

Hitachi Dynamic Link Manager (for AIX) 8.7.0-01 Release Notes

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About this document

This document (RN-00HS271-49, December 2019) provides late-breaking information about Hitachi Dynamic Link Manager (for AIX) 8.7.0-01. 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 Vantara partners who license and use Hitachi Dynamic Link Manager (for AIX).

Getting help

[Hitachi Vantara Support Connect](#) is the destination for technical support of products and solutions sold by Hitachi Vantara. To contact technical support, log on to Hitachi Vantara Support Connect for contact information: https://support.hitachivantara.com/en_us/contact-us.html.

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Accessing product downloads

Product software, drivers, and firmware downloads are available on Hitachi Vantara Support Connect: <https://support.hitachivantara.com/>.

Log in and select Product Downloads to access the most current downloads, including important updates that may have been made after the release of the product.

About this release

This release is a major release that adds new features and resolves multiple known problems.

Product package contents

Medium	CD-ROM	Revision	Release type	Prerequisite version of service pack
Software	Hitachi Dynamic Link	8.7.0-01	Full package	-

	Manager (for AIX)			
Documents	Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide	MK-92DLM111-45		

New features and important enhancements

8.7.0-00 Additional Functions and Modifications

- Hitachi Virtual Storage Platform 5100, 5500, 5100H, 5500H, and HPE XP8 are now supported.
- IBM XL C/C++ Runtime is now supported.

8.7.0-01 Additional Functions and Modifications

- File Access Library and File Conversion Utility (FAL/FCU) 01-08-69/00 or later is now supported.

System requirements

Refer to Chapter 3. Creating an HDLM environment of the *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide*.

Host

For details on supported hosts, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Host and OS support for HDLM

Host bus adapter (HBA)

For information on supported HBAs and drivers, refer to Appendix A - Host Bus Adapter (HBA) Support Matrix.

Storage

For details on supported storage systems, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Storage systems supported by HDLM

Requirements to use a HAM environment are as follows:

- HDLM supports the HAM functionality of the following storage system:
 - Hitachi Universal Storage Platform V/VM
 - Hitachi Virtual Storage Platform
 - HP XP24000/XP20000
 - HP P9500
 - Hitachi Unified Storage VM

The required microprogram versions are listed below:

Storage system	Interface	Microprogram version	Remark
Universal Storage Platform V/VM	FC I/F	60-06-10-XX/XX or later	X: voluntary number
Virtual Storage Platform	FC I/F	70-01-42-XX/XX or later*	X: voluntary number
XP24000/XP20000	FC I/F	60-06-10-XX/XX or later	X: voluntary number
P9500	FC I/F	70-01-42-XX/XX or later*	X: voluntary number
Hitachi Unified Storage VM	FC I/F	73-03-0X-XX/XX or later	X: voluntary number

* If you use the HAM functionality with USP V or XP24000, apply 70-03-00-XX/XX or later.

- HDLM for AIX supports the following cluster software in a HAM environment:

OS	TL/SP	Cluster software
AIX v6.1	TL06 SP01	PowerHA 5.5 to 6.1*

* When executing reverse resynchronization for recovering the owner path from a failure, PowerHA must be stopped before the reverse resynchronization.

- Perform the following settings:

- a) Set the reserve_policy attribute of hdisks as "no_reserve".
- b) Set the "prevents I/O on the Online(E) path" setting of HDLM as "on".

Virtualization

For details on supported virtualization environment, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Host and OS support for HDLM

Operating systems requirements

For details on supported operating system, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Host and OS support for HDLM

Each OS Patch for applicable OSs can be downloaded from IBM official website or FTP site (<ftp://ftp.software.ibm.com/aix/efixes/>).

Prerequisite programs

For details on related programs, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Host and OS support for HDLM

Related programs

For details on related programs, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Storage systems supported by HDLM - When handling intermediate volumes managed by Hitachi RapidXchange
- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Cluster software supported by HDLM

Memory and disk capacity requirements

For details on memory and disk capacity requirements, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Memory and disk capacity requirements

HDLM supported configurations

For details on the condition that HDLM can manage space requirements, refer to the following manual:

- *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide* Chapter 3. Creating an HDLM environment - HDLM system requirements - Number of LUs and paths that are supported in HDLM

Resolved problems

None.

Known problems

- 1) Precautions when deleting all HDLM devices on a server:

When deleting all devices managed by HDLM^a in a local boot disk environment^b, note the following:

- If Auto Failback is set to ON, set it to OFF before starting the deletion process. After the deletion process completes, reset it back to ON. Without modifying this setting, a server may crash due to an OS issue.
- Do not run the following procedures while deleting the devices managed by HDLM or a server may crash due to an OS issue:
 - Online operation
 - `lspath/chpath/rmpath` of the OS command execution

Notes:

- c) This operation is performed during the following procedures:
 - Upgrade installation, re-installation, or uninstallation.
 - Deletion of all HDLM devices by using the `dlmrmdev` or `rmdev` command when deleting an LU.

- d) If using HDLM in a boot disk environment, these precautions are not applicable.
- 2) Notes for using the DLMgetras utility:

If you specify a directory under an NFS mount point as an output destination and then run the DLMgetras utility, an empty directory named "DLMgetras_tmpdir.xxxx/the_specified_directory_name" may be created for the output destination directory ("xxxx" is an optional numeric value).

If the empty directory exists after running the DLMgetras utility, delete the directory.

- 3) Notes for running Live Update:

If you want to run Live Update while a Hitachi storage system is connected, you must apply APAR IJ08437 in advance.

To prevent this problem on AIX, before running Live Update, specify "no_reserve" for the reserve_policy attribute for the hdisk that is currently used as the rootvg.

- 4) Notes on using Virtual I/O Server 3.1.0.xx:

In a virtual I/O server environment where HDLM is installed, you cannot use the viosupgrade command to migrate the virtual I/O server.

Closing known problems

None.

Installation precautions

For details on HDLM installation, refer to the following manual:

Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 3. Creating an HDLM environment - Notes on creating an HDLM environment

Updating installation of HDLM precautions

For details on updating HDLM, refer to the following manual:

Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 3. Creating an HDLM environment - Notes on creating an HDLM environment - Notes on an upgrade installation or re-installation of HDLM

Uninstallation precautions

For details on HDLM uninstallation, refer to the following manual:

Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 3. Creating an HDLM environment - Removing HDLM

System generate precautions

For details on HDLM system generate, refer to the following manual:

Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 3. Creating an HDLM environment - Notes on creating an HDLM environment

Usage precautions

For details on usage Precautions when using HDLM, refer to the *Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide*:

- Chapter 3. HDLM operation - Notes on using HDLM
- Chapter 4. HDLM operation - HDLM operations using commands
- Chapter A. Functional differences between versions of HDLM
- Chapter B. Differences between HDLM version 5.9 or later and version 5.8.1 or earlier

Additional usage precautions

- 1) Version numbers displayed after installing this version of HDLM as follows:

Function	Item	Version number
HDLM command (dlnkmgr)	HDLM version	8.7.0-01
	HDLM manager	8.7.0-01

	HDLM Alert Driver	8.7.0-01
	HDLM Driver	8.7.0-01
Islpp	Level	8.7.0.1

2) The following example shows the text displayed when you run `dlnkmgr view -sys`:

```
# /usr/DynamicLinkManager/bin/dlnkmgr view -sys
HDLM Version                : 8.7.0-01
Service Pack Version        :
Load Balance                 : on(extended lio)
Support Cluster              :
Elog Level                   : 3
Elog File Size (KB)         : 9900
Number Of Elog Files        : 2
Trace Level                  : 0
Trace File Size (KB)        : 1000
Number Of Trace Files       : 4
Path Health Checking        : on(30)
Auto Failback                : on(60)
Intermittent Error Monitor  : off
Dynamic I/O path Control    : off(10)
HDLM Manager Ver            WakeupTime
Alive                        8.7.0-01 2019/12/01 14:51:00
HDLM Alert Driver Ver       WakeupTime      ElogMem Size
Alive                        8.7.0-01 2019/12/01 14:50:48 4000
HDLM Driver Ver             WakeupTime
Alive                        8.7.0-01 2019/12/01 14:50:56
License Type Expiration
Permanent                    -
KAPL01001-I The HDLM command completed normally. Operation name =
view, completion time = 2019/12/01 15:19:56
```

3) Notes on HAM environments

- 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.
- When an online operation is performed on an owner path, a non-owner path 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 status is Online. If the non-owner path status is Offline(E), change the status of HAM pairs to PAIR, and then perform an online operation on the Offline(E) path again.

- 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.
Run the `dlnkmgr view -lu -item hastat` operation. If `ha` is not displayed in the HaStat column, then the corresponding LU is not recognized as a HAM configuration.
If the host recognizes the paths to the MCU and RCU before the HAM pair is created, restart the host after the HAM pair is created.
- 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 must 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 is recognized as a volume other than an MCU volume. If this occurs, restart the host after the HAM pair is recreated.
- Run the `dlnkmgr view -lu -item hastat` operation, and then confirm that `ha` is displayed in the HaStat column.

Documentation

Available documentation

Document name	Document number	Issue date
Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide	MK-92DLM111-45	October 2019

Documentation errata

None.

Appendix A: Host Bus Adapter (HBA) Support Matrix

Use the SCSI I/F adapter or Fibre Channel I/F adapters listed below. When using two or more adapters, use the same type of adapter. If you combine different types of HBA, HDLM may not be able to switch a path when an error occurs.

The combination of HBA which can exist together is as follows.

- FC5716, FC1977 and FC1957
- FC5758 and FC1905
- FC5759 and FC1910

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