

Hitachi Protection Manager for Oracle

6.4.0-00 Release Notes

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About This Document

This document(RN-00HS283OR - April, 2010) provides late-breaking information about the Hitachi Protection Manager for Oracle 6.4.0-00. It includes information that was not available at the time the technical documentation for this product was published, as well as a list of known problems and solutions.

Intended Audience

This document is intended for customers and Hitachi Data Systems partners who license and use the Hitachi Protection Manager for Oracle.

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Getting Help

The Hitachi Data Systems Support Center staff is available 24 hours a day, seven days a week. To reach us, please visit the support Web site for current telephone numbers and other contact information:

<http://www.hds.com/services/support/>. If you purchased this product from an authorized HDS reseller, contact that reseller for support.

About This Release

This release is a major release that adds new features and fixes a variety of bugs.

Product Package Contents

	Item	Revision
Software	Hitachi Protection Manager for Oracle*1 (*1) This product consists of the following components. Hitachi Protection Manager Copy Controller 6.4.0-00 Hitachi Protection Manager for Oracle 6.4.0-00	6.4.0-00
Documents	Release Notes (this document)	
	Hitachi Protection Manager Software User's Guide	MK-94HC070-14
	Hitachi Protection Manager Software Command Reference	MK-94HC070-14
	Hitachi Protection Manager Software Messages	MK-94HC070-14

New Features and Important Enhancements

Enhancements in 6.4.0-00

Common

- Hitachi AMS2000 series(H/W Rev. 0200) is now supported.

Oracle

None

System Requirements

Server System

Solaris SPARC

Storage System

Protection Manager support the following Hitachi Storage subsystems

Abbreviation
USP/NSC
USP V/USP VM
Hitachi AMS series
Hitachi WMS series
Hitachi SMS series
Hitachi AMS2000 series
Hitachi AMS2000 series(H/W Rev. 0200)

Operating Systems

#	Operating Systems	Prerequisite Patch
1	Sun Microsystems Solaris 9 (SPARC)	None
2	Sun Microsystems Solaris 10 (SPARC)	None #1

#1: Non-global zone is not supported.

Available Backup Targets and Methods for Each Database-Backup Server Combination

#	DB Server		BK Server		Backup Target / Method	
	OS	Product	OS	Product	File System	Oracle
1	Solaris 9 (SPARC)	HPtM CC and HPtM Oracle	Solaris 9 (SPARC)	HPtM-CC	Y	Y
2	Solaris 9 (SPARC)	HPtM CC and HPtM Oracle	No backup server	-	Y	Y
3	Solaris 10 (SPARC)	HPtM CC and HPtM Oracle	Solaris 10 (SPARC)	HPtM-CC	Y	Y
4	Solaris 10 (SPARC)	HPtM CC and HPtM Oracle	No backup server	HPtM-CC	Y	Y

DKS Software Products/Storage System Devices

Storage subsystem	DKS Software Products	Microcode Version
USP / NSC	ShadowImage	50-02-01 or later
	Copy-on-write SnapShot	50-05-xx or later
	TrueCopy	50-02-01 or later
	TrueCopy Asynchronous	50-02-01 or later

System Requirements

	Universal Replicator	50-03-30 or later
USP V	ShadowImage	06-01-24 or later
	Copy-on-write SnapShot	06-01-24 or later
	TrueCopy	06-01-24 or later
	TrueCopy-Asynchronous	06-01-6x or later
	Universal Replicator	06-01-24 or later
USP VM	ShadowImage	06-01-6x or later
	Copy-on-write SnapShot	06-01-6x or later
	TrueCopy	06-01-6x or later
	TrueCopy-Asynchronous	06-01-6x or later
	Universal Replicator	06-01-6x or later
Hitachi AMS series (AMS1000/AMS500/AMS200)	ShadowImage in-system replication	0712/A or later
	Copy-on-write SnapShot	0712/A or later
	TrueCopy Remote Replication	0712/A or later
	TrueCopy Extended Distance	NOT supported
Hitachi WMS series (WMS100)	ShadowImage in-system replication	0712/A or later
	Copy-on-write SnapShot	0712/A or later
	TrueCopy Remote Replication	0712/A or later
	TrueCopy Extended Distance	NOT supported
Hitachi SMS series(SMS100)	ShadowImage in-system replication	1810/N or later
	Copy-on-write SnapShot	1810/N or later
Hitachi AMS2000 series (AMS2500/AMS2300/AMS2100)	ShadowImage in-system replication	0832/E or later
	Copy-on-write SnapShot	0832/E or later
	TrueCopy Remote Replication	0832/E or later
	TrueCopy Extended Distance	NOT supported
Hitachi AMS2000 series (AMS2500(H/W Rev. 0200) /AMS2300(H/W Rev. 0200) /AMS2100(H/W Rev. 0200))	ShadowImage in-system replication	0890/A or later
	Copy-on-write SnapShot	0890/A or later
	TrueCopy Remote Replication	0890/A or later
	TrueCopy Extended Distance	NOT supported

RAID Management Products

This section describes the combination of storage subsystems, version of microcodes, and available functionality of Protection Manager showing in tables. In the following tables, the versions listed in Microcode column are the earliest versions, which make the functionality available indicated in Available Functionality column.

System Requirements

When using the later version of Microcode than listed version in the table below, be sure to use RAID Manager and RM Shadow Copy Provider included in the same complete set of media as that of the Microcode.

The following section entries are now supported in the RAID Manager configuration definition file (horcm*n*.conf) for the RAID Manager instance that links to Protection Manager:

- HORCM_MON
- HORCM_CMD
- HORCM_DEV
- HORCM_LDEV #1
- HORCM_INST

#1: RAID Manager 01-18-03/06 or later is required.

(1) For RAID Storage System Devices

Storage subsystem	Microcode Version	Prerequisite RAID Manager (RM) software	Available Functionality
USP / NSC	50-02-01	RM:01-15-03/04	Backup using Single/Multiple generation with ShadowImage. Remote backup using TrueCopy. Remote backup using TrueCopy Asynchronous.
	50-03-03	RM:01-16-03/03	Backup using Single/Multiple generation with ShadowImage. Remote backup using TrueCopy. Remote backup using TrueCopy Asynchronous Remote backup using Universal Replicator.
	50-05-xx	RM:01-17-03/04	Backup using Single/Multiple generation with ShadowImage. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy. Remote backup using TrueCopy Asynchronous. Remote backup using Universal Replicator.
USP V / USP VM	60-01-24	RM:01-20-03/xx	Backup using Single/Multiple generation with ShadowImage. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy. Remote backup using Universal Replicator.

System Requirements

	60-01-6x	RM:01-20-03/xx	Backup using Single/Multiple generation with ShadowImage. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy. Remote backup using TrueCopy Asynchronous. Remote backup using Universal Replicator.
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(2) For DF Storage System Devices

Storage subsystem	Microcode Version	Prerequisite RAID Manager (RM) software	Available Functionality
Hitachi AMS series (AMS1000 /AMS500/ AMS200)	0712/A	RM:01-16-03/06	Backup using Single/Multiple generation with ShadowImage. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy Remote Replication.
Hitachi WMS series (WMS100)	0712/A	RM:01-20-03/06	Backup using Single/Multiple generation with ShadowImage in-system replication. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy Remote Replication.
Hitachi SMS series (SMS100)	1810/N	RM:01-20-03/06	Backup using Single/Multiple generation with ShadowImage in-system replication. Backup using Single/Multiple generation with Copy-on-write SnapShot.
Hitachi AMS2000 series (AMS2500 /AMS2300 /AMS2100)	0832/E	RM:01-20-03/06	Backup using Single/Multiple generation with ShadowImage in-system replication. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy Remote Replication.
Hitachi AMS2000 series (AMS2500 (H/W Rev. 0200) /AMS2300 (H/W Rev. 0200) /AMS2100 (H/W Rev. 0200))	0890/A	RM:01-23-03/08	Backup using Single/Multiple generation with ShadowImage in-system replication. Backup using Single/Multiple generation with Copy-on-write SnapShot. Remote backup using TrueCopy Remote Replication.

File System

The following file systems can now be backed up and restored:

System Requirements

#	Operating Systems	File System	Prerequisite Patch
1	Solaris 9 (SPARC) #2	Veritas File System (VxFS) 5.0	MP1 or MP3
		Veritas Cluster File System (VxCFS) 5.0	MP3 #3
2		Standard UFS	None
3	Solaris 10 (SPARC) #1,#2	Veritas File System (VxFS) 5.0	MP1 or MP3
		Veritas Cluster File System (VxCFS) 5.0	MP3 #3
4		Standard UFS	None

#1: ZFS is not supported.

#2: Oracle File System is not supported.

#3: The following patch is required to perform online backups. The patch can be obtained from Symantec Support:

Patch name: fs-sol_sparc-5.0MP3RP2HF5-patches.tar.gz

Version: 5.0 MP3 RP2 Hot Fix 5

CaseAuthKey=1293DE8D

Database Management System (DBMS)

#	Operating Systems	DBMS	Prerequisite Patch
1	Solaris 9 (SPARC)	Oracle Database 10g Release 1	None #1
2		Oracle Database 10g Release 2	None #1
3		Oracle Database 11g Release 1	None
4	Solaris 10 (SPARC)	Oracle Database 10g Release 1	Patch set 10.1.0.3 #1
5		Oracle Database 10g Release 2	None #1
6		Oracle Database 11g Release 1	None

#1: Automatic Storage Management (ASM) is not supported.

Cluster Software

When the database server or the file server is a cluster system:

#	Operating Systems	Cluster Software	Prerequisite Patch
1	Solaris 9 (SPARC) #1	Veritas Cluster Server (VCS) 5.0	MP1#2 or MP3
2	Solaris 10 (SPARC) #1	Veritas Cluster Server (VCS) 5.0	MP1#2 or MP3

#1: When the backup server is a cluster system, the operation of backup and restoration is not supported.

#2: If When VCS Diskgroup resource is a disk-group consisted on two physical disks or more, the operation of backup and restoration is not supported.

Volume Manager Software

The following file systems can now be backed up and restored on storage created by using the following volume managers:

#	Operating Systems	Volume Manager Software	Prerequisite Patch
1	Solaris 9 (SPARC)	No volume manager	#3
		Veritas Volume Manager (VxVM) 5.0	MP1 or MP3
		Veritas Cluster Volume Manager (VxVM) 5.0	MP3
		Oracle Automatic Storage Management (ASM)	#1, #2
2	Solaris 10 (SPARC)	No volume manager	#3
		Veritas Volume Manager (VxVM) 5.0	MP1 or MP3
		Veritas Cluster Volume Manager (VxVM) 5.0	MP3
		Oracle Automatic Storage Management (ASM)	#1, #2

#1: ASM is not supported for Oracle 10g.

#2: Create ASM disk groups on physical volumes not managed by other volume managers. ASM disk groups that used VxVM or CVM logical volumes are not supported.

#3: When a volume manager is not used to manage a physical disk, only the s2 partition or partitions in the range of s3 to s6 on the physical disk can be used.

Backup Management Software

When linking with a tape backup management product to back up the data on a secondary volume to a tape device:

#	Operating Systems	Cluster Software	Prerequisite Patch
1	Solaris 9 (SPARC)	Veritas NetBackup 6.5	None #1
2	Solaris 10 (SPARC)	Veritas NetBackup 6.5	None #1

#1: Both of the NetBackup master server feature and the NetBackup media server feature must be running on the backup server.

Path Manager Software

When multiple paths of physical disks are managed by the path manager software:

System Requirements

#	Operating Systems	File System	Prerequisite Patch
1	Solaris 9 (SPARC) #2,#3	HiCommand Dynamic Link Manager 5.0.0 or later	None
2		Hitachi Dynamic Link Manager 6.0.0 or later	None
3		Veritas Dynamic Multipathing (DMP)	None #1
4	Solaris 10 (SPARC) #1,#2,#3	Hitachi Dynamic Link Manager 5.9.4 or later	None
5		Hitachi Dynamic Link Manager 6.0.0 or later	None
6		Veritas Dynamic Multipathing (DMP)	None #1

#1: The same version to Veritas Volume Manager is supported.

FTP Server Software (on the Backup Server)

When performing ftp operation by using extended commands of Protection Manager:

#	FTP Server Software	Service Pack
1	Standard FTP daemon for the OS (ftpd)	None

FTP Client Software (on the Database Server or File Server)

When performing ftp operation by using extended commands of Protection Manager:

#	FTP Server Software	Service Pack
1	Standard FTP utility for the OS (ftp)	None

Memory and Disk Space Requirements

Memory Requirements

No.	Item	Memory requirements KB (*1)
1	Command facility	Standard: 64000 (Minimum: 32000)

(*1) 1KB (Kilobyte)=1,024 bytes

Disk Space Requirements

No.	Item	Disk space requirements KB (*1)
1	/opt/drm	17000

System Requirements

2	/var/opt/drm	2000
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(*1) 1KB (Kilobyte)=1,024 bytes

The following files also require additional disk space.

No.	Item	Directory	Size KB (*1)
1	Trace log-file	/var/opt/drm/log	64000
2	Dictionary map file	/var/opt/drm/db	(*2)
3	Backup catalog file	/var/opt/drm/db	(*3)
4	Storage directory for backup files	/var/opt/drm/backup/oracle	(*4)
5	Storage directory for log files	/var/opt/drm/backup/oracle/log	(*5)

(*1) 1KB (Kilobyte)=1,024 bytes

(*2) Disk space requirements of the dictionary map file :KB

$$\begin{aligned}
 &= 0.2 + \\
 &\text{number-of-table-spaces} + \\
 &\text{number-of-data-files} + \\
 &(\text{number-of-mount-point-directories} * 2) + \\
 &(\text{number-of-disk-groups-of-Veritas-Volume-Manager} * 2) + \\
 &\text{number-of-physical-volumes} + \\
 &(\text{number-of-secondary-volumes} * 0.2) + \\
 &(\text{number-of-pair-volumes} * 0.1)
 \end{aligned}$$

(*3) Disk space requirements of the backup catalog file :KB

$$\begin{aligned}
 &= \{ 8.0 + \\
 &\text{number-of-table-spaces} + \text{number-of-data-files} + \\
 &(\text{number-of-mount-point-directories} * 2) + \\
 &(\text{number-of-disk-groups-of-Veritas-Volume-Manager} * 2) + \\
 &\text{number-of-physical-volumes} + \\
 &(\text{number-of-secondary-volumes} * 0.2) + \\
 &(\text{number-of-pair-volumes} * 0.2) + \\
 &(\text{number-of-backup-target-table-spaces} * 0.3) + \\
 &(\text{number-of-backup-target-data-files} * 4.0) + \\
 &(\text{number-of-backup-target-mount-point-directories} * 0.3) + \\
 &(\text{number-of-target-files-or-directories} * 4.0) + \\
 &(\text{number-of-target-pair-volumes} * 0.1)
 \end{aligned}$$

} * (number-of-backup-times)

(*4) Disk space requirements of the storage directory for backup files: KB

$$= \{ \text{number-of-Oracle-instance} * \{ \{ \text{size-of-control-file} + \text{size-of-initial-parameter-file} + \text{size-of-server-parameter-file} + \text{size-of-network-file} + \text{size-of-password-file} \} * (\text{number-of-cold-backup-times}) + \{ \text{size-of-control-file} + \text{size-of-initial-parameter-file} + \text{size-of-server-parameter-file} + \text{size-of-network-file} + \text{size-of-password-file} \} * (\text{number-of-online-backup-times}) \} \}$$

(*5) Disk space requirements of the storage directory for log files: KB

$$= \{ \text{number-of-Oracle-instance} * \{ \{ \text{size-of-archived-log-file} * (\text{number-of-archived-log-files-when-backup} + 2) + \text{size-of-control-file} \} * 2 * (\text{number-of-online-backup-times}) + \{ \text{size-of-archived-log-file} * \}$$

System Requirements

```
(number-of-archived-log-files-when-log-backup + 2 ) +  
size-of-control-file  
} * (number-of-log-backup-times)  
}  
}
```

Number of mounted drives: Number of mounted drives displayed by df command.

Number of Physical disks: Number of volume which displayed by vxdisk command.

Number of Pair volumes: Number of paired volume which displayed by RAID Manager pairdisplay command.

Number of Secondary volumes: Number of secondary volumes (SVOL) which displayed by RAID Manager pairdisplay command.

Addition:

Protection Manager products and Protection Manager for Oracle products share the use of the additional disk space requirement described above in (*2) and (*3).

System Resource Requirements

No.	Item	Disk space requirements KB (*1)
1	Semaphore	2
2	Shared memory size	132

(*1) 1KB (Kilobyte)=1,024 bytes

Parameter Specs

No.	Parameter Item	Parameter requirements
1	Copy group	Only alphanumerical character or comma. Maximum 63 characters.
2	Path-name	Absolute path-name only. Maximum 1023 characters.
3	File-name	Maximum 511 characters.
4	Backup ID	Only an integer. Valid range is from 0000000001 to 4294967295 Leading zeros cannot be omitted.
5	Mount-point-directory-name	Maximum 255 characters.

Fixed Problems

6	Class name of NetBackup	Maximum 1023 characters.
7	Schedule name of NetBackup	Maximum 1023 characters.
8	Virtual server name	Maximum 255 characters.
9	Storage directory for log files	Maximum 255 characters.
10	Storage directory for backup files	Maximum 255 characters.
11	Log backup ID	Only an integer. Valid range is from 0001 to 9999 Leading zeros cannot be omitted.
12	Oracle instance name	Maximum 64 characters. '-' is not allowable as the first character.
13	Oracle user name	Maximum 30 characters.
14	Oracle user password	Maximum 30 characters.
15	Oracle home directory	Maximum 255 characters.
16	Oracle initial parameter file (PFILE) name	Maximum 1024 characters.
17	Oracle server parameter file (SPFILE) name	Maximum 1024 characters.
18	Oracle net service name	Maximum 1024 characters.
19	Oracle table space name	Maximum 30 characters.
20	Oracle database name	Maximum 30 characters.
21	ASM instance name	Maximum 32 characters.
22	User name for connecting to an ASM instance	Maximum 30 characters.
23	User password for connecting to an ASM instance	Maximum 30 characters.
24	Net service name for an ASM instance	Maximum 1024 characters.
25	ASM home directory	Maximum 255 characters.

Fixed Problems

Fixed Problems 6.4.0-00

Common

None

Oracle

None

Known Problems

None

Installation Precautions

To install this product, see Chapter 3 of the manual Hitachi Protection Manager Software User's Guide.

Usage Precautions

Common

- (1) If the `drmfbackup` command is executed before creating the dictionary-mapping file by the `drmfdisplay` command, it takes a long time to perform the backup processing because the dictionary-mapping file needs to be created.
To resolve this problem, execute the `drmfdisplay` command with the `-refresh` option and create the dictionary-mapping file before executing the `drmfbackup` command.
- (2) When the backup command or the restoration command is executed in the system configured by using Veritas Cluster Volume Manager (CVM), the mount points and disk groups for backup targets in the slave nodes are required to be in the following status:
 - When the target is managed as a cluster resource:
 - The mount point and the disk group must be in offline.
 - When the target is not managed as a cluster resource:
 - The mount point must be unmounted.
- (3) When the system is configured by using Veritas Cluster Volume Manager (CVM) that does not use a cluster, mount a shared disk to the shared name mount-points in each node.

Notes on Using Hitachi Protection Manager for Oracle

- (1) If the `drmorabackup` command is executed without the `-mode cold` option before creating the dictionary-mapping file by using the `drmoradisplay` command, it takes a long time to perform the backup processing because the dictionary-mapping file needs to be created.
To resolve this problem, execute the `drmoradisplay` command with the `-refresh` option and create the dictionary-mapping file before executing the `drmorabackup` command.
- (2) Refer to manuals of Oracle about detail of `NLS_LANG`.
Protection Manager for Oracle set '`AMERICAN_AMERICA.US7ASCII`' to

NLS_LANG' automatically when NLS_LANG is not set. Therefore the message text returned from Oracle may be garbled depending on the language setting of the Oracle database.

Example: ORA-3113 ??????????

- (3) When using ASM in a RAC environment, execute a restore operation only after shutting down all of the ASM instances on all of the nodes except the node where the restore operation is being executed. If an ASM instance is running on another node, the restore command might fail and the following message will be output:

KAVX0852-E An attempt to mount an ASM disk group has failed.

ASM disk group name = ASM-disk-group-name

Cause = ORA-00600: internal error code, arguments: [kfgFinalize_2], [], [], [], [], [], [], []

- (4) Set the listener to the static service configuration before performing a cold backup (#) on an Oracle database where an Oracle instance is running. If the listener is set to the dynamic service configuration, stop any Oracle instances before executing the backup command.

#: A cold backup refers to either of the following backup commands:

- drmorabackup with the -mode cold option
- EX_DRM_ORA_BACKUP with the -mode cold option

If a backup command is executed while the database is in the dynamic service configuration, the command will fail and the following message will be output:

KAVX0512-E An error occurred during Oracle-related processing.

Processing = DRM-10517: An attempt to start Oracle failed.

Cause = ORA-12514: TNS:listener does not currently know of service requested in connect

Documentation

Available Documents

Manual Name	Manual No.	Issue Date
Hitachi Protection Manager Software User's Guide	MK-94HC070-14	April 2010
Hitachi Protection Manager Software Command Reference	MK-94HC072-14	April 2010
Hitachi Protection Manager Software Messages	MK-94HC073-14	April 2010

Documentation Errata

None

Abbreviations

This document uses the following abbreviations for product names:

Full Name	Abbreviation
Hitachi Device Manager HiCommand Device Manager	Device Manager or HDvM
Hitachi Dynamic Link Manager HiCommand Dynamic Link Manager	Dynamic Link Manager or HDLM
Hitachi Protection Manager HiCommand Protection Manager	Protection Manager or HPtM
Hitachi Protection Manager Copy Controller HiCommand Protection Manager Copy Controller	HPtM CC
Hitachi Protection Manager for Oracle	HPtM Oracle
- HPtM CC - HPtM Oracle	HPtM
Hitachi Provisioning Manager HiCommand Provisioning Manager	Provisioning Manager or HPvM
Hitachi Tuning Manager HiCommand Tuning Manager	Tuning Manager or HTM
Sun Microsystems Solaris™ 9 (SPARC)	Solaris 9 (SPARC)
Sun Microsystems Solaris™ 10 (SPARC)	Solaris 10 (SPARC)
Solaris 9 (SPARC) Solaris 10 (SPARC)	Solaris (SPARC)
Oracle Database 10g Release 1	Oracle 10g R1
Oracle Database 10g Release 2	Oracle 10g R2
Oracle Database 11g Release 1	Oracle 11g R1
- Oracle 10g R1 - Oracle 10g R2	Oracle 10g
Oracle 11g R1	Oracle 11g
- Oracle 10g - Oracle 11g	Oracle
Real Application Clusters	RAC
- Oracle Clusterware - Cluster Ready Service	CRS
Automatic Storage Management	ASM
Veritas Storage Foundation for Solaris	VSFS
Veritas Volume Manager	VxVM
Veritas Cluster Volume Manager	CVM

Documentation

Veritas File System	VxFS
Veritas Cluster File System	VxCFS
Veritas NetBackup Server Veritas NetBackup Enterprise Server	NetBackup