Drive Cage Upgrade Kit Installation Guide: Intel[®] Server Chassis SC5300 Intel[®] Entry Server Chassis SC5275-E

Order Number: C51491-002

This document provides instructions for installing the following accessory kits: AXX4FIXDB AXX4SCSIDB AXX6SCSIDB AXX6SATADB



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Important Safety Instructions

Important Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See *Intel Server Boards and Server Chassis Safety Information* at <u>http://support.intel.com/support/motherboards/server/safecert.htm</u>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen unter <u>http://support.intel.com/support/motherboards/server/safecert.htm</u>.

重要安全指导

在执行任何指令之前,请阅读本文档中的所有注意事项及安全声明。 和/或 http://support.intel.com/support/motherboards/server/safecert.htm 上的 *Intel Server Boards and Server Chassis Safety Information*(《Intel 服务器主板与服务器机箱安全信息》)。

Consignes de sécurité

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez *Intel Server Boards and Server Chassis Safety Information* rendez-vous sur le site <u>http://support.intel.com/support/motherboards/server/safecert.htm</u>.

Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea *Intel Server Boards and Server Chassis Safety Information* en http://support.intel.com/support/motherboards/server/safecert.htm.

Warnings and Cautions

These warnings and cautions apply whenever you remove the Access Cover to access components inside the server. Only a technically qualified person should integrate and configure the server.

WARNINGS

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The power button on the front panel DOES NOT turn off the AC power. To remove power from server, you must unplug the AC power cord from the wall outlet or the chassis.

Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cords, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

Hazardous voltage, current, and energy levels are present inside the power supply. There are no user-serviceable parts inside it; servicing should be done by technically qualified personnel.

ESD can damage disk drives, boards, and other parts. Perform all procedures in this document only at an ESD workstation. If one is not available, provide ESD protection by wearing an anti-static wrist strap attached to chassis ground any unpainted metal surface on your server when handling parts.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. Do not touch the connector contacts. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

For proper cooling and airflow, always install the Access Cover before turning on the server. Operating it without the cover in place can damage system parts.

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Before removing the Access Cover for any reason, observe these safety guidelines.

- 1. Turn off all peripheral devices connected to the server.
- 2. Turn off the server by pressing the power button on the front of the chassis. Unplug the AC power cord from the chassis or wall outlet.
- 3. Label and disconnect all peripheral cables and all telecommunication lines connected to I/O connectors or ports on the back of the chassis.
- 4. Provide electrostatic discharge (ESD) protection by wearing an anti-static wrist strap attached to a chassis ground—any unpainted metal surface—when handling components.

About the Drive Cage Upgrade Kits

Four- and six-drive cage upgrade kits allow you to install various hard drive solutions for the following Intel[®] server chassis:

Intel[®] Server Chassis SC5300

Intel[®] Server Chassis SC5300 Base Redundant Power (BRP)

Intel[®] Server Chassis SC5300 LX

Intel[®] Entry Server Chassis SC5275-E (six-drive SCSI or SATA hot swap drive cage upgrade kits only)

NOTE

Refer to your server board documentation to determine Serial ATA (SATA) support for your server system.

If you want to use your SATA drives for a RAID configuration, you may need to install a SATA RAID add-in card. Refer to your server board documentation and/or your SATA RAID card documentation for additional installation instructions and requirements.

Kit Contents Lists

Each upgrade kit contains different items. See the following for a list of contents for each upgrade kit.

Four-drive Fixed Drive Cage Upgrade Kit (AXX4FIXDB)

Item	Quantity
Drive cage assembly	1
Fixed drive rails (pre-installed in drive cage)	8
This manual	1

Four-drive SCSI Hot Swap Drive Cage Upgrade Kit (AXX4SCSIDB)

Item	Quantity
Drive cage assembly	1
SCSI hot swap drive carriers (pre-installed in drive cage)	4
SCSI cable	1
IPMB cable	1
This manual	1

Six-drive SCSI Hot Swap Drive Cage Upgrade Kit (AXX6SCSIDB)¹

Item	Quantity
Drive cage assembly	1
SCSI hot swap drive carriers (pre-installed in drive cage)	6
SCSI cable	1
IPMB cable	1
This manual	1

Six-drive SATA Hot Swap Drive Cage Upgrade Kit (AXX6SATADB)¹

Item	Quantity
Drive cage assembly	1
SATA hot swap drive carriers (pre-installed in drive cage)	6
SATA connection ID label	1
SATA cable	6
IPMB cable	1
I2C cable	1
This manual	1

Note: (1) Additional parts are required for integration into the Intel® Entry Server Chassis SC5275-E. These additional parts ship with the Intel® Entry Server Chassis SC5275-E.

Tools and Supplies Needed

Phillips^{*} (cross head) screwdriver (#2 bit) Flat-head screwdriver Anti-static wrist strap (recommended) Needle-nosed pliers Screws/fasteners (included with your server chassis) Serial ATA RAID card (dependent on installation) For Intel® Entry Server Chassis SC5275-E installation only: o Drive cage bracket (ships with the Intel Entry Server Chassis SC5275-E)

• Fan bracket (ships with the Intel Entry Server Chassis SC5275-E)

How to use this Guide

If you are installing drive cage upgrade kits into an Intel® Server Chassis SC5300, SC5300 Base Redundant Power (BRP) or SC5300 LX follow the instructions under the section titled "Intel® Server Chassis SC5300 Installation."

If you are installing drive cage upgrade kits into an Intel® Entry Server Chassis SC5275-E, follow the instructions under the section titled "Intel® Entry Server Chassis SC5275-E Installation."

For either chassis, if you are installing hot swap drives, follow the instructions under the section titled "Installing a Hot Swap Hard Drive."

For the Intel Server Chassis SC5300, if you are installing fixed drives, follow the instructions under the section titled "Installing a Fixed Hard Drive."

NOTE

This section only applies to drive cage upgrade kit installations in the Intel® Server Chassis SC5300, SC5300 BRP, or SC5300 LX. If you are installing a drive cage upgrade kit into an Intel Entry Server Chassis SC5275-E, follow the instructions under the section titled "Intel® Entry Server Chassis SC5275-E Installation."

Remove the Access Cover

When your chassis is upright (in a tower/pedestal position), and you are facing the front of it, the Access Cover is on the left side.

If your chassis is in a rack-mount configuration, the left side is already on the top.

To remove the Access Cover:

- 1. Observe all safety and ESD precautions listed at the beginning of this document.
- 2. Power the system off and disconnect the power cable(s).
- 3. Remove the shipping screw, if necessary (letter "A").
- 4. If the bezel is locked, unlock it.
- 5. Press the latch (letter "B") and slide the cover towards the rear of the chassis.
- 6. Lift the cover outward to remove it.





Figure 1. Removing Access Cover

Remove the Bezel Assembly

The Bezel Assembly consists of two parts, an inner bezel door and an outer bezel door. Both parts comprise the Bezel Assembly in the Pedestal configuration. In the Rack configuration, only the Inner Bezel Door is used.

NOTE

Note: For a rack configuration or chassis on its side, position the chassis hanging over the edge of a table or workbench before removing the bezel.

To remove the Bezel Assembly:

- 1. Release the two plastic tabs (letter "A") on the left side of the Bezel Assembly to disengage the tabs.
- 2. Rotate the bezel assembly (letter "B") no more than 40 degrees outward.
- 3. At a 40-degree angle, push the Bezel Assembly away from the chassis (letter "C"). If Bezel Assembly does not immediately disconnect from the chassis, then tap the left-hand side of the Bezel Assembly to disengage the bezel hooks on the right-hand side of the chassis.

Do not rotate the Bezel Assembly more than 40 degrees or you will damage the bezel hooks on the right-hand side of the Bezel Assembly.



Figure 2. Removing Bezel Assembly

Remove Hot Swap Fans

If your system is configured with hot swap fans, remove those hot swap fans that are positioned directly behind the drive cage(s) by pressing the latch on the fan (letter "A") and pulling on handle to remove from chassis.



Figure 3. Removing Hot Swap Fans from Chassis

Four-drive Upgrade Drive Cage Installation

Perform these steps to install the following:

Four-drive Fixed Drive Cage (AXX4FIXDB)

Four-drive SCSI Hot Swap Drive Cage (AXX4SCSIDB)

NOTE

If you are performing a six-drive upgrade drive cage installation, refer to "Six-drive Upgrade Drive Cage Installation" for install instructions.

1. Loosen screw and remove the placeholder grill from the 4-drive bay slot of the chassis.



Figure 4. Removing Grill

2. Slide the four-drive Fixed or SCSI drive cage into the 4-drive bay slot. You should hear a click when the blue plastic retention mechanism locks into place.



Figure 5. Installing Drive Cage into Chassis

Make Backplane Cable Connections.

For a four-drive Fixed drive cage installation:

- 1. Install hard drives. Refer to the section titled "Installing a Fixed Hard Drive" for instructions on installing hard drives into a Fixed drive cage.
- 2. Connect a power cable (letter "A") and a data cable (letter "B") to each installed hard drive.



Figure 6. Making Four-drive Fixed Drive Cage Cable Connections

For a four-drive SCSI hot swap drive cage installation:

- 1. Connect the SCSI data cable to the SCSI connector on the SCSI backplane (letter "A").
- 2. Connect two power cables to the power connectors on the SCSI backplane (letter "B").
- 3. Connect the HSBP_B header on the server board to the IPMB connector on the SCSI backplane (letter "C").



Figure 7. Making Four-drive SCSI Hot Swap Drive Cage Backplane Cable Connections

Six-drive Upgrade Drive Cage Installation

Use these steps to install the following:

Six-drive SATA Hot Swap Drive Cage (AXX6SATADB) Six-drive SCSI Hot Swap Drive Cage (AXX6SCSIDB)

NOTE

If you are performing a four-drive upgrade drive cage installation, refer to the section titled "Fourdrive Upgrade Drive Cage Installation" for install instructions.

1. If hard drives are installed in the existing 6-drive Fixed drive cage, disconnect the power and data cables to each drive. Push the blue plastic release mechanism (letter "A") upward to release the existing drive cage. Remove existing drive cage from 6-drive bay slot in chassis (letter "B").



Figure 8. Removing Six-drive Fixed Drive Cage from Chassis

2. Slide the 6-drive SCSI or SATA hot swap drive cage into the 6-drive bay slot. You should hear a click when the blue plastic retention mechanism locks into place.



Figure 9. Installing Six-drive Hot Swap Drive Cage into Chassis

Make Backplane Cable Connections.

For a six-drive SATA hot swap drive cage installation:

A WARNING

It is critical that you connect the SATA data cables correctly from the SATA backplane to your server board or RAID Controller card. Failure to do so may result in data loss.



Figure 10. Making Six-drive SATA Hot Swap Drive Cage Backplane Cable Connections

1. Connect two power cables (letter "A") to the power cable connectors on the SATA backplane.

2. Connect a SATA data cable (letter "B") to each appropriate SATA connector on the SATA backplane. The hard drives in the drive cage are numbered as follows when viewed from the front.

NOTE

The SATA cables are labeled to correspond with each drive. Make sure to connect the cables correctly to avoid confusion later.

Drive number	Position in a Pedestal- configured system	Position in a Rack - configured system
Drive 0	Right	Bottom
Drive 1	Second from right	Second from bottom
Drive 2	Third from right	Third from bottom
Drive 3	Third from left	Third from top
Drive 4	Second from left	Second from top
Drive 5	Left	Тор

The SATA connectors are laid out as follows on the SATA backplane.



Figure 11. Layout of Cable Connectors on the SATA Backplane

For a six-drive SCSI hot swap drive cage installation:



Figure 12. Making Six-drive SCSI Hot Swap Drive Cage Backplane Cable Connections

- 1. Connect the SCSI data cable (letter "B") to the SCSI connector on the SCSI backplane.
- 2. Connect two power cables (letter "A") to the two power cable connectors on the SCSI backplane.
- 3. Connect the HSBP_A to the IPMB connector (letter "C") on the SCSI backplane.
- 4. Connect the I2C connector to the I2C connector on the RAID card (if one is installed).

Make Server Board/RAID Controller Card Connections

Refer to the documentation that came with your server board and/or RAID Controller card for instructions on connecting backplane cables to your server board or RAID Controller card.

It is critical that you connect the SATA data cables correctly from the SATA backplane to your server board or RAID Controller card. Failure to do so may result in data loss.

NOTE

Connect the I2C connector on the backplane to the RAID card (if one is installed).

Reinstall Hot Swap Fans

If previously removed, reinstall the hot swap fans into their respective positions in the chassis.



Figure 13. Reinstalling Hot Swap Fans

Install Hot Swap Hard Drives

If installing a four-drive SCSI hot swap drive cage, a six-drive SCSI hot swap drive cage or a sixdrive SATA hot swap drive cage, refer to the section titled "Installing a Hot Swap Hard Drive" for instructions on installing hot swap hard drives.

Replace Bezel Assembly



Figure 14. Reinstalling Bezel Assembly

1. For a Pedestal-configured system, open the Outer Bezel Door of the Bezel Assembly (letter "A").

NOTE

Both the Outer Bezel Door and Inner Bezel Door are used when the chassis is configured for the Pedestal position. For Rack-configured systems, only the Inner Bezel Door is used.

- 2. For both Pedestal- and Rack-configured systems, remove all filler panels from the Inner Bezel Door that correspond to installed drive cage(s).
- 3. For Pedestal-configured systems, close the Outer Bezel Door (letter "B").
- 4. Fit the right edge of the Bezel Assembly against the right side of chassis and engage plastic bezel hooks (letter "C") into raised metal slots at chassis edge.



Do not attach Bezel Assembly to chassis at more than a 40-degree angle or you will damage the bezel hooks at the right side of the Bezel Assembly.

5. Rotate Bezel Assembly toward chassis and latch the two plastic tabs (letter "D") on left side of Bezel Assembly to chassis.

Replace Access Cover

To replace the Access Cover:

- 1. Slide Access Cover on chassis.
- 2. Replace shipping screw (optional).

This chassis must be operated with the Access Cover installed to ensure proper cooling.





Figure 15. Replacing Access Cover

Intel® Entry Server Chassis SC5275-E Installation

NOTE

This section only applies to drive cage upgrade kit installations in the Intel® Entry Server Chassis SC5275-E. If you are installing a drive cage upgrade kit into an Intel® Server Chassis SC5300, SC5300 BRP, or SC5300 LX, follow the instructions under the section titled "Intel® Server Chassis SC5300 Installation."

Only six-drive SCSI or SATA hot swap upgrade drive cage kits can be installed in the Intel Entry Server Chassis SC5275-E.

Remove the Access Cover

When your chassis is upright (in a tower/pedestal position), and you are facing the front of it, the Access Cover is on the left side.

To remove the Access Cover:

- 1. Observe all safety and ESD precautions at the beginning of this document.
- 2. Power the system off and disconnect the power cord.
- 3. If the shipping screws are installed, remove both shipping screws (letter "A").
- 4. Slide the two thumb latches (letter "B") to the OPEN position.
- 5. Slide the Access Cover rearward and lift to remove (letter "C").



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Figure 16. Removing Access Cover

Remove the Bezel

To remove the Bezel:

- 1. Disengage the two bezel tabs (letter "A") from the chassis.
- 2. Rotate the left side of Bezel outward slightly (letter "B").
- 3. Disengage the latches that attach the right side of the Bezel to the chassis and remove (letter "C").



Figure 17. Removing Bezel

Install Six-drive Bay

Perform these steps to install the following:

Six-drive SCSI Hot Swap Drive Cage (AXX6SCSIDB)

Six-drive SATA Hot Swap Drive Cage (AXX6SATADB)

- 1. Note the location of the front fan connection on the server board so you will be able to reconnect it later. Disconnect the front fan cable from the server board.
- 2. If hard drives are installed in the existing drive cage, disconnect the power and data cables from each drive.

3. Remove and save the four screws (letter "A") that secure the existing drive cage to the chassis. Two screws are located on the front of the chassis and two screws are located on the left side of the chassis. Slide the drive cage from the chassis (letter "B").



Figure 18. Removing Six-drive Fixed Bay from Chassis

4. Remove front fan from the existing drive cage. The front fan is installed inside the standard drive cage that shipped with your chassis. This fan must be removed from the standard drive cage and attached to the new drive cage. Use a flat-head screwdriver to pry up the four plastic rivets that hold the fan in place. Slide the fan out through the fan opening. Set existing drive cage aside.

NOTE

If existing drive cage is empty, the front fan may fall out the bottom of the drive cage when plastic rivets are removed.



Figure 19. Removing Front Fan from Existing Drive Cage

5. Remove the two top stud screws on the new drive cage in your upgrade drive cage kit.



Figure 20. Removing Stud Screws from Drive Cage

6. Install drive cage bracket on new drive cage. The drive cage bracket ships with your chassis. Align drive cage bracket with the four screw holes on the left side of your new drive cage. Use four screws to secure the drive cage bracket to the drive cage.



Figure 21. Attaching Drive Cage Bracket to Drive Cage

7. Attach fan bracket to backplane of new drive cage. The fan bracket ships with your chassis. Remove the two thumb screws (letter "A") that secure the backplane to the drive cage. Align the fan bracket with the four pegs (letter "B") on the drive cage and slide fan bracket into position. Replace thumb screws.

Backplane may slip when thumb screws are removed. Ensure that backplane is positioned correctly before tightening thumb screws.



Figure 22. Attaching Fan Bracket to Drive Cage

8. Attach front fan to fan bracket by placing two corners of the fan into the two holding slots on the fan bracket (letter "A"). Press fan down until fan clicks into place.

Ensure that label and directional airflow arrow on fan are pointed out (away from the backplane).



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Figure 23. Attaching Front Fan to Fan Bracket

- 9. Slide the drive cage into the drive bay slot on the chassis. Be sure to feed the front fan cable through the slot first so that it exits through the back of the drive cage. Orient drive cage in chassis so that the metal tabs line up with the screw holes on the front of the chassis. Insert and tighten the four screws that hold the drive cage in the chassis. Two screws attach at the front of the chassis and two attach at the left side of the chassis.
- 10. Reconnect the front fan cable to its connector on the server board.



Figure 24. Installing Six-drive Bay into Chassis

Make Backplane Connections

For six-drive SCSI hot swap drive cage installation:



Figure 25. Making Six-drive SCSI Hot Swap Drive Cage Backplane Cable Connections

- 1. Connect two power cables (letter "A") to the two power cable connectors on the SCSI backplane.
- 2. Connect the SCSI data cable (letter "B") to the SCSI connector on the SCSI backplane.
- 3. Connect the HSBP_A header on the server board to the IPMB connector (letter "C") on the SCSI backplane.

It is critical that you connect the SATA data cables correctly from the SATA backplane to your server board or RAID Controller card. Failure to do so may result in data loss.

NOTE

Connect the I2C header to the RAID card (if one is installed).



Figure 26. Making Six-drive SATA Hot Swap Drive Cage Backplane Cable Connections

1. Connect two power cables (letter "A") to the power cable connectors on the SATA backplane.

2. Connect a SATA data cable (letter "B") to each appropriate SATA connector on the SATA backplane. The hard drives in the drive cage are numbered as follows when viewed from the front.

NOTE

The SATA cables are labeled to correspond with each drive. Make sure to connect the cables correctly to avoid confusion later.

Drive number	Position in a Pedestal- configured system
Drive 0	Bottom
Drive 1	Second from bottom
Drive 2	Third from bottom
Drive 3	Third from top
Drive 4	Second from top
Drive 5	Тор

The SATA connectors are laid out as follows on the SATA backplane.



Figure 27. Layout of SATA Connectors on the SATA Backplane

3. Affix the SATA Connection ID Label to the chassis. Note that when facing the front of the chassis, the label appears on the left-hand side of the chassis.



Figure 28. Affixing SATA Connection ID Label to Chassis

Make RAID Controller Card Connections

Refer to the documentation that came with your RAID Controller card for instructions on connecting backplane cables to your RAID Controller card.

It is critical that you conne

It is critical that you connect the SATA data cables correctly from the SATA backplane to your server board or RAID Controller card. Failure to do so may result in data loss.

Install Hot Swap Hard Drives

Refer to the section entitled "Installing a Hot Swap Hard Drive" for instructions on installing hard drives into your SCSI or SATA hot swap drive cage.

Replace Bezel

To replace the Bezel:

- 1. Engage the three clips (letter "A") at the right edge of the Bezel with the corresponding latches on the right side of the chassis.
- 2. Rotate the left side of Bezel towards the chassis (letter "B").
- 3. Snap the two bezel tabs (letter "C") into their corresponding recesses at left edge of chassis.



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Figure 29. Reinstalling Bezel Assembly

Replace Access Cover

To replace the Access Cover:

- 1. Slide Access Cover on chassis (letter "A").
- 2. Slide the two thumb latches (letter "B") to the CLOSED position.
- 3. (optional) Replace shipping screws (letter "C").

This chassis must be operated with the Access Cover installed to ensure proper cooling.



Figure 30. Replacing Access Cover

Installing a Fixed Hard Drive

1. Push the blue plastic release mechanism upward to release the Fixed drive cage so that it is partially exposed (about 2 inches out) from the drive bay slot in the chassis. Partially exposing the drive cage will make it easier to open the upper door of the drive cage.

NOTE

As an alternative, you may also fully remove the drive cage from its drive bay slot in the chassis. Take care, however, to position the drive cage horizontally before opening the drive cage doors or the drive rails will spill out.

2. Loosen the captive screw (letter "A") and open the upper door (letter "B").



Figure 31. Unlocking and Opening Upper Drive Cage Door

3. Open the lower door.



Figure 32. Opening Lower Drive Cage Door

4. Remove a pair of device slides from the drive cage. Attach the device slides to the hard drive. This is a tool-less operation. Insert tabs on device slides into mounting holes on hard drive and then press firmly to secure device slides to hard drive. Ensure that the metal tabs on the device slides are facing the front of the hard drive and facing towards each other.



Figure 33. Installing Device Slides to Hard Drive

5. Insert drive/slide assembly into drive cage. Make sure that the cable connector end of the hard drive faces towards the rear of the drive cage.



Figure 34. Inserting Drive/Slide Assembly into Drive Cage

6. Repeat steps 4-5 for installation of additional hard drives into drive cage.

7. Close lower drive cage door.



Figure 35. Closing Lower Fixed Drive Cage Door

8. Close upper drive cage door.



Figure 36. Closing Upper Fixed Drive Cage Door

9. Tighten captive screw.



Figure 37. Securing Fixed Drive Cage Door

10. Slide drive cage fully into chassis. You should hear a click when the blue plastic retention mechanism locks into place.

Installing a Hot Swap Hard Drive

1. Press in on the green latch (letter "A") at the end of the drive carrier to disengage it. Pull out on the black lever (letter "B") to fully open the drive carrier. When the lever reaches a fully opened position, it will pull the drive carrier out from the drive cage.



Figure 38. Releasing Drive Carrier from Drive Cage

2. Remove the four screws that secure the plastic retention device to the drive carrier. Remove the plastic retention device.



Figure 39. Removing Plastic Retention Device

3. Secure the hard drive to the drive carrier using the four screws that were formerly attached to the plastic retention device. Ensure that the cable connector end of the hard drive is facing the back of the drive carrier. The label side of the hard drive should be facing up in the drive carrier.



Figure 40. Securing Hard Drive to Drive Cage

4. With the black lever open, insert the drive carrier into the drive cage. Once inserted, rotate the black lever upwards to latch the drive carrier into position.



Figure 41. Re-installing Drive Carrier in Drive Cage