

Hitachi Dynamic Link Manager (for VMware®)

8.1.4-00 Release Notes

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About this document

This document (RN-91HC190-13, May 2015) provides late-breaking information about Hitachi Dynamic Link Manager (for VMware) 8.1.4-00. 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 Hitachi Dynamic Link Manager (for VMware).

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 website at <https://portal.hds.com> for current telephone numbers and other contact information. 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.

Product package contents

Medium	CD-ROM	Revision	Release Type	Prerequisite version of Service Pack
Software	Hitachi Dynamic Link Manager (for VMware)	8.1.4-00	Full Package	-
Documents	Hitachi Command Suite Dynamic Link Manager (for VMware®) User Guide	MK-92DLM130-12		

New features and important enhancements

[8.1.4-00 Additional Functions and Modifications]

1. VMware vSphere ESXi 6.0 is now supported.
2. Windows(R) 8 and Microsoft(R) Windows Server(R) 2012 R2 are now supported as OSs for the remote management client.

System requirements

Refer to Chapter 3. Creating an HDLM Environment of the Hitachi Command Suite Dynamic Link Manager User Guide for VMware®

Host

For details on supported Hosts refer to the following manual:

- Hitachi Command Suite Dynamic Link Manager User Guide for VMware® Chapter 3. Creating an HDLM Environment - HDLM System Requirements - Hosts and OSs Supported by HDLM

Supported OSs in a HAM environment are listed below:

Supported OS
VMware vSphere ESXi 5.0
VMware vSphere ESXi 5.1
VMware vSphere ESXi 5.5

Host Bus Adapter (HBA)

Applicable HBAs and HBA drivers:

- Inbox driver for ESXi 5.0/5.1/5.5/6.0 or HBA drivers that support ESXi 5.0/5.1/5.5/6.0 as listed in VMware Compatibility Guide.

- HBAs and HBA drivers for Hitachi Compute Blade that support ESXi 5.0/5.1/5.5/6.0 as listed in VMware Compatibility Guide.

Storage

For details on supported storage refer to the following manual:

- Hitachi Command Suite Dynamic Link Manager User Guide for VMware® Chapter 3. Creating an HDLM Environment - HDLM System Requirements - Storage Systems Supported by HDLM

When the Dynamic I/O Path Control function is enabled on Hitachi AMS 2000 series, use a microprogram version 08B8/D or later.

Requirements to use a HAM environment are as follows:

- HDLM supports the HAM functionality of the following storage systems:
 - Hitachi Virtual Storage Platform
 - HP P9500
 - Hitachi Unified Storage VM

The required microprogram versions are listed below:

Storage system	Interface	Microprogram version	Remark
Virtual Storage Platform	FC I/F	70-03-XX-XX/XX or later(*1)	X: voluntary number
P9500	FC I/F	70-03-XX-XX/XX or later(*1)	X: voluntary number
Hitachi Unified Storage VM	FC I/F	73-03-0X-XX/XX or later	X: voluntary number

*1: If you use the vStorage APIs for Array Integration with HAM, apply 70-05-00-XX/XX or later.

Operating Systems Requirements

The following operating systems are supported.

- VMware vSphere ESXi 5.0 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.0 update 1 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.0 update 2 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.0 update 3 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.1 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.1 update 1 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.1 update 2 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.1 update 3 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.5 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 5.5 update 1 Enterprise Edition/ Enterprise Plus Edition

Resolved problems

- VMware vSphere ESXi 5.5 update 2 Enterprise Edition/ Enterprise Plus Edition
- VMware vSphere ESXi 6.0 Enterprise Edition/ Enterprise Plus Edition

Prerequisite Programs

- Host
 - None
- Remote management host
 - VMware vSphere CLI 5.0/5.1/5.5/6.0 must be installed and set up to be connected to the host.

Resolved problems

None

Known problems

- (1) If you change the default PSP setting and reboot a target ESXi, the default PSP, which is of SATP provided by HDLM for Hitachi storage system, might be automatically changed to "HTI_PSP_HDLM_EXLIO". Therefore, if you add LUs, check the load balance setting (PSP) for LUs recognized by ESXi.
- (2) When you remove HDLM by using removehdlm (utility for Removing HDLM) in "HDLM-installation-folder\bin", perform the following operations.
 - "HDLM-installation-folder\bin" is not deleted. Delete "HDLM-installation-folder".
 - The dialog box "removehdlm is in use" is displayed during a remove. Select "Continue" to continue the remove.

The above phenomena can be avoided by performing either of the following procedures.

- Obtain the HDLM installation DVD, and then remove HDLM by using removehdlm utility stored in "drive-containing-installation-DVD-ROM:\HDLM_VMware\DLMTTools".
 - Copy removehdlm utility in "HDLM-installation-folder\bin" to any location, and then remove HDLM by using the copied removehdlm utility.
- (3) When you change the setting of user account or Credential Store file by dlmmcenv (utility for Configuring HDLM Remote Management Client Environments), restart the following two services by using the Windows service console to enable the change.
 - DLManagerVM
 - HBsA Service
 - (4) A dialog box is displayed to prompt a system reboot even when a new installation or upgrade installation is aborted. Select "No" since the reboot associated with the installation abort is not required.

- (5) In an ESXi 5.5/6.0 environment where MSCS is used, the load-balancing function cannot be enabled. If you install MSCS in an ESXi5.5/6.0 environment, use VMW_PSP_MRU.

Installation precautions

For details on HDLM installation refer to the following document:

- Hitachi Command Suite Dynamic Link Manager User Guide for VMware®
Chapter 3. Creating an HDLM Environment - Installing HDLM

Additional Precautions

- (1) ESXi and VIB package that is a module package of VMware respectively have four acceptance levels: VMwareCertified, VMwareAccepted, PartnerSupported and CommunitySupported, from higher levels. If the acceptance level of an ESXi is higher than that of a VIB package, the VIB package cannot be installed on the ESXi. In this case, an operation of lowering the acceptance level of the ESXi to an appropriate level is required. For the operation procedures, refer to the following document:

- Hitachi Command Suite Dynamic Link Manager User Guide for VMware®
Chapter 3. Creating an HDLM Environment - Installing HDLM

- (2) Names of offline bundle files and plugin modules provided in this version are listed below.

- Offline bundle name
hdlm-0814000001.zip
- Information of plugins

Plugin name	Version	Acceptance level
satp-hdlm	08.1.4-00	VMwareAccepted
psp-hdlm-exlio	08.1.4-00	VMwareAccepted
psp-hdlm-exlbn	08.1.4-00	VMwareAccepted
psp-hdlm-exrr	08.1.4-00	VMwareAccepted
hex-hdlm-dlnkmgr	08.1.4-00	PartnerSupported

- (3) Before installing HDLM, make sure that VMware vSphere CLI (vCLI) is installed and the ESXi server can be accessed by vCLI.
- (4) If HDLM is managed with HGLM, confirm the following before the operation of "Hitachi Command Suite Dynamic Link Manager User Guide for VMware® - Settings When Managing HDLM by Using Global Link Manager".

- On Remote Management Client, a host name of an ESXi host can be resolved into an IP address.
 - A Credential Store file is created by using the resolved IP address.
- (5) The command prompt which is displayed during an installation, upgrade, or uninstallation of remote management client is automatically closed after the operation is completed. Make sure not to close it during the operation. If Command Prompt is closed during the operation, the operation of an installation, upgrade, or uninstallation ends before completion. In this case, perform an upgrade installation.
- (6) An ESXi host can recognize up to 256 LUs including all SCSI devices such as built-in disk and CD-ROM drive. Although the maximum LU number for HDLM management-target in a storage system is 256, the LU number that can be actually managed will be smaller depending on the status of other connected devices. Before applying HDLM to an ESXi host, confirm that the HDLM management-target LUs are correctly recognized by the ESXi host.
- (7) To use VMware vSphere CLI 6.0 on the remote management client, perform either of the following:
1. Add the path of the command `esxcli` to the environment variable `Path`. To link Hitachi Dynamic Link Manager to Global Link Manager, add the path to the system environment variable `Path`. When adding the path to the system environment variable `Path`, do not enclose the path in double quotation marks (`"`). Add the following value to the environment variable `Path`:
`<installation-folder-of-VMware-vSphere-CLI>\bin (*)`
 2. In the command prompt of VMware vSphere CLI, set up the environment variables `perlp` and `vclip`, and then execute the utility `dlmrmcenv`. Specify the following values for `perlp` and `vclip`:
`perlp=<installation-folder-of-VMware-vSphere-CLI>\bin (*)`
`vclip=<installation-folder-of-VMware-vSphere-CLI>\perl\bin (*)`
Note that, if you restart the command prompt after executing the utility `dlmrmcenv`, you do not need to set up the environment variables `perlp` and `vclip`.
- *: `<installation-folder-of-VMware-vSphere-CLI>` is the current directory when the command prompt of VMware vSphere CLI starts.

Remove Precautions

For details on HDLM installation refer to the following document:

- Hitachi Command Suite Dynamic Link Manager User Guide for VMware®
Chapter 3. Creating an HDLM Environment - Removing HDLM

Usage precautions

Notes on General procedures

- (1) HDLM provides NMP sub-plugins(SATP/PSP) to enable multipath management for Hitachi storages. For the information of NMP/SATP/PSP, refer to the following documentation(*).

<http://pubs.vmware.com/vsphere-50/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-50-storage-guide.pdf>

(*): It is the information as of May, 2012.

- (2) Any restrictions and precautions for NMP which VMware announces are applied to your environment using HDLM. Check the restrictions and precautions before you build an environment.
- (3) Any restrictions and precautions for PSP VMW_PSP_RR (Round Robin) that is provided by VMware are applied to the following HDLM load balances.

- HTI_PSP_HDLM_EXLIO
- HTI_PSP_HDLM_EXLBK
- HTI_PSP_HDLM_EXRR

(a): In ESXi 5.0/5.1, Round Robin is not supported in MSCS environment.

<http://kb.vmware.com/kb/1036189>

This restriction is also applied to HDLM PSP, so HDLM PSP cannot be used. Therefore, if your environment meet the condition, use VMW_PSP_MRU.

Notes on HAM procedures

- (1) In the case of displaying the LU information, the HAM information is not output by specifying the "all" parameter-value for the HDLM command. Specify the "ha" and "hastat" parameter-value instead.
- (2) An online operation is performed on an owner path, a non-owner path's status may change to Offline(E). After performing an online operation on an owner path, use the HDLM command to make sure that the non-owner path's status is Online. If the non-owner path's status is Offline(E), change the status of HAM pairs to PAIR, and then perform an online operation on the Offline(E) path again.
- (3) When you set up a HAM pair to be managed by HDLM, make sure that the host recognizes paths to the MCU (Primary VOL) and RCU (Secondary VOL) after the HAM pair is created.

Execute the `dlnkmgr view -lu -item hastat` operation. If `ha` is not displayed in the `HaStat` column, then the corresponding LU is not recognized as being in a HAM configuration.

If the host recognizes the path to either one or both of the MCU and RCU, before the HAM pair is created, restart the host after the HAM pair is created.

Usage precautions

- (4) If you release a HAM pair to recover the system after a HAM volume failure, do not restart a host that is connected to the MCU and RCU while the HAM pair is released.

If you need to restart the host while the HAM pair is released, disconnect all paths to the MCU and RCU, restart the host, re-create the HAM pair, and then reconnect the paths.

If you restart a host that is connected to the MCU and RCU while the HAM pair is released, the RCU volume will be recognized as a volume other than an MCU volume. If this occurs, restart the host after the HAM pair is re-created.

Execute the `dlnkmgr view -lu -item hastat` operation, and then confirm that `ha` is displayed in the `HaStat` column.

Documentation

Available documents

Document name	Document number	Issue date
Hitachi Command Suite Dynamic Link Manager (for VMware®) User Guide	MK-92DLM130-12	May 2015

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