Storage Center™ 5.5

System Upgrade

from version 4.5.6 (and above)

Dell Compellent

Storage Center 5.5 System Upgrade

680-025-009

Revision	Date	Description
A	3/16/11	Initial release in support of Storage Center 5.5.2.
B	4/11/11	Updated to include new locations for contacting Dell technical support and downloading product manuals.

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Contents

Preface

Purpose

This guide describes how to upgrade Storage Center software from version 4.5.6 and above to version 5.5 and from version 5.0 and higher to version 5.5.

Related Publications

While using this guide, you may also want to refer to the following related publications:

- *Storage Center System Manager User Guide*

  Provides instructions for using Storage Center System Manager to manage storage.

- *Enterprise Manager User Guide*

  Provides instructions for managing multiple Storage Centers.

To download Dell Compellent product manuals, go to:

http://www.dell.com/manuals

Contacting Dell Support Services

Please contact Dell Technical Support Services from the following address if you need support assistance:

http://support.dell.com/compellent

Upgrading to Storage Center 5.5

Introduction

If configured to do so, Storage Center automatically checks for updates. However, once an update is downloaded to your system, you must manually install the upgrade. For more information about configuring the Storage Center upgrade process, refer to the *Storage Center 5.5 User Guide.*

You cannot upgrade directly to Storage Center 5.5 from versions prior to Storage Center 4.5.6. You must first upgrade to Storage Center 4.5.6 and then install the Upgrade Package that manages system updates.

To upgrade to Storage Center version 4.5.6, refer to the *Storage Center 4.5 System Upgrad*e.

Note You must upgrade the Storage Center software before making hardware changes to a system.

Types of Update Components

Within an update package, an individual update component is classified by how the update component can be installed:

- Required or Deferrable: Required components must be installed as part of the update; Deferrable components can be installed at a later time.

- Service Affecting or Service Optional: Service Affecting components can be installed only when the Storage Center is temporarily taken out-of-service to perform the update; Service Optional components can be installed either when the Storage Center is in service or during a scheduled outage.

The following table shows which components affect service during installation.

	Service Affecting	Service Optional
Storage Center with Single Controller		
Storage Center Firmware Update	☑	
** Enclosure Firmware Update	☑	☑
Disk Firmware Update	☑	
Storage Center with Clustered Controllers		
Storage Center Firmware Update		☑
** Enclosure Firmware Update	☑	☑
Disk Firmware Update	☑	

** Only the following enclosure firmware allow Service Optional installation:

- Fibre Channel SBOD enclosures, Model EN-SB4X16
- Fibre Channel SBOD enclosures Model EN-SB2X16
- Fibre Channel SATA enclosures, Model EN-SA2X16
- SAS enclosures, Model EN-SASX2X12

All other enclosure firmware installation is Service Affecting.

Downloading an Available Update

Storage Center can automatically download updates. To manually download an available update:

1 From the **Storage Management** menu, select **System>Update>Update Status**. The Update Status dialog appears.

2 Click **Download Now**.

As Storage Center downloads the update, status appears in a separate dialog. When Storage Center is finished checking for updates, the results are displayed in the **Update Status** dialog. See for details.

Checking Update Status

From the Storage Management menu, select **System > Update > Update Status**. The **Update Status** display appears, showing current status information.

Update Status States

Refer to the following table for details on all possible messages:

Field	Description
Current Update Status	Current status of the Check Update, Download Update, or Install Update process: • Checking for Update: Storage Center is currently checking for updates. • Controller Down: A controller is down. Installation cannot proceed when a controller is down. • Downloading Update: Storage Center is currently downloading an update. • Error Checking or Downloading: An error occurred during Check Update or Download Update. • Error Installing Update: An error occurred while installing an update component. Click Install Report to view details on the installation error. • Installing Update: Storage Center is currently installing an update. • No Updates Available: Last Check Update process found no available updates. Click Check Now to check again for updates. • Update Available for Download: An update is available for download. Click Download Now to download the update. • Update Ready to Install: A downloaded update is ready to install. Click Install Update to install the update. • Validating Components: Storage Center is currently verifying each component status to determine if a component is ready for installation.
Current Package Version	Package version currently running on the Storage Center.
New Package Version	Package version of the package ready to download or install.
Service Affecting	Indicates whether package installation affects Storage Center service: • Yes: Package installation affects Storage Center service. • No: Package installation does not affect Storage Center service. • Deferrable: Package contains service-affecting components that can be installed at a later time.

Field	Description
Controller Reset	Indicates whether the update package installation requires restarting the controllers: • For a single-controller Storage Center: restarting the controller always affects service. • For a clustered-controller Storage Center: If the upgrade is service-affecting, the controllers are restarted simultaneously. If the upgrade is not service-affecting, the controllers are restarted in sequence.
Last Check Time	Shows the date and time when Storage Center last successfully checked for updates.
Validation Errors	Shows the number of validation warnings or errors, if any, encountered during a Validate Update process.
Installation Errors	Shows the number of installation errors and warnings, if any, that occurred during installation.

Update Status Actions

Depending on the reported status, the following buttons appear:

Click …	To …
Check Now	Check for updates. See Checking Update Status on page 5.
Validate Components	Validate update components. See Validate Components on page 9
Install Update	Install the downloaded update package. Installing an Upgrade on page 9
Details	View details for a downloaded update package. See Viewing Update Package Details on page 7.
Installation Report	View installation warnings and/or errors for the last installation. If no warnings or errors were reported, the Installation Report button is not displayed. See Check for Additional Updates on page 13.

Viewing Update Package Details

When a downloaded update package is ready to install, you can view details for the package prior to installing the package. To view package details:

1 From the Storage Management menu, select **System > Update > Update Status**. The **Update Status** dialog appears.

2 Click **Details**. The **Update Details** dialog appears.

This dialog provides details for all components included in the update package.

Column	Description
Component	Name of component to be updated.
Type	Type of component to be updated: • **Storage Center:** Component updates Storage Center software. • **Enclosure**: Component updates enclosure firmware. • **Disk**: Component updates disk firmware.
Version	Version number of the update component.
Status	Status of the component update: • **Ready for Update:** Component is ready for update. • **Installed:** Component has been installed.
Update Count	Number of components on the Storage Center to which the update component applies. For example, for a controller firmware update, shows 1 for a single-controller Storage Center and 2 for a clustered-controller Storage Center.
Update Type	Indicates whether the installation of the update component is required or deferrable: • **Required:** Update component is required. • **Deferrable Service Affecting:** Update component is deferrable and the component must be installed during a scheduled outage. • **Deferrable Service Optional:** Update component is deferrable and you can select whether to install the component in background when the Storage Center is in service or you can install the component during a scheduled outage.
Message	Shows information messages, if any, that further describe the update component.

Deciding How to Apply Updates

The options available for applying updates to the Storage Center are dependent on the Storage Center configuration (single- or clustered-controller, enclosure types, and disk types) and the update component types included in the update package. Applying updates to the Storage Center can be performed:

• In Service: Components that do not affect service or are service optional can be applied in background mode while the Storage Center is in service. However, the completion of the installation can take significantly more time to complete in-service as compared to installing the components during a scheduled service outage.

• Scheduled Service Outage: Components that affect service must be applied during a scheduled service outage. These components require restarting the Storage Center controllers to complete the installation. Components that are service optional can also be applied during a scheduled service outage to speed up installation.

To decide how to apply updates:

1 After downloading an update packages, view update details:

    a From the Storage Management menu, select **System > Update > Update Status**. The **Update Status** dialog appears.

    b Click **Details**. The **Update Details** dialog appears.

2 In the **Update Details** dialog, view the **Update Type** column for each component:

For this Update Type …	Apply Update Options Include …
Required	Component must be installed. • For a single-controller Storage Center, the update component affects service. • For a clustered-controller Storage Center, the update component can be performed without disruption of service.
Deferrable Service Affecting	Component installation can be deferred. Applying the update affects service on all systems. Schedule a service outage to apply the update.
Deferrable Service Optional	Component installation can be deferred. Applying the update can be done either without affecting service or during a scheduled service outage.

3 After viewing the **Update Type** for all components included in the update package, determine how to apply the updates:

• If you intend to install components that affect service, plan for and schedule a service outage during which to apply the updates. You may also want to install components that are service optional during the schedule outage.

• If you intend to install components that do not affect service, plan for applying the updates during a time at which the Storage Center is least busy.

Installing an Upgrade

The install process automatically restarts the Storage Center controllers. For clustered-controller Storage Centers, the Install process restarts the controllers in sequence or simultaneously, depending on the components being updated. Because the Install process automatically restarts the Storage Center controllers, perform an installation only when you are ready to restart the Storage Center.

Note Do not manually restart the Storage Center controllers during the upgrade process. Upgrading is a software-controlled process.

When you are ready to apply update components to the Storage Center, do the following:

Phone Home

⇨ *To use Phone Home*

1 From the Storage Management window, select **System > Phone Home > Phone Home**.

2 From the displayed window, select **Phone Home Now**. When the system reports success for all Phone Home transfers, click **Close**.

Back Up the System

Make sure that backups are up-to-date and Replications are synchronized.

Validate Components

⇨ *To validate components*

1 From the Storage Management window, select **System > Update > Update Ready to Install - Install Now**.

2 On the displayed window, click **Validate Components**. If Storage Center detects a problem when validating update components, the **Validate Components** dialog displays a summary of validation problems. To re-validate an update package, when validation results are displayed, click **Revalidate Components**.

Storage Center re-validates update components and returns the results. Validation problems are classified as warnings or errors. In general, validation warnings indicate a connection or cabling issue with a component that prevents the component from being updated; validation errors indicate that a file required by an update component cannot be found. When a validation warning or error is displayed, resolve the issue before continuing with the installation.

Note If Validation warnings and/or errors cannot be resolved, contact Copilot services for assistance in resolving the errors. Do not force an installation without the assistance of Copilot support.

Install Update

When the system reports that all installation components have been successfully validated, you can install the update.

⇨ *To install an update*

1 Click **Install Update**.

2 From the displayed window, select the component updates you want to apply to the Storage Center:

- Apply the required portion of the update package: This option applies only the required portion of the update package.

- Apply updates that will not disrupt service: This option applies the required portion of the update package and all updates that do not disrupt service; that is, components that can be installed in-service.

- Apply updates that will disrupt service (exclude service optional): This option applies the required portion of the package and all update components that affect service. Components that are service optional (that is, can be installed in-service) are excluded.

- Apply all updates: This option applies all updates in the update package, including all deferrable updates, both **Service Affecting** and **Service Optional**. Service optional components can be installed in-service.

Note Depending on the updates, the estimated completion time for **Service Optional** enclosure updates may be significantly shorter using the **Apply all updates** option as compared to the **Apply updates that will not disrupt service option**.

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3 Once you have selected the way to apply updates, view information for the update you have selected:

- **Service Affecting**: Displays whether the installation of the selected components affects service.

- **Controller Reset**: Displays whether the installation causes a controller restart.

- **Estimated Completion Time**: Time estimate for the installation.

4 Click **Continue**. A summary of the selected installation options appears.

The installation process automatically restarts the Storage Center.

Note Do not click **Install Now** until you are ready to restart the Storage Center.

For an installation that does not affect service

Read the summary screen messages, and click **Install Now**.

For an installation that affects service

1   Read the summary screen messages, and click **Continue**.

2   Halt all IO to the Storage Center.

3   Click **Install Now**.

Note If the installation encountered errors, an Installation Report is generated. Refer to Checking the Installation Report on page 14.

Completing the Upgrade

Reconnect to the Storage Center

Open a browser. Enter the name or IP address of the Storage Center.

⇨ *To finish the upgrade*

- Define Server Operating Systems
- Rebalance Ports on Clustered-Controller Storage Centers
- Verify that the System Cache is Enabled
- Check for Additional Updates
- Phone Home

Define Server Operating Systems

Identifying the operating system of your servers allows Storage Center to streamline volume mapping. If you do not define server operating systems now, Storage Center will ask you to define server OS each time you re-enter the name or IP address of the Storage Center System.

When you connect to the Storage Center, the **Startup Wizard** appears, asking you to define server operating systems.

1   For each server, select an operating system. The **Startup Wizard** lists all operating systems supported by the Storage Center.

2   Click **Save Server Configurations**.

Note   You can subsequently change the operating system identified with a server by right-clicking on the server in the System Manager system tree and selecting **Properties**. The choice of operating systems reappears.

Rebalance Ports on Clustered-Controller Storage Centers

For clustered-controller Storage Centers, rebalance ports:

1   Click on the **Controllers** icon to view controller status.

2   When both controllers are up, the local port condition may be unbalanced. If so, click **Rebalance Ports**. The system rebalances the ports.

3   Verify that both controllers are running the new version of code. From the **Help** menu, select **About Compellent Storage Center**. A window appears. displaying the new version level.

Verify that the System Cache is Enabled

Note Global cache settings overwrite cache settings for individual volumes. To enable caching for some volumes and not others, enable caching system-wide and then disable caching for individual volumes.

⇨ *To enable read and write cache*

1 When the upgrade is complete and the system is restarted, enable read and write cache. From the Storage Center Storage Management menu, select **Properties > System.**

2 Click the **Cache** tab.

3 Click **Read** or **Write** cache.

4 Click **OK**.

Check for Additional Updates

After the upgrade is complete, check for Storage Center updates that may have become available after the Storage Center release.

⇨ *To check for available updates*

1 From the Storage Management menu, select **System>Update>Update Status**.

2 Click **Check Now**. As Storage Center checks for updates, status appears in the **Update Status** dialog.

If an update is available, install the update following the instructions in .

Note After upgrading to 5.5 for the first time, the **Check for Additional Updates** command always reveals this message: **Compellent MappingOS did not get applied on the first pass.** This component can be subsequently installed in a non-service affecting manner and only requires a few moments to install.

Phone Home

After completing the software upgrade, phone home. From the Storage Management menu, select **System > Phone Home > Phone Home**.

Checking the Installation Report

The **Installation Report** summarizes warnings and errors encountered during installation. If no warnings or errors were encountered during installation, an installation report is not generated, and the **Installation Report** button is not displayed on the **Update Status** dialog.

⇨ *To see an Installation Report*

1 From the Storage Management menu, select **System > Update > Update Status**.

1 Click **Installation Report**. The report is displayed.

2 Click **Return** to close the display.

680-025-009 B