S/390 Service Update Facility

User's Guide

Version 2 Release 1.2

IBM

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IBM

> **Note!**
>
> Before using this information and the product it supports, be sure to read the general information under "Notices" on page ix.

Fifth Edition (May 1999)

This major revision obsoletes and replaces GC23-3499-03. See the "What's Changed in This Book" on page xiii for the changes made in this edition.

This edition applies to Version 2 Release 1.2 of the IBM S/390 Service Update Facility and to all subsequent releases and modifications until otherwise indicated in new editions or Technical Newsletters. Make sure that you are using the correct edition for this level of the product.

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About This Book

This book describes how to set up and use IBM S/390 Service Update Facility. S/390 Service Update Facility offers you the ability to order and receive service for your OS/390, VM, and VSE hosts electronically using the Internet. With this system, you can order preventive or corrective service for your hosts and have it uploaded to your host automatically. You can specify tape delivery as an alternate to the Internet.

S/390 Service Update Facility also assists you in placing orders through the ServiceLink option of IBMLink.

S/390 Service Update Facility consists of a Customer Application Server, a Java application, that runs on an OS/2 or Windows NT workstation server or on an OS/390 UNIX System Server. This Customer Application Server connects through TCP/IP to your workstation, from which you order service. It also connects to your hosts for uploading the service packages you order. You use your Web browser at your workstation to define your host destinations, to place orders for service, and to check the status of the orders that you have requested. Your host destinations can be any of the following:

- OS/390
- VM
- VSE

OS/390 SMP/E, VMSES/E, and VSE/MSHP provide S/390 Service Update Facility with the host functions that receive orders on your OS/390, VM, and VSE hosts.

Who Should Read This Book

This book is intended for the persons in your organization who will:

- Set up the ordering workstations
- Set up the Customer Application Server
- Install and configure the S/390 Service Update Facility host programs
- Define the hosts that are to receive service orders
- Place orders for service
- Check the status of the orders that have been requested.

What's Changed in This Book

This section summarizes the major changes made in the current edition of the *S/390 Service Update Facility: User's Guide.* The following table shows the publication history of this manual:

Table 1. Publication History

Product Version/Release Service Level	Book		
	Edition	Date	Order Number
V2R1.2	**Fifth**	**May 1999**	**GC23-3499-04**
V2R1.2	Fourth	October 1998	GC23-3499-03
V2R1.1	Third	September 1998	GC23-3499-02
V2R1.0	Second	May 1998	GC23-3499-01
V1R1.1	First	June 1997	GC23-3499-00

The current edition is listed **first**.

Changes Made in the Fifth Edition

New Information

- Support for OS/390 V2R6.0 and V2R7.0 has been added. Refer to Chapter 2.

- A procedure for configuring WebSphere Application Server has been added to Chapter 5.

- Security considerations have been added to Chapter 7.

- Procedures for configuring WebSphere Application Server and ServletExpress have been added to Chapter 7.

- JCL to start and stop the Customer Application Server has been added to Appendix E.

Changed Information

- Server requirements have changed. Refer to Chapter 2.

- For OS/2 workstation servers, Java Development Kit (JDK) V1.1.6 is now required. Refer to Chapter 2.

- The S/390 Service Update Facility Web site is now:

  `http://www.ibm.com/s390/suf`

- The name of the S/390 Service Update Facility code package has been corrected. Refer to Chapter 4.

- The procedure for downloading the S/390 Service Update Facility Customer Application Server Code from the IBM Web site now includes a step to unzip the file before you install the code.

- The installation procedures have been divided into separate chapters by type of server. Refer to Chapter 5, Chapter 6, or Chapter 7.

- The procedure for testing your communication link has been moved and expanded. Refer to Chapter 5, Chapter 6, or Chapter 7.
- The information on analyzing communication link test results has been moved to Appendix C.
- Detailed descriptions of the S/390 Service Update Facility and how it processes orders has been moved to Appendix D.
- Minor editorial changes.

Changes Made in the Fourth Edition

New Information

- A procedure for obtaining and uploading OS/390 HOLDDATA to your host has been added. Refer to Chapter 12 for more information.

Changed Information

- For OS/390 and MVS hosts, REXEC has been replaced with a JCL procedure for starting the host program. The JCL is customized and uploaded when you set up your host profiles. Refer to Chapter 11 for more information.
- The description of creating and submitting to IBM an OS/390 consolidated software inventory (CSI) (bitmap) or VSE History File for use when ordering service through ServiceLink has been revised. Refer to Chapter 12 for more information.
- Minor editorial changes.

Changes Made in the Third Edition

New Information

- The Netscape Enterprise Server is now supported for Windows NT users. Refer to Chapter 5 for more information.
- An order scheduling capability has been added that permits you to schedule when orders are uploaded to your host. Refer to Chapter 11 for more information.
- A new proxy type, Anonymous at Host, has been added to supported proxy types. Refer to Chapter 5, Chapter 6, or Chapter 7 for more information.
- A graphical user interface to the TestCon program is now available for OS/2 and Windows NT users. Refer to Appendix C for more information.
- A FTP Partial File Transfer capability has been added for Internet connections whose performance is such that orders might be interrupted in transit. FTP Partial File Transfer attempts to be automatically restart the transmission of the order after an interruption. Refer to Appendix C for more information.

Changed Information

- Minor editorial changes.

Changes Made in the Second Edition

New Information

- New platforms, OS/390 UNIX System Services (OS/390 UNIX) and Windows NT, have been added for the Customer Application Server. Refer to Chapter 2 for more information.

- New setup procedures have been included for the new OS/390 UNIX host server and Windows NT workstation server. Refer to Chapter 3 for more information.

- New update procedures have been included for Customer Application Server code running on the OS/2 and Windows NT workstation servers and on the OS/390 UNIX host server. Refer to Appendix B for more information.

Changed Information

- Requirements have changed to reflect the change to Domino Go Webserver and Java and the addition of OS/390 UNIX host servers and Windows NT workstation servers as platforms for the Customer Application Server. Refer to Chapter 2 for more information.

- The overview of order processing that was included in each chapter has been consolidated into a single chapter.

Chapter 1. Introducing and Planning for the S/390 Service Update Facility

This chapter:

- Introduces IBM S/390 Service Update Facility and what it can do for you

- Provides an overview of:

  - The steps needed to set up the S/390 Service Update Facility

  - how to place orders.

  To help you plan your work.

What S/390 Service Update Facility Can Do for You

IBM's S/390 Service Update Facility enhances your ability to place and receive orders for OS/390, VM, and VSE service. It lets you place orders for preventive and corrective service using your Web browser, receive them electronically over the Internet at your Customer Application Server, and transfer them to your hosts. Optionally, you can still receive them on physical media (tape or cartridge) or from satellite to your Advanced Digital Delivery receiving workstation.

With S/390 Service Update Facility, you set up a Customer Application Server on an OS/2 or Windows NT workstation server or on an OS/390 UNIX System Services (an OS/390 UNIX) host server. The Customer Application Server, using the IBM Internet Connection Server, receives the service packages that you ordered for your OS/390, VM, or VSE hosts. When the packages are received, they are uploaded automatically to the hosts you defined.

To use S/390 Service Update Facility from your workstation, you must be sure that your workstation can access the Customer Application Server through TCP/IP. You must also have a supported Web browser available on your workstation. Your hosts must be connected to the Customer Application Server in one of the following ways:

- **For OS/390 and VM:** TCP/IP

- **For VSE:** APPC, LU2, or TCP/IP

  Note: The use of TCP/IP on VSE hosts is supported only by a product called TCP/IP 4 VSE that is available from a company named Connectivity Systems.

You must be sure that the S/390 Service Update Facility OS/390 and VM host programs are installed and configured on each host that is to receive the service packages that you order. VSE does not require a host program.

You can use S/390 Service Update Facility to create and submit to IBM an OS/390 consolidated software inventory (CSI) (bitmap) or VSE History File of the software that is installed on your OS/390 or VSE hosts. This inventory or history file is used by IBM when you place an order for service through ServiceLink instead of using Service Update Facility/390.

You can also use S/390 Service Update Facility to obtain the latest OS/390 Enhanced HOLDDATA from the IBM HOLDDATA Web site.

You might want to review, in general, the process for setting up the S/390 Service Update Facility an how to use it to place orders. Refer to "Overview of Setting Up S/390 Service Update Facility" and "Overview of Using S/390 Service Update Facility" on page 3.

Overview of Setting Up S/390 Service Update Facility

In general, the steps that you must plan for are:

1. Make sure that your system meets the requirements for setting up and using the S/390 Service Update Facility. Refer to Chapter 2.

2. If you do not already have the Java Development Kit or the Java Runtime Environment installed, install one of them on the server on which you are going to install the S/390 Service Update Facility.

3. Download the S/390 Service Update Facility's Customer Application Server code from the S/390 Service Update Facility's Web site. Refer to Chapter 4.

4. Install the Customer Application Server code. Refer to Chapter 5, Chapter 6, or Chapter 7.

5. Test your Internet connections to be sure that the Customer Application Server can communicate with IBM. Refer to Chapter 5, Chapter 6, or Chapter 7.

6. Make sure that your Web server is installed and configured.

7. Configure your Web server for the S/390 Service Update Facility's Customer Application Server. Refer to Chapter 5, Chapter 6, or Chapter 7.

8. Make sure that your hosts are set up correctly to receive service orders from the Customer Application Server. Refer to Chapter 8, Chapter 9, or Chapter 10.

9. Create a profile for yourself that defines to the Customer Application Server the hosts that are to receive the service orders. Refer to Chapter 11.

10. At this point, the S/390 Service Update Facility should be ready for you to place and receive orders for service. Refer to Chapter 12.

If you want to know more about:

- How the S/390 Service Update Facility works, you can refer to "How the S/390 Service Update Facility Works" on page 123.

- How the Customer Application Server processes orders, you can refer to "Overview of the S/390 Service Update Facility Customer Application Server Order Processing" on page 124.

- How orders are processed on an OS/390 host, you can refer to "Overview of the S/390 Service Update Facility OS/390 Host Order Processing" on page 126.

- How orders are processed on a VM host, you can refer to "Overview of the S/390 Service Update Facility VM Host Order Processing" on page 128.

- How orders are processed on a VSE host, you can refer to "Overview of the Service Update Facility/390 VSE Host Order Processing" on page 129.

If you are ready to begin installing the S/390 Service Update Facility, start with the instructions in Chapter 3.

Overview of Using S/390 Service Update Facility

After the Customer Application Server has been set up and you have defined the hosts at your workstation, you can begin ordering service for your hosts.

In general, ordering and receiving service usually follows these steps:

1. You specify the host that is to receive the service.

2. You specify the type of service.

3. You select the preferred and alternate delivery methods.

4. You submit your order.

5. IBM receives and processes your order.

6. IBM prepares your order for delivery.

7. You can review the status of your order while it is being processed.

8. Depending upon the delivery method you select or the size of the package, the Customer Application Server retrieves the order from IBM or it is delivered by alternate means.

9. The Customer Application Server uploads the order to the host you specified in the order.

10. Depending on your host, the order is received and installed or you install it yourself.

If you want to know more about how to submit orders using the S/390 Service Update Facility, you can refer to Chapter 12.

When you are ready to begin installing the S/390 Service Update Facility, make sure that your system meets the requirements described in Chapter 2.

Chapter 2. Hardware and Software Requirements

This Chapter describes the hardware and software required by the following components of S/390 Service Update Facility:

- **Your workstation** that is used for placing orders for service.

- **The Customer Application Server** that is the S/390 Service Update Facility workstation program that connects to your workstation and to your hosts.

  The Customer Application Server can run on one of the following:

  - OS/2 WARP workstation server
  - OS/390 UNIX host server
  - Windows NT workstation server

- **Your hosts** that are to receive the service.

  The hosts can be one or more of the following:

  - OS/390
  - VM
  - VSE

    Note: VSE hosts do not support a Customer Application Server running on an OS/390 System Server.

  OS/390 and VM hosts also require S/390 Service Update Facility host programs that can receive and process the orders. VSE hosts do not require a host program.

If your hosts and workstations meet the requirements described in this chapter, you can continue with the instructions in Chapter 3.

Hardware and Software Requirements for the Workstation Used to Place Orders

This section describes the software and hardware requirements for the workstation that you will use to place orders for service. It must have the following hardware and software:

A workstation that consists of the following:

- A TCP/IP communications link that supports an intranet connection to your Customer Application Server.

- An operating system that can run one of the following browsers:

  - Netscape Version 3.x, 4.x, or equivalent

    Or

  - Microsoft Internet Explorer 4.x or equivalent

Hardware and Software Requirements for the Customer Application Server

This section describes the software and hardware requirements for the workstation that is running the S/390 Service Update Facility Customer Application Server on the following:

- OS/2 workstation server
- OS/390 UNIX host server
- Windows NT workstation server

Requirements on an OS/2 Workstation Server

On an OS/2 workstation server, you must have the following:

A workstation that consists of the following:

- A personal computer with a Local Area Network adapter that supports OS/2 WARP and OS/2 TCP/IP.
- OS/2 WARP Server V4.0 with TCP/IP and Domino Go Webserver V4R6.1 or higher with Java Servlet support
- Java Development Kit (JDK) V1.1.6

    Note: Java Development Kit (JDK) V1.1.6 for OS/2 is available from IBM at:

    http://www.ibm.com/java/jdk/download/index.html

    S/390 Service Update Facility does not support levels higher than 1.1.x of JDK.

- S/390 Service Update Facility Customer Application Server code available from the S/390 Service Update Facility web site at:

    http://www.ibm.com/s390/suf

- Depending upon the service packages ordered, up to 1GB of hard disk space to receive the service updates
- Access to your intranet
- FTP access to the Internet

    Note: We strongly recommend that you set up a firewall between your Customer Application Server and the Internet. If you use a firewall, it must have a socks or proxy server configured for FTP access through the firewall. The Customer Application Server currently support the following types of proxy or socks servers:
    Socks
    Site hostname
    User without logon
    Transparent
    Anonymous at host
    See Chapter 3 for more information on using a proxy or socks server and Chapter 6 for instructions on defining your proxy or socks server to the Customer Application Server.

- **For VSE Host Users Only:** One of the following:

    – IBM Personal Communications/3270 (for LU2 support)

        Or

IBM Access Feature (for Advanced Program-to-Program Communications (APPC) LU6.2 support)

Or

OS/2 TCP/IP (if you are using Connectivity Systems TCP/IP for VSE/ESA on your VSE host)

Note: After you have installed the Customer Application Server, you can determine its level of code. From your workstation, use your browser to go to the URL of the S/390 Service Update Facility home page on your Customer Application Server.

`http://your-server-address/suf/html/suflogon.htm`

The general version and release appear on the banner the top of the page. For more specific information, do the following:

1. Go to the Logon Page.

2. Click on help

3. Select "About S/390 Service Update Facility"

   The version and release will display.

Requirements on an OS/390 UNIX System Server

On an OS/390 UNIX System Server, you must have the following:

A host server that consists of:

- One of the following releases of OS/390:

  - **OS/390 V2R4.0** with the following installed and configured:
    - Domino Go Webserver V4R6.1 or higher with Java Servlet support

      Note: For OS/390 V2R4.0, Domino Go Webserver V4R6.1 with Java Servlet support and Java Development Kit (JDK) V1.1.6 are available separately.

    - Java Development Kit (JDK) V1.1.6P (PTF level=UW57730) or higher

      Note: Java Development Kit (JDK) V1.1.6 for UNIX System Services is available from IBM at:

      `http://www.ibm.com/s390/java/`

      S/390 Service Update Facility does not support levels higher than V1.1.x of JDK.

    Or,

    OS/390 V2R5.0 with the following configured:
    - Domino Go Webserver V4R6.1 with Java Servlet support or higher

      Note: For OS/390 V2R5.0, Domino Go Webserver V4R6.1 with Java Servlet support is included as a component.

    - Java Development Kit (JDK) V1.1.6P (PTF level=UW57730) or higher

      Note: Java Development Kit (JDK) V1.1.6 for UNIX System Services is available from IBM at:

      `http://www.ibm.com/s390/java/`

S/390 Service Update Facility does not support levels higher than V1.1.x of JDK.

Or,

OS/390 V2R6.0 with the following configured:
- Domino Go Webserver V5R0.0

   Note: For OS/390 V2R6.0, Domino Go Webserver V5R0.0 is included as a component.

- ServletExpress
  Or,
  WebSphere Application Server V1.1
- Java Development Kit (JDK) V1.1.6P (PTF level=UW57731) or higher

   Note: Java Development Kit (JDK) V1.1.6 for UNIX System Services is available from IBM at:

   `http://www.ibm.com/s390/java/`

   S/390 Service Update Facility does not support levels higher than V1.1.x of JDK.

Or,

OS/390 V2R7.0 with the following configured:
- IBM HTTP Server V5R1.0
- WebSphere Application Server V1.1

   Note: For OS/390 V2R7.0, IBM HTTP Server V5R1.0 and WebSphere Application Server V1.1 are included as components.

- Java Development Kit (JDK) V1.1.6P (PTF level=UW57731) or higher

   Note: Java Development Kit (JDK) V1.1.6 for UNIX System Services is available from IBM at:

   `http://www.ibm.com/s390/java/`

   S/390 Service Update Facility does not support levels higher than V1.1.x of JDK.

- The latest level of the S/390 Service Update Facility Customer Application Server code available from the S/390 Service Update Facility web site:

   `http://www.s390.ibm.com/suf`

- Depending upon the service packages ordered, up to 1GB of HFS hard disk space to receive the service updates

- Access to your intranet

- FTP access to the Internet

   Note: We strongly recommend that you set up a firewall between your Customer Application Server and the Internet. If you use a firewall, it must have a socks or proxy server configured for FTP access through the firewall. The Customer Application Server currently support the following types of proxy or socks servers:

   > Socks
   > Site hostname
   > User without logon

Transparent
Anonymous at host

See Chapter 3 for more information on using a proxy or socks server and Chapter 6 for instructions on defining your proxy or socks server to the Customer Application Server.

Note: After you have installed the Customer Application Server, you can determine its level of code. From your workstation, use your browser to go to the URL of the S/390 Service Update Facility home page on your Customer Application Server.

```
http://your-server-address/suf/html/suflogon.htm
```

The general version and release appear on the banner the top of the page. For more specific information, do the following:

1. Go to the Logon Page.

2. Click on help

3. Select "About S/390 Service Update Facility"

The version and release will display.

Requirements on a Windows NT Workstation Server

On a Windows NT workstation, you must have the following:

A workstation that consists of the following:

- A personal computer with a Local Area Network adapter that supports Windows NT.
- Microsoft Windows NT 4.0 with Service Pack 3 or higher
- One of the following Web servers:
    Domino Go Webserver (DGW) V4R6.1 or higher with Java Servlet support
    Netscape Enterprise Server 3.5.1 or higher
    WebSphere Application Server V2.01 or higher
- Java Development Kit (JDK) V1.1.6 or higher or Java Runtime Environment (JRE) V1.1.6 or higher.

    Note: The latest level of the Java Development Kit (JDK) for Windows NT is available from Sun Microsystems at:

    ```
    http://java.sun.com/products/jdk/1.1/index.html
    ```

    S/390 Service Update Facility does not support levels higher than V1.1.x of JDK.

- The latest level of the S/390 Service Update Facility Customer Application Server code is available from the S/390 Service Update Facility web site:

    http://www.s390.ibm.com/suf

- Depending upon the service packages ordered, up to 1GB of hard disk space to receive the service updates
- Access to your intranet
- FTP Access to the Internet

    Note: We strongly recommend that you set up a firewall between your Customer Application Server and the Internet. If you use a firewall, it must have a socks or proxy server configured for FTP access through

the firewall. The Customer Application Server currently support the following types of proxy or socks servers:

    Socks
    Site hostname
    User without logon
    Transparent
    Anonymous at host

See Chapter 3 for more information on using a proxy or socks server and Chapter 6 for instructions on defining your proxy or socks server to the Customer Application Server.

Note: After you have installed the Customer Application Server, you can determine its level of code. From your workstation, use your browser to go to the URL of the S/390 Service Update Facility home page on your Customer Application Server.

`http://`*`your-server-address`*`/suf/html/suflogon.htm`

The general version and release appear on the banner the top of the page. For more specific information, do the following:

1. Go to the Logon Page.

2. Click on help

3. Select "About S/390 Service Update Facility"

   The version and release will display.

Hardware and Software Requirements for S/390 Hosts

Requirements for OS/390 Hosts

This section describes the software, data set, and hardware requirements for OS/390 hosts that are the destinations for the service orders.

Software Requirements

You must have one of the following:

- OS/390 V1R3.0 with PTFs UR48338 and UR49290
- OS/390 V2R4.0 with PTFs UR48338 and UR49290
- OS/390 V2R5.0 with PTF UR49291
- OS/390 V2R6.0 or higher

   Note: The TCP/IP FTP server function must be installed and configured.

Data Set Requirements

The S/390 Service Update Facility OS/390 host program must have the following data sets available to it before it can be started:

- **Permanent message log data set**

   You must provide a sequential data set, with a record format of fixed blocked, a logical record length of 80 and a block size of 3120. Its space parameters should be based on the volume of orders that you expect to receive. The average order writes about 25 lines, 72 characters in length, into the message log.

S/390 Service Update Facility attempts to keep a running log of order activity in this data set and will accumulate information for as many orders as there is space. Periodically, you must monitor the space used in this data set and increase its size as needed.

- **Order data set**

  You specify the high-level qualifier for this data set in your host profile. You can also specify the default volume to be used for this data set in the host profile. If you do not specify a volume there, then available system storage will be used. Make sure that the volume to be used for this purpose has about 1GB of free space available.

  You must provide sufficient space on a single DASD volume for the data set that is to receive the service orders. OS/390 orders are delivered to the receiving workstation in a single, compressed and bundled package file. When the order is uploaded to an OS/390 host, there must be enough space on a single DASD volume for the compressed and bundled package file.

- Temporary Data sets

  Temporary data sets are created on your OS/390 host when you place an order through the Service Update Facility. SMP/E queries are issued (using the GIMXTRX command) to obtain both a list of target zones and to create a bitmap which is submitted with your order. This bitmap is used by IBM to determine which PTFs have been installed previously in the target zone being serviced (either in a received or applied state).

  The temporary data set names created will use the following naming convention:

  HLQ Is the value specified in your user profile for this host.

  MLQ Is supplied in the form 'S*nnnnnnn*'.

  > Where *nnnnnnnn* is a unique, random number.

  LLQ Is either 'IN' or 'OUT' which represent the input or output data set for the GIMXTRX command.

Hardware Requirements

You must have the following hardware:

- An IBM S/390 host processor capable of running an OS/390 operating system listed above (excluding P390 and R390).

Requirements for VM Hosts

This section describes the hardware and software requirements for VM hosts that are the destinations for the service orders.

Software Requirements

You must have the following software:

- VM/ESA V2R2.0 (5654-030) with PTF UM28622

  Or

  VM/ESA V2R3.0 (5654-030) or higher

- TCP/IP for VM Version 2 Release 4 (5735-FAL) or higher or equivalent

  Note: The TCP/IP FTP and REXEC server functions must be installed.

- Language Environment for MVS and VM Release 5 (5688-198) or higher.

  Note: The Language Environment runtime library support, which is required to use the C components of TCP/IP is provided by the Common Execution Library (CEL) that is included as part of VM/ESA Version 2.

Hardware Requirements

You must have the following hardware:

- An IBM S/390 host processor capable of running a VM/ESA operating system listed above (excluding P390 and R390).

Requirements for VSE Hosts

This section describes the software and hardware requirements for VSE hosts that are the destinations for the service orders.

Software Requirements

You must have the following:

- VSE/ESA V2R1.1 (5690-VSE) or higher

Hardware Requirements

You must have the following hardware:

- An IBM S/390 host processor capable of running a VSE/ESA operating system listed above (excluding P390 and R390).

Chapter 3. Preparing to Set Up a Customer Application Server

This chapter describes how to prepare your OS/2 or Windows NT workstation server or OS/390 UNIX system server before you download and install the S/390 Service Update Facility Customer Application Server code. Your OS/2 or Windows NT workstation server or OS/390 UNIX system server must be able to communicate with one or more of the following:

- OS/390 hosts
- VM hosts
- VSE hosts.

Note: These servers must have a communication link to the hosts on which you want to install service. The OS/390 UNIX system server can be running on the same host that is to receive service. The communications link can vary depending on the host to which you are connecting.

Preparations Required for Communicating with an OS/390 or VM Host

You must use TCP/IP FTP on an OS/2 or Windows NT workstation server or an OS/390 UNIX system server to communicate with your OS/390 and VM hosts. To prepare an OS/2 or Windows NT workstation server or an OS/390 UNIX host server for communication with an OS/390 and VM host, do the following:

1 Make sure that TCP/IP has been installed and configured.

You must configure TCP/IP to be able to reach the OS/390 and VM host machines that you plan on servicing using S/390 Service Update Facility.

S/390 Service Update Facility must be able to use TCP/IP FTP to communicate over the Internet with an IBM service server in the IBM Distribution Center that serves your area. If you do not have a direct connection to the Internet (you are using a "firewall"), you must ensure that the workstation or UNIX host server is configured to talk to the Internet across your firewall using a proxy or socks enablement. This permits the Customer Application Server to access the Internet through the base TCP/IP socks or proxy server support.

Note: Later, if you wish to change the proxy communication method, you must re-install the Customer Application Server code.

2 Make sure that the appropriate level of Java has been installed.

3 When you are ready to download and install the Customer Application Server code, continue with the instructions in Chapter 4.

Preparations Required for Communicating With VSE Hosts

You can use one of the following on an OS/2 or Windows NT workstation server to communicate with your VSE hosts:

- IBM Personal Communication/3270 for (LU2) terminal emulation

- IBM Access Feature for Application Program-to-Program Communications (APPC) LU6.2 support
- IBM OS/2 WARP Connect V4.0 with TCP/IP for communication with Connectivity Systems TCP/IP 4 VSE on your VSE host

  Notes:

  OS/390 UNIX servers do not support communication with VSE hosts.

  VSE does not provide native support for TCP/IP communication. However, you might have TCP/IP 4 VSE on your VSE host. TCP/IP 4 VSE is a TCP/IP product, which is available from a company named Connectivity Systems. If you have this product, you can use the TCP/IP support that is available with OS/2 WARP Connect V4.0 with TCP/IP or its equivalent.

To prepare an OS/2 or Windows NT workstation server for communication with a VSE host, configure your communications method. Do one of the following:

- **For Terminal Emulation (LU2):** You must configure IBM Personal Communications/3270 for the following:
  - Access to the VSE Interactive Interface in a terminal emulation session.
  - Support for the EHLLAPI Interface for file transfers to or from VSE.
- **For APPC:** You must configure IBM Access Feature for the following:
  - APPC
  - CPIC

  See Figure 3 on page 71 for an example of an NDF configuration file.

  APPC support may also require configuration changes for VSE/VTAM and VSE/CICS. See "Configuring APPC Support on the VSE Host" on page 68 for instructions.
- **For TCP/IP:** You must make sure that TCP/IP has been installed and configured.

When you are ready to download and install the Customer Application Server code, continue with the instructions in Chapter 4.

Chapter 4. Obtaining the Customer Application Server Code

This Chapter describes:

- Considerations that you should know before you download the Customer Application Server code
- How to download the Customer Application Server code.

Considerations Before You Download the Customer Application Server Code

Before you download the S/390 Service Update Facility Customer Application Server code, you might want to consider the following:

- Review the hardware and software requirements for the S/390 Service Update Facility.
- Decide where you want to put the Customer Application Server code.

You will need the following:

- 1MB available on the hard drive on which you want to receive the Customer Application Server code from IBM in a file named:

  SUFV*XXX***.zip**

  Where:

  XXX   Is the release number of the code you receive.

- 20MB to 30MB of space on the hard drive on which you intend to install the Customer Application Server code.

  Most of the time the this code will require less than 10MB of space, but for short periods of time, it can grow to between 20MB to 30MB of space.

- Up to 1GB of space on the hard drive on which you intend to receive order packages from IBM. This size recommendation is based on the fact that a single order can be as large as 1GB.

  Note: This space on your hard drive is used as a staging area for orders that you receive from IBM while they are being processed for transfer to your hosts. This area must be large enough to receive and hold at least one order package. After the order has been processed and transferred to the host, its files are deleted from this area.

  The size requirements for this directory will vary greatly with the number and type of orders you submit. Factors that can affect the amount of space needed include the following situations:

  – You routinely receive several orders simultaneously
  – You receive OS/390 preventive maintenance
  – You set a large maximum size for orders that can be sent over the Internet.

  If these factors apply to you, you might need several hundred megabytes. As a general rule, you should have enough space available to accommodate the maximum size you specify in the profile setup for Internet orders.

Downloading the Customer Application Server Code

Before you can install the S/390 Service Update Facility's Customer Application Server code on your OS/2 or Windows NT workstation server or on your OS/390 UNIX host server, you must download it from IBM. To download the code, do the following:

1 Using a browser on the server on which you want to install the Customer Application Server code, go to S/390 Service Update Facility home page on the Internet at:

`http://www.ibm.com/s390/suf`

> **Note:** **For OS/390 Unix Users Only:** Because you probably cannot download the Customer Application Server code directly into your OS/390 UNIX System Server with your browser, continue with the following instructions and download the code to your workstation. Additional instructions are included below to help you move the code from your workstation into your OS/390 UNIX System Server.

2 Click on the **Download S/390 SUF** button.

3 Review the hardware and software prerequisites.

4 Click on the **Continue SUF download** button.

5 Review the entitlement requirements.

You must have the IBM agreement in place for your country.

6 If you have the specified agreement in place, click on the **YES** "I am entitled" button.

7 Select the appropriate country to view the "S/390 Service Update Facility International Program License Agreement."

8 Review the "S/390 Service Update Facility International Program License Agreement."

9 If you agree, click on the **I have read and accept these terms and conditions** button.

10 Supply the information requested in the "S/390 Service Update Facility Registration Form."

Select your country from the pull-down window.

11 You might choose to answer the "Optional Questions."

12 Click on the **Submit** button.

You will be presented with verification that your registration was received.

13 Click on the download button for the Customer Application Server code.

The code, in a file named SUFV*XXX*.zip, is downloaded to the subdirectory on the hard drive that you specify.

14 Unzip the SUFV*XXX*.zip file to get an installation file named setup.class.

15 **For OS/390 Unix Users Only:** Move the installation file to your OS/390 UNIX SYSTEM Server.

Note: To move the installation file from your workstation to your OS/390 UNIX System Server, do one of the following:

- **If you configured a TCP/IP OFTP server** on the OS/390 UNIX System Server on which you intend to install the S/390 Service Update Facility, you can use FTP to transfer the Customer Application Server code from your workstation to your OS/390 UNIX System Server. Transfer the Customer Application Server code in binary and place it in any directory in the OS/390 UNIX System Server's hierarchical file system that is accessible to the user ID from which you will install the code.

- **If you have not configured a TCP/IP OFTP server** on the OS/390 UNIX System Server on which you intend to install the S/390 Service Update Facility, you must first transfer the Customer Application Server code from your workstation to an OS/390 data set. You can use any file transfer method that is usually available to you. Transfer the installation file in binary. You do not require any specific data set allocation information. However, you must have enough space available to receive it (your TSO defaults should be sufficient). After you have transferred the Customer Application Server code into an OS/390 data set, use theOS/390 UNIX TSO, OPUT command to copy this data set into the hierarchical file system on your OS/390 UNIX System Server. Copy the Customer Application Server code in binary and place it in any directory on the OS/390 UNIX System Server that is accessible to the user ID from which you will install the code. Specify the OPUT BINARY and CONVERT(NO) options. For example:

  OPUT *data_set_name* '*pathname*' BINARY CONVERT(NO)

  Refer to the *OS/390 OpenEdition Command Reference,* SC28-1892, for a complete description of the syntax of the OPUT command.

You are now ready to install the Customer Application Server code. Continue with the instructions in Chapter 5 for Windows NT workstation servers, Chapter 6 for OS/2 workstation servers, or Chapter 7 for OS/390 UNIX System Servers.

Chapter 5. Installing the Customer Application Server on a Windows NT Workstation Server

This chapter describes how to:

- Install the S/390 Service Update Facility's Customer Application Server code on a Windows NT workstation server
- Test your Internet connection to ensure that your server can communication with the IBM Service Center
- Configure your Web server to recognize the Customer Application Server.

Installing the Customer Application Server Code

After you have downloaded the Customer Application Server code to your Windows NT workstation server, you are ready to install it. You must use the Customer Application Server installation dialog.

To start the installation dialog, do the following:

1 Go to a DOS window

2 At the command prompt, enter the following SET command:

`set classpath=`*d*`:\`*temp*`:%classpath%`

Where:

*d***:***temp* Is the directory that contains the `setup.class` installation file that yo unziped.

3 At the command prompt, enter the following command:

`java setup`

The `Welcome` window appears.

4 In the `Welcome` window, press the **Next** button.

The `README` window appears.

5 In the `README` window, read the text and press the **Next** button.

The `License Agreement` window appears.

6 In the `License Agreement` window, if you do not agree with the terms and conditions, press the **Cancel** button. Otherwise, if you agree, check the `Accept terms and conditions` check box and press the **Next** button.

The `Choose Destination Location` window appears.

7 In the `Choose Destination Location` window, enter the path to the directory or subdirectory into which you intend to install the Customer Application Server code. For example, if want to install the Customer Application Server in the `suf` directory on the "C" drive, you would enter the following:

`c:\suf`

If this directory does not exist, it will be created for you.

8 Press the **Next** button.

The `Choose Temporary Order Location` window appears.

9 In the `Choose Temporary Order Location` window, indicate the path to the subdirectory into which you will receive your service orders when they are sent from the IBM Distribution Center to your workstation. You can accept the path to the default subdirectory or, you can enter a path to another subdirectory.

If this directory does not exist, it will be created for you.

10 Press the **Next** button.

The `Choose IBM Distribution Center` window appears.

11 In the `Choose IBM Distribution Center` window, select the IBM Distribution Center that serves your country or geographic area. Refer to the following table:

Table 2. IBM Distribution Centers by Geographic Location

Country or Geographic Area	IBM Distribution Center
Asia-Pacific (AP) except Japan	Australia
Australia	Australia
Canada	Unites States
Europe-Middle East-Africa (EMEA)	Denmark
Japan	Not supported
Latin America (LA)	Denmark
New Zealand	Australia
United States	United States

Note: If you are not sure which distribution center to select, you can call IBM Support Center and tell them that you have a question about **S390SUF**.

12 Press the **Next** button.

The `Choose Internet Connection Type` window appears.

13 In the `Choose Internet Connection Type` window, do the following:

a. If you have a direct connection to the Internet, that is you are not using a "firewall," select the `Direct connection to the Internet` button and continue with step 14.

Or,

If you do not have a direct connection to the Internet, that is you are using a "firewall" through which you access the Internet, select the `Manual proxy configuration` button and continue with the next step.

> **Note:** If you are using a socks server and you have *socksified* your IP stack, you can select the `Direct connection to the Internet` button. If you select the `Manual proxy configuration` button, and for `Proxy Type` select the `Socks` button, the `Hostname` and `Port` that you specify will override your previous settings.

b. Select the type of proxy or socks server you are using:

- **Site Hostname**

    Requires a firewall server name and a *userid* and *password*. The user is logged on to the firewall and the remote connection is established using: SITE *remoteHost*.

- **User without Logon**

    Requires a firewall server name only. The *userid* and *password* are ignored. The command USER *remote_userid@remote_host* is sent to the firewall upon initial connection.

- **Transparent**

    Requires firewall *userid* and *password* for a transparent logon to the firewall.

- **Socks**

    Requires a firewall server name and the port number the server uses.

- **Anonymous at Host**

    Requires a firewall server name and a *userid* and *password* for an anonymous FTP. The remote connection is established using: USER anonymous@external_host.

c. Enter the information required for the type of proxy you selected:

For Site Hostname: Enter:

> Hostname or IP Address of the server
> Userid for the server
> Password for the server

For User without Logon: Enter:

> Hostname or IP Address of the server

For Transparent: Enter:

> Userid for the server
> Password for the server

For Socks: Enter:

> Hostname or IP Address of the server
> Port number the server uses (the default TCP/IP port is 1080)

For Anonymous at Host: Enter:

> Hostname or IP Address of the server
> Userid for the server
> Password for the server

14 Press the **Install** button.

A progress window appears.

> **Note: For Updating Only:** If you are using this dialog to update an earlier version of the Customer Application Server code, the `Rewrite Files` window will appear. In the `Rewrite Files` window, be sure that you push the **Yes to All** button only. The dialog will then continue as usual.
>
> Any information from a previous installation is preserved.

15 In the progress window, push the `Yes` button.

An `Installation Complete` window appears.

16 Push the `OK` button.

After you have installed the Customer Application Server code, you are ready to test your communications link. Continue with the instructions in "Testing Your Internet Connections."

Testing Your Internet Connections

You should use the TestCon program to ensure that the Customer Application Server code can communicate successfully through your firewall to the external Internet. After you installed the Customer Application Server code, you have access to the TestCon program.

Testing the Reliability of Your Internet Connection

The TestCon program tests the reliability of your connection to the Internet. It simulates ordering and receiving a small S/390 Service Update Facility Order.

What This Program Does

This program performs the following steps:

1. FTP logs on to the IBM Service Server and change to the directory in which the Service Update Facility orders are submitted to and received from.

2. Creates a directory and sends a 1 byte, a 5K, and a 50k file to it.

3. Changes to another directory and downloads a 10k and a 100k file

If any of these steps fails, the program quits.

The Customer Application Server performs the same steps during ordering with the following differences:

- The downloaded files would probably be much bigger in the real application.

- The real application has multiple levels of retry logic built in, so it can usually recover if a command fails.

How to Run This Test

1 Go to a DOS window.

2 At the command prompt, type:

```
java suf.testcon.TestCon
```

The `Test Connectivity with IBM Service Server` window appears.

Note: If you get this message instead:

```
Cannot find TestCon.class
```

Your CLASSPATH has not been set properly. Do the following:

    a. Run TestCon using different proxy types until it runs successfully. Generally, if you can use FTP to communicate with the external Internet, you should be able to use TestCon successfully.

    If you cannot get TestCon to run, you will not be able to use the S/390 Service Update Facility.

    b. If TestCon runs successfully only with a proxy that is different than the one you specified when you installed the Customer Application Server code, reinstall the Customer Application Server code (beginning with step 4) and specify the proxy that TestCon is able to use.

    If you reinstall the Customer Application Server code in the same location you used originally (`c:\suf`), you do not need to repeat step 3.

3 Select the IBM Service server that you want to test.

4 Select the type of Internet connection that you have.

5 Supply the information requested for the type of connection you selected.

6 Run the **Basic Test** several times first.

The test will run and tell you whether it ran successfully.

7 **If the basic test runs successfully** each time you run it, your communication link is reliable. Continue with step 8.

If the basic test fails one or more times when you run it, your communication link might be unreliable. Do the following:

    a. Run the `Partial file transfer test` to see if your communication link can support resuming a file transfer after your link fails.

    b. Evaluate your test results against the results shown in Table 6 in Appendix C to determine the performance you can expect and possible actions to take. When you have completed the testing of your communications link and you have determined that you are able to use the S/390 Service Update Facility, return here and continue with step 8.

8 Test whether S/390 Service Update Facility Order Scheduling works with the Customer Application Server on your Windows NT server. Refer to the instructions in "Testing Whether Order Scheduling Will Work on Your Windows NT Server" on page 120 in Appendix C. When you have completed the testing of Order Scheduling, return here.

You are ready to set up and configure your Web server. Continue with the instructions in "Setting Up the Environment for the Customer Application Server" on page 24.

Setting Up the Environment for the Customer Application Server

After you have installed and tested the Customer Application Server code and your Internet connections, you are ready to configure your Web server to recognize it.

If you are setting up a Web server for the first time: You should install one of the Web servers supported by the Customer Application Server on Windows NT now. Then return here to configure it.

If you already have your Web server set up: Do one of the following:

- To configure Domino Go Webserver, continue with the instructions in "Configuring Domino Go Webserver"

- To configure Netscape Enterprise Server, continue with the instructions in "Configuring Netscape Enterprise Server" on page 25

- To configure WebSphere Application Server, continue with the instructions in "Configuring WebSphere Application Server" on page 26

Configuring Domino Go Webserver

1 Go to the Domino Go Webserver home page.

2 Select `Configuration and Administration`.

3 On the `Configuration and Administration` page, select `Request Routing` under `Request Processing`.

4 In the `Action` field, select an action of `Pass`.

5 In the `URL request template` field, enter the following URL template:

`/suf/*`

6 In the `Replacement File Path` field, enter the replacement file path of the directory in which you installed the Customer Application Server. For example, if you installed it in the `suf` directory on the "C" drive, you would enter the following:

`c:\suf\*`

7 Push the **Apply** button.

8 Return to the `Configuration and Administration` page.

9 On the `Configuration and Administration` page, select `External Java Servlet Customization`.

10 Go to the `Java Virtual Machine Configuration` section.

11 In the `Java class path` field, enter the path to the Java classes subdirectory. For example, if you installed the Customer Application Server in the `suf` directory on the "C" drive, you would enter the following:

`c:\suf\classes`

12 Go to the `New Servlet Definition` section.

13 In the `Instance Name` field, enter:

`suf.servlets.SUFCA`

14 In the `Class Name` field, enter:

`suf.servlets.SUFCA`

15 Push the **Apply** button.

A confirmation window will appear.

16 In the confirmation window, press the **OK** button.

17 Return to your system.

18 Continue with the instructions in "Configuring Windows NT for the Customer Application Server" on page 27.

Configuring Netscape Enterprise Server

1 Start the administration server from the Netscape Suitespot programs folder in the `Start` menu.

You will be prompted for the User ID and Password you created when you installed the Netscape Enterprise Server.

2 Select the current web server that has been installed by clicking on the Web server name button.

3 Select the `Programs` option at the top of the page.

4 Select the `Java` option on the left side of the page.

5 Set `Activate Java Interpreter` to "YES."

6 Set the `Java Servlets Directory` to:

`c:\suf\classes`

Where `c:\suf` is the directory in which you installed the Customer Application Server code.

7 Click the **OK** button.

8 Select the `Content Management` option on the top of the page.

9 Select the `Additional Document Directories` option on the left side of the page.

10 Add an entry with the URL Prefix of `/suf` and the Map to Directory set to `c:\suf`.

Where `c:\suf` is the directory in which you installed the Customer Application Server code.

11 Do not select a template style for this entry. It should read `NONE`.

12 Click the **OK** button to add this entry to the list.

13 Click the **Apply** button at the top of the administration window.

> **Note:** Problems have been encountered using SUF with the Netscape Enterprise Server when the system environment variable for the Java `classpath` is not set to point to the classes shipped with Java. Please ensure your Java `classpath` includes the path to the classes provided with Java:
>
> `c:\jdk1.1.7B\lib\classes.zip`
>
> Where *c:\jdk1.1.7B* is the directory in which Java is installed.

14 Return to your system.

15 Continue with the instructions in "Configuring Windows NT for the Customer Application Server" on page 27.

Configuring WebSphere Application Server

1 Set the following directives in the WebSphere configuration file named `httpd.conf` in the `c:\program files\IBM HTTP Server\conf` default directory:

ServerName *your-server.some-domain*.com
alias /suf *c:\suf*

Where:

*your-server.some-domain***.com**   Is your server's TCP/IP hostname

c:\suf   Is the directory in which you installed the Customer Application Server

2 Start the WebSphere Administration Manager from the `WebSphere` program folder in your `Start` menu.

3 Type your WebSphere Administrator user ID and password

The default user ID is:

admin

The default password is also:

admin

4 Press the **Log In** button.

5 Expand the `Setup` options by selecting the arrow (►) next to the setup folder in the left pane of the `WebSphere Administration Server Introduction` page.

6 Select the `Java Engine` option in the expanded list of setup options.

7 Add the directory `c:\suf\classes` to the `Reloadable Servlet Classpath` field.

8 Press the **Save** button.

9 Return to your system.

10 Continue with the instructions in "Configuring Windows NT for the Customer Application Server" on page 27.

Configuring Windows NT for the Customer Application Server

After you have configured your Web server, you are ready to make some changes to your Windows NT system configuration. Do the following:

1 Add or change the following system variables in the `Control Panel->System->Environment` tab to update your system configuration for the Customer Application Server.

Variable	Value
classpath	c:\suf\classes
path	c:\suf\bin

Where:

`c:\suf` Is the path to the subdirectory in which you installed the Customer Application Server code.

2 Shutdown and restart your system.

3 The following programs must be running at system startup.

We recommend that you set up these programs to start automatically when you boot up or IPL your system.

- Your Web server (either Domino Go Webserver, Netscape Enterprise Server, or WebShpere Application Server)

  To start the Netscape Enterprise Server (if it is not running), go to the `Settings/Control Panel/Services` menu option of Windows NT.

  To start the WebSphere Application Server (if it is not running), go to the `Settings/Control Panel/Services` menu option of Windows NT and make sure that the IBM HTTP Server and WebSphere Application Server are running (the IBM HTTP Server is included with WebSphere).

  Note: If you have more than one Web server installed make sure that only one of them is running at a time or that you assigned them to unique port numbers.

- Java rmi Registry

  Use the following command to start the Java rmi Registry:

  `rmiregistry`

  The Java rmi Registry is provided with Java and is used by the S/390 Service Update Facility for communicating between your Web server and its Customer Application Server.

- Customer Application Server

  Use the following command to start the S/390 Service Update Facility Customer Application Server.

  `c:\suf\SUFServer.bat`

Where `c:\suf` is the directory in which you installed the Customer Application Server code.

After you have installed and configured your Web server, you are ready to set up the hosts for which you plan to provide service. Continue with the instructions in Chapter 8, Chapter 9, or Chapter 10.

Chapter 6. Installing the Customer Application Server on an OS/2 Workstation Server

This chapter describes how to:

- Install the S/390 Service Update Facility's Customer Application Server code on an OS/2 workstation server
- Test your Internet connections to ensure that your server can communicate with the IBM Service Center
- Configure your Web server to recognize the Customer Application Server.

Installing the Customer Application Server

After you have downloaded Customer Application Server code to the OS/2 workstation server, you are ready to install it. You must use the Customer Application Server installation dialog.

To start the installation dialog, do the following:

1 Go to an OS/2 window

2 At the command prompt, enter the following SET command:

```
set classpath=d:\temp:%classpath%
```

Where:

d:\temp   Is the directory that contains the `setup.class` installation file.

3 At the command prompt, enter the following command:

```
java setup
```

The `Welcome` window appears.

4 In the `Welcome` window, press the **Next** button.

The `README` window appears.

5 In the `README` window, read the text and press the **Next** button.

The `License Agreement` window appears.

6 In the `License Agreement` window, if you do not agree with the terms and conditions, press the **Cancel** button. Otherwise, if you agree, check the `Accept terms and conditions` check box and press the **Next** button.

The `Choose Destination Location` window appears.

7 In the `Choose Destination Location` window, enter the path to the directory or subdirectory into which you intend to install the Customer Application Server code. For example, if want to install the Customer Application Server in the `suf` directory on the "C" drive, you would enter the following:

```
c:\suf
```

If this directory does not exist, it will be created for you.

8 Press the **Next** button.

The `Choose Temporary Order Location` window appears.

9 In the `Choose Temporary Order Location` window, indicate the path to the subdirectory into which you will receive your service orders when they are sent from the IBM Distribution Center to your workstation. You can accept the path to the default subdirectory or, you can enter a path to another subdirectory.

If this directory does not exist, it will be created for you.

10 Press the **Next** button.

The `Choose IBM Distribution Center` window appears.

11 In the `Choose IBM Distribution Center` window, select the IBM Distribution Center that serves your country or geographic area. Refer to the following table:

Table 3. IBM Distribution Centers by Geographic Location

Country or Geographic Area	IBM Distribution Center
Asia-Pacific (AP) except Japan	Australia
Australia	Australia
Canada	Unites States
Europe-Middle East-Africa (EMEA)	Denmark
Japan	Not supported
Latin America (LA)	Denmark
New Zealand	Australia
United States	United States

Note: If you are not sure which distribution center to select, you can call IBM Support Center and tell them that you have a question about **S390SUF**.

12 Press the **Next** button.

The `Choose Internet Connection Type` window appears.

13 In the `Choose Internet Connection Type` window, do the following:

a. If you have a direct connection to the Internet, that is you are not using a "firewall," select the `Direct connection to the Internet` button and continue with step 14.

Or,

If you do not have a direct connection to the Internet, that is you are using a "firewall" through which you access the Internet, select the `Manual proxy configuration` button and continue with the next step.

Note: If you are using a socks server and you have *socksified* your IP stack, you can select the `Direct connection to the Internet` button. If you select the `Manual proxy configuration` button, and for `Proxy Type` select the `Socks` button, the `Hostname` and `Port` that you specify will override your previous settings.

b. Select the type of proxy or socks server you are using:

- **Site Hostname**

  Requires a firewall server name and a *userid* and *password*. The user is logged on to the firewall and the remote connection is established using: SITE *remoteHost*.

- **User without Logon**

  Requires a firewall server name only. The *userid* and *password* are ignored. The command USER *remote_userid@remote_host* is sent to the firewall upon initial connection.

- **Transparent**

  Requires firewall *userid* and *password* for a transparent logon to the firewall.

- **Socks**

  Requires a firewall server name and the port number the server uses.

- **Anonymous at Host**

  Requires a firewall server name and a *userid* and *password* for an anonymous FTP. The remote connection is established using: USER anonymous@external_host.

c. Enter the information required for the type of proxy you selected:

For Site Hostname: Enter:

> Hostname or IP Address of the server
> Userid for the server
> Password for the server

For User without Logon: Enter:

> Hostname or IP Address of the server

For Transparent: Enter:

> Userid for the server
> Password for the server

For Socks: Enter:

> Hostname or IP Address of the server
> Port number the server uses (the default TCP/IP port is 1080)

For Anonymous at Host: Enter:

> Hostname or IP Address of the server
> Userid for the server
> Password for the server

14 Press the **Install** button.

A progress window appears.

> **Note:** **For Updating Only:** If you are using this dialog to update an earlier version of the Customer Application Server code, the `Rewrite Files` window will appear. In the `Rewrite Files` window, be sure that you push the **Yes to All** button only. The dialog will then continue as usual.
>
> Any information from a previous installation is preserved.

15 In the progress window, push the `Yes` button.

An `Installation Complete` window appears.

16 Push the `OK` button.

After you have installed the Customer Application Server code, you are ready to test your communications link. Continue with the instructions in "Testing Your Internet Connections."

Testing Your Internet Connections

You should use the TestCon program to ensure that the Customer Application Server code can communicate successfully through your firewall to the external Internet. After you installed the Customer Application Server code, you have access to the TestCon program.

Testing the Reliability of Your Internet Connection

The TestCon program tests the reliability of your connection to the Internet. It simulates ordering and receiving a small S/390 Service Update Facility Order.

What This Program Does

This program performs the following steps:

1. FTP logs on to the IBM Service Server and change to the directory in which the Service Update Facility orders are submitted to and received from.

2. Creates a directory and sends a 1 byte, a 5K, and a 50k file to it.

3. Changes to another directory and downloads a 10k and a 100k file

If any of these steps fails, the program quits.

The Customer Application Server performs the same steps during ordering with the following differences:

- The downloaded files would probably be much bigger in the real application.

- The real application has multiple levels of retry logic built in, so it can usually recover if a command fails.

How to Run This Test

1 Go to an OS/2 window.

2 At the command prompt, type:

`java suf.testcon.TestCon`

The `Test Connectivity with IBM Service Server` window appears.

> **Note:** If you get this message instead:
>
> `Cannot find TestCon.class`
>
> Your CLASSPATH has not been set properly. Do the following:
>
> a. Run TestCon using different proxy types until it runs successfully. Generally, if you can use FTP to communicate with the external Internet, you should be able to use TestCon successfully.
>
> If you cannot get TestCon to run, you will not be able to use the S/390 Service Update Facility.
>
> b. If TestCon runns successfully only with a proxy that is different than the one you specified when you installed the Customer Application Server code (beginning with step 4) and specify the proxy that TestCon is able to use.
>
> If you reinstall the Customer Application Server code in the same location you used originally (`c:\suf`), you do not need to repeat step 3.

3 Select the service server that you want to test.

4 Select the type of Internet connection that you have.

5 Supply the information requested for the type of connection you selected.

6 Run the **Basic Test** several times first.

The test will run and tell you whether it was successful.

7 **If the basic test runs successfully** each time you run it, your communication link is reliable. Continue with the instructions in "Setting Up the Environment for the Customer Application Server."

If the basic test fails one or more times when you run it, your communication link might be unreliable. Do the following:

a. Run the `Partial file transfer test` to see if your communication link can support resuming a file transfer after your link fails.

b. Evaluate your test results against the results shown in Table 6 in Appendix C to determine the performance you can expect and possible actions to take. When you have completed the testing of your communications link and you have determined that you are able to use the S/390 Service Update Facility, return here and continue with the instructions in "Setting Up the Environment for the Customer Application Server."

Setting Up the Environment for the Customer Application Server

After you have installed and tested the Customer Application Server code and your Internet connections, you are ready to configure your Web server to recognize it.

If you are setting up a Web server for the first time: You should install the Web server supported by the Customer Application Server on OS/2 now. Then return here to configure it.

If you already have your Web server set up: Continue with the instructions in "Configuring Domino Go Webserver" on page 34.

Configuring Domino Go Webserver

1 Go to the Domino Go Webserver home page.

2 Select `Configuration and Administration`.

3 On the `Configuration and Administration` page, select `Request Routing` under `Request Processing`.

4 In the `Action` field, select an action of `Pass`.

5 In the `URL request template` field, enter the following URL template:

`/suf/*`

6 In the `Replacement File Path` field, enter the replacement file path of the directory in which you installed the Customer Application Server. For example, if you installed it in the `suf` directory on the "C" drive, you would enter the following:

`c:\suf\*`

7 Push the **Apply** button.

8 Return to the `Configuration and Administration` page.

9 On the `Configuration and Administration` page, select `External Java Servlet Customization`.

10 Go to the `Java Virtual Machine Configuration` section.

11 In the `Java class path` field, enter the path to the Java classes subdirectory. For example, if you installed the Customer Application Server in the `suf` directory on the "C" drive, you would enter the following:

`c:\suf\classes`

12 Go to the `New Servlet Definition` section.

13 In the `Instance Name` field, enter:

`suf.servlets.SUFCA`

14 In the `Class Name` field, enter:

`suf.servlets.SUFCA`

15 Push the **Apply** button.

A confirmation window will appear.

16 In the confirmation window, press the **OK** button.

17 Return to your system.

18 Add the path for the installation directory to the LIBPATH and CLASSPATH statements in your `config.sys` file to update the system configuration for the Customer Application Server.

```
LIBPATH=...;last-path;c:\suf\BIN
CLASSPATH=...;last-path;c:\suf\BIN
```

Where `c:\suf` is the path to the subdirectory in which you installed the Customer Application Server code.

19 Shutdown and reboot your system for these changes to take effect.

20 The following programs must be running at system startup.

We recommend that you set up these programs to start automatically when you boot up or IPL your system.

- Your Domino Go Webserver

    Note: If you have more than one Web server installed make sure that only one of them is running at a time or that you assigned them to unique port numbers.

- Java rmi Registry

    Use the following command to start the Java rmi Registry:

    `rmiregst`

    The Java rmi Registry is provided with Java and is used by the S/390 Service Update Facility for communicating between your Web server and its Customer Application Server.

- Customer Application Server

    Use the following command to start the S/390 Service Update Facility Customer Application Server.

    `c:\suf\SUFServer.cmd`

    Where `c:\suf` is the directory in which you installed the Customer Application Server code.

After you have installed and configured your Web server, you are ready to set up the hosts for which you plan to provide service. Continue with the instructions in Chapter 8, Chapter 9, or Chapter 10.

Chapter 7. Installing the Customer Application Server on an OS/390 UNIX Server

This chapter describes how to:

- Install the S/390 Service Update Facility's Customer Application Server code on an OS/390 UNIX System Server.
- Test your Internet connection to ensure that your server can communicate with the IBM Service Center
- Configure your Web server to recognize the Customer Application Server.

We recommend that you follow these procedures to set up your environment for the S/390 Service Update Facility.

After you have installed the S/390 Service Update Facility Customer Application Server code, you can continue with the instructions in this Chapter to test the reliability of your Internet connection.

Installing the Customer Application Server Code

After you have downloaded the Customer Application Server code to your OS/390 UNIX System Server, you are ready to install it.

If you are installing the Customer Application Server code for the first time on an OS/390 UNIX System Server, do the following:

1 Create a user ID for the S/390 Service Update Facility with access to TSO and UNIX.

We recommend that you use **SUF** as your user ID.

2 Create a new HFS mount point for the **SUF** user ID. For example:

`/usr/lpp/suf`

Using the following space allocation:

`(25,10) cylinders`

3 Create a UNIX `.profile` for the **SUF** user ID.

`u/suf/.profile`

and add the following statement to this profile:

`export CLASSPATH=.:/usr/lpp/suf/classes:$CLASSPATH:`

Where:

/usr/lpp/suf   Is the directory in which you intend to install the Customer Application Server code.

4 Change to the directory that contains the `setup.class` file.

5 Enter the following command:

`java setup -o /usr/lpp/suf`

Where:

/usr/lpp/suf   Is name of the directory in which you intend to install
                               the Customer Application Server code.

The following prompt appears:

```
InstallShield JavaTM Edition
Extracting installation code...........................................................done
```

Then, the following prompt appears:

```
Don't know enough about the IBM Corporation environment on OS/390 to create batch files
Some batch files were not automatically created
 There is one application in this package called
 suf.locks.SUFServer
 Please use this class name to start the application     Ok     [RET to continue]:
```

> **Note:** There is a known problem with Java 1.1.6 which causes an abend
> during the installation of the S/390 Service Update Facility (see APAR
> OW37360 for details). If you experience this problem, the following
> command will disable the Java JIT compiler and allow the SUF
> installation to complete successfully:
>
> export JAVA_COMPILER=

6 Press the RET key.

The following prompt appears:

```
Enter the location where orders can be placed until transferred to a host or
hit enter if you would like to use the default location of /u/userid/test/suf/suf
temp.

->
```

7 Press the **RET** key to accept the default, or enter another path to the
subdirectory that is to receive the service orders IBM will be sent to you. For
example:

-> /u/*userid*/test/suf/mytemp

The following prompt appears:

```
Select the IBM Distribution Center which should be used to process your SUF orders.
See the installation chapter in the SUF Users guide for assistance in selecting
the correct IBM Distribution Center.

1-Australia      2-Denmark        3-United States   0-Quit
->
```

8 Enter 1, 2, or 3 for the location of the IBM Distribution Center that serves you.
See Table 2 on page 20 for a list of the centers that serve IBM's global
geographies.

The following prompt appears:

```
Do you use an FTP proxy or socks server to access the Internet?
 1 for yes, 0 for no -> 1
->
```

9 Enter 1 if you are using either an FTP proxy or a socks server as a firewall
through which you reach the Internet or enter 0 if you have a direct
connection to the Internet.

For a Direct Connection: The final prompt shown in step 11 on page 41
appears.

For a Firewall: The following prompt appears:

```
Select an FTP Proxy Server type:

1-Site Hostname        2-Transparent          3-User Without Logon
4-Anonymous at Host    5-Socks                0-Quit
->
```

10 Enter an option for an FTP proxy server type or a socks server.

The prompt that appears next depends on the option you enter. Do one of
the following:

- **For a Site Hostname Proxy:** Do the following:

    a. Enter option 1

    The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.xxx.com
```

    b. Enter a host name or an IP address for the proxy server.

    The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

    c. Enter a userid for that server.

    The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

    d. Enter a password for that server.

- **For a Transparent Proxy:** Do the following:

    a. Enter option 2

    The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

    b. Enter a userid for that host.

       The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

    c. Enter a password for that host.

- **For User without Logon Proxy:** Do the following:

    a. Enter option 3

       The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.xxx.com
```

    b. Enter a host name or an IP address.

- **For an Anonymous at Host Proxy:** Do the following:

    a. Enter option 5

       The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.xxx.com
```

    b. Enter a host name or an IP address for the proxy server.

       The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

    c. Enter a userid for that server.

       The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

- **For a Socks Server:** Do the following:

    a. Enter option 4

       The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> socks1.server.xxx.com
```

b. Enter a hostname or IP address of the proxy server.

The following prompt appears:

```
Enter the port that should be used to access the proxy server or
hit enter to use the default port of 1080.

->
```

c. Press **Enter** to accept the default or enter the port number you are using.

11 The installation summary appears:

```
⋮
Installation is complete.
```

After you have installed the Customer Application Server code, you are ready to configure it. Continue with the instructions in "Testing Your Internet Connections."

Testing Your Internet Connections

You should use the TestCon program to ensure that the Customer Application Server code can communicate successfully through your firewall to the external Internet. After you installed the Customer Application Server code, you have access to the TestCon program.

Testing the Reliability of Your Internet Connection

The TestCon program tests the reliability of your connection to the Internet. It simulates ordering and receiving a small S/390 Service Update Facility Order.

What This Program Does

This program performs the following steps:

1. FTP logs on to the IBM Service Server and change to the directory in which the Service Update Facility orders are submitted to and received from.

2. Creates a directory and sends a 1 byte, a 5K, and a 50k file to it.

3. Changes to another directory and downloads a 10k and a 100k file

If any of these steps fails, the program quits.

The Customer Application Server performs the same steps during ordering with the following differences:

- The downloaded files would probably be much bigger in the real application.

- The real application has multiple levels of retry logic built in, so it can usually recover if a command fails.

How to Run This Test

1 Go to UNIX System Services session.

2 At the command prompt, type:

```
java suf.testcon.TestCon c
```

Note: If you get this message:

```
Cannot find TestCon.class
```

Your CLASSPATH has not been set properly. Do the following:

    a. Run TestCon using different proxy types until it runs successfully. Generally, if you can use FTP to communicate with the external Internet, you should be able to use TestCon successfully.

    If you cannot get TestCon to run, you will not be able to use the S/390 Service Update Facility.

    b. If TestCon runs successfully only with a proxy that is different than the one you specified when you installed the Customer Application Server code (beginning with step 3) and specify the proxy that TestCon is able to use.

    If you reinstall the Customer Application Server code in the same location you used originally (`c:\suf`), you do not need to repeat step 4.

3 If you answer "Yes" (1) to the first question, you will see information about evaluating the results of the test.

If you answer "No" (0) the test will begin immediately.

4 Answer the questions describing how you installed the S/390 Service Update Facility.

5 Run the **Basic Test** several times first.

```
Select test type-> 1
```

The test will run and tell you whether it was successful.

6 **If the basic test runs successfully** each time you run it, your communication link is reliable. Continue with the instructions in "Setting Up the Environment for the Customer Application Server" on page 43.

If the basic test fails one or more times when you run it, your communication link might be unreliable. Do the following:

    a. Run the `Partial file transfer test` to see if your communication link can support resuming a file transfer after your link fails.

    b. Evaluate your test results against the results shown in Table 6 in Appendix C to determine the performance you can expect and possible actions to take. When you have completed the testing of your communications link and you have determined that you are able to use the S/390 Service Update Facility, return here and continue with the instructions in "Setting Up the Environment for the Customer Application Server" on page 43.

Setting Up the Environment for the Customer Application Server

After you have installed the Customer Application Server code, you are ready to configure your Web server to recognize it.

Note: Please ensure that Unix System Services, WebSphere (or ServletExpress), and Java have been preinstalled and are operational. We strongly recommend that you use the test servlets provided with WebSphere (or ServletExpress) to verify that your installation is configured properly before you continue. If you do experience problems setting up this environment, please visit the S/390 Network Computing Web site at `http://www.ibm.com/s390/nc` for the latest documentation and hints and tips.

1 Update the Web server HTTP configuration file `httpd.conf` in the `\etc` directory as follows:

a. Add the following pass directive to the `httpd.conf` file to direct incoming URL requests containing `/suf/*` to your S/390 Service Update Facility installation directory.

```
Pass  /suf/*  /usr/lpp/suf/*
```

Where:

/usr/lpp/suf   Is your S/390 Service Update Facility
                                    installation directory.

b. Add the following Web server directives so all S/390 Service Update Facility requests are processed under the **SUF** user ID.

```
###################################################
#### Protection for S/390 Service Update Facility ##
###################################################
Protection S390_SUF  {
     AuthType       Basic
     Mask           anybody@(*)
}
Protect /suf/*          S390_SUF  SUF
Protect /servlet/suf.*  S390_SUF  SUF
###################################################
```

This ensures that the Web server has sufficient authority to access the `/usr/lpp/suf/` directory.

Note: An alternative, would give the **SUF** and Web server user IDs full access to the `/usr/lpp/suf` directories using UNIX file permission flags.

2 Issue the following RACF command to give the **SUF** user ID RACF surrogate authority.

```
RDEFINE SURROGAT BPX.SRV.SUF UACC(NONE)
PERMIT BPX.SRV.SUF CLASS(SURROGAT) ID(WEBSRV) ACCESS(READ)
SETROPTS RACLIST(SURROGAT) REFRESH
```

3 To configure WebSphere Application Server or ServletExpress, continue with the instructions in "Configuring WebSphere Application Server or ServletExpress" on page 44

Configuring WebSphere Application Server or ServletExpress

1 Add the following `servlets.classpath` directive to the WebSphere (or ServletExpress) `servlets.properties` file:

`servlets.classpath=/usr/lpp/suf/classes`

This enables the Web server to find the Java servlet classes supplied by the S/390 Service Update Facility.

The `servlets.properties` file is located in one of the following directories:

- **For WebSphere:**

  `/usr/lpp/WebSphere/AppServer/properties/server/servlet/servletservice`

- **For ServletExpress:**

  `/usr/lpp/ServletExpress/properties/server/ServletExpress/servletservice`

2 Continue with the instructions in "Configuring OS/390 for the Customer Application Server" on page 45.

Configuring Domino Go Webserver V4R6.1

1 Go to the Domino Go Webserver home page.

2 Select `Configuration and Administration`.

3 On the `Configuration and Administration` page, select `External Java Servlet Customization`.

4 Go to the `Java Virtual Machine Configuration` section.

5 In the `Java class path` field, enter the path to the Java classes subdirectory. For example, if you installed the Customer Application Server in the `/usr/lpp/suf` directory, you would enter the following:

`/usr/lpp/suf/classes`

6 Go to the `New Servlet Definition` section.

7 In the `Instance Name` field, enter:

`suf.servlets.SUFCA`

8 In the `Class Name` field, enter:

`suf.servlets.SUFCA`

9 Push the **Apply** button.

A confirmation window will appear.

10 In the confirmation window, press the **OK** button.

11 Return to your system.

12 Continue with the instructions in "Configuring OS/390 for the Customer Application Server" on page 45.

Configuring OS/390 for the Customer Application Server

After you have configured your Web server, you are ready to set up the environment for the S/390 Service Update Facility. Do the following:

1 Restart your Web server.

2 The following programs must be running to use the S/390 Service Update Facility.

We recommend that you set up these programs to start automatically when you IPL your system.

- Your Web server

    Note: If you have more than one Web server installed make sure that only one of them is running at a time or that you assigned them to unique port numbers.

- Java rmi Registry

    Use the following command to start the Java rmi Registry:

    `rmiregistry`

    The Java rmi Registry is provided with Java and is used by the S/390 Service Update Facility for communicating between your Web server and its Customer Application Server.

    For sample JCL that you can use to start the Java rmi Registry, see "Sample JCL to Start the Java RMI Registry" on page 140 in Appendix E

- Customer Application Server

    Use the following command to start the S/390 Service Update Facility Customer Application Server.

    `java -oss120m -mx128m suf.locks.SUFServer /usr/lpp/suf/db`

    Where:

    `/usr/lpp/suf/db`   Is the directory in which you installed the Customer Application Server code.

    For sample JCL that you can use to start the Customer Application Server, see Appendix E.

After you have installed and configured your Web server, you are ready to set up the hosts for which you plan to provide service. Continue with the instructions in Chapter 8, Chapter 9, or Chapter 10.

Chapter 8. Setting Up OS/390 Hosts

This chapter describes:

- Consideration for installing TCP/IP
- How to install the OS/390 host program
- How to configure the OS/390 host program on each MVS target
- How the host program is started
- How to write a user exit to change the program's defaults

When you are done, you can do any of the following:

- If you are setting up more than one OS/390 target, repeat these instructions for each OS/390 host.
- If you are setting up VSE hosts, continue with the instructions in Chapter 10.
- If you are setting up VM hosts, continue with the instructions in Chapter 9.
- If you are finished with all your hosts, continue with the instructions in Chapter 11.
- If you intend to create your own user exits, continue with the instructions in "Coding the ITNMUSER User Exit" on page 54 and "Coding the ITNMEXIT User Exit" on page 55.

Installing TCP/IP

If you must install TCP/IP on your OS/390 hosts, you must also install and configure the TCP/IP FTP server.

For more information see the following manuals:

- *IBM TCP/IP for MVS Customization and Administration Guide,* SC31-7134
- *IBM TCP/IP for MVS User's Guide,* SC31-7136

Installing the S/390 Service Update Facility OS/390 Host Program

The S/390 Service Update Facility OS/390 host program is supplied as part of SMP/E. The OS/390 components are provided in the following SMP/E data sets: LINKLIB, SGIMCLS0, and SGIMSENU.

Contents of the LINKLIB Data Set

The SMP/E LINKLIB data set contains two members for the S/390 Service Update Facility: one module that extracts CSI information and one module that unterses the service packages.

GIMXTRX   This load module extracts the CSI information

GIMUNPCK This load module unterses the service packages

Note: These modules are installed through the normal OS/390 SMP/E installation process and should be left in the LINKLIB data set for S/390 Service Update Facility.

Contents of the SGIMCLS0 Data Set

The SMP/E SGIMCLS0 data set contains nine members: eight REXX EXECs and a messages file. The members, in order of processing, are:

ITNMTSTR This EXEC is started through TCP/IP by the receiving workstation whenever an order is uploaded. It calls ITNMISPF to get the ISPF data set names, allocates the data sets, starts ISPF, and calls ITNMSUB.

ITNMISPF This EXEC lets you assign the ISPF data set names to the ISPF DDNAMES used by ITNMTSTR and ITNMSTRT. It is called by ITNMTSTR and ITNMSTRT.

ITNMSUB This EXEC tailors and submits an ISPF startup job that begins package processing.

ITNMSTRT This EXEC is run by the ISPF startup job. It re-creates the ISPF environment, and invokes the ITNMMAIN exec.

ITNMMAIN This is the primary EXEC. It unbundles the order package, and optionally, submits an SMP/E RECEIVE job, updates the message log, and sends a notification file to the user specified in ITNMDEF. It is called by ITNMSTRT.

ITNMDEF This EXEC lets you set up defaults for the OS/390 host program. It provide default variables for ITNMMAIN and ITNMSUB. For information on setting the defaults, refer to "Contents of Member ITNMDEF" on page 131.

ITNMUSER This is a user exit that lets you override the default values in ITNMDEF in response to certain conditions. It is always called by ITNMMAIN. For information on coding this user exit, refer to "Coding the ITNMUSER User Exit" on page 54.

ITNMEXIT This user exit is always called by ITNMMAIN immediately before the final exit. It allows you to code functions associated with the completion of the S/390 Service Update Facility process on OS/390. For information on coding this user exit, refer to "Sample Code in Member ITNMEXIT" on page 138.

ITNMMSGS This is the messages file that contains all the S/390 Service Update Facility OS/390 host messages.

Contents of the SGIMSENU Data Set

The SMP/E SGIMSENU data set contains four members: a job statement, the startup job that is submitted by the ITNMSUB EXEC, the first step of the SMP/E RECEIVE job, and JCL for any additional steps needed by the SMP/E RECEIVE. The members are:

ITNMJOBC This is the job statement for any job submitted by the host program. ITNMJOBC lets you update job information such as accounting data without changing the main job.

ITNMSUBS This is the file tailorable startup job which starts the ITNMSTRT exec.

ITNMSMPR Through ISPF file tailoring, this member creates the JCL for the first job step of SMP/E RECEIVE. If there is only one product or service SYSMOD in the package, then this step is the entire SMP/E RECEIVE job.

ITNMSTEP This member creates another job step for SMP/E RECEIVE. Each additional SYSMOD has a job step created from this file tailorable JCL.

You can replace these members with your own and reset the default variables that point to them. However, the basic functions of each file must remain, and all must be members of the same PDS.

Configuring the S/390 Service Update Facility OS/390 Host Program

Before the host program can be started, you must create a permanent message log data set, edit the ITNMDEF and ITNMISPF members of the SGIMCLS0 data set, and edit the ITNMJOBC member of the SGIMSENU data set.

1 Create a permanent message log data set that will contain the messages generated by the S/390 Service Update Facility OS/390 host program.

This must be a sequential data set, with a record format of fixed block, a logical record length of 80 and a block size of 3120. Its space parameters should be based on the volume of orders that you expect to receive. The average order writes about 25 lines, 72 characters in length, into the message log.

2 Edit the ITNMDEF member of the SGIMCLS0 data set to set the default variables. These variables will be used as the defaults during order processing.

The default variables are listed in three groups:

- Variables used for all general processing
- Variables used if you do not use DFSMS to assign data sets to volumes
- Variables needed if you want the host program to submit an SMP/E RECEIVE job.

Variables Used for General Processing

CLEANUP Indicates whether you want ITNMMAIN to delete the bundled and tersed order package data set and envelope data set after the order has been processed. Because the unbundled package and envelope data sets are not deleted by this variable, the default has been set to YES. You are not required to change this variable before you start S/390 Service Update Facility. Set to:

YES Delete the envelope and package data sets

NO Keep the envelope and package data sets

The default is "YES."

DSNPREF Supplies the prefix for any data sets. If you do not set this variable, the default is the high-level qualifier that you supplied in your host profile.

ITNMSLIB Supplies the name of the partitioned data set that contains the job statement and skeletons for the file tailorable jobs. The name can be *your-prefix*.**SGIMSENU**, or you can provide your

own name for this data set. You are required to change this variable before you start S/390 Service Update Facility.

> **Note:** If you provide your own partitioned data set, it must retain the basic functions of the job statement and the job skeleton that are supplied. Both the job statement and the job skeleton must be members of the data set you name.

MSGLOG Identifies the fully qualified data set name of the permanent message log data set that you created. This data set must exist prior to the invocation of ITNMMAIN. You are required to change this variable before you start S/390 Service Update Facility.

NAMEJOBS Supplies the job name for the startup job. The default is "START." You are not required to change this variable before you start S/390 Service Update Facility.

NOTENODE Supplies the node for the user ID that is to receive the order notification file. You are required to change this variable before you start S/390 Service Update Facility. If you change the NOTIFY variable to NO, then this variable is not required.

NOTIFY Indicates whether a notification file should be created and sent. Set to:

> **YES** Create and send the notification file.

> **NO** Do not create or send the notification file.

> The default is "YES." You are not required to change this variable before you start S/390 Service Update Facility.

NOTIFYID Supplies the user ID that is to receive the order notification file. You are required to change this variable before you start S/390 Service Update Facility.

SKELJOB Supplies the name of the member of the data set specified in the ITNMSLIB variable that contains the job statement for all jobs generated by the host program. The default is "ITNMJOBC."

> **Note:** If you provide your own, it must reside in the data set that you named in ITNMSLIB

> You are not required to change this variable before you start S/390 Service Update Facility.

SKELSTRT Supplies the name of the member of the data set specified in the ITNMSLIB variable that contains the job skeleton for the startup job that runs ITNMSTRT. The default is "ITNMSUBS."

> **Note:** If you provide your own name, it must reside in the data set that you named in ITNMSLIB.

> You are not required to change this variable before you start S/390 Service Update Facility.

TERSEDSN Identifies the name of the partitioned data set that contains the load module for the untersing program as a member. ITNMMAIN uses this name to call this load module.

Note: The default for this data set is SYS1.LINKLIB; you do not need to change this value. TRSMEM indicates the name of the member of this data set.

You are not required to change this variable before you start S/390 Service Update Facility.

TRSMEM Indicates the name of the member of the data set named in TERSEDSN that contains the load module for the untersing program.

Note: The default for this member is GIMUNPCK; you do not need to change this value.

You are not required to change this variable before you start S/390 Service Update Facility.

UNBUNDLE Indicates whether you want to unbundle and unterse the orders. Set to:

YES Unbundle and unterse the orders.

NO Do not unbundle or unterse the orders.

The default is "YES." You are not required to change this variable before you start S/390 Service Update Facility.

Because unbundled packages can consume a large amount of DASD space, you might want to set this variable to NO. When this variable is NO, the orders are not unbundled or untersed. However, you must unbundle and unterse them yourself after they have been received at the host. For instructions on unbundling and untersing orders yourself, see "Restarting the OS/390 Host Program" on page 93.

Variables Used for Non-DFSMS Assigned Data Sets

GENVOLNO Specifies the number of volumes across which a sequential data set can extend. This variable is used instead of SPECVLNO or TRSVOLNO, when they are set to zero. It is initially set to "1." GENVOLNO sets the MAXVOL and UCOUNT allocation options.

Note: If your volumes are managed by DFSMS, MAXVOL and UCOUNT are ignored.

You are not required to change this variable before you start S/390 Service Update Facility.

SPECUNIT Specifies the unit type for the volume that you identified in SPECVOL.1. You must specify SPECUNIT, if you specify SPECVOL.1. The default for SPECUNIT is "0." You are not required to change this variable before you start S/390 Service Update Facility.

SPECVLNO Specifies the number of dedicated, user-defined volumes that are to be assigned to the temporary data sets. This variable allows you to define several volumes with SPECVOL.1 through SPECVOL.n, but choose to use only a set number of them. The default is "0." You are not required to change this variable before you start S/390 Service Update Facility.

SPECVOL.1 Supplies the name of a specific, dedicated volume that will contain the temporary data sets created by the host program.

If you do not want to specify a volume, set SPECVOL.1 to "0." The default is "0." If do not specify the name of a volume, the system will assign the volume. If you specify a name for SPECVOL.1, you must also specify SPECUNIT.

If more than one volume is identified, create new variables named SPECVOL.2, SPECVOL.3, and so on. They must all be the same unit type, since SPECUNIT is used with all of them.

Note: If your volumes are managed by DFSMS, set SPECVOL.1 to "0."

You are not required to change this variable before you start S/390 Service Update Facility.

TRSVOL.1 Supplies the name of a specific, dedicated volume that will contain the unbundled data sets.

If you do not want to specify a volume, set TRSVOL.1 to "0." If do not specify the name of a volume, the system will assign the volume. If you specify a name for TRSVOL.1, you must also specify TRSUNIT.

If you need more than one volume, create new variables named TRSVOL.2, TRSVOL.3, and so on. They must all be the same unit type, since TRSUNIT is used with all of them.

Note: If your volumes are managed by DFSMS, set TRSVOL.1 to "0."

You are not required to change this variable before you start S/390 Service Update Facility.

TRSVOLNO Specifies the number of dedicated, user-defined volumes that are to be assigned to the unbundled data sets. This variable allows you to define several volumes with TRSVOL.1 through TRSVOL.n, but choose to use only a set number of them. The default is "0." You are not required to change this variable before you start S/390 Service Update Facility.

TRSUNIT Specifies the unit type for the volume that you identified in TRSVOL.1. You must specify TRSUNIT, if you specify TRSVOL.1. You are not required to change this variable before you start S/390 Service Update Facility.

Variables Used for Submitting SMP/E Receive Jobs

NAMEJOBR Supplies the job name for the SMP/E RECEIVE job. The default is "SMPRCV." You are not required to change this variable before you start S/390 Service Update Facility.

SKELRECV Supplies the name of the member of the data set specified in the ITNMSLIB variable that contains the job skeleton for the first step in the SMP/E RECEIVE job. The default is "ITNMSMPR."

Note: If you provide your own name, it must reside in the data set that you named in ITNMSLIB.

You are not required to change this variable before you start S/390 Service Update Facility.

SKELSTEP Supplies the name of the member of the data set specified in the ITNMSLIB variable that contains the job skeleton for each additional step in the SMP/E RECEIVE job. The default is "ITNMSTEP."

> **Note:** If you provide your own name, it must reside in the data set that you named in ITNMSLIB.

You are not required to change this variable before you start S/390 Service Update Facility.

SMPCSI Identifies the data set name of the SMP/E CSI. If the SMP/E RECEIVE job is requested in the variable SMPREC, this VSAM data set must exist prior to the invocation of ITNMMAIN. You are not required to change this variable before you start S/390 Service Update Facility.

SMPDSN Supplies the data set name of the sequential data set that will contain the JCL generated for the most recent SMP/E RECEIVE. This data set is automatically allocated by the host program, if it does not already exist. The data set can be used to resubmit the job, or steps in the job, if a failure occurs in the RECEIVE job. You are not required to change this variable before you start S/390 Service Update Facility.

SMPREC Indicates whether you want ITNMMAIN to submit an SMP/E RECEIVE job for the orders. Set to:

YES Submit an SMP/E RECEIVE job

NO Do not submit an SMP/E RECEIVE job

Default is "YES." You are not required to change this variable before you start S/390 Service Update Facility.

SMPSAV Indicates whether you want to save the generated RECEIVE JCL in the data set identified by SMPDSN. Set to:

YES Save the JCL.

NO Do not save the JCL.

The default is "YES." You are not required to change this variable before you start S/390 Service Update Facility.

You can find a listing of the ITNMDEF member in "Contents of Member ITNMDEF" on page 131 in Appendix E to help you edit this EXEC.

3 Edit the ITNMISPF member of the SGIMCLS0 data set to specify the fully qualified data set names of the ISPF files that are required by the S/390 Service Update Facility OS/390 host program.

The host program is run from a TSO job that is submitted through TCP/IP FTP. You set up the JCL for this job when you set up your host profile. Setting up your host profile is described in Chapter 11. This job does not allocate ISPF data sets. Since the host program must have an ISPF environment to do file tailoring and to store data in the ISPF pools, you must allocate these data sets prior to the invocation of ITNMSUB. These are the names (DDNAMES) assigned to the data sets for the OS/390 host.

You must supply data set names for the following variables:

ISPMLIB   ISPF message library

ISPPLIB   ISPF panel library

ISPSLIB   ISPF skeleton library

ISPTLIB   ISPF table input library

You can find a listing of the ITNMISPF member in "Contents of Member ITNMISPF" on page 135 in Appendix E to help you edit this EXEC. For an explanation of these data sets, see *ISPF Dialog Management and Reference,* SC34-4266.

4 Edit the ITNMJOBC member of the SGIMSENU data set to include your *accounting-information*, *user-name*, *notify-name*, *class*, and *msgclass*.

```
//&JOBNAME  JOB (accounting-information),'user-name',
//          USER=user,NOTIFY=user,
//          CLASS=job class,MSGCLASS=message class,
//          MSGLEVEL(1,1)
//*JOB CARD FOR S/390 SERVICE UPDATE FACILITY OS/390 HOST TOOL
```

5 Optionally, you can code the ITNMUSER and ITNMEXIT user exits to reset the default options provided in the ITNMDEF EXEC for specific situations or to perform functions before the completion of the host program. Refer to sections "Coding the ITNMUSER User Exit" or "Coding the ITNMEXIT User Exit" on page 55 for more information.

When you are done, you can do any of the following:

- If you are setting up on more than one OS/390 host, repeat these instructions for each host.

- If you are setting up VM hosts, continue with the instructions in Chapter 9.

- If you are setting up VSE hosts, continue with the instructions in Chapter 10.

- If you are finished with your host installations, continue with the instructions in Chapter 11.

- If you intend to create your own user exits, continue with the instructions in "Coding the ITNMUSER User Exit" and "Coding the ITNMEXIT User Exit" on page 55.

How to Install Orders after They Are Processed

Additional install and service information/instructions are contained in "How to Install Service on an OS/390 Host" on page 89.

Coding the ITNMUSER User Exit

The ITNMUSER user exit allows you to reset the default options provided in the ITNMDEF EXEC for specific situations.

You can find a sample listing of the ITNMUSER member in "Sample Code in Member ITNMUSER" on page 136 in Appendix E to help you code this exit.

Coding the ITNMEXIT User Exit

The ITNMEXIT user exit allows you to perform functions before the completion of the host program. It is called immediately before exiting from ITNMMAIN.

You can find a sample listing of the ITNMEXIT member in "Sample Code in Member ITNMEXIT" on page 138 in Appendix E to help you code this exit.

Chapter 9. Setting Up VM Hosts

This chapter describes:

- Considerations for installing TCP/IP

- The parts of the VM host program

- How to install and configure the S/390 Service Update Facility VM host program

- The user IDs, minidisks and files used by the VM host program

- How to install orders after they are processed

- How to restart installs after an error

- How to code a user exit to override default processing options of the host program

This chapter also points you to the *VM/ESA Installation and Service Guides* for instructions on installing and servicing the VMSES/E component, of which the VM host program is a part.

When you are done, you can do any of the following:

- If you are setting up more than one VM host, repeat these instructions for each VM host.

- If you are setting up OS/390 hosts, continue with the instructions in Chapter 8.

- If you are setting up VSE hosts, continue with the instructions in Chapter 10.

- If you are finished with your all your hosts, continue with the instructions in Chapter 11.

- If you intend to create your own user exit, continue with the instructions in "Coding the ITNVTSTR User Exits" on page 65.

Installing TCP/IP

You must install TCP/IP on your VM hosts. You must also install the TCP/IP FTP and REXEC servers. If you have already installed TCP/IP without either of these servers, you must install them before you start the delivery system.

Note: You must specify the TIMEOUT option for the REXEC server if you intend to allow S/390 Service Update Facility to automatically install preventive service. A value of 36000 (10 hours) should be large enough.

For more information see the following manuals:

- *IBM TCP/IP for VM Planning and Customization,* SC31-6151

- *IBM TCP/IP for VM User's Guide,* SC31-6081

Parts of the VM Host Program

The S/390 Service Update Facility VM host program is part of the VMSES/E component of VM/ESA. Its parts are:

ITNVTSTR EXEC
> Controls everything and is invoked on the server user ID to do all order processing.

ITN PROFILE
> Contains processing options that override the host program defaults.

VMFSUFTB EXEC
> Creates and updates the VM SYSSUF table.

VMFSUFIN EXEC
> Installs preventive and corrective service.

In addition to these parts, there are HELP files for the commands and messages.

Installing the S/390 Service Update Facility VM Host Program

The S/390 Service Facility Update VM host program code is installed as part of the VMSES/E component in VM/ESA Version 2 Release 3.0 or higher. In VM/ESA Version 2 Release 2.0, you can install the VM host program code with VMSES/E PTF UM28622. Refer to the "VM/ESA Service Guide" for information on installing VMSES/E service. For more information on the VMSES/E commands used in conjunction with the S/390 Service Update Facility, refer to the "VMSES/E Introduction and Reference."

Server and Minidisk Setup

You must create and setup one server user ID and four minidisks. The following table gives the user ID and DASD storage requirements for this VM host program service machine.

Table 4. DASD Storage Requirements for Target Minidisks

| Minidisk owner (user ID) | Default Address | Storage in Cylinders | | FB-512 Blocks | SFS 4K Blocks | Usage |
		DASD	CYLS			Default SFS Directory Name
ITNSERVE	191	3390	75	108000	NA	ITNSERVE user ID's 191 minidisk
		3380	90			
		9345	90			
ITNSERVE	192	3390	300	432000	54000	ITNSERVE user ID's unbundling target minidisk **VMSYS:ITNSERVE.192**
		3380	360			
		9345	360			
ITNSERVE	193	3390	2	2880	360	ITNSERVE user ID's delete pending requests minidisk **VMSYS:ITNSERVE.193**
		3380	3			
		9345	3			
ITNSERVE	194	3390	200	288000	36000	ITNSERVE user ID's archive target minidisk **VMSYS:ITNSERVE.194**
		3380	240			
		9345	240			

Notes:

1. Cylinder values defined in this table are based on a 4K block size.

2. FB-512 block and SFS values are derived from the 3380 cylinder values in this table.

3. The FBA blocks are listed as .5K but should be CMS formatted at 1K size.

4. 90,360 4K blocks are needed for SFS install and used for the ITNSERVE user ID.

5. ITNSERVE 191 must represent a minidisk, since the TCP/IP FTP server which uses this disk as an upload target does not support shared file system directories.

6. The cylinder and block values for all of the ITNSERVE server addresses depend largely upon the size of the electronically delivered files. The values provided are estimates based on tests with larger electronic files. Because of short file life, it is recommended that these disks be placed in the shared file system (SFS), where actual space is used only with the existence of a file.

Server User ID Considerations

- You cannot define a SECONDARY USER for the ITNSERVE user ID. This is a TCP/IP restriction.

- The server user ID must have read/write LINK authority to all disks in the :MDA section of the PPF of all products whose service will be automatically installed by SUF. If a product uses a different PPF/Component combination for install and build then the proper authorities must exist for both sets of disks. If a disk is defined in the :MDA section of the PPF as a read/only disk, only read LINK authority is needed for that disk.

- If you choose to define your own minidisks, you should define four separate and distinct minidisks for use by the ITNVTSTR EXEC.

- The ITNVTSTR EXEC can use either minidisks or shared file system directories. While it is not required, it is recommended that all the disks be shared file system directories. In this case, real space is not taken up until the files are created. The term disk used here will refer to either a minidisk or a shared file system directory.

- The ITN PROFILE should reflect the new minidisks or SFS directories.

- You can change the server user ID. If you change it, you also need to change the ITN PROFILE.
- The server user ID, ITNSERVE, should not be logged on or in a disconnected state.

Profile EXEC Setup

You need to set up a PROFILE EXEC on the server machine's ITNSERVE A-disk. The PROFILE EXEC must contain the following:

- A LINK and ACCESS to TCPMAINT's 592 (or equivalent, if you have changed the TCP/IP defaults) production build minidisk for client code.
- A LINK and ACCESS to MAINT's 5E5 minidisk (or equivalent, if you have changed the VM/ESA defaults), the VMSES/E code disk. The VMSES/E code disk must be accessed as B.
- A LINK and ACCESS to MAINT's 51D minidisk (or equivalent, if you have changed the VM/ESA defaults), the Software Inventory Disk. The Software Inventory Disk must be accessed as D.
- A 'SPOOL CONSOLE START'.
- A 'SET MACHINE XA'.
- A 'DEFINE STORAGE nnM' where nn is equal to the largest amount of storage required for the products whose service will be automatically installed (35 for base VM/ESA).

Configuring the S/390 Service Update Facility VM Host Program

You can configure the host program further by:

- Tailoring the ITN PROFILE to override the ITNVTSTR EXEC's processing options.
- Tailoring the VM SYSSUF table to control the service install processing done by the VMFSUFIN EXEC.

Tailoring the ITN PROFILE

To tailor the ITN PROFILE, do the following:

1 Locate the ITN PROFILE. Do one of the following:

- If you have not previously tailored the VM host program's processing options file, ITN PROFILE, or want to reset all the options, copy the ITN PROFILE from MAINT's 5E5 minidisk (VMSES/E's code disk) to your A-disk.
- If you have previously changed processing options, the ITN PROFILE should be on your A-disk.

2 Edit the ITN PROFILE using your favorite editor.

There is a sample of this profile listed in "Contents of ITN PROFILE" on page 143 in Appendix F to help you edit it.

3 Change any of the processing option values as required.

ARCHIVE [YES | NO]

Indicates whether to copy the envelope and package files from the
server's A-disk to the **ARCHIVE_DISK**. Archived files are removed from
the A-disk. The default value for **ARCHIVE** is **NO**.

ARCHIVE_DISK [*userid.address* | *dirid* | *]

Identifies the target minidisk or shared file system directory to which the
envelope and package files for a given order are to be archived. If
userid.address is specified, then it is a minidisk specification that
identifies its owner and virtual address. If *dirid* is specified, it represents
a shared file system directory specification and must be fully qualified, for
example, 'filepool:userid.subdira.subdirb.'. If the **ARCHIVE_DISK** value is
not specified or begins with an "*," the disk is assumed to be unassigned.
The default archive target is **ITNSERVE.194**.

> **Note:** The server's A-disk should not be used as an **ARCHIVE_DISK**.

CLEANUP [YES | NO]

Indicates whether the envelope and package files for the specified order
should be erased from the server's A-disk after successful processing.
The default value for **CLEANUP** is **YES**.

DELETE [YES | NO]

Indicates whether the host program should check for and process any
DELETE PENDING files on the **DELETE_DISK** and the server's A-disk.
The default value for **DELETE** is **YES**.

DELETE_DISK [*userid.address* | *dirid* | *]

Identifies the minidisk or shared file system directory where the file
DELETE PENDING should have been defined by a system programmer.
This file contains the filename and filetype of the files to be deleted from
the unbundle disk. If *userid.address* is specified, then it is a minidisk
specification that identifies its owner and virtual address. If *dirid* is
specified, it represents a shared file system directory specification and
must be fully qualified, for example, 'filepool:userid.subdira.subdirb.'. If
the **DELETE_DISK** value is not specified or begins with an "*," the disk is
assumed to be unassigned. The default archive target is **ITNSERVE.193**.

UNBUNDLE [YES | NO]

Indicates whether the host program should unbundle and move an order's
package and envelope files to the disk indicated by **UNBUNDLE_DISK**.
The default value for **UNBUNDLE** is **YES**.

UNBUNDLE_DISK [*userid.address* | *dirid* | *]

Identifies the target minidisk or shared file system directory to which the
envelope and package files for a given order are to be unbundled. If
userid.address is specified, then it is a minidisk specification that
identifies its owner and virtual address. If *dirid* is specified, it is a shared
file system directory specification and must be fully qualified, for example,
'filepool:userid.subdira.subdirb.'. If the **UNBUNDLE_DISK** value is not
specified or begins with an "*," the disk is assumed to be unassigned.
The default unbundle target is **ITNSERVE.192**.

> **Note:** The server's A-disk should not be used as an **UNBUNDLE_DISK**.

USERID [*userid* | *]

Provides the user ID or nickname of the person who is to receive the ITN
NOTIFY file after the host program has unbundled an order. If the

USERID value is not specified or starts with an '*', then it is assumed to be unassigned. This file contains the messages and customer documentation that was obtained from the order's envelope file. The default value is **ITNSERVE**.

USERNODE [nodeid **| *]**
Provides the node ID of the person who is to receive the ITN NOTIFY file after the host program has unbundled an order. If the USERNODE value is not specified or starts with an '*', then it is assumed to be unassigned. This file contains the messages and customer documentation that was obtained from the order's envelope file. The default value is unassigned.

Tailoring the VM SYSSUF Table

To tailor the VM SYSSUF table, do the following:

1 Enter the VMFSUFTB command with no options on the VM command line to create VM SYSSUF table or to update it with the latest service levels.

```
VMFSUFTB
```

2 Review the current settings in the VM SYSSUF table using the following VMFSIM command:

```
VMFSIM QUERY VM SYSSUF TDATA :PRODID prod-id
```

Where:

prod-id
Is the ID of the product that you wish to review. This ID must match an entry in the VM SYSSUF table.

3 Update the VM SYSSUF table using the VMFSIM command as follows:

```
VMFSIM MODIFY VM SYSSUF TDATA :PRODID prod-id tag value (REPLACE
```

Where:

prod-id
Is the ID of the product that you wish to update. This ID must match an existing entry in the VM SYSSUF table.

tag
Is the tag that you wish to change, for example, `:INSTALL`.

value
Is the new value for the tag, for example `NO`.

Note: The *tag value* pair can be repeated so you can change several tags for the same product with one command.

4 Change any of the following tags:

:INCLUDE {YES | NO}
Indicates whether the product is to be included in the input to the workstation code.

:INSTALL {YES | NO}
Indicates whether preventive service (RSU) for this product is to be automatically installed.

:BUILD {YES | NO}
>   Indicates whether the build step (VMFBLD) is to be run for this product after the service is installed.

:INSPPF {*ppfname compname***}**
>   Identifies the PPF that is to be used to install the service.

:BLDPPF {*ppfname compname***}**
>   Identifies the PPF that is to be used to run VMFBLD.

:DESC {*text***}**
>   Describes the product, this description will appear on the workstation.

Coding User Exits

Optionally, you can code two ITNVUSER user exits to permit additional processing through execution of user-defined EXECs known to the VM host server machine. Refer to sections "Coding the ITNVTSTR User Exits" on page 65 for more information.

When You Are Done

After you have set up your VM host, you can do any of the following:

- If you are setting up more than one VM host, repeat these instructions for each host.

- If you are setting up OS/390 hosts, continue with the instructions in Chapter 8.

- If you are setting up VSE hosts, continue with the instructions in Chapter 10.

- If you are finished with all your hosts, continue with the instructions in Chapter 11.

- If you intend to create your own user exit, continue with the instructions in "Coding the ITNVTSTR User Exits" on page 65.

- If you are just changing the values that were previously set in the ITN PROFILE, you are done. The next time the program starts, the new processing options will be used.

User IDs, Minidisks and Files Used by the VM Host Program

User IDs Used by the VM Host Program

The server user ID receives the uploaded order code (i.e., the envelope and package files). It also unbundles the order for later use by the system programmer. ITNSERVE is the default user ID.

Minidisks Used by the VM Host Program

The VM minidisks used by the VM host program are:

UPLOAD
>   This disk will always be the server's A-disk, where the workstation will initially place an order's envelope and package files. Other users should not have access to this disk. The default is ITNSERVE.191.

UNBUNDLE

This is the target disk for the files obtained by breaking apart and untersing an order's package file from the server's A-disk. An order's envelope file, which describes the parts of the package, is also moved to the **UNBUNDLE_DISK**. It is accessed in WRITE mode by the server.

This is the disk that the system programmer will access later in READ mode and use VMSES/E functions to install the product or apply service. The default is ITNSERVE.192.

DELETE

This disk contains the DELETE PENDING file. It is a listing of files that are to be deleted from the **UNBUNDLE_DISK** the next time that the EXEC is run. Each record in it should contain a file name and type. This file will be moved to the server's A-disk for processing and removed from the **DELETE_DISK**. The server and the system programmer need to have WRITE access (MR) to the **DELETE_DISK**. The default is ITNSERVE.193.

ARCHIVE

The envelope and package files for an order are moved from the server's A-disk to this disk for later processing. To use these files later, they must be copied manually back to the server's A-disk. Only the server should have access to this disk in WRITE mode. The default is ITNSERVE.194.

Input Files Used by the VM Host Program

ITN PROFILE

Contains the values that override the default processing values in the ITNVTSTR EXEC. The PROFILE can have only one "keyword and value" per line; anything after the second word in these lines is ignored. Comment lines in this file are allowed and start with an asterisk. You can change the processing override values on a permanent basis by editing this file and moving it to the server's A-disk. You may want to edit this file to specify the user ID and node ID for the system programmer who is to receive the notification file. The "keyword and value" combinations used in this profile are described in "Configuring the S/390 Service Update Facility VM Host Program" on page 60. There is also a sample listing of this profile in "Contents of ITN PROFILE" on page 143 in Appendix F to help you edit it.

DELETE PENDING

This is a file that you define on the **DELETE_DISK** after you process an order. Its records contain the file name and type of the files that you want to delete from the **UNBUNDLE_DISK**. When an upload occurs, the ITNVTSTR EXEC is normally invoked to unbundle an order's package. Prior to the actual unbundling, the EXEC attempts to free up as much space as possible from the **UNBUNDLE_DISK** using the **DELETE PENDING** file to first erase all unneeded files.

B*order_number* **ENVELOPE**
　　V*order_number* **ENVELOPE**

This is one of two files that are shipped as part of an order. This file describes the order as well as the nature and layout of the second file whose type is PACKAGE.

B*order_number* **PACKAGE**

V*order_number* **PACKAGE**

This is one of two files that are shipped as part of an order. The file is a concatenated set of tersed files that is described by the file whose type is ENVELOPE. The package will be unbundled (split and untersed) into numerous SERVLINK files on the **UNBUNDLE_DISK**. These SERVLINK files are the install and service files for the ordered products.

Output Files Produced by the VM Host Program

ITN CONTROL A

The records in this file contain a time and date stamped history of all major, successful events for the EXEC.

servlink_name **SERVLINK**

These files are unbundled from an order's package file as described by the same order's envelope file. They contain the product or service code for the order that needs to be applied by a system programmer. They are VM tape envelopes.

Input/Output Files Used or Created by the VM Host Program

VM SYSSUF

This table, which is built from the VM SYSAPPS, VM SYSRECS, and VM SYSDESCT tables, controls which products can be serviced via SUF/390. It also controls which products can use the automatic installation feature.

VM SYSREST

This table restarts VMFSUFIN after an error. It is also used to coordinate the installation of an RSU and its corrective service bucket.

Temporary Files Created by the VM Host Program

B*order_number* **MSGLOG A**

V*order_number* **MSGLOG A**

Is a message log of the EXEC's most recent invocation.

B*order_number* **NOTIFY A**

V*order_number* **NOTIFY A**

Is the notification file that will be sent to the user designated in the ITN PROFILE.

Coding the ITNVTSTR User Exits

Two exits have been provided in the ITNVTSTR EXEC that permit additional user processing through execution of user defined EXECs known to the VM host server machine.

ITNVUSER

Is invoked after the ENVELOPE file has been successfully read. This exit is called with the order's package format and routing code information.

ITNVEXIT

Is called as part of exit processing with the package format and routing code information, the envelope and package file names and the current

processing return code. Values, that do not exist, have a period ('.') as a place holder.

You define these exits, if needed, and place them on a disk that is available to the server when the ITNVTSTR EXEC is running.

You can find a sample listing of the ITNVUSER EXEC in "Sample Code for the ITNVUSER EXEC User Exit" on page 143 in Appendix F and a listing of the significant REXX variables defined and used by the ITNVTSTR EXEC in "Variables Set in ITNVTSTR EXEC" on page 144 in Appendix F to help you code a user exit. These REXX variables are accessible to the user exits using CMS Pipelines as the example exit shows.

Chapter 10. Setting Up VSE Hosts

This chapter describes:

- How to configure VSE for Service Update Facility/390
- How orders for preventive service are processed
- How orders for corrective service are processed

When you are done, you can do any of the following:

- If you are setting up more than one VSE host, repeat these instructions for each VSE host.
- If you are setting up OS/390 hosts, continue with the instructions in Chapter 8.
- If you are setting up VM hosts, continue with the instructions in Chapter 9.
- If you are finished with your all your hosts, continue with the instructions in Chapter 11.

Configuring Your VSE Host for Service Update Facility/390

Before you can use Service Update Facility/390, you must do the following at your VSE host:

- You must adjust the VSE PRIMARY library.

  This library is part of the VSE base system and is available after the system has been installed. You should check the VSAM space allocation in this library and adjust, so that it is large enough to hold the largest VSE service package that you specified for Internet delivery. This is in addition to the other data that is stored in the library. It must be at least 3 times the size you specified for Internet delivery, because the data is packed for transmission over the Internet and is expanded again at the workstation server before it is transferred to VSE.

- You must define a VSE sublibrary named PRIMARY.SUF.

  This sublibrary is used to transfer PTFs received from the Internet to your scratch tape.

- The VSE Background partition (BG) must be available when someone places orders for service.

  This partition is used to run jobs on the VSE system, for example, VSE/MSHP RETRACE jobs, and, therefore, must be free. S/390 Service Update Facility waits for the completion of a submitted job; however, if this job does not start running within three minutes, it ends with a timeout error.

Configuring LU2 Support on the VSE Host

Requirements at the VSE Host

VSE file transfer support (IND$FILE) must be installed and activated in the VSE/CICS subsystem.

Preparations at the VSE system

The VSE/CICS subsystem must be active when you use the S/390 Service Update Facility Customer Application Server.

Requirements at the Workstation Server

The IBM Personal Communications/3270 is required as terminal emulation software for LU2 support. You must define a session at the workstation server that accesses the target VSE system through the VSE Interactive Interface. This session must be configured to allow VSE file transfer.

Preparations at the Workstation Server

S/390 Service Update Facility requires the **A** session for communication. You must start the terminal emulation session (A) to access the VSE system. Then, you must logon to the VSE Interactive Interface and switch to PC file transfer mode. You must be connected to VSE as long as you work with the S/390 Servcie Update Facility.

Configuring APPC Support on the VSE Host

S/390 Service Update Facility uses the CPIC interface for APPC communication support.

Requirements at the VSE system

You must configure VSE/VTAM and VSE/CICS for S/390 Service Update Facility.

VSE/VTAM Definitions: You must define the workstation server in the VTAM Startup books.

VSE/CICS Definitions: You must do the following:

- Turn **ON** the **Intersystem Communication (ISC)** flag in the **VSE/CICS SIT** for APPC communication.

- Define a VTAM application ID **APPLID** for the target VSE/CICS subsystem in the startup job.

- Define a **connection** and a **session** in VSE/CICS for the Customer Application Server.

  To define these VSE/CICS definitions for the APPC communication, you can use the **CEDA** transaction.

Sample CEDA Definition for an APPC Connection: See Figure 1 on page 69 for an example of a CEDA definition for an APPC connection in VSE/CICS. This sample might help you do your own definition:

```
| Connection : SUF1
| Group : SUF
| CONNECTION IDENTIFIERS
| Netname : X7611700
| INDsys :
| REMOTE ATTRIBUTES
| REMOTESystem :
| REMOTEName :
| CONNECTION PROPERTIES
| ACcessmethod : Vtam ..... Vtam | IRc | INdirect
| Protocol : Appc ..... Appc | Lu61
| SInglesess : No ..... No | Yes
| Datastream : User ..... User | 3270 | SCs | STrfield | Lmsd
| RECordformat : U ..... U | Vb
| OPERATIONAL PROPERTIES
| AUtoconnect : No ..... No | Yes | All
| INService : Yes ..... Yes | No
| SECURITY
| SEcurityname :
| ATtachsec : Verify ..... Local | Identify | Verify
```

Figure 1. Sample CEDA Definition default values.

Sample CEDA Definition for a Session:

See Figure 2 on page 70 for an example of a CEDA definition of a session in
VSE/CICS. This sample might help you do your own definitions.

```
| Sessions : SUFSESS
| Group : SUF
| SESSION IDENTIFIERS
| Connection : SUF1
| SESSName :
| NETnameq :
| MOdename : #INTER
| SESSION PROPERTIES
| Protocol : Appc ...... Appc | Lu61
| MAximum : 00008 , 00008 ...... 0-32767
| RECEIVEPfx :
| RECEIVECount : No ...... No | 1-999
| SENDPfx :
| SENDCount : No ...... No | 1-999
| SENDSize : 04096 ...... 1-30720
| RECEIVESize : 04096 ...... 1-30720
| OPERATOR DEFAULTS
| OPERId :
| OPERPriority : 000 ...... 0-255
| OPERRsl : 0 ...... 0-24,..
| OPERSecurity : 1 ...... 1-64,..
| USERId :
| SESSION USAGES
| Transaction :
| SESSPriority : 000 ...... 0-255
| OPERATIONAL PROPERTIES
| Autoconnect : Yes ...... No | Yes | All
| INservice : ...... No | Yes
| Buildchain : Yes ...... Yes | No
| USERArealen : 000 ...... 0-255
| IOarealen : 00000 , 00000 ...... 0-32767
| RELreq : No ...... No | Yes
| Discreq : No ...... No | Yes
| NEPclass : 000 ......   0-255
| RECOVERY
| RECOvoption : Sysdefault ......  Sysdefault | None
```

Figure 2. Sample CEDA Definition for a Session

Preparation at the VSE Host

The **INWK** transaction must be defined and activated in the VSE/CICS sybsystem.

The **VSE/CICS** subsystem must be active in the target VSE system.

Requirements at the Workstation Server

The **IBM Access Feature** must be installed at the workstation server in order to setup and use APPC communication support. The required definitions must be made in the APPC configuration file (.NDF).

Sample .NDF File Definition: This example .NDF file definition may help you to setup your APPC communication:

```
DEFINE_LOCAL_CP  FQ_CP_NAME(DEIBMD1.X7819B00 )
                 CP_ALIAS(GABY     )
                 NAU_ADDRESS(INDEPENDENT_LU)
                 NODE_TYPE(EN)
                 NODE_ID(X'05DEF89B')
                 NW_FP_SUPPORT(NONE)
                 HOST_FP_SUPPORT(YES)
                 DLUR_MULTISUBNET_SUPPORT(YES)
                 FREE_UNUSED_SESSIONS(NO)
                 FREE_UNUSED_SESSIONS_TIME(10)
                 HOST_FP_LINK_NAME(HOST0001)
                 MAX_COMP_LEVEL(NONE)
                 MAX_COMP_TOKENS(0);

DEFINE_LOGICAL_LINK  LINK_NAME(HOST0001)
                     FQ_ADJACENT_CP_NAME(DEIBMIP1.VMHOST  )
                     ADJACENT_NODE_TYPE(LEN)
                     DLC_NAME(IBMTRNET)
                     ADAPTER_NUMBER(0)
                     DESTINATION_ADDRESS(X'40001000000204')
                     ETHERNET_FORMAT(NO)
                     CP_CP_SESSION_SUPPORT(NO)
                     SOLICIT_SSCP_SESSION(YES)
                     NODE_ID(X'05DEF617')
                     USE_PUNAME_AS_CPNAME(NO)
                     MAX_ACTIVATION_ATTEMPTS(USE_ADAPTER_DEFINITION)
                     AUTO_REACTIVATE(NO_RETRY)
                     ACTIVATE_AT_STARTUP(YES)
                     LIMITED_RESOURCE(USE_ADAPTER_DEFINITION)
                     LINK_STATION_ROLE(USE_ADAPTER_DEFINITION)
                     EFFECTIVE_CAPACITY(USE_ADAPTER_DEFINITION)
                     COST_PER_CONNECT_TIME(USE_ADAPTER_DEFINITION)
                     COST_PER_BYTE(USE_ADAPTER_DEFINITION)
                     SECURITY(USE_ADAPTER_DEFINITION)
                     PROPAGATION_DELAY(USE_ADAPTER_DEFINITION)
                     HPR_SUPPORT(NO)
                     LIMITED_RESOURCE_TIMEOUT(USE_ADAPTER_DEFINITION)
                     INACTIVITY_TIMEOUT(USE_ADAPTER_DEFINITION)
                     USER_DEFINED_1(USE_ADAPTER_DEFINITION)
                     USER_DEFINED_2(USE_ADAPTER_DEFINITION)
                     USER_DEFINED_3(USE_ADAPTER_DEFINITION);
```

Figure 3 (Part 1 of 3). Sample .NDF File Definition

```
|   DEFINE_PARTNER_LU   FQ_PARTNER_LU_NAME(DEIBMIP1.IP1A1C  )
|                       DESCRIPTION(CICS on WORKDESK on BOEVMCT1)
|                       PARTNER_LU_ALIAS(WORKDESK)
|                       PARTNER_LU_UNINTERPRETED_NAME(IP1A1C  )
|                       MAX_MC_LL_SEND_SIZE(32767)
|                       CONV_SECURITY_VERIFICATION(NO)
|                       DEFAULT_ROUTING_PREFERENCE(NATIVE_FIRST)
|                       PARALLEL_SESSION_SUPPORT(YES);
|
|   DEFINE_PARTNER_LU_LOCATION  FQ_PARTNER_LU_NAME(DEIBMIP1.IP1A1C  )
|                               DESCRIPTION(CICS on WORKDESK on BOEVMCT1)
|                               WILDCARD_ENTRY(NO)
|                               FQ_OWNING_CP_NAME(DEIBMIP1.VMHOST  )
|                               LOCAL_NODE_NN_SERVER(NO);
|
|   DEFINE_MODE  MODE_NAME(#INTER  )
|                COS_NAME(#INTER  )
|                DEFAULT_RU_SIZE(NO)
|                MAX_RU_SIZE_UPPER_BOUND(16384)
|                RECEIVE_PACING_WINDOW(63)
|                MAX_NEGOTIABLE_SESSION_LIMIT(256)
|                PLU_MODE_SESSION_LIMIT(8)
|                MIN_CONWINNERS_SOURCE(4)
|                PACING_TYPE(ADAPTIVE)
|                COMPRESSION_NEED(PROHIBITED)
|                PLU_SLU_COMPRESSION(NONE)
|                SLU_PLU_COMPRESSION(NONE)
|                SESSION_LEVEL_ENCRYPTION(NO)
|                APPN_ENCRYPTION_SUPPORT(NO);
```

Figure 3 (Part 2 of 3). Sample .NDF File Definition

```
|  DEFINE_DEFAULTS   IMPLICIT_INBOUND_PLU_SUPPORT(YES)
|                    DEFAULT_MODE_NAME(BLANK)
|                    MAX_MC_LL_SEND_SIZE(32767)
|                    DIRECTORY_FOR_INBOUND_ATTACHES(*)
|                    DEFAULT_TP_OPERATION(NONQUEUED_AM_STARTED)
|                    DEFAULT_TP_PROGRAM_TYPE(BACKGROUND)
|                    DEFAULT_TP_CONV_SECURITY_RQD(NO)
|                    MAX_HELD_ALERTS(10)
|                    DEFAULT_ROUTING_PREFERENCE(NATIVE_FIRST)
|                    IMPLICIT_LINK_HPR_SUPPORT(YES)
|                    RETRY_COUNT(6)
|                    ALIVE_TIMER(60)
|                    PATH_SWITCH_TIMER_LOW(480)
|                    PATH_SWITCH_TIMER_MEDIUM(240)
|                    PATH_SWITCH_TIMER_HIGH(120)
|                    TN3270E_PORT(23)
|                    TN3270E_KEEPALIVE_TYPE(NONE)
|                    TN3270E_AUTOMATIC_LOGOFF(0)
|                    DISABLE_DLUR_REGISTRATION(NO);
|
|  DEFINE_CPIC_SIDE_INFO  SYMBOLIC_DESTINATION_NAME(WORKDESK)
|                    DESCRIPTION(VSE system:  WORKDESK on BOEVMCT1)
|                    PARTNER_LU_ALIAS(WORKDESK        )
|                    MODE_NAME(#INTER )
|                    TP_NAME(INWK);
|
|  START_ATTACH_MANAGER;
```

Figure 3 (Part 3 of 3). Sample .NDF File Definition

Preparation at the Workstation Server
You must start the **IBM Access Feature**.

No additional preparations required for APPC communication when the VSE system programmer wants to access the VSE system through the S/390 Service Update Facility application. The APPC communication link between SUF and the VSE/CICS system is established dynamically on request.

Configuring TCP/IP Support on the VSE Host
There is no **native** TCP/IP support from IBM available in the VSE base operating system. However, you might have the product **TCP/IP for VSE/ESA** installed at your VSE system, a product that is owned by **Connectivity Systems**. If you already have this product installed, you can use the S/390 Service Update Facility in conjunction with it. Do the following:

- Define the TCP/IP address of the VSE system

- Configure and activate an FTP deamon in the TCP/IP startup job

- Define a TCP/IP user ID and password for security reasons

- You must have the following definitions in the VSE file system:

    VSE/POWER   Must be defined for access through FTP

    PRIMARY library Must be defined for access through FTP

Handling Preventive Service (Refreshes) at Your VSE Host

Support for preventive service generates an order to the IBM product libraries for the latest VSE refresh available.

A VSE refresh cannot be received over the Internet because of the following:

- The size of VSE refreshes
- The format of installation tapes
- The hardcopy documentation that comes with VSE refreshes.

Instead, VSE refreshes are delivered on physical media, the media type can be specified in the S/390 Service Update Facility setup dialog. We recommend that you use the VSE Interactive Interface dialogs to install the new VSE refresh after you have received the material from IBM.

Handling Corrective Service (PTFs) at Your VSE Host

Corrective service for VSE can either be received through the Internet or on physical media, depending on the size of the service package.

If you receive corrective service on physical media, we recommend that you use the VSE Interactive Interface dialogs to install the service on your VSE system.

If you receive corrective service over the Internet, S/390 Service Update Facility offers you a function that uploads the service PTFs through the VSE system to a scratch tape. You can use this tape later to install the PTFs. This function does the following:

1. The order package is untersed at the workstation server

2. The untersed file is transfered to the VSESUF.PTF member of the VSE sublibrary PRIMARY.SUF.

3. A VSE/DITTO job is submitted that writes the member to a scratch tape in the format that is required for PTF installation.

   Note: You must mount a scratch tape on the tape drive used with the S/390 Service Update Facility before you start this function, otherwise it will fail when VSE/DITTO tries to write to that tape. The tape address is the one specified in the S/390 Service Update Facility setup dialog for your VSE host.

We recommend that you use the VSE Interactive Interface dialogs to install the PTFs from this generated installation tape.

Chapter 11. Creating a Profile for Your Orders

This chapter describes:

- How to setup one or more profiles that you use when you place orders for service.

- How to change a profile that you have already set up.

- How to delete a profile.

Setting Up a Profile for Placing Orders

You must set up a profile for yourself and within it define each host for which you want to order service. Users who are responsible for ordering service must have their own profiles that define them and the hosts for which they can order service.

To create a new profile for yourself and define your hosts, do the following:

1 With your browser, go to the S/390 Service Update Facility Customer Application Server home page on your OS/2 or Windows NT workstation server or on your OS/390 UNIX System Server.

The default URL is:

`http://your-IP-address/suf/html/suflogon.htm`

Where:

your-IP-address Is the Internet name or IP address of your Customer Application Server.

The Logon page will appear.

2 Make sure that the `User ID` and `Password` fields are blank.

3 Click on the **Setup** button.

The `Setup` page appears on your screen.

4 In the `SUF User ID` field, type a user ID that you want to use for this profile.

The user ID can be any string of up to 30 characters that you choose.

5 In the `SUF Password` field, type the password that you want to use for this profile.

A password can be any string of up to 14 characters that you choose.

6 Type the password again in the next field.

7 In the `Company Name` field, type the name of your company.

8 In the `IBM Customer Number` field, type your company's IBM customer number.

This is the number that identifies your company to IBM as a customer when you order IBM products and service.

9 In the `Customer Location` field, select the country in which your company is located.

Click on the up or down arrows to the right of the field until the name of your country appears.

10 Click on the **Create New** button.

This will reset the fields for defining a host.

11 In the `Host Nickname` field, type the name that you want to use for this host.

The nickname can be any 8-character name that you choose. It is only used to identify this host to the S/390 Service Update Facility program.

12 In the `Host Type` field, select the type of host.

Click on the up or down arrows to the right of the field until the type appears.

13 In the `User ID` field, type the user ID that is to be used for this host.

This is the user ID that you will use to communicate with the host system from the Customer Application Server.

14 In the `Password` field, type the password that is to be used for this host.

This is the password that you will use to communicate with the host system from the Customer Application Server.

Notes:

The password you enter will appear as asterisks (*) for security reasons.

If you change your password on your host, you **must** also change it here.

15 **For OS/390 and VM Hosts Using TCP/IP Only:** In the `TCP/IP Address or Name` field, type the TCP/IP host name or the IP address of this OS/390 or VM host.

16 **For OS/390 Hosts Only:** Do the following:

  a. In the `Global Zone` field, type the name of the OS/390 SMP/E global zone into which service is to be received.

  b. In the `High-Level Qualifier for SUF Data Sets` field, type the high-level qualifier to be used when uploading service orders.

  c. Optionally, in the `Volume` field, type the volume serial number of the OS/390 volume on which the service orders are to be placed.

    If you do not specify a volume, the orders will be placed on an available temporary storage volume.

  d. In the `SMP/E Host Data Set Name` field, type the name of the dataset that contains the S/390 Service Update Facility REXX EXECs supplied with OS/390 SMP/E.

    This is the fully-qualified dataset name. It can be up to 44 characters long.

    Note: The default for this data set name is *your-hlq*.**SGIMCLS0**.

  e. In the `Upload JCL` field, edit the JCL as described in the comments.

```
//USERIDx JOB (accounting info),'your name',
//     NOTIFY=&SYSUID,
//     MSGCLASS=x,
//     MSGLEVEL=(1,1),
//     REGION=8M
//* Modify the job card as required for your installation
//* using the following guidelines:
//* 1) The job name must be in the format USERIDx,
//*    where USERID is your TSO userid and x is a
//*    1-character letter or number.
//* 2) MSGCLASS must be set to a JES HOLD output class.
//* 3) MSGLEVEL should not be changed.
//* Also, the SYSOUT classes below must be left as
//* JES Hold output classes.
//TSO EXEC IKJACCNT
//SYSPRINT DD SYSOUT=(*),HOLD=YES
//SYSTSPRT DD SYSOUT=(*),HOLD=YES
//SYSTSIN  DD *
```

Notes:

> You must change USERIDx to the user ID that you specified for the User ID field in the Setup page above.

> **For JES2:** The spool files must be in a hold queue. You must set MSGCLASS to a JES2 HOLD output class (usually H).

> **For JES3:** The spool files must be in a hold queue reserved for external writers. You must set MSGCLASS to a JES3 HOLD output class that is designated HOLD=EXTWTR in the JES3 installation stream You might need to ask your system programmer for the JES3 class that you should use.

17 **For VSE Hosts Only:** Do the following:

   a. Select the type of communication:

   If this VSE host is using the LU2 communication protocol, check the Uses LU2 selection box.

   If this host uses APPC, check the Uses APPC selection box.

   If this host uses TCP/IP, check the Uses TCP/IP selection box.

   Note: **For APPC Users:** The name of the system must be the Symbolic_Destination_Name of the target host as defined in the IBM Access Feature for that host.

   b. In the Tape Address field, type the 3-digit address of the tape unit attached to your VSE host that you want to use.

   c. In the Serial Number field, type the serial number for your VSE system.

   Note: If you do not know your serial number, you can find it in the header of the Order Overview for a previous VSE refresh. The serial number is shown in the header with your customer information.

   d. The Program Number field is preset to 5960-VSE

   This field can be changed if the program number changes.

18 In the `Physical Delivery` field for this type of host, select the type of media for orders that are to be shipped on physical media.

Click on the up or down arrows to the right of the field until the media you want appears.

19 If required, type the shipping address to be used for shipping physical media.

20 Type the maximum size (in Megabytes) that orders can be for delivery over the Internet.

Note: The default is 200MB. However, IBM will not ship orders that exceed 1GB over the Internet. If your orders exceed the size you set or if they exceed 1GB, they will be shipped on the physical media you chose to the address you supplied above.

21 Select when you want your orders processed and uploaded to your host.

Order can be processed in one of two ways:

- When they are received.

  You are not concerned about the system load that order processing might cause when the order is received and processed.

  To process orders as they are received:

  a. Select the `Process orders when created` radio button.

- During a time period that you specify.

  You feel that the internal or external network traffic or the host activity created by S/390 Service Update Facility order processing might place an excessive load on your system during certain hours.

  To process orders during a specific time period:

  a. Select the `Receive Orders Between` radio button.

  b. Define a start time using the start hour and minutes boxes.

  c. Define an end time using the end hour end minutes boxes.

  For example, if you want order processing to occur between 5:00 PM local time and 6:30 AM local time, you would click the `Receive Orders Between` radio button and set the following times in the start and end boxes: 5pm 00 and 6am 30.

  Notes:

  The values you define here for order scheduling are defaults. You can override them temporarily when you place an order.

  Do not set an end time earlier than the start time.

  If an order is received after the end time, its processing is deferred until the start time.

  If an order is received within the start and end times, it is processed immediately. Therefore, in the previous example, an order received at 3:00 PM would wait two hours before it is processed, while an order received at 5:10 PM would be processed immediately, and an order received at 7:15 AM would wait all day.

Orders are processed until they are completed, cancelled, or rejected. If an order's processing extends beyond the end time, the order continues processing until it is complete..

22 **For Advantis ServiceLink Customers Only:**

You can use S/390 Service Update Facility to create and submit to IBM an OS/390 consolidated software inventory (CSI) (bitmap) or VSE History File of the software that is installed on your OS/390 or VSE hosts. This inventory or history file is used by IBM when you place an order for service through ServiceLink instead of using Service Update Facility /390.

To be ablt to submit a bitmap, do the following:

a. In the `Advantis ServiceLink Account Number` field, type your account number if you are a ServiceLink user.

b. In the `Advantis ServiceLink Account Code` field, type your account code if you are a ServiceLink user.

23 Click on the **Add** button.

24 Click on the **Add** button.

The host you just defined now appears in the `Defined Hosts` window.

25 To define additional hosts, repeat steps 10 through 23 for each host that you want to define in this profile.

26 When you are done with all of your hosts, click on the **Done with setup** button.

A confirmation window will appear.

Changing a Host Definition in a User Profile

To change a host definition in a user profile that you previously set up, do the following:

1 Go to the S/390 Service Update Facility Logon page.

2 Type the `User ID` and `Password` for the profile in which you want to change the host definition.

3 Click on the **Setup** button.

The S/390 Service Update Facility User Profile Setup page appears on your screen.

4 In the list of `Defined Hosts`, select the host whose definition you want to change.

The fields will display the information that is currently defined for the host you chose.

5 Change any other fields as needed.

6 Click on the **Done with setup** button.

A confirmation window will appear.

Deleting a Host Definition from a User Profile

To delete a host definition from a user profile, do the following:

1 Go to the S/390 Service Update Facility Logon page.

2 Type the User ID and Password of the profile from which you want to delete the host definition.

3 Click on the **Setup** button.

The S/390 Service Update Facility User Profile Setup page appears on your screen.

4 Select the host whose profile you want to delete in the list of Defined Hosts.

5 Click on the **Delete** button.

A confirmation window will appear.

Deleting a User Profile

To delete a user profile, do the following:

1 Go to the S/390 Service Update Facility page.

2 Type the User ID and Passwords of the profile that you want to delete.

3 Click on the **Delete** button.

A confirmation window will appear.

Chapter 12. Placing and Reviewing Orders

This chapter describes how to:

- Get to the S/390 Service Update Facility home page

- Place an order for service

- Review the status of orders

- **For OS/390 Host Only:** Create and submit a software description for ServiceLink

  Note: **For OS/390 Host Only:** If you are using ServiceLink to place orders for service, you can use the S/390 Service Update Facility to help you submit those orders. You can obtain and submit a SMP/E consolidated software inventory (CSI) (bitmap) of the software that is currently installed on your hosts. This bitmap will be used by ServiceLink to determine the service that it ships to you. ServiceLink will only ship the software that is downlevel based on the information in the bitmap. The bitmap is kept for 48 hours and then discarded. You must place your order through ServiceLink within that time period.

- **For OS/390 Host Only:** Obtain the latest OS/390 Enhanced HOLDDATA and sent it to your host.

Getting to the S/390 Service Update Facility Home Page

To go to the S/390 Service Update Facility home page, do the following:

1 **For VSE Hosts Only:** If your Customer Application Server uses IBM Personal Communication/3270 to connect to your VSE host, you must do the following before placing an order:

   a. Go to the Customer Application Server and sign on to the VSE Interactive Interface in **Session A.**

   b. Activate VSE file transfer support. Do one of the following:

   - Enter administrator fast path **386.**

     Or

   - Press PF6 or PF9 to escape to CICS.

2 At your workstation, use your browser to locate the URL of the S/390 Service Update Facility home page on the Customer Application Server.

The default URL is:

`http://your-IP-address/suf/html/suflogon.htm`

Where:

your-IP-address Is the Internet name or IP address of your Customer Application Server.

The Logon page will appear. Do one of the following:

- If you are a new user and you have not defined a profile or you are not using a profile that has been defined for you, you must define a profile to use. Click **Setup** button and continue with step 2. in Chapter 11.
- If you want to place an order for service, continue with step 1 in "Placing an Order for Service."
- If you want to review the status of an order, continue with step 1 in "Reviewing the Status of a Service Order" on page 85.
- **For OS/390 Hosts Only:** If you want to create and submit an SMP/E consolidated software inventory (CSI) of the software on your host that IBM will use for preparing service orders you plan to submit through ServiceLink, continue with step 1 in "Creating and Submitting a Software Description for ServiceLink" on page 86.

Placing an Order for Service

To place an order for service, do the following:

1 If the `User ID` field is empty or the default is not the one you want, type the user ID of the profile that you want to use for this order.

2 In the `Password` field type the password for the profile that you have chosen.

3 Click on the **Logon** button.

The `S/390 Service Update Facility` home page will appear.

4 On the `S/390 Service Update Facility` home page, click on the **Place Order** button.

The `Select Hosts` page appears.

5 Select the host for which you are placing this order in the `Defined Hosts` window.

6 Press the **Continue** button.

The `Select Service Type` page appears. Do one of the following:

- **For Preventive Service:** Continue with step 7.
- **For Corrective Service:** Continue with step 8.

7 For Preventive Service:

- **For OS/390 Hosts:** Do the following:
  - **a.** Select one or more target zones for which you are requesting service.
  - **b.** Press the **Preventive Service** button.

    The `Select OS/390 RSU` page appears.
  - **c.** Select the RSU that you want.

    Note: The recommended RSU for your host is preselected.
  - **d.** Press the **Continue** button.

    The `Select Delivery Method` page appears.

> e. Continue with step 9.

- **For VM Hosts:** Do the following:

  a. Press the **Preventive Service** button.

  The `Select VM RSU` page appears.

  b. The first list of products (products that are not at the current level) is preselected. You can deselect the entire list with the **Deselect All** button, and then optionally select individual products from the list. You can also select one or more products from the second list (products that are at the current level).

  > **Note:** You must select at least one product from either the first or second list.

  c. Press the **Continue** button.

  The `Select Delivery Method` page appears.

  d. Continue with step 9.

- **For VSE Hosts:** Do the following:

  a. Select the **Preventive Service** button.

  The VSE page will appear.

  b. Return to the VSE page.

  c. Enter the Refresh to order it.

  d. Press the **Continue** button.

  The `Select Delivery Method` page appears.

  e. Continue with step 9.

8 **For Corrective Service Only:** Specify the corrective service that you want. Do the following:

- **For VM Hosts Only:** Do the following:

  a. Select the **Corrective Service** button.

  The `Enter PTFs for Corrective Service` page appears.

  b. Type the number of the VM PTFs that you want in the entry box.

  > **Note:** Each PTF number is seven characters long. If you specify more than one number, you must separate each PTF with at least one blank.

  c. Select a service type in the `Service Type` window.

  Click on the up or down arrows to the right of the field until the service type you want appears.

  d. Type a service level in the `Service Level` field.

  > **Note:** A service level is four digits long.

  e. Press the **Continue** button.

  The `Select Delivery Method` page appears.

  f. Continue with step 9.

- **For All Other Hosts:** Do the following:

a. Select the **Corrective Service** button.

The `Enter PTFs for Corrective Service` page appears.

b. Type the number of the PTFs or APARs that you want in the entry box.

Note: You **cannot** mix PFT and APAR numbers in this box. You must order PTFs and APARs separately.

Each PTF and APAR number is seven characters long. If you specify more than one number, you must separate each PTF with at least one blank.

c. Press either the **All values denote PTFs** or the **All values denote APARs** button as appropriate.

d. Press the **Continue** button.

The `Select Delivery Method` page appears.

e. Continue with step 9.

9 Select the preferred delivery method.

Click on the up or down arrows to the right of the field until the method you want appears. The alternate delivery method is preselected as `None`. If you select none the order will not be sent to you if it cannot be sent by your preferred method.

For OS/390 and VM Orders Only: If you chose satellite as the preferred delivery method, include a routing code for Advanced Digital Delivery.

Note: Your order will be handled by Advanced Digital Delivery and sent to your Advanced Digital Delivery receiving workstation.

For VSE Orders Only: Preventive service is delivered only on physical media (tape or cartridge), there is no other option.

This page contains a link to the VSE home page that will provide you with descriptions of the latest refresh that is available.

You must provide a E-mail address at which you want to receive notification about your order.

10 Select when you want this order processed and uploaded to your host.

If you want to change the default shown for this order, you can do one of the following:

- Select the `Process order when created` radio button.
- Select `Process Order Between` radio button and set a start and end time in the start and end time boxes.

Note: Your choice here, will only change how this order is processed. If you must make a permanent change to the defaults shown, you must change the profile for this host on the Customer Application Server. Refer to Chapter 11 for instructions on changing this host profile.

11 Click on the **Submit Order to IBM** button.

A confirmation window appears.

12 In the confirmation window, click on the **OK** button.

The order is submitted to IBM, processed, and sent to your Customer Application Server.

The Order Submitted page appears, which describes the order.

If you want to cancel the order, click on the **Cancel Transfer** button while this page is on the screen. If this order is still being processed and has not been sent to you, it will be canceled.

Note: If the service order cannot be delivered using your preferred choice, it will be shipped to you using the alternate method if it is physical.

13 To return to the S/390 Service Update Facility home page, click on the **SUF Home** button at the bottom of the `Order Submitted` page.

Should you decide not to submit the current order, press the **Cancel** button to stop processing.

The **Go to Status** button displays the `Status` page that shows the status of any pending orders that you have already placed including the current order.

Reviewing the Status of a Service Order

To review the status of an order, do the following:

1 On the `S/390 Service Update Facility` home page, click on the **Go to Status** button.

The `Status` page will appear with a list of all the orders that are pending that match the filters that you might have set.

2 If you want to set filters to change the list, do the following:

a. Select either or both of these filters:

Active   Orders that are still being processed

Non-Active Orders that have been cancelled or have completed processing

b. Select one or more of these filters:

Internet Orders whose preferred shipping method is the Internet

Satellite Orders whose preferred shipping method is satellite using the Advanced Digital Delivery system

Physical Orders whose preferred shipping method is physical media

Notes:

If you do not select either **Active** or **Non-Active**, the default is to display both active and non-active orders.

If you do not select at least one of **Internet**, **Satellite**, or **Physical**, the default is to display all of them.

c. Click the **View These Orders** button and the list will redisplay showing the orders that meet the new criteria.

3 Select the order whose status you want to check from the list.

4 Click on the **View Detailed Status of Selected Order** button, and the Order Submitted page for that order will appear in the bottom frame of the page.

Creating and Submitting a Software Description for ServiceLink

You can use S/390 Service Update Facility to create and submit to IBM an OS/390 consolidated software inventory (CSI) (bitmap) or VSE History File of the software that is currently installed on your OS/390 or VSE hosts. This inventory or history file is used by IBM if you place an order for service through ServiceLink instead of using Service Update Facility/390. To submit a bitmap for use by ServiceLink, do the following:

1 On the S/390 Service Update Facility home page, click on the **Additional Services** button.

The Additional Services page will appear.

2 On the Additional Services page, click on the **ServiceLink Bitmap** button.

Note: The **ServiceLink Bitmap** button appears only if you provided your ServiceLink account number and code when you created your host profile.

The Select Hosts page appears.

3 Select the host for which you are placing this order in the Defined Hosts window.

4 **For OS/390 Hosts Only:** The Select Target Zones for ServiceLink page appears. Do the following:

  a. Press the **Continue** button.

  b. Select one or more target zones for which you are requesting service.

  c. Press the **Submit** button.

  The Order Submitted page appears, which describes the order.

5 **For VSE Hosts Only:** Do the following:

  a. Press the **Submit** button.

  The Order Submitted page appears, which describes the order.

6 Enter your order for service through ServiceLink as usual.

Your order will be delivered to you through ServiceLink.

Obtaining the Latest OS/390 Enhanced HOLDDATA

You can use S/390 Service Update Facility to obtain the latest OS/390 Enhanced HOLDDATA from the IBM OS/390 HOLDDATA Web site and send it to a specific OS/390 host. Based on when you received your last service, you can request HOLDDATA that covers the intervening time span. The data is updated daily, and you can obtain data for the last month, the last quarter, half, or full year.

To obtain HOLDDATA and send it to your, do the following:

1 On the S/390 Service Update Facility home page, click on the **Additional Services** button.

The `Additional Services` page will appear.

2 On the `Additional Services` page, click on the **OS/390 HOLDDATA** button.

The `Select Hosts` page appears.

3 On the `Select Hosts` page, do the following:

    a. You can click on the `Go to IBM's OS/390 Holddata Web Site` link and obtain information about the current HOLDDATA.

    b. In the `Select Host` field, select the host to which you want to send the HOLDDATA.

    c. In the `Select File` field, select the time span that you want the HOLDDATA to cover.

    d. Press the **Upload holddata text file to host** button.

    The HOLDDATA file for the time span you selected is uploaded to the host you selected.

Chapter 13. How to Install Service after They Are Received

This chapter describes how to install service after it has been uploaded to:

- An OS/390 host
- A VM host
- A VSE host

How to Install Service on an OS/390 Host

After service has been uploaded to your OS/390 hosts and unbundled, it is the responsibility of the person notified on each host to install the unbundled product or service. You can follow your usual background SMP/E APPLY and ACCEPT procedures to complete the installation.

How to Install Service on a VM Host

After service has been uploaded to your VM hosts and unbundled by the ITNVTSTR EXEC, it is the responsibility of the person notified on each host either to apply the unbundled service or to verify that automatically installed service was performed. The person notified is identified by **USERID** and **USERNODE** in the ITN PROFILE.

Note: After service has been automatically installed, you should examine the console output and any message logs that were created to determine whether the service installation was successful. In particular, if you received message VMFPSU1073I, you must rework the specified local modifications.

Orders for preventive service are installed automatically if the VM SYSSUF table entry for the product to which it applies has an `:INSTALL` value of `YES`. If preventive orders have an `:INSTALL` value of `NO`, they must be installed manually.

Orders for corrective service must be installed manually.

To process unbundled orders that are not automatically installed, do the following:

1 Access the **UNBUNDLE_DISK** in READ mode.

2 Examine the unbundled files to determine what action to take.

Table 5 (Page 1 of 2). Unbundled files

Description	Filename Suffix	Filetype	VMFPLCD Format	Command to Process
RSU	R	SERVLINK	yes	VMFSUFIN or normal RSU process
RSU List	S	DOC	no	Readable
COR Text-only Bucket	B	DOC	no	Readable

Table 5 (Page 2 of 2). Unbundled files

Description	Filename Suffix	Filetype	VMFPLCD Format	Command to Process
COR List	S	DOC	no	Readable
VMSES COR PTFs	V	SERVLINK	yes	VMFSUFIN or normal corrective service process
VMSES List	W	SERVLINK	yes	VMFPLCD LOAD
Non-VMSES PTFs	N	SERVLINK	yes	Product service EXEC
Non-VMSES List	P	SERVLINK	yes	VMFPLCD LOAD

3 Use the appropriate command specified in the Unbundled Files table to install the unbundled SERVLINK files listed.

4 After successful processing, update the DELETE PENDING file on the **DELETE_DISK** with the file name and type of the files to be deleted by the server the next time the ITNVTSTR EXEC is run to process an order uploaded from the workstation.

How to Install Service on a VSE Host

Preventive Service

Preventive service for VSE is delivered on physical media only. After you received the tapes from IBM, you can install the new refresh using the FSU process of the VSE system. The VSE Interactive Interface provides panels that will guide you through the installation process.

Corrective Service

You can receive corrective service from IBM on tape or over the Internet. If you receive corrective service over the Internet, you must first build an installation tape before you can install it on your VSE host. If you receive corrective service on tape from IBM, you can install it directly on your host. Do one of the following:

- **If you receive corrective service on tape:** Continue with the instructions in "Install the Corrective Service from Tape" on page 91.

- **If you receive corrective service over the Internet:** Continue with the instructions in "Build an Installation Tape for the Service Received from the Internet."

Build an Installation Tape for the Service Received from the Internet

If you have received the service through the Internet at your Web server, S/390 Service Update Facility provides a function to build a PTF installation tape for the files that your received. To prepare for creating a PTF installation tape, do the following:

1 At your VSE host, insert a scratch tape into the tape drive that you defined in your host profile for this host.

2 Mount the scratch tape and make sure that the device is ready.

3 At your workstation, go to the VSE page to start the S/390 Service Update Facility function to build the tape.

4 Continue with the instructions for installing from tape.

Install the Corrective Service from Tape
This step is independent of how you have received the corrective service (Internet or physical media). You either received the tape from IBM or you created it using the procedure described above. Once you have the installation tape, use the PTF installation dialogs provided by the VSE Interactive Interface to install the PTFs.

Chapter 14. Restarting the S/390 Service Update Facility Host Programs

Occasionally, you may need to start the S/390 Service Update Facility OS/390 or VM host programs. This can happen if:

- An order encounters an error during processing at the host and must be reprocessed.

- You did not choose to unbundle an order package (`UNBUNDLE` option was set to `NO`) when you uploaded it to your host.

Restarting the OS/390 Host Program

To restart the OS/390 host program to reprocess an order, start the ITNMMAIN EXEC from TSO within ISPF. This is usually option 6, Commands, on the ISPF main panel.

OS/390 Host ITNMMAIN Command

```
►►──EXEC──'your-prefix.SGIMCLS0(ITNMMAIN)'──────────────────────────────►

►──'prefix.order-number.PACKAGE─┬──────────────────────────────────────┬──'──EXEC──►◄
                                └─prefix.order-number.envelope-dataset-name─┘
```
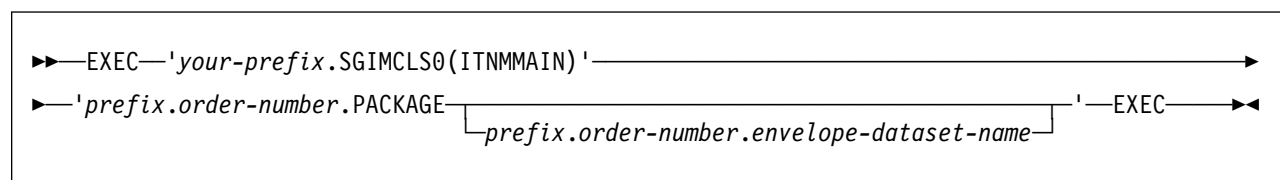
Figure 4. OS/390 ITNMMAIN Command Syntax

Where:

your-prefix.**SGIMCLS0(ITNMMAIN)**
>   Is the name of the EXEC. You must supply:

>   *your-prefix*
>>   This is the high-level qualifier you assigned to the SGIMCLS0 data set when you installed the host program from the installation tape.

prefix.*order-number*.**PACKAGE**
>   Is a required parameter that identifies the fully-qualified data set name of the package data set. You must supply:

>   *prefix*
>>   This is the high-level qualifier that you assigned to order packages when you configured the workstation program. It is specified in the `Package data set high level qualifier` field in the `Platform Information` page of the `Host` notebook.

>   *order-number*
>>   This is the order number assigned to the order package by IBM.

prefix.*order-number*.*envelope-dataset-name*
>   Is an optional parameter that identifies the fully-qualified data set name of the envelope data set. This parameter is required only if you have renamed the envelope data set supplied with the order. If you need this parameter, you must supply:

prefix
>This is the high-level qualifier that you assigned to order packages when you configured the workstation program. It is specified in the "Package data set high level qualifier" field of the *Host Add or Update* notebook for this host.

order-number
>This is the order number assigned to the order package by IBM.

envelope-dataset-name
>This is the data set name you assigned to the envelope. If you do not provide your own data set name, it will default to **ENVELOPE**.

The ITNMMAIN EXEC requires one parameter, the data set name of the package. The data set name of the envelope is optional. ITNMMAIN determines the data set name of the envelope by replacing the last qualifier of the package data set name with 'ENVELOPE'.

Example

For example, if the prefix for the SGIMCLS0 data set is TRANSJOB, the prefix for the order package is IBMORDER, and the number of the order that you want to reprocess is B0000175, you would enter the following on the TSO command line:

```
exec 'transjob.sgimcls0(itnmmain)' 'ibmorder.b0000175.package' exec
```

Restarting the VM Host Program

To start the VM host program to reprocess an order, use the ITNVTSTR command or the VMFSUFIN command, depending upon where the error occurred.

If a package was not unbundled or if an error occurred during ITNVTSTR processing, you must start ITNVTSTR and VMFSUFIN to install the service. Continue with the instructions "How to Start ITNVTSTR"

If an error occurred during VMFSUFIN processing, you need only start VMFSUFIN. Continue with the instructions in "How to Restart Automatic Service Installation after a VMFSUFIN Error" on page 95

Refer to the "VMSES/E Introduction and Reference" for a complete description of the syntax of these commands.

How to Start ITNVTSTR

To start ITNVTSTR and VMFSUFIN, do the following:

1 Re-issue the ITNVTSTR command that failed.

```
ITNVTSTR args
```

The VMFSUFIN command is automatically issued by the ITNVTSTR command.

How to Restart Automatic Service Installation after a VMFSUFIN Error

If an order cannot be automatically installed because of an error from VMFSUFIN, you can manually restart the installation process after correcting the error. Do the following:

1 Access the UNBUNDLE_DISK in Read mode.

2 Issue the VMFSUFIN command with the RESTART option.

```
VMFSUFIN prod-id%compname (NOPROMPT RESTART
```

Where:

prod-id%compname
>   Is the ID and component name of the product for which you wish to install service. This ID must match an entry in the VM SYSREST table.

The service install process will restart for the failing product at the step where it failed. If there were other products to process on the original invocation they will also be processed. The VMFSUFIN command can be issued for any of the original products to initiate the restart.

Note: If you choose to not restart a failed invocation of VMFSUFIN, you must remove the restart entry for the package from the VM SYSREST table. The VMFSUFIN EXEC will not process an order for a product if there is an outstanding restart record in the VM SYSREST table for the product.

Chapter 15. Obtaining Service Support from IBM for the S/390 Service Update Facility

If you encounter problems installing or using the S/390 Service Update Facility, you can call the IBM Support Center at 1-800-IBM-5511 (1-800-426-5511). Tell them your customer number (access code), and tell them the product identifier is "S390SUF."

Appendix A. Messages

This section describes the OS/390, VM, and VSE host messages that can appear. It also explains what you can do if you receive them.

S/390 Service Update Facility host program messages have eight-character message identifiers associated with them (e.g. ITN0001W). These message identifiers consist of three parts:

1. The first three characters are **ITN**. Messages with a different prefix or no prefix belong to a different product.

2. **For VM Messages Only:** The next three characters indicate the issuing module. They do not appear in the message numbers listed in this appendix.

3. The next four characters are a unique four-digit number.

4. The final character of the message code is a letter that indicates the type of message.

Type	Meaning	Return Code
I	Information	0
W	Warning	4
E	Error	8
S	Severe Error	12

OS/390 Program Messages

These messages are issued by the OS/390 host program.

Note: The messages issued by the SMP/E host program can be found in *OS/390 SMP/E Messages and Codes,* SC28-1738. These messages are prefixed by the letters "GIM."

ITN1000I   SUBMIT OF JOB FOR ORDER *order number* **WAS SUCCESSFUL.**

Explanation: Message is displayed when job that will execute the MVS host code is submitted.

User Response: No action required.

Destination:

- Message Log

ITN1001S   COULD NOT ALLOCATE *data set name* **FOR** *package format* **ORDER** *order number***.   RETURN CODE =** *return code***.**

Explanation: The data set could not be allocated. The return code was returned from the ALLOCATE command.

User Response: Read the job stream output to view all relevant data. After the problem is fixed, re-execute ITNMMAIN EXEC.

Destination:

- Message Log

ITN1002I UNBUNDLE of PACKAGE *package data set name* **FOR ORDER** *order number*
WAS NOT REQUESTED.

Explanation: The user elected not to unbundle the package.

User Response: No action required.

Destination:

• Message Log

ITN1003S COULD NOT UNTERSE PACKAGE *package data set name* **FOR** *package*
format **ORDER** *order number*. **RETURN CODE FROM TRSUNPCK IS** *return*
code

Explanation: The module that does the unterse of the package failed.

User Response: Look at the job output to determine the complete reason for the failure. If
necessary, contact your IBM service representative.

Destination:

• Message Log

ITN1005I ENVELOPE DATA SET *envelope data set name* **FOR** *package format* **ORDER**
order number **HAS BEEN DELETED.**

Explanation: The data set was successfully deleted as requested by the user.

User Response: No action required.

Destination:

• Message Log

ITN1006I PACKAGE DATA SET *package data set name* **FOR** *package format* **ORDER**
order number **HAS BEEN DELETED.**

Explanation: The data set was successfully deleted as requested by the user.

User Response: No action required.

Destination:

• Message Log

ITN1007I SMP/E RECEIVE FOR *package format* **ORDER** *order number* **WAS NOT**
REQUESTED.

Explanation: The user did not request an SMP/E RECEIVE be submitted.

User Response: No action required.

Destination:

• Message Log

ITN1008I THE SMP/E RECEIVE JOB HAS BEEN SUBMITTED FOR *package format*
ORDER *order number*.

Explanation: The SMP/E RECEIVE was submitted as requested.

User Response: No action required.

Destination:

• Message Log

ITN1009I   **UNBUNDLE COMPLETE FOR** *package format* **ORDER** *order number*. **THE FOLLOWING DATA SETS WERE IN THE PACKAGE:**

Explanation: The unbundle of the package was successful. All of the files are listed after the message.

User Response: No action required.

Destination:

- Message Log

ITN1010I   **THE PACKAGE DATA SET** *package data set name* **FOR** *package format* **ORDER** *order number* **IS NOT FOR MVS.**

Explanation: The MVS Host code was asked to unbundle a package that was not meant for MVS. No further processing is required.

User Response: Distribute the package as desired. The OPSYS keyword in the envelope shows the package's platform.

Destination:

- Message Log

ITN1011I   **THE MINIMUM REQUIRED LEVEL FOR THE PACKAGE IS** *envelope's version level*. **THIS IS HIGHER THAN THE CURRENT LEVEL,** *host code's version level*, **OF THE MVS PROGRAM. PROCESSING CONTINUES.**

Explanation: The MVS Host code's version level is older than the level used to create the package.

User Response: This is a problem only if the code fails later. If a failure occurs, install the latest version of the host code. Then, execute ITNMMAIN.

Destination:

- Message Log

ITN1012I   **THE SMP/E RECEIVE JOB WAS NOT SUBMITTED BECAUSE NEITHER AN SMPHOLD NOR AN SMPMCS DATA SET WAS PRESENT IN** *package format* **ORDER** *order number*

Explanation: SMP/E RECEIVE requires either an SMPHOLD or a SMPMCS data set. Neither was provided in the package.

User Response: No action required.

Destination:

- Message Log

ITN1013E   **FILE TAILORING FAILED, RETURN CODE =** *return code from file tailoring*. **RECEIVE FOR** *package format* **ORDER** *order number* **WAS NOT SUBMITTED.**

Explanation: The attempt to file tailor the RECEIVE job skeleton failed.

User Response: The job skeleton for the RECEIVE was probably incorrectly coded. If it is the IBM supplied skeleton, contact your IBM service representative. If it is locally written, correct the code. Since the unbundling process has completed, the job skeleton cannot be rerun to do an SMP/E RECEIVE. A RECEIVE job specific to the package must be written and submitted.

Destination:

- Message Log

ITN1014S   COULD NOT ALLOCATE *data set name* **FOR ORDER** *order number***. THE ALLOCATION RETURN CODE =** *return code*

Explanation: The envelope data set could not be allocated.

User Response: Look at the job output to determine the cause of the problem. After that has been resolved, execute ITNMMAIN as described in the User Guide.

Destination:

* Message Log

ITN1015I   WRITE TO MESSAGE LOG *message log data set name* **FAILED WITH RETURN CODE =** *return code***. PROCESSING CONTINUES.**

Explanation: The messages for the order were not written to the permanent message log.

User Response: Look at the job output to determine the complete reason for the failure. Since the job that displayed the message completed, there is no need to rerun it. However, the data set should be corrected so that messages associated with future orders can be saved.

Destination:

* Message Log

ITN1016E   ATTEMPT TO SUBMIT RECEIVE JOB FAILED FOR *package format* **ORDER** *order number***.**

Explanation: The SMP/E RECEIVE job was not submitted successfully.

User Response: This message does not mean that the SMP/E RECEIVE failed. The SMP/E RECEIVE was not attempted, because the job that was supposed to execute it failed. Look at the job output to determine the cause. If you have saved the JCL in a dataset, fix the JCL and re-submit the job. If you chose not to save the JCL (ITNMDEF variable SMPSAV set to 'NO'), then correct the member in your SGIMSENU dataset, and execute ITNMMAIN.

Destination:

* Message Log

ITN1017I   MVS PROGRAM INVOKED FOR ORDER *order number***.**

Explanation: First message displayed when primary MVS host code is executed.

User Response: No action required.

Destination:

* Message Log

VM Program Messages

These messages are issued by the VM host program.

ITN2000E   The variations of this message are explained below.

* **An insufficient number of input operands were specified for the invocation of this command.**

* **Unexpected data found after the closing parenthesis:** *command_line_data*

Explanation: An incorrect number of operands were specified on the command. Or, unexpected data was found after the closing parenthesis on the command.

User Response: Update the command and resubmit it. Check the command syntax for additional information.

ITN2000I *date time message_number* **The ITNVTSTR program has begun processing with the command:**

ITNVTSTR *args*

Explanation: This is the initialization message that the ITNVTSTR program was successfully initialized.

User Response: No action required.

ITN2001I **The variations of this message are explained below.**

- **Unbundle process starting on** *date* **at** *time* **for order** *order_number*

- **Unbundle process ending on** *date* **at** *time*

- *date time* **Order** *order_number* **file** *package_filename* **unpackaged file** *filename* **to** *target_disk/directory*

Explanation: These messages address the actual start and ending of the unbundling process.

User Response: No action required.

ITN2002I **The variations of this message are explained below.**

- **Delete process starting on** *date* **at** *time*

- **Delete process ending on** *date* **at** *time*

- *date time* **File** *filename* **deleted from** *target_disk/directory*

- **There are no requests for file deletion**

Explanation: These messages mark the start and ending of the file (ENVELOPE and PACKAGE) delete process.

User Response: No action required.

ITN2003I **The variations of this message are explained below.**

- **The ITNVTSTR program was unsuccessful**

- **The ITNVTSTR program was unsuccessful for order** *order_number*

- **The ITNVTSTR program was successful**

- **The ITNVTSTR program was successful for order** *order_number*

Explanation: These messages represent the concluding message for ITNVTSTR EXEC with regard to successful processing of a specific order.

User Response: If the order was processed unsuccessfully, then the user should investigate the cause of the failure.

ITN2004I **The following messages were issued:**

Explanation: This message is placed in the NOTIFY file to delimit the message section.

User Response: No action required.

Destination:

- Message Log

ITN2005I **Letter for** *order_format* **order** *order_number* **follows:**

Explanation: This message is used in the NOTIFY file and marks the start of the CUSTDOC data (order information).

User Response: No action required.

ITN2006I **The variations of this message are explained below.**

- **Archive process starting on** *date* **at** *time* **for order** *order_number*
- **Archive process ending on** *date* **at** *time*
- *date time* **Order** *order_number* **file** *filename* **archived to** *target_disk/directory*

Explanation: These messages mark the start and ending of the archive process.

User Response: No action required.

ITN2006W Archive will not be performed, since it maps to the A-disk

Explanation: Either an ITN PROFILE file or a command override is requesting archiving of the current order file, but the archive target is the user's current A-disk. This is not allowed.

User Response: Several actions can be taken by the user:

- Change the A-disk.
- Turn off archiving.
- Retarget the archiving.

ITN2007I **The variations of this message are explained below.**

   MESSAGES:

- **Install process starting on** *date* **at** *time* **for order** *order_number*
- **Install process ending on** *date* **at** *time*
- *date time* **Order** *order_number* **file** *package_filename* **installed**

Explanation: These messages address the actual start and ending of the install process.

User Response: No action required.

ITN2007W The variations of this message are explained below.

   MESSAGES:

- **Install process ending on** *date* **at** *time* **with warnings**
- *date time* **Order order_number file** *package_filename* **installed with warnings**

Explanation: The install process has completed with warnings from at least one of the called VMSES/E commands.

User Response: Review the console log and the VMSES/E message logs for the warning condition.

ITN2008E   The variations of this message are explained below.

> *MESSAGES:*
>
> - **An error was encountered installing order** *order_number*, **Rc =** *return_code*
>
> - **Install was not performed for order** *order_number* **because no service envelope files were found**

Explanation: Either an error condition was returned from one of the called VMSES/E commands or there was no service envelope to install.

User Response: If an error was encountered installing the order, review the console log and the VMSES/E message logs for the error condition. Correct the error, and restart the install process by entering the VMFSUFIN command for the failing product with the RESTART option. If no service envelope was found, contact your IBM Service Representative for assistance.

ITN2010E   The variations of this message are explained below.

> - **Option** *option* **was given an invalid value of (***value***)**
>
> - **An invalid option (***option***) was found**

Explanation: An ITN PROFILE file or a command option was specified with an invalid value. Or, an unknown option was specified.

User Response: Change the option or its value and resubmit the command.

ITN2011E   The variations of this message are explained below.

> - **An error occurred in PIPE** *pipe_name* **while reading the user profile** *filename*, **Rc =** *return_code*
>
> - **An error occurred in PIPE** *pipe_name*, **Rc =** *return_code*

Explanation: A Pipeline command with the specified name failed with the indicated return code possibly when trying to read the indicated file.

User Response: Contact your IBM service representative.

ITN2011W An error occurred in PIPE *pipe_name*, **Rc =** *return_code*

Explanation: A Pipeline command with the specified name failed with the indicated return code.

User Response: No user action is required, since this is just a warning of a failure for a non-critical command.

ITN2012E   Problems were encountered accessing directory *directory* **as mode** *access_mode {FORCERO|FORCERW}*, **Rc =** *return_code*

Explanation: The indicated directory could not be accessed.

User Response: Contact your system programmer for corrective action. The most probable cause is that space or authorization was not set up correctly for the indicated directory.

ITN2013E   Problems were encountered accessing minidisk *minidisk_address* **as mode** *access_mode*, **Rc =** *return_code*

Explanation: An error occurred when trying to access to indicated minidisk. The access return code is also supplied.

User Response: With the message information, attempt to perform error determination and correction. If successful, then re-issue the command; otherwise, contact your system programmer for further assistance.

ITN2014E The variations of this message are explained below.

- **A LINK attempt for** *minidisk_owner minidisk_address* **as** *link_address link_mode* **failed, Rc =** *return_code*

- **A LINK and ACCESS attempt for** *minidisk_owner minidisk_address* **failed**

Explanation: The indicated minidisk could not be properly linked and accessed.

User Response: Contact your system programmer to ensure that minidisk definitions and authorizations have been correctly set up.

ITN2015E The variations of this message are explained below.

- **No free modes are available to perform an ACCESS**

- **No free addresses were found in the range x'100' to x'5FF'**

Explanation: All available access modes or disk addresses (in the range x'100' to x'5FF') are in use.

User Response: Free up additional modes or addresses (in the required range); then retry the command.

ITN2016E The variations of this message are explained below.

- **COPYFILE error was encountered copying file** *from_filename* **to** *to_filename*, **Rc =** *return_code*

- **COPYFILE error was encountered copying file** *from_filename* **starting at record** *starting_index* **for** *number_of_records* **to** *to_filename*, **Rc =** *return_code*

Explanation: A COPYFILE error has occurred when copying all or a part of the indicated file from one file to another.

User Response: Ensure that there is sufficient space on the target disk to copy the file. Also, ensure that you are authorized to write to the target disk.

ITN2017I   Delete of file *filename* **was not done, since it was not found**

Explanation: An erase of the indicated file was requested, but the file was not found. Processing continues.

User Response: No action required.

ITN2017W ERASE error was encountered erasing file *filename*, **Rc =** *return_code*

Explanation: An expected file was not found when trying to erase it. A warning message is issued and processing continues.

User Response: No action required.

ITN2018E The variations of this message are explained below.

   MESSAGES:

- **A {DETERSE|TERSE} (UNPACK encountered an error with file** *filename*, **Rc =** *return_code*

- **Package unbundling requires a DETERSE MODULE or a TERSE MODULE, neither can be found**

Explanation: Either the DETERSE and TERSE modules are not available or an error occurred when attempting to run one of them.

User Response: Ensure that the DETERSE module or the TERSE module is available. Also ensure that there is sufficient space on the target disk to unbundle the package. If

---

problems have been encountered when running DETERSE or TERSE, contact your IBM Service Representative for additional assistance.

ITN2019W A SENDFILE error was encountered trying to send file *filename* **to** *user_target*, **Rc =** *return_code*

Explanation: A SENDFILE error occurred in trying to send the indicated file to the indicated user. The return code from this attempt is also displayed.

User Response: From the message information, attempt to correct the problem. If the problem can not be corrected, contact your IBM service representative. Since this message is a warning, it does not represent a serious processing problem. The real error is the probable loss of the NOTIFY file for this order.

ITN2020E   The variations of this message are explained below.

- **File** *filename* **can not be found, Rc =** *return_code*

- **Error occurred reading file** *filename*, **Rc =** *return_code*

- **No comment records were found in file** *filename*, **these contain the processing control information**

Explanation: A problem was encountered when attempting to access and read the indicated ENVELOPE file.

User Response: An apparent problem has occurred in the ordering process. Ensure that the ENVELOPE file is stored on the A-disk and is in a readable format. If the problem can not be corrected, contact your IBM service representative.

ITN2021E   The variations of this message are explained below.

- **Control section** *section_name* **in file** *envelope_filename* **must start with this keyword, followed by** *second_keyword*

- **Control section** *section_name* **in file** *envelope_filename* **must end with this keyword, followed by** *second_keyword*

- **Control record or section** *name* **is missing in file** *envelope_filename*

- **Control records or sections** *names* **are missing in file** *envelope_filename*

- **Control record or section** *name* **was found a second time in file** *envelope_filename*

- **No data was found between the** *section_name* **control records in file** *envelope_filename*

- **Control record** *name* **is missing data after the keyword in file** *envelope_filename*

- **Control record** *OPSYS* **has a value** *value* **that is different than** *VM* **in file** *envelope_filename*

- **Control record** *name* **is missing in file** *envelope_filename*

- **Control record** *name* **has a value** *value* **but** *value* **is expected in file** *envelope_filename*

- **Control record** *name* **has a value of** *value* **but a positive whole number was expected in file** *envelope_filename*

- **Control record** *VMFPLCD_FMT* **has a value of** *YES* **indicating that a filetype value of SERVLINK and not** *filetype* **was expected for record** *NAME* **in file** *envelope_filename*

- **A filename and filetype (2 values) are expected on a** *NAME* **record in file** *envelope_filename*

- **Record VMFPLCD_FMT had an invalid value of** *value* **specified in file** *envelope_filename*, **valid values are "***YES NO***"**

Explanation: An error exists in the structure of this order's ENVELOPE file.

User Response: Contact your IBM Service Representative for correction and retransmission of the order.

ITN2022I **The ITNVTSTR EXEC at level** *host_tool_level* **does not match the level that the order was packaged at** *packaging_level* **as specified in file** *envelope_filename*

Explanation: A mismatch exists between the current level of the VMSES/E ITNVTSTR EXEC and the packaging level of the transmitted files. Processing continues.

User Response: It is very likely that no action will need to be taken. If processing should fail, it may require upgrading the level of the packaged files, the tool or both.

ITN2023E **A mismatch exists in the number of packaged files as reported in file** *envelope_filename* **on the** *FILECNT* **record (***filecnt_value***) and the number of** *FILE* **sections (***file_sections_found***)**

Explanation: The number of FILE sections in the ENVELOPE file does not match the expected number of files as provided on the FILECNT record in this same file.

User Response: Contact your IBM service representative. Either or both of the ENVELOPE and PACKAGE files are in error.

ITN2024E **The** *package_filename* **package file contains** *number_of* **records, but only** *number* **of these records are referenced in the** *FILE* **section in file** *envelope_filename*

Explanation: There exists a mismatch in the number of records that exist in the PACKAGE file and those referenced by the ENVELOPE file. They need to match exactly.

User Response: Contact your IBM service representative. Either or both of the ENVELOPE and PACKAGE files are in error.

ITN2025E **The** *START* **record with a value of** *record_index* **for** *FILE packaged_filename* **does not point to the next package record of** *running_record_index* **in file** *envelope_filename*

Explanation: The ENVELOPE file contains information on the packaged files in the corresponding PACKAGE file. In this ENVELOPE file, each of the packaged files must have a START index. This value is compared to the end of the previous packaged file to ensure that the records are contiguous; otherwise, this error situation is flagged.

User Response: Contact your IBM service representative. Either or both of the ENVELOPE and PACKAGE files are in error.

ITN2026E **The** *RECORDS* **record with a value of** *number_of_records* **for** *FILE packaged_filename* **in file** *envelope_filename* **results in an index that is larger than the package file**

Explanation: The ENVELOPE file contains information on one of the packaged files with regards to the number of records that it contains. This data when coupled with the starting index of the packaged file would exceed the size of the PACKAGE file.

User Response: Contact your IBM service representative. Either or both of the ENVELOPE and PACKAGE files are in error.

ITN2027E When option *option_name* **is YES, then option** *second_option_name* **must be specified**

Explanation: The presence of the first option with the value of YES requires that the second option also be specified.

User Response: Either modify the processing PROFILE or supply a command option that changes the value of the first option or provides a value for the second option.

ITN2050E The variations of this message are explained below.

- **Error encountered in message processing**

- **The message repository could not be initialized**

- **An invocation message could not be issued**

Explanation: Either the ITNUME message repository could not be found or a requested message could not be issued from the repository.

User Response: It is possible that the ITNUME message repository text file does not exist or has been corrupted, or that the specific message does not exist. If this is the case, you can attempt to rebuild the text file from the source repository (REPOS) file. If the text file can not be rebuilt, contact your IBM service representative.

VMF1200E No {SERVICE|RESTART} record was found for product
              prodid **in table** *sysid* **{SYSSUF|SYSREST}.**

Explanation: A record for the specified product could not be found in the specified table. If the specified table is the SYSSUF table, the specified product is not installed and therefore cannot be serviced using VMFSUFIN. If the specified table is the SYSREST table, there is no interrupted VMFSUFIN install to restart for the specified product.

System Action: RC = 100. Processing is terminated.

User Response: Insure that the correct product was entered on the VMFSUFIN command. If not, re-enter the command correctly. If an installed product is not in the SYSSUF table, use the VMFSUFTB command to update the table, and then re-enter the command.

VMF1201E A [checkpoint] restart was found for
              {product *prodid*|**package** *package_name*}
              in table *sysid* **SYSREST. The interrupted invocation of**
              VMFSUFIN must be completed before a new one for
              {a common product|the same package} can be started.

Explanation: VMFSUFIN cannot install a service package if the SYSREST table contains a checkpoint restart record for one of the products specified on the VMFSUFIN command or if the SYSREST table contains any restart record for the specified package.

System Action: RC = 100. Processing is terminated.

User Response: Complete the interrupted invocation of VMFSUFIN by re-entering the VMFSUFIN command with the restart option. After the restarted invocation completes successfully, re-enter the original command. If you do not want to complete the interrupted invocation, you must delete the restart record from the VM SYSREST table using the VMFSIM MODIFY command, and then re-enter the original command.

VMF1202E The checkpoint restart data for package *package_name*
              in table *sysid* **SYSREST is not valid. The restart**
              {product *prodid*|**step** *step_name*}
              is not in the {product|step} list for this
              {package|product}.

Explanation: VMFSUFIN cannot restart the interrupted invocation due to the invalid data in the checkpoint restart record.

System Action: RC = 100. Processing is terminated.

User Response: If possible, correct the checkpoint restart record using the VMFSIM MODIFY command, and re-enter the VMFSUFIN command. Otherwise, the interrupted invocation of VMFSUFIN cannot be completed. Contact your IBM Support Center about this problem.

VMF1203E No service envelope name was specified.

Explanation: The VMFSUFIN command was invoked with neither the RSUENV option nor the CORENV option specified.

System Action: RC = 24. Command execution stops.

User Response: Invoke the command with the correct options.

VMF1204W Unable to copy file *fn* **$PPF from the A-disk to the
        Software Inventory Disk (D-disk).**

Explanation: The VMFSUFIN command could not copy the specified $PPF file to the Software Inventory Disk.

System Action: RC = 4. Processing continues.

User Response: Correct the problem, and then copy the specified $PPF file from the A-disk to the Software Inventory Dusk, and erase it from the A-disk.

**VMF1205E A {RSU|COR Bucket} service envelope name was specified
        on two calls using the same KEY option.**

Explanation: The VMFSUFIN command was invoked twice using the same KEY option, and either RSU or COR Bucket data was passed on both invocations. One invocation should pass the RSU data and the other should pass the COR Bucket data.

System Action: RC = 24. Command execution stops.

User Response: Invoke the command with the correct options, or contact your IBM Support Center about this problem.

**VMF1206I Service was not {installed|built} for product
        prodid because {:INSTALL|:BUILD}
        was not set to YES in the VM SYSSUF table.**

Explanation: VMFSUFIN uses the :INSTALL tag from the VM SYSSUF table to determine whether to install service for a product and uses the :BUILD tag to determine whether to execute the build steps when installing service.

System Action: Command processing continues.

User Response: If you wish to override the :INSTALL tag and process the bypassed product, enter the VMFSUFIN command with the FORCE option. If you wish to execute the bypassed build steps for a product, enter the appropriate VMFBLD commands as documented in the service instructions for the product.

VMF1207I There is no service for product *prodid* **on CORrective
        service envelope** *fn.*

Explanation: An RSU is being installed, and there is no service for this product in the CORrective service envelope received with the RSU.

System Action: The receive and apply steps for CORrective service are skipped, and the installation of the RSU continues.

User Response: None.

VMF1208I File *fn ft fm* **was empty and therefore was not created.**

Explanation: VMSES/E attempted to create *fn ft fm* but the file was empty. If the file previously existed, it was erased.

For file SUF OUT A, this condition can only occur if you have set the :INCLUDE tag to NO in the VM SYSSUF table for all of the products installed on your system.

System Action: RC = 0. Command processing continues.

User Response: None.

VMF1209W Service was not installed for product *prodid*
                  because the RSU contains PTFs that are excluded

Explanation: An RSU is being installed by the VMFSUFIN EXEC, and one or more of the PTFs on the RSU were found in an exclude list for this product. VMFSUFIN only uses the Preapplied-Prebuilt method of installing an RSU, and this method cannot exclude PTFs.

System Action: RC = 4 The RSU installation is terminated for this product, and the installation continues for any other products specified.

User Response: If the PTFs in the exclude list do not need to be excluded, remove them from the list, and re-enter the VMFSUFIN command for the product.

If the service instructions for this product document a PTFs-Only method of RSU installation, you can use that documented procedure to install the RSU while excluding PTFs.

VMF1210I The COR Bucket for this RSU, *fn* **DOC, is Text-Only.**

Explanation: The CORrective service bucket for the RSU being installed is Text-Only, and therefore has no PTFs to install.

System Action: RC = 0. Command processing continues.

User Response: Read the documentation in file, *fn* DOC, and respond accordingly.

VMF1211I Data for KEY *key* **has been stored in the Restart table**

Explanation: A VMFSUFIN command was issued with the KEY option, and since there was no record in the Restart table with KEY *key*, a record was created. This new record contains the service data that was specified on the VMFSUFIN command. VMFSUFIN will not install the specified service until a second VMFSUFIN command is issued with the same KEY. At that time service will be installed using the data specified on the command and the data in the restart record. The Service Update Facility uses this function to ship an RSU and its COR bucket separately but install them together.

System Action: RC = 0. Command processing completes.

User Response: None.

Appendix B. Updating Your Customer Application Server Code

When an update to the Customer Application Server code becomes available, you can reinstall it on your OS/2 or Windows NT workstation server or OS/390 UNIX System Server.

For OS/2 and Windows NT Users: If you are updating the Customer Application Server code on an OS/2 or Windows NT workstation server, you must use a dialog to install the code. Continue with the instructions in "Updating Customer Application Server Code Using a Dialog" below.

For OS/390 UNIX with X-Windows: If you are updating the Customer Application Server code on an OS/390 UNIX host server with X-Windows, you can use a dialog or UNIX command line prompts to install the code. Continue with the instructions in "Updating Customer Application Server Code Using a Dialog" or "Updating Customer Application Server Code Using Command Line Prompts."

For OS/390 UNIX without X-Windows: If you are using an OS/390 UNIX host server without X-Windows, you must us the UNIX command line to install the code. Continue with the instructions in "Updating Customer Application Server Code Using Command Line Prompts."

Updating Customer Application Server Code Using a Dialog

To update your Customer Application Server code using an installation dialog, do the following:

1 Download the updated Customer Application Server code using the instructions in Chapter 4.

2 Shut down your Web server and the Customer Application Server.

3 Reinstall the updated Customer Application Server code following the instructions in Chapter 5, Chapter 6, or Chapter 7 as appropriate.

4 Restart your Web server and the updated Customer Application Server.

Updating Customer Application Server Code Using Command Line Prompts

To update your Customer Application Server code using command line prompts, do the following:

1 Download the updated Customer Application Server code using the instructions in Chapter 4.

2 Shut down your Web server and the Customer Application Server.

3 At the command prompt, enter the following command:

```
export CLASSPATH=/u/userid/temp:$CLASSPATH
```

Where /u/userid/temp is the directory that contains the `setup.class` installation file.

4 Enter the following command to start installing the updated Customer Application Server code:

`java setup -o `*`suf-directory`*

Where:

suf-directory   Is name of the directory in which you intend to install the Customer Application Server code.

The following prompt appears:

```
InstallShield JavaTM Edition
Extracting installation code.........................................................done
Overwrite the following file?
 /u/userid/test/suf/license.txt
   1)     Yes
   2)   Yes to All
   3)     No
   4)   No to All
   5)   Cancel
Select choice [1 - 5] : 2
```

5 Always choose option 2.

`Select choice [1 - 5] : 2`

The following prompt appears:

```
Don't know enough about the IBM Corporation environment on OS/390 to create batch files
Some batch files were not automatically created
 There is one application in this package called
 suf.locks.SUFServer
 Please use this class name to start the application     OK     [RET to continue]:
```

6 Press the RET key.

The following prompt appears:

```
Would you like to change the location of where orders are placed until they are transferred
to a host?

 1 for yes, 0 for no -> 1
```

You current choice is shown.

7 If you want to keep the current location enter 0, and skip the next prompt.

If you want to change the location that receives your orders, enter option 1 and the following prompt appears:

```
Enter the location where orders can be placed until transferred to a host or
hit enter if you would like to use the default location of /u/userid/test/suf/suf

-> /u/userid/test/suf/mytemp
```

Your current path is shown.

8 Enter the new path.

The following prompt appears:

```
Would you like to change the IBM Center that is used to process your SUF orders?
 1 for yes, 0 for no -> 1
```

9 If you want to keep your current distribution center enter 0, and skip the next prompt.

If you want to change the distribution center, enter option 1 and the following prompt appears:

```
Select the IBM Distribution Center which should be used to process your SUS orders.
See the installation chapter in the SUF Users guide for assistance in selecting
the correct IBM Distribution Center.

1-Australia      2-Denmark        3-United States   0-Quit
-> 2
```

You current choice is shown.

10 Enter the new distribution center.

The following prompt appears:

```
Would you like to change the type of FTP proxy server which is used to access the
Internet?
 1 for yes, 0 for no -> 1
```

11 If you want to keep your current type of server enter 0, and skip the final prompt shown in step 14 on page 118.

If you want to change the distribution center, enter option 1 and the following prompt appears:

```
Do you use an FTP proxy or socks server to access the Internet?
 1 for yes, 0 for no -> 1
```

You current choice is shown.

12 Enter your new choice.

Enter 1 if you are changing to an FTP proxy or a socks server as a firewall through which you reach the Internet or enter 0 if you are changing to a direct connection to the Internet.

For a Direct Connection: The final prompt shown in step 14 on page 118 appears.

For a Firewall: The following prompt appears:

```
Select an FTP Proxy Server type:

1-Site Hostname       2-Transparent           3-User Without Logon
4-Socks               0-Quit
->   1
```

Your current choice is shown

13 Enter the an option for an FTP Proxy Server type.

The prompt that appears next depends on the option you enter. Do one of
the following:

- **For a Site Hostname Proxy:** Do the following:

    a. Enter option 1

    The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.ibm.com
```

    b. Enter a host name or an IP address for the proxy server.

    The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

    c. Enter a userid for that server.

    The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

    d. Enter a password for that server.

- **For a Transparent Proxy:** Do the following:

    a. Enter option 2

    The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

    b. Enter a userid for that host.

    The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

      c. Enter a password for that host.

- **For User without Logon Proxy:** Do the following:

      a. Enter option 3

      The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.xxx.com
```

      b. Enter a host name or an IP address.

- **For a Socks Proxy:** Do the following:

      a. Enter option 4

      The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> socks1.server.xxx.com
```

      b. Enter a hostname or IP address of the proxy server.

      The following prompt appears:

```
Enter the port that should be used to access the proxy server or
hit enter to use the default port of 1080.

->
```

      c. Press **Enter** to accept the default or enter the port number you are
using.

- **For an Anonymous at Host Proxy:** Do the following:

      a. Enter option 5

      The following prompt appears:

```
Enter the hostname or IP address of the proxy server.

-> someproxy.xxx.com
```

      b. Enter a host name or an IP address for the proxy server.

      The following prompt appears:

```
Enter the userid for the proxy server.

-> myuserid
```

c. Enter a userid for that server.

The following prompt appears:

```
Enter the password for the proxy server.

-> mypassword
```

14 The installation summary appears:

```
⋮
Installation is complete.
```

15 Restart your Web server and the updated Customer Application Server.

Appendix C. Testing Your Internet Connections

This appendix describes:

- How to evaluate whether your Customer Application Server will be able to communicate reliably over the Internet using FTP

- How to enable the FTP Partial File Transfer capability if your communication link is unreliable

- What to do if the test fails completely

- **For Windows NT Users Only:** How to test whether Order Scheduling will work on your server.

Evaluate Your Test Results

If you ran the TESTCON `Partial file transfer test`, do the following:

1 Evaluate your test results against the results shown in the following table to determine the performance you can expect:

Table 6. Evaluating the Results of the Communications Link Test (TestCon)

Percent of Tests Run Successfully	Indicated Performance
>= 40%	Normal performance - no anticipated problems communicating with the specified IBM Service Server.
>=10% to <40%	Fair performance - orders may frequently experience delays as a result of problems communicating with the specified IBM Service Server.
<10%	Poor performance - orders may frequently fail as a result of problems communicating with the specified IBM Service Server.
0%	Try these tests again at other times and on other days. If the tests continue to fail, your Internet connection is inadequate for the S/390 Service Update Facility.

2 If your link is unreliable or inadequate, refer to "What to Do If This Test Shows Fair or Poor Performance" on page 120 or "What to Do If This Test Fails Consistently" on page 120 for possible actions to take.

If your link performs reliably, you do not need to take any other actions. You are ready to test whether S/390 Service Update Facility Order Scheduling works on your Customer Application Server. Continue with the instructions in "Testing Whether Order Scheduling Will Work on Your Windows NT Server" on page 120.

What to Do If This Test Shows Fair or Poor Performance

If this test shows that your communication link can expect only fair or poor performance, you can enable the FTP Partial File Transfer capability of the Customer Application Server. This will attempt to resume sending a file that was interrupted because of a communications failure.

To enable FTP Partial File Transfer, do the following:

1 Change to the S/390 installation directory.

```
\suf
```

2 In the S/390 installation directory, edit the initialization file:

```
\DB\Private\SUFDB.CFG
```

3 Change the value of the FTP Resume Supported entry from "0" to "1."

```
FTP RESUME SUPPORTED=1
```

The default is "0" - off.

4 Save the initialization file.

After you have retested your communications link and your are sure that your link will perform reliably, you are ready to test whether S/390 Service Update Facility works on your Customer Application Server. Continue with the instructions in "Testing Whether Order Scheduling Will Work on Your Windows NT Server."

What to Do If This Test Fails Consistently

If this test fails consistently and shows that your server cannot communicate over the Internet with IBM, you should contact your local network specialist or Internet Provider to determine how to correct the problems.

After you have corrected the problems with your communications link and retested the link to ensure that it will perform reliably, you are ready to test whether S/390 Service Update Facility Order Scheduling will work on your Customer Application Server.

Testing Whether Order Scheduling Will Work on Your Windows NT Server

The S/390 Service Update Facility lets you choose when orders are uploaded and processed at your host. You can have orders processed as they are received or you can schedule order processing for a specific time period. However, Order Scheduling may not work correctly on some Customer Application Servers because of a Java date class problem on certain Windows systems. After you have installed the Customer Application Server, you can use the following test to determine whether Order Scheduling will work on your server.

1 Make sure that the Customer Application Server is running.

2 Type the following at a command line prompt:

```
java suf.database.OrderScheduler
```

3 The Order Scheduler will prompt you for a start time:

```
Enter start time
```

4 Using 24 hour format, enter a start time about 10 minutes later than the current local time shown on your system's clock.

For example, if the current time is 8:43 AM, you would enter 0853; however, if the current time is 8:43 PM, you would enter 2053.

The scheduler will prompt you for a stop time:

```
Enter stop time
```

5 Enter a stop time an hour after the start time.

From the previous example, if your start time was 0853, then enter a stop time of 0953.

After a few seconds, the scheduler will display:

```
Time Until Next Window  10
```

The value shown should be about 9 or 10 minutes. This is the number of minutes remaining until the one hour order processing window you specified begins. If this value is way off, Order Scheduling might not work as expected on your server. For example, if the value shown was 424, Order Scheduling would not work.

6 To stop the test program, type **Control-C**.

Note: In some cases even when this test fails, you might still be able to use Order Scheduling. Try starting the Customer Application Server using the Java `jre.exe` rather than the `java.exe` and then repeat this test.

To start the Customer Application Server with the jre.exe, you must specify the full classpath on the command line. For example: If you use the following command to start the server using the `java.exe`:

```
java suf.locks.SUFServer d:\data\sufjava\suf\database\jdbdir
```

Then you would use the following command to start the server using the `jre.exe`:

```
d:\winapps\jre116\bin\jre -classpath
  d:\data\sufjava;d:\winapps\jre116\lib\rt.jar suf.locks.SUFServer
  d:\data\sufjava\suf\database\jdbdir
```

Rerun the test. If the test is successful, you can use order scheduling. If the test fails again, you cannot schedule your orders, they must be handled as they are received.

Appendix D. Details of S/390 Service Update Facility Order Processing

This appendix describes:

- How the S/390 Service Update Facility works

- The details of the Customer Application Server order processing

- The details of the OS/390 host order processing

- The details of the VM host processing

    - VMFSUFTB processing
    - ITNVTSTR processing
    - VMFSUFIN processing

- The details of the VSE host order processing

- The details of the VSE host program order processing

    - How the workstation communicates to the VSE host
    - How orders for preventive service are processed
    - How orders for corrective service are processed

How the S/390 Service Update Facility Works

After the Customer Application Server has been set up and you have defined the hosts at your workstation, you can begin ordering service for your hosts.

The process for ordering and receiving service usually follows these steps:

1 When you place an order for service, you specify the host that is to receive it.

You can specify only one host with each order.

2 **For OS/390 Hosts Only:** You must specify the target zones for which you want to receive service.

3 You specify the type of service that you want to receive:

- **For Preventive Service:** For OS/390, specify the Recommended Service Update (RSU) that you want or for VM select the products for which you want service from the list of products that are installed in your host or for VSE specify the latest System Refresh.

- **For Corrective Service:** Specify the Program Temporary Fixes (PTF) that you want.

4 Select the preferred and alternate delivery methods.

5 Submit your order.

6 After you have submitted your orders to IBM, you can review their status.

Refer to Chapter 12 for information on submitting orders and reviewing their status.

7 Your order is received by IBM and processed.

8 Your order is prepared in two parts: a package that contains the service files and an envelope that describes the package. The individual service files in the package are first compressed (made smaller by tersing them) and then these compressed files are bundled into a single package file. The envelope file is not compressed or bundled and is browsable.

9 Depending upon the delivery method you select or the size of the package, the Customer Application Server retrieves the order from an IBM FTP server or it is delivered by alternate means.

10 The order is uploaded from the Customer Application Server to the host you specified in the order.

- **For OS/390 Hosts:** The OS/390 host program receives it, unterses it, unbundles it, and, optionally, receives it with an SMP/E RECEIVE job.

- **For VM Hosts:** The VM host program receives it, unterses it, unbundles it, and, optionally installs preventive service. You must install corrective service using standard VM installation procedures and tools.

- **For VSE Hosts - Corrective Service Orders Only:** The Customer Application Server receives the corrective service order, unbundles it, transfers the unbundled order to your VSE host and writes it to tape. You must install these orders from tape using standard VSE installation procedures and tools.

    For VSE Hosts - Preventive Service Orders Only: Orders for preventive service are delivered on physical media only. You install these orders from the physical media using standard VSE installation procedures and tools.

If you want to know more about how the S/390 Service Update Facility Customer Application Server handles your orders, you can refer to "Overview of the S/390 Service Update Facility Customer Application Server Order Processing."

Overview of the S/390 Service Update Facility Customer Application Server Order Processing

In general, this is the process for placing an order:

1. You start your browser on the OS/2 or Windows NT workstation or in the OS/390 UNIX session that you use to place orders.

2. You go to the S/390 Service Update Facility home page on the Customer Application Server.

    Contact is made through your intranet with the S/390 Service Update Facility Customer Application Server.

3. You choose to place an order.

4. You select the host for which you want to order service.

    For OS/390 Hosts Only: The Customer Application Server communicates through FTP with the OS/390 host you selected to get the list of target zones.

5. **For OS/390 Hosts Only:** You select the target zone on the host you selected.

6. You select the type of service (preventive or corrective)

   For OS/390 and VM Orders for Preventive Service Only: The Customer Application Server communicates through FTP with the IBM service server for the selected host to get the list of applicable RSUs.

   For VM Orders for Preventive Service Only: The Customer Application Server communicates through FTP with the selected host to get the list of installed products.

7. **For OS/390 Preventive Service Only:** You select the RSU level from the list of RSUs.

8. **For VM Corrective Service Only:** You select the service type and service level.

   For VM Preventive Service Only: You can select or deselect RSUs.

9. You select the delivery option.

10. You submit the order.

11. **For All OS/390 Orders Only:** The Customer Application Server communicates through FTP with the host to get the CSI (bitmap).

    For VSE Corrective Service Orders Only: The Customer Application Server communicates with the host to get the history file.

    The Customer Application Server communicates through FTP with the IBM service server to submit the order file.

    You receive an initial status that your order has been submitted.

12. Subsequently, you check the status of your order.

    For All Orders Except VSE Preventive Service Orders: The Customer Application Server communicates with the IBM service server to get the applicable status file.

    For VSE Preventive Service Orders Only: These orders provided on physical media only

    You receive a status that the order has been submitted.

13. The order is downloaded to the Customer Application Server.

    For All Orders Except VSE Preventive Service Orders: The IBM service server uses FTP to download the package and envelope to the Customer Application Server.

    You receive a status message that the order has been downloaded.

    For VSE Preventive Service Orders Only: The media is shipped to you.

    No additional status messages are provided.

14. The order is transferred to the designated host.

    For All Orders Except VSE Preventive Service Orders: The Customer Application Server communicates through FTP to send the package and envelope to the appropriate host to process the package and envelope.

    You receive a status message that the order has been transferred to the host.

    For VSE Preventive Service Orders Only: You receive the physical media and install the service on your VSE host.

15. The order is installed on the designated host.

For All Orders Except VSE Preventive Service Orders: You receive a final status message that the order has been transferred to your host.

If you want to know more about how the S/390 Service Update Facility handles orders for OS/390, VM or VSE hosts, you can refer to "Overview of the S/390 Service Update Facility OS/390 Host Order Processing," "Overview of the S/390 Service Update Facility VM Host Order Processing" on page 128, or "Overview of the Service Update Facility/390 VSE Host Order Processing" on page 129,

Overview of the S/390 Service Update Facility OS/390 Host Order Processing

OS/390 Host Order Processing

In general, this is the process for handling an order on an OS/390 host:

.

1. The user places an order from the S/390 Service Update Facility home page as described in Chapter 12.

From a host system perspective, no action occurs until the user selects the type of service they wish to order as described in step 6 in the "Placing an Order for Service" on page 82 section of Chapter 12.

2. When the user selects the type of service they want, the Customer Application Server sends a request to the OS/390 host to retrieve a list of the target zones within the SMP/E GLOBAL zone that was entered in the host profile for the system they wish to service. This information is passed to the host in a data set called *sufhlq.randommlq.*IN. This data set is transferred by FTP to the host SMP/E program that creates the list of target zones to be displayed at the browser.

The data set, `sufhlq.randommlq.`IN. is constructed by S/390 Service Update Facility as follows:

sufhlq
  Is the high-level qualifier entered in the browser by the user. If no value is entered by the user, S/390 Service Update Facility uses the OS/390 user ID as the high-level qualifier for this data set.

randommlq
  is the middle-level qualifier randomly generated by S/390 Service Update Facility.

IN is the low-level qualifier generated by S/390 Service Update Facility for the input data set.

The list of target zones displayed at the browser is created by the host SMP/E program and placed in a data set called *sufhlq.randommlq.*OUT. This data set is transferred by FTP to the customer application to display the list of selectable target zones at the browser.

The data set, *sufhlq.randommlq..*OUT. is constructed by S/390 Service Update Facility as follows:

sufhlq
> is the high-level qualifier entered OUT the browser by the user. If no value is entered by the user, S/390 Service Update Facility will use the OS/390 user ID as the high-level qualifier for this data set.

randommlq
> is the middle-level qualifier randomly generated by S/390 Service Update Facility.

OUT
> is the low-level qualifier generated by S/390 Service Update Facility for the output data set.

3. The user then selects the target zones they wish to service at the browser from the displayed list.

   Once the user selects the target zones they wish to service, the Customer Application Server builds the *sufhlq.randommlq.*IN data set. This data set is transferred by FTP to the OS/390 SMP/E program that creates a compact version of the service installed on the customer's system based on the input target zone information.

4. The compact version of the service installed on the customer's system is placed in a data set called *sufhlq.randommlq.*OUT. This data set is transferred via FTP to the customer application to be sent to IBM to process a custom-built service package.

OS/390 Host Flow of Control

When an order is uploaded from the receiving workstation, the OS/390 host program is invoked through TCP/IP. The host program does the following:

1. The ITNMTSTR EXEC starts ISPF and calls the ITNMSUB EXEC.

2. The ITNMSUB EXEC submits an ISPF file tailored startup job that unbundles the order. ITNMSUB displays a message if the job was successfully submitted. After the job is submitted, the TCP/IP connection with the receiving workstation ends.

3. The startup job starts ITNMSTRT, which recreates the ISPF environment, and starts the ITNMMAIN EXEC.

4. ITNMMAIN reads the ENVELOPE file to get information about the PACKAGE file.

5. ITNMMAIN unbundles and unterses the PACKAGE file into its original data sets with their original attributes.

6. Optionally, if you request it, the data sets are received using an SMP/E RECEIVE job.

7. Optionally, if you request it, a notification file, containing messages and the packing list, is sent to a user ID and node that you specify.

Overview of the S/390 Service Update Facility VM Host Order Processing

When you select VM preventive service on the workstation, a call is automatically made to the VMFSUFTB EXEC to gather data on the products that are installed on your VM host. This data is stored in the VM SYSSUF table on the System Inventory Disk. This EXEC can also be started manually by logging on to the host server and entering the VMFSUFTB command on the CMS command line. A brief outline of the processing done by the VMFSUFTB EXEC follows:

1. The VM SYSAPPS, VM SYSRECS, and VM SYSDESCT tables are read from the System Inventory Disk to obtain information on the installed products.

2. If an installed product is not in the VM SYSSUF table, an entry is added with the prodid, service level, description, install PPF, build PPF, and flags for include, install, and build.

3. If an installed product is already in the VM SYSSUF table, only the service level is updated.

4. If the FILE option is specified, an output file is created which is retrieved by the workstation code. If the value of the :INCLUDE tag for a product in the VM SYSSUF table is NO, the product is omitted from the output file and is therefore not known to the workstation code.

When the order is received by IBM, it is prepared in two parts: a package that contains the service files and an envelope that describes the package. The individual service files are compressed and then these compressed files are bundled into a single package file. The envelope file is not compressed or bundled and is browsable. The order is sent to the Customer Application Server from where it is uploaded to the host.

When an order is uploaded to the VM server's A-disk from the Customer Application Server, a call is automatically made to the ITNVTSTR EXEC to process the order on the host. This EXEC can also be started manually by logging on to the host server and entering the ITNVTSTR command on the CMS command line. A brief outline of the processing done by the ITNVTSTR EXEC follows:

1. The ITNVTSTR EXEC establishes the processing options.

2. If you wanted to delete previously ordered packages after they have been unbundled and installed, the EXEC deletes the requested packages.

3. If you wanted the ordered package unbundled, then:

   a. The EXEC reads the envelope file to get information about the package file.

   b. The package file is separated, as directed by the envelope file, into multiple files.

   c. Each of these files is untersed.

4. If you wanted to archive the order, the envelope and package files are copied to the archive disk.

5. If you wanted to clean up after the package was unbundled, then the envelope and package files are erased.

6. If you wanted the preventive order installed, the VMFSUFIN EXEC is called.

7. If you requested it, a NOTIFY file is prepared and sent to the user specified by the USERID and USERNODE processing options.

   The person notified that the order has been processed successfully should then continue with the instructions in "How to Install Service on a VM Host" on page 89 to install the unbundled order.

When a preventive order is processed by the ITNVTSTR EXEC, the VMFSUFIN EXEC is called to install the service. This EXEC can also be started manually by logging on to the host server and entering the VMFSUFIN command on the CMS command line. A brief outline of the processing done by the VMFSUFIN EXEC follows:

1. Establish the products to service and the processing options.

2. Do restart processing. This is controlled by the RESTART and KEY options and entries in the VM SYSREST table.

3. Loop through the specified products.

4. If the value of the :INSTALL tag for a product is NO, no service is installed for that product.

5. The product's environment is established by the VMFSETUP command with the LINK option using the PPF specified in the VM SYSSUF table. Read/write link authority to the product's disks must have been established during initial setup of the SUF/390 VM host program.

6. Service is received and applied for the product from the specified service envelopes, preventive (RSU) and/or corrective.

7. If the value of the :BUILD tag for a product is YES, the service is also built.

   Note: When VMFSUFIN builds the service for a product, it executes VMFBLD first with the STATUS option and then with the SERVICED option. If there are any special build steps for a product or any steps after VMFBLD with the SERVICED option they must be executed manually. You must read the service instructions for each product to determine what additional steps are required to complete the build.

8. If an error occurs, an entry will have been written in the VM SYSREST table which will allow a restart after the error condition has been corrected.

   Note: When VMFSUFIN completes you should examine the console output and any message logs that were generated to determine if the service installation is complete. In particular, if you receive message VMFPSU1073I, you must rework the specified local modifications.

Overview of the Service Update Facility/390 VSE Host Order Processing

Communication between SUF server and the VSE host

VSE offers you three different protocols for communication from your workstation server to your VSE host system:

- LU2 communication
- APPC communication
- TCP/IP communication

When S/390 Service Update Facility needs to query data from the VSE system, a VSE job is submitted to the VSE/POWER Reader queue. The job results are received from the VSE/POWER List queue and processed at the workstation server to extract the information S/390 Service Update Facility is looking for.

Handling Preventive Service (Refreshes) at Your VSE Host

A VSE refresh cannot be received over the Internet. Instead, VSE refreshes are delivered on physical media. The VSE refreshes can be installed using the VSE Interactive Interface dialogs.

Handling Corrective Service (PTFs) at Your VSE Host

Corrective service for VSE can either be received through the Internet or on physical media, depending on the size of the service package.

If corrective service is received on physical media, the PTFs can be installed using the VSE Interactive Interface dialogs.

If corrective service is received over the Internet, S/390 Service Update Facility uploads it through the VSE system to a scratch tape. The PTFs can be installed from this generated installation tape using the VSE Interactive Interface dialogs.

Appendix E. Contents of OS/390 Members ITNMDEF, ITNMISPF, ITNMUSER, and ITNMEXIT

This appendix describes the contents of ITNMDEF, ITNMISPF, ITNMUSER, and ITNMEXIT.

Contents of Member ITNMDEF

The ITNMDEF EXEC allows you to establish default values for variables that are used throughout ITNMMAIN. These should be values that are most commonly used. You can use the ITNMUSER EXEC to override these values for specific situations.

- You want orders to be unbundled and untersed automatically as they are received
- You want someone notified when orders are received
- You want an SMP/E RECEIVE job to be submitted automatically when an order is received
- You want to save the JCL from any SMP/E RECEIVE jobs.
- You want to use the following data sets provided by SMP/E or ISPF or created by the host program.
  - *hlq.mlq*.SGIMSENU
  - ITNMJOBC
  - ITNMSMPR
  - ITNMSTEP
  - ITNMSUBS
  - GIMUNPCK member of the SYS1.MIGLIB data set
  - SYS1.MIGLIB
- You don't want data sets created by the host program to extend across more than one volume.
- You will let the host program do the following for you:
  - Assign high-level qualifiers to any data set that it creates
  - Assign volumes to the data sets that contain the unbundled and untersed orders
  - Assign volumes to temporary data sets
  - Name of the start-up job "START"
  - Name of the SMP/E RECEIVE job "SMPRCV"
- You want the original bundled data sets to be deleted after they have been processed.

Figure 5 shows the ITNMDEF EXEC as provided. You must supply information for the variables shown in bold. You cannot omit a variable.

```
/*REXX*/
/********************************************************************/
/* ITNMDEF EXEC                                                     */
/*                                                                  */
/* THIS EXEC CONTAINS ALL DEFAULT VALUES FOR THE ADVANCED DIGITAL   */
/* DELIVERY HOST TOOL                                               */
/*                                                                  */
/* ALL VARIABLES MUST CONTAIN A VALUE.                              */
/*                                                                  */
/*                                                                  */
/* COPYRIGHT : THIS MODULE IS "RESTRICTED MATERIALS OF IBM"         */
/*           (C) COPYRIGHT IBM CORPORATION - 1995, 1996             */
/*           LICENSED MATERIALS - PROPERTY OF IBM                   */
/*           SEE COPYRIGHT INSTRUCTIONS, G120-2083                  */
/*           ALL RIGHTS RESERVED.                                   */
/*                                                                  */
/*  ADVANCED DIGITAL DELIVERY  VERSION 01.01.00                     */
/********************************************************************/
/*    SMP/E Change Activity                                         */
/*                                                                  */
/*                                                                  */
/* ----------------------------------------------------------------*/
/* FLAG REASON   RELEASE   DATE   ORG   DESCRIPTION                 */
/* ---- ------- ------- -------- ---   ----------------------------*/
/* $L1= SRF001B   1B.00  05/14/97 DMM: SERVICE UPDATE FACILITY      */
/*                                                                  */
/********************************************************************/
/*    CHANGE FLAG KEY: M@PNC                                        */
/*    WHERE:                                                        */
/*                                                                  */
/* M= MULTIPLE    P= DCRS = D,E,F,G   N= 0-9,A-Z   C= A = ADD       */
/*    FOR SUMMARY   RMPS = H,I,J,K   (USE '0' ONLY   C = CHANGE     */
/*    FLAGS         LINE = L,M,N,O    WHEN ELEMENT   P = COPY       */
/*                  PTMS = P,Q,R,S    IS BEING       M = MOVE       */
/*                  APARS = 0-9       CREATED)       D = DELETE     */
/********************************************************************/
CLEANUP = 'YES'                  /* SHOULD BUNDLED PACKAGE AND
                                    ENVELOPE DATASETS BE DELETED AFTER
                                    TOOL COMPLETES                */

DSNPREF = ''                     /* HIGH LEVEL QUALIFIER FOR ANY
                                    DATASET CREATED BY THE TOOL
                                    SET TO BLANK WILL DEFAULT TO
                                    HLQ IN PACKAGE NAME           */

GENVOLNO = '1'                   /* NUMBER OF GENERALLY AVAILABLE
                                    VOLUMES THAT A DATA SET CAN
                                    EXTEND ACROSS. SET TO ZERO IF
                                    NOT USED                      */

ITNMSLIB = 'hlq.mlq..SGIMSENU'   /* DATASET NAME OF PDS THAT CONTAINS
                                    JOB SKELETON FOR SMP/E RECEIVE */
```

Figure 5 (Part 1 of 3). ITNMDEF EXEC - Processing default values.

```
MSGLOG = 'hlq.mlq.llq'         /*PERMANENT MESSAGE LOG          */

NAMEJOBS = 'START'             /* JOB NAME OF STARTUP JOB       */

NAMEJOBR = 'SMPRCV'            /* JOB NAME OF SMP/E RECEIVE     */

NOTENODE = 'anynode'          /* NODE WHERE NOTIFICATION IS SENT */

NOTIFY = 'YES'                /* INDICATES THAT NOTIFICATION
                                 SHOULD BE SENT. YES OR NO.    */

NOTIFYID = 'any-userid'       /* USER'S ID WHERE NOTIFICATION IS
                                 SENT                          */

SKELJOB  = 'ITNMJOBC'         /* MEMBER IN SKELETON THAT CONTAINS
                                 JOB CARD ALL JOBS             */

SKELRECV = 'ITNMSMPR'         /* MEMBER IN SKELETON THAT CONTAINS
                                 SMP/E RECEIVE JOB             */

SKELSTEP = 'ITNMSTEP'         /* MEMBER IN SKELETON THAT CONTAINS
                                 JOB STEP FOR SMP/E RECEIVE JOB */

SKELSTRT = 'ITNMSUBS'         /* MEMBER IN SKELETON THAT EXECUTES
                                 ITNMSTRT                      */

SMPCSI = 'hlq.mlq.llq'        /* DATASET NAME OF SMP/E CSI     */

SMPDSN = 'hlq.mlq.llq'        /* DATA SET THAT STORES SMP/E RECEIVE
                                 JOB IF RE-SUBMIT MIGHT BE DONE */

SMPREC = 'YES'                /* SHOULD TOOL SUBMIT AN SMP/E
                                 RECEIVE ? YES OR NO.          */

SMPSAV ='YES'                 /* SHOULD THE JOB CREATED FOR THE
                                 SMP/E RECEIVE BE SAVED IN THE
                                 DSN IDENTIFIED IN SMPDSN ? YES OR
                                 NO. DATA SET CAN BE RE-SUBMITTED
                                 BY USER                       */

SPECVLNO = '0'                /* NUMBER OF SPECIFIC VOLUMES
                                 ASSIGNED TO TEMPORARY DATASETS.
                                 SET TO ZERO IF NOT USED       */

SPECVOL.1 = '0'              /* VOLUMES FOR TEMPORARY DATA SETS.
                                 DO NOT USE FOR SMS
                                 MANAGED VOLUMES. CANNOT BE
                                 ALTERED IN ITNMUSER           */

SPECUNIT = '0'               /* UNIT FOR SPECVOL. DO NOT USE
                                 FOR SMS MANAGED VOLUMES. CANNOT
                                 ALTERED IN ITNMUSER           */
```

Figure 5 (Part 2 of 3). ITNMDEF EXEC - Processing default values.

```
    TERSEDSN = 'SYS1.MIGLIB'         /* DATASET NAME OF PDS THAT CONTAINS
                                        UN-TERSING LOAD MODULE   @L1C   */

    TRSMEM  = 'GIMUNPCK'             /* MEMBER IN PDS THAT CONTAINS
                                        UN-TERSING MODULE        @L1C   */

    TRSVOL.1 = '0'                   /* VOLUMES FOR UNTERSE DATASETS.
                                        THIS IS OPTIONAL, AND CAN
                                        BE LEFT SET TO 0. DO NOT USE
                                        FOR SMS MANAGED VOLUMES          */

    TRSVOLNO = '0'                   /* NUMBER OF VOLUMES THAT UNTERSED
                                        DATA SET CAN EXTEND ACROSS.
                                        SET TO ZERO IF NOT USED          */

    TRSUNIT = '0'                    /* UNIT FOR TERSEVOL, DEFAULT
                                        IS '0'. NOT FOR SMS MANAGED
                                        VOLUMES                          */

    UNBUNDLE = 'YES'                 /* SHOULD TOOL UNBUNDLE PACKAGE, YES
                                        OR NO                            */

                                     /* STORE ALL VALUES                 */
    SCTR = 1
    DO WHILE SCTR <= SPECVLNO        /* WHILE THERE ARE TEMPORARY DATA
                                        SET VOLUMES                      */
     QUEUE SPECVOL.SCTR              /* PLACE VOLUME NAME ON QUEUE       */
     SCTR = SCTR + 1
    END
    TCTR = 1
    DO WHILE TCTR <= TRSVOLNO        /* WHILE THERE ARE UNTERSED DATA SET
                                        VOLUMES                          */
     QUEUE TRSVOL.TCTR               /* PLACE VOLUMENAME ON QUEUE        */
     TCTR = TCTR + 1
    END
                                     /* ENSURE UPPERCASE                 */

UPPER NOTENODE NOTIFYID DSNPREF UNBUNDLE SMPREC SMPCSI MSGLOG,
CLEANUP TERSEDSN ITNMSLIB SKELRECV TRSMEM,
SKELSTEP NOTIFY NAMEJOBR ITNMSLIB NAMEJOBS,
SKELJOB SKELSTRT SMPSAV SMPDSN;


"ISPEXEC VPUT (NOTENODE NOTIFYID DSNPREF UNBUNDLE SMPREC SMPCSI MSGLOG
 CLEANUP TERSEDSN ITNMSLIB SKELRECV TRSUNIT TRSMEM SPECUNIT TRSVOLNO)"

"ISPEXEC VPUT (SKELSTEP SPECVLNO GENVOLNO NOTIFY NAMEJOBR ITNMSLIB
 NAMEJOBS SKELJOB SKELSTRT SMPSAV SMPDSN)"

EXIT 0
```

Figure 5 (Part 3 of 3). ITNMDEF EXEC - Processing default values.

Contents of Member ITNMISPF

You must set the variables in ITNMISPF. These are the data sets that ITNMTSTR EXEC must use in order to establish an ISPF environment.

The figure below shows ITNMISPF as provided.

```
/*REXX*/
/******************************************************************/
/* ITNMISPF EXEC                                                  */
/*                                                                */
/* THIS EXEC ALLOWS THE USER TO SET THE DATA SET NAMES NEEDED TO  */
/* ESTABLISH AN ISPF ENVIRONMENT FOR THE ADVANCED DIGITAL DELIVERY */
/* HOST TOOL.                                                     */
/*                                                                */
/*                                                                */
/* COPYRIGHT : THIS MODULE IS "RESTRICTED MATERIALS OF IBM"       */
/*             (C) COPYRIGHT IBM CORPORATION - 1995, 1996         */
/*             LICENSED MATERIALS - PROPERTY OF IBM               */
/*             SEE COPYRIGHT INSTRUCTIONS, G120-2083              */
/*             ALL RIGHTS RESERVED.                               */
/*                                                                */
/*  ADVANCED DIGITAL DELIVERY  VERSION 01.01.00                  */
/******************************************************************/

ISPPLIB = hlq.mlq.llq                /* PANEL LIBRARY    */
ISPMLIB = hlq.mlq.llq                /* MESSAGE LIBRARY */
ISPSLIB = hlq.mlq.llq                /* SKELETON LIBRARY */
ISPTLIB = hlq.mlq.llq                /* TABLE INPUT LIBRARY */

RETURN ISPPLIB ISPMLIB ISPSLIB ISPTLIB
```

Figure 6. ITNMISPF EXEC - Specifiying ISPF data sets.

Sample Code in Member ITNMUSER

The ITNMUSER EXEC user exit allows you to adjust the MVS code to specific situations.

The ITNMUSER EXEC is shown here with sample code. This sample EXEC has the package format, the package routing code the envelope data set name, and the package data set name passed to it. You can write code to change default variables defined in ITNMDEF based on the values passed.

The figure below shows ITNMUSER as provided.

```
/*REXX*/
/******************************************************************/
/* ITNMUSER EXEC                                              */
/*                                                            */
/* USER'S EXIT EXEC. EXECUTED BY ITNMMAIN. THIS EXEC ALLOWS    */
/* THE USER TO UPDATE THE DEFAULT VALUES. ITNMMAIN EXEC WILL   */
/* ALWAYS CALL THIS EXEC. IF THE VALUES ARE TO BE CHANGED, THE USER*/
/* CAN SET THE NEW VALUE.                                     */
/*                                                            */
/* FOUR PARAMETERS ARE PASSED IN. THE USER CAN CREATE CODE BASED */
/* ON THEIR VALUES. THE PARAMETERS ARE:                       */
/*                                                            */
/*  1. PACKAGE FORMAT (E.G COR, CBPDO)                        */
/*  2. PACKAGE ROUTING CODE (E.G. USER'S NAME )               */
/*  3. ENVELOPE DATA SET NAME                                 */
/*  4. PACKAGE DATA SET NAME                                  */
/*                                                            */
/*  NOTE: SAMPLE CODE IS PROVIDED. IT HAS BEEN PLACED WITHIN   */
/*        COMMENTS.                                           */
/*                                                            */
/*                                                            */
/* COPYRIGHT : THIS MODULE IS "RESTRICTED MATERIALS OF IBM"   */
/*             (C) COPYRIGHT IBM CORPORATION - 1995, 1996     */
/*             LICENSED MATERIALS - PROPERTY OF IBM           */
/*             SEE COPYRIGHT INSTRUCTIONS, G120-2083          */
/*             ALL RIGHTS RESERVED.                           */
/*                                                            */
/*  ADVANCED DIGITAL DELIVERY  VERSION 01.01.00               */
/*                                                            */
/******************************************************************/

PARSE ARG FMT PKGROUT ENVNME PKGNME  /* RECEIVE PARAMETERS       */
"ISPEXEC VGET (NOTENODE NOTIFYID DSNPREF SMPREC SMPCSI UNBUNDLE
 CLEANUP TERSEDSN TRSUNIT TRSVOLNO GENVOLNO NOTIFY SMPDSN SMPSAV
 ITNMSLIB SKELRECV NAMEJOBR TRSMEM)"  /* GET ALL DEFAULT VALUES   */
```

Figure 7 (Part 1 of 2). ITNMUSER EXEC - A user exit example.

```
/* START OF SAMPLE CODE */

/*SELECT
    WHEN FMT = 'CBPDO' THEN
      DO
       UNBUNDLE = 'YES'
       SMPREC = 'YES'
       CLEANUP = 'YES'
       NOTENODE = 'CBNODE'
       NOTIFYID = 'BOB'
      END
    WHEN FMT = 'COR' THEN
      DO
       UNBUNDLE = 'YES'
       SMPREC = 'NO'
       CLEANUP = 'YES'
       NOTENODE = 'CORNODE'
       NOTIFYID = 'MARY'
      END
    OTHERWISE
      DO
       UNBUNDLE = 'NO'
       SMPREC = 'NO'
       CLEANUP = 'NO'
       NOTENODE = 'ANYNODE'
       NOTIFYID = 'JOE'
      END
    END                                                             */
/******************************************************************/
/* USE CODE BELOW IF SPECIFIC VOLUMES ARE ASSIGNED FOR THE        */
/* UNTERSED DATA SETS                                             */
/******************************************************************/
/*
TRSVOL.1 = 'VSAT01'
TRSUNIT = '3390'
TRSVOLNO = 1
TCTR = 1

DO WHILE TCTR <= TRSVOLNO
 QUEUE TRSVOL.TCTR
 TCTR = TCTR + 1
END                                                               */
                                    /* ENSURE UPPERCASE           */

UPPER NOTENODE NOTIFYID DSNPREF SMPREC SMPCSI UNBUNDLE,
TRSMEM NOTIFY SMPSAV SMPDSN CLEANUP TERSEDSN,
ITNMSLIB SKELRECV NAMEJOBR;

"ISPEXEC VPUT (NOTENODE NOTIFYID DSNPREF SMPREC SMPCSI UNBUNDLE
TRSMEM TRSUNIT TRSVOLNO GENVOLNO NOTIFY SMPSAV SMPDSN CLEANUP TERSEDSN
ITNMSLIB SKELRECV NAMEJOBR)" /* STORE ALL DEFAULT VALUES          */

EXIT 0
```

Figure 7 (Part 2 of 2). ITNMUSER EXEC - A user exit example.

Sample Code in Member ITNMEXIT

The ITNMEXIT EXEC user exit allows you to perform functions at the completion of the host program. It is called immediately before exiting from ITNMMAIN.

The ITNMEXIT EXEC is shown here with sample code. This sample user exit has the package format, the package routing code the envelope data set name, the package data set name, and the ITNMMAIN return code passed to it. You can write functions that can react to, or use, the values passed.

This sample code shown allows you to send the envelope and package data sets to a specific user.

The figure below shows ITNMEXIT as provided.

```
/*REXX*/
/*****************************************************************/
/* ITNMEXIT EXEC                                              */
/*                                                            */
/* FINAL USER'S EXIT EXEC. EXECUTED BY ITNMMAIN AFTER ALL     */
/* PROCESSING IS SUCCESSFUL.                                  */
/*                                                            */
/* THE FOLLOWING PARAMETERS ARE PASSED IN:                    */
/*                                                            */
/*  1. PACKAGE FORMAT                                         */
/*  2. PACKAGE ROUTING CODE                                   */
/*  3. ENVELOPE DATA SET NAME                                 */
/*  4. PACKAGE DATA SET NAME                                  */
/*  5. RETURN CODE FROM ITNMMAIN                              */
/*                                                            */
/*  NOTE: SAMPLE CODE IS PROVIDED. IT HAS BEEN PLACED WITHIN  */
/*        COMMENTS.                                           */
/*                                                            */
/*                                                            */
/* COPYRIGHT : THIS MODULE IS "RESTRICTED MATERIALS OF IBM"   */
/*             (C) COPYRIGHT IBM CORPORATION - 1995,1996      */
/*             LICENSED MATERIALS - PROPERTY OF IBM           */
/*             SEE COPYRIGHT INSTRUCTIONS, G120-2083          */
/*             ALL RIGHTS RESERVED.                           */
/*                                                            */
/*  ADVANCED DIGITAL DELIVERY  VERSION 01.01.00               */
/*                                                            */
/*****************************************************************/

PARSE ARG FMT PKGROUT ENVNME PKGNME RTC    /* RECEIVE PARAMETERS   */

"ISPEXEC VGET (NOTENODE NOTIFYID DSNPREF SMPREC SMPCSI UNBUNDLE
     CLEANUP TERSEDSN TRSUNIT TRSVOLNO GENVOLNO NOTIFY
     ITNMSLIB SKELRECV SKELJOB JOBNAME TRSMEM)" /* GET ALL DEFAULT
```

Figure 8 (Part 1 of 2). ITNMEXIT EXEC - A user exit example.

```
/* START OF SAMPLE CODE */

/* IF PKGROUT = 'SMP01VST' THEN /*SAMPLE CODE FOR XMITTING FILES TO VM*/
   DO
   ENV = "'"||ENVNME||"'"
   SAY 'ENV = ' ENV
    "XMIT (KGNVMC.FRANCE) DA("ENV") SEQ"   /* XMIT ENVELOPE       */
   PKG = "'"||PKGNME||"'"
   SAY 'PKG = ' PKG
    "XMIT (KGNVMC.FRANCE) DA("PKG") SEQ"   /* XMIT PACKAGE        */
   END                                                             */

EXIT 0
```

Figure 8 (Part 2 of 2). ITNMEXIT EXEC - A user exit example.

Sample JCL to Start the Java RMI Registry

You can use this sample JCL to start the Java rmi Registry.

```
//SUFINIT1 PROC
//STEP1 EXEC PGM=BPXBATCH,
// PARM='SH /usr/lpp/Java/J1.1/bin/rmiregistry',
// REGION=0M,TIME=NOLIMIT
//STDOUT DD PATH='/tmp/sufinit-stdout',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
//STDERR DD PATH='/tmp/sufinit-stderr',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
```

Figure 9. Sample JCL to Start the Java rmi Registry.

Sample JCL to Start the Customer Application Server

You can use this sample JCL to start the Customer Application Server.

```
//SUFINIT2 PROC
//DBDIR SET DBDIR='/usr/lpp/suf/db'
//STEP1 EXEC PGM=BPXBATCH,
// PARM='SH java -oss128M -mx128m suf.locks.SUFServer &DBDIR',
// REGION=0M,TIME=NOLIMIT
//STDOUT DD PATH='/tmp/sufinit-stdout',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
//STDERR DD PATH='/tmp/sufinit-stderr',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
```

Figure 10. Sample JCL to Start the Customer Application Server.

Sample JCL to Stop the Customer Application Server

You can use this sample JCL to stop the Customer Application Server.

```
//SUFSTOP PROC
//CMD1  SET CMD1='grep SUFServer'
//CMD2  SET CMD2='grep -v "grep SUFServer"'
//CMD3  SET CMD3='awk "{print $2}"'
//STEP1 EXEC PGM=BPXBATCH,
// PARM='SH kill -9  ps -ef ] &CMD1 ] &CMD2 ] &CMD3 ',
// REGION=0M,TIME=NOLIMIT
//STDOUT DD PATH='/tmp/sufstop-stdout',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
//STDERR DD PATH='/tmp/sufstop-stderr',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=SIRWXU
```

Figure 11. Sample JCL to Stop the Customer Application Server.

Appendix F. Contents of VM ITN PROFILE, and ITNVTSTR and ITNVUSER EXECs

This appendix describes the contents of ITN PROFILE, ITNVTSTR EXEC, and ITNVUSER EXECs.

Contents of ITN PROFILE

This is the ITN PROFILE as provided.

```
*********************************************************************
* ITN User Profile - Processing Definitions/Overrides              *
*********************************************************************
ARCHIVE         NO              * YES or NO
ARCHIVE_DISK    ITNSERVE.194 * Archive target
CLEANUP         NO              * Erase ENVELOPE/PACKAGE file
                                *   after unbundle
DELETE          YES             * YES or NO
DELETE_DISK     ITNSERVE.193 * Location of delete pending requests
UNBUNDLE        YES             * YES or NO
UNBUNDLE_DISK   ITNSERVE.192 * Unbundling target
USERID          ITNSERVE     * Userid or nickname to notify
USERNODE                        * Nodeid of userid to notify
```

Figure 12. Contents of the ITN PROFILE.

Sample Code for the ITNVUSER EXEC User Exit

The ITNVUSER EXEC user exit allows you to adjust the VM code and order data to specific situations. This sample EXEC has the package format and the package routing code passed to it, and the defaults are reset depending on which format and routing code is passed. CMS Pipelines are used to get and set tool data.

You define your own ITNVUSER EXEC and place it on a disk that is available to the server when ITNVTSTR EXEC is running.

The ITNVUSER EXEC is shown here with sample code.

```
/*******************************************************************/
/* ITNVUSER EXEC                                                */
/*                                                             */
/* Two parameters are supplied as input:                       */
/*   - Package Format (eg., COR, ESO, RSU)                      */
/*   - Package Routing Code (eg., user's name)                  */
/*                                                             */
/* The user develops code for this exec based on the parameter  */
/* values supplied as well as from other data in the active     */
/* ITNVTSTR exec available via CMS Pipelines.                   */
/*                                                             */
/*******************************************************************/

Parse Arg format routing_code               /* Receive parameters  */

'PIPE (END ?)',                             /* Get additional data */
  '? VAR OPTION.0USERID   1 | VAR USERID',   /*  - notify user      */
  '? VAR OPTION.0USERNODE 1 | VAR USERNODE', /*  - notify node      */
  '? VAR ENVELOP.0ORDER     | VAR ORDER'     /*  - order number     */

If order = 'B1234567' Then Do               /* Notify reset        */
  userid  = 'SAM'
  usernode = 'VMESA001'
End

'PIPE (END ?)',                             /* Update data         */
  '? VAR USERID   | VAR OPTION.0USERID 1',   /*  - notify user      */
  '? VAR USERNODE | VAR OPTION.0USERNODE 1'  /*  - notify node      */

Exit 0
```

Figure 13. ITNVUSER EXEC - A user exit example.

Variables Set in ITNVTSTR EXEC

Significant REXX variables that are defined and used by the ITNVTSTR EXEC are presented here. They are accessible to the user exits using CMS Pipelines.

These are the variables set in the ITNVTSTR EXEC as provided.

```
Information extracted from an ENVELOPE file:
    envelop.0             - number of ENVELOPE records
    envelop.i             - specific ENVELOPE record
    envelop.0format       - order format
    envelop.0host_vrm     - packaging level
    envelop.0order        - order number
    envelop.0opsys        - target operating system
    envelop.0prc          - routing code for user exit
    envelop.0custdoc.0    - number of custdoc records
    envelop.0custdoc.i    - specific custdoc record

    envelop.0file_list.0bundle_info.0bundmeth - bundling method
    envelop.0file_list.0bundle_info.0filecnt  - bundled file count

    envelop.0file_list.0file.0           - file counter
    envelop.0file_list.0file.i.0filenum     - file index
    envelop.0file_list.0file.i.0name        - bundled file name
    envelop.0file_list.0file.i.0vmfplcd_fmt - vmfplcd file flag
    envelop.0file_list.0file.i.0start       - file start index
    envelop.0file_list.0file.i.0records     - file size

Processing task switches (YES or NO):
    option.0archive       - Archive envelope/package
    option.0cleanup       - Delete order from A-disk
    option.0delete        - Handle unbundle deletes
    option.0unbundle      - Unbundle request flag

Processing disk targets (userid.address or directory_id):
    option.0archive_disk  - Address of archive disk
    option.0delete_disk   - DELETE PENDING disk address
    option.0unbundle_disk - Disk to unbundle to

Processing notification information:
    option.0userid        - Notify this user
    option.0usernode         at the following node
```

Figure 14. REXX Variables Used in ITNVTSTR EXEC

Index

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In the U.S.A.

Do the following:

1 Call the IBM Support Center, 1+800+237-5511. You will first connect with a voice menu. Press **0** at any time to connect with a customer service representative.

2 Tell the customer representative your customer number (access code). If you do not have a customer number, use **S390SUF** as your generic customer number or access key.

3 The customer representative will ask you if this is a new or an existing problem. Answer:

- **New** if this is the first time you have called about this problem.
- **Existing** if you have a problem management record (PMR) number already assigned to the problem.

    Note: Make sure you have your PMR number available.

4 The customer representative will ask you what software application operating system you are using. Answer "My product ID is **S390SUF**."

Note: Do not answer the operating system question, and if the representative says hold on while he transfers you to Socrates for the PS Support family entitlement, stop him! Tell him you want to use the product ID and that you do not want to be transferred to Socrates.

5 Give the customer representative your name, address, phone number, and a description of the problem. The customer representative will generate your PMR and queue it to S390SUF.

6 Hang up and wait for a call back.

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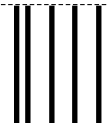Name   Address
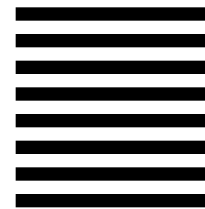
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