



**Program Directory for
IBM WebSphere Host On-Demand
Version 8
at maintenance level V8.0.2 for OS/390 and z/OS**

V08.00.02

Program Number 5733-A59

FMIDs HHOJ800

for Use with
OS/390 V2.10.00
z/OS V1.01.00 and higher

Document Date: February 2004

GI10-3276-00

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page vii.

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements.

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1.0 Introduction

This Program Directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of IBM WebSphere Host On-Demand V8 for OS/390 and z/OS. This publication refers to IBM WebSphere Host On-Demand V8 for OS/390 and z/OS as Host On-Demand.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for Host On-Demand.
- 3.0, “Program Support” on page 11 describes the IBM support available for Host On-Demand.
- 4.0, “Program and Service Level Information” on page 13 lists the APARs (program level) and PTFs (service level) incorporated into Host On-Demand.
- 5.0, “Installation Requirements and Considerations” on page 17 identifies the resources and considerations required for installing and using Host On-Demand.
- 6.0, “Installation Instructions” on page 27 provides detailed installation instructions for Host On-Demand. It also describes the procedures for activating the functions of Host On-Demand, or refers to appropriate publications.

Before installing Host On-Demand, read the Program Directory and keep for future reference. Section 3.2, “Preventive Service Planning” on page 11 tells you how to find any updates to the information and procedures in this Program Directory.

Do not use this Program Directory if you are installing Host On-Demand with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the Program Directory as required.

This program directory is being maintained as a 'living document' that contains up-to-date program and service level information. Please always reference the latest level of the Program Directory. You can find the latest level at the Host On-Demand **InfoCenter** at the following URL:

<http://www.ibm.com/software/webservers/hostondemand/library/>
(continued): v8infocenter/

this site also includes all the product documentation, a search function, tutorials, white papers, and a link to Hints and Tips.

1.1 Host On-Demand Description

IBM WebSphere Host On-Demand is for customers who wish to provide easy, cost-effective host access with security to users in intranet and extranet-based environments. It enables businesses to extend the reach of their host applications and data to new users, including business partners, suppliers, and sales personnel.

Host On-Demand gives users secure browser access to host applications and data, with Web browser-based emulation. With support for TN3270E, TN5250, VT52/100/220, and CICS applications included in a single package, users need to learn only one interface to reach key host data. Because Host On-Demand is Java based, users in different operating environments get the same look and feel, and identical feature set.

Host On-Demand is installed on the host and the Host On-Demand applet is downloaded via a Web URL to the users' Web browser. The Host On-Demand cached client will reduce download and user idle time, enhance productivity, and help save significant expense in product deployment and maintenance. Host On-Demand works with IBM Screen Customizer, providing customized GUI screens in place of "green screens" to help simplify the user experience for users who may be unfamiliar with or prefer not to use the traditional host green screens.

A rich Java toolset, including Host Access Beans for Java and the API, can enable customers to rapidly create custom e-business applications to achieve a competitive advantage. Because Host On-Demand is part of the WebSphere family, applications developed using the toolset can be incorporated into other WebSphere software projects, helping preserve your Host On-Demand investment and helping provide a quick start to the Web and e-business.

Host On-Demand is recommended for installations that require low-cost centralized deployment, easy, centralized administration, and support for a broad range of client and server platforms.

Please order the latest service updates (PTF UA08622, UA08624, & UA08625) that will bring your Host On-Demand product up to the latest maintenance level (V8.0.2) via your normal service process. Please see section 4.0, "Program and Service Level Information" on page 13, for more information on the latest service level.

1.2 Host On-Demand FMIDs

Host On-Demand consists of the following FMIDs:

HHOJ800

2.0 Program Materials

An IBM program is identified by a program number. The program number for Host On-Demand is 5733-A59

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by Host On-Demand. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is magnetic tape. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 27 for more information about how to install the program.

Figure 1 describes the physical tape. Figure 2 describes the file content.

<i>Figure 1. Basic Material: Program Tape</i>			
Medium	Physical Volume	External Label	VOLSERs
3480 Cart.	3	IBM WebSphere Host On-Demand V8	HOJ800 (1 of 3), HOJ801 (2 of 3), HOJ802 (3 of 3)

Figure 2 describes the program file content for Host On-Demand.

Notes:

1. The data set attributes in this table should be used in the JCL of jobs reading the data sets, but since the data sets are in IEBCOPY unloaded format, their actual attributes may be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

<i>Figure 2 (Page 1 of 2). Program File Content</i>				
Name	O R G	R E C M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400

Figure 2 (Page 2 of 2). Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HHOJ800.F1	PS	VS	8816	8820
IBM.HHOJ800.F2	PS	VS	6160	6164
IBM.HHOJ800.F3	PS	VS	32620	32624

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Host On-Demand.

2.3 Program Publications

The following sections identify the basic and optional publications for Host On-Demand.

2.3.1 Basic Program Publications

Figure 3 identifies the basic unlicensed program publications for Host On-Demand. The publications are in softcopy form and can be accessed by following the information following:

Figure 3 (Page 1 of 2). Basic Material: Unlicensed Publications

Publication Title	Form Number
<i>Planning, Installing, and Configuring</i>	N/A
<i>Readme</i>	N/A
<i>Host Printing Reference</i>	N/A
<i>Session Manager API</i>	N/A
<i>HOD Macro Programming Guide</i>	N/A
<i>Web Express Logon Reference</i>	N/A
<i>Trouble Shooting Guide</i>	N/A
<i>Programmable HOD Reference</i>	N/A
<i>Toolkit Getting Started</i>	N/A
<i>J2EE Connector</i>	N/A
<i>Host Access Class Library</i>	N/A

Figure 3 (Page 2 of 2). Basic Material: Unlicensed Publications

Publication Title	Form Number
Host Access Beans for Java	N/A

The main Host On-Demand publication is *Planning, Installing, and Configuring* which details installation (for non z/OS operating systems), configuration (all operating systems), and administration (all operating systems). The publications are included in soft copy form (HTML and PDF) with the product and are viewable from your browser once the product has been successfully installed using the URL format listed below:

- Host On-Demand Online Documentation:
 - <http://<server name>/<webserver alias>/<language>/doc/>

where **<server name>** refers to your OS/390 or z/OS server's TCP/IP host name, **<webserver alias>** refers to your web server's Pass Rule alias (look in your **/etc/httpd.conf** file in the Pass Rule section - default is **hod**), and **<language>** refers to your installed language prefix (ie., **en** for English, **de** for German, etc.). Two tables follow which list all the supported languages, publication availability and their associated prefix. An example of a URL to point to the English language Host On-Demand *Planning, Installing, and Configuring* is:

<http://mvs048/hod/en/doc/install/install.html>

The publications are also available from the Host On-Demand product **InfoCenter**:

<http://www.ibm.com/software/webservers/hostondemand/library/>
(continued): [v8infocenter/](#)

this site also includes all the product documentation, a search function, tutorials, white papers, and a link to Hints and Tips.

Note: Host On-Demand V8 requires the addition of *PASS RULES* added to your configuration file for your HTTP web server. Without these PASS RULES added to your web server, you will not be able to view the online documentation as well as execute functions within Host On-Demand. Typically, the configuration file is named **httpd.conf** and is typically found in your **/etc** directory in UNIX System Services. Listed below are the complete set of *Pass Rules* that you should have to successfully execute Host On-Demand V8. Please verify that the following *Pass* statements exist in your **httpd.conf**.

There is a new Pass Rule that was added for Host On-Demand V8. The first Pass Rule in the following list was added if your users will be using a Web Start client. The passrule is required to enable Web Start to work with a zSeries host. Please also make sure that the statements are listed in the following order:

```
# *** ADD NEW PASS RULES HERE ***

Pass /hod/*.jnlp /usr/lpp/HOD/hostondemand/HOD/*.jnlp.ascii
Pass /hod/*.html /usr/lpp/HOD/hostondemand/HOD/*.html.ascii
Pass /hod/*.HTML /usr/lpp/HOD/hostondemand/HOD/*.HTML.ascii
Pass /hod/*.js /usr/lpp/HOD/hostondemand/HOD/*.js.ascii
Pass /hod/*.properties (continued on next line)
    /usr/lpp/HOD/hostondemand/HOD/*.properties.ascii
Pass /hod/*.props /usr/lpp/HOD/hostondemand/HOD/*.props.ascii
Pass /hod/* /usr/lpp/HOD/hostondemand/HOD/*
```

It is extremely important that the *Pass* statement "Pass /hod/* /usr/.." is the last *Pass* rule encountered. If this is not the last statement, problems will occur when you try to access Host On-Demand *htmls* and online publications.

The following resource mapping directives should also be included among the other rules in the *AddType* section of the Web Server configuration file. A new *AddType* statement was also added for Host On-Demand V8 to support the new Web Start client. The new *AddType* is the first one below, the other *AddTypes* were added in past releases.

```
AddType .jnlp application/x-java-jnlp-file 8bit 1.0
AddType .cab application/octet-stream binary 1.0
AddType .jar multipart/x-zip binary 1.0
```

Figure 4 identifies the supported languages and the associated language prefix that you use in the URLs mentioned previously to access the *Readme*, *Planning*, *Installing*, and *Configuring (PIC)*, *Host Printing Reference*, and *Session Manager API (SMAPI)* publications. If a 'Y' is indicated, the document is provided in that translated language. If an 'N' is indicated, an English language manual will be displayed instead of a translated version.

Figure 4 (Page 1 of 2). Host On-Demand Supported Language Publication Availability with Prefix (Table 1 of 2)

Language	Prefix	PIC	Readme	Host Printing Ref	SMAPI
Czech	cs	Y	Y	N	N
Danish	da	N	Y	N	N
Dutch	nl	N	Y	N	N
English	en	Y	Y	Y	Y
German	de	Y	Y	N	N
Greek	el	Y	Y	N	N
Finnish	fi	Y	Y	N	N
French	fr	Y	Y	N	N
Hungarian	hu	Y	Y	N	N

Figure 4 (Page 2 of 2). Host On-Demand Supported Language Publication Availability with Prefix (Table 1 of 2)

Language	Prefix	PIC	Readme	Host Printing Ref	SMAPI
Italian	it	Y	Y	N	N
Japanese	ja	N	Y	Y	Y
Korean	ko	Y	Y	Y	N
Norwegian	no	Y	Y	N	N
Polish	pl	Y	Y	N	N
Portugese	pt_PT	Y	Y	N	N
Brazilian Portugese	pt	Y	Y	N	N
Russian	ru	Y	Y	N	N
Slovenian	sl	Y	Y	N	N
Spanish	es	Y	Y	N	N
Swedish	sv	N	N	N	N
Turkish	tr	N	Y	N	N
Simplified Chinese	zh	Y	Y	N	N
Traditional Chinese	zh_TW	Y	Y	N	N

Figure 5 identifies the supported languages and the associated language prefix that you use in the URLs mentioned previously to access the Macro Reference, Web Express Logon Reference (WELR), Trouble Shooting Guide (TS Guide), and Programmable HOD Reference publications. If a 'Y' is indicated, the document is provided in that translated language. If an 'N' is indicated, an English language manual will be displayed instead of a translated version.

Figure 5 (Page 1 of 2). Host On-Demand Supported Language Publication Availability with Prefix (Table 2 of 2)

Language	Prefix	HOD Macro Ref.	WELR	TS Guide	Programmable HOD Ref.
Czech	cs	N	N	Y	N
Danish	da	N	N	N	N
Dutch	nl	N	N	Y	N
English	en	Y	Y	Y	Y
German	de	N	N	N	N
Greek	el	N	N	Y	N
Finnish	fi	N	N	N	N

Figure 5 (Page 2 of 2). Host On-Demand Supported Language Publication Availability with Prefix (Table 2 of 2)

Language	Prefix	HOD Macro Ref.	WELR	TS Guide	Programmable HOD Ref.
French	fr	N	N	Y	N
Hungarian	hu	N	N	Y	N
Italian	it	N	N	N	N
Japanese	ja	Y	Y	Y	Y
Korean	ko	N	N	Y	N
Norwegian	no	N	N	Y	N
Polish	pl	N	N	Y	N
Portugese	pt_PT	N	N	Y	N
Brazilian Portugese	pt	N	N	Y	N
Russian	ru	N	N	Y	N
Slovenian	sl	N	N	Y	N
Spanish	es	N	N	Y	N
Swedish	sv	N	N	N	N
Turkish	tr	N	N	N	N
Simplified Chinese	zh	N	Y	Y	N
Traditional Chinese	zh_TW	N	N	Y	N

Figure 6. Basic Material: Licensed Publications

Publication Title	Form Number	Feature Number
No licensed publications		

2.3.2 Optional Program Publications

No optional publications are provided for Host On-Demand.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for Host On-Demand.

2.5 Publications Useful During Installation

The publications listed in Figure 7 on page 9 may be useful during the installation of Host On-Demand. To order copies, contact your IBM representative or visit the IBM Publications Center on the world wide web at:

<http://www.ibm.com/shop/publications/order>

Publication Title	Form Number
<i>IBM SMP/E for z/OS and OS/390 User's Guide</i>	SA22-7773
<i>IBM SMP/E for z/OS and OS/390 Commands</i>	SA22-7771
<i>IBM SMP/E for z/OS and OS/390 Reference</i>	SA22-7772
<i>IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis</i>	GA22-7770
<i>MVS OS/390 Command Reference</i>	SC27-1972
<i>MVS OS/390 System Codes</i>	GC28-1780
<i>MVS z/OS Command Reference</i>	SA22-7627
<i>MVS z/OS System Codes</i>	SA22-7626
<i>MVS OS/390 Messages Library, System Messages Vol 1</i>	GC28-1784
<i>MVS OS/390 Messages Library, System Messages Vol 2</i>	GC28-1785
<i>MVS OS/390 Messages Library, System Messages Vol 3</i>	GC28-1786
<i>MVS OS/390 Messages Library, System Messages Vol 4</i>	GC28-1787
<i>MVS OS/390 Messages Library, System Messages Vol 5</i>	GC28-1788
<i>MVS z/OS Messages Library, System Messages Vol 1</i>	SA22-7631
<i>MVS z/OS Messages Library, System Messages Vol 2</i>	SA22-7632
<i>MVS z/OS Messages Library, System Messages Vol 3</i>	SA22-7633
<i>MVS z/OS Messages Library, System Messages Vol 4</i>	SA22-7634
<i>MVS z/OS Messages Library, System Messages Vol 5</i>	SA22-7635
<i>MVS z/OS Messages Library, System Messages Vol 6</i>	SA22-7636
<i>MVS z/OS Messages Library, System Messages Vol 7</i>	SA22-7637
<i>MVS z/OS Messages Library, System Messages Vol 8</i>	SA22-7638
<i>MVS z/OS Messages Library, System Messages Vol 9</i>	SA22-7639
<i>MVS z/OS Messages Library, System Messages Vol 10</i>	SA22-7640

3.0 Program Support

This section describes the IBM support available for Host On-Demand.

3.1 Program Services

Contact your IBM representative for specific information about available program services.

3.2 Preventive Service Planning

Before installing Host On-Demand, you should review the current Preventive Service Planning (PSP) information.

Before installing Host On-Demand, you should also review the current support, product information, and Hints and Tips on the following Web sites:

- Support site: <http://www.ibm.com/software/webservers/hostondemand/support/>
- Product information site: <http://www.ibm.com/software/webservers/hostondemand/>
- Program Directory softcopy: <http://www.ibm.com/software/webservers/hostondemand/library/>
(continued): [v8infocenter/](http://www.ibm.com/software/webservers/hostondemand/library/v8infocenter/)
- Hints and Tips site: <http://www.ibm.com/software/webservers/hostondemand/support/>

If Host On-Demand is more than two weeks old when you install it, you should contact the IBM Support Center or check the above websites to get the most current support information.

For access to RETAIN, visit <http://www.ibm.com/ibmlink.ibm.com/> on the Internet.

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 8 identifies the component IDs (COMPID) for Host On-Demand.

<i>Figure 8. Component IDs</i>			
F MID	COMPID	Component Name	RETAIN Release
HHOJ800	5733A5900	Host On-Demand V8	800

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of Host On-Demand. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

The following APAR fixes against previous releases of Host On-Demand are available. They are listed and detailed in the section following.

4.2 Service Level Information

PTFs containing APAR fixes against this release of Host On-Demand are available. Please order via your normal service process.

4.2.1 Service Level V8.0.2 (Available February, 2004)

PTFs (UA08622, UA08624, and UA08625) are now available for Host On-Demand to bring the maintenance level to V8.0.2. The APARs corrected for Service Level V8.0.2 are listed below:

- IC37783 - Unable to start a VT session with SSH enabled from within DW.
- IC38233 - HOD processes Autoskip when it shouldn't.
- IC38265 - Paste Next function is including extra field information that should have been cutoff from previous Paste function.
- IC38356 - Background color in unprotected fields changes.
- IC38368 - When using the jump-next function from one session to the next, the focus will remain on the original session.
- IC38433 - The file size of map-file is different by save methods.
- IC38592 - Customization Studio fails in some Java 2 environments.
- IC38597 - LDAP data repository for hod data.
- IC38598 - Host On-Demand does not detect registry changes even if IIS webserver is uninstalled
- IC38730 - Using the configuration server model of Host On-Demand session properties are lost.
- IC38734 - Paste of logical text type using Hebrew code page to numericfield does not transfer digits to correct position in new field.
- IC38775 - Native Authentication users couldn't change passwords until now.
- OA04432 - HOD Ehallapi Bridge Utility does not support multiple applications running at the same time.
- OA05389 - Browsing back and forth between hodadminfull and HOD download client produces java exception.
- OA05484 - HOD EHLLAPI bridge hangs sporadically when using SUN Java 1.4.2.
- OA05540 - HOD's HotSpot feature does not recognize HTTPS.

OA05576 - HOD TOOLKIT V7: When print dialog is opened and dragged using PRINTSCREEN() method and customterminal, repaint does not occur.

OA05664 - EHLAPPI UTLGETSTRING code changed to reflect a successful call will be equal to a value greater than 0 rather than 1.

OA05665 - Font not displayed correcting in the Toolbar when using Java 2.

OA05692 - HOD screen reco recognizes strings anywhere on the screen when specified to look at the given starting position.

OA05718 - When tabbing off some widgets, focus is lost for any other widget.

OA05901 - Deployment Wizard output file not recognized when created on different operating systems.

OA06080 - Enter key no longer works when updating session properties. session properties were access via right click on session icon.

4.2.2 Service Level V8.0.1 (Available October, 2003)

PTFs (UA06019, UA06020, and UA06021) are superseded by the V8.0.2 level. Please apply the PTFs for the V8.0.2 level to bring Host On-Demand up to the latest maintenance level. The APARs that were included are listed below:

IC36321 - Jump next on AIX client sessions doesn't bring the focus on the active session that is being jumped to.

IC36505 - Using Host On-Demand 7.0.2 in a 3270 session with macro manager and using the Alt-Tab command places the focus in the wrong location

IC36624 - Host On-Demand: When accessing session properties of a multiple session icon, hang could occur and Java null pointer exceptions posted

IC36713 - Keyboard input delayed with Screen Customizer enabled in a Java 2 (1.4.0 or later) environment.

IC36720 - Host On-Demand 7.0.2 file transfer to host causes lock/freeze ups.

IC36725 - Host On-Demand Screen Customizer label/text disappears.

IC36739 - Host On-Demand 7.0.2, Screen Customizer does not handle the radio button background color correctly for Java 2

IC36746 - When using the Sun JVM, ISUSER16.dll and ISUSER32.dll are allocated in C:\Documents and Settings\user\desktop

IC36753 - Host On-Demand Screen Customizer incorrect character image

IC36775 - Host On-Demand Screen Customizer incorrect button issues

IC36806 - Cursor focus not returning to input fields after encountering "X II" or keyboard lock after pressing Tab using Java 2 client.

IC36813 - Host On-Demand 7.0.2, error on data field, Host On-Demand returns a system dump of cpf0001. Host On-Demand is not handling mandatory data entry field

IC36840 - Host On-Demand Screen Customizer font pitch is not the same between input and output field.

IC36943 - Host On-Demand's CTG client hangs when CTG server fails to complete a connection setup.

IC36982 - VT 420 doesn't refresh menu options after choosing menu options.

IC37075 - Host On-Demand 7.0.3 - CLIENT-SIDE AUTHENTICATION AND SMART CARDS.

IC37103 - SC receives Java console error "font exception reset to mono spaced" when using HACL

OA03440 - Modifying session properties dynamically and configuring a FTP session causes the FTP password to be set.

OA04107 - Cursor position being reset outside of margin on VT session

OA04190 - "font name" session screen property shows "IBM3270", regardless of what other fixed font was selected and saved.

4.2.3 PTF Installation Directions and Notes.

Run the **hod80ptf.sh** shell script found in the /usr/lpp/HOD directory when installed via SMP/E. If you did not install in the default HOD directory, you will find the install shell script in your user defined directory.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Host On-Demand. The following terminology is used:

- *Driving system*: the system used to install the program.
- *Target system*: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.
- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install Host On-Demand.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

<i>Figure 9. Driving System Software Requirements</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 V2.10.00 or higher
5694-A01	z/OS V1.01.00 or higher
5655-G44	IBM SMP/E for z/OS and OS/390 V3.01.00 or higher

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Host On-Demand.

Host On-Demand installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Mandatory Requisites

A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

<i>Figure 10. Mandatory Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 V2.10.00 (see ** note **)
5694-A01	z/OS V1.10.00 or higher

Note: ******If you are running with OS/390 V2.10.00, there is an LDAP PTF that is needed to properly display LDAP sessions. The PTF number is UW74965 (superseded by UW99407) Please contact IBM Support to obtain the proper service.

5.2.2.2 Functional Requisites

A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

Note: For HOD V8, "basic function" consists of:

- A Host running the Host On-Demand Server
- A Workstation client running a terminal emulator session

With this set of basic functions, Java, a HTTP server, and TCP/IP are REQUIRED on the server and a browser and Java Plug-in are REQUIRED on the workstation. An exception to this is the use of the new Web Start Client which does not require a browser. Please see the *Planning, Installing, and Configuring* Host On-Demand document for further information.

Figure 11 (Page 1 of 3). Functional Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5647-D43	Domino Go Webserver for OS/390 V5.00.00 or higher(IBM HTTP SERVER) - **V6.00.00 supports z/OS V1.02.00 and higher only	Web Server
5655-A46	IBM Java V1.3.1, V1.4.0, or V1.4.1 for OS/390 or z/OS	Java
	OS/390 or x/OS Communications Server TCP/IP Services (must be running)	TCP/IP
Any one of the following needed for Browser Function:		
Note: A Java Plugin is required for the proper function of your Browser and must be either Java Plugin V1.3.1, 1.4, or 1.4.1 (from IBM, Sun, or HP). Please have this installed for the proper function of your browser.		
	Netscape Navigator 4.7, 6.1, 6.2, 7.0	Browser Function
	Netscape Navigator (OS/2) 4.61, IBM Web Browser for OS/2 V1.2	Browser Function
	Microsoft Internet Explorer 4.01 with SP1, 5.1, 5.5, 6.0	Browser Function
	Safari	Browser Function
	Mozilla V1.0.2, 1.2.1	Browser Function
	Browsers supported on Apple Mac system: Microsoft Internet Explorer 5.2 and Safari V1	Browser Function
	JRE levels supported on Apple Mac system: 1.3.1 and 1.4.1	Browser Function
The following for Web Server Requisite:		
5655-F31	WebSphere Application Server for z/OS and OS/390 V4.0.1 and higher	Configuration Servlet
Any one or more for Client Function:		
	Windows 95 R2, Windows 98, Windows Millenium Edition, Windows NT 4.0 with SP5 and higher, Windows 2000(Professional), Windows XP Professional and Home Edition, Windows Server 2003 (** see Client Note)	Client
	IBM AIX V4.3.3, V5L, V5.1, V5.2	Client
	IBM OS/2 Warp Server 4	Client
	Sun Solaris V2.6, V2.7, V2.8	Client
	HP-UX V11.00, V11i	Client

Figure 11 (Page 2 of 3). Functional Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
	Redhat Linux V7.1, V7.2, V7.3	Client
	Redhat Enterprise Linux AS 2.1	Client
	Redhat Linux 8.0 Personal and 8.0 Professional	Client
	Redhat Linux 9.0 Personal and 9.0 Professional	Client
	SUSE Linux V7.1, V7.2, V7.3, V8.0, V8.1 Professional, V8.2	Client
	Caldera V3.1	Client
	SCO-Caldera OpenLinux Workstation 3.1.1	Client
	SCO-Caldera OpenLinux Server 3.1.1	Client
	TurboLinux V6.5, V7.0, V8.0 Workstation and 8.0 Server	Client
	Windows NT Server 4.0 Terminal Server Edition and Windows Terminal Services for Windows 2000	Client
	Netstation V2R1M0	Client
	Citrix Metaframe 1.8 for Windows Terminal Server 4.0 and 1.8 for Windows 2000 Server	Client
	Citrix Metaframe XP (Versions s, a, e) for Windows	Client
	Apple Mac OS X 10.2.1	Client
	** Client Note - A local client is only supported on Win 32 platform	
Optional - Any one for LDAP Server Function		
	IBM LDAP Directory Server for OS/390 V2R9,R10, z/OS V1.1 or higher	LDAP Function
	IBM LDAP Directory Server V3.2.2	LDAP Function
	Netscape Directory Server V4.0 (Windows NT and AIX)	LDAP Function
Optional - Any one or more of the following needed for Development Environment		
	IBM VisualAge for Java Version V3.5, V4.0	Development Environment
	WebSphere Studio Application Developer 4.0, V5.0	Development Environment

Figure 11 (Page 3 of 3). Functional Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
	WebSphere Studio Site Developer Advanced 4.0	Development Environment
	Borland/Inprise JBuilder Version V5.0, V6.0, V7.0, V8.0	Development Environment
Optional - Any one or more of the following needed for Web Express Logon		
	IBM Tivoli Access Manager for e-business V4.1	Web Express
	Netegrity SiteMinder V5.5	Web Express
	IBM DB2 Universal Database V7	Web Express
Optional - Miscellaneous Software		
	IBM WebSphere Portal Family V2.1	Portal Function
	IBM WebSphere Portal for Multiplatforms V4.1, V4.2	Portal Function
	Acrobat Reader V5.0 or higher	DBCS PDF support
	CICS Transaction Gateway V5.01	CICS transaction processing

5.2.2.3 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product which must be present on a sharing system. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD at different time intervals.

Host On-Demand has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

A negative requisite identifies products which must *not* be installed on the same system as this product.

Host On-Demand has no negative requisites.

5.2.3 DASD Storage Requirements

Host On-Demand libraries can reside on all supported DASD types.

Figure 12 lists the total space required for each type of library.

Figure 12. Total DASD Space Required by Host On-Demand

Library Type	Total Space Required
Target	1 MB
Distribution	940 MB
HFS	3500 MB

Notes:

1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:

- U** Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or Program Directories) need to be referenced for the data set size.
- S** Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other Program Directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.6, "Allocate SMP/E Target and Distribution Libraries and Paths" on page 30.

3. Abbreviations used for the HFS Path type are:

- N** New path, created by this product.
- X** Path created by this product, but may already exist from a previous release.
- P** Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set may be changed
- The default block size of the data set may be changed
- The data set may be merged with another data set that has equivalent characteristics
- The data set may be either a PDS or a PDSE

5. All target libraries listed have the following attributes:

- The data set may be SMS managed
- It is not required for the data set to be SMS managed
- It is not required for the data set to reside on the IPL volume
- The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

6. All target libraries listed which contain load modules have the following attributes:

- The data set may be in the LPA
- It is not required for the data set to be in the LPA
- The data set may be in the LNKLIST
- It is not required for the data set to be APF authorized

Figure 13. Storage Requirements for SMP/E Work Data Sets

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SMPWRK1	S	PDS	FB	80	75	216
SMPWRK2	S	PDS	FB	80	75	216
SMPWRK3	S	PDS	FB	80	75	216
SMPWRK4	S	PDS	FB	80	75	216
SMPWRK6	S	PDS	FB	80	3000	216
SYSUT1	U	SEQ	--	--	34	0
SYSUT2	U	SEQ	--	--	34	0
SYSUT3	U	SEQ	--	--	34	0
SYSUT4	U	SEQ	--	--	34	0

Figure 14. Storage Requirements for SMP/E Data Sets

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SMPLTS	E	PDS	U	0	15	1
SMPMTS	E	PDS	FB	80	-	-
SMPPTS	E	PDS	FB	80	15000	5
SMPSCDS	E	PDS	FB	80	-	-
SMPSTS	E	PDS	FB	80	-	-

The following figures describe the target and distribution libraries and HFS paths required to install Host On-Demand. The storage requirements of Host On-Demand must be added to the storage required by other programs having data in the same library or path.

Note: The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 15. Storage Requirements for Host On-Demand Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
LINKLIB	LMOD	TVOL1	E	PO	U	0	7	1
SHOMINST	Sample EXEC	TVOL1	U	PDS	FB	80	4	2

Figure 16. Host On-Demand HFS Paths

DDNAME	T Y P E	Path Name
SHOM0001	N	/usr/lpp/HOD/IBM

Figure 17. Storage Requirements for Host On-Demand Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AHOMHFS1	U	PDS	VB	32600	14000	1
AHOMINST	U	PDS	FB	80	4	2
AHOMMOD1	U	PDS	U	0	7	1

5.3 FMIDs Deleted

Installing Host On-Demand may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install Host On-Demand into separate SMP/E target and distribution zones.

Note: These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special Considerations

The distribution libraries are assumed to be contained in a single HFS data set whose mount point is */usr/lpp/HOD*. Host On-Demand can be installed into an existing HFS, but if you wish to create your own HFS, the sample job HOMHFS can be used to allocate the HFS. It is recommended that you create your own HFS for Host On-Demand for serviceability. The HOMISMKD JCL sample is used to create the directory structure for your HFS. HOMISMKD also creates a directory structure under the */usr/lpp/HOD* filesystem, which is assumed to already be allocated and mounted on the target system.

After you finish with the SMP/E portion of your installation including running HOMAPPLY and HOMACCPT, you will have to run the shell script **hod80mvs.sh** to complete the installation. Refer to **6.2, “Activating Host On-Demand”** on page 34 for more details.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Host On-Demand.

Please note the following:

- If you want to install Host On-Demand into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.
- Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing Host On-Demand

6.1.1 SMP/E Considerations for Installing Host On-Demand

This release of Host On-Demand is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

6.1.2 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 18. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

SUB-ENTRY	Value	Comment
DSSPACE	(5000,1200,2500)	Specifies the primary and secondary (in Tracks) and the number of directory blocks to be allocated for each SMPTLIB dataset.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

Host On-Demand uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When Host On-Demand is installed, ensure that DDDEFs exist for the following libraries:

- CEE.SCEELKED

Note: The DDDEFs above are used only to resolve the link-edit for Host On-Demand using CALLLIBS. These data sets are not updated during the installation of Host On-Demand.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Host On-Demand:

<i>Figure 19. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
HOMRECVE	RECEIVE	Sample RECEIVE job	IBM.HHOJ800.F1
HOMALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HHOJ800.F1
HOMDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HHOJ800.F1
HOMHFS	HFS	Sample job to define Host On-Demand HFS data set (Optional)	IBM.HHOJ800.F1
HOMISMKD	MKDIR	Sample job to invoke the supplied HOMMKDIR EXEC to allocate HFS paths	IBM.HHOJ800.F1
HOMAPPLY	APPLY	Sample APPLY job	IBM.HHOJ800.F1
HOMACCPT	ACCEPT	Sample ACCEPT job	IBM.HHOJ800.F1
HOMSERVR	START	Sample job for starting Host On-Demand	IBM.HHOJ800.F1

You may copy the jobs from the tape or product files by submitting the job below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```

//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HHOJ800.F1,UNIT=tunit,
// VOL=SER=HOJ800,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HHOJ800.F1,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(3,2,1))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
SELECT MEMBER=(HOMACCPT,HOMALLOC,HOMAPPLY)
SELECT MEMBER=(HOMDDDEF,HOMHFS,HOMISMKD,HOMMKDIR)
SELECT MEMBER=(HOMRECVE,HOMSERVR)
/*

```

In the sample above, update the statements as noted below:

If using TAPEIN:

tunit is the unit value matching the product tape
x is the tape file number where the data set name is on the tape
 IBM.HHOJ800.F1 is the 2nd file on the tape.

Note: i.e, **x=2** or the 2nd file on the tape.

If using FILEIN

filevol is the volume serial of the DASD device where the downloaded files reside.

OUT

jcl-library-name is the name of the output data set where the sample jobs will be stored

dasdvol is the volume serial of the DASD device where the output data set will reside

SYSIN

xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

You can also access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the refiles to a work data set for editing and submission. See Figure 19 on page 28 to find the appropriate refile data set.

6.1.5 Perform SMP/E RECEIVE

Perform an SMP/E RECEIVE for Host On-Demand.

You may also edit and submit sample job HOMRECVE to perform the SMP/E RECEIVE for Host On-Demand. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: Return Code = 0

6.1.6 Allocate SMP/E Target and Distribution Libraries and Paths

Edit and submit sample job HOMALLOC to allocate the SMP/E target and distribution libraries for Host On-Demand. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: Return Code = 0

6.1.7 Create DDDEF Entries

Edit and submit sample job HOMDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Host On-Demand. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: Return Code = 0

This job may receive warning message GIM56501W and rc=4. This message is issued when DDDEF entries are added because they did not exist prior to running the job.

This job may also receive warning message GIM27701W and rc=4. This message is issued when DDDEF entries are added because they did not exist prior to running the job.

This job may also receive the following messages:

```
GIM35601E ** DATASET SUBENTRY WAS NOT ADDED BECAUSE
           IT ALREADY EXISTS.
GIM25601I - THE SPECIFIED ENTRY WAS NOT UPDATED
           BECAUSE OF AN ERROR DURING UCLIN PROCESSING.
```

with a rc=8 if the **SCEELKED** or **LINKLIB** DDDEF entries already exist. You can either delete the **ADD** for **SCEELKED** or **LINKLIB** or change the **ADD** to a **REP** and rerun the job.

Note: If you do not have a SYSLIB on your system (i.e., new Host On-Demand environment/SMP/E zone), you must create one, at a minimum, to include the SMPMTS. You must have both a DDDEF entry for the SMPMTS and a DDDEF entry for the SYSLIB that includes (CONCAT) the SMPMTS.

As an example:

```
ADD DDDEF (SMPMTS) DA(HOM.SMPMTS) SHR UNIT(SYSALLDA) .
ADD DDDEF (SYSLIB) CONCAT (SMPMTS) .
```

Consult your SMP/E manuals for further information.

6.1.8 Allocate Host On-Demand HFS Data Set (HOMHFS) - Optional

IBM WebSphere Host On-Demand V8 for OS/390 and z/OS can be installed into any HFS. However, if you wish to create your own HFS for Host On-Demand, edit and submit sample job HOMHFS to allocate the HFS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: Return Code = 0

6.1.9 Allocate HFS Mount Points and paths (HOMISMKD)

In this step you will create the HFS paths and the mount point for Host On-Demand. The instructions to create the mount point for Host On-Demand is detailed below as well as directions for running the HOMISMKD job which will create the paths.

The distribution libraries are assumed to be contained in a single HFS data set whose mount point is */usr/lpp/HOD*. Host On-Demand can be installed into an existing HFS or a new one created using the HOMHFS sample job. Use the commands below and the HOMISMKD job as needed to create the paths and mount points for Host On-Demand. If you created a new HFS, you will need to complete all three (3) steps below. If you are installing into an existing HFS, you will only have to do step #3 (omit steps 1 and 2).

Note: The TSO MKDIR commands must be invoked using a RACF userid with root authority in the UNIX System Services. Path as well as mount point specification in UNIX System Services is case sensitive.

Follow these steps to create the mount point and directories:

1. From TSO issue the following TSO MKDIR command to create the */usr/lpp/HOD* mount point.

```
TSO MKDIR '-PATHPREFIX-/usr/lpp/HOD' MODE (7,5,5)
```

Note: Change the occurrences of the string *-pathprefix-* to the appropriate high level directory name. For users installing in the root, this would be null. For others, the high level directory may be something like */service/* or a more meaningful name. Please note the replacement string is case sensitive.

2. Issue the following MOUNT command to mount the HFS on the */usr/lpp/HOD* mount point. The HFS was previously allocated by the HOMHFS job.

Note: The mount command should be on one line.

Note: Change the **hfsprfx** qualifier to the name of the qualifier used in the HOMHFS installation job.

```
TSO MOUNT FILESYSTEM('hfsprfx.HOM.HFS')  
MOUNTPOINT('-PATHPREFIX-/usr/lpp/HOD') TYPE(HFS)
```

Note: Change the occurrences of the string *-pathprefix-* to the appropriate high level directory name. For users installing in the root, this would be null. For others, the high level directory may be something like */service/* or a more meaningful name. Please note the replacement string is case sensitive.

3. Edit and submit sample job HOMISMKD to allocate the HFS paths for Host On-Demand. Consult the instructions in the sample job for more information.

This job calls HOMMKDIR which creates the directory structure for Host On-Demand. HOMMKDIR is a REXX script which is called by HOMISMKD. HOMMKDIR should not be invoked by itself.

If you plan to create a new HFS for this product, you should consider updating the BPXPRMxx PARMLIB member to mount the new HFS at IPL time. This may be helpful if an IPL occurs before the installation is complete.

Expected Return Codes and Messages: Return Code = 0

6.1.10 Perform SMP/E APPLY

Edit and submit sample job HOMAPPLY to perform an SMP/E APPLY CHECK for Host On-Demand. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Once you have taken any actions indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Note: The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY CHECK: Return Code = 0

Expected Return Codes and Messages from APPLY: Return Code = 0

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job HOMACCPT to perform an SMP/E ACCEPT CHECK for Host On-Demand. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Once you have taken any actions indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Note: The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: Return Code = 0

Expected Return Codes and Messages from ACCEPT: Return Code = 0

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

6.1.12 Completing the Installation of Host On-Demand

To complete the install of Host On-Demand, the **hod80mvs.sh** shell script is provided in the `/usr/lpp/HOD` directory. This shell script will migrate configuration data from versions V2.0 through V7.X and install the current version of the software. Review the instructions in the shell script prior to running this script.

To **execute** the shell script (after editing) in UNIX System Services:

1. In UNIX System Services, change directory into the directory of your base HOD directory (i.e., **cd /usr/lpp/HOD** in most instances).
2. Type in at the USS prompt: **hod80mvs.sh** and <ENTER> to execute the shell script.

Here is a more detailed description of what this shell script does:

1. If you are migrating from V2.0 through V7.X to the current version of Host On-Demand, this script will do the following based on what version you are migrating from. Uncomment the shell script statements that are appropriate to the version you are migrating from.
 - Delete these two directories:
 - `/usr/lpp/HOD/ondemand/lib`
 - `/usr/lpp/HOD/ondemand/HOD`
 - The directory which has the V2.0 through V7.X configuration data is not deleted and that configuration data will be migrated to the current version of the software. The directory which is not deleted is:
 - `/usr/lpp/HOD/ondemand/private`
 - Install Host On-Demand

This shell script will install the `hod80mvs.tar` file. If no earlier version was installed, the current version of Host On-Demand will be installed in the following directory:

 - `/usr/lpp/HOD/hostondemand`
2. This shell script will also create the necessary installation directories for the Native Authentication Service (HODRAPD). Two directories will be created in the default `/usr/lpp/HOD/hostondemand/private` directory which will link to the HODRAPD module that was installed and link-edited by SMP/E during the Host On-Demand V8 SMP/E installation.

Note: Please note that the subdirectory named "ondemand" in earlier versions of this product has been renamed to "hostondemand" in the current version.

Note: If you find that after you successfully install Host On-Demand (after the execution of `hod80mvs.sh`), you are running out of space on your HFS, you may take the following steps (your SMP/E environment must be available):

1. Remove the files in the default `/usr/lpp/HOD` directory. These are actually hardlinks of the files in the `/usr/lpp/HOD/IBM` directory.
2. Delete the files in the `/usr/lpp/HOD/IBM` directory, specifically the HOMTARx files.
3. To restore these files to your HFS, run the SMP/E APPLY job with the REDO option in the SMP/E control statements. The APPLY will create the hardlinks in the `/usr/lpp/HOD` directory.

6.2 Activating Host On-Demand

Host On-Demand is fully operational once the SMP/E installation is complete. No further customization is required to activate this function.

6.2.1 Update Web Server Pass Rules and Resource Mapping Directives

To activate the functions of Host On-Demand, add the Pass Rules listed below to the *Pass Rule* section of your Web Server configuration file. The configuration file name is typically `httpd.conf`. (For IBM WebSphere Application Server and Domino Go Webserver). The `httpd.conf` file is typically found in your `/etc` directory in UNIX System Services. Listed below are the *Pass Rules* that you will need to have in your `httpd.conf` file.

There is a new Pass Rule that was added for Host On-Demand V8. The first Pass Rule in the list following was added if your users will be using a Web Start client. The passrule is required to enable Web Start to work with a zSeries host.

These *Pass Rules* **must be** in the order listed and must be placed prior to the **Pass /*** Pass Rule. The rules assume an alias of `/hod/`. Consult your Web Server documentation for further details.

The Pass Rules are:

```
# *** ADD NEW PASS RULES HERE ***
```

```
Pass /hod/*.jnlp /usr/lpp/HOD/hostondemand/HOD/*.jnlp.ascii
Pass /hod/*.html /usr/lpp/HOD/hostondemand/HOD/*.html.ascii
Pass /hod/*.HTML /usr/lpp/HOD/hostondemand/HOD/*.HTML.ascii
Pass /hod/*.js /usr/lpp/HOD/hostondemand/HOD/*.js.ascii
Pass /hod/*.properties (continued on next line)
    /usr/lpp/HOD/hostondemand/HOD/*.properties.ascii
Pass /hod/*.props /usr/lpp/HOD/hostondemand/HOD/*.props.ascii
Pass /hod/* /usr/lpp/HOD/hostondemand/HOD/*
```

Note: Please note that the subdirectory named "ondemand" in earlier versions of this product has been renamed to "hostondemand" in the current version.

The following resource mapping directives should also be included among the other rules in the AddType section of the Web Server configuration file. A new AddType statement was also added for Host On-Demand V8 to support the new Web Start client. The new AddType is the first one below, the other AddTypes were added in past releases.

```
AddType .jnlp application/x-java-jnlp-file 8bit 1.0
AddType .cab application/octet-stream      binary 1.0
AddType .jar multipart/x-zip                binary 1.0
```

6.2.2 Start Host On-Demand

The HOMSERVER sample job is supplied to start Host On-Demand. This job starts the **ServiceManager.sh** shell script, which starts the Host On-Demand Service Manager. The **ServiceManager.sh** shell script is found in the **/usr/lpp/HOD/hostondemand/lib** directory (if installing to the default directory) and must be modified for correct execution of Host On-Demand. You must modify the **ServiceManager.sh** for your correct Host On-Demand installation directory and your level of debug. If you installed with a default installation directory of **/usr/lpp/HOD**, you may not need to change edit the shell script. It would still be a good idea to check to see that the desired level of debug is set correctly for your site. Please note the comments and edit appropriately.

Note: You may want to rename the HOMSERVER sample job to a started PROC name of less than 8 characters (ie., HOMSRV). This will help when displaying subprocesses and stopping HOD. You will be able to cancel HOD and all subprocesses at once if your started PROC name is less than 8 characters. If you decide to rename the job name for the Host On-Demand server from HOMSERVER to something fewer than eight characters, beware that the job names for the tasks listening on ports 8999 and 3470 will get a digit appended to them. This is important if you decide to make port reservations in your TCPIP.PROFILE using the explicit job names.

Prior to starting Host On-Demand, copy the HOMSERVER sample job from your install library SHOMINST to an authorized PROCLIB. If you are installing in a directory other than the default directory (**/usr/lpp/HOD**) you must change the PARM parameter to point to the location where you have ServiceManager.sh installed.

The HOMSERVER procedure must be started from a RACF USERID with root authority in UNIX System Services. Here are the basic instructions to enable Host On-Demand to be assigned to the appropriate USERID. These are not detailed instructions. If you need assistance or authorization, contact your RACF System Administrator.

- Create a USERID for the HOMSERVER procedure, (for example you might create a HOMSERVER USERID)
 - Choose a default group that is defined to UNIX System Services (has an UNIX System Services segment with a GID (Groupid) defined; for example you might have a group called OMVSGRP which contains all UNIX System Services users).
 - Add a UNIX System Services segment giving the userid root authority by assigning it a UID of 0.
- Create a started class entry (or update ICHRIN03) for the HOMSERVER procedure

- Make the entry name `procname.*` (for example, `HOMSERVER.*`)
- Assign `"=Member"` to the user thereby making `userid` and the `procname` the same (for example `HOMSERVER.*`).
- Assign the `procname` to the USSgroup that is the default group for the user (for example `OMVSGRP`).

To start Host On-Demand, start the sample job `HOMSERVER`.

To stop Host On-Demand, cancel sample job `HOMSERVER`.

Note: With a `procname` of 8 characters, you will need to provide the job's address space value to cancel the main proc. You will also need the address space value to cancel the subprocesses. If your `procname` is > 8 characters (ie., `HOMSRV`), you will only need to issue the 'cancel `HOMSRV`' command to cancel both the main process as well as the subprocesses.

6.2.3 Configuring Host On-Demand (Administration)

You must now load the Host On-Demand Administration Utility to define and configure `USER` and `GROUP` accounts, define emulator sessions, the Redirector and Database On-Demand, as necessary

1. Type the following URL into your browser URL area: `http://<server_name>/hod/HODMain.html` where `<server name>` refers to your OS/390 or z/OS TCP/IP host name.
2. Select **Readme** to see information that was not included in this document, the **Planning, Installing, and Configuring** document or the Helps.
3. Select **Administration Client** to begin configuring the Server.

Information about the Administration Utility and how to perform the above administration tasks is provided in the **Configuring Host On-Demand** section in **Planning, Installing, and Configuring**.

6.2.4 Starting the Optional Native (Platform) Authentication Service (HODRAPD)

Note: The following can be done only after the `hod80mvs.sh` has been successfully completed. The `hod80mvs.sh` shell script sets up `hodrapd` directories in your `/usr/lpp/HOD/hostondemand/private` directory for accessing the HODRAPD module that was installed during the SMP/E CALLLIBS processing. When the Native (Platform) Authentication Service is started from USS (UNIX System Services), the HODRAPD module is executed.

Provided below are the statements and links that are set-up for the HODRAPD module by the `hod80mvs.sh` shell script. These statements and links are provided in the event they are somehow removed at a later time:

```
#####
# Create installation directories for Native Authentication
#
# Two directories will be created in the
# $HOD80_INSTALL_DIR/hostondemand/private directories which will
# execute the HODRAPD module that was installed by SMP/E
# during the Host On-Demand V8.0 SMP/E installation.
#
#####

touch $HOD80_INSTALL_DIR/hostondemand/private/HODRAPD
ln -s $HOD80_INSTALL_DIR/hostondemand/private/(cont. on next line)
    HODRAPD $HOD80_INSTALL_DIR/hostondemand/private/hodrapd

chmod 744 $HOD80_INSTALL_DIR/hostondemand/private/HODRAPD
chmod +t $HOD80_INSTALL_DIR/hostondemand/private/HODRAPD
```

6.2.4.1 Setup for Starting the Native Authentication Service

The installation is designed to install the server load module into SYS1.LINKLIB. The module is automatically link-edited during the the JCLIN CALLLIBS processing during the APPLY. If you choose to install and execute the server from an alternative dataset, that dataset must be accessed by the system LNKLST or LPALIB concatenation.

The authentication server is invoked as a USS (UNIX) command. The server must run under the ownership of an ID that has an OMVS segment defined that includes superuser authority.

The following example illustrates the RACF command used to create a user profile with superuser authority:

```
AU userid DFLTGRP(oegroup) name(AUTHSERV) OMVS(UID(0) HOME('/'))
```

Additionally, if your site is running in a BPX.DAEMON environment, then RACF NOPADCHK processing must be enabled for the dataset containing the HOMRAPD load module. The following example gives the appropriate RACF commands:

```
RALTER PROGRAM * ADDMEM ('your.rapd.dataset'/volser/NOPADCHK)
SETROPTS WHEN(PROGRAM) REFRESH
```

6.2.4.2 Starting the Native (Platform) Authentication Service in USS

To start the Native Authentication Service (HODRAPD) using USS (Unix System Services), go to the /usr/lpp/HOD directory on the system where HODRAPD is installed and at the command prompt, enter:

```
hodrapd.sh
```

Options such as logging, time-out values, and maximum number of requests the server will allow can be specified when you start the Native Authentication Service. To change the options, edit (oedit) **hodrapd.sh** in the /usr/lpp/HOD default directory. You **must** keep the (-x) option, but you can append the following options to the (-x) where the options are:

- l (ie., -xl)** Enable logging.
- t (ie., -xt)** Set socket timeout value, in seconds. The default is 20.

c (ie., -xc) Set the maximum number of requests the server will allow.

For example, to start the native authentication service and set the socket timeout to 100 seconds, edit the line where the hodrapd module is called (line 82) and change the call (i.e., hodrapd -x) to:

```
hodrapd -xt100
```

To start the platform authentication service with a maximum number of requests, edit the line where the hodraps module is called (i.e., hodrapd -x) to:

```
hodrapd -xc100
```

You will see a message displayed to USS that the Native Authentication Service is starting. When the Service has completely started, you will see a message display to your OS/390 or z/OS console as follows:

```
BPXF024I (USER2) 08/11/00 09:32:27 hodrapd: PAS0001 Starting IBM  
Platform Authentication Service.
```

You can also check the status of the Native Authentication Service by issuing the following from your USS prompt:

```
netstat -a
```

This command will display the status of the Service. The Native Authentication Service uses the *well_known_port=2569*. The netstat -a command will display the following based on your USERID for the Native Authentication Service:

```
MVS TCP/IP onetstat CS V2R8 TCPIP Name: TCPIP 09:37:37  
User Id Conn Local Socket Foreign Socket State  
----- ---- -  
USER25 000002E5 0.0.0.0.2569 0.0.0.0..0 Listen
```

where USER2 is the USERID where the Native Authentication has been started from and USER25 is the Native Authenticated process that has started.

The **hodrapd.sh** shell script appends to your LIBPATH and NLSPATH. You may want to take the statements found in the shell script and add them to your /etc/profile on USS. You will need to re-execute your /etc/profile to activate the changes. You do this by entering *. profile* from your /etc directory. The LIBPATH and NLSPATH statements are provided below (using default paths):

```
export NLSPATH=$NLSPATH:/usr/lpp/HOD/hostondemand/lib/mgs/%N  
export LIBPATH=$LIBPATH:/usr/lpp/HOD/hostondemand/lib/
```

6.2.5 OS/390 and z/OS LDAP Directory Configuration

If you have an existing OS/390 Security Server LDAP Server and are running on OS/390 V2.10 or z/OS V1.1 and above, verify the following before configuring it for Host On-Demand:

- Verify that the LDAP Server is configured as described in the *OS/390 Security Server LDAP Server Administration and Usage Guide*(SC24-5561) and the *z/OS V1R2 LDAP Server Admin and Usage Guide* (SC24-5923).

- Verify that a suffix has been added and associated with an object class.

You can use this suffix as the parent distinguished name (DN) for Host On-Demand or you can use a lower-level object.

To configure an existing LDAP directory for Host On-Demand, familiarize yourself with the LDAP directory and the default schema shipped with it. You will need to use the IBM schema shipped with the LDAP Server in order to use Host On-Demand with LDAP. The process for setting up this IBM Schema is different depending on the DB2 backend you are using, RDBM or TDBM.

6.2.5.1 To Set Up Schema When Using RDBM Backend

To add the IBM schema to the existing LDAP Directory:

1. Edit the LDAP directory configuration file **slapd.conf** that the LDAP Server is using.
2. Change the includes from the original files to the IBM files as listed below. Refer to "Using IBM Schema Configuration Files" in the *Security Server LDAP Server Administration and Usage Guide* for more information.

Original	IBM
slapd.at.system	schema.system.at
slapd.cb.at.conf	schema.IBM.at
slapd.at.conf	schema.user.at
slapd.oc.system	schema.system.oc
slapd.cb.oc.conf	schema.IBM.oc
slapd.oc.conf	schema.user.oc

3. Save your changes to **slapd.conf**.
4. Restart the LDAP Server.

Note: The original schema files shipped with OS/390 LDAP Server create about 100 DB2 tables. The original schema definitions create about 600 tables. Before attempting to use these schema files, be sure that DB2 is configured to allow over 600 DB2 tables to be created and used. LDAP32K is the tablespace for most of the over 600 created tables. The SPUFI command for creating this tablespace should look similar to:

```
create large tablespace eeeeeee in dddddddd
  numparts 1 bufferpool BP32K
  using stogroup sysdeflt priqty 720 secqty 720;
```

where *sysdeflt* is the installation-dependent, systems default stogroup that you obtain from your local DB2 administrator.

6.2.5.2 To Set Up Schema When Using TDBM Backend

To add the IBM schema to the existing LDAP Directory:

1. Use `ldapmodify` command to add the **schema.user.ldif** that is shipped with the LDAP Server.
2. Use `ldapmodify` command to add the **schema.IBM.ldif** that is shipped with the LDAP Server.

Note: See chapter 17 of the *z/OS V1R2.0 Security Server LDAP Server Administration and Use* publication (SC24-5923-02) for detailed information on using `ldapmodify` to update schema in TDBM.

6.2.5.3 To Set Up the Directory Tree (for either RDBM or TDBM)

Decide how Host On-Demand will fit into your network and organizational structure, and design the LDAP directory information tree. For example,

- To build a directory information tree for an entire organization, use the organization object class for the suffix:

```
dn: o=MyOrganization
objectclass: organization
o: MyOrganization
```

- To build a directory information tree for one division of an organization, use the organizationalUnit object class for the suffix:

```
dn: ou=MyDivision, o=MyOrganization
objectclass: organizationalUnit
ou: MyDivision
```

The directory information tree should be defined in an LDAP Data Interchange Format (LDIF) file and added in the LDAP directory using the `ldapadd` command. Details on using the `ldapadd` command can be found in the LDAP Server Admin documentation.

6.2.5.4 Performance Considerations (when using RDBM)

The following configuration changes are offered as possible performance enhancements:

- Add the following lines to **slapd.conf**:

```
ndex pr nc palPtr eq
ndex dc eq
ndex o eq
ndex name eq
ndex objectClass eq
ndex u d eq
```

- `Sizelimit` is the number of entries LDAP will return on a search request; change the `sizelimit` to 5000 (this applies when using either RDBM or TDBM).

6.2.6 Hints and Tips

1. **Running out of space on HFS** - If your Host On-Demand HFS is running out of space on your z/OS or OS/390 platform, you may take the following steps after the install shell script and any PTF shell scripts have been successfully run. Your SMP/E environment must be available.
 - a. Remove the files in the default /usr/lpp/HOD directory. These are actually hardlinks of the files in the /usr/lpp/HOD/IBM directory.
 - b. Delete the files in the /usr/lpp/HOD/IBM directory, specifically the HOMTARx files.
 - c. To restore these files to your HFS, run the SMP/E APPLY job with the REDO option in the SMP/E control statements. The APPLY will create the hardlinks in the /usr/lpp/HOD directory.
2. For the best performance of Host On-Demand, we recommend that you install the latest version of Java for OS/390 or z/OS. For information on how to download Java, go to this web site:
<http://www.ibm.com/java/jdk/index.html>
3. If you are installing Host On-Demand in a directory other than the default directory (/usr/lpp/HOD), you need to change paths in these shell scripts:
 - hod80mvs.sh (full path is /usr/lpp/HOD/hod80mvs.sh)
 - ServiceManager.sh (full path is /usr/lpp/HOD/hostondemand/lib/ServiceManager.sh)
 - hodrapd.sh (full path is /usr/lpp/HOD/hodrapd.sh)

Refer to the shell script comments for instructions.

4. When you run Host On-Demand Service Manager (HODSRV) as a started task on zSeries platforms, you no longer need to use the cancel command to stop it (which often resulted in a CEE3DMP SVC call). Included with Host On-Demand V8 is a shell script for stopping the Service Manager and all of its child processes: **stophodsrv.sh**. The file is located by default (assuming you installed under /usr/lpp/HOD) under pathname /usr/lpp/HOD/hostondemand/lib/samples/zSeriesCommandFiles. You can of course, move **stophodsrv.sh** to your /private directory.

Before starting the script, modify its variable file names according to your environment; the variables are simply placeholders for the names of your writable temporary files. Then either start the script from USS or run it as an MVS procedure as shown in the examples below (which also appear in the comments of the script file itself):

- Executing in USS: Assign execute privileges to the script (chmod) and start the script by typing **stophodsrv.sh** on your USS command line and <enter>.
- As an MVS procedure:

```
//STOPHOD PROC HODINST='/usr/lpp/HOD/hostondemand',
//      SCRPTDIR='lib/samples/zSeriesCommandFiles'
//*****
//STOPHOD EXEC PGM=BPXBATCH,REGION=0K,TIME=NOLIMIT,
//      PARM='sh &HODINST/&SCRPTDIR/stophodsrv.sh'
//SYSPRINT DD SYSOUT=T
//SYSIN DD DUMMY
//SYSERR DD SYSOUT=T
//STDOUT DD SYSOUT=T
//STDERR DD SYSOUT=T
//SYSOUT DD SYSOUT=T
//***STDENV DD PATH='/etc/leopt'
```

Note: When you perform the MVS procedure, Host On-Demand Service Manager may end with a 0143 condition code. This is not an error. The condition code merely notifies you that the current process is ending.

- When running shell scripts in the OMVS shell from a 3270 terminal session the USS(OMVS) shell has a status indicator in the lower right part of the screen that states **Running** when the terminal session is active. If no data is being typed into the screen, after about 15 seconds the session goes into sleep mode and the status indicator changes to **Input**. The install shell scripts for Host On-Demand and Screen Customizer normally take **more** than 15 seconds to run, so the indicator changes from Running to Input. The shell script is not waiting for input; instead, it is running in the foreground. The terminal has gone into sleep mode.

Press F10 to Refresh the screen or F8 to page forward, both of which wake the session. The indicator changes back to Running for another 15 seconds. Do not stop the shell script. The command prompt appears when the shell script has run to completion, and when the terminal session has been awakened by pressing F10 or F8. It is not recommended to press Enter to wake the session.

The Java command for the keyrng utility produces the same behavior of the USS terminal session.

This behavior of USS(OMVS) is only for 3270 terminal sessions, not telnet sessions to UNIX System Services.

- The program tape has all the documentation including the **Planning, Installing, and Configuring** guide which can be viewed via your browser once the product has been installed or from the Host On-Demand Web site. Please see Section 2.3 on how to access the publications via your browser.
- Make sure that the LIBPATH and PATH statements are all set correctly in your USS profile. For the LIBPATH and PATH statements, you will need updates for your installed Java libraries as detailed below. These statements should point to your installed level of Java. You should also make sure that the LIBPATH, PATH, and CLASSPATH statements also include the proper **WebSphere Application Server** product statements (ie., usually /usr/lpp/internet/bin). The USS profile is usually found in your **/etc** directory in USS.
 - The LIBPATH environment variable should point to the correct Java libs. The LIBPATH statement would include the proper path to your java /lib path. An example follows:

```
LIBPATH=/usr/lpp/java/IBM/J1.3/lib
```

- The PATH environment variable should point to the correct Java binaries. The PATH statement should include the proper path to your java /bin. An example follows:

```
PATH=/usr/lpp/java/IBM/J1.3/bin
```

8. You cannot run two Host On-Demand servers on the same stack because the Service Manager listens on a specific IP port. Two service managers running at the same time will try to grab the same port; the result is that one of the two will fail.
9. Since the configuration files are all stored in the /private directory, you should ensure that the directory path is correct. If you installed Version 3 in the default directories, it would be **/usr/lpp/HOD/ondemand/private**. The installation script **hod80mvs.sh** will migrate your Version 3 /private directory. Double check to make sure the migration was successful and you see your Version 3 /ondemand/private files in /hostondemand/private.
10. Be aware that whatever method you may use to edit files in UNIX System Services (ie., configuration files), you may see problems such as carriage returns or blanks being inserted. To alleviate this problem use a flat-text editor or simply use **FTP** to *ftp* your file to a Windows based text editor and then *ftp* back the modified file to your USS Host.
11. The **private** directory can be a separate HFS with a mountpoint of /usr/lpp/HOD/hostondemand/private. This HFS must be mounted read/write and the main Host On-Demand HFS can be mounted in read only.
12. If you are running multiple stacks and you want the Host On-Demand server to run on one stack only, you need to create stack affinity by adding the respective environment variable to the ServiceManager.sh shell script:

```
export _BPXK_SETIBMOPT_TRANSPORT=XXXXXXXX
```

where XXXXXXXX is the name of the TCP/IP stack with which you want to establish affinity.

13. If you experience java Service Manager 'out-of-memory' errors, causing various tasks to fail such as:
 - Saving session information
 - Loading a large number of users
 - Attempting to save large blocks of trace data

The following two parameters can be used on the start-up command in the Host On-Demand Service Manager shell start-up script (/usr/lpp/HOD/hostondemand/lib/ServiceManager.sh)

a. -mx32m (or larger if needed, ie., -mx64m)

- The mx32m parameter increases the maximum Java heap size. The heap size is increased from the default value of 3 to 32MB.

b. -oss256k

- The oss256k parameter increases the maximum Java stack size (per thread). The value is changed from the default of 128 KB to 256 KB.

These parameters have been added as a start-up option line in your ServiceManager.sh script. The line is commented out by default. If you need to run Host On-Demand with increased Java heap and

stack parameters, uncomment the line in the ServiceManager.sh shell script that begins as follows (making sure to comment out your previous executable statement):

```
java -mx32m -oss256k -classpath .:sm.zip:.....
```

14. APPLY will abend with RC=12 if the SYS1.LINKLIB dataset does not have write authority.

Reader's Comments

Program Directory for IBM WebSphere Host On-Demand V8 for OS/390 and z/OS February 2004

You may use this form to comment about this document, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

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RATING SCALE					
very satisfied	<----->	very dissatisfied	not applicable		
1	2 3 4	5	N		

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of Program Directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of Program Directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

How did you order this product?

- CustomPac
- ServerPac
- Independent
- Other

Is this the first time your organization has installed this product?

- Yes
- No

Were the people who did the installation experienced with the installation of z/OS products?

- Yes
- No



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