

Hitachi Dynamic Link Manager (for AIX) 8.1.2-00 Release Notes

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About this document

This document (RN-00HS271-30, February 2015) provides late-breaking information about Hitachi Dynamic Link Manager (for AIX) 8.1.2-00. 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 AIX).

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 and resolves multiple known problems.

Product package contents

Medium	CD-ROM	Revision	Release Type	Prerequisite version of Service Pack
Software	Hitachi Dynamic Link Manager (for AIX)	8.1.2-00	Full Package	-
Documents	Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide	MK-92DLM111-31		

New features and important enhancements

[8.1.2-00 Additional Functions and Modifications]

1. Functionality for specifying the number of times the same path can be used for extended load balancing (random I/O) 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 (*1)	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 (*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 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(*1)

*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:
 - (1) Set the reserve_policy attribute of hdisks as "no_reserve".
 - (2) 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 in a server:

When deleting all devices managed by HDLM (*1) in local boot disk environment (*2), note the following two items:

1. If Auto Failback is set to ON, set it to OFF before the deletion processing. After the deletion processing completes, reset it back to ON. Without this process, a server may crash due to an OS issue.
2. Do not execute the following procedures while deleting the devices managed by HDLM. If executed, a server may crash due to an OS issue.

- Online operation

- `lspath/chpath/rmpath` of the OS command execution

*1: This operation will be performed when performing the following procedures:

- The upgrade installation, re-installation or uninstallation

- The deletion of all HDLM devices by `dlmrmdev` or `rmdev` command in deleting LU.

*2: If using HDLM in the boot disk environment, these precautions are not applicable.

(2) Notes for executing DLMgetras utility:

If you specify a directory under an NFS mount point as an output destination and then execute 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).

When the empty directory exists after executing DLMgetras utility, delete the directory.

Closing known problems

None.

Installation precautions

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

Usage precautions

- 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 following manual:

- Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 4. HDLM Operation - Notes on Using HDLM
- Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter 4. HDLM Operation - HDLM Operations Using Commands
- Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter A. Functional Differences Between Versions of HDLM
- Hitachi Command Suite Dynamic Link Manager (for AIX) User Guide Chapter B. Differences Between HDLM Version 5.9 or Later and Version 5.8.1 or Earlier

Usage precautions

Additional usage precautions

(1) Version numbers to be displayed after this version of HDLM is installed are as follows:

Function	Item	Version number
HDLM command (dlnkmgr)	HDLM Version	8.1.2-00
	HDLM Manager	8.1.2-00
	HDLM Alert Driver	8.1.2-00
	HDLM Driver	8.1.2-00
Islpp	Level	8.1.2.0

(2) The following example shows the text displayed when `dlnkmgr view -sys` is executed:

```
# /usr/DynamicLinkManager/bin/dlnkmgr view -sys
HDLM Version           : 8.1.2-00
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                 8.1.2-00 2015/02/02 14:51:00
HDLM Alert Driver Ver WakeupTime      ElogMem Size
Alive                 8.1.2-00 2015/02/02 14:50:48 4000
HDLM Driver Ver       WakeupTime
Alive                 8.1.2-00 2015/02/02 14:50:56
License Type Expiration
Permanent             -
KAPL01001-I The HDLM command completed normally. Operation name
= view, completion time = 2015/02/02 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.

Documentation

- 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.

- 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 `dlmkmgr 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 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 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 `dlmkmgr 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 AIX) User Guide	MK-92DLM111-31	February, 2015

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

IF	Applicable HBA	AIX 5L V5.3	AIX V6.1	AIX V7.1
Fibre Channel	IBM HBA	OS Bundled	OS Bundled	OS Bundled
	QLogic QMI2472/2572 (*1)	OS Bundled	OS Bundled	OS Bundled
Fibre Channel over Ethernet	IBM FC5708	OS Bundled	OS Bundled	OS Bundled

(*1): HBA hot swap is not supported for this HBA because this HBA is not a supported hot plug.

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