



**Program Directory for  
IBM Directory Maintenance for VM/ESA<sup>TM</sup>**

Release 5, Modification Level 0

Program Number 5748-XE4

for Use with  
VM/ESA<sup>®</sup>

Document Date: February 2000

GI10-4663-00

**Note!**

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

This program directory, dated February 2000, applies to IBM Directory Maintenance for VM/ESA Release 5, Modification Level 0 (DirMaint™), Program Number 5748-XE4 for the following:

<b>COMPIDs</b>	<b>Feature Numbers</b>	<b>System Name</b>
5749DVH00	5831	VM/ESA
	5832	
	5834	
	5720	

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## 2 Summary of Changes

2 The following describes the different revision indicators used and the timeframe when they were inserted:

- 2 • Lines flagged with revision indicator of '1' indicate changes made between October 1995 and July 1996.
- 2 • Lines flagged with revision indicator of '2' indicate changes made between July 1996 and July 1997.
- 3 • Lines flagged with revision indicator of '3' indicate changes made between July 1997 and February 2000.

---

## 3 DirMaint Web Information

3 The DirMaint web page can be visited at URL <http://www.ibm.com/s390/vm/related/dirmaint> where you will find:

- 3 • Additional useful information, hints, and tips.
  - 3 • A postscript version of the DirMaint 1.5.0 program directory available for downloading.
  - 3 • A PDF version of the DirMaint 1.5.0 program directory available for viewing.
  - 3 • Appendix E, “DirMaint Release 5 Migration Guide” on page 127 available for viewing online.
  - 3 • Appendix F.8, “YEAR 2000 Support with APAR VM60538” on page 160 available for viewing online.
- 3 Plan on visiting this URL often.



---

## 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 DirMaint. You should read all of this program directory before installing the program and then keep it for future reference.

### Note!

Knowledge of VMSES/E is required prior to installing and/or servicing DirMaint. For a complete description of VMSES/E refer to *VMSES/E Introduction and Reference*.

The program directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for DirMaint.
- 3.0, “Program Support” on page 8 describes the IBM support available for DirMaint.
- 4.0, “Program and Service Level Information” on page 9 lists the APARs (program level) and PTFs (service level) incorporated into DirMaint.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and considerations for installing and using DirMaint.
- 6.0, “Installation Instructions” on page 24 provides detailed installation instructions for DirMaint.
- 7.0, “Service Instructions” on page 60 provides detailed servicing instructions for DirMaint.
- Appendix A, “Test the Installation/Service for DirMaint” on page 79 provides test instructions.
- Appendix B, “Local Modification Example: \$EXEC File” on page 114 provides a local modification example for DirMaint.
- Appendix C, “Applying a Recommended Service Upgrade (RSU) Tape For DirMaint” on page 116 provides detailed RSU install instructions for DirMaint.
- Appendix D, “Overriding the VMSYS File Pool Name” on page 123 provides instructions on overriding the VMSYS file pool name for DirMaint.
- Appendix E, “DirMaint Release 5 Migration Guide” on page 127 provides information on migrating DIRMAINT Release 4 to DirMaint Release 5.
- Appendix F, “Documentation Updates” on page 149 provides updates to DirMaint Release 5 publications.
- 3 • Appendix G, “Interface Descriptor Changes” on page 165 shows APAR level updates to the DirMaint  
3 Release 5 interface descriptor used by exits.

Before installing DirMaint, read 3.1, “Preventive Service Planning” on page 8. This section tells you how to find any updates to the information and procedures in this program directory.

---

## 1.1 Program Description

Directory Maintenance for VM/ESA provides:

- Commands to allow general users to control those portions of their directory entry not directly affecting their privileges or resources, relieving the system administrators of this chore;
- Commands to allow system administrators to easily make updates to the directory affecting user privileges and resource allocations, improving productivity;
- Integrity checking and verification services to avoid accidental damage to the directory or overlapping of DASD allocations.

---

## 1.2 Enhancements for IBM Directory Maintenance for VM/ESA

The following enhancements have been made to DirMaint:

- VMSES/E Enablement for installation and service
- Publications library refresh
- Improved networking support
- Distributed administration
- Providing separate commands to manipulate every directory statement reducing the need for get/replace
- Provide six new user exits and twenty-six new system exits
- Changing the way DASD allocation is done based on size of disk to minimize fragmentation
- No longer holds a work unit lock if the work unit fails
- Conditionally eliminate printed password warning notices
- Purge old reader file notices
- Supporting set password as being already in the warning period
- Elimination of the 15 minute wait between consecutive VM minidisk requests
- Exploiting DFSMS® copy function if DFSMS is installed
- No longer arbitrarily upper case directory file information
- Support alternate source and alternate object directories

---

## 2.0 Program Materials

An IBM program is identified by a program number and a feature code. The program number for DirMaint is 5748-XE4.

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

The following sections identify:

- The basic and optional program materials available with this program

---

### 2.1 Basic Machine-Readable Material

The distribution medium for this program is 9-track magnetic tape (written at 6250 BPI), 3480 cartridge, 1/4-inch tape cartridge, or 4mm DAT cartridge. The tape or cartridge contains all the programs and data needed for installation. DirMaint is installed using VMSES/E. See section 6.0, "Installation Instructions" on page 24 for more information about how to install the program. Figure 1 describes the tape or cartridge.

**Note:** A DirMaint Recommended Service Update (RSU) tape, if available, will accompany each order. This tape will be labeled 'yynnRSU', where 'yynn' indicates the RSU level.

*Figure 1. Basic Material: Program Tape*

Feature Number	Medium	Physical Volume	Tape Content	External Tape Label
5831	6250 tape	1	DirMaint 1.5.0	Base Product 1 of 1
5832	3480 cart.	1	DirMaint 1.5.0	Base Product 1 of 1
5834	.25" cart	1	DirMaint 1.5.0	Base Product 1 of 1
5720	4 mm DAT cart	1	DirMaint 1.5.0	Base Product 1 of 1

*Figure 2 (Page 1 of 2). Program Tape: File Content*

Tape File	Content
1	Tape Header
2	Tape Header
3	Product Header
4	Product Memo

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

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<b>Tape File</b>	<b>Content</b>
5	Service Apply Lists
6	PTFPARTs
7	DirMaint Service
8	DirMaint Service Inventories
9	DirMaint Base Code
10	DirMaint Optional Source
11	DirMaint sample tailorable files
12	DirMaint American English HELP files
13	Interpretive DIRMAINT EXEC files for copying to MAINT's 19E disk
14	Compiled DIRMAINT EXEC files for copying to MAINT's 19E disk
15	Interpretive EXEC, REXX, and XEDIT files for DIRMAINT/DATAMOVE/DIRMSAT service machine code.
16	Compiled EXEC, REXX, and XEDIT files for DIRMAINT/DATAMOVE/DIRMSAT service machine code.
17	Non-EXEC/REXX/XEDIT files for DIRMAINT/DATAMOVE/DIRMSAT service machine code. Also contains sample customer tailorable files.
18	Interpretive EXEC, REXX, and XEDIT files for the user interface code
19	Compiled EXEC, REXX, and XEDIT files for the user interface code
20	Non-EXEC/REXX/XEDIT files for the user interface code such as message repository files.

---

## 2.2 Optional Machine-Readable Material

There are no optional machine-readable materials for DirMaint.

---

## 2.3 Program Publications

The following sections identify the basic and optional publications for DirMaint.

## 2.3.1 Softcopy Publications

- 3 DirMaint publications are offered in displayable softcopy form on CD-ROM. These files are shipped on the
- 3 *IBM Online Library Omnibus Edition VM Collection* (SK2T-2067) CD-ROM. One copy of the VM collection
- 3 kit CD-ROM is included when you order the basic materials for DirMaint.
  
- 3 These displayable manuals can be used with the BookManager® READ licensed programs in any of the
- 3 supported environments. Terms and conditions for use of the machine-readable files are shipped with the
- 3 Online Product Library.

## 2.3.2 Basic Program Publications

Figure 3 identifies the basic program publications for DirMaint. One copy of each of these publications is included when you order the basic materials for DirMaint. For additional copies, contact your IBM representative.

*Figure 3. Basic Material*

Publication Title	Form Number
DirMaint Release 5 General Information	GC20-1836-06
DirMaint Release 5 Licensed Program Specifications	GC20-1837-04
DirMaint Release 5 Tailoring and Administration Guide	SC23-0533-04
DirMaint Release 5 Command Reference Summary	SX23-0402-01
3 IBM Online Library Omnibus Edition VM Collection	SK2T-2067-16

### 3 Note:

- 3 • In countries outside the United States, the form number for ordering the *IBM Online Library Omnibus Edition VM Collection* may be 5636-PUB.
- 3 • The *DirMaint Release 5 Command Reference*, SC20-1839-04, and *DirMaint Release 5 Message Reference*, SC23-0437-02, manuals are only available on the *IBM Online Library Omnibus Edition VM Collection*.

## 2.3.3 Optional Program Publications

Figure 4 identifies the optional publications for DirMaint. The first copy is available at no charge to licenses of the basic material by ordering the first copy feature number. Additional copies may be ordered using the additional copy feature number. A fee is charged for additional copies. For additional copies, contact your IBM representative.

*Figure 4. Basic Material*

Publication Title	First Copy Feature Number	Additional Copy Feature Number	Form Number
DirMaint Release 5 Diagnosis Reference	7002	8064	LY23-0889-07

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## 2.4 Microfiche Support

There is no microfiche for DirMaint.

---

## 2.5 Publications Useful During Installation/Service

3 The publications listed in Figure 5, Figure 6, and Figure 7 may be useful during the installation of  
3 DirMaint. To order copies, contact your IBM representative.

3 *Figure 5. Publications Useful During Installation / Service on VM/ESA 2.3.0 or higher*

<b>3 Publication Title</b>	<b>Form Number</b>
3 VM/ESA: VMSES/E Introduction and Reference	GC24-5837
3 VM/ESA: Service Guide	GC24-5838
3 VM/ESA: Planning and Administration	SC24-5750
3 VM/ESA: CP Command and Utility Reference	SC24-5773
3 VM/ESA: CMS Command Reference	SC24-5776
3 VM/ESA: CMS File Pool Planning, Administration, and Operation	SC24-5751
3 VM/ESA: System Messages and Codes	GC24-5841

*Figure 6. Publications Useful During Installation / Service on VM/ESA 2.1.0 and VM/ESA 2.2.0*

<b>3 Publication Title</b>	<b>Form Number</b>
3 VMSES/E Introduction and Reference	SC24-5747
3 VM/ESA: Service Guide	SC24-5749
3 VM/ESA: Planning and Administration	SC24-5750
3 VM/ESA: CMS Command Reference	SC24-5776
3 VM/ESA: CP Command and Utility Reference	SC24-5773
3 VM/ESA: CMS File Pool Planning, Administration, and Operation	SC24-5751
3 VM/ESA: System Messages and Codes	SC24-5784

*Figure 7 (Page 1 of 2). Publications Useful During Installation/Service on VM/ESA Version 1*

<b>3 Publication Title</b>	<b>Form Number</b>
3 VMSES/E Introduction and Reference	SC24-5444
3 VMSES/E Introduction and Reference	SC24-5444
3 VM/ESA: Planning and Administration	SC24-5521
3 VM/ESA: Service Guide	SC24-5527
3 VM/ESA: CP Command and Utility Reference	SC24-5519



3 *Figure 7 (Page 2 of 2). Publications Useful During Installation/Service on VM/ESA Version 1*

3 <b>Publication Title</b>	<b>Form Number</b>
3 VM/ESA: CMS Command Reference	SC24-5461
3 VM/ESA: SFS and CRR Planning, Administration, and Operation	SC24-5649
3 VM/ESA: System Messages and Codes	SC24-5529
3 <b>Note:</b> The above form numbers may be different for VM/ESA 1.1.5.	

---

## 3.0 Program Support

This section describes the IBM support available for DirMaint.

---

### 3.1 Preventive Service Planning

Before installing DirMaint, check with your IBM Support Center or use IBMLink™ (Service Link) to see whether there is additional Preventive Service Planning (PSP) information. To obtain this information, specify the following UPGRADE and SUBSET values:

Figure 8. PSP Upgrade and Subset ID

---

Retain				
COMPID	Release	Upgrade	Subset	Description
5749DVH00	A50	DIRM150	DIRM/150	Install information
5749DVH00	A50	DIRM150	yynnRSU	RSU service recommendations
5749DVH00	A50	DIRM150	RSU-BY-LVL	Service sorted by RSU service level
5749DVH00	A50	DIRM150	RSU-BY-APAR	Service sorted by RSU APARs
5749DVH00	A50	DIRM150	RSU-BY-PTF	Service sorted by RSU PTFs

If you have received DirMaint only from IBM Software Distribution, then before installing DirMaint, you should also check with your IBM Support Center or use SoftwareXcel Extended to see if there is additional PSP information that you should know.

---

### 3.2 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 9 identifies the component IDs (COMPID), Retain Release and Field Engineering Service Numbers (FESN) for DirMaint.

Figure 9. Component IDs

---

Retain			
COMPID	Release	Component Name	FESN
5749DVH00	A50	DirMaint 1.5.0	6415301

---

## **4.0 Program and Service Level Information**

This section identifies the program and any relevant service levels of DirMaint. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided. For information regarding any NAT/VM SDO refreshes for DirMaint, please review the SDO program directory before continuing with instructions here.

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### **4.1 Program Level Information**

DirMaint Release 4 APARs are not applicable to DirMaint Release 5. However, all fixes previous to June 1995 have been incorporated into DirMaint Release 5.

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### **4.2 Service Level Information**

This is the initial release of IBM Directory Maintenance for VM/ESA. There are no PTFs on the installation tape.

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### **4.3 Cumulative Service Tape**

An RSU tape for IBM Directory Maintenance for VM/ESA will be produced periodically as service warrants. See upgrade bucket DIRM150 subset yynnRSU (where yynn is the RSU service level) for the latest RSU tape available. For the list of PTF's included on the RSU tape, see the service memo from the tape.

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## 5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DirMaint.

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### 5.1 Hardware Requirements

There are no special hardware requirements for DirMaint.

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### 5.2 Program Considerations

The following sections list the programming considerations for installing DirMaint and activating its functions.

#### 5.2.1 Operating System Requirements

DirMaint supports the following VM platforms:

- VM/ESA 1.2.1
- VM/ESA 1.2.2
- VM/ESA 2.1.0
- 1 • VM/ESA 1.1.5 370 Feature
- **RSU9501 service level** or above must be applied to VMSES/E on VM/ESA 1.2.1, VM/ESA 1.2.2, or VM/ESA 1.1.5 prior to installing DirMaint
- 3 • VM/ESA 2.2.0 (or higher)
- 3 • APAR **VM62316** must be applied to VMSES/E on VM/ESA 2.2.0, VM/ESA 2.3.0, or VM/ESA 2.4.0
- 3 prior to installing DirMaint
- 3 **Note:** VM/ESA 2.2.0 is the first VM release containing year 2000 support.

#### 5.2.2 Other Program Product Requirements

- 3 The VM/REXX 3.0 runtime library, or equivalent function, is required if using compiled execs is preferred, otherwise DirMaint has no dependencies on any other product.

## 5.2.3 Program Installation/Service Considerations

This section describes items that should be considered before you install or service DirMaint.

- VMSES/E is required to install and service this product.
- If multiple users install and maintain licensed products on your system, there may be a problem getting the necessary access to MAINT's 51D disk. If you find that there is contention for write access to the 51D disk, you can eliminate it by converting the Software Inventory from minidisk to Shared File System (SFS). See the *VMSES/E Introduction and Reference* manual, section 'Changing the Software Inventory to an SFS Directory', for information on how to make this change.
- Customers will no longer install and service DirMaint strictly using the MAINT or DIRMAINT user ID, but will use a new user ID--P748XE4M. This is the IBM suggested user ID name. You are free to change this to any user ID name you wish, however, a PPF override must be created.

**Note:** It may be easier to make the above changes during the installation procedure 6.2, "Plan Your Installation For DirMaint" step 6 on page 27, than after you have installed this product.

- RSU tapes will be supplied as necessary. Service between RSU tapes can be obtained via CORrective service.
- A section of the *DirMaint Release 5 Tailoring and Administration Guide* entitled "Directory Entries for the DirMaint Machines" provides useful background information on the server directories.

## 5.2.4 Recommended Program Products / Components

For maximum performance of DirMaint, it is recommended to obtain and use the VM/REXX 3.0 run time library.

## 5.2.5 User ID Directory Information

User directory statements supplied in the 5748XE4M PRODPART file have user IDs that have privilege classes other than G. These privilege classes are required for the following reasons:

- The DIRMAINT virtual machine must have class B privilege for any of the following:
  - Use of MSGNOH
  - Use of DIAGNOSE X'3C'
  - Use of DIAGNOSE X'84'
  - Use of DIAGNOSE X'A0' if RACF® or other ESM (External Security Manager) is installed
  - Use of DIAGNOSE X'D4' for SECLABEL and/or TCB use
- The DIRMAINT virtual machine must have class D privilege to issue the CP QUERY ALLOC command for determining system owned space. The DIRMAINT server will map these as used extents.

Warning, there are risks with granting any user ID class D authority. You may rather want to create a separate class for the CP QUERY command and grant the DIRMAINT user ID authority to that class.

- The DATAMOVE virtual machine must have class B privilege for any of the following:
  - Use of MSGNOH
  - Use of DIAGNOSE X'D4' for SECLABEL and/or TCB use
- The DIRMSAT virtual machine must have class B privilege for any of the following:
  - Use of MSGNOH
  - Use of DIAGNOSE X'3C'
  - Use of DIAGNOSE X'84'
- I    – Use of DIAGNOSE X'D4' for SECLABEL and/or TCB use

Alternate privilege classes may be required if CP's user Class Restructure support has been used to redefine the system privileges. Some of these classes may not be required if RACF/VM, or an equivalent external security manager, is installed and the appropriate permissions have been granted to the service machines to issue the necessary commands and diagnose instructions.

### 3 **5.2.6 New Function (Development) APARs**

3 The following are new function, or development, and special attention APARS for DirMaint:

- 3 • APAR VM60054
  - 3    ADD/PURGE performance improvement, if not exploiting authorization exits
- 3 • APAR VM60131
  - 3    Allow initialization while RUNMODE=TESTING
- 3 • APAR VM60261
  - 3    Elimination of copyright notice screen
- 3 • APAR VM60509
  - 3    Modifications to the interface between the DIRMAINT server and the DATAMOVE and DIRMSAT
  - 3    servers to allow the servers to communicate with DIRMAINT in the language specified by the system
  - 3    programmer in the CONFIG\* DATADVH file(s) while still sending messages to the user in the user's
  - 3    chosen language.
- 3 • APAR VM60538
  - 3    Provide support for VM/ESA 2.2.0 and YEAR 2000. For more information see F.8, "YEAR 2000
  - 3    Support with APAR VM60538" on page 160.
- 3 • APAR VM60574
  - 3    Add capability to prevent reuse of recently used passwords.
- 3 • APAR VM60575
  - 3    Allow use of a preset password contained within LASTING GLOBALV.
- 3 • APAR VM60576

- 3 Allow customer control of console spooling.
- 3 • APAR VM60684
- 3 Performance Enhancements.
- 3 • APAR VM60744
- 3 Allow replace to not sort the directory.
- 3 • APAR VM61019
- 3 Provide support for the IBM Multiprise® 2000 internal DASD. For more information see F.9, “Multiprise 2000 Support” on page 161.
- 3 • APAR VM61371
- 3 VM/ESA 2.3.0 support
- 3 • APAR VM61493
- 3 Provide NEEDPASS command for 140A compatibility mode
- 3 • APAR VM61546
- 3 Provide the capability to close the TRANSLOG file daily
- 3 • APAR VM61719
- 3 Performance enhancements
- 3 • APAR VM61818
- 3 DASD Performance enhancements
- 3 • APAR VM61848
- 3 Year 2000 support
- 3 • APAR VM62147
- 3 VM/ESA 2.4.0 support
- 3 • APAR VM62262
- 3 Performance enhancements

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### 5.3 DASD Storage and User ID Requirements

Sections 5.3.1, “Required DASD Storage for DirMaint” on page 15 and 5.3.2, “Required DASD Storage for DirMaint Based on Source Directory Size” on page 20 lists the user IDs and minidisks that are required to install and service DirMaint. Sections 5.3.3, “Optional DASD Storage for DirMaint” on page 21 and 5.3.4, “Optional DASD Storage for DirMaint Based on Source Directory Size” on page 23 lists the user IDs and minidisks that are optional for DirMaint.

### **Important Installation Notes:**

- The user IDs and minidisks will be defined in 6.2, “Plan Your Installation For DirMaint” on page 25 and are listed here so that you can get an idea of the resources that you will need prior to allocating them.
- P748XE4M is a default user ID and can be changed. If you choose to change the name of the installation user ID you need to create a Product Parameter Override (PPF) to change the name. This can be done in 6.2, “Plan Your Installation For DirMaint” step 6 on page 27.
- If you chose to change the installation user ID, you must ensure that all the default virtual minidisk addresses for DirMaint are unique on the new installation user ID. You will have to create a PPF override to change any minidisk address conflicts. Use of the shared file system will help reduce these conflicts. However, any disk with \*NONSFS listed in the SFS 4K block column of Figure 10 on page 15 must remain a minidisk.
- The DIRMSAT user ID and minidisk resources are only required if you plan on using a DirMaint Satellite server machine. This server is only necessary if you plan on maintaining multiple object directories on a single system or within a Cross System Extension (CSE) cluster. If this is not your environment, then there is no need to obtain the DIRMSAT user ID or any of the resources it owns.



### 5.3.1 Required DASD Storage for DirMaint

The table in Figure 10 contains the required DASD for the P748XE4M, MAINT, and DirMaint server user IDs in order to install and service DirMaint 1.5.0.

#### 2 Important DASD Notes:

- 2 • **It is not recommended** that the P748XE4M 492, 491, 41F, or 11F minidisks, or any disks owned  
2 by DirMaint servers reside in a shared file system directory. In the event of shared file system  
2 problems, it may be impossible to make any directory changes. And it is possible that one or  
2 more directory changes, such as allocating more DASD space, may be necessary to make the  
1 shared file system operational again. The DIRMAINT 15D and 1DE disks must not reside in a  
2 shared file system directory.
- 1 • All disks **MUST** be CMS formatted except the DIRMAINT 1DE disk which **MUST** be CP formatted.  
1 The DIRMAINT 1DE disk is only used on VM/ESA 1.1.5
- 2 • The DIRMAINT 1AA, 1FA, and 1DE, the DATAMOVE 1AA, and the DIRMSAT 1AA minidisks are  
2 in the required list since they are strongly recommended.
  - 2 – The 1AA minidisks are used to maintain history files for debugging purposes. If your system  
2 has an ESM with the ability for authorized virtual machines to write log records into the ESM  
2 audit trail, then you may wish to omit the 1AA minidisks in favor of the ESM's audit trail.
  - 2 – If you have a DIRMAINT Release 4 112 minidisk, you can use that disk in place of the  
2 DIRMAINT 1FA minidisk by customizing the DVHPROFA DIRMAINT file.
  - 2 – If you have a DIRMAINT Release 4 1CA minidisk, you can use that disk in place of the  
2 DIRMAINT 1DE minidisk by customizing the DVHPROFA DIRMAINT file.

Figure 10 (Page 1 of 5). DASD Storage Requirements for (Required) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
P748XE4M	2B2	9345 3390 3380 3375 3350	15 13 15 24 19	18000	2250	Contains all of the base code shipped with DirMaint  <b>VMSYS:P748XE4M.DIRM.OBJECT</b>
<b>Notes:</b>						
1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.						
2. *NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.						

Figure 10 (Page 2 of 5). DASD Storage Requirements for (Required) Target Minidisks

2  
2  
2  
2  
2

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
P748XE4M	2C2	9345 3390 3380 3375 3350	1 1 1 2 1	1200	150	Used for user local modifications for DirMaint  <b>VMSYS:P748XE4M.DIRM.LOCALMOD</b>
P748XE4M	2D2	9345 3390 3380 3375 3350	50 45 50 80 65	60000	7500	Contains serviced files  <b>VMSYS:P748XE4M.DIRM.DELTA</b>
P748XE4M	2A6	9345 3390 3380 3375 3350	5 4 5 8 7	6000	750	Contains AUX files and version vector table that represents your test level of DirMaint  <b>VMSYS:P748XE4M.DIRM.APPLYALT</b>
P748XE4M	2A2	9345 3390 3380 3375 3350	5 4 5 8 7	6000	750	Contains AUX files and version vector table that represent your production level of DirMaint  <b>VMSYS:P748XE4M.DIRM.APPLYPROD</b>
P748XE4M	29D	9345 3390 3380 3375 3350	10 9 10 16 13	12000	1500	Contains American English help files for DirMaint  <b>VMSYS:P748XE4M.DIRM.HELP</b>
P748XE4M	29E	9345 3390 3380 3375 3350	1 1 1 2 1	1200	150	Test disk for DirMaint code belonging on MAINT's 19E  <b>VMSYS:P748XE4M.DIRM.MAINT19E</b>
P748XE4M	492	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Test disk for DirMaint servers, also contains sample directories and other tailorable files and new source files. Also servers 192 disk

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.

Figure 10 (Page 3 of 5). DASD Storage Requirements for (Required) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
P748XE4M	491	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Production disk for DirMaint servers, also servers 191 disk
P748XE4M	41F	9345 3390 3380 3375 3350	5 4 5 8 7	6000	*NONSFS	Test disk for DirMaint interface code
P748XE4M	11F	9345 3390 3380 3375 3350	5 4 5 8 7	6000	*NONSFS	Production disk for DirMaint interface code also servers 11F disk
P748XE4M	191	9345 3390 3380 3375 3350	10 9 10 16 13	12000	1500	P748XE4M user ID's 191 minidisk  <b>VMSYS:P748XE4M.</b>
MAINT	19E	9345 3390 3380 3375 3350	1 1 1 2 1	1200	150	Production disk for DirMaint user exec.
DATAMOVE	155	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Server's A-disk
DIRMSAT	155	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Server's A-disk

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.

Figure 10 (Page 4 of 5). DASD Storage Requirements for (Required) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
DIRMAINT	1AA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Contain CONSOLE and TRANSLOG files
DATAMOVE	1AA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Contain CONSOLE and TRANSLOG files
DIRMSAT	1AA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Contain CONSOLE and TRANSLOG files
DIRMAINT	15D	9345 3390 3380 3375 3350	1 1 1 1 1	64	*NONSFS	Intersystem locking disk
DIRMAINT	1FA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Temporary storage for arriving spool files
DATAMOVE	1FA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Temporary storage for arriving spool files
DIRMSAT	1FA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Temporary storage for arriving spool files

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.

Figure 10 (Page 5 of 5). DASD Storage Requirements for (Required) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
DIRMAINT	1DE	9345	10	12000	*NONSFS	For using DIRECT/DIRECTXA with the EDIT option
		3390	9			
		3380	10			
		3375	16			
		3350	13			

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.

### 5.3.2 Required DASD Storage for DirMaint Based on Source Directory Size

The following table contains the required DASD for the DIRMAINT server whose disk size is based on the source directory size.

*Figure 11. DASD Storage Requirements for Required DIRMAINT Disks Based on Source Directory Size*

<b>Minidisk owner (user ID)</b>	<b>Default Address</b>	<b>Calculation for Storage in Cylinders</b>	<b>Usage</b>
DIRMAINT	155	<b>Two</b> Times the Source Directory Size	DIRMAINT server's A-disk
DIRMAINT	1DF	<b>Two</b> times the Source Directory Size	Contains the primary directory files
DIRMAINT	1DB	<b>Three</b> Times the Source Directory Size	Contains the USER BACKUP file

**Notes:**

1. **It is not recommended** that any disks owned by DirMaint servers reside in a shared file system directory. In the event of shared file system problems, it may be impossible to make any directory changes. And it is possible that one or more directory changes, such as allocating more DASD space, may be necessary to make the shared file system operational again.
2. All the disks defined in this table **MUST** be CMS formatted.

### 5.3.3 Optional DASD Storage for DirMaint

The following table contains the optional DASD for the P748XE4M, MAINT, and DirMaint server user IDs in order to install optional source, install and service Uppercase English help files, copy American English help files to MAINT's 19D minidisk, and for DirMaint backup minidisks.

Figure 12 (Page 1 of 2). DASD Storage Requirements for (Optional) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
P748XE4M	2B1	9345 3390 3380 3375 3350	9 8 9 14 12	10200	1350	Contains optional source files  <b>VMSYS:P748XE4M.DIRM.SOURCE</b>
P748XE4M	502	9345 3390 3380 3375 3350	10 9 10 16 13	12000	1500	Contains Upper Case English help files for DirMaint  <b>VMSYS:P748XE4M.DIRM.HELPU</b>
MAINT	19D	9345 3390 3380 3375 3350	10 9 10 16 13	12000	1500	Production disk containing American English help files for DirMaint
MAINT	402	9345 3390 3380 3375 3350	10 9 10 16 13	12000	1500	Production disk containing Upper Case English help files for DirMaint
DIRMAINT	2AA	9345 3390 3380 3375 3350	10 9 10 16 13	12000	*NONSFS	Contains a backup of the CONSOLE and TRANSLOG files.

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.
3. Cylinder values for the 2B1 minidisk are based on the source files in packed format. In order to create updates and assemble the files they will need to be unpacked. Disk sizes unpacked will be approximately double that which is shown in this table.
4. All the disks defined in this table MUST be CMS formatted.

Figure 12 (Page 2 of 2). DASD Storage Requirements for (Optional) Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		FB-512 Blocks	SFS 4K Blocks	Usage
		DASD	CYLS			Default SFS Directory Name
DATAMOVE	2AA	9345	10	12000	*NONSFS	Contains a backup of the CONSOLE and TRANSLOG files.
		3390	9			
		3380	10			
		3375	16			
		3350	13			
DIRMSAT	2AA	9345	10	12000	*NONSFS	Contains a backup of the CONSOLE and TRANSLOG files.
		3390	9			
		3380	10			
		3375	16			
		3350	13			

**Notes:**

1. Cylinder values defined in this table are based on a 4k block size. FB-512 and SFS block values are derived from the 3380 cylinder values in this table.
2. \*NONSFS in the SFS 4K block column means that disk cannot be installed to the shared file system and must remain a minidisk which will be defined in 6.3, "Allocate Resources for Installing DirMaint." on page 28.
3. Cylinder values for the 2B1 minidisk are based on the source files in packed format. In order to create updates and assemble the files they will need to be unpacked. Disk sizes unpacked will be approximately double that which is shown in this table.
4. All the disks defined in this table MUST be CMS formatted.



### 5.3.4 Optional DASD Storage for DirMaint Based on Source Directory Size

The following table contains the optional DASD for the DIRMAINT server whose disk size is based on the source directory size.

<i>Figure 13. DASD Storage Requirements for Optional DIRMAINT Disks Based on Source Directory Size</i>			
<b>Minidisk owner (user ID)</b>	<b>Default Address</b>	<b>Calculation for Storage in Cylinders</b>	<b>Usage</b>
DIRMAINT	2DF	<b>Two</b> Times the Source Directory Size	Contains a backup of the secondary directory files
DIRMAINT	2DB	<b>Three</b> Times the Source Directory Size	Contains a backup of the USER BACKUP file
<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li><b>It is not recommended</b> that any disks owned by DirMaint servers reside in a shared file system directory. In the event of shared file system problems, it may be impossible to make any directory changes. And it is possible that one or more directory changes, such as allocating more DASD space, may be necessary to make the shared file system operational again.</li> <li>All the disks defined in this table <b>MUST</b> be CMS formatted.</li> </ol>			

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## 6.0 Installation Instructions

This chapter describes the installation methods and the step-by-step procedures to install and activate DirMaint.

The step-by-step procedures are in a two column format. The steps to be performed are in bold large numbers. Commands for these steps are on the left hand side of the page in bold print. Additional information for a command may exist to the right of the command.

Each step of the installation instructions must be followed. Do not skip any step unless otherwise directed to. All instructions showing accessing of disks or SFS directories assumes the use of default minidisk addresses or SFS directory names. If different minidisk addresses are used, change the instructions appropriately.

Only one of the following four component names should be chosen and used throughout the install instructions. The four choices are:

- **DIRM** Used when installing the interpretive execs to minidisk
- **DIRMSFS** Used when installing the interpretive execs to SFS
- **DIRMC** Used when installing the compiled execs to minidisk
- **DIRMCSFS** Used when installing the compiled execs to SFS

All compiled and interpretive execs are loaded to the base regardless of component name used. Only the build disks will be loaded with compiled or interpretive execs depending on the component name used.

| You can switch between using interpretive and compiled execs by issuing the VMFBLD command with the  
2 ALL option after doing a VMFSETUP (see step 8 on page 64).

| To switch from interpretive to compiled execs issue:

| VMFBLD PPF 5748XE4M DIRMC DVHBLDCI (ALL  
| VMFBLD PPF 5748XE4M DIRMC DVHBLDCD (ALL  
| VMFBLD PPF 5748XE4M DIRMC DVHBLDCU (ALL

| To switch from compiled to interpretive execs issue:

| VMFBLD PPF 5748XE4M DIRM DVHBLDII (ALL  
| VMFBLD PPF 5748XE4M DIRM DVHBLDID (ALL  
| VMFBLD PPF 5748XE4M DIRM DVHBLDIU (ALL

### Note!

The sample console output presented throughout these instructions was produced on a VM/ESA 1.2.1 system using minidisks. If you're installing DirMaint on a different VM/ESA system, or are using shared file directories, the results obtained for some commands may differ from those depicted here.

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## 6.1 VMSES/E Installation Process Overview

The following is a brief description of the main steps in installing DirMaint using VMSES/E.

- Plan Your Installation

Use the VMFINS command to load several VMSES/E files from the product tape and to obtain DirMaint resource requirements.

- Allocate Resources

The information obtained from the previous step is used to allocate the appropriate minidisks (or SFS directories) and user IDs needed to install and use DirMaint.

- Install the DirMaint Product

Use the VMFINS command to load the DirMaint product files from tape to the test BUILD and BASE minidisks/directories. VMFINS is then used to update the VM SYSBLDS file used by VMSES/E for software inventory management.

- Perform Post-installation Tasks

Information about file tailoring and initial activation of the program is presented in 6.8, "Tailor the DirMaint Server Machines" on page 44.

- Place the DirMaint Files into Production

Once the product files have been tailored and the operation of DirMaint is satisfactory, the product files are copied from the test BUILD disk(s) to production BUILD disk(s).

For a complete description of all VMSES/E installation options refer to *VMSES/E Introduction and Reference* manual.

---

## 6.2 Plan Your Installation For DirMaint

The VMFINS command will be used to plan the installation. This is a two step process that will:

- load the first tape file, containing VMSES/E PPF and PRODPART files
- generate a 'PLANINFO' file listing:
  - all user ID/mdisk requirements
  - required products

To obtain planning information for your environment:

- 1** Log on as the DirMaint installation planner.

This user ID can be any ID that has read access to MAINT's 5E5 and write access to MAINT's 51D minidisk

**2** Mount the DirMaint installation tape and attach it to this user ID at virtual address 181. The VMFINS EXEC requires the tape drive to be at virtual address 181.

**3** Establish read access to VMSES/E code.

**link maint 5e5 5e5 rr  
access 5e5 b**

The 5E5 disk is where VMSES/E resides.

**4** Establish write access to the Software Inventory Disk (MAINT 51D).

**link maint 51d 51d m  
access 51d d**

The MAINT 51D disk is where the VMSES/E system level software inventory files reside.

**Note:** If another user already has the MAINT 51D minidisk linked in write mode (R/W), you'll only obtain read access (R/O) to this minidisk. If this occurs, you'll need to have that user re-link the 51D in read-only mode (RR), and then re-issue the above LINK and ACCESS commands. Do not continue with these procedures until a write link is established to the 51D minidisk. **Do not use *mw* mode.**

**5** Load DirMaint specific files to the 51D disk.

**vmfins install info (nomemo)**

The NOMEMO option will load the memos but will not issue a prompt to send them to the system printer. Use MEMO if you wish to be prompted for printing the memo.

This command will perform the following:

- Loads the Memo-to-Users to the 51D
- Loads the product control files (PPF and PRODPART) to the 51D
- Creates the VMFINS PRODLIST on your A-disk. The VMFINS PRODLIST contains a list of products on the installation tape.

```
VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS1909I VMFINS PRODLIST created on your A-disk
VMFINS2760I VMFINS processing completed successfully
Ready;
```

**6** Obtain resource planning information for DirMaint (5748XE4M PLANINFO file)

**Note:** The product will not be loaded by the VMFINS command at this time.

**vmfins install ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (plan nomemo**

Use **DIRM** if installing interpretive execs to minidisks or **DIRMSFS** if installing interpretive execs to SFS or **DIRMC** if installing compiled execs to minidisks or **DIRMCSFS** if installing compiled execs to SFS.

The PLAN option indicates that you want VMFINS to perform requisite checking, plan system resources, and provide an opportunity to override the defaults in the product parameter file.

**You can override the following:**

- the name of the product parameter file
- the default user IDs
- minidisk/directory definitions

**Notes:**

- a. If you change the PPF name, a default user ID, or other parameters via a PPF override, you'll need to use your changed values instead of those indicated (when appropriate), throughout the rest of the installation instructions, as well as those indicated for servicing DirMaint. For example, you'll need to specify your PPF override file name instead of 5748XE4M for certain VMSES/E commands. For more information about changing the VMSYS file pool name see Appendix D, "Overriding the VMSYS File Pool Name" on page 123
- b. If you're not familiar with creating PPF overrides using VMFINS, you should review the 'Using the Make Override Panel' section in Chapter 3 of the *VMSES/E Introduction and Reference* before you continue.
- c. If you do choose to make overrides, be sure they are filed on the 51D disk.

```

VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF 5748XE4M DIRM :PRODID
5748XE4M%DIRM?
Enter 0 (No), 1 (Yes) or 2 (Exit)
0
VMFINS2603I Processing product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM
VMFREQ1909I 5748XE4M PLANINFO created on your A-disk
VMFREQ2805I Product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM has passed
requisite checking
VMFINT2603I Planning for the installation of product :PPF 5748XE4M DIRM :PRODID
5748XE4M%DIRM
VMFRMT2760I VMFRMT processing started
VMFRMT2760I VMFRMT processing completed successfully
VMFINS2760I VMFINS processing completed successfully
Ready;

```

- 7 Review the install message log (\$VMFINS \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific install messages, see *VM/ESA: System Messages and Codes*, or use online HELP.

## vmfview install

---

### 6.3 Allocate Resources for Installing DirMaint.

Use the planning information in the 5748XE4M PLANINFO file, created in the PLAN step, to:

- Create the following user IDs if they do not already exist, or update them with new resources if they already do exist:
  - P748XE4M
  - DIRMAINT
  - DATAMOVE
  - DIRMSAT (optional user ID needed for CSE clusters)
- Place the new directories online via the following:

- 1 Obtain the user directory entries from the 5748XE4M PLANINFO file.

**Notes:**

- a. The user directory entries are located at the bottom of the PLANINFO file. This will contain all of the necessary links and privilege classes for all of the user IDs. Use the directory entry found in PLANINFO as model input to your system directory.
- b. A section of the *DirMaint Release 5 Tailoring and Administration Guide* entitled "Directory Entries for the DirMaint Machines" provides useful background information on the server directories.
- c. If you are NOT migrating from DIRMAINT Release 4, delete the links to the following DIRMAINT user ID disks (note you may have a different name for the user ID running the DIRMAINT server code): 191 (linked as 391), 193 (linked as 393), 195, 196, and 1A5.

**2** If you are using minidisks, add the MDISK statements for each disk allocated to the appropriate user ID directory (whether it be P748XE4M, DIRMAINT, DATAMOVE, or DIRMSAT) before placing the directories online. If appropriate, place passwords on the P748XE4M MDISK statements (A password of 'ALL' is recommended for the 11F and 41F minidisks only). It is strongly discouraged, for security reasons, to put passwords on any of the server minidisks (DIRMAINT, DIRMSAT, or DATAMOVE owned minidisks). Use Figure 10 on page 15 and Figure 11 on page 20 to obtain the minidisk requirements. Please note the disks in these tables which MUST be CMS or CP formatted. To format the disks, you may wish to temporarily add link statements for these disks in the P748XE4M directory, format the disk, then remove the link statements. All minidisks should be formatted at this time.

3  
3

**Notes:**

- a. You should obtain minidisk requirements at this time for all optional installation features for DirMaint you intend to use. These include requirements for optional source, Uppercase English help files, and MAINT requirements for the American English help files, which can all be obtained from Figure 12 on page 21 and Figure 13 on page 23. All minidisks should be formatted at this time.
- b. The directory for the P748XE4M must contain a link statement for the DIRMAINT 1DF minidisk.

3  
3

**3** If you are using SFS then you will need to do the following:

- a** Determine the number of 4k blocks that are required for SFS directories. From the 5748XE4M PLANINFO file add up all of the 4k blocks for all of the SFS directories listed or add up all of the SFS Blocks in Figure 10 on page 15 and Figure 11 on page 20. This will give you the total number of 4k blocks that will be needed to install DirMaint. This information will be used when enrolling the P748XE4M

user ID to the VMSYS filepool. Note that there are several disks which cannot be placed in an SFS.

**Note:** You should obtain SFS requirements at this time for all optional installation features for DirMaint you intend to use. These include requirements for optional source, Uppercase English help files, and MAINT requirements for the American English help files, which can all be obtained from Figure 12 on page 21 and Figure 13 on page 23.

- b** Enroll user P748XE4M in the VMSYS filepool using the ENROLL USER command:

**enroll user P748XE4M vmsys: (blocks *blocks*)**

where *blocks* is the number of 4k blocks that you calculated in the previous step.

**Note:** This must be done from a user ID that is an administrator for the VMSYS: filepool.

- c** Determine if there are enough blocks available in the filepool to install DirMaint. This information can be obtained from the QUERY FILEPOOL STATUS command. Near the end of the output from this command is a list of minidisks in the filepool and the number of blocks free. If the number of blocks free is smaller than the total 4k blocks needed to install DirMaint you will need to add space to the filepool. See the *VM/ESA SFS and CRR Planning, Administration, and Operation* manual (VM/ESA Version 1) or the *VM/ESA CMS File Pool Planning, Administration, and Operation* manual (VM/ESA Version 2) for information on adding space to a filepool.
- d** Create the necessary subdirectories listed in the 5748XE4M PLANINFO file using the CREATE DIRECTORY command.

**set filepool vmsys:  
create directory *dirid***

*dirid* is the name of the SFS directory you're creating, such as:

```
create directory vmsys:P748XE4M.DIRM.object  
create directory vmsys:P748XE4M.DIRM.localmod  
:
```

If necessary, see the *VM/ESA CMS Command Reference* manual for more information about the CREATE DIRECTORY command.

A complete list of default DIRM SFS directories is provided in Figure 10 on page 15.



- e** Create the P748XE4M 492, 491, 41F, and 11F, the DIRMAINT 155, 1DF, 1AA, 1DB, 1FA, 15D, and 1DE, the DIRMSAT 155, 1AA, and 1FA, and the DATAMOVE 155, 1AA, and 1FA minidisks, and any of the desired optional minidisks which include the DIRMAINT 2DF, 2AA, and 2DB, the DIRMSAT 2AA, and the DATAMOVE 2AA minidisks. These disks are not recommended to be placed on a shared file directory. The DIRMAINT servers 15D and 1DE minidisks must not reside on a shared file directory. Add the MDISK statements for each disk allocated to the appropriate user ID directory (whether it be DIRMAINT, DATAMOVE, or DIRMSAT) before placing the directories online. It is strongly discouraged, for security reasons, to put passwords on any of the server minidisks (DIRMAINT, DIRMSAT, or DATAMOVE owned minidisks).

**Notes:**

- 1) Please note the disks which **MUST** be CMS or CP formatted. To format the disks, you may wish to temporarily add link statements for these disks in the P748XE4M directory, format the disk, then remove the link statements (note the link statement for the DIRMAINT 1DF disk must remain).
- 2) All minidisks should be formatted at this time.

- f** If you intend to use an SFS directory as the work space for the P748XE4M used ID, include the following IPL control statement in the P748XE4M directory entry:

```
IPL CMS PARM FILEPOOL VMSYS
```

This will cause CMS to automatically access the P748XE4M's top directory as file mode A.

- 4** If running on VM/ESA 1.1.5 then the following user directory changes must be made:

- For the DIRMAINT user directory
  - Delete the MACHINE ESA statement from the directory entry.
  - Delete the D8ONECMD statement from the directory entry.
  - Change the OPTION statement to OPTION BMX CONCEAL  
ECMODE REALTIME
- For the DATAMOVE user directory
  - Delete the MACHINE ESA statement from the directory entry.
  - Delete the D8ONECMD statement from the directory entry.
  - Change the OPTION statement to OPTION BMX CONCEAL  
ECMODE REALTIME

- For the DIRMSAT user directory
  - Delete the MACHINE ESA statement from the directory entry.
  - Delete the D8ONECMD statement from the directory entry.
  - Change the OPTION statement to OPTION BMX CONCEAL  
ECMODE REALTIME
- For the P748XE4M user directory
  - Delete the MACHINE ESA statement from the directory entry.
  - Add OPTION ECMODE prior to the CONSOLE statement.

**5** Change passwords for any newly created user IDs.

**6** Add all of the user ID directories to the user directory.

**7** Place the new directories online using your existing DIRMAINT product or an equivalent CP directory maintenance method.

**Note:** All minidisks for the P748XE4M user ID must be formatted before installing DirMaint.

---

## 6.4 Install DirMaint

The *ppfname* used throughout these instructions is **5748XE4M**, which assumes you are using the PPF supplied by IBM for DirMaint. If you have your own PPF override file for DirMaint, you should use your file's *ppfname* instead of **5748XE4M**. The *ppfname* you use should be used **throughout** the rest of this procedure.

**1** Log on to the installation user ID **P748XE4M**.

**2** Create a PROFILE EXEC that will contain the access of MAINT's 5E5 and 51D minidisks.

**xedit profile exec a**

====> **input /\*\*/**

====> **input 'access 5e5 b'**

====> **input 'access 51d d'**

====> **file**

- 3 Establish write access to the Software Inventory Disk (MAINT 51D) if it is not already linked in write mode.

**Note:** If the MAINT 51D minidisk was accessed R/O, you will need to have the user who has it linked R/W link it as R/O. You then can issue the following command to obtain write access to it. **Do not use *mw mode*.**

**link maint 51d 51d m**

The MAINT 51D disk is where the VMSES/E system level software inventory files reside.

- 4 Execute the profile to access the 5E5 and 51D disks.

**profile**

- 5 Establish write access to the P748XE4M 492 and 41F minidisks if they are not already linked in write mode.

**Note:** The DIRMAINT server has write mode links to them in its directory entry. If the DIRMAINT server has these disks in write mode, then detach them from that user ID. You then can issue the following command to obtain write access to it. **Do not use *mw mode*.**

**link \* 492 492 m**

**link \* 41f 41f m**

- 6 Have the DirMaint installation tape mounted and attached to **P748XE4M** at virtual address 181. The VMFINS EXEC requires the tape drive to be at virtual address 181.

## 7 Install DirMaint

### Notes:

- a. You may be prompted for additional information during VMFINS INSTALL processing depending on your installation environment. If you are unsure how to respond to a prompt refer to the “Installing Products with VMFINS” and “Install Scenarios” chapters in the *VMSES/E Introduction and Reference* to decide how to proceed.

**vmfins install ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (nomemo nolink**

Use **DIRM** if installing interpretive execs to minidisks or **DIRMSFS** if installing interpretive execs to SFS or **DIRMC** if installing compiled execs to minidisks or **DIRMCSFS** if installing compiled execs to SFS.

The NOLINK option indicates that you don't need VMFINS to link to the appropriate minidisks, only access them if not accessed.

```

VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF 5748XE4M DIRM :PRODID
5748XE4M%DIRM?
Enter 0 (No), 1 (Yes) or 2 (Exit)
0
VMFINS2603I Processing product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM
VMFREQ2805I Product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM has passed
requisite checking
VMFREQ2805I Installing product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM
VMFSET2760I VMFSETUP processing started
VMFUTL2205I Minidisk|Directory Assignments:
String Mode Stat Vdev Label/Directory
VMFUTL2205I LOCALSAM E R/W 2C2 P742C2
VMFUTL2205I APPLY F R/W 2A6 P742A6
VMFUTL2205I G R/W 2A2 P742A2
VMFUTL2205I DELTA H R/W 2D2 P742D2
VMFUTL2205I BUILD0 I R/W 29E P7429E
VMFUTL2205I BUILD1 J R/W 492 P74492
VMFUTL2205I BUILD3 K R/W 41F P7441F
VMFUTL2205I BUILD6 L R/W 29D P7429D
VMFUTL2205I BASE M R/W 2B2 P742B2
VMFUTL2205I ----- A R/W 191 P74191
VMFUTL2205I ----- B R/O 5E5 MNT5E5
VMFUTL2205I ----- D R/W 51D MNT51D
VMFUTL2205I ----- S R/O 190 MNT190
VMFUTL2205I ----- Y/S R/O 19E MNT19E
VMFSET2760I VMFSETUP processing completed successfully
VMFREC2760I VMFREC processing started
VMFREC1852I Volume 1 of 1 of INS TAPE 9500
VMFREC1851I (1 of 12) VMFRCAXL processing AXLIST
VMFRCX2159I Loading n part(s) to DELTA 2D2 (H)
VMFREC1851I (2 of 12) VMFRCPTF processing PARTLST
:
VMFRCX2159I Loading part(s) to BUILD3 41F (K)
VMFRCX2159I Loaded n part(s) to BUILD3 41F (K)
VMFREC2760I VMFREC processing completed successfully
VMFINT2603I Product installed
VMFINS2760I VMFINS processing completed successfully
Ready;

```

- 8 Review the install message log (\$VMFINS \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific install messages, see *VM/ESA: System Messages and Codes*, or use online HELP.

## vmfview install

---

## 6.5 Load The Recommended Service Upgrade Tape

Included with DirMaint product tape may be a tape volume referred to as the IBM Recommended Service Upgrade Tape (RSU). This tape includes recommended service that was not included on the DirMaint product tape that should also be installed.

If this tape has not been included with DirMaint, then an RSU has not yet been made available. In this case, continue on with step 6.6, "Optional Installation Steps" on page 39.

The *ppfname* used throughout these instructions is **5748XE4M**, which assumes you are using the PPF supplied by IBM for DirMaint. If you have your own PPF override file for DirMaint, you should use your file's *ppfname* instead of **5748XE4M**. The *ppfname* you use should be used **throughout** the rest of this procedure.

- 1** Log on to the installation user ID **P748XE4M**.
- 2** Establish write access to the Software Inventory Disk (MAINT 51D) if it is not already linked R/W.

**Note:** If the MAINT 51D minidisk was accessed R/O, you will need to have the user who has it linked R/W link it as R/O. You then can issue the following commands to obtain write access to it. **Do not use *mw mode*.**

**link maint 51d 51d m  
access 51d d**

The MAINT 51D disk is where the VMSES/E system level software inventory files reside.

- 3** Establish write access to the P748XE4M 492 and 41F minidisks if they are not already linked in write mode.

**Note:** The DIRMAINT server has write mode links to them in its directory entry. If the DIRMAINT server has these disks in write mode, then detach them from that user ID. You then can issue the following command to obtain write access to it. **Do not use *mw mode*.**

**link \* 492 492 m  
link \* 41f 41f m**

- 4** Have the DirMaint RSU tape mounted and attached to **P748XE4M** at virtual address 181. The VMFINS EXEC requires the tape drive to be at virtual address 181.

- 5** Receive the documentation

Receive the documentation on the tape for the RSU. This step will also load the cumulative Apply Status Table (DIRM SRVAPPS) which identifies all

preapplied service contained on the tape. These files are loaded to the 51D disk.

#### **vmfins install info (nomemo**

#### **6** Determine DASD sizes for disks to receive service:

In order to receive the service from the RSU tape, you need to have adequate space available on the alternate APPLY, DELTA, and BUILD disks. The required sizes are identified in the DirMaint documentation (5748XE4M MEMO D) received in the previous step.

#### **7** Enter the VMFINS command to load the contents of the RSU tape.

#### **vmfins install ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (nomemo nolink**

Refresh the DirMaint service disks by loading new service from the RSU tape.

Use **DIRM** if installing interpretive execs to minidisks or **DIRMSFS** if installing interpretive execs to SFS or **DIRMC** if installing compiled execs to minidisks or **DIRMCSFS** if installing compiled execs to SFS.

The NOLINK option indicates that you don't need VMFINS to link to the appropriate minidisks, only access them if not accessed.

When prompted for creating an override enter a **0**.

```

VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF 5748XE4M DIRM :PRODID
5748XE4M%DIRM?
Enter 0 (No), 1 (Yes) or 2 (Exit)
0
VMFINS2603I Processing product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM
VMFREQ2805I Product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM has passed
requisite checking
VMFREQ2805I Installing product :PPF 5748XE4M DIRM :PRODID 5748XE4M%DIRM
VMFSET2760I VMFSETUP processing started
VMFUTL2205I Minidisk|Directory Assignments:
String Mode Stat Vdev Label/Directory
VMFUTL2205I LOCALSAM E R/W 2C2 P742C2
VMFUTL2205I APPLY F R/W 2A6 P742A6
VMFUTL2205I G R/W 2A2 P742A2
VMFUTL2205I DELTA H R/W 2D2 P742D2
VMFUTL2205I BUILD0 I R/W 29E P7429E
VMFUTL2205I BUILD1 J R/W 492 P74492
VMFUTL2205I BUILD3 K R/W 41F P7441F
VMFUTL2205I BUILD6 L R/W 29D P7429D
VMFUTL2205I BASE M R/W 2B2 P742B2
VMFUTL2205I ----- A R/W 191 P74191
VMFUTL2205I ----- B R/O 5E5 MNT5E5
VMFUTL2205I ----- D R/W 51D MNT51D
VMFUTL2205I ----- S R/O 190 MNT190
VMFUTL2205I ----- Y/S R/O 19E MNT19E
VMFSET2760I VMFSETUP processing completed successfully
VMFREC2760I VMFREC processing started
VMFREC1852I Volume 1 of 1 of INS TAPE yynn
:
VMFREC2760I VMFREC processing completed successfully
VMFINT2760I VMFINST processing completed successfully
VMFINS2760I VMFINS processing completed successfully
Ready;

```

- 8 Review the install message log (\$VMFINS \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific install messages, see *VM/ESA: System Messages and and Codes*, or use online HELP.

### vmfview install

- 3
- 3
- 3
- 3
- 9 Remove obsolete files from the DELTA disk using the IN2PROD EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *comprname* of **DIRM**. If either the *ppfname* or *comprname* being used is different, you will have to tell the IN2PROD exec the names you are using.



3 To find out more information on the IN2PROD EXEC issue **in2prod {? |**  
3 **help}**.

3 **in2prod clean\_up** *ppfname compname* (**count nn age nn**

3 IN2PROD will remove PTF part files on the 2D2  
3 DELTA disk which have been obsoleted by more  
3 recent service. Parameters with the CLEAN\_UP  
3 option are as follows:

3 **count nn**  
3 *nn* is in the range of 1 to 10 indicating the  
3 number of duplicate files kept; the default is 2.

3 **age nn**  
3 *nn* is in the range of 0 to 60 indicating the  
3 number of months to keep duplicate files; the  
3 default is 18.

---

## 6.6 Optional Installation Steps

This section describes optional install steps that include Uppercase English help files, optional source,  
3 local modifications, and REXX runtime library name.

If you plan on doing any of the following:

- 6.6.1, "Create Uppercase English Help Files"
- 6.6.2, "Install Optional Source Files"
- 6.6.3, "Local Modifications to DirMaint"
- 3 • 6.6.4, "Change the REXX Runtime Library Name for Compiled Parts"

Continue with all applicable steps. Otherwise skip to 6.7, "Update Build Status Table for DirMaint."

### 6.6.1 Create Uppercase English Help Files

- 1 Make sure you are logged on to P748XE4M and have write access to the MAINT 51D minidisk and the P748XE4M 492 and 41F minidisks.

**Note:** You should have already obtained the necessary resources in the plan section. Resource requirements are obtained from Figure 12 on page 21.

## 2 Create Uppercase English help files from American English Help Files

### a If installing using minidisks

```
access 29d e
access 502 f
vmfcopy * * e = = f (prodid 5748XE4M%DIRM upcase replace olddate
```

### b If installing using SFS

```
access VMSYS:P748XE4M.DIRM.HELP e
access VMSYS:P748XE4M.DIRM.HELPU f
vmfcopy * * e = = f (prodid 5748XE4M%DIRM upcase replace olddate
```

## 6.6.2 Install Optional Source Files

The *ppfname* used to install optional source is **5748XE4M**, which assumes you are using the PPF supplied by IBM for IBM Directory Maintenance for VM/ESA. If you have your own PPF override file for IBM Directory Maintenance for VM/ESA, you should use your file's *ppfname* instead of 5748XE4M.

- 1 Make sure you are logged on to P748XE4M and have write access to the MAINT 51D minidisk and the P748XE4M 492 and 41F minidisks.

#### Notes:

- a. You should have already obtained the necessary resources in the plan section. If not, resource requirements are obtained from Figure 12 on page 21.
- b. DASD sizes for the 2B1 disk are for source files in packed format. If you plan on creating updates for this source, then you will need to unpack the files. DASD space for all source unpacked will be approximately double that shown in the referenced table. To unpack the source, issue:

```
copy fn ft fm = = = (rep oldd unpack
```

- 2 Have the installation tape mounted and attached to **P748XE4M** at virtual address 181.

- 3 Install Optional Source Using VMFINS

```
vmfins install ppf 5748XE4M {DIRMS | DIRMSSFS} (nomemo nolink
```

Use **DIRMS** if installing using minidisks or **DIRMSSFS** if installing using SFS.

When prompted for creating an override enter a **0**.

### 6.6.3 Local Modifications to DirMaint

If any local modifications to DirMaint are needed at this time, refer to "Installing Local Service" chapter of the *VM/ESA Service Guide*. Follow the steps that are applicable to your local modification.

The following substitutions need to be made in the service guide when creating a local modification to DirMaint:

- **esalcl** should be **5748XE4M**
- **esa** should be **5748XE4M**
- *compname* should be **DIRMS** or **DIRMSSFS** (minidisk or SFS) if modifying any part on the 2B1 disk, use **DIRM** or **DIRMSFS** (minidisk or SFS) if modifying any part on the 2B2 disk.
- *appid* should be **5748XE4M**
- *fm-local* should be the fm of 2C2
- *fm-applyalt* should be the fm of 2A6
- When you get to the "Rebuilding Objects" step in the *Service Guide* you should return back to this program directory at 6.7, "Update Build Status Table for DirMaint" on page 42.

There is a local modification example in Appendix B, "Local Modification Example: \$EXEC File" on page 114.

3

VM/ESA 2.1.0 or higher users only.

### 3 6.6.4 Change the REXX Runtime Library Name for Compiled Parts

3

**1** Make sure you are logged on to P748XE4M and have write access to the P748XE4M 29E, 492 and 41F minidisks.

3

3

**2** Access the P748XE4M 492 minidisk

3 **access 492 j**

3

**3** Change the REXX runtime library for compiled parts using the IN2PROD EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}**.

3

3

3

3

3

3 **in2prod run\_time *ppfname compname* (compiler EAG2DMS | DMS2EAG | name**

3 IN2PROD will change the REXX runtime library  
 3 called out for in the compiled parts on the  
 3 P748XE4M 29E, 492, and 41F mindisks, or  
 3 equivalent SFS directories, based on the following  
 3 parameters with the RUN\_TIME option:

3 **compiler eag2dms**  
 3 Changes the library from REXX to CMS.

3 **compiler dms2eag**  
 3 Changes the library from CMS to REXX.

3 *name*  
 3 Changes the library to use *name* allowing use  
 3 of other runtime library products. For example,  
 3 **EAGRTPRC** can be specified to change the  
 3 name to the REXX runtime library, and  
 3 **DMSRTPRC** can be specified to change the  
 3 name to the CMS runtime library.

3 \_\_\_\_\_ End of VM/ESA 2.1.0 or higher users only. \_\_\_\_\_

---

## 6.7 Update Build Status Table for DirMaint

- 1 Make sure you are logged on to P748XE4M and have write access to the MAINT 51D minidisk and the P748XE4M 492 and 41F minidisks.
- 2 Update the VM SYSBLDS software inventory file for DirMaint

**vmfins build ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (serviced nolink**

Use **DIRM** if installing interpretive execs to minidisks or **DIRMSFS** if installing interpretive execs to SFS or **DIRMC** if installing compiled execs to minidisks or **DIRMCSFS** if installing compiled execs to SFS.

The **serviced** option will update the software inventory build status table showing that 5748XE4M has been built.

**Note**

If the \$PPF files have been serviced you will get the following prompt:

```
⋮
VMFBLD2760I VMFBLD processing started
VMFBLD2185R The following source product parameter files have been serviced:
VMFBLD2185R 5748XE4M $PPF
VMFBLD2185R When source product parameter files are serviced, all product
parameter files built from them must be recompiled using VMFPPF
before VMFBLD can be run.
VMFBLD2185R Enter zero (0) to have the latest levels of the source product
parameter files copied to your A-disk and exit VMFBLD so you can
recompile your product parameter files with VMFPPF
Enter one (1) to continue only if you have already recompiled your
product parameter files with VMFPPF
```

**0** Enter a 0 and complete the following steps before you continue.

```
VMFBLD2188I Building 5748XE4M $PPF on 191 (A) from level $PFnnnn
```

**vmfppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCFSFS}**

**Note:** If you've created your own PPF override then use your PPF name instead of 5748XE4M.

You should recompile all overrides to ensure they are at the proper level for future use.

**copy 5748XE4M \$ppf a = = d (olddate replace erase 5748XE4M \$ppf a** **Note:** **Do not** use your own PPF name in place of 5748XE4M for the COPY and ERASE commands.

**vmfins build ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCFSFS} (serviced nolink**  
**1**

This will complete updating the build status table. When you receive the prompt that was previously displayed, enter a 1 to continue.

## 6.8 Tailor the DirMaint Server Machines

3 After completion of this section, DirMaint will be installed in test mode. This means the RUNMODE= entry  
 3 in the CONFIG DATADVH file (placed on the 41F minidisk in step 3 on page 46) will be set to *testing*. In  
 3 this mode the DIRMAINT server will not place the source directory online. Any commands you issue to  
 3 the DIRMAINT server are for test purposes only. While testing using Appendix A, "Test the  
 3 Installation/Service for DirMaint" on page 79, DirMaint will be in test mode only unless you change the  
 3 RUNMODE= entry.

Appendix F, "Documentation Updates" on page 149 provides updates to DirMaint Release 5 publications. You may wish to review this appendix before continuing.

The following table describes sample files provided with DirMaint that have been installed to the 492 test  
 3 build disk. This section will have you copy the sample files to a tailorable configuration file form. For  
 3 example, the CONFIG SAMPDVH file becomes CONFIG DATADVH in its tailorable configuration file form.

Figure 14 (Page 1 of 2). DirMaint 1.5.0 Supplied Sample Files

Sample File Name	Sample Description
ACCESS SAMPDVH	Provides location of user interface disk to the DIRMAINT EXEC. IN2PROD SAMP will copy this as ACCESS DATADVH on the 29E minidisk.
AUTHDASD SAMPDVH	Provides authorization of DASD requests for the DirMaint servers. IN2PROD SAMP will copy this as AUTHDASD DATADVH on the 1DF minidisk.
CONFIG SAMPDVH	Configuration file for the DirMaint servers. IN2PROD SAMP will copy this as CONFIG DATADVH on the 41F minidisk.
DATAMOVE SAMPDVH	Defines key time events for the DATAMOVE server. IN2PROD SAMP will copy this as DATAMOVE DATADVH on the 492 minidisk.
DIRMAINT SAMPDVH	Defines key time events for the DIRMAINT server. IN2PROD SAMP will copy this as DIRMAINT DATADVH on the 492 minidisk.
DIRMMAIL SAMPDVH	A file containing mail like information on the DirMaint product. IN2PROD SAMP will copy this as DIRMAINT NEWSMAIL on the 41F minidisk.
DIRMSAPI EXEC SAMP	Sample of how to use the DirMaint application programming interface. IN2PROD SAMP will copy this as DIRMSAPI EXEC on the 41F minidisk. Copy this to any disk you wish to run it from.
DIRMSAT SAMPDVH	Defines key time events for the DIRMSAT server. IN2PROD SAMP will copy this as DIRMSAT DATADVH on the 492 minidisk.
DVHNAMES SAMPDVH	Defines key system administration and support players and how to communicate with them. IN2PROD SAMP will copy this as DVHNAMES DATADVH on the 492 minidisk.
DVHPROFD SAMPDVH	Defines the disks which the DIRMAINT server will access when initialized. IN2PROD SAMP will copy this as DVHPROFA DIRMAINT on the 492 minidisk.
DVHPROFM SAMPDVH	Defines the disks which the DATAMOVE server will access when initialized. IN2PROD SAMP will copy this as DVHPROFM DATADVH on the 492 minidisk.
DVHPROFS SAMPDVH	Defines the disks which the DIRMSAT server will access when initialized. IN2PROD SAMP will copy this as DVHPROFA DIRMSAT on the 492 minidisk.

Figure 14 (Page 2 of 2). DirMaint 1.5.0 Supplied Sample Files

Sample File Name	Sample Description
150CMDS SAMPDVH	List of commands, command part handler routine, whether or not password authentication is required for processing the command, and the command set class for DIRMAINT 150A compatibility mode. IN2PROD SAMP will copy this as 150CMDS DATADVH on the 41F minidisk.
140CMDS SAMPDVH	List of commands, command part handler routine, whether or not password authentication is required for processing the command, and the command set class for DIRMAINT 140A compatibility mode. IN2PROD SAMP will copy this as 140CMDS DATADVH on the 41F minidisk.
EXTENT SAMPDVH	Provides device specific information for the DirMaint servers. IN2PROD SAMP will copy this as EXTENT CONTROL on the 1DF minidisk.
PROFILE EXEC SAMP	Sample PROFILE EXEC for the DirMaint 1.5 servers. IN2PROD SAMP will copy this as PROFILE EXEC on the 492 minidisk.

2 **Warning!**

2 IN2PROD PROD, which you will run when placing the DirMaint code into production, will copy the  
 2 tailorable files IN2PROD SAMP placed on the 41F and 492 test disks to the 11F and 491 production  
 2 disks. To avoid possibly back leveling these files, you **should only** make changes to these files on  
 2 the 41F and 492 test disks.

This section is required. You will initialize the server machines with the DirMaint code. Additionally you will tailor the server machines for your operating environment.

Choose one of the following sections to proceed with based on your installation

- If you currently have DIRMAINT Release 4 installed, follow the instructions in 6.8.2, "Tailor DirMaint For Migration" on page 48.
- Otherwise follow the instructions in 6.8.1, "Tailor DirMaint For Initial Installation."

## 6.8.1 Tailor DirMaint For Initial Installation

If you are **not** migrating from DIRMAINT Release 4 follow the steps in this section to copy and tailor sample files for a new DirMaint installation.

**Note!**

This section will require P748XE4M to have write access to the DIRMAINT 1DF disk. Before continuing, please make sure this disk is linked appropriately.

**1** Log on to P748XE4M if you are not already logged on to it.

- 2 Access the disk where the IN2PROD EXEC resides.

**access 492 u**

- 3 Copy the SAMPDVH files to their real file types using the IN2PROD exec. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}**.

**in2prod samp** *ppfname compname*

IN2PROD will copy the sample files to their real file types on the P748XE4M 492, 41F, and 29E minidisks and the DIRMAINT 1DF minidisk.

- 4 The file DVHPROFA DIRMAINT (located on the P748XE4M 492 minidisk, created from running IN2PROD SAMP) **must** have a filetype matching the user ID running the DIRMAINT server. If yours is not DIRMAINT, then rename this file to have a filetype matching the DIRMAINT server user ID. The file DVHPROFA DIRMSAT (only necessary if using a satellite server, located on the P748XE4M 492 minidisk, and created from running IN2PROD SAMP) **must** have a filetype matching the user ID running the DIRMSAT server. If yours is not DIRMSAT, then rename this file to have a filetype matching the DIRMSAT server user ID.
- 5 Access certain DirMaint 1.5 production disks which contain your production tailored files, and the P748XE4M server test disks which contain sample tailorable files, using the IN2PROD exec.

**in2prod access\_new** *ppfname compname*

IN2PROD will access the DIRMAINT 1.5 1DF disk as filemode J, the P748XE4M 492 disk as filemode K, and the P748XE4M 41F disk as filemode L.

- 6 Create the USER INPUT file on the DIRMAINT 1.5 1DF disk. Your current monolithic directory must be copied to the DIRMAINT 1DF as USER INPUT for DirMaint's use. The 1DF disk was accessed as file mode J in the previous step. The USER INPUT file must be a RECFM F LRECL 80 file when located on the 1DF disk.
- 7 If you wish to utilize DirMaint's capability of preventing reuse of recently used passwords, continue with this step, otherwise continue with step 8 on page 48.

2  
2  
2



2                   **a** Run DVHPWMGR exec to include current directory passwords in the  
 2                   DirMaint 1.5 password history file. This exec has the following files as  
 2                   input:

- 2                   • USER INPUT (Monolithic format directory)
- 2                   • DVHPWX CONTROL

2                   This is the DirMaint 1.4 password history file. If this file is not found  
 2                   on any accessed mini disk, a warning message indicating this  
 2                   condition will be issued, and only the current passwords from the  
 2                   USER INPUT file will be added to the DirMaint 1.5 history file.

2                   to create the following DirMaint 1.5 control file:

- 2                   • DVHPWUSE DATADVH, or
- 2                   • *userid* DVHPWUSE

2                   The DVHPWMGR exec accepts two optional parameters as input.

2                   *output\_file* One of the following *output\_file* parameters will be  
 2                   accepted:

- 2                   • *COMBINED* (the default if \* is specified or left blank)  
 2                   will create one history file called DVHPWUSE  
 2                   DATADVH, containing masked passwords from the  
 2                   DVHPWX CONTROL (if available) and USER INPUT  
 2                   files for each user ID found within the USER INPUT  
 2                   file.
- 2                   • \* as positional place holder to use *COMBINED*
- 2                   • *INDIVIDUAL* will create a history file for each user ID  
 2                   found within the USER INPUT file with file names of  
 2                   the form *userid* DVHPWUSE, containing masked  
 2                   passwords from the DVHPWX CONTROL (if available)  
 2                   and USER INPUT files.

2                   *hash\_name*

2                   Used to optionally pass a hash routine for DVHPWMGR to  
 2                   use. If left blank, the IBM supplied DVHHASH MODULE is  
 2                   used. See F.10, "PW Reuse Hashing (DVHHASH  
 2                   MODULE)" on page 163 for more information on the  
 2                   DVHHASH exit routine.

2                   If *NONE* is specified as a *hash\_name*, then passwords will  
 2                   be saved in the history file in their hexadecimal  
 2                   representation (without hashing).

2   **dvhpmgr** *output\_file hash\_name*                   All output will be written to the A-disk. Files used  
 2                   as input to the conversion are assumed to be valid.

2                                   **b** Copy the migrated files off the P748XE4M's 191 A-disk to the  
2                                   DIRMAINT 1DF disk where they will be used from.

2                                   **1** If *output\_file* was COMBINED, \*, or left blank

2 **copy dvhpwuse datadvh a = = j**  
2 **erase dvhpwuse datadvh a**

2                                   **2** If *output\_file* was INDIVIDUAL

2 **copy \* dvhpwuse a = = j**  
2 **erase \* dvhpwuse a**

2                                   **8**

- 2                                   • See "Data Files" section of the "Tailoring the DIRMAINT Service  
2                                   Machine" chapter in the *DirMaint Release 5 Tailoring and Administration*  
3                                   *guide*, and documentation updates described in F.3, "Tailoring and  
3                                   Administration Guide (SC23-0533-04)" on page 149, for further details on  
2                                   configuring and tailoring each of the files that you just copied, along with  
2                                   any other relevant files which need to be configured, and for setting up  
2                                   the DirMaint server machine environments for your testing purposes.
- 2                                   • As a reference, see Figure 15 on page 141 which lists all tailorable files  
2                                   for DirMaint, what they are used for, and where you can find more  
2                                   information.
- 2                                   • Return here when you have completed all tailoring and setup work for the  
2                                   DirMaint servers.

#### What's Next?

You have now finished tailoring the DirMaint virtual machines. Continue with Appendix A, "Test the Installation/Service for DirMaint" on page 79. You will return to 6.9, "Place DirMaint Into Production" on page 54 to place the new DirMaint code into production.

## 6.8.2 Tailor DirMaint For Migration

If you are migrating from DirMaint Release 4 you will use the DVHMIGR8 exec to migrate your current DIRMAINT configuration files to the format required by DirMaint Release 5.

## Notes

1. Appendix E, “DirMaint Release 5 Migration Guide” on page 127 provides information on migrating DIRMAINT Release 4 to DirMaint Release 5. You should review this appendix before continuing with this tailoring section.
2. This section will require P748XE4M to have write access to the DIRMAINT 1DF disk, and read access to the DIRMAINT 191 (linked as 391), 193 (linked as 393), 195, 196, and 1A5 disks. Before continuing, please make sure these disks are linked appropriately.

**1** Log on to P748XE4M if you are not already logged on to it.

**2** Access the disk where the IN2PROD exec resides.

**access 492 u**

**3** Copy the SAMPDVH files to their real file types using the IN2PROD exec. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}**.

**in2prod samp** *ppfname compname*

IN2PROD will copy the sample files to their real file types on the P748XE4M 492, 41F, and 29E minidisks and the DIRMAINT 1DF minidisk.

**4** The file DVHPROFA DIRMAINT (located on the P748XE4M 492 minidisk, created from running IN2PROD SAMP) **must** have a filetype matching the user ID running the DIRMAINT server. If yours is not DIRMAINT, then rename this file to have a filetype matching the DIRMAINT server user ID. The file DVHPROFA DIRMSAT (only necessary if using a satellite server, located on the P748XE4M 492 minidisk, and created from running IN2PROD SAMP) **must** have a filetype matching the user ID running the DIRMSAT server. If yours is not DIRMSAT, then rename this file to have a filetype matching the DIRMSAT server user ID.

**5** Manually trigger a backup of the DIRMAINT 1.4 directory files.

**dirm backup**

The P748XE4M user ID must have DIRMAINT STAFF authority to issue this command.

- 6** Access certain DIRMAINT 1.4, and DIRMAINT 1.5 production disks which contain your production tailored files, and the P748XE4M server test disks which contain sample tailorable files, using the IN2PROD exec.

**in2prod access\_migrate** *ppfname compname*

IN2PROD will access the DIRMAINT 1.4 196 disk as filemode E, 195 disk as filemode F, 193 disk (linked as 393) as filemode G, 191 disk (linked as 391) as filemode H, and 1A5 disk as filemode I, the DIRMAINT 1.5 1DF disk as filemode J, and the P748XE4M 492 disk as filemode K and the P748XE4M 41F disk as filemode L.

- 7** Copy the current USER BACKUP file from the DIRMAINT 1.4 193 disk as USER INPUT on the DIRMAINT 1.5 1DF disk.

**copy USER BACKUP g = INPUT j**

- 8** Run DVHMIGR8 exec to migrate your old configuration files to their new format. This exec has the following DIRMAINT 1.4 files as input:

- USER INPUT (Monolithic format directory)
- DIRMAINT DATA
- ASSIGN FILE
- PWMON CONTROL
- LINKS EXCLUDE
- EXTENT CONTROL

and the following DirMaint 1.5 sample files as input:

- EXTENT SAMPDVH

to create the following DirMaint 1.5 control files:

- AUTHFOR CONTROL
- PWMON CONTROL
- DVHLINK EXCLUDE
- EXTENT CONTROL

**dvhmigr8**

All output will be written to the A-disk. Files used as input to the conversion are assumed to be valid. Comments are not moved to the resultant files.



- *INDIVIDUAL* will create a history file for each user ID found within the USER INPUT file with file names of the form *userid* DVHPWUSE, containing masked passwords from the DVHPWX CONTROL (if available) and USER INPUT files.

*hash\_name*  
 Used to optionally pass a hash routine for DVHPWMGR to use. If left blank, the IBM supplied DVHHASH MODULE is used. See F.10, "PW Reuse Hashing (DVHHASH MODULE)" on page 163 for more information on the DVHHASH exit routine.

If *NONE* is specified as a *hash\_name*, then passwords will be saved in the history file in their hexadecimal representation (without hashing).

**dvhpwmgr** *output\_file hash\_name* All output will be written to the A-disk. Files used as input to the conversion are assumed to be valid.

**b** Copy the migrated files off the P748XE4M's 191 A-disk to the DIRMAINT 1DF disk where they will be used from.

**1** If *output\_file* was COMBINED, \*, or left blank

**copy** dvhpwuse datadvh a = = j  
**erase** dvhpwuse datadvh a

**2** If *output\_file* was INDIVIDUAL

**copy** \* dvhpwuse a = = j  
**erase** \* dvhpwuse a

## 11

- See "Data Files" section of the "Tailoring the DIRMAINT Service Machine" chapter in the *DirMaint Release 5 Tailoring and Administration guide*, and documentation updates described in F.3, "Tailoring and Administration Guide (SC23-0533-04)" on page 149, for further details on configuring these new format files, for more information on all tailorable files, and for setting up the DirMaint server machine environments for your testing purposes.
- As a reference, see Figure 15 on page 141 which lists all tailorable files for DirMaint, what they are used for, and where you can find more information.

2  
2

- Return here when you have completed all tailoring and setup work for the DirMaint servers.

#### **What's next?**

You have now finished tailoring the DirMaint virtual machines. Continue with Appendix A, “Test the Installation/Service for DirMaint” on page 79. You will return to 6.9, “Place DirMaint Into Production” on page 54 to place the new DirMaint code into production.

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## 6.9 Place DirMaint Into Production

### Important note

This procedure should only be done when you have successfully tested DirMaint installation.

Placing the DirMaint code into production is a two step process:

- First the test code is moved from the test build disks to the server production minidisks.
- Then general user code is placed on the MAINT 19E minidisk making it available to all users.

### 6.9.1 Copy the Server Code to the Server Minidisks

This step will be accomplished by using the IN2PROD EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}** after accessing the 492 disk.

**Note:** If you have arrived here from testing the DIRMAINT server, then the P748XE4M user ID should have write access to the 491 and 11F minidisks when it is logged on. If this is not the case, then the DIRMAINT server will first have to be logged off.

### Warning!

IN2PROD PROD, will copy the tailorable files IN2PROD SAMP placed on the 41F and 492 test disks to the 11F and 491 production disks. To avoid possibly back leveling these files, you **should only** make changes to these files on the 41F and 492 test disks.

**1** Log on to P748XE4M, if you are not already logged on to it.

**2** Access the disk where the IN2PROD EXEC resides

**access 492 e**

**3** Copy code from the 492 and 41F test minidisks to the 491 and 11F production minidisks.

**in2prod prod *ppfname compname***

**4** Log off P748XE4M so the DIRMAINT server machine can gain write access to the 491 and 11F minidisks when establishing your production environment.

**logoff**



## 6.9.2 Copy DirMaint to the MAINT's Minidisks for Production

### 1 Log on as MAINT

**Note:** The following steps should be done from the MAINT user ID so that the appropriate CMS shared segment can be saved.

### 2 Copy the system Y-disk code to MAINT's 19e disk

#### a If installing using minidisks

```
link P748XE4M 29e addr rr
access addr e
access 19e f
vmfcopy ** e = = f (prodid 5748XE4M%DIRM replace olddate
```

*addr* is any free disk address on the MAINT user ID

**Note:** DirMaint users require files placed on the 19E disk.

#### b If installing using SFS

```
access VMSYS:P748XE4M.DIRM.MAINT19E e
access 19e f
vmfcopy ** e = = f (prodid 5748XE4M%DIRM replace olddate
```

**Note:** DirMaint users require files placed on the 19E disk.

2 **c** Re-save the CMS saved system, to return the Y-disk (product code or  
2 MAINT's 19E disk) to 'shared' status. See the 'Placing (Serviced)  
2 Components into Production' section of the *VM/ESA Service Guide* for  
2 detailed information about how to save the CMS saved system.

### 3 Copy American English help files to MAINT's 19D disk

#### a If installing using minidisks

```
link P748XE4M 29d addr2 rr
access addr2 e
access 19d f
vmfcopy ** e = = f (prodid 5748XE4M%DIRM replace olddate
```

*addr2* is any free disk address on the MAINT user ID

**Note:** Users wishing to access DirMaint help files require the 19D disk.

**b** If installing using SFS

**access VMSYS:P748XE4M.DIRM.HELP e**

**access 19d f**

**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**Note:** Users wishing to access DirMaint help files require the 19D disk.

**c** In order to obtain DirMaint American English help, either of the following must be issued:

- DIRM HELP
- HELP DVHAMENG

3 If you require the DIRMAINT 1.4 help files to be used for command  
3 level 140A, then copy those help files to MAINT's 19D minidisk. If you  
3 do not require help for command level 140A, and desire to use HELP  
3 DIRMAINT (as in DIRMAINT 1.4) for obtaining DirMaint American  
3 English help for command level 150A, then make the following  
changes:

- Rename or copy all \* HELPADVH files to \* HELPDIRM on the MAINT 19D minidisk.
- Rename or copy the DVHAMENG HELPMENU file to DIRMAINT HELPMENU on the MAINT 19D minidisk.
- Rename or copy the ADVH HELPABBR file to DIRM HELPABBR on the MAINT 19D minidisk.
- Change the AMENG\_HELP\_150A configuration (CONFIG DATADVH) entry to:  
2 AMENG\_HELP\_150A = DVHAMENG HELPDIRM
- Rename or copy the ADVHCMD HELPMENU file to DIRMCMD HELPMENU on the MAINT 19D minidisk.
- Rename or copy the ADVHINFO HELPTASK file to DIRMINFO HELPTASK on the MAINT 19D minidisk.
- Edit the DIRMCMD HELPMENU file and change entry :ADVHINFO to :DIRMINFO.
- Edit the DIRMAINT HELPMENU file and change all instances of ADVH to DIRM.
- Edit the DIRMINFO HELPTASK file and change all instances of ADVH to DIRM.

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2

**d** Re-build the CMS HELP logical saved segment, to include DirMaint's help files from the AMENG Help (MAINT's 19D) disk. See the 'Placing (Serviced) Components into Production' section of the *VM/ESA Service Guide* for detailed information about how these segments should be saved on your system. (Note that you will need to use (**all** instead of (**serviced** on the VMSES/E VMFBLD command when re-building any segments.)

**4** If the Uppercase English help files have been installed, place the files into production from P748XE4M's 502 disk to MAINT's 402 disk

**a** If installing using minidisks

**link P748XE4M 502 addr rr** *addr* is any free disk address on the MAINT user  
**access addr e** ID  
**access 402 f**  
**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**b** If installing using SFS

**access VMSYS:P748XE4M.DIRM.HELPU e**  
**access 402 f**  
**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**c** In order to obtain DirMaint Uppercase English help, either of the following must be issued:

- DIRM HELP
- HELP DVHUCENG

3  
3  
3  
3  
3

If you require the DIRMAINT 1.4 help files to be used for command level 140A, then copy those help files to MAINT's 402 minidisk. If you do not require help for command level 140A, and desire to use HELP DIRMAINT (as in DIRMAINT 1.4) for obtaining DirMaint Uppercase English help for command level 150A, then make the following changes:

- Rename or copy all \* HELPADVH files to \* HELPDIRM on the MAINT 402 minidisk.
- Rename or copy the DVHUCENG HELPMENU file to DIRMAINT HELPMENU on the MAINT 402 minidisk.
- Rename or copy the UDVH HELPABBR file to DIRM HELPABBR on the MAINT 402 minidisk.

- 2 • Change the UCENG\_HELP\_150A configuration (CONFIG
- 2 DATADVH) entry to:
- 2 UCENG\_HELP\_150A = DVHUCENG HELPDIRM
- 2 • Rename or copy the UDVHCMD HELPMENU file to DIRMCMD
- 2 HELPMENU on the MAINT 402 minidisk.
- 2 • Rename or copy the UDVHINFO HELPTASK file to DIRMINFO
- 2 HELPTASK on the MAINT 402 minidisk.
- 2 • Edit the DIRMCMD HELPMENU file and change entry :UDVHINFO
- 2 to :DIRMINFO.
- 2 • Edit the DIRMAINT HELPMENU file and change all instances of
- 2 UDVH to DIRM.
- 2 • Edit the DIRMINFO HELPTASK file and change all instances of
- 2 UDVH to DIRM.

### 6.9.3 Place the DirMaint Servers Into Operation

**1** Change the RUNMODE= setting to *operational* in the CONFIG DATADVH file (on the 41F minidisk).

**2** If migrating from DIRMAINT Release 4:

- For the DIRMAINT user ID, delete the following minidisks:
  - 191, the P748XE4M's 491 will become the DIRMAINT 191 minidisk
  - 112, the 1FA disk will be used for arriving spool files in DirMaint 1.5.0
  - 1Ax, the P748XE4M's 11F will contain the user interface code in DirMaint 1.5.0
  - 193, the 1AA and 1DB will be used as backup disks in DirMaint 1.5.0
  - 194, the 15D will be used as the Intersystem locking disk in DirMaint 1.5.0
  - 195, the 155 will be used for scratch space in DirMaint 1.5.0
  - 196, the 1DF will contain the primary directory files in DirMaint 1.5.0
  - 1B0, the 1DB will contain the USER BACKUP files in DirMaint 1.5.0
  - 1CA, the 1DE will be used for DIRECT/DIRECTXA EDIT option in DirMaint 1.5.0
  - BC4, the 123 will be used as the SYSRES volume address in DirMaint 1.5.0
- For the DATAMOVE user ID, delete the following minidisks:
  - 191, the P748XE4M's 491 will become the DATAMOVE 191 minidisk



---

## 7.0 Service Instructions

### RSU Warning

If applying a DirMaint RSU, go to the instructions in Appendix C, "Applying a Recommended Service Upgrade (RSU) Tape For DirMaint" on page 116. You will return to a step in this chapter specified in that appendix.

This section of the Program Directory contains the procedure to install **CORrective service** to DirMaint with VMSES/E.

To become more familiar with service using VMSES/E, you should read the introductory chapters in *VMSES/E Introduction and Reference*. This manual also contains the command syntax for the VMSES/E commands listed in the procedure.

### Notes:

1. Each step of the servicing instructions must be followed. Do not skip any step unless otherwise directed to. All instructions showing accessing of disks or SFS directories assumes the use of default minidisk addresses or SFS directory names. If different minidisk addresses are used, change the instructions appropriately.
2. The component name used to install DirMaint should also be used during the service instructions. The four choices are:
  - **DIRM** Used when servicing the interpretive execs to minidisk
  - **DIRMSFS** Used when servicing the interpretive execs to SFS
  - **DIRMC** Used when servicing the compiled execs to minidisk
  - **DIRMCSFS** Used when servicing the compiled execs to SFS
3. You can switch between using interpretive and compiled execs by issuing the VMFBLD command with the ALL option after doing a VMFSETUP (see step 8 on page 64).

To switch from interpretive to compiled execs issue:

```
VMFBLD PPF 5748XE4M DIRMC DVHBLDCI (ALL
VMFBLD PPF 5748XE4M DIRMC DVHBLDCD (ALL
VMFBLD PPF 5748XE4M DIRMC DVHBLDCU (ALL
```

To switch from compiled to interpretive execs issue:

```
VMFBLD PPF 5748XE4M DIRM DVHBLDII (ALL
VMFBLD PPF 5748XE4M DIRM DVHBLDID (ALL
VMFBLD PPF 5748XE4M DIRM DVHBLDIU (ALL
```

4. The P748XE4M user ID should be a privileged DirMaint user in order to issue restricted commands to the DIRMAINT server during these instructions. The AUTHFOR CONTROL file contains a list of privileged user IDs.

5. If the service instructions are not completed at one time, you can issue VMFSETUP and continue with the step you left off at.
6. Appendix F, “Documentation Updates” on page 149 provides updates to DirMaint Release 5 publications. You may wish to review this appendix before continuing.
- 2 7. Figure 15 on page 141 lists all tailorable files for DirMaint, what they are used for, and where you can  
2 find more information. You may wish to review this information before continuing.

---

## 7.1 VMSES/E Service Process Overview

The overview will give a brief description of the main steps in servicing IBM Directory Maintenance for VM/ESA using VMSES/E.

- Merge Service

Use the VMFMRDSK command to clear the alternate apply disk before receiving new service. This allows you to easily remove the new service if a serious problem is found.

- Receive Service

The VMFREC command receives service from the delivery media and places it on the Delta disk.

- Apply Service

The VMFAPPLY command updates the version vector table (VVT), which identifies the service level of all the serviced parts. In addition, AUX files are generated from the VVT for parts that require them.

- Reapply Local Service (if applicable)

All local service must be entered into the software inventory to allow VMSES/E to track the changes and build them into the system. See Chapter 7 in the *VM/ESA Service Guide* for this procedure.

- Build a New Level

The build task generates the serviced level of an object and places the new object on a BUILD disk.

- Place the New Service into Production

Once the service is satisfactorily tested it should be put into production by copying the new service to the production disk, re-saving the DCSS (Discontiguous Saved Segments), etc.

---

## 7.2 Servicing DirMaint

### RSU Warning

If applying a DirMaint RSU, go to the instructions in Appendix C, “Applying a Recommended Service Upgrade (RSU) Tape For DirMaint” on page 116. You will return to a step in this chapter specified in that appendix.

## 7.2.1 Prepare to Receive Service

### Electronic Service

If you have received service electronically or on a CD-ROM, follow the appropriate instructions to retrieve and decompact the envelope files to your A-disk. The decompaction is currently done by using the DETERSE module. The file names of the decompacted files will be of the format VLST*num*, for the documentation envelope and VPTF*num*, for the service envelope. The file type must be SERVLINK. You will need to enter the file name on the VMFREC commands that follow.

The *ppfname* used throughout these instructions is **5748XE4M**, which assumes you are using the PPF supplied by IBM for DirMaint. If you have your own PPF override file for DirMaint, you should use your file's *ppfname* instead of **5748XE4M**. The *ppfname* you use should be used **throughout** the rest of this procedure.

- 1 Log on to the DirMaint service user ID **P748XE4M**
- 2 Establish write access to the Software Inventory Disk (MAINT 51D) if it is not already linked in write mode.

**Note:** If the MAINT 51D minidisk was accessed R/O, you will need to have the user who has it linked R/W link it as R/O. You then can issue the following commands to obtain write access to it. **Do not use *mw* mode.**

**link maint 51d 51d m  
access 51d d**

The MAINT 51D disk is where the VMSES/E system level software inventory files reside.

- 3 Establish write access to the P748XE4M 492 and 41F minidisks if they are not already linked in write mode.

**Note:** The DIRMAINT server has write mode links to them in its directory entry. You will need to have the DIRMAINT server detach these disks.

- a The DIRMAINT server should be running in production using the code residing on the P748XE4M production disks (491 and 11F). If this is not the case, rather the DIRMAINT server is running in production using the code residing on the P748XE4M test disks (492 and 41F), then logoff the server. Otherwise you can issue the following commands to the DIRMAINT server to free the links to the P748XE4M test disks and leave the server running:

**dirmaint cp detach 192 21f**

This will allow the P748XE4M user ID to establish write mode links to the required test disks for applying service.



**b** Issue the following commands to obtain write access to them. **Do not use *mw* mode.**

link \* 492 492 m  
link \* 41f 41f m

**4** Have the DirMaint CORrective tape mounted and attached to **P748XE4M** as 181.

3  
3 **5** Receive the documentation. VMFREC, with the INFO option, loads the documentation and displays a list of all the products on the tape.

3 **a** If receiving the service from tape

3 **vmfrec info** This command will load the service memo to the  
3 191 disk.

3 **b** If receiving the service from an envelope file

3 **vmfrec info (env vlstnum** This command will load the service memo to the  
3 191 disk.

**6** Review the receive message log (\$VMFREC \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific receive messages, see *VM/ESA: System Messages and Codes* or use online HELP.

**vmfview receive**

Also, make note of which products and components have service on the tape. To do this, use the PF5 key to show all status messages which identify the components on the tape.

**7** Read the product memo (5748XE4M MEMO) before going on. This memo is loaded to the A-disk.

## 8 Setup the correct minidisk access order

**vmfsetup 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

```
VMFSET2760I VMFSETUP processing started
VMFUTL2205I Minidisk|Directory Assignments:
              String  Mode  Stat  Vdev  Label/Directory
VMFUTL2205I LOCALSAM  E     R/W   2C2   P742C2
VMFUTL2205I APPLY     F     R/W   2A6   P742A6
VMFUTL2205I             G     R/W   2A2   P742A2
VMFUTL2205I DELTA     H     R/W   2D2   P742D2
VMFUTL2205I BUILD0    I     R/W   29E   P7429E
VMFUTL2205I BUILD1    J     R/W   492   P74492
VMFUTL2205I BUILD3    K     R/W   41F   P7441F
VMFUTL2205I BUILD6    L     R/W   29D   P7429D
VMFUTL2205I BASE      M     R/W   2B2   P742B2
VMFUTL2205I -----  A     R/W   191   P74191
VMFUTL2205I -----  B     R/O   5E5   MNT5E5
VMFUTL2205I -----  D     R/W   51D   MNT51D
VMFUTL2205I -----  S     R/O   190   MNT190
VMFUTL2205I -----  Y/S   R/O   19E   MNT19E
VMFSET2760I VMFSETUP processing completed successfully
READY;
```

## 9 Clear the alternate APPLY disk for the new service. This command will copy the contents of the alternate apply disk to the production apply disk.

**vmfmrdsk 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} apply**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

This command clears the alternate APPLY disk.

```

VMFMRD2760I VMFMRDSK processing started
VMFMRD1937I Merge of APPLY started
VMFMRD1938I Merging APPLY 2A6 to 2A2
VMFMRD2065I APPLY 2A2 is now n percent full
VMFMRD1939I Merge of APPLY completed
VMFMRD2760I VMFMRDSK processing completed successfully
READY;

```

- 10** Review the merge message log (\$VMFMRD \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific merge messages, see *VM/ESA: System Messages and Codes* or use online HELP.

**vmfview mrd**

## 7.2.2 Receive the Service

### 1 Receive the Service

3 **a** If receiving the service from tape

3 **vmfrec ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

3 Use **DIRM** if interpretive execs are installed on  
 3 minidisks or **DIRMSFS** if interpretive execs are  
 3 installed on SFS or **DIRMC** if compiled execs are  
 3 installed on minidisks or **DIRMCSFS** if compiled  
 3 execs are installed on SFS.

3 This command receives service from your service  
 3 tape. All new service is loaded to the DELTA disk.



- 2 Review the apply message log (\$VMFAPP \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific apply messages, see *VM/ESA: System Messages and Codes*, or use online HELP.

## vmfview apply

### Note

3 If you get the message VMFAPP2120W then re-apply any local modifications, or make any  
3 necessary changes to your overrides of the tailorable configuration files, before building the new  
3 DirMaint.

3 You will see this message when any of the sample tailorable files have been serviced. Do not  
3 make any changes to the local modifications having a file type of SDVL0000 on the 2C2 disk, if  
3 the files referred to in the message have a file type of SDVnnnnn. Instead you should issue the  
3 IN2PROD EXEC, in 7.2.6, "Additional Service Steps" on page 70, to automatically update the  
3 DirMaint configuration files. The DirMaint configuration files are not touched when servicing  
3 DirMaint. Changes you desire to make to the configuration files should be accomplished using  
3 override files as described in the *DirMaint Release 5 Tailoring and Administration* manual. See  
3 Figure 14 on page 44 for a list of the tailorable DirMaint configuration files created from the  
3 sample files. To see what has been changed, compare the local modification on the 2C2  
3 (LOCALSAM) disk to the serviced part on the 2D2 (DELTA) disk. Then compare with the  
3 tailorable configuration files and make any necessary changes to your override files. When  
3 VMFBLD is run, the SDVL0000 copy on the 2C2 disk is copied with a file type of SAMPDVH on  
3 the 492 disk. The SAMPDVH files are not used by DirMaint.

For further information on the local modification process, refer to the "Installing Local Service"  
chapter of the *VM/ESA Service Guide*. Follow the steps that are applicable to your local  
modification.

The following substitutions need to be made in the service guide when creating a local  
modification to DirMaint:

- **esalcl** should be **5748XE4M**
- **esa** should be **5748XE4M**
- *compname* should be **DIRMS** or **DIRMSSFS** (minidisk or SFS) if modifying any part on the 2B1 disk, use **DIRM** or **DIRMSFS** (minidisk or SFS) if modifying any part on the 2B2 disk.
- *appid* should be **5748XE4M**
- *fm-local* should be the fm of 2C2
- *fm-applyalt* should be the fm of 2A6
- When you get to the "Rebuilding Objects" step in the *VM/ESA Service Guide* you should return back to this program directory at 7.2.4, "Update the Build Status Table" on page 68.

**Note:** There is a local modification example in Appendix B, "Local Modification Example: \$EXEC File" on page 114.

## 7.2.4 Update the Build Status Table

- 1 Update the Build Status Table with serviced parts.

**vmfbld ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (status**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

This command updates the build status table.

**Note**

If the \$PPF files have been serviced you will get the following prompt:

```
VMFBLD2760I VMFBLD processing started
VMFBLD2185R The following source product parameter files have been serviced:
VMFBLD2185R 5748XE4M $PPF
VMFBLD2185R When source product parameter files are serviced, all product
parameter files built from them must be recompiled using VMFPPF
before VMFBLD can be run.
VMFBLD2185R Enter zero (0) to have the latest levels of the source product
parameter files copied to your A-disk and exit VMFBLD so you can
recompile your product parameter files with VMFPPF
Enter one (1) to continue only if you have already recompiled your
product parameter files with VMFPPF
```

**0** Enter a 0 and complete the following steps before you continue.

```
VMFBLD2188I Building 5748XE4M $PPF on 191 (A) from level $PFnnnn
```

**vmfppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

**Note:** If you've created your own PPF override then use your PPF name instead of 5748XE4M.

You should recompile all overrides to ensure they are at the proper level for future use.

**copy 5748XE4M \$ppf a = = d (olddate replace  
erase 5748XE4M \$ppf a**

**Note:** Do not use your own PPF name in place of 5748XE4M for the COPY and ERASE commands.

**vmfbld ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (status**

**1**

This will complete updating the build status table. When you receive the prompt that was previously displayed, enter a 1 to continue.

- 2 View the build status messages and see what objects need to be built.

vmfview build

## 7.2.5 Build Service Objects

- 1 Rebuild DirMaint serviced parts.

vmfbld ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (serviced

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

Three of the following informational messages may be displayed during the build process. This is a normal state since only compiled or interpretive execs will be copied to the test build disks, but all serviced parts need to be satisfied in a build list.

VMFBLD1851I (x of y) *Cannot process DVHBLDaa EXEC because it is flagged to be bypassed*

- 2 Review the build message log (\$VMFBLD \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific build messages, see *VM/ESA: System Messages and Codes* or use online HELP.

vmfview build

## 3 7.2.6 Additional Service Steps

- 3 1 Remove obsolete files from the DELTA disk using the IN2PROD EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}**.

3 **in2prod clean\_up** *ppfname compname (count nn age nn*



3 IN2PROD will remove PTF part files on the 2D2  
3 DELTA disk which have been obsoleted by more  
3 recent service. Parameters with the CLEAN\_UP  
3 option are as follows:

3 **count** *nn*  
3 *nn* is in the range of 1 to 10 indicating the  
3 number of duplicate files kept; the default is 2.

3 **age** *nn*  
3 *nn* is in the range of 0 to 60 indicating the  
3 number of months to keep duplicate files; the  
3 default is 18.

3 **2** Update the DirMaint tailorable configuration files from the latest SAMPDVH  
3 service levels. The IN2PROD exec will only replace the configuration files if it  
3 can determine the current level matches a serviced level, or is at a base  
3 level. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a  
3 default *compname* of **DIRM**. If either the *ppfname* or *compname* being used  
3 is different, you will have to tell the IN2PROD exec the names you are using.  
3 To find out more information on the IN2PROD EXEC issue **in2prod {? |**  
3 **help}**.

3 **in2prod update\_files** *ppfname compname* IN2PROD will update the tailorable configuration  
3 files on the P748XE4M 492, 41F, and 29E  
3 minidisks and the DIRMAINT 1DF minidisk.

---

## 7.3 Optional Service Steps (depending on what was installed)

### 7.3.1 Servicing the Uppercase English Files

**1** Re-build Uppercase English serviced parts

**vmfbld ppf 5748XE4M {DIRMU | DIRMUSFS} (serviced setup**

Use component name **DIRMU** if help files are installed on minidisks or **DIRMUSFS** if help files are installed in SFS

The SETUP option sets up the minidisk/directory access order using the :MDA section of the PPF.

3 \_\_\_\_\_ VM/ESA 2.1.0 or higher users only. \_\_\_\_\_

### 3 7.3.2 Change the REXX Runtime Library Name for Compiled Parts

3                   **1** Make sure you are logged on to P748XE4M and have write access to the the  
3                   P748XE4M 29E, 492 and 41F minidisks.

3                   **2** Access the P748XE4M 492 minidisk

3 **access 492 j**

3                   **3** Change the REXX runtime library for compiled parts using the IN2PROD  
3                   EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a  
3                   default *compname* of **DIRM**. If either the *ppfname* or *compname* being used  
3                   is different, you will have to tell the IN2PROD exec the names you are using.  
3                   To find out more information on the IN2PROD EXEC issue **in2prod {? |**  
3                   **help}**.

3 **in2prod run\_time pppname compname (compiler EAG2DMS | DMS2EAG | name**

3                   IN2PROD will change the REXX runtime library  
3                   called out for in the compiled parts on the  
3                   P748XE4M 29E, 492, and 41F mindisks, or  
3                   equivalent SFS directories, based on the following  
3                   parameters with the RUN\_TIME option:

3                   **compiler eag2dms nn**  
3                   Changes the library from REXX to CMS.

3                   **compiler dms2eag nn**  
3                   Changes the library from CMS to REXX.

3                   **name**  
3                   Changes the library to use *name* allowing use  
3                   of other runtime library products. For example,  
3                   **EAGRTPRC** can be specified to change the  
3                   name to the REXX runtime library, and  
3                   **DMSRTPRC** can be specified to change the  
3                   name to the CMS runtime library.

3 \_\_\_\_\_ End of VM/ESA 2.1.0 or higher users only. \_\_\_\_\_

---

## 7.4 Test the New DirMaint Service

At this point you can test the service that was applied. Go to Appendix A, "Test the Installation/Service for DirMaint" on page 79 for the minimum steps necessary for ensuring that your new code is functional. When your testing is complete you will return to 7.5, "Place Serviced DirMaint into Production" to place the service into production.

---

## 7.5 Place Serviced DirMaint into Production

### Important note

#### Notes:

1. This procedure should only be done when you have successfully tested the new service. Once you perform this step you can not easily back off to your previous production code. See the "Removing Service Levels" chapter in the *VM/ESA Service Guide* for further details regarding backing off service levels.
2. Make sure the RUNMODE= entry of the CONFIG DATADVH file (on the 41F minidisk) has been set to *operational*.

Placing the DirMaint code into production is a two step process:

- First the test code is moved from the test build disks to the server production minidisks.
- Then the general user code is placed onto the MAINT 19E minidisk making the new DirMaint code available to all users.

### 7.5.1 Copy the Server Code to the Production Minidisks

This step will be accomplished by using the IN2PROD EXEC. The IN2PROD exec uses a default *ppfname* of **5748XE4M** and a default *compname* of **DIRM**. If either the *ppfname* or *compname* being used is different, you will have to tell the IN2PROD exec the names you are using. To find out more information on the IN2PROD EXEC issue **in2prod {? | help}** after accessing the 492 minidisk.

**Note:** If you have arrived here from testing the DIRMAINT server, then the P748XE4M should have write access to the 491 and 11F minidisks when it is logged on. If this is not the case, then the DIRMAINT server will first have to be logged off.

#### 2 Warning!

- 2 IN2PROD PROD, will copy the tailorable files IN2PROD SAMP placed on the 41F and 492 test disks  
2 to the 11F and 491 production disks. To avoid possibly back leveling these files, you **should only**  
2 make changes to these files on the 41F and 492 test disks.

**1** Log on to P748XE4M, if you are not already logged on to it.

**2** Access the disk where the IN2PROD EXEC resides

**access 492 e**

**3** Use the IN2PROD exec to copy code from the 492 and 41F test minidisks to the 491 and 11F production minidisks.

**in2prod prod pfname compname**

**4** Log off P748XE4M so the DIRMAINT server can gain write access to the 491 and 11F minidisks when re-establishing your production environment.

**logoff**

## 7.5.2 Copy the DirMaint Production Code to MAINT's Minidisks

This step needs to be performed so that the new DirMaint code is available to general users to use.

**1** Log on as **MAINT**

**Note:** The following steps should be done from the MAINT user ID so that the appropriate CMS shared segment can be saved.

**2** Copy the system Y-disk code to MAINT's 19e disk

**a** If servicing using minidisks

**link P748XE4M 29e addr rr**

**access addr e**

**access 19e f**

**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

*addr* is any free disk address on the MAINT user ID

**Note:** DirMaint users require files placed on the 19E disk.

**b** If servicing using SFS

**access VMSYS:P748XE4M.DIRM.MAINT19E e**

**access 19e f**

**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**Note:** DirMaint users require files placed on the 19E disk.

2                                   **C** Re-save the CMS saved system, to return the Y-disk (product code or  
2                                   MAINT's 19E disk) to 'shared' status. See the 'Placing (Serviced)  
2                                   Components into Production' section of the *VM/ESA Service Guide* for  
2                                   detailed information about how to save the CMS saved system.

### 3 Copy American English help files to MAINT's 19D disk

#### a If servicing using minidisks

**link P748XE4M 29d addr2 rr**                                    *addr2* is any free disk address on the MAINT user  
**access addr2 e**    ID  
**access 19d f**  
**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**Note:** Users wishing to access DirMaint help files require the 19D disk.

#### b If servicing using SFS

**access VMSYS:P748XE4M.DIRM.HELP e**  
**access 19d f**  
**vmfcopy \* \* e = = f (prodid 5748XE4M%DIRM replace olddate**

**Note:** Users wishing to access DirMaint help files require the 19D disk.

#### C In order to obtain DirMaint American English help, either of the following must be issued:

- DIRM HELP
- HELP DVHAMENG

3                                   If you require the DIRMAINT 1.4 help files to be used for command  
3                                   level 140A, then copy those help files to MAINT's 19D minidisk. If you  
3                                   do not require help for command level 140A, and desire to use HELP  
3                                   DIRMAINT (as in DIRMAINT 1.4) for obtaining DirMaint American  
3                                   English help for command level 150A, then make the following  
3                                   changes:

- Rename or copy all \* HELPADVH files to \* HELPDIRM on the MAINT 19D minidisk.
- Rename or copy the DVHAMENG HELPMENU file to DIRMAINT HELPMENU on the MAINT 19D minidisk.
- Rename or copy the ADVH HELPABBR file to DIRM HELPABBR on the MAINT 19D minidisk.

- 2 • Change the AMENG\_HELP\_150A configuration (CONFIG
  - 2 DATADVH) entry to:
  - 2 AMENG\_HELP\_150A = DVHAMENG HELPDIRM
  - 2 • Rename or copy the ADVHCMD HELPMENU file to DIRMCMD
  - 2 HELPMENU on the MAINT 19D minidisk.
  - 2 • Rename or copy the ADVHINFO HELPTASK file to DIRMINFO
  - 2 HELPTASK on the MAINT 19D minidisk.
  - 2 • Edit the DIRMCMD HELPMENU file and change entry :ADVHINFO
  - 2 to :DIRMINFO.
  - 2 • Edit the DIRMAINT HELPMENU file and change all instances of
  - 2 ADVH to DIRM.
  - 2 • Edit the DIRMINFO HELPTASK file and change all instances of
  - 2 ADVH to DIRM.
- 2 **d** Re-build the CMS HELP logical saved segment, to include DirMaint's
- 2 help files from the AMENG Help (MAINT's 19D) disk. See the 'Placing
- 2 (Serviced) Components into Production' section of the *VM/ESA Service*
- 2 *Guide* for detailed information about how these segments should be
- 2 saved on your system. (Note that you will need to use ( **all** instead of (
- 2 **serviced** on the VMSES/E VMFBLD command when re-building any
- 2 segments.)

**4** If the Uppercase English help files have been installed, place the files into production from P748XE4M's 502 disk to MAINT's 402 disk

**a** If installing using minidisks

```
link P748XE4M 502 addr rr          addr is any free disk address on the MAINT user
access addr e                    ID
access 402 f
vmfcopy ** e = = f (prodid 5748XE4M%DIRM replace olddate
```

**b** If installing using SFS

```
access VMSYS:P748XE4M.DIRM.HELPU e
access 402 f
vmfcopy ** e = = f (prodid 5748XE4M%DIRM replace olddate
```

**c** In order to obtain DirMaint Uppercase English help, either of the following must be issued:

- DIRM HELP

- HELP DVHUCENG

3  
3  
3  
3  
3

If you require the DIRMAINT 1.4 help files to be used for command level 140A, then copy those help files to MAINT's 402 minidisk. If you do not require help for command level 140A, and desire to use HELP DIRMAINT (as in DIRMAINT 1.4) for obtaining DirMaint Uppercase English help for command level 150A, then make the following changes:

2  
2  
2  
2  
2  
2  
2  
2  
2  
2  
2  
2  
2  
2

- Rename or copy all \* HELPADVH files to \* HELPDIRM on the MAINT 402 minidisk.
- Rename or copy the DVHUCENG HELPMENU file to DIRMAINT HELPMENU on the MAINT 402 minidisk.
- Rename or copy the UDVH HELPABBR file to DIRM HELPABBR on the MAINT 402 minidisk.
- Change the UCENG\_HELP\_150A configuration (CONFIG DATADVH) entry to:  
UCENG\_HELP\_150A = DVHUCENG HELPDIRM
- Rename or copy the UDVHCMD HELPMENU file to DIRMCMD HELPMENU on the MAINT 402 minidisk.
- Rename or copy the UDVHINFO HELPTASK file to DIRMINFO HELPTASK on the MAINT 402 minidisk.
- Edit the DIRMCMD HELPMENU file and change entry :UDVHINFO to :DIRMINFO.
- Edit the DIRMAINT HELPMENU file and change all instances of UDVH to DIRM.
- Edit the DIRMINFO HELPTASK file and change all instances of UDVH to DIRM.

### 7.5.3 Reinitialize the Server Machines

The server machines will be reinitialized in order for them to use the new production code.

#### Notes:

1. Ensure that the installation user ID P748XE4M is not logged on. If the installation user ID is logged on it will prevent the DIRMAINT server machine from accessing the 491 and 11F minidisks in write mode.
2. If the DIRMAINT server is currently not running, then you will need to log it on and only issue the commands to reinitialize the DATAMOVE and DIRMSAT servers (skip the *dirm cp ipl cms parm autocr* command).

3. You may need to correct the system to IPL to match the name of the CMS saved system, or change it to IPL by device address rather than by system name. It should match the IPL statement you included in the DIRMAINT machine's directory entry, or the IPL statement included in the profile used by the DIRMAINT machine's directory entry.

If you had tested the new service of DirMaint, then you will first need to log the server machines off and then back on as they are currently running the old service level of DirMaint. Otherwise you can issue the following commands to reinitialize each DirMaint server. This must be done from a DirMaint privileged user (such as the MAINT user ID).

```
dirm cp ipl cms parm autocr  
dirm datamove cp ipl cms parm autocr  
dirm satellite cp ipl cms parm autocr
```

**You have now finished servicing IBM Directory Maintenance for  
VM/ESA**



---

## Appendix A. Test the Installation/Service for DirMaint

This Appendix is used for testing the initial installation of DirMaint and its related server machines. It will also be used prior to placing new service into production. You should follow the steps to test each of the server machines that you are using.

### Notes:

1. This procedure will require the DirMaint server machines to be shutdown, therefore, you should only test when it will least disrupt your production environment.
2. If the install ID is logged on you will get messages stating that the minidisks can not be accessed R/W. The install ID should be logged off during this procedure.
3. If testing after installing DirMaint, then the RUNMODE= entry of the CONFIG DATADVH file (on the P748XE4M 41F minidisk) is set to *testing* unless otherwise changed. If testing after applying service, then be aware of what the RUNMODE= entry is set to. You should review whether or not you want the DIRMAINT server to have the ability to place the source directory online while testing and set the RUNMODE= entry accordingly.
- 3 4. If you have installed service, or an RSU tape, the sample tailorable files may have been serviced.  
3 You should review which of these files have been serviced on the 2D2 disk with a filetype of  
3 SDVnnnnn before continuing with these test instructions. The sample tailorable files have been  
3 pre-primed as local modifications on the 2C2 disk. Do not make any changes to the local  
3 modifications having a file type of SDVL0000 on the 2C2 disk. Instead you should make any  
3 necessary applicable changes to your override files. The tailorable DirMaint configuration files are not  
3 touched when servicing DirMaint. See Figure 14 on page 44 for a list of the tailorable DirMaint  
3 configuration files created from the sample files.
5. During these instructions, privilege commands are issued from another user ID. The AUTHFOR CONTROL file should have an entry for the user ID you will be issuing these commands from. For the purposes of these instructions, the test user ID will be called **DIRMUSER**. If you are testing from a different user ID, substitute that name for DIRMUSER. Note, to test multiple system CSE clusters, you will need a DIRMUSER user ID on a second and third system in the cluster.
- | 6. For the purposes of these instructions, **DIRMAINT**, **DATAMOVE**, and **DIRMSAT** are assumed as the  
| name of the server user ID's. If you are using a different user ID name, substitute that name for the  
| particular server name where applicable in this appendix.
7. The test instructions in this appendix are divided into four sections as follows:
  - A.1, "Test the DIRMAINT Server Machine" on page 80 for DIRMAINT,
  - A.2, "Test the DIRMSAT Server Machine" on page 91 for DIRMSAT,
  - A.3, "Test the DATAMOVE Server Machine" on page 100 for DATAMOVE, and
  - 3 A.5, "Quick Test After Installing Service" on page 111 for testing after applying of service.
- 3 Following a new installation of DirMaint, complete Complete all relevant test sections then proceed  
3 with A.4, "Post Test Instructions" on page 109. After installing RSU or corrective service, you may  
3 alternatively use the procedure in A.5, "Quick Test After Installing Service" on page 111.

---

## A.1 Test the DIRMAINT Server Machine

This procedure will test the new DIRMAINT code to see that it functions properly. You will log on a test server machine and access the appropriate disks. The DIRMUSER user ID is required in order to verify the DIRMAINT function.

### Notes

1. Starting with step 10 on page 84, this procedure will have you make updates to the source directory and verify these changes took effect. To do this the RUNMODE= entry of the CONFIG DATADVH file (on the P748XE4M 41F minidisk) must be set to *operational*.

**1** Log on to the **DIRMAINT** server.

**2** If a DIRMAINT server (any release of DirMaint) is currently running, it must be brought down

**a** If DirMaint 1.5 is currently running

**shutdown**

**b** If DIRMAINT Release 4 (or an older release) is currently running

**#cp i cms  
access (noprof**

**3** Link to the P748XE4M's test disks

As an alternative to the instructions shown here, you can use the DVHXLVL EXEC (exit called by the PROFILE EXEC) to switch from one level of DirMaint code to another. The keyword *choice=* is used to determine the level of code to use as:

*choice='R4'* to run DIRMAINT 1.4.0

*choice='R5T'* to run DirMaint 1.5.0 from the test disks.

*choice='R5P'* to run DirMaint 1.5.0 from the production disks.

*choice='\_\_\_'* to manually do the disk switching as shown below.

**a** If testing DirMaint 1.5 after installing

**cp detach 191 11F 21F 591 592  
cp link \* 592 191 m  
cp link \* 21F 11F m  
access 191 a**

**Note:** The detach of the 191 disk may fail if this is a new install of IBM Directory Maintenance for VM/ESA

**b** If testing DirMaint 1.5 after servicing

```
cp detach 191 192 11F 21F
cp link * 192 191 m
cp link * 21F 11F m
access 191 a
```

**Note:** The detach of the 192 and 21F disks may fail if you had already detached them while applying service.

**4** Run the DirMaint profile exec.

You will not see a CMS "Ready" message. Instead, this condition has been replaced by a line with the DIRMAINT service machine's network node id, user id, the date, return code, and time of day.

**profile**

**5** Verify the appropriate disks have been accessed

The disk mode and addresses or directory names should match the configuration specified in the DVHPROFA DIRMAINT file. If not, make the necessary corrections and run the profile exec again.

**q accessed**

The following shows a sample screen of the accessed disks.

```
q accessed
Mode Stat   Files Vdev  Label/Directory
A     R/W      1   155  DVH155
C     R/W     294  191  DVH191
D     R/W     57  11F  DVH11F
E     R/W     45  1DF  DVH1DF
G     R/W     7   1DB  DVH1DB
H     R/W     10  1AA  DVH1AA
S     R/O    464  190  CMSESA
Y/S   R/O     3   19E  Y-DISK
Z     R/W     0   1FA  DVH1FA
DIRMAINT DVHTEST1 - 1995/04/11; T=0.01/0.01 17:28:35
```

## 6 Check for any extraneous files

This check verifies that the disks are accessed, that the message handler is functioning correctly, and that there are no back level executable files that have been misplaced in the search order. If you have a large number of duplicate files, or if you have any executable files, use an *EXEC DVHUCHK CHECK FILELIST* command to resolve the discrepancies before continuing.

### exec dvhuchk check itemize

2  
2  
2

The following shows a sample screen from issuing this command. Depending on your environment, the messages issued may contain different information.

```
exec dvhuchk check itemize
DVHUCH1371W Filemodes C and E both contain AUTHDASD DATADVH.
DVHUCH1371W Filemodes A and C both contain DIRMAINT DATADVH.
| DVHUCH1371W Filemodes A and E both contain DIRMAINT DATADVH.
| DVHUCH1371W Filemodes A and G both contain DIRMAINT DATADVH.
| DVHUCH1372I There were 4 extraneous files found.
DVHUCH1190I Command CHECK complete; RC= 2.
DIRMAINT DVHTEST1 - 1995/04/11(00002); T=0.40/0.43 18:11:32
```

## 7 Start the server machine using the new code.

The DVHBEGIN EXEC will start the server. This will make a copy of the USER INPUT file (on the primary directory disk, 1DF) as USER BACKUP (on the directory backup disk, 1DB), and then convert the USER BACKUP file from "monolithic" to "clusterized" format. This also initializes all of the other control files DIRMAINT needs to begin updating the source directory. The operation of a substantial portion of the DirMaint product code will have been verified by this step.

### dvhbegin

The DIRMAINT service machine should now be waiting for work. The following shows a sample screen of what the start up messages should look like.

```

dvhbegin
| DVHILZ3510I Starting DVHINITL with directory: USER INPUT E
| DVHILZ3510I DVHINITL Parms: BLDMONO
DVHILZ3509I Monolithic backup now exists as: USER BACKUP G.
DVHILZ3509I Continuing with execution.
| DVHILZ3510I Starting DVHINITL with directory: USER BACKUP G
| DVHILZ3510I DVHINITL Parms: BLDCLUSTER BLDLINK BLDDASD
DIRMAINT DVHTEST1 - 1995/04/11; T=4.30/4.69 18:58:06
DVHWAI2140I Waiting for work on 95/04/11 at 18:58:06.

```

**8** Verify the operation of DirMaint's console interrupt handler, the command syntax parser, and part of the authorization checking.

#### cp query files

The following shows a sample screen of what should be returned from issuing this command.

```

cp query files
DVHWAI2146I Wakeup caused by console attention on 95/04/11 at 19:20:00.
DVHREQ2290I Request is: CP query files
DVHREQ2288I Your CP request for DIRMAINT at * has been accepted.
FILES: NO RDR, 0001 PRT, NO PUN
DVHREQ2289I Your CP request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/11; T=0.56/0.61 19:20:05
DVHWAI2140I Waiting for work on 95/04/11 at 19:20:05.

```

**9** Test DirMaint's automatic restart and recovery.

**a** Create a CP disabled wait state.

If a restart is not successful, check the *SHUTDOWN\_REIPL\_COMMAND= CP IPL CMS PARM AUTOOCR* entry in the CONFIG\* DATADVH file(s). You may need to correct the name of the CMS saved system, or change it to IPL by device address rather than by system name. It should match the IPL statement you included in the DIRMAINT machine's directory entry, or the IPL statement included in the profile used by the DIRMAINT machine's directory entry.

#### cp system clear

The following shows a sample screen of what should be returned from issuing this command.

```

cp system clear
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 21:51:50.
DVHREQ2290I Request is: CP system clear
DVHREQ2288I Your CP request for DIRMAINT at * has been accepted.
Storage cleared - system reset.
DMSWSP314W Automatic re-IPL by CP due to disabled wait; PSW 000A0000 00000000
VM/ESA REL. 2.1 01/13/95 13:14
PRT FILE 1019 SENT FROM DIRMAINT CON WAS 1019 RECS 0049 CPY 001 0 HOLD NOKEEP
:
PRODUCT:
IBM Directory Maintenance for VM/ESA (DirMaint)
5748-XE4 (C) Copyright IBM Corporation 1979, 1995.
Version 1 Release 5 Modification 0 Service Level 9501.
DMSACC724I 155 replaces A (191)

DVHPRO2008I ROLE = DIRMAINT

DVHPRO2010I TESTING USE OF MSGNOH ...
DVHPRO2002A Manual start is required for DIRMAINT.
DVHPRO2002A Enter "DVHBEGIN" when ready to start.
DIRMAINT DVHTEST1 - 1995/04/16; T=0.38/0.46 21:54:49

```

**b** Start the server machine again

If the DIRMAINT machine was running disconnected, the DVHPROF EXEC would have automatically issued an *EXEC DVHBEGIN* command; manual intervention would not have been required.

**dvhbegin**

**10** Verify the DIRMAINT machine will update the source directory.

Complete the test instructions from this point only when you are ready to allow DirMaint to update the source directory.

**a** Determine your present distribution code

**distrib ?**

Write down the value returned from this command, it will be used in step 10h on page 87 when restoring it.

```
distrib ?
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:00:31.
DVHREQ2290I Request is: DISTRIB ?
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHDIS3248I The current distribution code for DIRMAINT is oldvalue
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=0.97/1.06 20:00:40
DVHWAI2140I Waiting for work on 95/04/16 at 20:00:40.
```

**b** Try changing your present distribution code

**distrib value**

*value* can be any value you wish.

```
distrib value
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:01:49.
DVHREQ2290I Request is: DISTRIB value
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.13/1.23 20:02:00
DVHWAI2140I Waiting for work on 95/04/16 at 20:02:00.
```

**c** Check if the distribution code has been changed

**distrib ?**

The distribution code has not been changed because the RUNMODE= entry of the CONFIG DATADVH file is set to *testing*.

```
distrib ?
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:02:16.
DVHREQ2290I Request is: DISTRIB ?
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHDIS3248I The current distribution code for DIRMAINT is oldvalue
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=0.97/1.05 20:02:24
DVHWAI2140I Waiting for work on 95/04/16 at 20:02:25.
```

**d** Update the RUNMODE= and ONLINE= entries

**cms xedit config datadvh**

Change the RUNMODE= entry to *operational* and ONLINE= entry to *immed*.

**e** Place the new CONFIG DATADVH file into use

**rlddata**

```
rlddata
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:04:25.
DVHREQ2290I Request is: RLDDATA
DVHREQ2288I Your RLDDATA request for DIRMAINT at * has been accepted.
DVHREQ2289I Your RLDDATA request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.36/1.46 20:04:36
DVHWAI2140I Waiting for work on 95/04/16 at 20:04:36.
```

**f** Change your present distribution code

**distrib value**

*value* can be any value you wish, you will be changing it back shortly.

```
distrib value
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:05:57.
DVHREQ2290I Request is: DISTRIB value
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHBIU3423I The source for directory entry DIRMAINT has been updated.
DVHBIU3423I The next ONLINE will take place via Diagnose 84.
DVHBIU3428I Changes made to directory entry DIRMAINT have been placed online.
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.26/1.39 20:06:09
DVHWAI2140I Waiting for work on 95/04/16 at 20:06:10.
```

**g** Check if the distribution code has been changed

**distrib ?**

This time the distribution code should match the one you selected.



```
distrib ?
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:06:12.
DVHREQ2290I Request is: DISTRIB ?
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHDIS3248I The current distribution code for DIRMAINT is value
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=0.97/1.06 20:06:20
DVHWAI2140I Waiting for work on 95/04/16 at 20:06:20.
```

## **h** Restore the original distribution code

**distrib *oldvalue***

*oldvalue* is the original distribution code.  
determined in step 10a on page 84.

```
distrib oldvalue
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:05:57.
DVHREQ2290I Request is: DISTRIB oldvalue
DVHREQ2288I Your DISTRIB request for DIRMAINT at * has been accepted.
DVHBIU3423I The source for directory entry DIRMAINT has been updated.
DVHBIU3423I The next ONLINE will take place via Diagnose 84.
DVHBIU3428I Changes made to directory entry DIRMAINT have been placed online.
DVHREQ2289I Your DISTRIB request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.26/1.39 20:06:09
DVHWAI2140I Waiting for work on 95/04/16 at 20:06:10.
```

## 11 Test a directory update that does not get placed online with diagnose X'84'

spool 00b 1403  
spool 00b ?  
spool 00b delete

```
spool 00B 1403
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:41:07.
DVHREQ2290I Request is: SPOOL 000B 1403
DVHREQ2288I Your SPOOL request for DIRMAINT at * has been accepted.
DVHBIU3424I The source for directory entry DIRMAINT has been updated.
DVHBIU3424I The next ONLINE will take place immediately.
2 DVHBIU3428I Changes made to directory entry DIRMAINT have been placed
2 DVHBIU3428I online.
2 DVHBIU3427I Changes made to directory entry
2 DVHBIU3427I DIRMAINT by DIRMAINT at DVHTEST1 have
2 DVHBIU3427I been placed online.
DVHREQ2289I Your SPOOL request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.20/1.32 20:41:18
DVHWAI2140I Waiting for work on 95/04/16 at 20:41:18.
spool 00B ?
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:43:36.
DVHREQ2290I Request is: SPOOL 000B ?
DVHREQ2288I Your SPOOL request for DIRMAINT at * has been accepted.
2 DVHSPL3320I The spool statement in DIRMAINT associated with virtual
2 DVHSPL3320I address 000B is:
2 DVHSPL3320I 1403
DVHREQ2289I Your SPOOL request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.00/1.10 20:43:45
DVHWAI2140I Waiting for work on 95/04/16 at 20:43:45.
spool 00b delete
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 20:49:50.
DVHREQ2290I Request is: SPOOL 000B DELETE
DVHREQ2288I Your SPOOL request for DIRMAINT at * has been accepted.
DVHBIU3424I The source for directory entry DIRMAINT has been updated.
2 DVHBIU3424I The next ONLINE will take place immediately.
2 DVHBIU3428I Changes made to directory entry DIRMAINT have been placed
2 DVHBIU3428I online.
2 DVHBIU3427I Changes made to directory entry
2 DVHBIU3427I DIRMAINT by DIRMAINT at DVHTEST1 have
2 DVHBIU3427I been placed online.
DVHREQ2289I Your SPOOL request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/16; T=1.35/1.49 20:50:04
DVHWAI2140I Waiting for work on 95/04/16 at 20:50:04.
```

## 12 Verify the directory has not been corrupted by any changes made

chksum

```

chksum
DVHWAI2146I Wakeup caused by console attention on 95/04/22 at 14:24:32.
DVHREQ2290I Request is: CHKSUM
DVHREQ2288I Your CHKSUM request for DIRMAINT at * has been accepted.
DVHILZ3510I Starting DVHINITL with directory: USER DIRECT E
DVHILZ3510I DVHINITL Parns: BLDMONO
DVHREQ2289I Your CHKSUM request for DIRMAINT at * has completed; with RC = 0.
DIRMAINT DVHTEST1 - 1995/04/22; T=0.91/0.99 14:24:38

```

**13** Make sure the DIRMUSER and DATAMOVE user ID's are authorized to issue privilege commands, then disconnect the DIRMAINT server user ID.

**a** Issue the AUTHFOR command to add the DIRMUSER and DATAMOVE user ID's as privilege users to the AUTHFOR CONTROL file.

**Note:** If you are testing from a different user ID, substitute that name for DIRMUSER.

**for dirmuser authfor dirmuser cmdset adghops**  
**for datamove authfor datamove cmdset adghops**

**b** Disconnect the DIRMAINT server.

**#cp disc**

**14** Log on to the DIRMUSER user ID. This user ID is required to be a DirMaint privileged user in order to issue privileged DirMaint commands to properly validate your installation of DirMaint.

**a** Link to the disk or SFS directory containing test code for the MAINT 19E minidisk

**1** If using minidisks

**link P748XE4M 29E vaddr rr**  
**access vaddr b**

*vaddr* is any free virtual address. This disk contains the DIRMAINT EXEC which will be used to verify that DirMaint code is satisfactory.

## 2 If using SFS

**access VMSYS:P748XE4M.DIRM.MAINT19E b**

This directory contains the DIRMAINT EXEC which will be used to verify that DirMaint code is satisfactory.

- b** Edit the ACCESS DATADVH file on the B disk and change the entry for the 11F disk to 21F and file on your A disk.

3 **Note:** If the 21F minidisk (P748XE4M's 41F minidisk) was defined with  
3 a password other than 'ALL' (as recommended in 6.3, "Allocate  
3 Resources for Installing DirMaint." on page 28), be sure to make the  
3 appropriate password correction here as well.

- c** Verify correct installation of the user machine code, issue:

**dirmaint globalv ? interface**

This should result in the following messages.

```
DVHGLB1341I The current setting for INTERFACE is 199501.150A
DVHGLB1190I Command GLOBALV complete; RC= 0.
```

- d** Verify correct installation of the DIRMAINT service machine code and configuration of the DIRMAINT service virtual machine, issue the following:

**dirmaint globalv cmdlevel 150a**  
**dirmaint defaults cmdset adghops**  
**dirmaint query dvhlevel**

*yynn* will be the year and number of the latest RSU applied to DirMaint. If *0000*, then there have not been any RSUs applied to DirMaint.

This should result in the following messages.

```
DVHGLB3844I IBM Directory Maintenance for VM/ESA
DVHGLB3844I 5748-XE4 (C)Copyright IBM Corporation 1979, 1995
DVHGLB3844I Version 1 Release 5 Modification 0 Service Level yynn
DVHREQ2289I Your QUERY request for DIRMUSER at * has completed; with RC = 0.
```

- e** Do not logoff or disconnect from the DIRMUSER user ID yet as it will be used to test the other DirMaint functions.

---

## A.2 Test the DIRMSAT Server Machine

This procedure will test the new DIRMSAT code to see that it functions properly. You will log the server machine on and access the appropriate disks. The DIRMUSER user ID is required in order to verify the DIRMSAT function. Note, to test multiple system CSE clusters, you will need a DIRMUSER user ID on a second and third system in the cluster.

### Notes

1. Starting with step 12 on page 96, this procedure will have you make updates to the source directory and verify these changes took effect. To do this the RUNMODE= entry of the CONFIG DATADVH file (on the P748XE4M 41F minidisk) must be set to *operational*.

**1** Log on to the **DIRMSAT** server.

**2** If a DIRMSAT server (any release of DirMaint) is currently running, it must be brought down

**a** If the DIRMSAT server for DirMaint 1.5 is currently running

**shutdown**

**b** If the DIRMSAT server for DIRMAINT Release 4 (or an older release) is currently running, first hit the PA1 key then issue the following:

**#cp i cms  
access (noprof**

**3** Link to the P748XE4M's test disks

As an alternative to the instructions shown here, you can use the DVHXLVL EXEC (exit called by the PROFILE EXEC) to switch from one level of DIRMSAT code to another. The keyword *choice=* is used to determine the level of code to use as:

*choice='R4'* to run DIRMAINT 1.4.0

*choice='R5T'* to run DirMaint 1.5.0 from the test disks.

*choice='R5P'* to run DirMaint 1.5.0 from the production disks.

*choice='\_\_\_'* to manually do the disk switching as shown below.

**a** If testing DirMaint 1.5 after installing

```
cp detach 191 11F
cp link * 592 191 rr
cp link * 21F 11F rr
access 191 a
```

**Note:** The detach of the 191 disk may fail if this is a new install of IBM Directory Maintenance for VM/ESA

**b** If testing DirMaint 1.5 after servicing

```
cp detach 191 11F
cp link * 192 191 rr
cp link * 21F 11F rr
access 191 a
```

**4** Run the DIRMSAT profile exec.

You will not see a CMS "Ready" message. Instead, this condition has been replaced by a line with the DIRMSAT service machine's network node id, user id, the date, return code, and time of day.

**profile**

**5** Verify the appropriate disks have been accessed

The disk mode and addresses or directory names should match the configuration specified in the DVHPROFA DIRMSAT file. If not, make the necessary corrections and run the profile exec again.

**q accessed**

The following shows a sample screen of the accessed disks.

```
q accessed
Mode Stat   Files Vdev  Label/Directory
A     R/W      1  155  DVH155
C     R/O     294 191  DVH191
D     R/O     57 11F  DVH11F
E     R/O     45 1DF  DVH1DF
H     R/W     10 1AA  DVH1AA
S     R/O    464 190  CMSESA
Y/S   R/O     3  19E  Y-DISK
Z     R/W     0  1FA  DVH1FA
DIRMSAT DVHTEST1 - 1995/04/11; T=0.01/0.01 17:28:35
```

## 6 Check for any extraneous files

This check verifies that the disks are accessed, that the message handler is functioning correctly, and that there are no back level executable files that have been misplaced in the search order. If you have a large number of duplicate files, or if you have any executable files, use an *EXEC DVHUCHK CHECK FILELIST* command to resolve the discrepancies before continuing.

### exec dvhuchk check itemize

The following shows a sample screen from issuing this command.

```
exec dvhuchk check itemize
DVHUCH1371W Filemodes C and E both contain AUTHDASD DATADVH.
DVHUCH1371W Filemodes A and C both contain DIRMSAT DATADVH.
DVHUCH1372I There were 2 extraneous files found.
DVHUCH1190I Command CHECK complete; RC= 2.
DIRMSAT DVHTEST1 - 1995/04/11(00002); T=0.40/0.43 18:11:32
```

## 7 Start the server machine using the new code.

The DVHBEGIN EXEC will start the server.

### dvhbegin

The DIRMSAT service machine should now be waiting for work. The following shows a sample screen of what the start up messages should look like.

```
dvhbegin
DIRMSAT DVHTEST1 - 1995/04/11; T=4.30/4.69 18:58:06
DVHWAI2140I Waiting for work on 95/04/11 at 18:58:06.
```

## 8 Verify the operation of DIRMSAT's console interrupt handler, the command syntax parser, and part of the authorization checking.

### cp query files

The following shows a sample screen of what should be returned from issuing this command.

```
cp query files
DVHWAI2146I Wakeup caused by console attention on 95/04/11 at 19:20:00.
DVHREQ2290I Request is: CP query files
DVHREQ2288I Your CP request for DIRMSAT at * has been accepted.
FILES: NO RDR, 0001 PRT, NO PUN
DVHREQ2289I Your CP request for DIRMSAT at * has completed; with RC = 0.
DIRMSAT DVHTEST1 - 1995/04/11; T=0.56/0.61 19:20:05
DVHWAI2140I Waiting for work on 95/04/11 at 19:20:05.
```

## 9 Test DirMaint's automatic restart and recovery of the DIRMSAT server

### a Create a CP disabled wait state.

If a restart is not successful, check the *SHUTDOWN\_REIPL\_COMMAND= CP IPL CMS PARM AUTOOCR* entry in the CONFIG\* DATADVH file(s). You may need to correct the name of the CMS saved system, or change it to IPL by device address rather than by system name. It should match the IPL statement you included in the DIRMSAT machine's directory entry, or the IPL statement included in the profile used by the DIRMSAT machine's directory entry.

### cp system clear

The following shows a sample screen of what should be returned from issuing this command.



```

cp system clear
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 21:51:50.
DVHREQ2290I Request is: CP system clear
DVHREQ2288I Your CP request for DIRMSAT at * has been accepted.
Storage cleared - system reset.
DMSWSP314W Automatic re-IPL by CP due to disabled wait; PSW 000A0000 00000000
VM/ESA REL. 2.1 01/13/95 13:14
PRT FILE 1019 SENT FROM DIRMSAT CON WAS 1019 RECS 0049 CPY 001 0 HOLD NOKEEP
:

PRODUCT:
IBM Directory Maintenance for VM/ESA (DirMaint)
5748-XE4 (C) Copyright IBM Corporation 1979, 1995.
Version 1 Release 5 Modification 0 Service Level 9501.
DMSACC724I 155 replaces A (191)

DVHPR02008I ROLE = DIRMSAT

DVHPR02010I TESTING USE OF MSGNOH ...
DVHPR02002A Manual start is required for DIRMSAT.
DVHPR02002A Enter "DVHBEGIN" when ready to start.
:
DIRMSAT DVHTEST1 - 1995/04/16; T=0.38/0.46 21:54:49

```

**b** Start the server machine again

If the DIRMSAT machine was running disconnected, the DVHPROF EXEC would have automatically issued an *EXEC DVHBEGIN* command; manual intervention would not have been required.

**dvhbegin**

**10** Disconnect the user ID

**#cp disc**

**11** Verify multiple system CSE cluster routing is properly working. Logon to a DIRMUSER user ID on a system in your cluster **other than the one where DIRMAINT is running**, and do the following:

- a** Send a command to the DIRMAINT server in the cluster and verify a response is received by issuing:

**dirm distrib ?**

- b** Send a file to the DIRMAINT server and verify the file is returned by issuing:

**dirm batch  
input review noprof  
file**

- c** Peek the reader file returned, and verify for accuracy by issuing:

**peek *nnnn*  
discard  
logoff**

*nnnn* is the spool ID of the reader file returned from DIRMAINT.

**12 Go back to the DIRMUSER user ID for the system in your cluster where DIRMAINT is running** (the user ID which you tested DIRMAINT functions).

Complete the test instructions from this point only when you are ready to allow DirMaint to update the source directory.

There are two reasons for using a satellite server. If you are using a satellite server to update multiple object directories in a multiple system CSE cluster, you can verify that a directory change has taken place by logging on to the user ID on each system in turn and checking the necessary characteristic. If you are using a satellite server to maintain a duplicate object directory on a stand-alone system, it is more difficult to completely verify successful operation. You will need to do a CP SHUTDOWN of your entire system, IPL from the alternate system residence volume, logon to the DIRMUSER id and verify that the directory changes have in fact taken place, then SHUTDOWN your system again and re-IPL from your primary system residence volume. These instructions will not have you do the system SHUTDOWN/IPL, do this at your discretion.

**13 Verify the DIRMSAT service machine correctly updates the object directory, do the following:**

- a** Determine your present distribution code

**dirmaint for dirmuser distrib ?**

Write down the value returned from this command, it will be used in step 13e on page 97 when restoring it.

**b** Change your present distribution code

**dirmaint for dirmuser distrib** *value* *value* can be any value you wish, you will be changing it back shortly.

**c** Verify the distribution code has been changed by issuing:

**#cp query v 00e** verify that the distribution code returned matches the value specified in the previous DISTRIB command.

**d** Log on to the DIRMUSER user ID on each system in the cluster and issue:

**#cp query v 00e** verify that the distribution code returned matches the value specified in the previous DISTRIB command.

**#cp logoff** logoff the DIRMUSER user ID on each system in the cluster except the system where DIRMAINT is running.

**e** Restore the original distribution code

**dirmaint for dirmuser distrib** *oldvalue* *oldvalue* is the original distribution code determined in step 13a on page 96.

**14** If your system is running in a multiple system CSE cluster, continue with the following system affinity test verification steps. You will need a DIRMUSER user ID on two other systems in your cluster to complete these verification steps.

**a** Determine your present distribution code

**dirmaint for dirmuser distrib ?** Write down the value returned from this command, it will be used in step 14h on page 100 when restoring it.

**b** Change the system affinity code for one of the systems in your cluster.

**dirmaint for dirmuser AT *sys2* distrib *value***

*sys2* is the system ID name of a second system in your cluster other than the one where DIRMAINT is running, and *value* can be any value you wish, you will be changing it back shortly.

**c** Query the current distribution code for the local system and two other systems in your cluster by issuing the following:

**dirmaint for dirmuser distrib ?**  
**dirmaint for dirmuser at *sys1* distrib ?**  
**dirmaint for dirmuser at *sys2* distrib ?**  
**dirmaint for dirmuser at *sys3* distrib ?**

*sys1* is the system ID where DIRMAINT is running, *sys2* and *sys3* are system ID names of a second and third system in your cluster other than the one where DIRMAINT is running.

The response from the first command would be a message telling you there is no distribution code for the DIRMUSER user ID. The response from the second command would be a message with the original distribution code determined in step 14a on page 97. The response from the third command would be a message with the distribution code as set in step 14b. The response from the fourth command would be a message with the original distribution code determined in step 14a on page 97.

**d** Change the system affinity code for the third system in your cluster.

**dirmaint for dirmuser at *sys3* distrib *value***

*sys3* is the system ID name of a third system in your cluster other than the one where DIRMAINT is running, and *value* can be any value you wish, you will be changing it back shortly.

- e** Query the current distribution code for the local system and two other systems in your cluster by issuing the following:

**dirmaint for dirmuser distrib ?**  
**dirmaint for dirmuser at *sys1* distrib ?**  
**dirmaint for dirmuser at *sys2* distrib ?**  
**dirmaint for dirmuser at *sys3* distrib ?**

*sys1* is the system ID where DIRMAINT is running, *sys2* and *sys3* are system ID names of a second and third system in your cluster other than the one where DIRMAINT is running.

The response from the first command would be a message telling you there is no distribution code for the DIRMUSER user ID. The response from the second command would be a message with the original distribution code determined in step 14a on page 97. The response from the third command would be a message with the distribution code as set in step 14b on page 98. The response from the fourth command would be a message with the distribution code as set in step 14d on page 98.

- f** Log on to the DIRMUSER user ID on system *sys2* in your cluster and issue:

**#cp query v 00e**

The response from issuing this command would be a message with the distribution code as set in step 14b on page 98.

**#cp logoff**

Logoff should only be issued for the DIRMUSER user ID on system *sys2*.

- g** Log on to the DIRMUSER user ID on system *sys3* in your cluster and issue:

**#cp query v 00e**

The response from issuing this command would be a message with the distribution code as set in step 14d on page 98.

## #cp logoff

Logoff should only be issued for the DIRMUSER user ID on system *sys3*.

### h Restore the original distribution codes

```
dirmaint for dirmuser at sys2 distrib oldvalue  
dirmaint for dirmuser at sys3 distrib oldvalue
```

*sys2* and *sys3* are system ID names of a second and third system in your cluster other than the one where DIRMAINT is running, and *oldvalue* is the original distribution code determined in step 14a on page 97.

### i Query the current distribution codes by issuing the following:

```
dirmaint for dirmuser at sys1 distrib ?  
dirmaint for dirmuser at sys2 distrib ?  
dirmaint for dirmuser at sys3 distrib ?  
dirmaint for dirmuser at distrib ?
```

*sys1* is the system ID where DIRMAINT is running, *sys2* and *sys3* are system ID names of a second and third system in your cluster other than the one where DIRMAINT is running.

The response from the first three commands would be a message telling you there is no distribution code for the DIRMUSER user ID. The response from the fourth command would be a message with the original distribution code determined in step 14a on page 97.

- 15 Do not logoff or disconnect from the DIRMUSER user ID on the system where DIRMAINT is running as it will be used to test the DATAMOVE server functions.

---

## A.3 Test the DATAMOVE Server Machine

This procedure will test the new DATAMOVE code to see that it functions properly. You will log on a server machine and access the appropriate disks. The DIRMUSER user ID is required in order to verify the DATAMOVE function. Note, to test multiple system CSE clusters, you will need a DIRMUSER user ID on a second system in the cluster, and you should have already verified the DIRMSAT operation in A.2, "Test the DIRMSAT Server Machine" on page 91.

**Note!**

Starting with step 11 on page 105, this procedure will have you make updates to the source directory and verify these changes took effect. To do this the RUNMODE= entry of the CONFIG DATADVH file (on the P748XE4M 41F minidisk) must be set to *operational*.

**1** Log on to the **DATAMOVE** server.

**2** If a DATAMOVE server (any release of DirMaint) is currently running, it must be brought down

**a** If the DATAMOVE server for DirMaint 1.5 is currently running

**shutdown**

**b** If the DATAMOVE server for DIRMAINT Release 4 (or an older release) is currently running, first hit the PA1 key then issue the following:

**#cp i cms  
access (noprof**

**3** Link to the P748XE4M's test disks

As an alternative to the instructions shown here, you can use the DVHXLVL EXEC (exit called by the PROFILE EXEC) to switch from one level of DATAMOVE code to another. The keyword *choice=* is used to determine the level of code to use as:

*choice='R4'* to run DIRMAINT 1.4.0

*choice='R5T'* to run DirMaint 1.5.0 from the test disks.

*choice='R5P'* to run DirMaint 1.5.0 from the production disks.

*choice='\_\_\_'* to manually do the disk switching as shown below.

**a** If testing DirMaint 1.5 after installing

**cp detach 191 11F  
cp link \* 592 191 rr  
cp link \* 21F 11F rr  
access 191 a**

**Note:** The detach of the 191 disk may fail if this is a new install of IBM Directory Maintenance for VM/ESA

**b** If testing DirMaint 1.5 after servicing

```
cp detach 191 11F
cp link * 192 191 rr
cp link * 21F 11F rr
access 191 a
```

**4** Run the DATAMOVE profile exec.

You will not see a CMS "Ready" message. Instead, this condition has been replaced by a line with the DATAMOVE service machine's network node id, user id, the date, return code, and time of day.

**profile**

**5** Verify the appropriate disks have been accessed

The disk mode and addresses or directory names should match the configuration specified in the DVHPROFM DATADVH file. If not, make the necessary corrections and run the profile exec again.

**q accessed**

The following shows a sample screen of the accessed disks.

```
q accessed
Mode Stat   Files Vdev  Label/Directory
A     R/W      1  155  DVH155
C     R/O     294 191  DVH191
D     R/O     57 11F  DVH11F
H     R/W     10 1AA  DVH1AA
S     R/O    464 190  CMSESA
Y/S   R/O      3 19E  Y-DISK
Z     R/W      0 1FA  DVH1FA
DATAMOVE DVHTEST1 - 1995/04/11; T=0.01/0.01 17:28:35
```

**6** Check for any extraneous files

This check verifies that the disks are accessed, that the message handler is functioning correctly, and that there are no back level executable files that have been misplaced in the search order. If you have a large number of duplicate files, or if you have any executable files, use an *EXEC DVHUCHK CHECK FILELIST* command to resolve the discrepancies before continuing.

**exec dvhuchk check itemize**

The following shows a sample screen from issuing this command.



```
exec dvhuchk check itemize
DVHUCH1371W Filemodes C and E both contain AUTHDASD DATADVH.
DVHUCH1371W Filemodes A and C both contain DATAMOVE DATADVH.
DVHUCH1372I There were 2 extraneous files found.
DVHUCH1190I Command CHECK complete; RC= 2.
DATAMOVE DVHTEST1 - 1995/04/11(00002); T=0.40/0.43 18:11:32
```

## 7 Start the server machine using the new code.

The DVHBEGIN EXEC will start the server.

### dvhbegin

The DATAMOVE service machine should now be waiting for work. The following shows a sample screen of what the start up messages should look like.

```
dvhbegin
DATAMOVE DVHTEST1 - 1995/04/11; T=4.30/4.69 18:58:06
DVHWAI2140I Waiting for work on 95/04/11 at 18:58:06.
```

## 8 Verify the operation of DATAMOVE's console interrupt handler, the command syntax parser, and part of the authorization checking.

### cp query files

The following shows a sample screen of what should be returned from issuing this command.

```
cp query files
DVHWAI2146I Wakeup caused by console attention on 95/04/11 at 19:20:00.
DVHREQ2290I Request is: CP query files
DVHREQ2288I Your CP request for DATAMOVE at * has been accepted.
FILES: NO RDR, 0001 PRT, NO PUN
DVHREQ2289I Your CP request for DATAMOVE at * has completed; with RC = 0.
DATAMOVE DVHTEST1 - 1995/04/11; T=0.56/0.61 19:20:05
DVHWAI2140I Waiting for work on 95/04/11 at 19:20:05.
```

## 9 Test DirMaint's automatic restart and recovery of the DATAMOVE server

### a Create a CP disabled wait state.

If a restart is not successful, check the *SHUTDOWN\_REIPL\_COMMAND= CP IPL CMS PARM AUTOOCR* entry in the CONFIG\* DATADVH file(s). You may need to correct the name of the CMS saved system, or change it to IPL by device address rather

than by system name. It should match the IPL statement you included in the DATAMOVE machine's directory entry, or the IPL statement included in the profile used by the DATAMOVE machine's directory entry.

## cp system clear

The following shows a sample screen of what should be returned from issuing this command.

```
cp system clear
DVHWAI2146I Wakeup caused by console attention on 95/04/16 at 21:51:50.
DVHREQ2290I Request is: CP system clear
DVHREQ2288I Your CP request for DATAMOVE at * has been accepted.
Storage cleared - system reset.
DMSWSP314W Automatic re-IPL by CP due to disabled wait; PSW 000A0000 00000000
VM/ESA REL. 2.1 01/13/95 13:14
PRT FILE 1019 SENT FROM DATAMOVE CON WAS 1019 RECS 0049 CPY 001 0 HOLD NOKEEP
:
PRODUCT:
IBM Directory Maintenance for VM/ESA (DirMaint)
5748-XE4 (C) Copyright IBM Corporation 1979, 1995.
Version 1 Release 5 Modification 0 Service Level 9501.
DMSACC724I 155 replaces A (191)

DVHPRO2008I ROLE = DATAMOVE

DVHPRO2010I TESTING USE OF MSGNOH ...
DVHPRO2002A Manual start is required for DATAMOVE.
DVHPRO2002A Enter "DVHBEGIN" when ready to start.
:
DATAMOVE DVHTEST1 - 1995/04/16; T=0.38/0.46 21:54:49
```

### **b** Start the server machine again

If the DATAMOVE machine was running disconnected, the DVHPROF EXEC would have automatically issued an *EXEC DVHBEGIN* command; manual intervention would not have been required.

## dvhbegin

### **10** Disconnect the user ID

## #cp disc

**11** Go back to the DIRMUSER user ID.

Complete the test instructions from this point only when you are ready to allow DirMaint to update the source directory.

You will also want to make sure directory changes are placed online immediately for verification steps.

- a** Verify the DIRMAINT server will allocate DASD, issue the following:

```
dirmaint globalv cmdlevel 150a  
dirmaint online immed  
dirmaint for dirmuser amdisk nnn x autov 1 voluser
```

*nnn* is any legal device address that does not already exist for the DIRMUSER user ID, and *voluser* can be any volume label with at least 1 cylinder (on any CKD device) or 800 blocks (on any FB-512 device) of available space (if using FB-512 DASD substitute 64 for 1).

- b** Wait for the messages to indicate that the minidisk has been added and transferred to the DIRMUSER user ID, then issue the following:

```
cp link * nnn nnn mr  
access nnn z
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID. This will verify that the minidisk exists and has not been formatted.

- c** Have DIRMAINT delete the requested DASD, issue the following:

```
dirmaint for dirmuser dmdisk nnn noclean
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID.

The expected result will be messages from DIRMAINT indicating that the specified device has been deleted and that the space is available for re-allocation.

- d** Wait for the messages to indicate that the minidisk has been deleted, then issue the following:

```
cp detach nnn  
cp link * nnn nnn mr
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID. The minidisk should not exist.

- e** Verify the DATAMOVE server will allocate and format DASD, issue the following:

```
dirmaint globalv cmdlevel 150a  
dirmaint for dirmuser amdisk nnn x autov 1 voluser label label
```

*nnn* is any legal device address that does not already exist for the DIRMUSER user ID, *voluser* can be any volume label with at least 1 cylinder (on any CKD device) or 800 blocks (on any FB-512 device) of available space (if using FB-512 DASD substitute 64 for 1), and *label* is the label assigned to the minidisk being allocated.

- f** Wait for the messages to indicate that the minidisk has been added to DATAMOVE, the minidisk has been formatted, and transferred to the DIRMUSER user ID, then issue the following:

```
cp link * nnn nnn mr  
access nnn z
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID. This will verify that the minidisk exists and has been formatted by DATAMOVE.

**g** Have DATAMOVE delete the requested DASD, issue the following:

**dirmaint for dirmuser dmdisk *nnn* clean**

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID.

The expected result will be a message from DIRMAINT indicating that the specified device has been transferred to the DATAMOVE machine for DATA security clean-up, followed by more messages from DIRMAINT indicating that the specified device has been deleted from the DATAMOVE machine and that the space is available for re-allocation.

**h** Wait for the messages to indicate that the minidisk has been deleted, then issue the following:

**cp detach *nnn***  
**cp link \* *nnn nnn mr***

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID. The minidisk should not exist.

**12** If your system is running in a multiple system CSE cluster, continue with the following system affinity test verification steps. You will need a DIRMUSER user ID on another system in your cluster to complete these verifications steps.

**a** Verify the DATAMOVE server on a second system in the cluster will allocate DASD, issue the following:

**dirmaint for dirmuser at *sys2* amdisk *nnn* x autov 1 *voluser* *label* *label***

*sys2* is the system ID name of a second system in your cluster other than the one where DIRMAINT is running, *nnn* is any legal device address that does not already exist for the DIRMUSER user ID on the *sys2* system, *voluser* can be any volume label with at least 1 cylinder (on any CKD device) or 800 blocks (on any FB-512 device) of available space (if using FB-512 DASD substitute 64 for 1), and *label* is the label assigned to the minidisk being allocated.

- b** Wait for the messages to indicate that the minidisk has been added to DATAMOVE, the minidisk has been formatted, and transferred to the DIRMUSER user ID on the *sys2* system in the cluster, then issue the following from DIRMUSER on the *sys2* system in the cluster:

```
cp detach nnn  
cp link * nnn nnn mr  
access nnn z
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID on the *sys2* system. This will verify that the minidisk exists and has been formatted by DATAMOVE.

- c** Have the DATAMOVE server on the *sys2* system in the cluster delete the requested DASD, issue the following:

```
dirmaint for dirmuser at sys2 dmdisk nnn clean
```

*sys2* is the system ID name of a second system in your cluster other than the one where DIRMAINT is running, *nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID on the *sys2* system.

- d** Wait for the messages to indicate that the minidisk has been transferred to DATAMOVE, the minidisk has been formatted, and has been deleted from DATAMOVE on the *sys2* system in the cluster, then issue the following from DIRMUSER on the *sys2* system in the cluster:

```
cp detach nnn  
cp link * nnn nnn mr
```

*nnn* is the device address used in the previous AMDISK command for the DIRMUSER user ID on the *sys2* system. The minidisk should not exist.

- e** Logoff the DIRMUSER user ID on the *sys2* system in the cluster.

```
logoff
```

Logoff should only be issued for the DIRMUSER user ID on the *sys2* system in the cluster.

---

## A.4 Post Test Instructions

Verification of DirMaint is now complete. You will need to do some final clean up.

**1** Erase the ACCESS DATADVH file created on the test CMS user ID's A disk.

**2** You can log off the DIRMUSER user ID

**3** If you were testing DirMaint after installing and are plan on placing Release 5 into production at this time, the following directory changes must be made:

- In the directory for the DIRMAINT user ID:
  - Change the **LINK P748XE4M 491 591 M** statement to **LINK P748XE4M 491 191 M**
  - Change the **LINK P748XE4M 492 592 M** statement to **LINK P748XE4M 492 192 M**
- In the directory for the DATAMOVE and DIRMSAT user ID's:
  - Change the **LINK P748XE4M 491 591 rr** statement to **LINK P748XE4M 491 191 rr**
  - Change the **LINK P748XE4M 492 592 rr** statement to **LINK P748XE4M 492 192 rr**.

Then have DIRMAINT place the changes online. You can use the **DIRM GET** command to obtain a directory for a user ID and the **DIRM REPLACE** command to place the changes online.

**4** At this point, it is advisable to log off all DirMaint server machines. This will enable you to either go back to the previous service level (or previous release of DirMaint) or to place the new level into production. If you had not updated the DVHXLVL exec, when the servers are again IPLed, they will be running either DIRMAINT Release 4, or DirMaint Release 5 production code (the latter only if you had made the directory statement changes from the previous step). If you have customized the DVHXLVL EXEC file to automatically switch levels for you, you will need to re-customize it to revert back to your production level.

If you revert back to DIRMAINT Release 4 then you will want to re-initialize your DirMaint Release 5 directory with any updates made while Release 4 was running. First erase the USER DIRECT file on the 1DF disk. When you are ready to switch from Release 4 to Release 5 again, make sure you do the (Release 4) DIRM BACKUP and DIRM SHUTDOWN commands, and copy the Release 4 USER BACKUP file from the 193 disk to the 1DF disk as USER INPUT.

**Note:** The above instructions can be used anytime you wish to restart DirMaint with a new USER INPUT.

2                                   **5** Once DirMaint is in production, the tailorable files listed in 6.8, “Tailor the  
2 DirMaint Server Machines” on page 44, which IN2PROD SAMP placed on  
2 the P748XE4M's 492 and 41F minidisks, can be modified and placed in  
2 production without bringing down the DirMaint server's. This way, the  
2 tailorable files can be maintained on the test disk and immediately placed into  
2 production without the need for shutting the servers down.

2                                   From the P748XE4M user ID, do the following:

2                                   **a** Establish write access to the P748XE4M 492 and 41F minidisks.

2 **dirmaint cp detach 192 21f**                                   This will allow the P748XE4M user ID to establish  
2 **link \* 492 492 m**   write mode links to the required test disks. **Do not**  
2 **link \* 41f 41f m**   **use mw mode.**

2                                   **b** Make the desired changes to a tailorable file on the 492 or 41f test  
2 minidisk.

2                                   **c** Send the updated tailored file to the DIRMAINT server and have it  
2 replace the file on the appropriate production minidisk.

2 **dirm file *fn ft fm***   *fn ft fm* is the file identification and location of the  
2 tailorable file you wish to replace on the  
2 appropriate production minidisk.

2                                   **d** Have the DIRMAINT server place the new tailored files into use

2 **dirm rlddata**

**What's Next?**

Proceed with:

| 6.9, “Place DirMaint Into Production” on page 54 to place the new DirMaint Release 5 code into  
| production for initial installations.

| **OR**

| 7.5, “Place Serviced DirMaint into Production” on page 73 to **replace** the DirMaint Release 5 code  
| running in production with the new code when servicing your system.



---

### 3 A.5 Quick Test After Installing Service

3 The steps in A.1, “Test the DIRMAINT Server Machine” on page 80, A.2, “Test the DIRMSAT Server  
3 Machine” on page 91, and A.3, “Test the DATAMOVE Server Machine” on page 100 are specifically  
3 designed to systematically test the functions of the DirMaint product in a sequence such that the point of  
3 failure, if any, isolates the cause and identifies the necessary corrective action. After a period of  
3 production, there is small likelihood that this procedure will encounter any problem, and is unnecessarily  
3 involved for routine regression testing.

3 This procedure provides an easier alternative. If the test is successful, testing is complete. If the test  
3 fails, there is no indication of the cause; return to A.1, “Test the DIRMAINT Server Machine” on page 80  
3 and follow the more detailed steps to isolate the cause and identify the solution.

3 **1** Switch the DirMaint service machines from using the production code to use  
3 the code to be tested.

3 Create a PROD2TST DVHBATCH file, for example, containing the following  
3 commands:

3 **OFFLINE**  
3 **DATAMOVE SHUTDOWN**  
3 **SATELLITE SHUTDOWN**  
3 **FOR DATAMOV\* LINK P748XE4M 491 191 DELETE**  
3 **FOR DATAMOV\* LINK P748XE4M 11F 11F DELETE**  
3 **FOR DIRMSAT\* LINK P748XE4M 491 191 DELETE**  
3 **FOR DIRMSAT\* LINK P748XE4M 11F 11F DELETE**  
3 **FOR DIRMAINT LINK P748XE4M 491 191 DELETE**  
3 **FOR DIRMAINT LINK P748XE4M 11F 11F DELETE**  
3 **FOR DATAMOV\* LINK P748XE4M 492 191 RR**  
3 **FOR DATAMOV\* LINK P748XE4M 41F 11F RR**  
3 **FOR DIRMSAT\* LINK P748XE4M 492 191 RR**  
3 **FOR DIRMSAT\* LINK P748XE4M 41F 11F RR**  
3 **FOR DATAMOV\* REVIEW NOPROF**  
3 **FOR DIRMSAT\* REVIEW NOPROF**  
3 **FOR DIRMAINT REVIEW NOPROF**  
3 **FOR DIRMAINT LINK P748XE4M 492 191 MR**  
3 **FOR DIRMAINT LINK P748XE4M 41F 11F MR**  
3 **CP MSG <your\_id> PROD2TST is done!**

3 **2** Submit this batch job to the DIRMAINT server using the following commands:

3 **DIRM BATCH PROD2TST DVHBATCH**

3 **3** When the job has completed successfully, and you have reviewed the  
3 returned reader files verifying the link statements are correct, issue:

3 **DIRM DIRECT**  
3 **DIRM SHUTDOWN**

3                           **4** Then issue the following commands:

3 **CP XAUTOLOG DIRMAINT**  
3 **CP SLEEP 1 MIN**  
3 **CP XAUTOLOG DIRMSAT**  
3 **CP XAUTOLOG DATAMOVE**

3                           **5** Run a test that exploits most of DirMaint's critical code paths.

3                           Issue the following commands:

3 **DIRM ONLINE**  
3 **DIRM FOR <any\_id> AMDISK <555> <3390> AUTOG <1> <groupname> M**

3                           You may substitute other values for the virtual  
3                           address, device type, size, or groupname; as  
3                           appropriate for your installation. This tests the  
3                           communication paths between the originating user  
3                           and the DIRMAINT server, the parser, message  
3                           handler, and the path between DIRMAINT and the  
3                           DIRMSAT servers, if any.

3                           **6** Reverse the previous step by issuing the following command:

3 **DIRM FOR <any\_id> DMDISK <555> CLEAN**           This retests the same paths as the previous step,  
3                           and adds the communication paths between  
3                           DIRMAINT and the DATAMOVE server, and from  
3                           DATAMOVE back to DIRMAINT.

3                           **7** Switch the DirMaint service machines from using the test code back to use  
3                           the production code to be tested.

3                           Create a TST2PROD DVHBATCH file, for example, containing the following  
3                           commands:

3 OFFLINE  
3 DATAMOVE SHUTDOWN  
3 SATELLITE SHUTDOWN  
3 FOR DATAMOV\* LINK P748XE4M 492 191 DELETE  
3 FOR DATAMOV\* LINK P748XE4M 41F 11F DELETE  
3 FOR DIRMSAT\* LINK P748XE4M 492 191 DELETE  
3 FOR DIRMSAT\* LINK P748XE4M 41F 11F DELETE  
3 FOR DIRMAINT LINK P748XE4M 492 191 DELETE  
3 FOR DIRMAINT LINK P748XE4M 41F 11F DELETE  
3 FOR DATAMOV\* LINK P748XE4M 491 191 RR  
3 FOR DATAMOV\* LINK P748XE4M 11F 11F RR  
3 FOR DIRMSAT\* LINK P748XE4M 491 191 RR  
3 FOR DIRMSAT\* LINK P748XE4M 11F 11F RR  
3 FOR DIRMAINT LINK P748XE4M 491 191 MR  
3 FOR DIRMAINT LINK P748XE4M 11F 11F MR  
3 FOR DATAMOV\* REVIEW NOPROF  
3 FOR DIRMSAT\* REVIEW NOPROF  
3 FOR DIRMAINT REVIEW NOPROF  
3 CP MSG <your\_id> TST2PROD is done!

3                                   **8** Submit this batch job to the DIRMAINT server by issuing the following  
3                                   command:

3 **DIRM BATCH TST2PROD DVHBATCH**

3                                   **9** When the job has completed successfully, and you have reviewed the  
3                                   returned reader files verifying the link statements are correct, issue the  
3                                   following commands:

3 **DIRM DIRECT**  
3 **DIRM ONLINE**  
3 **DIRM SHUTDOWN**

3     **What's Next?**

3     Proceed with 7.5, "Place Serviced DirMaint into Production" on page 73 to **replace** the DirMaint  
3     Release 5 code running in production with the new code.

---

## Appendix B. Local Modification Example: \$EXEC File

The following local modification example is for a VM/ESA 1.2.1 system.

If you are running a lower or higher level VM/ESA system you can still use this example. Some of the steps may be in a different order so you can cross reference the example against the *VM/ESA Service Guide*, Chapter 7, to help with the correct order.

### Note!

This example provides an example for updating the DVHPXR exec part. You should substitute the file name of the part you are modifying for DVHPXR in the instructions. Since the output of the instructions is to create an EXEC file type with an abbreviation of EXC, you should substitute the abbreviation of the file type you are modifying for EXC.

### 1 Set up the required access order

**vmfsetup 5748XE4M {DIRMS | DIRMSSFS}**      *compname* is **DIRMS** if using minidisks or **DIRMSSFS** if using SFS

### 2 Update the local service level (VVTLCCL) of the software inventory to create a record of the local modification

**vmfsim logmod 5748XE4M vvtlcl *fmlocal* tdata :part dvhpxr exc :mod lcl0001.update1**  
*fmlocal* is the fm of the local modification (2C2) minidisk or directory

### 3 Create or update and edit the 5748XE4M \$SELECT file on the alternate apply disk 2A6.

**xedit 5748XE4M \$select *fmapply***      *fmapply* is the fm of the alternate apply minidisk or directory. *mm/dd/yy hh:mm:ss* is the current date and time and must be unique.  
====> **top**  
====> **input :APPLYID.*mm/dd/yy hh:mm:ss***  
====> **input DVHPXR EXC**  
====> **file**

### 4 Create/Edit the AUXLCL file for the part to update

**Note:** This step can be skipped when applying a local modification to a full part replacement part.

```
xedit dvhpxr auxlcl fmlocal (noprof fmlocal is the fm of the local modification (2C2)
====> input UPDATE1 LCL LCL0001 * comment minidisk or directory
====> file
```

## 5 XEDIT Source file to create the update file

**Note:** You do not need the XEDIT control (ctl) option when editing a full part replacement part.

```
xedit dvhpxr $exec (ctl dvhvm fmlocal is the fm of the local modification (2C2)
====> fm fmlocal minidisk or directory
```

## 6 Make your desired changes

## 7 Issue the XEDIT file command when changes are completed

```
====> file
```

## 8 Use EXECUPDT to generate an interpretive exec with the changes

**Note:** This step can be skipped when applying a local modification to a full part replacement part.

```
execupdt dvhpxr exec * (ctl dvhvm outmode a hist sid nocomments
```

## 9 Copy the updated exec to the LOCALMOD disk

```
vmfcopy dvhpxr exec a = excl0001 fmlocal (prodid 5748XE4M%DIRM olddate replace
erase dvhpxr * a
```

*fmlocal* is the fm of the local modification (2C2)  
minidisk or directory

## 10 Build the DirMaint product by issuing VMFBLD

```
vmfbld ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (serviced
```

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

---

## Appendix C. Applying a Recommended Service Upgrade (RSU) Tape For DirMaint

### Note!

You should first read through the RSU hard copy memo contained with the tape before continuing with these instructions.

The RSU tape is structured to install all PTFs included on the tape plus the tape files containing the preapplied service and prebuilt objects. All PTF-related files are loaded to the delta disk. The tape file containing the preapplied service, i.e. containing the results of VMFAPPLY, is loaded to the alternate apply disk and the contents of the tape files containing prebuilt objects are loaded to the appropriate build disks.

Points to consider about using the Product Service Upgrade procedure are:

- This process will not alter any of your tailored flat files (files serviced by full part replacement only such as CONFIG DATADVH) in any way. Sample files which may have been updated using update files will need to have those updates reapplied.
- Planning must be done (such as determining any disk size changes, and determining what service, if any, on your existing system is not contained on the RSU tape) prior to actually loading the service from the RSU tape. These tasks will be discussed.

The following outline is an overview of what tasks need to be performed during the PSU procedure:

- Prepare System

In this task, you will receive the documentation contained on the RSU tape and determine the DASD required to install the RSU tape.

- Merge Service

Use the VMFMRDSK command to clear the alternate apply disk before receiving the RSU tape. This allows you to easily remove the new service if a serious problem is found.

- Receive Service

The VMFINS command receives service from the RSU tape and places it on the Delta disk.

- Apply Additional Service

The VMFAPPLY command updates the version vector table (VVT), which identifies the service level of all the serviced parts. In addition, AUX files are generated from the VVT for parts that require them. These steps are used to reapply service that was not contained on the refresh tape that was already installed for DirMaint.

- Reapply Local Service (if applicable)

All local service must be entered into the software inventory to allow VMSES/E to track the changes and build them into the system.

- Build New Levels

The build tasks generates the serviced level of an object and places the new object on a BUILD disk.

- Place the New Service into Production

Once the service is satisfactorily tested it should be put into production by copying the new service to the production disk, re-saving the DCSS (Discontiguous Saved Segments), etc.

## C.1 Apply DirMaint RSU

### C.1.1 Prepare Your System for Service Refresh

The *ppfname* used throughout these instructions is **5748XE4M**, which assumes you are using the PPF supplied by IBM for DirMaint. If you have your own PPF override file for DirMaint you should use your file's *ppfname* instead of **5748XE4M**. The *ppfname* you use should be used **throughout** the rest of this procedure.

#### 3 Electronic Service (envelope file)

3 If you have received service electronically or on a CD-ROM, follow the appropriate instructions to  
 3 retrieve and decompact the envelope files to your A-disk. The decompaction is currently done by  
 3 using the DETERSE module. The file name of the decompacted file will be of the format RPTF*num* for  
 3 the service envelope. The file type must be SERVLINK. You will need to enter the file name on the  
 3 VMFINS commands that follow.

**1** Log on to the IBM Directory Maintenance for VM/ESA service user ID P748XE4M

**2** Establish write access to the Software Inventory Disk (MAINT 51D) if it is not already linked in write mode.

**Note:** If the MAINT 51D minidisk was accessed R/O, you will need to have the user who has it linked R/W link it as R/O. You then can issue the following commands to obtain write access to it. **Do not use *mw mode*.**

**link maint 51d 51d m  
access 51d d**

The MAINT 51D disk is where the VMSES/E system level software inventory files reside.

**3** Establish write access to the P748XE4M 492 and 41F minidisks if they are not already linked in write mode.

**Note:** The DIRMAINT server has write mode links to them in its directory entry. You will need to have the DIRMAINT server detach these disks.

**a** The DIRMAINT server should be running in production using the code residing on the P748XE4M production disks (491 and 11F). If this is

not the case, rather the DIRMAINT server is running in production using the code residing on the P748XE4M test disks (492 and 41F), then logoff the server. Otherwise you can issue the following commands to the DIRMAINT server to free the links to the P748XE4M test disks and leave the server running:

**dirmaint cp detach 192 21f**

This will allow the P748XE4M user ID to establish write mode links to the required test disks for applying service.

- b** Issue the following commands to obtain write access to them. **Do not use *mw mode*.**

**link \* 492 492 m**

**link \* 41f 41f m**

- 4** Mount the RSU tape on the tape drive as virtual device 181. You must use 181.

- 5** Receive the documentation:

Receive the documentation on the tape for the RSU tape. This step will also load the cumulative Apply Status Table (DIRM SRVAPPS) which identifies all preapplied service contained on the tape. These files are loaded to the 51D disk.

- 3 **a** If receiving the RSU from tape

3 **vmfins install info (nomemo**

- 3 **b** If receiving the RSU from an envelope file

3 **vmfins install info (nomemo env rptfnum**

- 6** Determine DASD sizes for disks to receive service:

In order to receive the service from the RSU tape, you need to have adequate space available on the alternate APPLY, DELTA, and BUILD disks. The required sizes are identified in the DirMaint documentation (5748XE4M MEMO D) received in the previous step.



## 7 Setup the correct minidisk access order

**vmfsetup 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

## 8 Merge the APPLY disks for DirMaint:

Next, you must prepare your system to receive the service from the RSU tape. To do this, you must first clear the alternate apply disk for receipt of the service from the RSU tape.

Enter the VMFMRDSK command to merge the alternate apply disk to the apply disk. This will clear the alternate apply disk.

**vmfmrdsk 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} apply**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

## 9 If DirMaint is installed on VM/ESA 1.2.2 or above, you can obtain additional information about the service on the RSU and how it will affect your local modifications by invoking the VMFPSU command. This command creates an output file, **5748XE4M PSUPLAN**, which you can review. See *VM/ESA Service Guide* for an explanation of this file.

**vmfpsu 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

This command produces an output file that contains information about the service on the RSU compared against the service and local modifications on your system. The file name is **5748XE4M PSUPLAN**,

## C.1.2 Receive the Preapplied, Prebuilt Service

**1** Refresh the DirMaint service disks by loading new service from the RSU tape:

3                   **a** If receiving the RSU from tape

3 **vmfins install ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (nomemo nolink**

3                   Use **DIRM** if interpretive execs are installed on  
3                   minidisks or **DIRMSFS** if interpretive execs are  
3                   installed on SFS or **DIRMC** if compiled execs are  
3                   installed on minidisks or **DIRMCSFS** if compiled  
3                   execs are installed on SFS.

3                   **b** If receiving the RSU from an envelope file

3 **vmfins install ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS} (nomemo nolink env rptfnum**

3                   Use **DIRM** if interpretive execs are installed on  
3                   minidisks or **DIRMSFS** if interpretive execs are  
3                   installed on SFS or **DIRMC** if compiled execs are  
3                   installed on minidisks or **DIRMCSFS** if compiled  
3                   execs are installed on SFS.

```
VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF 5748XE4M DIRM :PRODID
5748XE4M%DIRM?
Enter 0 (No), 1 (Yes) or 2 (Exit)
0
```

**2** Check the install message log (\$VMFINS \$MSGLOG) for warning and error messages. If necessary, correct any problems before going on. For information about handling specific install messages, see VM/ESA System Messages and Codes, or use online HELP.

**vmfview install**

### C.1.3 Process Additional Service

#### 1 Apply additional service:

The VMFAPPLY command is used to reapply service that was not contained on the refresh tape that was already installed for the component.

Applying service with preapplied, prebuilt service will reapply any reach-ahead service that may be on the system **or** indicate that there are no reach-ahead PTFs to be applied.

#### **vmfapply ppf 5748XE4M {DIRM | DIRMSFS | DIRMC | DIRMCSFS}**

Use **DIRM** if interpretive execs are installed on minidisks or **DIRMSFS** if interpretive execs are installed on SFS or **DIRMC** if compiled execs are installed on minidisks or **DIRMCSFS** if compiled execs are installed on SFS.

Messages VMFAPP2122E and VMFAPP2109R will be displayed only if you have reach-ahead service that needs to be reapplied.

VMFAPP2122E THE SET OF PTFs IN THE APPLY STATUS TABLE (5748XE4M SRVAPPS) ON THE 2A2 (G) DISK IS NOT A SUBSET OF THE PTFs IN THE HIGHEST LEVEL APPLY STATUS TABLE ON THE 2A6 (F) DISK. THIS IS AN INCONSISTENT STATE  
VMFAPP2109R VMFAPPLY WILL AUTOMATICALLY CORRECT THE PROBLEM IDENTIFIED BY MESSAGE 2122E BY INCLUDING THE MISSING PTFs IN THE CURRENT APPLY LIST. ENTER (1) TO CONTINUE; (0) TO QUIT.

1

If you receive these messages, enter **1** for VMFAPPLY to reapply the reach-ahead service.

#### 2 Check the apply message log (\$VMFAPP \$MSGLOG) for warning and error messages. If necessary, correct any problems before going on. For information about handling specific apply messages, see VM/ESA System Messages and Codes, or use online HELP.

#### **vmfview apply**

#### 3 If necessary, rework local service

If DirMaint is installed on VM/ESA 1.2.2 or above, the **5748XE4M PSUPLAN** (output from running the VMFPSU command in a previous step), can be used to indicate what local service or modifications are affected by the RSU tape. If a PTF is applied and it contains service to a part for which you have a local

modification, you will need to rework the local modification. Refer to the *VM/ESA Service Guide*.

This also applies to any of the sample tailorable files which have been serviced. You do not need to make any changes to the local modifications having a file type of SDVL0000 on the 2C2 disk. Instead you should issue the IN2PROD EXEC, in 7.2.6, "Additional Service Steps" on page 70, to automatically update the tailorable DirMaint configuration files. The tailorable DirMaint configuration files are not touched when servicing DirMaint. Changes you desire to make to the configuration files should be accomplished using override files as described in the accomplished using override files as described in the *DirMaint Release 5 Tailoring and Administration* manual. See Figure 14 on page 44 for a list of the tailorable DirMaint configuration files created from the sample files. To see what has been changed, compare the local modification on the 2C2 (LOCALSAM) disk to the serviced part on the 2D2 (DELTA) disk. Then compare with the tailorable configuration files and make any necessary changes to your override files. When VMFBLD is run, the SDVL0000 copy on the 2C2 disk is copied with a file type of SAMPDVH on the 492 disk. The SAMPDVH files are not used by DirMaint.

**Note!**

If on VM/ESA 1.2.1 or VM/ESA 1.1.5, you need to look at your local modifications on the 2C2 disk and rework them if applicable (see if the update will apply, correct if not, then reassemble (or equivalent) with the new service.

### C.1.3.1 Build the New Service Level:

The last task is to rebuild all objects that were affected by reach-ahead service that was reapplied, local modifications, and saved segments. Choose one of the following sections to proceed with based on whether there is any reach ahead service or local modifications to be reapplied.

- If there is no reach ahead service (the VMFAPPLY step indicated no additional PTF's have been applied) or local modifications to be reapplied, then all objects or parts have been built and received to the test build disks during the receive of the RSU. Installation of the RSU is complete. It is not necessary to do the build step since there will not be any objects or parts flagged to be built. Continue with step 7.3, "Optional Service Steps (depending on what was installed)" on page 71.
- If there is reach-ahead service or a local modification that needs to be reapplied, continue with step 7.2.4, "Update the Build Status Table" on page 68.

---

## Appendix D. Overriding the VMSYS File Pool Name

### Note!

This procedure is only necessary for VM/ESA 1.2.1 and VM/ESA 1.1.5. For VM/ESA 1.2.2 and above, see "Changing the Shared File System Directory File Pool Name" section of the *VMSES/E Introduction and Reference* manual. However, the general concept of creating a PPF override as shown within this section, can be used as an example on any VM/ESA system.

This section provides information to help you change the name of the file pool where DirMaint files will reside when DirMaint is installed using SFS directories.

During the VMFINS installation process, you're presented with an opportunity to override the default installation parameters defined in the 5748XE4M \$PPF file. If you choose to do this, the 'Make Override Panel' will be displayed, from which you can then change various installation parameters, including the SFS directory names used to organize the DirMaint files. However, this panel does not support changing the name of the file pool with which these directories are associated—VMSYS.

VMSYS is the IBM default name for a file pool that's intended to be used for system data and programs that are to be shared among users. See the *VM/ESA Planning and Administration* manual for more information about the VMSYS file pool and its characteristics.

If you intend to change *only* the VMSYS file pool name, you'll need to manually create a PPF override for the :DCL. section of the 5748XE4M \$PPF file *before* you install DirMaint, as described in 6.4, "Install DirMaint" on page 32.

If you intend to change the VMSYS file pool name in addition to other installation parameters, you should first create a PPF override file during the installation process to change those parameters, then modify the resulting \$PPF override file to account for the VMSYS-related changes.

**Note:** Do **not** modify the product supplied 5748XE4M \$PPF or 5748XE4M PPF files to change the VMSYS file pool name or any other installation parameters. If the 5748XE4M \$PPF file is serviced, the existing \$PPF file will be replaced, and any changes to that file will be lost; by creating your own \$PPF override, your updates will be preserved. This should be done after the install planning step, do not reissue that step.

The following process describes changing the default file pool name from VMSYS to MYPOOL1:

- 1** Create a new \$PPF override file, or edit the override file created via the 'Make Override Panel' function.

**xedit** *overname* \$PPF *fm2*

*overname* is the PPF override file name (such as "MYDIRM") that you want to use.

*fm2* is an appropriate file mode. If you create this file yourself, specify a file mode of A.

If you modify an existing override file, specify a file mode of A or D, based on where the file currently resides (A being the file mode of a R/W 191 minidisk, or equivalent; D, that of the MAINT 51D minidisk).

- 2** Create the override list by inserting the following:  
:OVERLST. DIRMSFS DIRMCSFS DIRMUSFS DIRMSSFS
- 3** Create (or modify as required) the Variable Declarations (:DCL.) section for each override used when installing and servicing DirMaint. DIRMSFS is used to install and service DirMaint using interpretive execs, a sample :DCL. section is shown in step 3a. DIRMCSFS is used to install and service DirMaint using compiled execs, a sample :DCL. section is shown in step 3b on page 125. DIRMUSFS is used to service DirMaint Uppercase English help files, a sample :DCL. section is shown in step 3c on page 125. DIRMSSFS is used to install DirMaint source files, a sample :DCL. section is shown in step 3d on page 125.
  - a.** Create (or modify as required) the Variable Declarations (:DCL.) section for the DIRMSFS override area, so that it resembles the :DCL. section shown below.

```
:DIRMSFS. DIRMSFS 5748XE4M
:DCL. UPDATE
&INST191 DIR MYP00L1:P748XE4M
&BASEZ DIR MYP00L1:P748XE4M.DIRM.OBJECT
&SAMPZ DIR MYP00L1:P748XE4M.DIRM.LOCALMOD
&DELTZ DIR MYP00L1:P748XE4M.DIRM.DELTA
&APPLX DIR MYP00L1:P748XE4M.DIRM.APPLYALT
&APPLY DIR MYP00L1:P748XE4M.DIRM.APPLYPROD
&BLD0Z DIR MYP00L1:P748XE4M.DIRM.MAINT19E
&BLD6Z DIR MYP00L1:P748XE4M.DIRM.HELP
:EDCL.
:END.
```

(This override will update the :DCL. section of the DIRMSFS override area of the 5748XE4M \$PPF file.)

- b. Create (or modify as required) the Variable Declarations (:DCL.) section for the DIRMCSFS override area, so that it resembles the :DCL. section shown below.

```
|  
:DIRMCSFS. DIRMCSFS 5748XE4M  
:DCL. UPDATE  
&INST191 DIR MYP00L1:P748XE4M  
&BASEZ DIR MYP00L1:P748XE4M.DIRM.OBJECT  
&SAMPZ DIR MYP00L1:P748XE4M.DIRM.LOCALMOD  
&DELTZ DIR MYP00L1:P748XE4M.DIRM.DELTA  
&APPLX DIR MYP00L1:P748XE4M.DIRM.APPLYALT  
&APPLY DIR MYP00L1:P748XE4M.DIRM.APPLYPROD  
&BLD0Z DIR MYP00L1:P748XE4M.DIRM.MAINT19E  
&BLD6Z DIR MYP00L1:P748XE4M.DIRM.HELP  
:EDCL.  
:END.
```

(This override will update the :DCL. section of the DIRMCSFS override area of the 5748XE4M \$PPF file.)

- c. Create (or modify as required) the Variable Declarations (:DCL.) section for the DIRMUSFS override area, so that it resembles the :DCL. section shown below.

```
|  
:DIRMUSFS. DIRMUSFS 5748XE4M  
:DCL. UPDATE  
&INST191 DIR MYP00L1:P748XE4M  
&BASEZ DIR MYP00L1:P748XE4M.DIRM.OBJECT  
&SAMPZ DIR MYP00L1:P748XE4M.DIRM.LOCALMOD  
&DELTZ DIR MYP00L1:P748XE4M.DIRM.DELTA  
&APPLX DIR MYP00L1:P748XE4M.DIRM.APPLYALT  
&APPLY DIR MYP00L1:P748XE4M.DIRM.APPLYPROD  
&BLD0Z DIR MYP00L1:P748XE4M.DIRM.MAINT19E  
&BLD6Z DIR MYP00L1:P748XE4M.DIRM.HELPU  
:EDCL.  
:END.
```

(This override will update the :DCL. section of the DIRMUSFS override area of the 5748XE4M \$PPF file.)

- d. Create (or modify as required) the Variable Declarations (:DCL.) section for the DIRMSSFS override area, so that it resembles the :DCL. section shown below.

```

:DIRMSSFS. DIRMSSFS 5748XE4M
:DCL. UPDATE
&INST191 DIR MYPOOL1:P748XE4M
&BASEZ DIR MYPOOL1:P748XE4M.DIRM.OBJECT
&SAMPZ DIR MYPOOL1:P748XE4M.DIRM.LOCALMOD
&DELTZ DIR MYPOOL1:P748XE4M.DIRM.DELTA
&APPLX DIR MYPOOL1:P748XE4M.DIRM.APPLYALT
&APPLY DIR MYPOOL1:P748XE4M.DIRM.APPLYPROD
&BLD0Z DIR MYPOOL1:P748XE4M.DIRM.MAINT19E
&BLD6Z DIR MYPOOL1:P748XE4M.DIRM.HELP
&BAS1Z DIR MYPOOL1:P748XE4M.DIRM.SOURCE
:EDCL.
:END.

```

(This override will update the :DCL. section of the DIRMSSFS override area of the 5748XE4M \$PPF file.)

- 4 If your \$PPF override file was created at file mode A, copy it to file mode D—the Software Inventory minidisk (MAINT 51D).

#### file

**copyfile** *overname* \$PPF *fm* = = d (olddate)

**erase** *overname* \$PPF *fm*

- 5 Compile your changes to create the usable *overname* PPF file.

**vmfppf** *overname compname*

where *overname* is the file name of your \$PPF override file, and *compname* is **DIRMSFS**, **DIRMCSFS**, **DIRMUSFS**, and **DIRMSSFS**. Each override created in step 2 on page 124 must be compiled.

**Note:** Make sure the created *overname* PPF file is on the D (51D) minidisk, not the A minidisk.

- 6 Update the IPL directory control statement in the P748XE4M directory entry:

```
IPL CMS PARM FILEPOOL MYPOOL1
```

This will cause CMS to access the P748XE4M's top directory as file mode A using the MYPOOL1 file pool name instead of VMSYS.

Now that the *overname* PPF file has been created, you should specify *overname* instead of 5748XE4M as the PPF name to be used for those VMSES/E commands that require a PPF name.



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## Appendix E. DirMaint Release 5 Migration Guide

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### E.1 Warnings and Assumptions

#### E.1.1 Assumed Environments

This migration guide is primarily intended for customers migrating from DirMaint Release 4 to DirMaint Release 5. Many of the concepts and ideas discussed may be applicable to earlier releases of DirMaint but it is important that the user understand the viewpoint assumed when this document was written. When migrating to DirMaint Release 5, it should be considered a new install. The information in this appendix will aid you in customizing the newly installed DirMaint Release 5 system to conform with installation choices made when DirMaint Release 4 was installed.

To achieve maximum benefit from the migration appendix, it is advisable to read the entire appendix before attempting your migration. Several sections are interrelated and reading the appendix in its entirety will aid your overall understanding of the task to be undertaken.

#### E.1.2 Programming Language Used

DirMaint Release 5 was written in the REXX programming language. As source was distributed with the product, this allows the customer full access to the design and logic behind the various functions within the product. Modifications, should they be required, should be able to be made with less trouble than the same modifications made in prior releases of DirMaint due to the ease of use and flexibility of the REXX programming language.

#### E.1.3 Performance Considerations

Due to the enhanced function and choice of the REXX programming language, DirMaint Release 5 will not perform as fast as prior releases of DirMaint when comparing on a command by command basis. Prior releases of DirMaint were coded in assembler and did not have to deal with the enhanced function and flexibility of function offered in DirMaint Release 5. This should be considered when installing the latest release. Several steps can be taken to maximize the performance of DirMaint Release 5. These steps are discussed in detail in Appendix B of the *DirMaint Tailoring and Administration Guide*.

DirMaint Release 5 has been designed to eliminate several 'bottle necks' that existed in prior releases of DirMaint, especially in the DASD management area, and overall throughput may increase with the new release. The actual performance you achieve will depend on the way DirMaint is being used at your installation.

## **E.1.4 DASD Management Migration Consideration**

The use of an \* for a WILD card entry in the MDISK section of DirMaint 1.4.0 is not supported in the REGION section of DirMaint 1.5.0. The DVHMIGR8 EXEC will ignore any WILD card entries. Any WILD card entry presently in your DirMaint 1.4.0 MDISK section of the EXTENT CONTROL file must be explicitly defined as a MDISK entry prior to running the DVHMIGR8 EXEC or added manually as a REGION entry after running the DVHMIGR8 EXEC.

The new REGIONS entry must now reference a DEFAULTS entry. In release 1.4 the MDISKS entry did not reference a DEFAULTS entry. If a MDISKS entry did not exist, then the DEFAULTS entry was used. In release 1.5 the REGIONS entry must have a corresponding DEFAULTS entry. Be aware that any DEFAULTS entry in your existing release 1.4 Extent Control file will be put at the top of the newly created DEFAULTS section in release 1.5 via the DVHMIGR8 EXEC. This will essentially override any duplicate DEFAULTS entry provided below them.

---

## **E.2 Benefits of DirMaint Release 5**

### **E.2.1 Distributed Administration**

DirMaint Release 5 offers the ability to execute commands that originate from a node other than the local node. This ability did not exist in prior releases of DirMaint but it is mentioned here as something that may be considered as you migrate from earlier releases of DirMaint.

The AUTHFOR CONTROL file (which exists on the Primary Directory Disk) controls all command level authorization on the DirMaint server (i.e. who can issue what commands on behalf of which users). This file is described in detail in the *DirMaint Tailoring and Administration Guide* in chapter 3.

During your migration, the DVHMIGR8 EXEC will use information from the DirMaint Release 4 ASSIGN FILE and DIRMAINT DATA files to build the new DirMaint Release 5 AUTHFOR CONTROL file. After building the new AUTHFOR CONTROL file with the DVHMIGR8 EXEC, it is advisable to edit the file and check the contents. This may also be a good time to add additional records authorizing your remote administrators. DirMaint provides commands that may be used for this purpose (AUTHFOR and DROPFOR) but direct manipulation of the file during your migration is often the quicker of the two ways.

### **E.2.2 Command Class Structure**

DirMaint Release 4 classified commands into two distinct sets: privileged and general user commands. DirMaint Release 5 has mimicked the CP command class structure. In DirMaint Release 5, a command class consists of the characters A-Z and 0-9. Each DirMaint command belongs to one or more classes. A user may be authorized to use one or more command classes, thus the concept of a single definition for a DIRM\_STAFF or DIRM\_SUB\_STAFF user no longer applies in DirMaint Release 5. To aide your migration, the DVHMIGR8 EXEC makes an attempt to grant users defined on a DirMaint Release 4 system with special authority the required DirMaint Release 5 command classes to approximate the authority that was allowed on the DirMaint Release 4 system.

Delegating administrative authority is described in detail in the *DirMaint Tailoring and Administration Guide* in chapter 8.

- 2 **Note:** it is recommended that any user ID with administrative authority be authorized for both 140A and 2 150A command levels.

In addition to describing which users can issue commands on behalf of other users, the AUTHFOR CONTROL file is used to describe the applicable command sets associated with each user. After building the new AUTHFOR CONTROL file with the DVHMIGR8 EXEC, it is advisable to edit the file and check the contents. The following command class assignments should have been made based on the listed DirMaint Release 4 DIRMAINT DATA file entries:

<b>1.4 Entry</b>	<b>1.5 Command Classes</b>
<b>OWNER=</b>	GS
<b>DATAMOVE=</b>	GZ
<b>DIRM_STAFF=</b>	GHMADP
<b>DIRM_SUB_STAFF=</b>	GH
<b>SYS_OPER=</b>	GO
<b>PW_MONITOR=</b>	GHM
<b>SYS_SERVER_UID=</b>	GZ

A discussion of the command classes and the steps required to define new command classes or alter existing command classes can be found in the *DirMaint Tailoring and Administration Guide* in chapter 8.

### **E.2.3 DASD Management Enhancements**

Extensive changes were made to the DASD management function provided by DirMaint. Many of the limitations imposed by DirMaint Release 4 have been eliminated by DirMaint Release 5. The primary externals change to DirMaint involved the expansion and change of the EXTENT CONTROL file and the addition of numerous new ways to allocate extents.

During your migration, the DVHMIGR8 EXEC will use information from the DirMaint Release 4 EXTENT CONTROL file, the DirMaint Release 5 EXTENT SAMPDVH file and the USER INPUT file to build the new DirMaint Release 5 EXTENT CONTROL file.

Each section in the DirMaint Release 4 file will be migrated to the appropriate entry in the new DirMaint Release 5 file. In addition, a new section will be added.

<b>1.4 Section</b>	<b>1.5 Section</b>
<b>MDISKS</b>	REGION
<b>DEFAULTS</b>	DEFAULTS
<b>EXCLUDE</b>	EXCLUDE
<b>GROUPS</b>	GROUPS

## N/A AUTOBLOCK

The new REGION entries are intended to accomplish a function similar to the MDISKS entries but in a manner that is more flexible. The DirMaint Release 4 concept of a 'slot size' no longer applies.

The nature and use of the DEFAULTS entries has remained the same. They are still intended to define the size of various device types. Each REGION entry references a DEFAULT entry in its syntax.

The nature and use of the EXCLUDE entries has remained the same.

The nature and use of the GROUP entries has remained the same. A minor change to the syntax with regard to ALLOCATE ROTATING was put into place. The DVHMIGR8 EXEC correctly migrates this notation.

The new AUTOBLOCK section contains device dependant blocking and architecture values and should require no editing.

For a detailed discussion of the DirMaint Release 5 EXTENT CONTROL file, consult chapter 6 in the *DirMaint Tailoring and Administration Guide*.

### E.2.4 Dealing With Multiple DataMove Servers

One of the primary advantages to DirMaint Release 5 is the ability to use multiple DataMove servers. These servers may increase throughput of DASD operations. Defining a DataMove server to DirMaint is covered in chapter 4 of the *DirMaint Tailoring and Administration Guide*.

DirMaint Release 5 now fully supports statements in a CSE cluster. Numerous DataMove servers may be defined but at least one DataMove server should be defined with a system affinity of '\*'. Several servers may share a single system affinity. If your installation is not using CSE clusters, each server should use a system affinity of '\*'.

### E.2.5 Command Syntax Changes

The command syntax was enhanced to allow DirMaint Release 5 users to exploit the distributed administration capability. This new command syntax enables the exploitation of the new command class structure and eliminates many ambiguities that existed in the DirMaint Release 4 command syntax. In addition to the new command syntax, the DirMaint Release 5 product also allows the use of a separate command syntax that closely approximates the DirMaint Release 4 command syntax. This may aide 2 applications that are dependant on the older command syntax. You should consult the "Issuing 2 Commands to DirMaint" chapter of the *DirMaint Command Reference* manual, paying close attention to 2 the DIRMAINT EXEC and use of prefix keywords. Note that any reference to DIRMaint found elsewhere 2 in this manual are direct references to the DIRMAINT EXEC found in the referenced chapter.

The default command set can be adjusted in the CONFIG DATADVH file with the DEFAULT\_CMDLEVEL= configuration entry. The shipped setting is 150A. Select 140A if you wish to use the older command set with its limitations.

| The following should be considered when doing a user ADD. If the new entry contains a MDISK  
| statement which is in 140A CMDLEVEL syntax, the user ID issuing the DIRMAINT ADD command must  
| have 140A CMDLEVEL authority set in the AUTHFOR CONTROL file. Otherwise, the ADD command will  
| eventually fail. If only 150A CMDLEVEL is desired, then every MDISK entry must contain only 150A  
| CMDLEVEL syntax. This is due to the asynchronous manner in which minidisks are added for a user.

2 **Note:** it is recommended that any user ID with administrative authority be authorized for both 140A and  
2 150A command levels. For more information see usage note 6 under the ADD command in the *DirMaint*  
| *Command Reference* manual.

---

## E.3 Configuration Entries

### E.3.1 DirMaint Release 4 Statements to DirMaint Release 5

The following table correlates DirMaint Release 4 DIRMAINT DATA file entries with the appropriate DirMaint Release 5 configuration file entries where possible. Some entries were rendered not applicable in the new release. Other entries are new to DirMaint Release 5 and are not mentioned here.

#### Release 4 Release 5

##### **NAT\_LANG\_SUPPORT**

This entry is not applicable to DirMaint Release 5. Translatable files are specified in the DirMaint Release 5 configuration file with the associated language being part of the configuration file entry tag. For a discussion of language dependant configuration entries see Appendix D in the *DirMaint Tailoring and Administration Guide*.

##### **DIRM\_LANG**

This entry is not applicable to DirMaint Release 5. Translatable files are specified in the DirMaint Release 5 configuration file with the associated language being part of the configuration file entry tag. For a discussion of language dependant configuration entries see Appendix D in the *DirMaint Tailoring and Administration Guide*.

##### **END\_LANG**

This entry is not applicable to DirMaint Release 5.

##### **DEFAULT\_LANG**

This entry has been changed to DEFAULT\_SERVER\_LANG in DirMaint Release 5. Consult the comments associated with the DEFAULT\_SERVER\_LANG variable in the CONFIG SAMPDVH file for a discussion on its implications.

**OWNER** The concept of a system OWNER does not apply in DirMaint Release 5. During execution, DVHMIGR8 should have added an entry to the AUTHFOR CONTROL file with command sets G and S for the user ID listed as OWNER in the DirMaint Release 4 DIRMAINT DATA file. This list of functions approximates the authority that OWNER gave user ID's in DirMaint Release 4. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

**DIRMAINTVM**

This entry is not applicable to DirMaint Release 5. Routing information is contained on the FROM= DirMaint Release 5 configuration statement. For a discussion of using the FROM= setting in DirMaint Release 5 see chapters 3, 4 and 5 in the *DirMaint Tailoring and Administration Guide*. The CONFIG SAMPDVH file also contains an extensive example using the FROM= configuration file entry.

**DATAMOVE**

DirMaint Release 5 is not limited to a single DataMove machine. This entry was replaced with the DATAMOVE\_MACHINE configuration file entry in DirMaint Release 5. See chapter 4 in the *DirMaint Tailoring and Administration Guide* for additional information on its use.

**DIRM\_STAFF**

The concept of a DIRM\_STAFF user does not apply in DirMaint Release 5. During execution, DVHMIGR8 should have added an entry to the AUTHFOR CONTROL file with command sets G, H, M, A, D and P for the user ID's listed as DIRM\_STAFF in the DirMaint Release 4 DIRMAINT DATA file. This list of functions approximates the authority that DIRM\_STAFF gave user ID's in DirMaint Release 4. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

**END\_STAFF**

This entry is not applicable to DirMaint Release 5.

**DIRM\_MONITOR**

The concept of a DIRM\_MONITOR user does not apply in DirMaint Release 5. During execution, DVHMIGR8 should have added an entry to the AUTHFOR CONTROL file with command sets G, H and M for the user ID's listed as DIRM\_MONITOR in the DirMaint Release 4 DIRMAINT DATA file. This list of functions approximates the authority that DIRM\_MONITOR gave user ID's in DirMaint Release 4. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

**END\_MONITOR**

This entry is not applicable to DirMaint Release 5.

**DIRM\_MONITOR\_PREF\_NODE**

This entry is not applicable to DirMaint Release 5.

**SYS\_OPER**

The concept of a SYS\_OPER user does not apply in DirMaint Release 5. During execution, DVHMIGR8 should have added an entry to the AUTHFOR CONTROL file with command sets G and O for the user ID's listed as SYS\_OPER in the DirMaint Release 4 DIRMAINT DATA file. This list of functions approximates the authority that SYS\_OPER gave user ID's in DirMaint Release 4. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

**DIRM\_SUB\_STAFF**

The concept of a DIRM\_SUB\_STAFF user does not apply in DirMaint Release 5. During execution, DVHMIGR8 should have added an entry to the AUTHFOR CONTROL file with command sets G and H for the user ID's listed as DIRM\_SUB\_STAFF in the DirMaint Release 4 DIRMAINT DATA file. This list of functions approximates the authority that

DIRM\_SUB\_STAFF gave user ID's in DirMaint Release 4. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

#### **END\_SUB\_STAFF**

This entry is not applicable to DirMaint Release 5.

#### **CLUSTER\_RESERVE**

The use of clusters in DirMaint Release 5 differs from their use in DirMaint Release 4. This entry does not apply in DirMaint Release 5.

#### **SORT\_DIRECTORY**

This entry has remained the same in DirMaint Release 5. For a discussion of the implications of using the SORT\_DIRECTORY setting in DirMaint Release 5 see chapter 3 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the SORT\_DIRECTORY variable in the CONFIG SAMPDVH file.

#### **RACF\_ACTIVE**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the ESM\_PASSWORD\_AUTHENTICATION\_EXIT in DirMaint Release 5. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

**BACKUP** This entry is not applicable to DirMaint Release 5. The time automatic backups are run is controlled by an entry in the WAKEUP times file. For a discussion of the WAKEUP times file consult Appendix E in the *DirMaint Tailoring and Administration Guide*.

#### **DUMPTYPE**

This entry is not applicable to DirMaint Release 5.

#### **EXTNCHK**

This entry has been changed to EXTENT\_CHECK in DirMaint Release 5. For a discussion of the implications of using the EXTENT\_CHECK setting in DirMaint Release 5 see chapter 6 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the EXTENT\_CHECK variable in the CONFIG SAMPDVH file.

#### **PROFS\_SPOOL\_PRPQ**

This entry is not applicable to DirMaint Release 5.

#### **PWCONTROL**

This entry is not applicable to DirMaint Release 5. The setting is assumed to be USER under DirMaint Release 5. Suggested methods of restricting the setting of passwords in DirMaint Release 5 include restricting the use of the DIRM PW, TESTPW and PWMON commands or through the use of the PASSWORD\_SYNTAX\_CHECKING\_EXIT exit routine. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

#### **PWLENGTH**

This entry has been changed to PW\_MIN\_LENGTH in DirMaint Release 5. It is consulted by the syntax checking exits PASSWORD\_SYNTAX\_CHECKING\_EXIT and

PASSWORD\_SYNTAX\_CHECKING\_USER\_EXIT in DirMaint Release 5. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

#### **PWUSEXIT**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the PASSWORD\_SYNTAX\_CHECKING\_USER\_EXIT and PASSWORD\_SYNTAX\_CHECKING\_EXIT in DirMaint Release 5. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

#### **PWWARN**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the entries

```
PW_INTERVAL_FOR_GEN=    warn lock
PW_INTERVAL_FOR_PRIV=  warn lock
```

An exit, CHECK\_USER\_PRIVILEGE\_EXIT, is used to determine if the subject user is 'GEN' or 'PRIV'. For a discussion of the implications of using the PW\_INTERVAL\_FOR\_GEN and PW\_INTERVAL\_FOR\_PRIV settings in DirMaint Release 5 see chapter 6 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the PW\_INTERVAL\_FOR\_GEN and PW\_INTERVAL\_FOR\_PRIV variables in the CONFIG SAMPDVH file. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

#### **PWWARN\_MODE**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the PW\_WARN\_MODE entry. For a discussion of the implications of using the PW\_WARN\_MODE settings in DirMaint Release 5 see chapter 6 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the PW\_WARN\_MODE variable in the CONFIG SAMPDVH file.

#### **PW\_MONITOR**

This entry is not applicable to DirMaint Release 5.

**PWLOCK** This entry is not applicable to DirMaint Release 5. Its function has been replaced by the entries

```
PW_INTERVAL_FOR_GEN=    warn lock
PW_INTERVAL_FOR_PRIV=  warn lock
```

An exit, CHECK\_USER\_PRIVILEGE\_EXIT, is used to determine if the subject user is 'GEN' or 'PRIV'. For a discussion of the implications of using the PW\_INTERVAL\_FOR\_GEN and PW\_INTERVAL\_FOR\_PRIV settings in DirMaint Release 5 see chapter 6 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the PW\_INTERVAL\_FOR\_GEN and PW\_INTERVAL\_FOR\_PRIV variables in the CONFIG SAMPDVH file. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

#### **PWLOCK\_MODE**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the PW\_WARN\_MODE entry For a discussion of the implications of using the PW\_LOCK\_MODE



settings in DirMaint Release 5 see chapter 6 in the *DirMaint Tailoring and Administration Guide* or or consult the comments associated with the PW\_LOCK\_MODE variable in the CONFIG SAMPDVH file.

#### **PW\_FOR\_PRIV**

This entry is not applicable to DirMaint Release 5. See PWWARN and PWLOCK.

**PWMON** This entry is not applicable to DirMaint Release 5. If the DIRM PWMON MONITOR command is to be issued automatically, it should be added to the WAKEUP times file. For a discussion of the WAKEUP times file consult Appendix E in the *DirMaint Tailoring and Administration Guide*.

**WPW** This entry is not applicable to DirMaint Release 5. Removing password validation can be controlled on a user by user basis by using the DIRM NEEDPASS command. For information on the NEEDPASS command, consult the *DirMaint Command Reference*.

#### **END\_WPW**

This entry is not applicable to DirMaint Release 5.

**ONLINE** This entry has remained the same in DirMaint Release 5 but the acceptable parameters have changed. Valid parameters include: IMMED, OFFLINE and SCHED. As the scheduled times are controlled by the WAKEUP times file, HOURLY and HOURLY+offset are no longer accepted. For a discussion of the implications of using the ONLINE setting in DirMaint Release 5 see chapter 3 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the ONLINE variable in the CONFIG SAMPDVH file.

#### **DISK\_CLEANUP**

This entry has remained the same in DirMaint Release 5. An additional parameter, CYLO\_BLK0\_CLEANUP, is also consulted when working with an extent that is using cylinder or block 0. For a discussion of the implications of using the DISK\_CLEANUP and CYLO\_BLK0\_CLEANUP settings in DirMaint Release 5 see chapter 3 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the DISK\_CLEANUP and CYLO\_BLK0\_CLEANUP variables in the CONFIG SAMPDVH file.

#### **UP\_IN\_PLACE**

This entry has been changed to UPDATE\_IN\_PLACE in DirMaint Release 5. For a discussion of the implications of using the UPDATE\_IN\_PLACE setting in DirMaint Release 5 see chapter 3 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the UPDATE\_IN\_PLACE variable in the CONFIG SAMPDVH file.

#### **ACCOUNT**

This entry is not applicable to DirMaint Release 5. Suggested methods of restricting the alteration of account numbers in DirMaint Release 5 include restricting the use of the DIRM ACCOUNT command or through the use of the ACCOUNT\_NUMBER\_VERIFICATION\_EXIT exit routine. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

**ACCT\_USER\_EXIT**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the ACCOUNT\_NUMBER\_VERIFICATION\_EXIT exit routine. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

**LINK**

This entry is not applicable to DirMaint Release 5. Suggested methods of restricting the addition of link statements in DirMaint Release 5 include restricting the use of the DIRM LINK command or through the use of the LINK\_AUTHORIZATION\_EXIT exit routine. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

**LNKLMT**

This entry has remained the same in DirMaint Release 5. For a discussion of the implications of using the LNKLMT setting in DirMaint Release 5 consult the comments associated with the LNKLMT variable in the CONFIG SAMPDVH file. Additional information on this setting may be obtained from usage notes on the DIRM LINK command in the *DirMaint Command Reference*.

**OPTION**

This entry is not applicable to DirMaint Release 5. The suggested method of restricting the alteration or addition of option statements in DirMaint Release 5 involves restricting the use of the DIRM OPTION command. For a discussion of command classes and the AUTHFOR CONTROL file see chapter 8 in the *DirMaint Tailoring and Administration Guide*.

**ENVIRONMENT**

This entry is not applicable to DirMaint Release 5.

**MIXED**

This entry is not applicable to DirMaint Release 5. Its function is handled by the DIRECTXA\_OPTIONS statement in DirMaint Release 5. For a discussion of the implications of using the DIRECTXA\_OPTIONS setting in DirMaint Release 5 see chapter 3 in the *DirMaint Tailoring and Administration Guide* or consult the comments associated with the DIRECTXA\_OPTIONS variable in the CONFIG SAMPDVH file.

**RWBUFF**

This entry is not applicable to DirMaint Release 5. DirMaint Release 5 is constrained by virtual machine size when dealing with a single user entry. The larger the virtual machine size, the larger the single user entry can be. Additionally, the size of various DirMaint server disks may tend to constrain the size of the entire source directory.

**REPLYVIA**

This entry is not applicable to DirMaint Release 5. DirMaint Release 5 will always attempt to use the MSGNOH command. If the DirMaint server is not authorized to use the MSGNOH command, MSG will be used. CP command privilege class B is required to use the MSGNOH command.

**RUNMODE**

The syntax of this entry has remained the same in DirMaint Release 5. For a discussion of the implications of the RUNMODE setting in DirMaint Release 5 consult the chapter 3 in the *DirMaint Tailoring and Administration Guide* or comments associated with the RUNMODE variable in the CONFIG SAMPDVH file.

## **WRKU\_ONLINE**

This entry has been changed to WRK\_UNIT\_ONLINE in DirMaint Release 5. For a discussion of the implications of the WRK\_UNIT\_ONLINE setting in DirMaint Release 5 consult the chapter 3 in the *DirMaint Tailoring and Administration Guide* or comments associated with the WRK\_UNIT\_ONLINE variable in the CONFIG SAMPDVH file.

## **TRANS\_LOG**

This entry has been changed to MESSAGE\_LOGGING\_FILETYPE in DirMaint Release 5. For a discussion of the implications of the MESSAGE\_LOGGING\_FILETYPE setting in DirMaint Release 5 consult the chapter 3 in the *DirMaint Tailoring and Administration Guide* or comments associated with the MESSAGE\_LOGGING\_FILETYPE variable in the CONFIG SAMPDVH file.

## **DISKx\_THRESH**

This entry has been changed to

DISK\_SPACE\_THRESHHOLD\_xxxx= WarnPct ShutPct

in DirMaint Release 5, where 'xxx' denotes the address of the device to be monitored. Use 'SFS' if shared file space is to be monitored.

## **LOGGING**

This entry is not applicable to DirMaint Release 5. Control of message logging is controlled on a user by user basis. This setting defaults to 'OFF' and can be altered using the DIRM USEROPTN command. Additional information on this command may be obtained by consulting the *DirMaint Command Reference*.

## **MDPWMINL**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the MINIDISK\_PASSWORD\_CHECKING\_EXIT exit routine. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

## **MDUSEXIT**

This entry is not applicable to DirMaint Release 5. Its function has been replaced by the MINIDISK\_PASSWORD\_CHECKING\_EXIT exit routine. For a discussion of exit routines see chapter 9 in the *DirMaint Tailoring and Administration Guide*.

## **MDPWCYCL**

This entry has been changed to MDPW\_INTERVAL in DirMaint Release 5. For a discussion of the implications of the MDPW\_INTERVAL setting in DirMaint Release 5 consult the chapter 3 in the *DirMaint Tailoring and Administration Guide* or comments associated with the MDPW\_INTERVAL variable in the CONFIG SAMPDVH file.

## **GLOBAL\_SMSG**

This entry is not applicable to DirMaint Release 5. DirMaint Release 5 uses SMSG where possible and defaults to spool files when required.

## **SYS\_SERVER\_UID**

This entry is not applicable to DirMaint Release 5. Defining satellite servers in DirMaint Release 5 is done via the SATELLITE\_SERVER configuration entry. For a discussion of the implications of the SATELLITE\_SERVER setting in DirMaint Release 5 consult the chapter 5 in

the *DirMaint Tailoring and Administration Guide* or comments associated with the SATELLITE\_SERVER variable in the CONFIG SAMPDVH file.

#### **SYS\_LOCK\_WAIT**

This entry is not applicable to DirMaint Release 5.

#### **SYSBACK**

This entry is not applicable to DirMaint Release 5.

---

## **E.4 Exit Routines**

DirMaint Release 5 provides all the exit points that were provided in DirMaint Release 4 and many additional points. With the DirMaint Release 5 support of system affinity (CSE clusters), alteration of the parameter list provided on exit calls is required. This change requires some adjustment of any existing exit routines before they can be used with DirMaint Release 5. A detailed discussion of exits is presented in chapter 9 of the *DirMaint Tailoring and Administration Guide*.

---

## **E.5 Migrating Applications That Use DirMaint**

Applications have tended to use DirMaint Release 4 in three general ways, each with their own problems.

1. Return Code Dependant
2. Message Text Dependant
3. Internals Dependant

### **E.5.1 Return Code Dependant**

Applications that check the return code and either ignore or redisplay DirMaint message text to the user have proven to be the easiest class of applications to migrate.

Applications written to simply check the return codes of the commands tend to be designed for easy modification. The addition of new return codes that represent failures on DirMaint Release 5 should be able to be done to enable your application to run with DirMaint Release 4 and DirMaint Release 5.

As a general rule, return codes in DirMaint Release 5 consist of the message number of the message issued during the failure or a return code of zero if the event was successful. If the application can not be modified, the message repositories used by DirMaint Release 5 can be adjusted to force a specific return code to be returned when a specific message is issued. This is accomplished by using a message override file.

A message override file is a partial message repository file that is searched before the primary repository file. The message repositories are defined in the CONFIG DATADVH file. The shipped defaults for AMENG on the server are:

```
AMENG_SERV_MSGS_150A=    LCLASERV MSGADVH
AMENG_SERV_MSGS_150A=    150ASERV MSGADVH
```

Appropriate entries also exist for the user side of the operation (i.e. messages that are issued before the transaction is received on the DirMaint server). In this example the primary server message repository is

```
150ASERV MSGADVH
```

The override message repository would be

```
LCLASERV MSGADVH
```

When a message is issued, the override message repository is searched before the primary repository.

Each message in a DirMaint Release 5 repository may consist of several lines but each line has the general format of:

```
mmmmffxss data
```

Where:

**mmmm** Identifies the message number. All DirMaint Release 5 messages are 4 digit.

**ff** Identifies the message format or version number.

**xxs** Identifies the entry type and severity.

**data** Is either message text or a return code override value.

The entry type, xxs, will differ depending on the line being identified. Each message can contain two types of entries:

**00s** This entry can take the form: 00I, 00W, 00E, 00S, 00T, 00A or 00R. The 's' is used to set the severity of the message. It indicates that the following number should be used as the return code from the message instead of the message number itself.

**nnn** This entry can take the form: nnI, nnW, nnE, nnS, nnT, nnA or nnR. The 's' is used to set the severity of the message. The 'nn' is the message line number (i.e. 01, 02 .. etc). Note that within the message text the substitution parameters are represented as '\_n\_' where the 'n' is a number between 1 and 9 inclusive.

An example message entry may look as follows:

```
32040100I 0
32040101I User _1_ currently has a priority value of _2_.
32040200I 0
32040201I User _1_ currently has no priority specified on the user
32040201I statement. CP defaults are in effect.
```

As you can see, this message segment actually contains two separate messages:

```
32040101I User _1_ currently has a priority value of _2_.
```

and

```
32040201I User _1_ currently has no priority specified on the user
32040201I statement. CP defaults are in effect.
```

This message is also using the message return code override entries. Both of these messages will return a zero when they are issued. Had the return code override portion of the message been missing, the return code would have been 3204 for both messages.

When processing a message, the message handler will check the override file and then the primary message repository file for the return code override and text components of a message to be issued. Both components are treated separately as the search takes place. Should the return code override exist in the override repository, its value is used in preference to the value specified in the primary repository. The same is true of the message text component.

Back to the original problem. If your application requires a return code of 1212 when message 320401 is issued, you would place the following entry

```
32040100I 1212
```

in the

```
LCLASERV MSGADVH
```

3 file. Several entries may be placed into the override file. For example:

```
32040100I 1212
```

```
32040200I 1212
```

would override the return codes for messages 320401 and 320402.

## E.5.2 Message Text Dependant

This class of applications is dependant on the wording of a specific message text. The techniques detailed in the previous section can be used, with modification, to alter the message text.

For example, if the original DirMaint message is defined as

```
32040101I User _1_ currently has a priority value of _2_.
```

but your application requires the priority value preceding the user id, the following entry in the

```
LCLASERV MSGADVH
```

file will alter the message text when the message is issued.

```
32040100I 0
```

```
32040101I Priority _2_ is currently assigned to user _1_.
```

Note that the return code override is provided on this message override. This is required because the message handler stops searching the repositories once the message text is located.

## E.5.3 Internals Dependant

Applications that have been written to exploit internal features of DirMaint Release 4 may require extensive rework. DirMaint Release 5 internal features are radically different from DirMaint Release 4 internal features. Consulting the *DirMaint Diagnosis Reference* may aide in your migration if internal features must be exploited. A better approach would be to avoid their use.

## E.5.4 General Application Migration Comments

Commands requiring the use of a DataMove machine are handled as asynchronous work elements. To aide applications in detecting when this event has finished, message 3430 version 01 is issued when the work element has completed.

Messages were extensively altered in DirMaint Release 5. To aide your migration efforts, some key DirMaint Release 4 messages are listed with the DirMaint Release 5 message that provides the closest approximation.

2	<b>008I format 1</b>	3425I
2	<b>008I format 2</b>	3424I
	<b>009I</b>	3427I format 2
	<b>074I</b>	3423I format 1
	<b>075I</b>	3428I format 1
	<b>143I</b>	3426I format 1
	<b>275I</b>	3428I format 2

## 2 E.6 DirMaint Tailorable and System Files

2 Figure 15 lists the DirMaint files which may be tailored by an installation, what the files are used for, and  
2 where to find more information about the file.

2	<i>Figure 15 (Page 1 of 4). DirMaint 1.5.0 Tailorable Files</i>	
2	<b>File Name</b>	<b>Description</b>
2	ACCESS DATADVH	Identifies where the DirMaint common user code resides. For more information see the 'The ACCESS DATADVH File' section of the 'User Tailoring' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2	AUTHDASD DATADVH	Determines who can allocate space in what DASD groups, regions, or volumes. For more information see the 'The AUTHDASD DATADVH Control File' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2	AUTHFOR CONTROL	Identifies what user ID's have delegated authority for another user ID to act for them, and what command sets are included in that authority. Maintained by using the DIRM AUTHFOR and DIRM DROPFOR commands. For more information see the 'AUTHFOR CONTROL' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the AUTHFOR and DROPFOR command descriptions in the <i>DirMaint Release 5 Command Reference</i> manual.
2	AUTHLINK CONTROL	Identifies what user ID's are allowed to issue DIRM LINK commands without having to know the minidisk password for the disk being linked. Maintained by using the DIRM AUTHLINK command. For more information see the AUTHLINK command description in the <i>DirMaint Release 5 Command Reference</i> manual.
2	AUTHSCIF CONTROL	Contains a list of user ID's which are allowed to issue the DIRM SECUSER command. This file is maintained by the DIRM AUTHSCIF command. For more information see the AUTHSCIF and SECUSER command descriptions in the <i>DirMaint Release 5 Command Reference</i> manual.

2	<i>Figure 15 (Page 2 of 4). DirMaint 1.5.0 Tailorable Files</i>	
2	<b>File Name</b>	<b>Description</b>
2 2 2 2	AUTOMAIL DATAADVH	Contains the minidisk audit notice file. The Uppercase English version of this file has a filetype of DATAUDVH. For more information see the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the AUTOMAIL \$DATAADV source file.
2 2 2 2 2	CONFIG DATADVH	Is the configuration file for the DirMaint servers. Multiple configuration files are allowed, providing the ability to override the supplied sample configuration file without actually altering it. Configuration file records are read starting with filenames CONFIG99-CONFIG0, CONFIGZZ-CONFIGA, then CONFIG DATADVH. For more information see the 'CONFIG DATADVH' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 2 2	DATAMOVE DATADVH	Contains a schedule of events for the DATAMOVE server. For more information see the 'DATAMOVE DATADVH' section of the 'Tailoring the DATAMOVE Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 2	DIRECT DATADVH	Contains a list of all VM/ESA 370 feature directory statements. For more information see the DIRECT \$DATADVH source file.
2 2	DIRECTXA DATADVH	Contains a list of all VM/ESA ESA feature directory statements. For more information see the DIRECTXA \$DATADVH source file.
2 2 2	DIRMAINT DATADVH	Contains a schedule of events for the DIRMAINT server. For more information see the 'DIRMAINT DATADVH' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 2 2 2	DIRMAINT NEWMAIL	Is a mail file which may contain system information about new or changed function or installation policy or any other general DirMaint information an installation would like distributed to users. Maintained by using the DIRM MAIL command. For more information see the MAIL command description in the <i>DirMaint Release 5 Command Reference</i> manual.
2 2 2	DIRMSAT DATADVH	Contains a schedule of events for the DIRMSAT server. For more information see the 'DIRMSAT DATADVH' section of the 'Tailoring the DIRMSAT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 2 2 2 2	DVHBHEAD DATAADVH	Contains the batch header file. The Uppercase English version of this file has a filetype of DATAUDVH. The Kanji version of this file has a filetype of DATAKDVH. For more information see the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the DVHBHEAD \$DATAADV source file.
2 2 2 2 2	DVHCOPYR DATAADVH	Contains the DirMaint copyright notice. This file is obsolete. The Uppercase English version of this file has a filetype of DATAUDVH. The Kanji version of this file has a filetype of DATAKDVH. For more information see the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 2 2 2 2 2	DVHLINK EXCLUDE	Contains a list of minidisk addresses, and their owners, that are excluded from the DVHLINK FILE (contains a list of user ID's who have a link to a minidisk). Maintained by using the DIRM USEROPTN command. For more information see the 'DVHLINK EXCLUDE' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the USEROPTN command description in the <i>DirMaint Release 5 Command Reference</i> manual.
2 2 2 2 2	DVHMENUS DATAADVH	Contains the DirMaint menu source. The Uppercase English version of this file has a filetype of DATAUDVH. For more information see the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 'Menu Definition File' section of the 'Command Menu Processor' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.



2 *Figure 15 (Page 3 of 4). DirMaint 1.5.0 Tailorable Files*

2 <b>File Name</b>	2 <b>Description</b>
2 DVHNAMES DATADVH	2 Identifies user ID's which are to be notified when any significant event occurs in any of the 2 DirMaint servers. For more information see the 'DVHNAMES DATADVH' section of the 2 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and 2 Administration</i> manual.
2 DVHPROFA *	2 Determines which minidisks (or SFS Directories) are accessed by the DIRMAINT, DATAMOVE, 2 and DIRMSAT servers and at what filemode during initialization. The filetype <b>must be</b> the 2 same as the user ID name the server is running on. For more information see the 'DVHPROFA 2 DIRMAINT' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual.
2 DVHPROFM DATADVH	2 Determines which minidisks (or SFS Directories) are accessed by the DATAMOVE server and 2 at what filemode during initialization. This file is used if there is no DVHPROFA file with a 2 filetype matching the user ID name the DATAMOVE server is running on. For more information 2 see the 'DVHPROFA DIRMAINT' section of the 'Tailoring the DIRMAINT Service Machine' 2 chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 EXTENT CONTROL	2 Provides information required for DirMaint DASD management functions. For more information 2 see the 'The Extent Control File' section of the 'DASD Management' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual.
2 PROFILE EXEC	2 Contains the PROFILE EXEC for the DirMaint servers. For more information see the PROFILE 2 \$EXEC source file.
2 PROFILE XEDIT	2 Determines characteristics of your edit sessions. For more information see the 'PROFILE 2 XEDIT' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 2 5 Tailoring and Administration</i> manual.
2 PWMON CONTROL	2 Contains a list of user ID's whose passwords do not expire, or do not receive password 2 expiration notices, or have their password expiration notices sent to an alternate user ID. 2 Maintained by using the DIRM PWMON command. For more information see the 'PWMON 2 CONTROL' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual, and the PWMON command in the <i>DirMaint 2 Release 5 Command Reference</i> manual.
2 PWLNOLCK DATAADVH	2 Contains the password expired (without lockout) notice file. The Uppercase English version of 2 this file has a filetype of DATAUDVH. For more information see the 'Language Dependant 2 Configuration Entries' section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual, and the PWLNOLCK \$DATAADV source file.
2 PWLOCKED DATAADVH	2 Contains the password expired (with lockout) notice file, sent to the affected user ID. The 2 Uppercase English version of this file has a filetype of DATAUDVH. For more information see 2 the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data 2 Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 2 PWLOCKED \$DATAADV source file.
2 PWLOTHER DATAADVH	2 Contains the password expired (with lockout) notice file, sent to the surrogate user ID listed in 2 the PWMON CONTROL file. The Uppercase English version of this file has a filetype of 2 DATAUDVH. For more information see the 'Language Dependant Configuration Entries' section 2 of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and 2 Administration</i> manual, and the PWLOTHER \$DATAADV source file.
2 PWWB4LCK DATAADVH	2 Contains the password will expire (with lockout) notice file, sent to the affected user ID. The 2 Uppercase English version of this file has a filetype of DATAUDVH. For more information see 2 the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data 2 Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 2 PWWB4LCK \$DATAADV source file.

2 *Figure 15 (Page 4 of 4). DirMaint 1.5.0 Tailorable Files*

2 File Name	2 Description
2 PWWNOLCK DATAADVH	2 Contains the password will expire (without lockout) notice file, sent to the affected user ID. The 2 Uppercase English version of this file has a filetype of DATAUDVH. For more information see 2 the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data 2 Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 2 PWWNOLCK \$DATAADV source file.
2 PWWOTHER DATAADVH	2 Contains the password will expire (without lockout) notice file, sent to the surrogate user ID 2 listed in the PWMON CONTROL file. The Uppercase English version of this file has a filetype 2 of DATAUDVH. For more information see the 'Language Dependant Configuration Entries' 2 section of the 'DirMaint Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring 2 and Administration</i> manual, and the PWWOTHER \$DATAADV source file.
2 RPWLST DATA	2 Contains a list of prohibited passwords. For more information see the 'RPWLST DATA' section 2 of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring 2 and Administration</i> manual, and the <i>VM/ESA CP Command and Utility Reference</i> or the 2 <i>Planning and Administration Guide for 370</i> manuals.
2 USER INPUT	2 Is the existing source directory file. For more information see the 'USER INPUT' section of the 2 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and 2 Administration</i> manual, and the <i>VM/ESA Planning and Administration Guide</i> manual.
2 150ASERV MSGADVH	2 Contains the American English message repository for the DirMaint servers. For more 2 information see the 'Language Dependant Configuration Entries' section of the 'DirMaint 2 Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> 2 manual, and the '150AUSER MSGADVH' section of of the 'User's Virtual Machine Program 2 Flow' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual,
2 150AUSER MSGADVH	2 Contains the American English message repository for the user interface code. For more 2 information see the 'Language Dependant Configuration Entries' section of the 'DirMaint 2 Configuration Data Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> 2 manual, and the '150AUSER MSGADVH' section of of the 'User's Virtual Machine Program 2 Flow' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual,
2 150ASERV MSGKDVH	2 Contains the Kanji message repository for the DirMaint servers. For more information see the 2 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data Files' 2 appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 150AUSER MSGKDVH	2 Contains the Kanji message repository for the user interface code. For more information see 2 the 'Language Dependant Configuration Entries' section of the 'DirMaint Configuration Data 2 Files' appendix in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 140CMDS DATADVH	2 Describes the 1.4 compatibility command set. For more information see the 140CMDS 2 \$SAMPDVH source file.
2 150CMDS DATADVH	2 Describes the 1.5 compatibility command set. For more information see the 150CMDS 2 \$SAMPDVH source file.

2 Figure 16 lists the DirMaint files which are created and maintained by the DirMaint servers, what the files  
2 are used for, and where to find more information about the file if applicable. These files **should not** be  
2 directly modified by an installation.

2 <i>Figure 16 (Page 1 of 4). DirMaint 1.5.0 Non-Tailable Files</i>	
2 <b>File Name</b>	2 <b>Description</b>
2 ACTIVE DATADVH	2 Contains a list of all directory statements from the DIRECT or DIRECTXA DATADVH file plus 2 any additional added by the DIRM DEFINESTAG command. For more information see the 2 DIRECTXA \$DATADVH and DIRECT \$DATADVH source files, and the DEFINESTAG 2 command in the <i>DirMaint Release 5 Command Reference</i> manual.
2 AUTOBLK CONTROL	2 Generated from the :AUTOBLOCK. section of the EXTENT CONTROL file. For more 2 information see the 'The Extent Control File' section of the 'DASD Management' chapter in the 2 <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 CLST* CLUSTER	2 Contains clusters of user ID's from the monolithic source directory. This file is built using the 2 load list format of the directory. The last 4-characters of the filename will be the cluster number 2 starting at offset 1.
2 CMDSTATE FILE	2 Used for maintaining the state of command processing.
2 DATAMOVE CONTROL	2 Contains the primary control structure for managing interaction with the DATAMOVE machine. 2 Built from entries contained in the CONFIG* DATADVH files. For more information see the 2 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 2 Diagnosis Reference</i> manual.
2 DEFAULT CONTROL	2 Generated from the :DEFAULTS. section of the EXTENT CONTROL file. For more information 2 see the 'The Extent Control File' section of the 'DASD Management' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual.
2 DIRMAINT TRANSLOG	2 Contains the DirMaint servers transaction message logs for the latest month. For more 2 information see the CONFIG \$SAMPDVH source file.
2 DIRMAINT TLOG $yy$ $mm$	2 Contains the DirMaint servers transaction message logs for previous months. For more 2 information see the CONFIG \$SAMPDVH source file.
2 DIRMSAT CONTROL	2 Contains the primary control structure for managing interaction with the DIRMSAT Server. Built 2 from entries contained in the CONFIG* DATADVH files.
2 DISABLE CONTROL	2 Contains the date and time when the DIRM DISABLE command was issued. This file is erased 2 when the DIRM ENABLE command is issued. For more information see the ENABLE and 2 DISABLE command descriptions in the <i>DirMaint Release 5 Command Reference</i> manual.
2 DVHBATCH CONTROL	2 Used for maintaining the state of batch processing.
2 DVHBATCH QUEUE	2 Contains the batch requests which have not yet been processed. This file is appended to when 2 a reader file is received after a DIRM BATCH command is issued. For more information see 2 the BATCH command description in the <i>DirMaint Release 5 Command Reference</i> manual.
2 DVHCEXIT CALLINFO	2 Contains a timestamped record of exits called by a DirMaint server, or user interface code, and 2 the return code passed back from the exit. For more information see the 'DVHCEXIT- Call an 2 exit routine' section of the 'Common Service Machine Program Flow' chapter in the <i>DirMaint 2 Release 5 Diagnosis Reference</i> manual.
2 DVHLINK ATTEMPT	2 Contains a list of minidisk link attempts which were rejected. This file is appended to when a 2 DIRM LINK command fails. The DIRM ELINK command can be used to provide maintenance 2 on this file. For more information see the ELINK and LINK command descriptions in the 2 <i>DirMaint Release 5 Command Reference</i> manual.
2 DVHLINK FILE	2 Contains a list of of user ID's who have a link to a minidisk. Maintained by using the DIRM 2 DLINK and DIRM LINK commands. For more information see the DLINK and LINK command 2 descriptions in the <i>DirMaint Release 5 Command Reference</i> manual.
2 DVHLOCK DATADVH	2 Contains a list of device addresses or user ID's which are locked. Maintained by the DIRM 2 LOCK and DIRM UNLOCK commands. For more information see the LOCK and UNLOCK 2 commands in the <i>DirMaint Release 5 Command Reference</i> manual.

2 *Figure 16 (Page 2 of 4). DirMaint 1.5.0 Non-Tailorable Files*

2 <b>File Name</b>	2 <b>Description</b>
2 DVHPWUSE DATADVH	2 Contains a history of user ID passwords for the timeframe specified by the 2 PW_REUSE_INTERVAL= configuration file entry. Passwords for all user ID's on the system are 2 contained in this file. This file is maintained by the supplied (DVHPXV) local password 2 screening exit, and by the supplied (DVHXPV) local logon password notification exit.
2 DVHPWX CONTROL	2 Contains the DirMaint R4 password history. DirMaint R5 will delete passwords from this file for 2 each one added to the R5 control file(s). When the last entry for a user ID is deleted, the 2 record is deleted. When the record for the last user is deleted, the file is deleted. This file is 2 maintained by the supplied (DVHPXV) local password screening exit, and by the supplied 2 (DVHXPV) local logon password notification exit.
2 DVHRETRY QUEUE	2 Contains a list of work in progress when DirMaint previously shutdown due to an error 2 encountered. For more information see the 'DVHSHUT - Restart or shutdown after 2 encountering an error' section of the 'Common Service Machine Program Flow' chapter in the 2 <i>DirMaint Release 5 Diagnosis Reference</i> manual.
2 DVHSCAN OUTPUT	2 Created during DIRM SCAN command processing to hold the requested output of that 2 command. For more information see the SCAN command description in the <i>DirMaint Release 5 2 Command Reference</i> manual.
2 DVHSHUTX CONTROL	2 Contains two counters and an action indicator used during shutdown/restart processing when 2 errors are encountered. For more information see the 'DVHSHUT - Restart or shutdown after 2 encountering an error' section of the 'Common Service Machine Program Flow' chapter in the 2 <i>DirMaint Release 5 Diagnosis Reference</i> manual.
2 DVHSLVL DATADVH	2 Contains the current RSU service level for the DirMaint server's. Maintained on the RSU only.
2 DVHULVL DATADVH	2 Contains the current RSU service level for the user interface code. Maintained on the RSU 2 only.
2 EXCLUDE CONTROL	2 Generated from the :EXCLUDE. section of the EXTENT CONTROL file. For more information 2 see the 'The Extent Control File' section of the 'DASD Management' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual.
2 GROUP CONTROL	2 Generated from the :GROUPS. section of the EXTENT CONTROL file. For more information 2 see the 'The Extent Control File' section of the 'DASD Management' chapter in the <i>DirMaint 2 Release 5 Tailoring and Administration</i> manual.
2 LOCAL DATADVH	2 Contains a list of all directory statements added by the DIRM DEFINESTAG command. For 2 more information see the DEFINESTAG command in the <i>DirMaint Release 5 Command 2 Reference</i> manual.
2 OFFLINE CONTROL	2 Contains the date and time when the DIRM OFFLINE command was issued. This file is erased 2 when the DIRM ONLINE command is issued. For more information see the OFFLINE and 2 ONLINE command descriptions in the <i>DirMaint Release 5 Command Reference</i> manual.
2 OPTIONS DATADVH	2 Defines the keywords on the OPTION directory statement. Is used during DIRM OPTION 2 command processing. For more information see the OPTION command description in the 2 <i>DirMaint Release 5 Command Reference</i> manual, and the OPTIONS \$DATADVH source file.
2 PASSCHNG DATADVH	2 Contains a list of minidisk password change requests. This file is maintained by the supplied 2 (DVHXMN) minidisk password notification exit.
2 PASSWORD CHANGE	2 Created when the DIRM PWGEN command is issued. This file contains a list of randomly 2 generated passwords to alter the existing user ID passwords. For more information see the 2 PWGEN command in the <i>DirMaint Release 5 Command Reference</i> manual.
2 PENDING MESSAGES	2 Contains a list of messages to be issued when the next directory online takes place.

2 *Figure 16 (Page 3 of 4). DirMaint 1.5.0 Non-Tailorable Files*

File Name	Description
PENDING FREEDEV	Contains a list of devices to be freed from a device table (*FDEV DEVTABLE). For more information see the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
PURGES PENDING	Contains a list of user ID purge requests which have not yet been processed. This file is appended to when a DIRM PURGE command is received. For more information see the PURGE command description in the <i>DirMaint Release 5 Command Reference</i> manual.
PWMINFO LOCKLIST	Contains the distribution list of user ID's to be sent a password expired notice and have their passwords changed to NOLOG. This list of users will be sent the password expired notice and be NOLOGed if the CONFIG DATADVH entry PW_LOCK_MODE=AUTOMATIC. For more information see the 'Step 4. Select Password Control Characteristics' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
PWMINFO WARNLIST	Contains the distribution list of user ID's to be sent a password warning notice. This list of users will be sent the password warning notice if the CONFIG DATADVH entry PW_WARN_MODE=AUTOMATIC. For more information see the 'Step 4. Select Password Control Characteristics' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
PWMON LOCKLIST	Contains a list of user ID's to be locked out of the system. This list is sent to, intended to be edited by, the system administrator. The DIRM PWMON command is used to send this file back to DirMaint for processing. For more information see the 'Step 4. Select Password Control Characteristics' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the PWMON command in the <i>DirMaint Release 5 Command Reference</i> manual.
REGION CONTROL	Generated from the :REGIONS. section of the EXTENT CONTROL file. For more information see the 'The Extent Control File' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
UNASSIGN DVHQUEUE	Contains a list of unassigned Work Unit Control Files (WUCF). For more information see the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
USER BACKOLD	Is the previous backup of the monolithic version of the source directory file. For more information see the BACKUP command in the <i>DirMaint Release 5 Command Reference</i> manual.
USER BACKUP	Is the backup of the monolithic version of the source directory file. For more information see the BACKUP command in the <i>DirMaint Release 5 Command Reference</i> manual.
USER DIRECT	Manages the cluster files, containing pointers to the cluster files for each user ID in the directory.
WHERE TO DATADVH	Identifies the node in a multi-system cluster on which the DIRMAINT server is currently running. For more information see the 'Files on the Interface Disk (DIRMAINT's 11F) or Directory' section of the 'User's Virtual Machine Program Flow' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
\$DIRGRP\$ DIRMPART	Contains the GLOBALDEFS statement which denotes the start of the global definition section of the source directory. The GLOBALDEFS Directory Control Statement contains the GLOBALOPTS and POSIXGROUP Directory Control Statements. Maintained by using the DIRM GLOBALOPTS and DIRM POSIXGROUP commands. For more information see the GLOBALOPTS and POSIXGROUP commands in the <i>DirMaint Release 5 Command Reference</i> manual.

2 *Figure 16 (Page 4 of 4). DirMaint 1.5.0 Non-Tailorable Files*

2 <b>File Name</b>	2 <b>Description</b>
2 * DIRMPART	2 Contains additions or changes to a user directory. The filename will be the user ID of the directory entry. All DIRMPART files are merged into the CLUSTER files during nightly back up processing.
2 * DVHPWUSE	2 Contains a history of user ID passwords, one file for each user ID in the system, for the timeframe specified by the PW_REUSE_INTERVAL= configuration file entry. These files are maintained by the supplied (DVHPXV) local password screening exit, and by the supplied (DVHXPV) local logon password notification exit.
2 * NAMES	2 Contains the distribution list to be notified when a DirMaint server starts up or shuts down. Generated from the DVHNAMES DATADVH file. The filename will be DIRMAINT, DIRMSAT, and DATAMOVE for the three different servers. For more information see the 'DVHNAMES DATADVH' section of the 'Tailoring the DIRMAINT Service Machine' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual.
2 * RDRFILE	2 Contains the data file associated with a reader file request. The filename will be the spool file ID of the reader file request.
2 * VCONTROL	2 Contains information that pertains to a particular DASD volume. One of these files exists for each known DASD volume on the system. The filename will be the DASD volume ID. For more information see the 'Volume Control File' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
2 * WORKSAVE	2 Contains the WORKUNIT file after completion of processing if saving was specified in the CONFIG* DATADVH files. For more information see the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual, and the CONFIG \$DATADVH source file.
2 * WORKUNIT	2 Contains the basic unit of work managed on the DASD subsystem, also known as the Work Unit Control File (WUCF). The filename will be an eight digit number uniquely identifying the work unit. For more information see the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
2 * WUCFFAIL	2 Contains a history of what commands were performed and which commands failed for a basic unit of work managed on the DASD subsystem. The filename will be an eight digit number uniquely identifying the work unit. For more information see the 'Error Recovery' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Tailoring and Administration</i> manual, and the 'Rollback Processing' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.
2 *FDEV DVHTABLE	2 Contains a bit map describing what devices are currently in use in the associated DATAMOVE machine. The first 4-characters of the filename will be a number which is assigned to a specific DATAMOVE machine. For more information see the 'Component Overview' section of the 'DASD Management' chapter in the <i>DirMaint Release 5 Diagnosis Reference</i> manual.

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## Appendix F. Documentation Updates

IBM frequently receives comments from readers requesting clarifications in or additions to our publications. This appendix is provided to make you aware of the DirMaint publication changes resulting from those comments.

IBM intends to update this appendix periodically, when and as the quantity and significance of the new or changed information warrants. To determine whether you need to order a new edition of this Program Directory, check the documentation provided with the most recent Recommended Service Upgrade (RSU).

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### F.1 Licensed Program Specifications (GC20-1837-04)

- None

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### F.2 General Information (GC20-1836-06)

#### 3 Page 6, Greater Flexibility through Additional Exit Routines

3 Add the following label box:

3

**Note!**

3

IBM does not supply samples for every exit point listed. See Figure 20 on page 151 for a list of exits IBM supplies samples for.

3

#### 2 Page 14, Bullet 4

2 This bullet incorrectly states 'User can no longer use GLOBALV to preset a password, but  
2 users can add themselves to the waive password (WPW) list' and should be changed as  
2 follows:

2

- APAR VM60575 provides support for a user to preset a password in LASTING GLOBALV.

2

- The new DIRM NEEDPASS command can now be used to waive a password.

#### 3 Page 18, Bullet 4, Sub-bullets 1 and 2

3 The restrictions documented by these two bullets (the bullets which start with 'In a non-System  
3 Affinity source directory', and 'In a System Affinity source directory') have been removed by  
3 APAR VM62236.

---

### F.3 Tailoring and Administration Guide (SC23-0533-04)

#### 2 Page 34, Item 8

2 Add the following:

2

The DirMaint machine needs to link to the 15D disk or equivalent, in write mode, before the  
2 DIRMSAT machine otherwise it is possible that DirMaint commands will not be processed.

2 **Page 48, Figure 15**

2 The following entry has been added:

2 **4** DISK\_SPACE\_THRESHHOLD\_xxxx=

2 *Figure 17. Selecting Restart and Recovery Characteristics*

2 **4**  
2 The DISK\_SPACE\_THRESHHOLD\_xxxx values specify warning and shutdown  
2 limitations on DASD space usage. When DASD space usage reaches the warning  
2 threshold, hourly messages will be broadcast to the support staff asking for  
2 assistance. When usage reaches the shutdown threshold, the DirMaint service  
2 machines will log themselves off.

3 **Page 49, Figure 16**

3 The following entry has been modified:

3 **5** MESSAGE\_LOG\_RETENTION\_PERIOD = 3 (MONTHS) | DAYS

3 *Figure 18. Selecting Security and Auditing Characteristics*

2 **Page 53, Figure 17**

2 The following entry has been added:

2 **10** PW\_REUSE\_HASHING\_EXIT= DVHHASH MODULE  
2 **11** PW\_REUSE\_INTERVAL= 365 DAYS | 0 - nnn DAYS | 0 - 31

2 *Figure 19. Selecting Password Control Characteristics*

2 **10**  
2 The PW\_REUSE\_HASHING\_EXIT routine hashes the user's password for storage  
2 in the password history file. The filetype may be either EXEC or MODULE; the IBM  
2 supplied default is DVHHASH MODULE. If not specified, the passwords will be  
2 stored in the history file as hexadecimal digits.

2 **11**  
2 The PW\_REUSE\_INTERVAL identifies how long an entry is kept in the password  
2 history file. It may be either a time period with a DAYS suffix, or a count with no  
2 suffix. The IBM supplied default is 365 DAYS.

3 **Page 63, AUTHFOR CONTROL**

3 The following information has been added to the end of the columns 28-31 description layout  
3 for the AUTHFOR CONTROL file:

3 You must be authorized for both levels when issuing an ADD request in 150A level for a  
3 directly entry containing 140A format MDISK statements, and when issuing an ADD request in  
3 140A level for a directory entry that contains 150A format MDISK statements. The 150A format  
3 is identified by use of one or more of the keywords: BLKSIZE, LABEL, or PWS; if none of  
3 these keywords is present the statement is 140A format."



3 **Page 68, User Input, Bullet 1**

3 The restrictions documented by this bullet (the bullet which start with 'When the internal form of  
3 SysAffin') has been removed by APAR VM62236.

3 **Page 143, Table 15**

3 A column has been added to indicate whether or not IBM supplies sample code.

3 **Note:** the page numbers indicate where to find more information in the *DirMaint Release 5*  
3 *Tailoring and Administration* manual, unless otherwise noted by <sup>PD</sup> which indicates where to  
3 find more information within this program directory.

3 *Figure 20 (Page 1 of 2). Exit Routines Summary*

3 Exit Routine	3 Function	3 Environment	3 IBM 3 Supplied 3 Sample	3 Page
3 DVHCXA	Command exit, after processing	User Machine	Yes	146
3 DVHCXB	Command exit, after parsing, before 3 processing	User Machine	No	147
3 DVHCXC	Command exit, before parsing	User Machine	Yes	149
3 DVHDA0	External security manager password 3 authentication exit	DIRMAINT Machine	Yes	150
3 DVHDXP	DATAMOVE non-CMS disk copying exit	DATAMOVE Machine	No	151
3 DVHESMLR	External Security Manager log recording 3 exit	User Machine DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	Yes	152
3 DVHHASH	PW reuse hashing exit, to mask 3 passwords for storage in the DVHPWUSE 3 DATADVH history file.	DIRMAINT Machine	Yes	163 <sup>PD</sup>
3 DVHPXA	User's logon password exit, after 3 transmission to DIRMAINT	User Machine	Yes	154
3 DVHPXR	Random password generation exit for 3 logon	User Machine DIRMAINT Machine	Yes	155 159
3 DVHPXV	User's logon password exit, syntax 3 verification	User Machine DIRMAINT Machine	Yes	157
3 DVHXAN	Account number notification exit	DIRMAINT Machine	No	161
3 DVHXAV	Account number verification exit	DIRMAINT Machine	Yes	162
3 DVHXCP	Check user privilege exit	DIRMAINT Machine	No	163
3 DVHXDA	DASD authorization checking exit	DIRMAINT Machine	No	164
3 DVHXDN	DASD notification exit	DIRMAINT Machine	No	166

3 Figure 20 (Page 2 of 2). Exit Routines Summary

3	3 Exit Routine	3 Function	3 Environment	3 IBM Supplied Sample	3 Page
3	DVHXFA	FOR authorization checking exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	No	167
3	DVHXLA	Link authorization checking exit	DIRMAINT Machine	No	169
3	DVHXLF	Log record filtering exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	Yes	170
3	DVHXLN	Link notification exit	DIRMAINT Machine	No	172
3	DVHXMN	Minidisk password change notification exit	DIRMAINT Machine	Yes	173
3	DVHXMP	Minidisk password syntax verification exit	DIRMAINT Machine	No	174
3	DVHXMU	MULTIUSER authorization checking exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	Yes	175
3	DVHXPN	Password change notification exit	DIRMAINT Machine	Yes	176
3	DVHXPROF	Post-profile exit for the DirMaint service machines. Typically a router to call DVHLOCAL for DIRMAINT, DVHDATLC for DATAMOVE, or DVHSATLC for DIRMSAT. The exit name, DVHXPROF, must <b>not</b> be renamed.	DIRMAINT Machine	Yes	209
3	DVHXPP	Password notice print exit	DIRMAINT Machine	Yes	177
3	DVHXRA	Request after processing exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	No	178
3	DVHXRB	Request after parsing, before processing exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	No	180
3	DVHXRC	Request before parsing exit	DIRMAINT Machine DATAMOVE Machine DIRMSAT Machine	No	182
3	DVHXTA	Local STAG authorization exit	DIRMAINT Machine	No	183
3	DVHXTP	Backup tape mount exit	DIRMAINT Machine	Yes	184
3	DVHXUN	User ID change notification exit	DIRMAINT Machine	No	186

**Page 184**

Under the description of the BACKUP\_TAPE\_MOUNT\_EXIT, note that the IBM supplied default routine (DVHXTTP EXEC) uses a simple message to the operator to request a 3480 tape mount. The "protocol" and "tdev" variables will need to be changed to suit the needs of your installation.

**2 Page 188, Table 36**

2 Change the table description to:

3 LASTING GLOBALV level 199501, 199601, 199701, 199702, and 199801 Variables for the  
2 DVHCX\* and DVHPX\* Exits

**2 Page 189, Table 37**

2 1. Change the table description to:

3 SESSION GLOBALV level 199501, 199601, 199701, 199702 and 199801 Variables for the  
2 DVHCX\* and DVHPX\* Exits

2 2. Replace the VALIDLVLS variable description:

2 Specifies the valid interface design levels.

2 **199501** Identifies the base product level.

2 **199601** Adds support for the DATEFORMAT command, plus new messages: 3214,  
2 3228 format 3, 3440, 3441, 3442, and 3536.

2 **199701** Accommodates changes in the syntax of the DMVCTL and DSATCTL  
2 commands. Adds support for messages: 1924 format 4, 2924 format 4, and  
2 3541; and updates the contents of messages 3262 and 3430.

3 **199702** Added the NEEDPASS and USEROPTN commands to command level 140A.

3 **199801** Added DVHSAPI support for messages 1197S, 1198S, and 1199S.

**2 Page 191, Table 38**

2 Change the table description to:

3 LASTING GLOBALV level 199501, 199601, 199701, 199702 and 199801 Variables for the  
2 DVHX\* Exits

**2 Page 191, Note block**

2 Replace with the following note block:

**2 Notes:**

2 1. Some of the following variables are not available until after parsing has been completed,  
2 and are therefore not available to the REQUEST\_BEFORE\_PARSING\_EXIT (DVHXRC  
2 EXEC). Those that ARE available are: CMDLEVEL, INTERFACE.XRC, ORIGNODE,  
2 ORIGUSER, and ROLE.

2 2. Some of the following variables are not available until after authorization checking has been  
2 completed, and therefore are not available to the REQUEST\_BEFORE\_PROCESSING\_  
2 EXIT (DVHXRB EXEC). Those that are NOT available are: ASUSER, ASNODE, and  
2 TARGETID.

2 **Page 191, Table 39**

- 2 1. Change the table description to:
- 2     SESSION GLOBALV level 199501, 199601, 199701, 199702, and 199801 Variables for the
- 2     DVHX\* Exits
- 2 2. Add a new entry for LOG\_STRING:
- 2     Contains the command string being processed with any passwords or other sensitive data
- 2     changed to XXXs.
- 2 3. Replace the VALIDLVLS variable description:
- 2     Specifies the valid interface design levels.
- 2     **199501**   Identifies the base product level.
- 2     **199601**   Adds support for the DATEFORMAT command, plus new messages: 3214,
- 2     3228 format 3, 3440, 3441, 3442, and 3536.
- 2     **199701**   Accommodates changes in the syntax of the DMVCTL and DSATCTL
- 2     commands. Adds support for messages: 1924 format 4, 2924 format 4, and
- 2     3541; and updates the contents of messages 3262 and 3430.
- 3     **199702**   Added the NEEDPASS and USEROPTN commands to command level 140A.
- 3     **199801**   Added DVHSAPI support for messages 1197S, 1198S, and 1199S.

2 **Page 213, Table 41**

2     The following entries have been modified or added.

3     **Note:** the page numbers indicate where to find more information in the *DirMaint Release 5*

3     *Tailoring and Administration* manual, unless otherwise noted by <sup>PD</sup> which indicates where to

3     find more information within this program directory.

3 *Figure 21 (Page 1 of 4). CONFIG\* DATADVH Entries Summarized*

3 Entry Name	Possible Operands	Comments	Page
3 ADD_COMMAND_PROCESSING=	FULL or SHORT	This statement specifies whether LINK and MDISK directory statements in a directory entry being added are processed using full authorization checking, or if they are allowed to short cut any of the LINK and AMDISK authorization checks.	52
3		<b>Note:</b> If ADD_COMMAND_PROCESSING= SHORT is specified, extent overlap checking is bypassed for ADD processing.	

3 Figure 21 (Page 2 of 4). CONFIG\* DATADVH Entries Summarized

3 Entry Name	Possible Operands	Comments	Page
3 BACKUP_REBUILD=	CLUSTER DVHLINK <VCONTROL>   NONE	This statement controls the balance between the time taken to complete a BACKUP operation and the amount of cleanup needed.	46
3 CLASS_LIMIT_ON_USER_STATEMENT=	8   0 ... 32   0 ... 8	Specifies how many CP privilege classes may be included on the USER statement.	47
3 CLASS_STATEMENT_IN_PROFILE_CHECK =	NO or YES	Specifies whether DirMaint will do the additional checking to see if the included PROFILE contains a CLASS statement.	47
3 MESSAGE_LOG_RETENTION_PERIOD=	<i>months or days</i>	This statement supports the AUDITING policy. A value of 3 months is suggested. This value may need to be adjusted up or down, depending on the amount of DirMaint activity on your system and the size of the minidisks you have allocated for the transaction history files. The minimum MESSAGE_LOG_RETENTION_PERIOD is either 1 month or 1 DAY; and the maximum is either 24 months or 730 DAYS.	50
3 PURGE_COMMAND_PROCESSING=	FULL or SHORT	This statement specifies whether LINK and MDISK directory statements in a directory entry being purged are processed using full authorization checking, or if they are allowed to short cut any of the LINK and DMDISK authorization checks.  <b>Note:</b> If PURGE_COMMAND_PROCESSING= SHORT is specified, disk cleanup processing is bypassed for PURGE processing (unless the CLEAN option is explicitly specified on the PURGE command).	52
3 PW_MONITOR=	user ID	The information a user needs to contact someone authorized to issue a SETPW command for their user ID in the event their logon password has expired and been set to NOLOG.	45



3 Figure 21 (Page 4 of 4). CONFIG\* DATADVH Entries Summarized

3 Entry Name	Possible Operands	Comments	Page
3 SPOOL_CONSOLE=	Pool console command text	Specifies the user ID to receive the console spool files from the various DirMaint service machines. The data following the '=' would be normal command syntax after the CP SPOOL CONSOLE command. NOTE: When the DIRM GETCONSOLE command is issued, a copy of the spool file is sent to the command issuer AND a copy is sent to the user ID specified here. If the user ID's are the same, only one copy is sent. The same action will occur if the DIRM GETCONSOLE command is to retrieve a spool file residing in the virtual printer.	53
3 SRCUPDATE=	DISABLED or NOP	This value determines whether DIRMAINT disables itself from accepting directory update commands from users each time DIRMAINT is restarted. If DISABLED, a DISABLE CONTROL file is created; otherwise this statement is ignored (NOP). The DISABLE CONTROL file will be erased by a DIRM ENABLE command.	45
3 WRK_UNIT_CLEANUP=	ERASE or RENAME	Controls whether the WORKUNIT files will be ERASEd or RENAMEd to WORKSAVE upon completion of DASD management commands. In the event of a failure, they will be RENAMEd to WUCFFAIL in either case.	47

3 **Page 224, Language identifiers list**

3 The following language should be added to the language identifiers list:

3 **SAMPL** Provides an example of creating a custom language for a special application.

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## F.4 Command Reference (SC20-1839-04)

3 See the following for current DirMaint command descriptions:

- 3 • Online help information (current depending on service applied)
- 3 • DirMaint publications contained in *IBM Online Library Omnibus Edition VM Collection*
- 3 • DirMaint publication links at <http://www.ibm.com/s390/vm/related/dirmaint> (may be more current
- 3 than the collection kit)

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## F.5 Message Reference (SC23-0437-02)

3 See the following for current DirMaint message descriptions:

- 3 • Online help information (current depending on service applied)
- 3 • DirMaint publications contained in *IBM Online Library Omnibus Edition VM Collection*
- 3 • DirMaint publication links at <http://www.ibm.com/s390/vm/related/dirmaint> (may be more current
- 3 than the collection kit)

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## F.6 Reference Summary (SX23-0402-01)

3 See the following for current DirMaint command descriptions:

- 3 • Online help information (current depending on service applied)
- 3 • DirMaint publications contained in *IBM Online Library Omnibus Edition VM Collection*
- 3 • DirMaint publication links at <http://www.ibm.com/s390/vm/related/dirmaint> (may be more current
- 3 than the collection kit)

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## F.7 Diagnosis Reference (LY23-0889-07)

### | Page 13

| The heading which reads 'Files on the Interface Disk (DIRMAINT's C1F) or Directory' is in  
| error. It **should read** 'Files on the Interface Disk (DIRMAINT's 11F) or Directory'. Note the  
| C1F minidisk address is actually the 11F minidisk address. This change should also be noted  
| in the table of contents on page iii.

### 2 Page 17 and Page 55

2 The table which shows recipients of DirMaint messages based on the sending character has  
2 been updated with the following:

2 The DVHMSG message will be sent to one of the these recipients:

2 : Specifies self, as an XEDIT message for use in the menu processor. This parameter  
2 should only be used for messages issued within the command originator's (user's) virtual  
2 machine



- 2 \* Specifies self; in the service machines the message may be logged. This parameter can
- 2 be used for messages issued by a DirMaint Server or from within the command
- 2 originator's virtual machine.
- 2 ? Originator. The message may be logged.
- 2 - Originator. The message will NOT be logged.
- 2 + Self. The message may be logged, AS IF sent to originator.
- 2 **Note:** The ?, -, and the + parameters along with all nickname codes should only be
- 2 used for messages issued by a DirMaint Server.

2 **Page 64, Item 2**

2 The item identifies the COMMAND\_BEFORE\_PROCESSING entry as being in the EXITUSER  
2 DATADVH file. This is wrong, it is an entry in the CONFIG\* DATADVH file.

2 **Page 65, Item 9**

2 The item identifies the COMMAND\_AFTER\_PROCESSING entry as being in the EXITUSER  
2 DATADVH file. This is wrong, it is an entry in the CONFIG\* DATADVH file.

**Page 114**

Add the following description of the DVHPWGNP EXEC.

**Purpose**

Set or clear the indicator controlling whether PW? requires a password prompt and verification.

**Routine name and type:**

DVHPWGNP EXEC

**Operating environment:**

DIRMAINT

**Routines calling this part:**

DVHOURLY, DVHPWGEN

**Routines called by this part:**

DVHMSG

**Exits called by this part:**

None

**Description**

If the PASSWORD CHANGE file is present, this EXEC creates a PWCHANGE PENDING file on the user interface disk to indicate that a password prompt is required for the PW? command and that password verification is required for the PW? command. If the PASSWORD CHANGE file is not found, this EXEC erases the PWCHANGE PENDING file on the user interface disk to indicate that a password prompt is not required for the PW? command and that password verification is not required.

---

## 2 F.8 YEAR 2000 Support with APAR VM60538

2 DirMaint APAR VM60538 provides support for VM/ESA 2.2.0 and year 2000. This includes supporting the  
2 new DATEFORMAT directory statement, and the new FULLDATE, ISODATE, SHORTDATE, VMDATE,  
2 and SYSDEFAULT options on several CP and CMS commands.

### 2 F.8.1 DATEFORMAT Command



2 **VM Systems:** VM/ESA 2.2.0 and above

#### 2 F.8.1.1 Purpose

2 The DATEFORMAT operand of the DIRMAINT command allows the general user to  
2 add, change, delete, or query the DATEFORMAT statement in a directory entry.

#### 2 F.8.1.2 Operands

2 ? issues a query against the existing DATEFORMAT statement.

##### 2 DELETE

2 deletes an existing DATEFORMAT statement from the directory entry.

##### 2 FULLdate

2 requests that dates be shown in FULL date (mm/dd/yyyy) format.

##### 2 ISODate

2 requests that dates be shown in ISO date (yyyy-mm-dd) format.

##### 2 SHORtdate

2 requests that dates be shown in SHORT date (mm/dd/yy, mm/dd, or dd mmm  
2 yy; depending on the particular command) format.

##### 2 SYSdefault

2 requests that dates be shown in whichever format has been selected by the  
2 system administrator and specified with the SYSTEM\_DATEFORMAT  
2 statement in the system configuration file, or by the system operator and  
2 specified with a CP SET DATEFORMAT SYSTEM command.

### 2 **F.8.1.3 Usage Notes**

- 2 1. You may use one or more of the prefix keywords (REQuest, TOsys, ASuser,  
2 BYuser, FORuser, ATnode) with this command. These prefix keywords may be  
2 specified in any order, but each keyword may only be specified once.
- 2 2. For a complete description of the DATEFORMAT directory statement see the  
2 *VM/ESA Planning and Administration* manual.

## 2 **F.8.2 Date Support**

2 FULLDATE, ISODATE, SHORTDATE, and VMDATE are now options on several DirMaint commands as  
2 follows:

### 2 **CHECK**

2 FULLDATE, ISODATE, SHORTDATE, and VMDATE on the FILELIST and LISTFILE options

### 2 **DATAMOVE**

2 FULLDATE, ISODATE, and SHORTDATE on the GETCONSOLE option

### 2 **GETCONSOLE**

2 FULLDATE, ISODATE, and SHORTDATE on the ? option

### 2 **INVEN**

2 FULLDATE, ISODATE, and SHORTDATE on the ALL option

### 2 **SATELLITE**

2 FULLDATE, ISODATE, and SHORTDATE on the GETCONSOLE option

---

## 2 **F.9 Multiprise 2000 Support**

2 DirMaint APAR VM61019 provides support for the IBM Multiprise internal DASD.

2 The IBM Multiprise internal DASD emulates multiple volumes of 3380 or 3390 DASD. However, this is not  
2 an exact multiple of the real 3380 or 3390 capacities. When emulating a 3380-3, there is a residual  
2 volume of 1459 cylinders. When emulating a 3390, there may be a residual volume of either 455 or 1568  
2 cylinders, depending upon the model of 3390 being emulated.

2 The EXTENT SAMPDVH file has been updated to include entries for "3380-91", "3380-92", "3380-93",  
2 "3380-99", and "3380-459" for use with a Multiprise 2000 internal disk emulating 3380 DASD with 1113,  
3 2226, 3339, 10017, or 1459 cylinders respectively, plus "3390-455", "3390-084" and "3390-568" for  
3 Multiprise 2000 internal disks emulating a 3390 with 455, 1084, or 1568 cylinders respectively.

2 The following have been added to the 'Maximum Minidisk Sizes and Blocks Per Cylinder for CKD' table  
2 (table 2) in Appendix B of the *DirMaint Release 5 Command Reference* manual:

2 *Figure 22. Maximum Minidisk Sizes and Blocks Per Cylinder for CKD*

2	Maximum CKD Minidisk Sizes		Blocks Per CKD Cylinder with a Block Size of:					
	2 Disk Type	800-Byte CMS Format	Other Usage	800	512	1K	2K	4K
2	3380-91	N/S	1113	540	690	465	270	150
2	3380-92	N/S	2226	540	690	465	270	150
2	3380-93	N/S	3339	540	690	465	270	150
2	3380-99	N/S	10017	540	690	465	270	150
2	3380-459	N/S	1459	540	690	465	270	150
3	3390-084	N/S	1084	N/S	735	495	315	180
2	3390-455	N/S	455	N/S	735	495	315	180
2	3390-568	N/S	1568	N/S	735	495	315	180

2 **Special Notes:**

- 2 1. N/S = NOT supported.
- 2 2. The 2305 is not supported by CMS at any block size.
- 2 3. The 231x devices (2311/2314/2319) are no longer supported. Capacity information is shown above for migration planning.
- 2 4. For a 3333, specify 3330. For a 3344, specify 3340.
- 3 5. For a 3350 used in 3330 compatibility mode, specify 3330-1.
- 3 6. For a 3390 used in 3380 compatibility mode, specify:
  - 3 specify 3380-91 for those volumes containing 1113 cylinders,
  - 3 specify 3380-92 for those volumes containing 2226 cylinders,
  - 3 specify 3380-93 for those volumes containing 3339 cylinders, and
  - 3 specify 3380-99 for those volumes containing 10017 cylinders.
- 2 7. For a 9392, specify 3390.
- 2 8. For a 9395, specify either 3390-3 (native) or 3380-3 (emulation).
- 2 9. For a 3995-151, specify 3390-151. For a 3995-153, specify 3390-153.
- 3 10. For a Multiprise 2000 internal disk (or any other DASD) emulating a 3380:
  - 3 specify 3380-1 for those volumes containing 885 cylinders,
  - 3 specify 3380-2 for those volumes containing 1770 cylinders,
  - 3 specify 3380-3 for those volumes containing 2655 cylinders, and
  - 3 specify 3380-459 for the last volume containing 1459 cylinders.
- 3 11. For a Multiprise 2000 internal disk (or any other DASD) emulating a 3390:
  - 3 specify 3390-01 for those volumes containing 1113 cylinders,
  - 3 specify 3390-02 for those volumes containing 2226 cylinders,
  - 3 specify 3390-03 for those volumes containing 3339 cylinders,
  - 3 specify 3390-9 for those volumes containing 10017 cylinders,
  - 3 specify 3390-455 for the volume containing 455 cylinders,
  - 3 specify 3390-084 for the volume containing 1084 cylinders, and
  - 3 specify 3390-568 for the volume containing 1568 cylinders.
- 2 12. For any other DASD that emulates a VM-supported disk device with a non-standard capacity, assign your own "model number". Simply update the AUTOBLOCK and DEFAULTS sections of the EXTENT CONTROL file to include your new "model(s)" of the emulated device type.

---

## 2 F.10 PW Reuse Hashing (DVHHASH MODULE)

2 **F.10.1.1 Environment:** DIRMAINT service machine

### 2 F.10.1.2 Description: New for Release 5.0

2 The PW reuse hashing exit routine hashes the user's password for storage in the password history file.  
2 The filetype may be either EXEC or MODULE; the IBM supplied default is DVHHASH MODULE. If not  
2 specified, the passwords will be stored in the history file as hexadecimal digits.

2 **F.10.1.3 Invocation:** The following entry should be entered in the text file in upper case, as  
2 required in the CONFIG\* DATADVH file.

2 PW\_REUSE\_HASHING\_EXIT= DVHHASH MODULE

2 For more information, see the 'CONFIG DATADVH' section of the 'Tailoring the DIRMAINT Service  
2 Machine' chapter in the *DirMaint Release 5 Tailoring and Administration* manual.

### 2 F.10.1.4 Interface Parameter

#### 2 DVHHASH

2 Is called with the following parameters:

- 2 • The new password
- 2 • The user ID whose password is being changed

2 **F.10.1.5 Return Codes:** This routine must exit with one of the following:

---

2 *Figure 23 (Page 1 of 2). DVHHASH Return Codes*

2 Return Code	2 Meaning
2 0	2 The password has been successfully masked. The exit routine <b>must have</b> set REXX variables 2 DVHHASH.0 to 1 and DVHHASH.1 to the masked result in the calling EXEC's caller. From a 2 MODULE file, issue command: 2 'PIPE STEM DVHHASH.   STEM DVHHASH. 1' 2 From an EXEC (or CEXEC file), issue command: 2 'PIPE STEM DVHHASH.   STEM DVHHASH. 2' 2 This is necessary to pass the results through the intervening DVHCEXIT routine.
2 8	2 The IBM supplied DVHHASH MODULE indicating an invalid parameter list.
2 12	2 The IBM supplied DVHHASH MODULE indicating a CMS command error.
2 16	2 The IBM supplied DVHHASH MODULE indicating an error in masking subroutines.

---

2 *Figure 23 (Page 2 of 2). DVHHASH Return Codes*

---

2	<b>Return Code</b>	<b>Meaning</b>
2	<b>30</b>	Reserved for IBM use to indicate that the calling routine (either DVHPXV or DVHXPV via DVHCEXIT) is to behave as if the hashing exit is not present. This return code is not used by the IBM supplied DVHHASH MODULE.
2	<b>Other nonzero</b>	Indicates an error occurred and the password has not been masked. This return code is not used by the IBM supplied DVHHASH MODULE.

---

---

## 3 Appendix G. Interface Descriptor Changes

### 3 Migration Alert!

3 This Appendix lists the interface descriptor changes made by DirMaint Release 5 APARS, what the  
3 level has been changed to, and what exits were affected. Customers will need to rework their  
3 modifications to these routines or their own DVHXRA, DVHXRB, DVHXRC, or DVHCXB exits, and the  
3 DVHSAPI and DIRMSAPI EXEC accordingly.

3 For more information on the interface descriptor, see the 'Global Variables Available for the DVHX\*  
3 Exits' section of the 'Exit Routines' chapter in the *DirMaint Release 5 Tailoring and Administration*  
3 manual, and the EXITPARM help file.

- 3 • The interface descriptor has been changed from 199501 to 199601 by APAR VM60538 for the  
3 following exit points:
  - 3 – COMMAND\_AFTER\_PROCESSING\_USER\_EXIT (DVHCXA)
  - 3 – COMMAND\_BEFORE\_PROCESSING\_USER\_EXIT (DVHCXB)
  - 3 – COMMAND\_BEFORE\_PARSING\_USER\_EXIT (DVHCXC)
  - 3 – MESSAGE\_LOGGING\_FILTER\_EXIT (DVHXLF).
  - 3 – REQUEST\_AFTER\_PROCESSING\_EXIT (DVHXRA)
  - 3 – REQUEST\_BEFORE\_PROCESSING\_EXIT (DVHXRB)
  - 3 – REQUEST\_BEFORE\_PARSING\_EXIT (DVHXRC)
- 3 • The interface descriptor has been changed to 199701 by APAR VM60509 for the following exit points:
  - 3 – COMMAND\_AFTER\_PROCESSING\_USER\_EXIT (DVHCXA)
  - 3 – COMMAND\_BEFORE\_PROCESSING\_USER\_EXIT (DVHCXB)
  - 3 – COMMAND\_BEFORE\_PARSING\_USER\_EXIT (DVHCXC)
  - 3 – MESSAGE\_LOGGING\_FILTER\_EXIT (DVHXLF).
  - 3 – REQUEST\_AFTER\_PROCESSING\_EXIT (DVHXRA)
  - 3 – REQUEST\_BEFORE\_PROCESSING\_EXIT (DVHXRB)
  - 3 – REQUEST\_BEFORE\_PARSING\_EXIT (DVHXRC)
- 3 • The interface descriptor has been changed to 199701 by APAR VM60574 for the following exit points:
  - 3 – PW\_REUSE\_HASHING\_EXIT (DVHHASH)
- 3 • The interface descriptor has been changed to 199702 by APAR VM61383 for the following exit points:
  - 3 – ACCOUNT\_NUMBER\_NOTIFICATION\_EXIT (DVHXAN)
  - 3 – ACCOUNT\_NUMBER\_VERIFICATION\_EXIT (DVHXAV)

- 3 • The interface descriptor has been changed to 199702 by APAR VM61385 for the following exit points:
    - 3 – MINIDISK\_PASSWORD\_CHANGE\_NOTIFICATION\_EXIT (DVHXMN)
  - 3 • The interface descriptor has been changed to 199702 by APAR VM61493 for the following exit points:
    - 3 – COMMAND\_AFTER\_PROCESSING\_USER\_EXIT (DVHCXA)
    - 3 – COMMAND\_BEFORE\_PROCESSING\_USER\_EXIT (DVHCXB)
    - 3 – COMMAND\_BEFORE\_PARSING\_USER\_EXIT (DVHCXC)
    - 3 – REQUEST\_AFTER\_PROCESSING\_EXIT (DVHXRA)
    - 3 – REQUEST\_BEFORE\_PROCESSING\_EXIT (DVHXR B)
    - 3 – REQUEST\_BEFORE\_PARSING\_EXIT (DVHXRC)
  - 3 • The interface descriptor has been changed to 199801 by APAR VM61741 for DVHSAPI and DIRMSAPI users to include undocumented messages:
    - 3 – DVHAPI1197S
    - 3 – DVHAPI1198S
    - 3 – DVHAPI1199S
    - 3 – DVHAPI1199S
- 3 The IBM supplied samples for DVHCXA, DVHCXB, DVHCXC, DVHXMN, DVHXL F, and DIRMSAPI have  
 3 been updated to tolerate any of the above interface descriptor values. In addition, the EXITPARM  
 3 HELPADVH help file has been updated describing the valid interface design levels.



# Reader's Comments

## Program Directory for IBM Directory Maintenance for VM/ESA Release 5, Modification Level 0

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