

Dell™ PowerEdge™ Cluster FE500-IA64 Systems Platform Guide

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Notes, Notices, and Cautions



NOTE: A NOTE indicates important information that helps you make better use of your computer.



NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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June 2004

P/N N5828

Rev. A01

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This document provides information for installing and connecting peripheral hardware, storage, and storage area network (SAN) components to your Dell™ PowerEdge™ Cluster FE500W-IA64 solution. The configuration information in this document is specific to the Microsoft® Windows® Server 2003, Enterprise Edition for 64-bit Itanium-based Systems operating system.

This document covers the following topics:

- Configuration information for installing peripheral hardware components, such as storage systems, HBAs, NICs, and PCI adapter cards into Cluster FE500W-IA64 configurations
- Configuration rules and guidelines for direct-attached configurations
- Configuration rules and guidelines for SAN-attached configurations



NOTE: Configurations not listed in this document may not be certified or supported by Dell or Microsoft.



NOTE: In this guide and in other cluster documentation, the Microsoft Cluster Service is also referred to as MSCS.

Supported Cluster Configurations

This section provides information about supported cluster configurations for your PowerEdge cluster configuration.

Table 1-1 provides a list of supported cluster configurations for the Cluster FE500W-IA64 systems running Windows Server 2003, Enterprise Edition for 64-bit Itanium-based Systems.



NOTE: Each cluster node must be of the same system model and have two or more processors.

Table 1-1. Supported Cluster Configurations


PowerEdge Cluster	Supported PowerEdge Systems	Supported Storage Systems	Supported Cluster Interconnect (for the Private Network)
FE500W-IA64	7250	Dell EMC CX300 Dell EMC CX500 Dell EMC CX700	Any Ethernet NIC supported by the system. NOTE: All nodes in the same cluster must use homogeneous (identical) Ethernet NICs for the cluster interconnect.


Obtaining More Information

See the *Dell PowerEdge Cluster FE500W-IA64 Installation and Troubleshooting Guide* for a detailed list of related documentation.

High-Availability Cluster Configurations

This section provides information about the supported operating systems, HBAs, and HBA drivers for your cluster configuration.

 **NOTICE:** All cluster nodes in a Cluster FE500W-IA64 solution must run the same operating system.

 **NOTICE:** HBAs must be identical if they are installed in clusters using redundant paths. Cluster configurations are tested and certified using identical HBAs installed in all of the cluster nodes. Using dissimilar HBAs in your cluster nodes is not supported.

Service Pack Support

At the time this document was printed, a service pack was not available for the Windows Server 2003 Enterprise Edition for 64-bit Itanium-based Systems operating system. However, hotfix **KB818877** and the most recent StorPort hotfix are required. These hotfixes will be incorporated into Service Pack 1 when it is available.

See Knowledge Base articles **KB818877** and **KB838894**, the current StorPort hotfix at this time, located on the Microsoft support website at www.microsoft.com for more information.

HBA Support for PowerEdge Cluster FE500W-IA64 Configurations

The Cluster FE500W-IA64 configuration supports the QLogic QLA2340 HBA. No additional HBAs are supported.

See "Installing Peripheral Components in Your Cluster Node PCI Slots" for PCI slot recommendations.

Fibre Channel Switches

When you are configuring your Cluster FE500W-IA64 solution, use the following guidelines:

- Dual (redundant) fabric configurations are required.
- A maximum of 16 switches may be used in a SAN.
- A minimum of two and a maximum of eight Inter-Switch Links (ISLs) may exist between any two directly communicating switches. A single ISL is permitted only when connecting to a remote switch in a EMC[®] MirrorView[™] configuration.
- A maximum of three hops (the number of ISLs each data frame must traverse) may exist between a host and a storage system.

Rules and Guidelines

When configuring your cluster, all cluster nodes must contain identical versions of the following:

- Operating systems and service packs
- Hardware drivers, firmware, or BIOS for the NICs, HBAs, and any other peripheral hardware components
- Systems management software, such as Dell OpenManage™ systems management software and EMC Navisphere® storage management software

Maximum Distance Between Cluster Nodes

Table 1-2 lists the maximum cable lengths that are used in a Cluster FE500W-IA64 configuration.

Table 1-2. Maximum Cable Lengths

Cable Configuration/Type	Maximum Cable Length
<ul style="list-style-type: none">• HBA to a switch	300 meters using multimode fiber at 2Gb/sec.
<ul style="list-style-type: none">• HBA to a storage system• Fibre Channel switch to a storage system	NOTE: You can increase the total distance between a server and a storage system by using switch ISLs.
<ul style="list-style-type: none">• Copper Gigabit Ethernet	100 meters
Optical Gigabit Ethernet	550 meters
	NOTE: You can extend this distance by using switches and VLAN technology

Maximum Latency Between Cluster Nodes

The maximum latency for a round-trip network packet between nodes is 500 milliseconds.

Obtaining More Information

See the *Dell PowerEdge Cluster FE500W-IA64 Installation and Troubleshooting Guide* for installation instructions about hardware configurations running Windows Server 200, Enterprise Edition for 64-bit Itanium-based Systems.

Installing Peripheral Components in Your Cluster Node PCI Slots

This section provides configuration information for adding HBAs, a DRAC III, and RAID controllers into your cluster node PCI slots.

Table 1-3 provides configuration information for the supported PowerEdge cluster nodes.



CAUTION: Only trained service technicians are authorized to remove and access any of the components inside the system. See your PowerEdge *System Information Guide* for complete information about safety precautions, working inside the computer, and protecting against electrostatic discharge.

Table 1-3. PCI Slot Assignments for PowerEdge Cluster Nodes

PowerEdge System	PCI Buses/Segments	HBA	DRAC III	RAID Controller
7250	PCI-X bus 0: PCI slot 1 through 3 are 64-bit, 100 MHz PCI-X bus 1: PCI slots 4 and 5 are 64-bit, 100 MHz; PCI slot 6 is 64-bit, 133 MHz PCI-X bus 2: PCI slots 7 and 8 are 64-bit, 133 MHz	For dual HBA configurations, install the HBAs on separate 64-bit PCI buses to balance the load on the system.	Install the new or existing DRAC III in slot 1.	Install the RAID controller in PCI slot 1, 2, 3, or 4.

Attaching Your Cluster Shared Storage System in a Direct-Attach Configuration

This section provides the rules and guidelines for attaching your cluster nodes to the shared storage system using a direct connection (without Fibre Channel switches).

In a direct-attached configuration, both cluster nodes are connected directly to the storage system.

Rules and Guidelines

The rules and guidelines described in Table 1-4 apply to direct-attached clusters.

Table 1-4. Direct-Attached Clusters Rules and Guidelines

Rule/Guideline	Description
Primary storage	Windows Server 2003, Enterprise Edition for 64-bit Itanium-based Systems can support more than 22 shared logical drives through mount points. Only one storage system can be direct-attached to the cluster.
Fibre Channel HBAs supported	QLogic QLA2340.
QLogic driver version	Storport driver 9.00.17 or later.
Operating system	Each direct-attached cluster must run Windows Server 2003, Enterprise Edition for 64-bit Itanium-based System.
Dell EMC CX300 core software	2.06.300 or later.
Dell EMC CX500 core software	2.06.500 or later.

Table 1-4. Direct-Attached Clusters Rules and Guidelines (continued)

Rule/Guideline	Description
Dell EMC CX700 core software	2.06.700 or later; however, Access Logix™ Option 01.01.5 or later must be installed and enabled if two clusters or a mix of clustered and nonclustered hosts are direct-attached to the CX700.
Additional software application programs	EMC Navisphere Agent 6.6 or later. EMC Navisphere Manager 6.6 or later. EMC PowerPath® 3.0.6 or later. EMC AdminSnap version 2.10.06 or later (not supported on the Dell EMC CX300). QLogic SANsurfer SANblade Manager for Windows version 2.0.29 or later.

Attaching Your Cluster Shared Storage System to a SAN

This section provides the rules and guidelines for attaching your PowerEdge cluster nodes to the shared storage systems through a Dell | EMC SAN using redundant Fibre Channel switch fabrics.

Rules and Guidelines

The rules and guidelines described in Table 1-5 apply to SAN-attached clusters.

Table 1-5. SAN-Attached Clusters Rules and Guidelines

Rule/Guideline	Description
Primary storage	Windows Server 2003, Enterprise Edition for 64-bit Itanium-based Systems can support more than 22 shared logical drives through mount points. Up to four Dell EMC Fibre Channel disk arrays are supported per cluster in a SAN environment.
Fibre Channel switch configuration	Redundant switch fabrics required.
Fibre Channel switch zoning	Single-initiator zoning.
Fibre Channel switches supported	Dell EMC DS-16B2 (Brocade SilkWorm 3800), Brocade SilkWorm 3200.
Fibre Channel switch firmware	Version 3.1.2a or later.
Fibre Channel HBAs supported	QLogic QLA2340.
QLogic driver version	Storport driver 9.00.17 or later.

Table 1-5. SAN-Attached Clusters Rules and Guidelines (continued)

Rule/Guideline	Description
Operating system	Each cluster attached to the SAN must run Windows Server 2003, Enterprise Edition for 64-bit Itanium-based Systems.
Dell EMC CX300 core software	2.06.300 (with Access Logix Option 01.01.5 or later installed and Access Control enabled) or later.
Dell EMC CX500 core software	2.06.500 (with Access Logix Option 01.01.5 or later installed and Access Control enabled) or later.
Dell EMC CX700 core software	2.06.700 (with Access Logix Option 01.01.5 or later installed and Access Control enabled) or later.
Additional software application programs	EMC Navisphere Agent 6.6 or later.
	EMC Navisphere Manager 6.6 or later.
	EMC PowerPath 3.0.6 or later.
	EMC MirrorView version 1.85.5 or later
	EMC SnapView™ version 2.03.5 or later
	QLogic SANsurfer SANblade Manager for Windows version 2.0.29 or later.

Obtaining More Information

See the *Dell PowerEdge Cluster FE500W-IA64 Installation and Troubleshooting Guide* for more information about SAN-attached clusters. You can also see the Dell Support website at support.dell.com.

See the *Dell PowerEdge 7250 Systems Product Guide* for information about installing peripheral system components and servicing your PowerEdge 7250 systems.



0N5828A01

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