

## 6Gb SAS BL Switch Installation Instructions

This document details procedures for installing an HP StorageWorks 6Gb SAS BL Switch in an HP BladeSystem c-Class enclosure.

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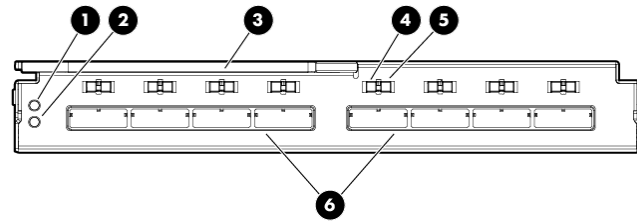
www.hp.com



### Key installation steps include:

1. Getting started
2. Planning the configuration
3. Selecting the interconnect bay
4. Installing the switch
5. Accessing the switch
6. Updating switch firmware
7. Connecting cables to the switch
8. Configuring the switch

### Front panel and LED definitions



1	Unit ID LED	Off	Normal
		Blue	Solid—Being identified Blinking—Firmware is being updated
2	Health LED	Off	Not powered up
		Green	Solid—Healthy
		Amber	Blinking—Error, there is a problem with the switch
3	Locking latch handle		
4	Link LED	Off	No link between the port and external storage enclosure
		Green	Solid—Link between port and external storage enclosure is established Steady blinking (1Hz)—Switch hardware or software is starting up. Access to the switch and its VSM software is restricted and server blades with SAS mezzanines mapped to the switch interconnect bay are restricted from starting up. Irregular blinking—There is activity on the established link
5	Fault LED	Off	Normal
		Amber	Solid—Link error, there is a problem with the SAS port on the switch or external storage enclosure, or with the SAS cable
6	SAS ports (to external devices)		

### Before you begin

#### ⚠ CAUTION:

- Removing a module can significantly change air flow within an operating enclosure. Each enclosure bay must be populated with a module or blanking panel for the enclosure to cool properly. Remove a module or blanking panel from an enclosure bay only when a new module is available to install in that bay.
- Parts can be damaged by electrostatic discharge. Use proper anti-static protection. For more information, see HP c-Class BladeSystem or SAS BL Switch user guides.
- For safety information and regulatory notices, see the SAS BL Switch user guides.

### Getting started

- Familiarize yourself with information available on the HP BladeSystem website: <http://www.hp.com/go/ bladesystem>.
- Navigate through the HP BladeSystem website to learn more about BladeSystem c-Class enclosures, this SAS BL Switch, mezzanine cards, servers, and other BladeSystem components. Product pages, overviews, QuickSpecs, and user documents for all BladeSystem products are accessible from this website.
- Scroll down the left pane of the HP BladeSystem website and click **Technical Resources** to access to the HP BladeSystem Technical Resources page. Tabs across the top of this page provide access points to planning, installation, maintenance, and troubleshooting information. User documents for all BladeSystem components are located on the **Installing** tab.
- Obtain the following documents; they are needed when planning, installing, and configuring the switch:
  - *HP BladeSystem Deployment Guide for Solutions with 6Gb SAS BL Switches and External SAS Storage Enclosures*
  - *HP 6G Virtual SAS Manager User Guide*
  - *HP StorageWorks 6Gb SAS BL Switch User Guide*
  - *HP BladeSystem 6Gb SAS BL Switch QuickSpecs*
 These documents are available on the BladeSystem Technical Resources page (described above) and on the HP Manuals page at <http://www.hp.com/support/manuals>.

### Planning the configuration

For both single- and dual-domain deployments, a variety of cabling and configuration strategies are available. Consider the server blades, switches, external storage enclosures, and external backup devices in your deployment and develop plans for cabling the external devices and for zoning the switch to control access to the storage.

For assistance, HP recommends using the *HP BladeSystem Deployment Guide for Solutions with 6Gb SAS BL Switches and External SAS Storage Enclosures*. The deployment guide provides guidelines, instructions, and configuration examples for solutions centered around an HP BladeSystem c-Class enclosure with server blades, SAS BL switches, SAS mezzanine cards, and external SAS storage enclosures.

### Selecting the interconnect bay

HP BladeSystem c-Class enclosure interconnect bays map to servers via the slots in which the mezzanine cards are installed in the server blades. When selecting an interconnect bay for a switch, make sure that the selected bay maps to the desired server blades. For information about mappings, see the user documents for your BladeSystem c-Class enclosure model. For information about supported mezzanine cards, see the HP 6Gb SAS BL Switch QuickSpecs.

#### ⓘ IMPORTANT:

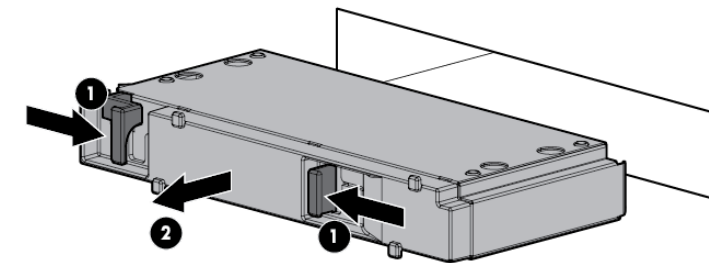
This switch can be deployed in both single- and dual-domain environments. When used in dual-domain configurations, the two switches must be installed in the same row of the BladeSystem c-Class enclosure.

### Installing the switch

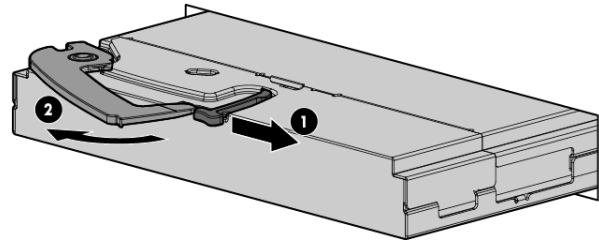
#### 📌 NOTE:

- Make sure that mezzanine cards are installed in server mezzanine slots that map to the selected BladeSystem c-Class enclosure interconnect bay.
- The 6Gb SAS BL Switch may be hot-installed in an operational enclosure.
- The 6Gb SAS BL Switch does not have a power on/off button. Power is automatically applied or removed when the switch is installed or removed from the enclosure. Power can also be applied or removed through the Onboard Administrator application.
- Connect SAS cables to external storage enclosures only after confirming that the desired firmware version is installed on the switch.

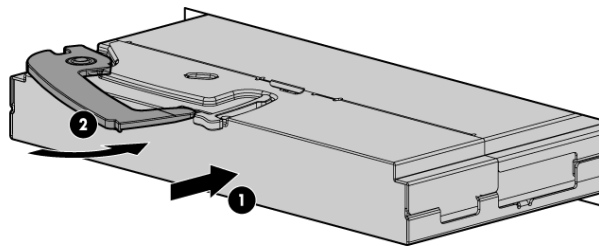
1. Remove the air baffle from the selected interconnect bay.



2. Prepare the switch.



3. Install the switch in the open interconnect bay.



When installed in an operational enclosure, the switch automatically powers up and performs a series of Power On Self Tests.

**NOTE:**

Do not connect cables to the switch at this time. HP recommends connecting cables only after confirming that the switch is operational and has the desired, supported version of firmware installed.

4. Note the following during startup:

- All eight switch Link LEDs will blink while the switch and the VSM software are starting up.
- Startup time is approximately two minutes. If startup is longer than two minutes, confirm that a supported version of Onboard Administrator is installed on the system.
- After the switch and the VSM software has started up successfully, the switch Health LED will be solid green.
- If the Health LED is amber or off, remove the switch from the BladeSystem enclosure Interconnect Bay and reinstall it, pressing firmly on the switch and its locking latch handle to ensure it is seated properly. If trouble persists, see the "Troubleshooting" section of the HP BladeSystem enclosure setup and installation guide.

For more information about switch LED patterns, see "Front panel and LED definitions" on page 1.

## Accessing the switch

The switch is configured and managed through the HP Onboard Administrator and HP 6G Virtual SAS Manager (VSM) applications.

To access VSM:

1. Access Onboard Administrator (OA).

**IMPORTANT:**

3.10 is the minimum OA version supported for use with 6Gb SAS BL Switch firmware 1.0.x.0. Consult the QuickSpecs for the switch and confirm that a supported version of OA is installed.

2. In the OA Systems and Devices tree, expand the Interconnect Bays and select the HP 6G SAS BL Switch.
3. After selecting the SAS switch to manage, click **Management Console** and wait a few moments for the application to open.

For more information about accessing and using the VSM, see the *HP 6G Virtual SAS Manager User Guide*, available on the 6Gb SAS BL Switch manuals page at <http://www.hp.com/support/manuals>.

## Updating switch firmware

Firmware is pre-installed on each switch in the factory, but an updated, alternative, or preferred version may be available.

The installed firmware version is displayed in the VSM near the center of the HP Virtual SAS Manager banner. Access the VSM and make note of the installed firmware version on each 6Gb SAS BL Switch.

If needed, update firmware on the switches. For details, see the *HP 6G Virtual SAS Manager User Guide*, available on the 6Gb SAS BL Switch manuals page at <http://www.hp.com/support/manuals>.

**IMPORTANT:**

When two 6Gb SAS BL Switches are installed in the same row of a BladeSystem enclosure, make sure that they are running the same firmware version.

## Connecting cables to the switch

After confirming that the desired firmware is installed on the switch, connect SAS cables between the switch and the external SAS storage enclosures or external backup devices.

The 6Gb SAS BL Switch uses SAS cables with mini-SAS universal connectors. For a list of supported cables, see the 6Gb SAS BL Switch QuickSpecs.

For detailed cabling information, see the *HP StorageWorks 6Gb SAS BL Switch User Guide* and *HP BladeSystem Deployment Guide for Solutions with 6Gb SAS BL Switches and External SAS Storage Enclosures*. Both guides are available on the 6Gb SAS BL Switch manuals page at <http://www.hp.com/support/manuals>.

**IMPORTANT:**

Confirm that firmware installed on the external SAS devices is supported for use with the firmware installed on the switch. Consult the QuickSpecs for the switch and all attached external devices and confirm that compatible, supported versions of firmware are installed.

## Configuring the switch

Key configuration steps include:

- Entering switch parameters.
- Creating zone groups.
- Assigning zone groups to enclosure blade ports (servers).

The switch is configured using the HP 6G Virtual SAS Manager (VSM) application. For more information on zoning and configuration tasks, see the *HP 6G Virtual SAS Manager User Guide*, available on the 6Gb SAS BL Switch manuals page at <http://www.hp.com/support/manuals>.

## Additional information

HP BladeSystem: <http://www.hp.com/go/ bladesystem>

HP BladeSystem Technical Resources:  
<http://www.hp.com/go/ bladesystem/ documentation>

HP Storage: <http://www.hp.com/ storage>

HP Support: <http://www.hp.com/ support>

HP Manuals: <http://www.hp.com/ support/ manuals>