20, 32, and 72 form a sequence, and if this sequence can be repeated up to 10 times in a message, each sequence of the fields 20, 32, and 72 would be an occurrence of the repeatable sequence.

In the TOF, the occurrences of a repeatable sequence are numbered in ascending order from 1 to 32767 and can be referred to using the occurrence number.

A repeatable sequence in a message may itself contain another repeatable sequence. To identify an occurrence within such a nested repeatable sequence, more than one occurrence number is necessary.

reply message. In MQSeries, a type of message used for replies to request messages.

reply-to queue. In MQSeries, the name of a queue to which the program that issued an MQPUT call wants a reply message or report message sent.

report message. In MQSeries, a type of message that gives information about another message. A report message usually indicates that the original message cannot be processed for some reason.

request message. In MQSeries, a type of message used for requesting a reply from another program.

request queue. The queue in which a service request is stored. It resides in main storage and consists of a set of request queue elements that are chained in different queues:

- Requests waiting to be processed
- Requests currently being processed
- Requests for which processing has finished

request queue handler (RQH). A MERVA ESA component that handles the queueing and scheduling of service requests. It controls the request processing of a nucleus server according to rules defined in the finite state machine.

Resource Access Control Facility (RACF). An IBM licensed program that provides for access control by identifying and verifying users to the system, authorizing access to protected resources, logging detected unauthorized attempts to enter the system, and logging detected accesses to protected resources.

retype verification. See *verification*.

routing. In MERVA, the passing of messages from one stage in a predefined processing path to the next stage.

RP. Regional processor.

RQH. Request queue handler.

RRDS. Relative record data set.

S

SAF. System Authorization Facility.

SCS. SNA character string

SCP. System control process.

SDI. Sequential data set input. A batch utility used to import messages from a sequential data set or a tape into MERVA ESA queues.

SDO. Sequential data set output. A batch utility used to export messages from a MERVA ESA queue to a sequential data set or a tape.

SDY. Sequential data set system printer. A batch utility used to print messages from a MERVA ESA queue.

service request. A type of request that is created and passed to the request queue handler whenever a nucleus server requires a service that is not currently available.

sequence number. A number assigned to each message exchanged between two nodes. The number is increased by one for each successive message. It starts from zero each time a new session is established.

sign off. To end a session with MERVA.

sign on. To start a session with MERVA.

single-system sysplex. A sysplex in which only one MVS system can be initialized as part of the sysplex. In a single-system sysplex, XCF provides XCF services on the system, but does not provide signalling services between MVS systems. A single-system sysplex requires an XCF couple data set. See also *multisystem sysplex*.

small queue element. A queue element that is smaller than the smaller of:

- The limiting value specified during the customization of MERVA
- 32KB

SMP/E. System Modification Program Extended.

SN. Session number.

SNA. Systems network architecture.

SNA character string. In SNA, a character string composed of EBCDIC controls, optionally mixed with user data, that is carried within a request or response unit.

SPA. Scratch pad area.

SQL. Structured Query Language.

SR-ASPDU. The status report application support PDU, which is used by MERVA Link for acknowledgment messages.

SSN. Select sequence number.

subfield. A subdivision of a field with a specific meaning. For example, the SWIFT field 32 has the subfields date, currency code, and amount. A field can have several subfield layouts depending on the way the field is used in a particular message.

SVC. (1) Switched Virtual Circuit. (2) Supervisor call instruction.

S.W.I.F.T. (1) Society for Worldwide Interbank Financial Telecommunication s.c. (2) The network provided and managed by the Society for Worldwide Interbank Financial Telecommunication s.c.

SWIFT address. Synonym for *bank identifier code*.

SWIFT Correspondents File. The file containing the bank identifier code (BIC), together with the name, postal address, and zip code of each financial institution in the BIC Directory.

SWIFT financial message. A message in one of the SWIFT categories 1 to 9 that you can send or receive via the SWIFT network. See *SWIFT input message* and *SWIFT output message*.

SWIFT header. The leading part of a message that contains the sender and receiver of the message, the message priority, and the type of message.

SWIFT input message. A SWIFT message with an input header to be sent to the SWIFT network.

SWIFT link. The MERVA ESA component used to link to the SWIFT network.

SWIFT network. Refers to the SWIFT network of the Society for Worldwide Interbank Financial Telecommunication (S.W.I.F.T.).

SWIFT output message. A SWIFT message with an output header coming from the SWIFT network.

SWIFT system message. A SWIFT general purpose application (GPA) message or a financial application (FIN) message in SWIFT category 0.

switched virtual circuit (SVC). An X.25 circuit that is dynamically established when needed. It is the X.25 equivalent of a switched line.

sysplex. One or more MVS systems that communicate and cooperate via special multisystem hardware components and software services.

System Authorization Facility (SAF). An MVS or VSE facility through which MERVA ESA communicates with an external security manager such as RACF (for MVS) or the basic security manager (for VSE).

System Control Process (SCP). A MERVA Link component that handles the transfer of MERVA ESA commands to a partner MERVA ESA system, and the receipt of the command response. It is associated with a system control process entry in the partner table.

System Modification Program Extended (SMP/E). A licensed program used to install software and software changes on MVS systems.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operating sequences for transmitting information units through, and for controlling the configuration and operation of, networks.

T

tag. A field identifier.

TCP/IP. Transmission Control Protocol/Internet Protocol.

Telex Correspondents File. A file that stores data about correspondents. When the user enters the corresponding nickname in a Telex message, the corresponding information in this file is automatically retrieved and entered into the Telex header area.

telex header area. The first part of the telex message. It contains control information for the telex network.

telex interface program (TXIP). A program that runs on a Telex front-end computer and provides a communication facility to connect MERVA ESA with the Telex network.

Telex Link. The MERVA ESA component used to link to the public telex network via a Telex substation.

Telex substation. A unit comprised of the following:

- Telex Interface Program
- A Telex front-end computer
- A Telex box

Terminal User Control Block (TUCB). A control block containing terminal-specific and user-specific information used for processing messages for display devices such as screen and printers.

test key. A key added to a telex message to ensure message integrity and authorized delivery. The test key is an integer value of up to 16 digits, calculated manually or by a test-key processing program using the significant information in the message, such as amounts, currency codes, and the message date.

test-key processing program. A program that automatically calculates and verifies a test key. The Telex Link supports panels for input of test-key-related data and an interface for a test-key processing program.

TFD. Terminal feature definitions table.

TID. Terminal identification. The first 9 characters of a bank identifier code (BIC).

TOF. Originally the abbreviation of *tokenized form*, the TOF is a storage area where messages are stored so that their fields can be accessed directly by their field names and other index information.

TP. Transaction program.

transaction. A specific set of input data that triggers the running of a specific process or job; for example, a message destined for an application program.

transaction code. In IMS and CICS, an alphanumeric code that calls an IMS message processing program or a CICS transaction. Transaction codes have 4 characters in CICS and up to 8 characters in IMS.

Transmission Control Protocol/Internet Protocol (TCP/IP). A set of communication protocols that support peer-to-peer connectivity functions for both local and wide area networks.

transmission queue. In MQSeries, a local queue on which prepared messages destined for a remote queue manager are temporarily stored.

trigger event. In MQSeries, an event (such as a message arriving on a queue) that causes a queue manager to create a trigger message on an initiation queue.

trigger message. In MQSeries, a message that contains information about the program that a trigger monitor is to start.

trigger monitor. In MQSeries, a continuously-running application that serves one or more initiation queues. When a trigger message arrives on an initiation queue, the trigger monitor retrieves the message. It uses the information in the trigger message to start a process that serves the queue on which a trigger event occurred.

triggering. In MQSeries, a facility that allows a queue manager to start an application automatically when predetermined conditions are satisfied.

TUCB. Terminal User Control Block.

TXIP. Telex interface program.

U

UMR. Unique message reference.

unique message reference (UMR). An optional feature of MERVA ESA that provides each message with a unique identifier the first time it is placed in a queue. It is composed of a MERVA ESA installation name, a sequence number, and a date and time stamp.

UNIT. A group of related literals or fields of an MCB definition, or both, enclosed by a DSLLUNIT and DSLLUEND macroinstruction.

UNIX System Services (USS). A component of OS/390, formerly called OpenEdition (OE), that creates a UNIX environment that conforms to the XPG4 UNIX 1995 specifications, and provides two open systems interfaces on the OS/390 operating system:

- An application program interface (API)
- An interactive shell interface

UN/EDIFACT. United Nations Standard for Electronic Data Interchange for Administration, Commerce and Transport.

USE. S.W.I.F.T. User Security Enhancements.

user file. A file containing information about all MERVA ESA users; for example, which functions each user is allowed to access. The user file is encrypted and can only be accessed by authorized persons.

user identification and verification. The acts of identifying and verifying a RACF-defined user to the system during logon or batch job processing. RACF identifies the user by the user ID and verifies the user by the password or operator identification card supplied during logon processing or the password supplied on a batch JOB statement.

USS. UNIX System Services.

V

verification. Checking to ensure that the contents of a message are correct. Two kinds of verification are:

- Visual verification: you read the message and confirm that you have done so
- Retype verification: you reenter the data to be verified

Virtual LU. An LU defined in MERVA Extended Connectivity for communication between MERVA and MERVA Extended Connectivity.

Virtual Storage Access Method (VSAM). An access method for direct or sequential processing of fixed and variable-length records on direct access devices. The records in a VSAM data set or file can be organized in logical sequence by a key field (key sequence), in the physical sequence in which they are written on the data set or file (entry sequence), or by relative-record number.

Virtual Telecommunications Access Method (VTAM). An IBM licensed program that controls communication and the flow of data in an SNA network. It provides single-domain, multiple-domain, and interconnected network capability.

VSAM. Virtual Storage Access Method.

VTAM. Virtual Telecommunications Access Method (IBM licensed program).

W

Windows NT service. A type of Windows NT application that can run in the background of the Windows NT operating system even when no user is logged on. Typically, such a service has no user interaction and writes its output messages to the Windows NT event log.

X

X.25. An ISO standard for interface to packet switched communications services.

XCF. Abbreviation for *cross-system coupling facility*, which is a special logical partition that provides high-speed caching, list processing, and locking functions in a sysplex. XCF provides the MVS coupling services that allow authorized programs on MVS systems in a multisystem environment to communicate with (send data to and receive data from) authorized programs on other MVS systems.

XCF couple data sets. A data set that is created through the XCF couple data set format utility and, depending on its designated type, is shared by some or all of the MVS systems in a sysplex. It is accessed only by XCF and contains XCF-related data about the sysplex, systems, applications, groups, and members.

XCF group. The set of related members defined to SCF by a multisystem application in which members of the group can communicate with (send data to and receive data from) other members of the same group. All MERVA systems working together in a sysplex must pertain to the same XCF group.

XCF member. A specific function of a multisystem application that is defined to XCF and assigned to a group by the multisystem application. A member resides on one system in a sysplex and can use XCF services to communicate with other members of the same group.

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- *S.W.I.F.T. User Handbook*
- *S.W.I.F.T. Dictionary*
- *S.W.I.F.T. FIN Security Guide*
- *S.W.I.F.T. Card Readers User Guide*

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MERVA USE & Branch for Windows NT
User's Guide
Version 4 Release 1

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