



Hitachi VDS Hardware Provider for AMS/WMS/SMS Arrays

Companion Guide for VDS Applications

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Preface

This document describes how to use the Hitachi VDS Hardware Provider for AMS/WMS/SMS Arrays.

This preface includes the following information:

- ☐ [Intended Audience](#)
- ☐ [Software Version](#)
- ☐ [Document Revision Level](#)
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Intended Audience

This document provides information for System Administrators that install and configure the Hitachi VDS Hardware Provider.

Software Version

This document revision applies to Hitachi VDS Hardware Provider for AMS/WMS/SMS Arrays version 3.3 or higher.

Document Revision Level

Revision	Date	Description
MK-09DF8196-00	March 2009	Preliminary Release
MK-09DF8196-01	August 2009	Revision 1, supersedes and replaces MK-09DF8196-00.
MK-09DF8196-02	May 2010	Revision 2, supersedes and replaces MK-09DF8196-01.

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.

Before calling the Hitachi Data Systems Support Center, please provide as much information about the problem as possible, including:

- The circumstances surrounding the error or failure.
- The exact content of any error message(s) displayed on the host system(s).

Comments

Please send us your comments on this document: doc.comments@hds.com. Include the document title, number, and revision, and refer to specific section(s) and paragraph(s) whenever possible.

Thank you! (All comments become the property of Hitachi Data Systems Corporation.)

Setting Up the VDS Provider

This document explains how to set up and configure the Hitachi VDS Hardware Provider for AMS/WMS/SMS Arrays. The following topics are discussed:

- ☐ [Overview of the VDS Provider](#)
- ☐ [Supported Operating Systems](#)
- ☐ [Installing the Provider](#)
- ☐ [Uninstalling the Provider](#)
- ☐ [Creating the Provider Configuration File](#)
- ☐ [Required Array Configurations](#)
- ☐ [Troubleshooting](#)
- ☐ [Known Issues](#)

Overview of the VDS Provider

Virtual Disk Service(VDS) is part of Microsoft Storage services framework and provides the infrastructure for managing storage hardware and disks (LUNs). VDS provides a common storage management across any storage hardware. VDS also provides the interfaces for volume management on Windows Operating systems. VDS hardware provider is a vendor-supplied component used by the VDS service.

Virtual Disk Service questions and configures operations requested by end users, scripts, and applications. This service provides an API to the existing volume and disk management features, and combines volume management and hardware RAID management under a single API.

The VDS Hardware provider sends management commands to Hitachi Storage using TCP/IP. Any servers that have the VDS Hardware provider installed should have access to the management port of the Hitachi Storage.

The SMS arrays will always create a RAID 6 LUN. For detailed information on VDS, see the Microsoft Web Site. Figure 1 illustrates the configuration.

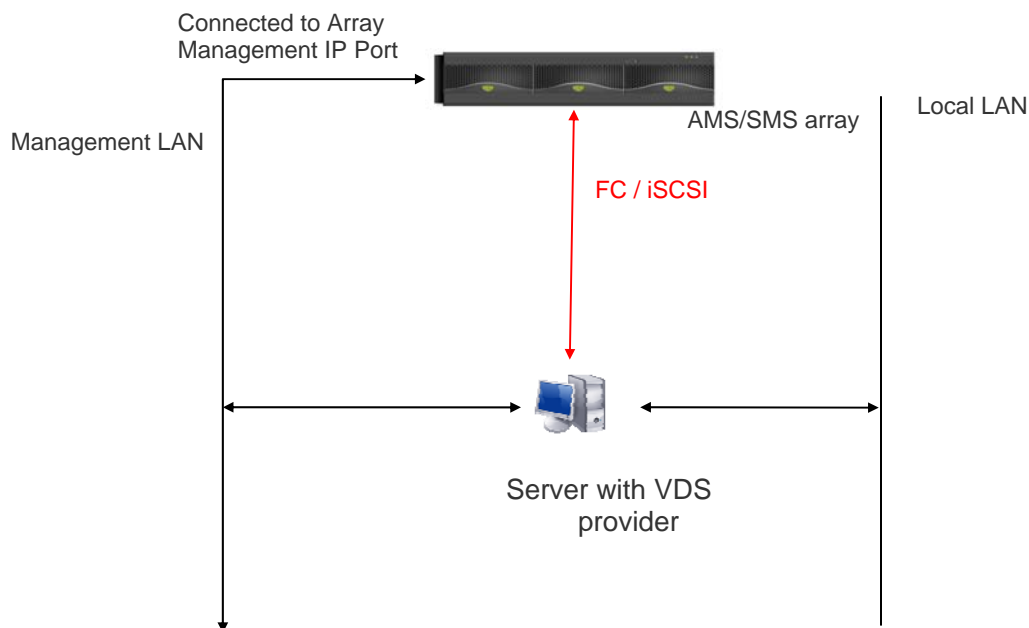


Figure 1 VDS Configuration

Supported Operating Systems

- Microsoft Windows Server 2003 SP2
- Microsoft Windows Server 2003 R2 SP2
- Microsoft Windows Server 2008

Installing the Provider

To install the provider, run the .msi file. The binaries will be installed in the default directory:

```
C:\Program Files\Hitachi Data Systems\HwProvider
```

Uninstalling the Provider

1. Open **Add/Remove Programs**.
2. Select the application **Hitachi VDS Hardware Provider** to uninstall the provider.

Creating the Provider Configuration File

The VDS Hardware provider sends commands to the Hitachi Storage using the controller management IP port. Create the configuration file (hiconfig.txt) in the installation directory of the provider (defaults to C:\Program Files\Hitachi Data Systems\HwProvider). Enter the IP address of all the controller management ports that will be used by the VDS provider. If you have two controllers, then enter both IP addresses in the configuration file.

The format of the configuration file is a list of IP addresses of the Controller Management port. An example of the configuration file contents is:

```
192.168.0.16  
192.168.0.17
```

Required Array Configurations

The following configurations are required for the VDS provider to operate properly:

- Access mode--Host Group/Target Security--The Host Group/Target Security must be enabled for all the ports. Set this option using Storage Navigator Modular (SNM).
- LU mapping mode--The LU Mapping mode must be enabled. Set this option using Storage Navigator Modular (SNM).
- RAID Groups--If you want to use Storage Manager for SANs, create RAID groups before attempting to use this application.

Creating LUNs

The provider supports the following LUN Types for LUN Creation:

- Mirrored (RAID 1+0, RAID 1)
- RAID 5
- RAID 6 (only for SMS arrays)

Deleting LUNs

- The provider will delete the entire LU mapping for that LUN.
- If a LUN is deleted from a Host Group/Target and the LU list is empty, the Host Group/Target (if created by the VDS provider) will be deleted.

Extending LUNs

The provider supports LUN capacity extension for all WMS/AMS/SMS arrays for the following LUN types:

- Mirrored (RAID 1+0, RAID 1)
- RAID 5
- RAID 6



Note: LUN extension functionality for RAID 0 is not supported.

Shrink LUNs

The provider supports Shrinking LUN capacity for only AMS 2000 and SMS arrays for the following LUN types:

- Mirrored (RAID 1+0, RAID 1)
- RAID 5
- RAID 6



Note: LUN Shrink functionality for RAID 0 is not supported.

HDP LUNs

LUNs that are created off a DP Pool can be viewed/enumerated as HDP LUNs. The HDP LUNs are applicable only on AMS 2000 family.

Assigning LUNs

FC Provider

- If the WWN is already configured in the array, the provider will use the existing Host Group for LUN assignment.
- If the WWN is not configured, the provider will choose the port with the least number of LUs and then create a new Host Group, and then assign the LUN to the created Host Group.

iSCSI Provider

To view a LUN assigned to a target on the local server, navigate to the **iSCSI Initiator Properties** panel and log on to the iSCSI targets.



Note: After a LUN is assigned to a Target, the LUN may not be visible to the local server until the local iSCSI initiator is logged on to the target using the **iSCSI Initiator Properties** panel.

Troubleshooting

Table 1 lists different scenarios and their resolutions. Use the VDS Provider's DIAG tool to diagnose and send information on problems to Hitachi Data Systems.

Table 1 Troubleshooting

Issue	Resolution
The Storage Manager for SAN displays an error that it cannot find any available VDS providers.	Exit all applications and stop the VDS service using the command: <code>net stop vds</code> .
The LUN Name used in Storage Manager for SAN is lost after restarting the application or rebooting the server.	None. The array does not support storing of LUN name information.

Limitations

- The iSCSI provider does not support Target security like CHAP and Initiator Secret.
- In the Storage Manager for SANs, **Log on to iSCSI Targets..** may report incorrect logon status.

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