

**AIX Native MPIO
for CLARiiON[®]**

Technical Note

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REV A01

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This technical note contains supplemental information about AIX Native MPIO for CLARiiON storage systems.

Technical notes are updated periodically and posted on <http://Powerlink.EMC.com>. Before installing AIX Native MPIO for CLARiiON, check the Powerlink website for the most recent information.

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Product description

AIX Native MPIO for CLARiiON[®] is a software available from IBM that provides failover for EMC[®] CLARiiON storage systems. AIX Native MPIO also provides Load Balancing for up to 8 paths to a CLARiiON storage system.

New features and changes

AIX Native MPIO for CLARiiON is now supported with CLARiiON Release 26 or later.

Environment and system requirements

This section identifies the hardware and software supported by AIX Native MPIO for CLARiiON.

Host requirements

AIX Native MPIO requires the following two filesets from the EMC ODM definitions kit to be installed before configuring AIX Native MPIO with CLARiiON arrays:

EMC CLARiiON Support Software

EMC CLARiiON FCP MPIO Support Software

ODM Support Software	Fileset containing CLARiiON support
EMC CLARiiON FCP MPIO Support Software	EMC.CLARiiON.fcp.MPIO.rte 5.3.0.2

You can download the latest EMC ODM fileset from:

`ftp://ftp.emc.com/pub/elab/aix/ODM_DEFINITIONS`

The following table shows the minimum requirements for AIX hosts to run AIX Native MPIO for CLARiiON:

Operating system	Patch or package containing CLARiiON support
AIX 5.3	AIX v5.3 TL9; AIX v5.3 TL8 SP4
AIX 6.1	AIX v6.1 TL2; AIX v6.1 TL1 with APAR IZ32812
VIOS	VIOS v2.1; VIOS v1.5.2.0 SP4



CAUTION

AIX Native MPIO and EMC PowerPath® cannot manage the same class of array on the same host.

HBAs, HBA driver software, and operating system software

The *EMC Support Matrix* is the definitive source of information about supported EMC HBAs, operating system software, and driver software. To read it, go to the EMC website (www.EMC.com) and search for *matrices*. Select the link to the EMC Interoperability Support Matrices,

and then the link to the EMC Support Matrix.

FLARE storage-system software

CX4-series, CX3-series and CX-series storage systems use FLARE® software (formerly called *Base Software*). The minimum revisions of FLARE software used to test this release are as follows:

Storage system	FLARE
CX4-series	04.28
CX3-series	03.26
CX-series	02.26

Navisphere products

The EMC Navisphere[®] Host Agent and Navisphere Server Utility are not supported on hosts running AIX Native MPIO. Host registration with a CLARiiON storage system must be done manually.

FLARE storage-system layered applications

EMC SnapView[™] software, EMC MirrorView[™] /Asynchronous software, EMC MirrorView/Synchronous software, and EMC SAN Copy[™] software are not supported with hosts running AIX Native MPIO.

Fixed problems

None — This is the first release of the product.

Known problems and limitations

This section identifies known problems and limitations with this release.

Description	Workaround
Navisphere Host Agent and Navisphere Server Utility cannot push a host registration command down all paths to the CLARiiON storage system. [208875]	None. Navisphere Host Agent and Navisphere Server Utility are not supported with AIX Native MPIO

Limitations

- ◆ AIX Native MPIO and EMC PowerPath cannot manage the same class of array on the same host.
- ◆ CLARiiON iSCSI devices are not supported with AIX Native MPIO.
- ◆ AIX Native MPIO with CLARiiON is not supported when the configuration consists of clustered hosts.
- ◆ EMC Navisphere Server Utility and EMC Navisphere Host Agent are not supported on hosts running AIX Native MPIO.
- ◆ EMC CLARiiON models CX400 and CX600 are not supported.
- ◆ Maximum 8 host paths per array.
- ◆ Maximum 100 LUNs per host.

Technical notes

No auto-restore of LUNs when running AIX Native MPIO

AIX Native MPIO does not auto-restore LUNs to their default owner SP when paths to that SP are restored.

Manual registration of AIX Native MPIO hosts

The Navisphere Agent and Navisphere Server Utility are not supported on hosts with AIX Native MPIO. These hosts must be manually registered with CLARiiON storage systems. EMC recommends using the steps below.

Load Balancing with AIX Native MPIO

By default, hdisk ODM attributes are set for failover mode of operation. In this type of configuration, two HBAs are installed on the host and each is zoned to a single Storage Processor FC Port. No Load Balancing will take place. For a Load Balancing configuration, each of the HBAs can be zoned to multiple ports on the Storage Processors. To enable the AIX Native MPIO Load Balancing feature, change the ODM settings as described next for each CLARiiON hdisk and reboot the host system:

```
% chdev -l hdiskX -a reserve_policy=no_reserve -P
% chdev -l hdiskX -a algorithm=round_robin -P
```

AIX Fibre Channel fc_err_recov attribute

By default, the fscsi fc_err_recov attribute setting is set to delayed_fail. This attribute needs to be changed to fast_fail. To enable the AIX Fibre Channel fc_err_recov attribute, change the ODM settings as described below for each fscsi driver and reboot the host system:

```
% chdev -l fscsiX -a fc_err_recov=fast_fail -P
```

Determining host HBA WWNs

Determine the WWN (world wide names—the embedded, numeric identifier) of each HBA that you will connect to the CLARiiON storage systems. Use the lscfg command to determine the WWN for each adapter:

```
% lscfg -vl fcs0
fcs0                U0.1-P1-I2/Q1  FC Adapter

Network Address.....10000000C9290E6C
ROS Level and ID.....02C039D0
```

```
Device Specific.(Z0).....2002606D
Device Specific.(Z1).....00000000
Device Specific.(Z2).....00000000
Device Specific.(Z3).....03000909
Device Specific.(Z4).....FF401411
Device Specific.(Z5).....02C039D0
Device Specific.(Z6).....064339D0
Device Specific.(Z7).....074339D0
Device Specific.(Z8).....20000000C9290E6C
Device Specific.(Z9).....CS3.93A0
Device Specific.(ZA).....C1D3.93A0
Device Specific.(ZB).....C2D3.93A0
Device Specific.(ZC).....00000000
Hardware Location Code.....U0.1-P1-I2/Q1
```

In the sample output of the above command, the Network Address is the World Wide Port Name and the Device Specific (Z8) location is the World Wide Node Name:

```
Network Address.....10000000C9290E6C
```

```
Device Specific.(Z8).....20000000C9290E6C
```

Make a note of each controller number and worldwide port name; you will use these numbers later to complete the manual host registration process.

Using Navisphere Manager

Follow the procedures below if you are managing your storage system with Navisphere Manager.

Setting connection properties using Navisphere Manager

To set connection properties using Navisphere Manager:

1. Right-click the storage-system name in the Enterprise Storage window in Navisphere Manager
2. Click **Connectivity Status** in the pop-up menu. The **Connectivity Status** dialog box opens.

If the zones are activated and your host system has been booted, you should see the initiator WWNs of your HBAs with a Fibre Logged In status of Yes. You may have to wait for Navisphere Manager to update its initiator table from the storage system, if your system has booted and the zones have been established, and no Fibre Logged In entries are appearing as Yes.

If, after 60 seconds, the storage system still does not show a Yes in the Fibre Logged In column, examine the zoning configuration and status using the fabric switch configuration tool supplied by the switch manufacturer.

Registering the connection using Navisphere Manager

When you have established a connection between the SP and the HBA, you must register the connection. The registration process assigns a specific initiator type to the connection between the SP port and the HBA. This initiator type determines how the SP responds to SCSI commands received on the port.

To register the connection:

3. From the **Connectivity Status** dialog box, select the connection for the WWPN of the HBA, and click **Register** to open the **Register Initiator Record** dialog box.
4. Select the following:
 - **Initiator Type** of **CLARiiON Open**.
 - **ArrayCommPath** box to enable the correct LUNZ behavior.
 - **Unit Serial Number** of **Array**.
 - **Failover Mode** of **1**

5. In the **Host Information** box, select **New Host** or **Existing Host** and specify the following:
 - If this is a **New Host**, type the hostname and IP address.
 - If this is an **Existing Host**, click **Host**, and select the host from the list box.
6. Click **OK**.

After a few seconds, the **Connectivity Status** dialog box appears again with the registration status changed from No to Yes.

When you have completed registration for all of your new HBA connections, you are ready to create a storage group and make your LUNs visible to the host.

Software media, organization, and files

All AIX host media for this release is available from IBM. The latest EMC ODM definitions can be downloaded from ftp://ftp.emc.com/pub/elab/aix/ODM_DEFINITIONS

Installation

This section provides installation restrictions, instructions, and notes.

Installation instructions

Install the EMC CLARiiON FCP MPIO Support Software on the AIX host before configuring AIX Native MPIO with CLARiiON devices.

Troubleshooting and getting help

This section provides specific instructions for contacting EMC Customer Service and obtaining additional information about EMC products.

Where to get help

EMC support, product, and licensing information can be obtained as follows.

Product information

For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to the EMC Powerlink® website (registration required) at:

<http://Powerlink.EMC.com>

Technical support

For technical support, go to EMC WebSupport on Powerlink. To open a case on EMC WebSupport, you must be a WebSupport customer. Information about your site configuration and the circumstances under which the problem occurred is required.

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