IBM

IBM MessageSight™

Addendum to the *Installation and Service Guide* for IBM System x3650 M4

Service information for: 6188-SM1.

If your IBM System x3650 M4 server was purchased as part of a Software Group Appliance, certain information contained in the product documentation might or might not apply to your particular product. Information that might differ is:

1. The warranty period
2. Parts replacement procedure
3. Service support call flow

The information in this document supersedes the *Installation and Service Guide* for IBM System x3650 M4 Type 7915.

The table below maps the Software Group Appliance models to the IBM Systems and Technology Group System x models.

Table 1. Appliance and System x models

Appliance Name	Appliance Model Type	System x Name	System x Model Type
IBM MessageSight	6188-SM1	IBM System x3650 M4	7915-AC1

This addendum provides the supplemental parts listing, UEFI/POST error codes, and Integrated management module II (IMM2) error messages to IBM System x3650 M4. Keep this documentation with your other server documentation.

Note: For information about the IBM System x3650 M4, go to http://www.ibm.com/supportportal.

Troubleshooting

The section describes the diagnostic tools and troubleshooting information that are available to help you solve problems that might occur in the server.

InfoCenter

Use this information to view InfoCenter.

Go to InfoCenter at http://pic.dhe.ibm.com/infocenter/ism/v1r0m0/index.jsp for more information.

Diagnostic tools

The section introduces available tools to help you diagnose and solve hardware-related problems.

NVDIMM LEDs

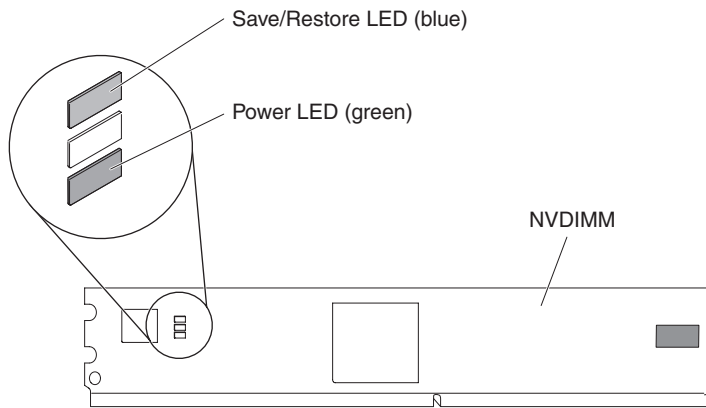This section describes the LEDs on the NVDIMM.

Save/Restore LED (blue)

Power LED (green)

NVDIMM

Figure 1. NVDIMM LEDs

Table 2. NVDIMM LEDs

LED	State	Function
Save/Restore LED (blue)	Fast blink	A FORCE_SAVE or a FORCE_RESTORE is in progress.
	Slow blink (once every 15 seconds)	Normal state.
Power LED (green)	On	NVDIMM controller power is present.
	Off	NVDIMM controller power is not present.

UEFI/POST error codes

The following table describes the UEFI/POST diagnostic error codes and suggested actions to correct the detected problems.

Table 3. POST/UEFI diagnostic codes

Diagnostic error code	Message	Severity	Description	Action
S.580C0	NVDIMM Flash Failure	Error	[S.580C0] A NVDIMM flash part failure has been detected.	1. Check the IBM support website for an applicable retain tip or firmware update that applies to this NVDIMM error. 2. (Trained service technician only) If the problem remains, replace the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 3. (Trained service technician only) If the problem occurs on the same DIMM connector, check the DIMM connector. If the connector contains any foreign material, remove the foreign material. If the connector is damaged, skip to step 5. 4. (Trained service technician only) Replace the affected microprocessor. 5. (Trained service technician only) Replace the system board.

Table 3. POST/UEFI diagnostic codes (continued)

Diagnostic error code	Message	Severity	Description	Action
S.580C1	NVDIMM Supercap Error	Error	[S.580C1] A NVDIMM supercap error has been detected.	1. Check the IBM support website for an applicable retain tip or firmware update that applies to this NVDIMM error. See the release notes to find an applicable solution. 2. If the NVDIMM is newly installed, or the server has recently been moved, reseat all the cables connecting Supercap of the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 3. (Trained service technician only) Replace the Supercap of the affected NVDIMM. 4. (Trained service technician only) If the problem remains, replace the affected NVDIMM.
S.580C2	NVDIMM Supercap Disconnected	Error	[S.580C2] A NVDIMM has been disconnected from its supercap.	1. If the NVDIMM is newly installed, or the server has recently been moved, reseat all the cables connecting Supercap of the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 2. (Trained service technician only) Replace the Supercap of the affected NVDIMM. 3. (Trained service technician only) If the problem remains, replace the affected NVDIMM.

Integrated management module error messages

The following table describes the IMM error messages and suggested actions to correct the detected problems.

Table 4. IMM error messages

Diagnostic error code	Message	Severity	Description	Action
8007020c-2502ffff 8007020c-2505ffff 8007020c-2508ffff 8007020c-250bffff	Sensor [nvDIMM n Status] has transitioned to critical from a less severe state.(n = DIMM number)	Error	This message is for the use case when an implementation has detected a Sensor transitioned to critical from less severe.	1. Check the IBM support website for an applicable retain tip or firmware update that applies to this NVDIMM error. 2. (Trained service technician only) If the problem remains, replace the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 3. (Trained service technician only) If the problem occurs on the same DIMM connector, check the DIMM connector. If the connector contains any foreign material, remove the foreign material. If the connector is damaged, skip to step 5. 4. (Trained service technician only) Replace the affected microprocessor. 5. (Trained service technician only) Replace the system board.
8007020f-2201ffff	Sensor [nvDIMM Flash] has transitioned to critical from a less severe state.	Error	This message is for the use case when an implementation has detected a Sensor transitioned to critical from less severe.	1. Check the IBM support website for an applicable retain tip or firmware update that applies to this NVDIMM error. 2. (Trained service technician only) If the problem remains, replace the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 3. (Trained service technician only) If the problem occurs on the same DIMM connector, check the DIMM connector. If the connector contains any foreign material, remove the foreign material. If the connector is damaged, skip to step 5. 4. (Trained service technician only) Replace the affected microprocessor. 5. (Trained service technician only) Replace the system board.
806f011b-2502ffff 806f011b-2505ffff 806f011b-2508ffff 806f011b-250bffff	The connector [nvDIMM n Cable] has encountered a configuration error. (n = DIMM number)	Error	This message is for the use case when an implementation has detected an Interconnect Configuration Error.	1. If the NVDIMM is newly installed, or the server has recently been moved, reseat all the cables connecting Supercap of the affected NVDIMM (as indicated by the error LEDs on the system board or the event logs). 2. (Trained service technician only) Replace the Supercap of the affected NVDIMM. 3. (Trained service technician only) If the problem remains, replace the affected NVDIMM.

Table 4. IMM error messages (continued)

Diagnostic error code	Message	Severity	Description	Action
8107020f-2201ffff	Sensor [nvDIMM Flash] has transitioned to a less severe state from critical.	Info	This message is for the use case when an implementation has detected a Sensor transition to less severe from critical.	No action; information only.

NVDIMM problems

Use this information to resolve NVDIMM problems.

The appliance might not operate if the NVDIMM are not installed in the exact same slots. To resolve this, complete the following commands:

1. Stop the appliance.

```
Console>imaserver stop
imaserver is stopped
```

2. Check if the NVDIMMs are operational.

```
Console>advanced-pd-options _nvcheck
nvDIMM in socket 2 is ready
nvDIMM in socket 5 is ready
nvDIMM in socket 8 is ready
nvDIMM in socket 11 is ready
```

3. Clear the NVDIMM contents.

```
Console>device nvdimm clear
Are you sure you want to clear the nvDIMM volume labels
yes/no:yes
Volume labels cleared
```

4. Start the appliance.

```
Console>imaserver start
imaserver is started
```

Parts listing, IBM MessageSight™ Type 6188

The following replaceable components are available for the IBM® MessageSight™ Type 6188.

Replaceable server components

In addition to the list of FRUs below, all structural parts (components such as chassis assembly, top cover, bezel), and Tier 1/Tier 2 parts listed in the *Installation and Service Guide* for IBM System x3650 M4 Type 7915 are delegated as FRUs for IBM MessageSight™ Type 6188.

Field replaceable unit (FRU): FRUs must be installed only by trained service technicians, at no additional charge, under the type of warranty service that is designated for your server.

The following table lists the appliance-specific replaceable components.

Table 5. FRU list

Description	FRU part number
Mellanox ConnectX-3 VPI dual-port QSFP FDR14/40GbE HCA	00D9552
Mellanox QSA adapter (QSFP to SFP+)	46W4232
IBM System x3650 M4 (IBM MessageSight™) USB memory key	00J6535
IBM System x3650 M4 (IBM MessageSight™ Appliance V2.0) Supercap Kit with Cable	00Y8384
IBM System x3650 M4 (IBM MessageSight™ Appliance V2.0) RS232 cable to USB 3M cable	00Y8490
Memory, 4 GB single-rank 1.5V, DDR3, 1600 MHz, NVDIMM (VLP)	00AM205
10GbE SW SFP+ transceiver	46W4236
3 meter QSFP cable	90Y3473

For information about the terms of the warranty, see the *Warranty Information* document that comes with your product.

Removing and replacing server components

This section provides information for removing and replacing components in the server.

Returning a device or component

If you are instructed to return a device or component, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Internal cable routing and connectors

This section provides information about routing the cables when you install some components in the server.

For more information about the requirements for cables and connecting devices, see the documentation that comes with the server.

Cabling Supercap and NVDIMM

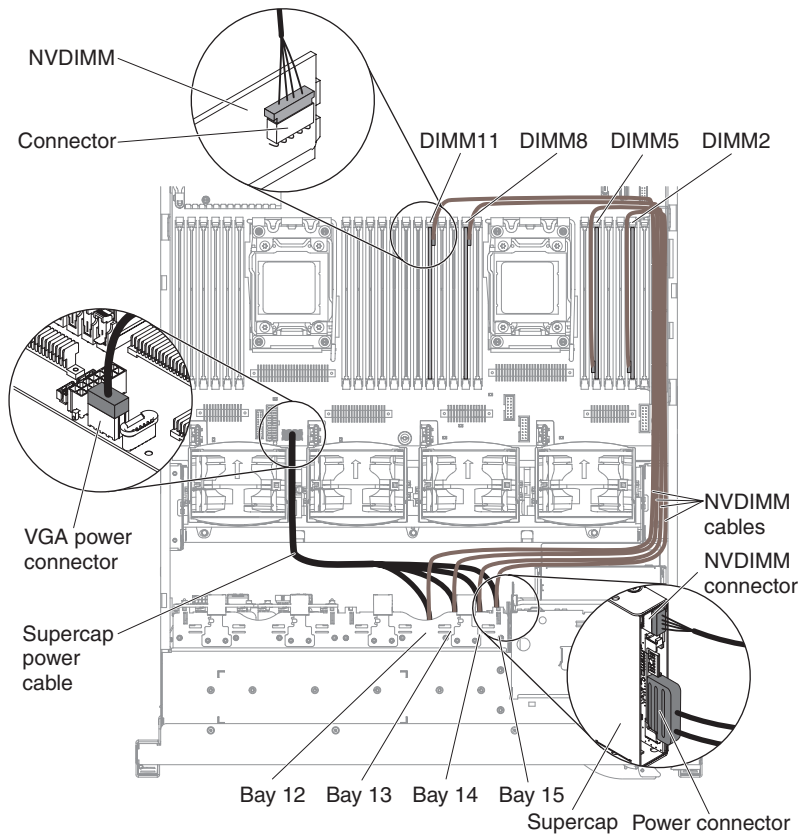The following illustration shows the internal routing and connectors for Supercaps and NVDIMMs.

Figure 2. Supercap and NVDIMM cable routing

Note:

1. Supercap power cable is 1 to 4 connectors.
2. Make sure all LEDs on the NVDIMM are completely off before disconnecting cables.
3. You must install at least two 16 GB DIMMs in DIMM 1 and 13 to pair with Supercap bay 12 and NVDIMM in DIMM 2. See Table 6 for more information.

Table 6. Supercap, NVDIMM, and DIMM configuration

Supercap	NVDIMM	DIMM
Hard disk drive bay	DIMM connector	DIMM connector
12	2	1, 13
13	5	4, 16
14	8	9, 21
15	11	12, 24

4. If you have to move the NVDIMMs from one server to another, you must keep the original NVDIMM configuration and installation sequence to avoid data loss. For example, there are two NVDIMMs installed in DIMM 2 and 5 in server A. You must install the NVDIMM (originally installed in DIMM 2 in server A) in DIMM 2 in server B and the other NVDIMM (originally installed in DIMM 5 in server A) in DIMM 5 in server B.

Removing and replacing FRUs

FRUs must be removed or replaced only by trained service technicians.

The illustrations in this document might differ slightly from the hardware.

Removing an NVDIMM

Use this information to remove an NVDIMM.

About this task

To remove an NVDIMM, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Turn off the server and peripheral devices and disconnect all power cords.
3. Remove the cover, using the instructions in your server documentation.
4. Remove the air baffle, using the instructions in your server documentation.
5. Make sure all LEDs on the selected NVDIMM are completely off.
6. Remove the cable connected to the NVDIMM.

   Attention: Removing the cable while not all LEDs on the selected NVDIMM are completely off might cause damage to the selected NVDIMM.
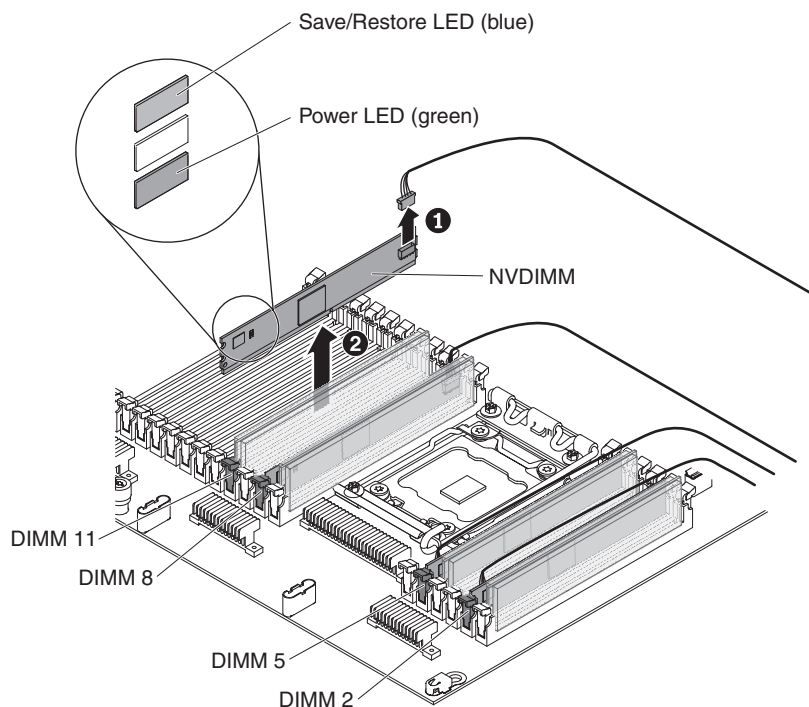

Figure 3. NVDIMM removal

7. Carefully open the retaining clips on each end of the DIMM connector and remove the NVDIMM, using the instructions in your server documentation.

Attention:

a. To avoid breaking the retaining clips or damaging the DIMM connectors, open and close the clips gently.

b. Make a note of the location of each DIMM as you remove it, so that you can later reinstall it in the same connector. See Table 6 on page 7 for more details.

Results

If you are instructed to return the NVDIMM, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Replacing an NVDIMM

Use this information to replace an NVDIMM.

About this task

To replace an NVDIMM, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Turn off the server and peripheral devices and disconnect all power cords.
3. Remove the cover, using the instructions in your server documentation.
4. Remove the air baffle, using the instructions in your server documentation.
5. Carefully open the retaining clips on each end of the DIMM connector and remove the NVDIMM, using the instructions in your server documentation.

   Attention: To avoid breaking the retaining clips or damaging the DIMM connectors, open and close the clips gently.
6. Touch the static-protective package that contains the NVDIMM to any unpainted metal surface on the outside of the server. Then, remove the NVDIMM from the package.
7. Install the NVDIMM into the connector, using the instructions in your server documentation. See Table 6 on page 7 for more details.
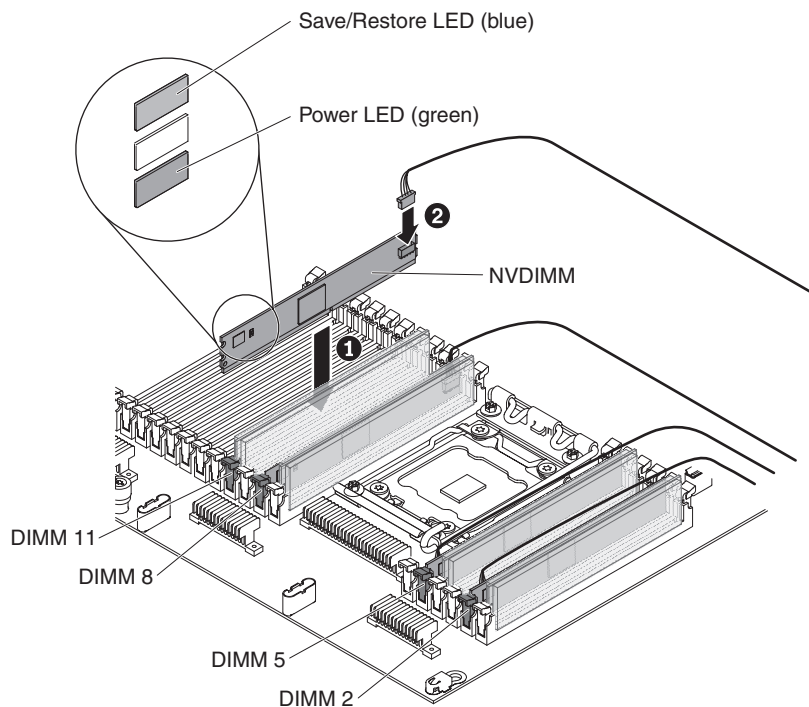
Figure 4. NVDIMM installation

8. Connect the cable to the NVDIMM.
9. Reconnect the power cords and any cables that you removed.
10. Replace the air baffle, using the instructions in your server documentation.

   Attention: Close all the retaining clips even for slots without DIMMs installed before replacing the air baffle.

11. Replace the cover, using the instructions in your server documentation.
12. Turn on the peripheral devices and the server.

Removing a Supercap

Use this information to remove a Supercap.

About this task

To remove a Supercap, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Turn off the server and peripheral devices and disconnect all power cords.
3. Remove the cover, using the instructions in your server documentation.
4. Make sure all LEDs on the paired NVDIMM are completely off.
5. Remove the cables connected to the Supercap.

   Attention: Failure to remove the cables while all LEDs on the paired NVDIMM are off might cause damage to the paired NVDIMM.
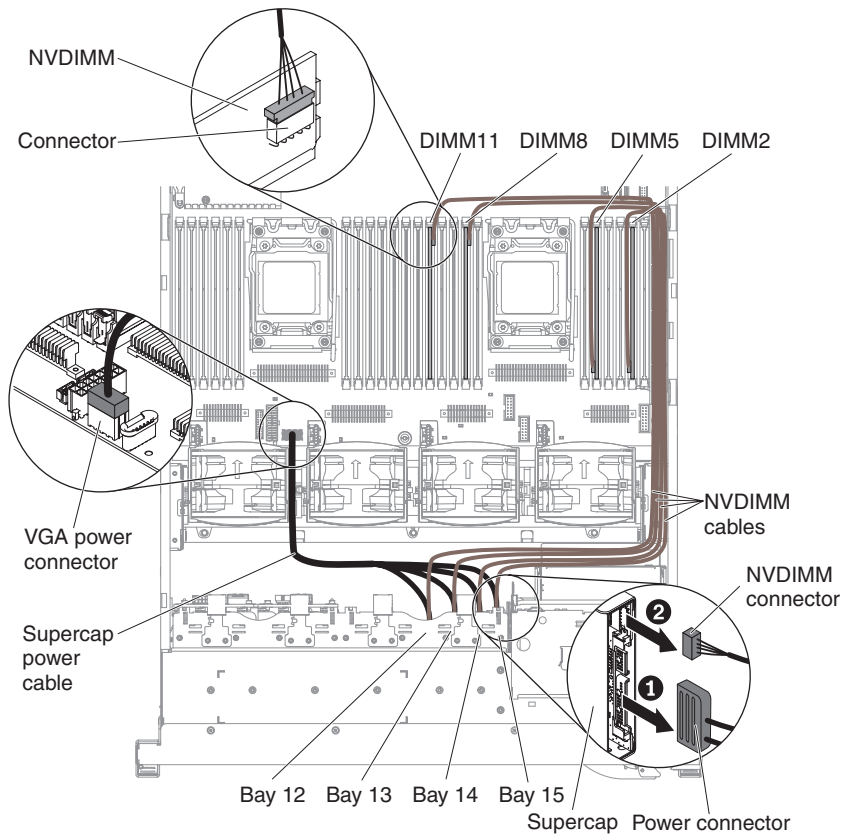
Figure 5. Supercap cable routing

6. Remove the 4-drive filler panel.
7. Slide the blue release latch down with one finger (to release the drive) while using another finger to grasp the black drive handle and pull the hard disk drive out of the drive bay.
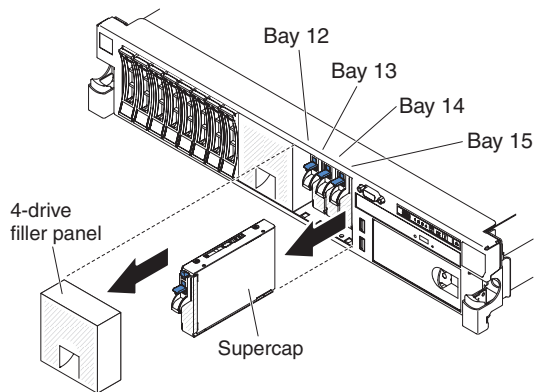

Figure 6. Supercap removal

8. Reinstall the 4-drive filler panel that you removed earlier.

Results

If you are instructed to return the Supercap, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Replacing a Supercap

Use this information to replace a Supercap.

About this task

To replace a Supercap, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Turn off the server and peripheral devices and disconnect all power cords.
3. Remove the cover, using the instructions in your server documentation.
4. Remove the 4-drive filler panel.
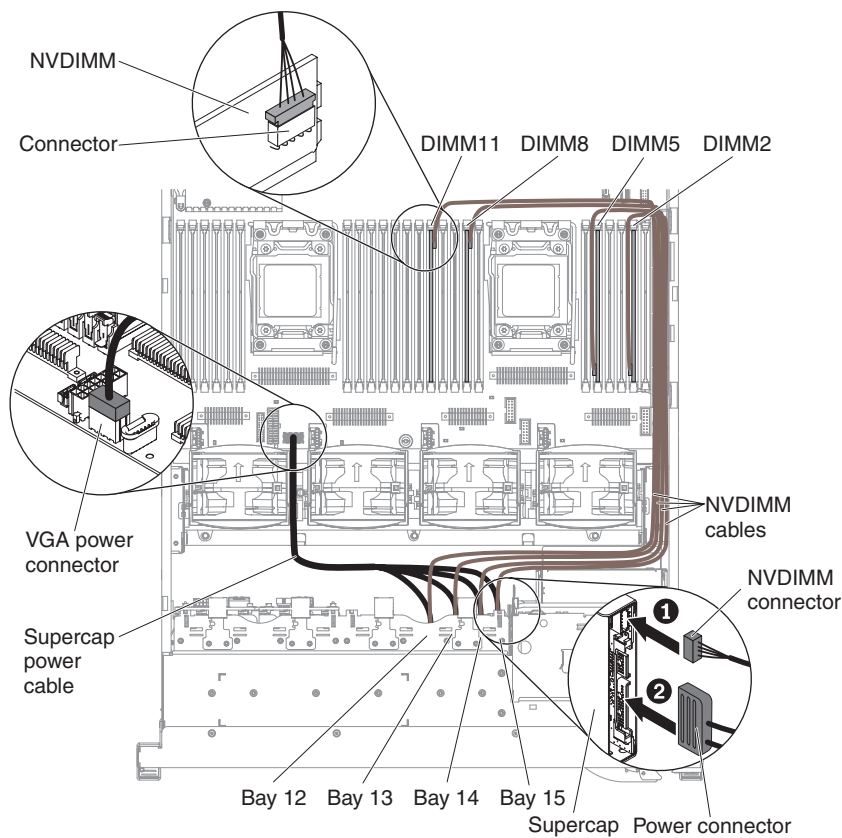5. Connect the cables to the Supercap.

Figure 7. Supercap cable routing

   a. Connect the cable from the NVDIMM.

   b. Connect the cable from the system board.

6. Touch the static-protective package that contains the Supercap to any unpainted metal surface on the server; then, remove the Supercap from the package and place it on a static-protective surface.
7. Install the Supercap in the drive bay, using the instructions in your server documentation.
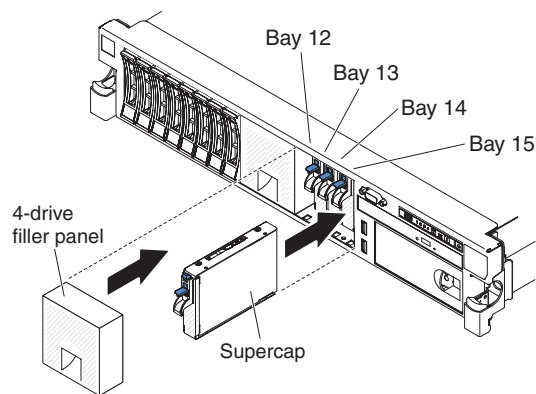
Figure 8. Supercap installation

8. Reinstall the 4-drive filler panel that you removed earlier.
9. Reconnect the power cords and any cables that you removed.
10. Replace the cover, using the instructions in your server documentation.
11. Turn on the peripheral devices and the server.

Replacing the USB embedded hypervisor key and the system board

The firmware of the IBM MessageSight™ appliance is stored on the USB embedded hypervisor key installed in the appliance. The USB hypervisor key is encrypted when the appliance is manufactured by IBM. The decryption password to unlock the USB hypervisor key is stored on the Trusted Platform Module (TPM) on the system board. Thus, if the system board was damaged, you cannot move the USB hypervisor key (and the firmware it stored) to another system board.

If you have to replace the system board or the USB embedded hypervisor key, you must reinstall the MessageSight firmware with a separate bootable USB key. You have to create the separate bootable USB key containing the firmware and bring it with you to the customer's site for reinstallation.

Before going to the customer's site

Use this information to prepare a bootable USB key before going to the customer's site.

Prerequisites

This section provides information you need to prepare before creating a bootable USB key.

* The USB key (FRU part number 41Y8279)
* A computer with Windows or Linux
* VGA display and USB keyboard, or KVM switch
* Bootable ISO image file and its associated hash file and password

Creating a bootable USB key

Use this information to create a bootable USB key.

Getting the bootable ISO image file:

Use this information to get a bootable ISO image file.

About this task

Procedure

1. Download the bootable ISO image from http://ausgsa.ibm.com/projects/i/ima_support/downloads/ bootableISOs/ for IBM MessageSight™ Type 6188.

2. The file name of the bootable ISO is `usb-flash-<MTMN-DATE>.img`, where:
   - `MTMN` is the machine type and model number. For example, 6188-SM1.
   - `DATE` is the date and time in the format of YYYYMMDD-HHMM. For example, `20130401-0110.img`.

3. Download the associated file with the same name and extension of "`*.md5`".

4. Use the following files:

Table 7. File name

Machine Type / Model	Bootable ISO Image File	Hash File
6188-SM1	`usb-flash-6188SM1-20130401-0110.img`	`usb-flash-6188SM1-20130401-0110.img.md5`
Table note: Changes are made periodically to the IBM website. The actual file names might vary slightly from what is described in this document.		

5. Use the "md5" file to verify the integrity of the bootable ISO image file after you download them.

Transferring the bootable ISO image to the USB key:

Use this information to transfer the bootable ISO image to the USB key.

Windows XP or 7:

Use this information to transfer the bootable ISO image to the USB key in Windows.

About this task

You need to use the Win32 Disk Imager tool or any other tool that can create a bootable USB key.
- You can find a copy of Win32 Disk Imager at http://ausgsa.ibm.com/projects/i/ima_support/ downloads/bootableISOs/.
- Win32 Disk Imager is an open source project hosted on SourceForge at http://sourceforge.net/ projects/win32diskimager/.
- As with any open source tool, review its use with your manager or consult IBM SWG legal. Refer the example at http://ausgsa.ibm.com/projects/i/ima_support/downloads/bootableISOs/.

To transfer the bootable ISO image to the USB key in Windows, complete the following steps:

Procedure

1. Insert the USB key into a USB port on your computer.

2. Start `Win32DiskImager.exe`.
   a. Select the USB drive for **Device** field.
   b. Select the `usb-flash-<MTMN-DATE>.img` file for **Image File** field.
   c. Check **MD5 Hash** box.
   d. Compare the result with the value in `usb-flash-<MTMN-DATE>.img.md5`.

3. If the value matches, press **Write**.

4. After completion, press **Exit**.

5. Eject the USB key from your computer.

Results

You have created the bootable USB key.

Linux:

Use this information to transfer the bootable ISO image to the USB key in Linux.

About this task

To transfer the bootable ISO image to the USB key in Linux, complete the following steps:

Procedure
1. Insert the USB key into a USB port on your computer.
2. Verify the `usb-flash-<MTMN-DATE>.img` file was downloaded successfully.
   a. Run `md5sum usb-flash-<MTMN-DATE>.img`
   b. Compare the result with the value in `usb-flash-<MTMN-DATE>.img.md5`. They should match.
3. Enter the following commands to move the bootable ISO image to the USB key, where:
   - `if=` specifies the name of the bootable ISO image file you just downloaded. For example, `usb-flash-<MTMN-DATE>.img`.
   - `of=` specifies the device name of the USB drive. For example, `/dev/sdb`.
     Attention: Be careful to verify the device name for the USB drive after you insert it in your computer. Specifying the wrong device for `of=` might results in damage.
   ```
   dd if=usb-flash-<MTMN-DATE>.img of=/dev/sdb bs=3936256c count=509
   sync; sync
   ```
4. Remove the USB key from your computer.

Results

You have created the bootable USB key.

Obtaining the password for the bootable USB key
Use this information to obtain the password for the bootable USB key.

You need a firmware password to unlock the bootable USB key when booting the appliance from the key. You can obtain the password at http://ausgsa.ibm.com/projects/i/ima_support/downloads/bootableISOs/FirmwareAccess.htm and log in with your IBM Intranet ID and password.

Note: Bring the password with you to the customer's site.

At the customer's site
Use this information to replace the component at the customer's site.

Replacing the USB embedded hypervisor key
Use this information to replace the USB embedded hypervisor key.

About this task

To replace the USB embedded hypervisor key, complete the following steps:

Procedure
1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.

2. Turn off the server and any attached devices.
3. Turn off the peripheral devices and disconnect all power cords.
4. Remove the cover, using the instructions in your server documentation.
5. Remove PCI riser-card assembly 2, using the instructions in your server documentation.
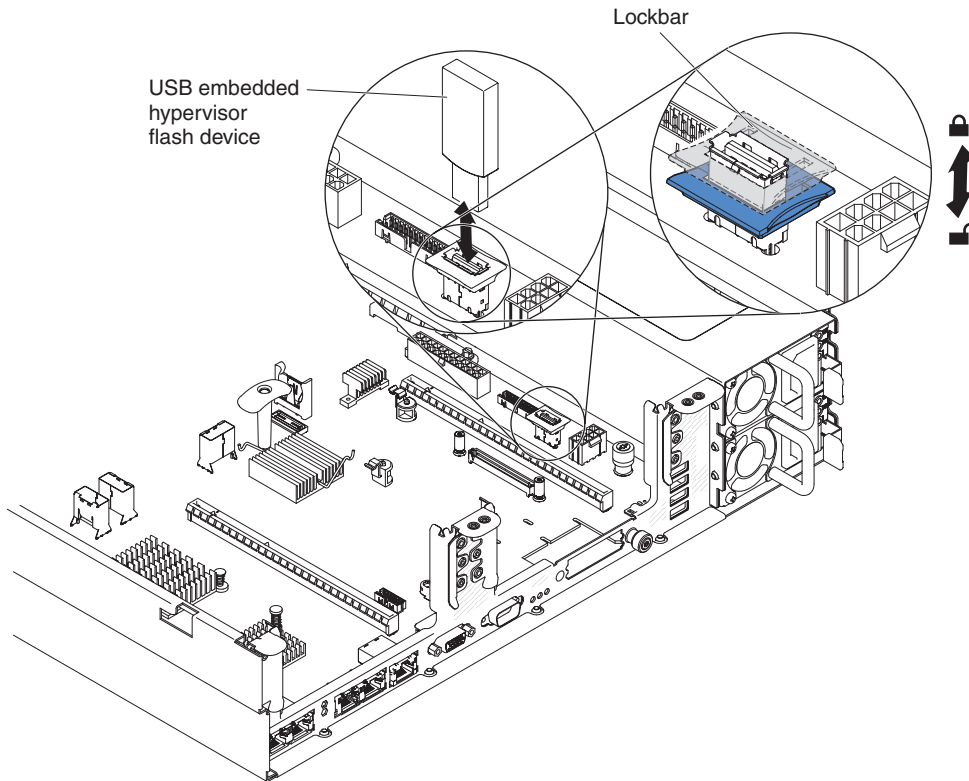6. Remove the old USB embedded hypervisor key:

Figure 9. USB embedded hypervisor key removal

    a. Unlock the retention latch on the USB connector by squeezing the two retention clips toward each other.

    b. Open the retention latch.

    c. Grasp the key and pull to remove it from the connector.
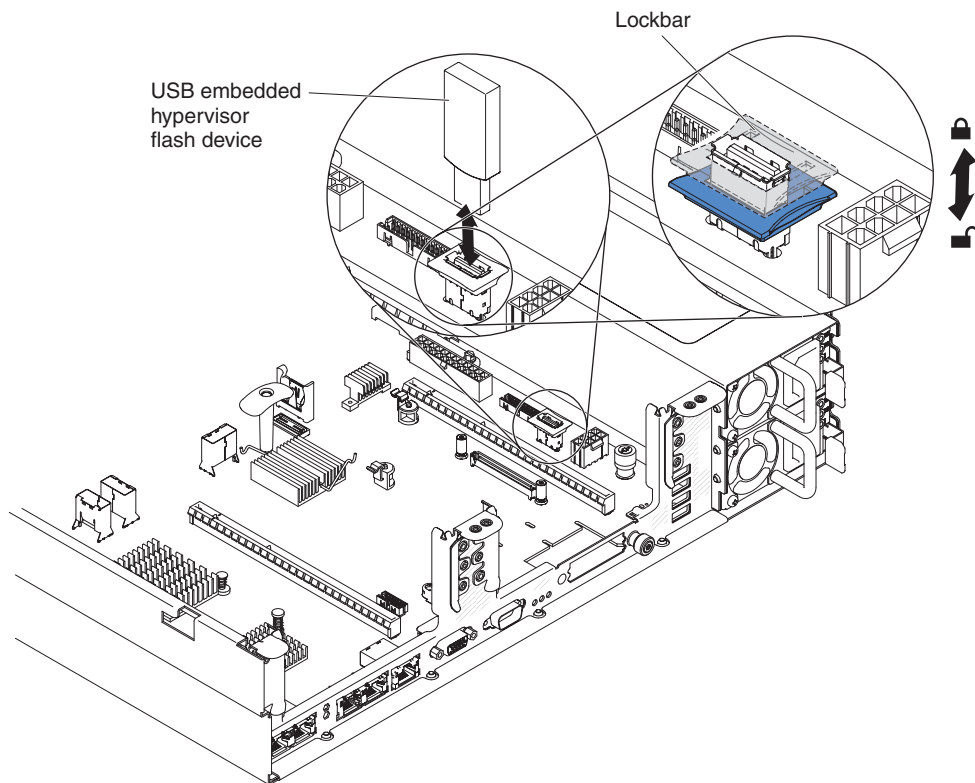
7. Install the new USB embedded hypervisor key:

Figure 10. USB embedded hypervisor key installation

    a. Align the key with the connector on the system board and push it into the USB connector until it is firmly seated.

    b. Press down on the retention latch to lock the key into the USB connector.

  8. Reconnect the power cords and any cables that you removed.

  9. Replace the cover, using the instructions in your server documentation.

10. Slide the server into the rack.

Results

After completing this procedure, you can continue to install the firmware (see "Installing the firmware" on page 22 for more information).

Removing the system board

Use this information to remove the system board.

About this task

To remove the system board, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Turn off the server and any attached devices.
3. Turn off the peripheral devices and disconnect all power cords.

    Note: When you replace the system board, you must either update the server with the latest firmware or restore the pre-existing firmware from the bootable USB key you created in

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"Before going to the customer's site" on page 13. Make sure that you have the latest firmware or a copy of the pre-existing firmware before you proceed.

4. Pull the power supplies out of the rear of the server, just enough to disengage them from the server.

5. Remove the cover, using the instructions in your server documentation.

6. Remove all PCI riser-card assemblies and adapters, using the instructions in your server documentation.

7. Remove the air baffle, using the instructions in your server documentation.

8. Remove the ServeRAID SAS/SATA controller, using the instructions in your server documentation.

9. Remove the dual-port network adapter, using the instructions in your server documentation.

10. Remove the USB embedded hypervisor key, using the instructions in your server documentation.

11. Remove the memory modules and set them aside on a static-protective surface for reinstallation, using the instructions in your server documentation.

   Note: Make a note of the location of each DIMM as you remove it, so that you can later reinstall it in the same connector. See Table 6 on page 7 for more details.

12. Remove the NVDIMMs and set them aside on a static-protective surface for reinstallation, see "Removing an NVDIMM" on page 8.

   Note: Make a note of the location of each DIMM as you remove it, so that you can later reinstall it in the same connector. See Table 6 on page 7 for more details.

13. Remove the Supercap, see "Removing a Supercap" on page 10.

14. Remove all heat sinks and microprocessors, and set them aside on a static-protective surface for reinstallation, using the instructions in your server documentation.

   Notes:

   a. Remove the socket covers from the microprocessor sockets on the new system board and place them on the microprocessor sockets of the system board you are removing.

   b. Do not allow the thermal grease to come in contact with anything, and keep each heat sink paired with its microprocessor for reinstallation. Contact with any surface can compromise the thermal grease and the microprocessor socket. A mismatch between the microprocessor and its original heat sink can require the installation of a new heat sink.

15. Remove the system battery, using the instructions in your server documentation.

16. Disconnect all cables from the system board. Make a list of each cable as you disconnect it; you can then use this as a checklist when you install the new system board, using the instructions in your server documentation.

   Attention: Disengage all latches, release tabs or locks on cable connectors when you disconnect all cables from the system board. Failing to release them before removing the cables will damage the cable sockets on the system board. The cable sockets on the system board are fragile. Any damage to the cable sockets may require replacing the system board.

17. Remove the hot-swap fans, using the instructions in your server documentation.

18. Pull out and lift up the pin and the thumbscrews on each side of the system board.
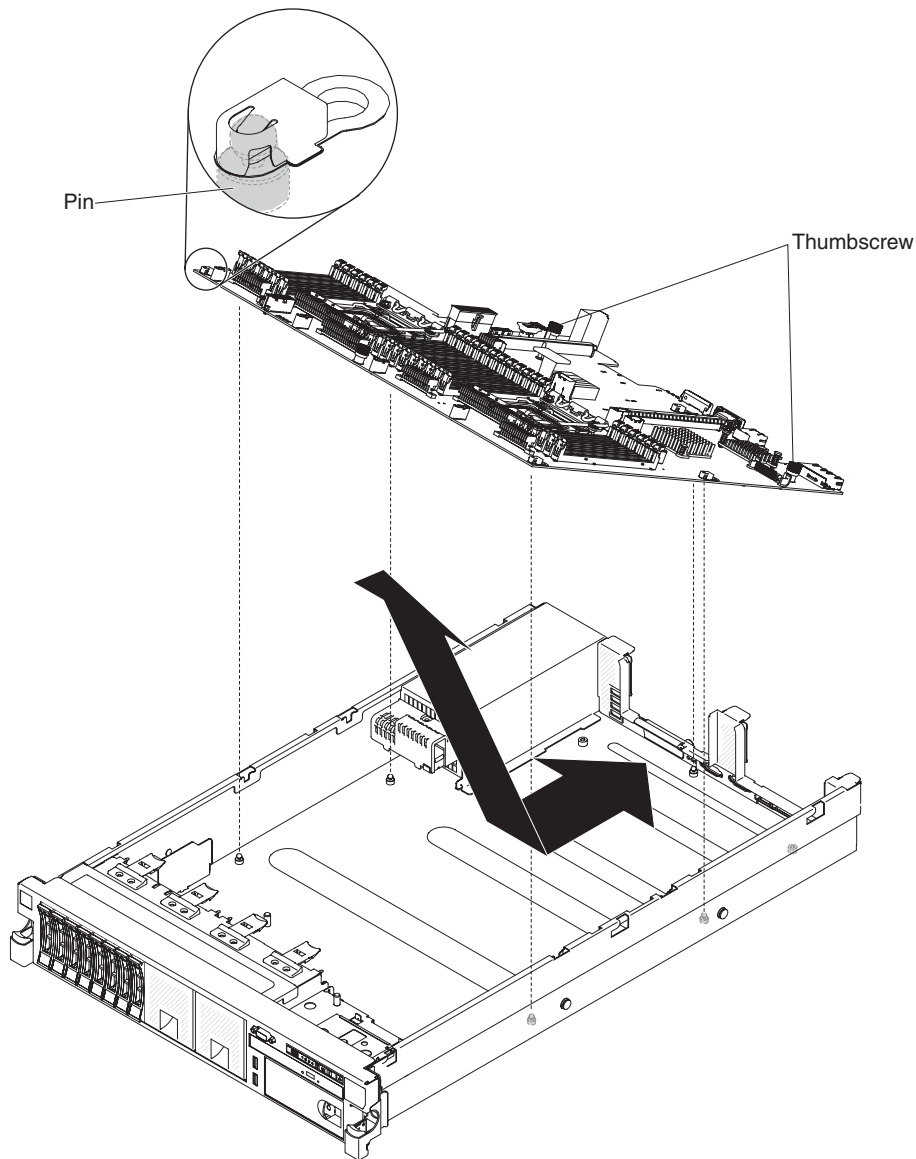
Figure 11. System board removal

19. Remove the socket covers from the microprocessor sockets on the new system board and place them on the microprocessor sockets of the old system board that you are removing.

Results

If you are instructed to return the system board, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Attention: Make sure to place the socket covers for the microprocessor sockets on the system board before returning the system board.

Replacing the system board

Use this information to replace the system board.

About this task

Important:

1. When you reassemble the components in the server, be sure to route all cables carefully so that they are not exposed to excessive pressure.
2. When you replace the system board, you must either update the server with the latest firmware or restore the pre-existing firmware from the bootable USB key you created in "Before going to the customer's site" on page 13. Make sure that you have the latest firmware or a copy of the pre-existing firmware before you proceed.
3. Some cluster solutions require specific code levels or coordinated code updates. If the device is part of a cluster solution, verify that the latest level of code is supported for the cluster solution before you update the code.

To install the system board, complete the following steps:

Procedure

1. See the server *Installation and Service Guide* for installation guidelines and additional safety information.
2. Align the system board at an angle, as shown in the illustration; then, rotate and lower it flat and slide it back toward the rear of the server. Make sure that the rear connectors extend through the rear of the chassis.
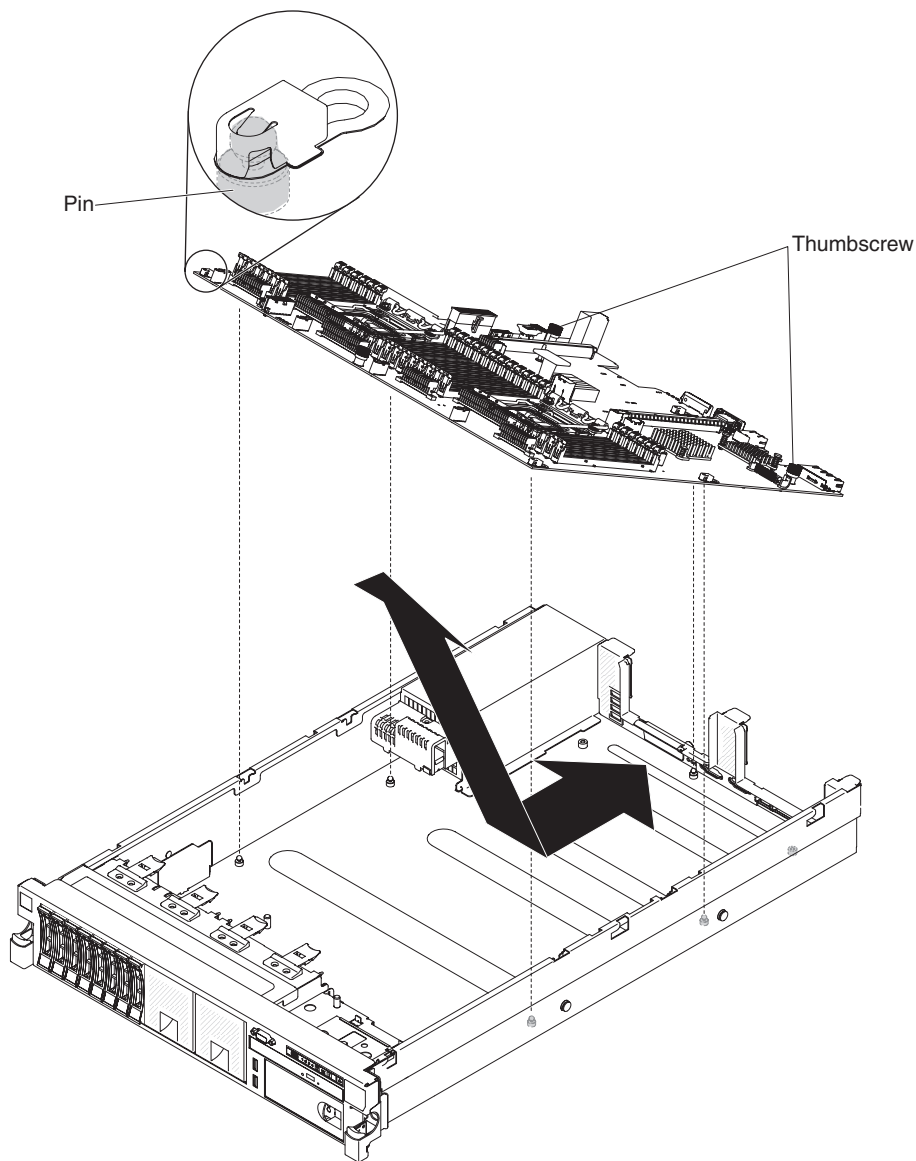
Pin

Thumbscrew

Figure 12. System board installation

3. Reconnect to the system board the cables that you disconnected previously, using the instructions in your server documentation.
4. Rotate the system-board thumbscrews toward the rear of the server until the latch clicks into place.
5. Install the hot-swap fans, using the instructions in your server documentation.
6. Install the microprocessor and heat sink, using the instructions in your server documentation.
7. Install the Supercap, see "Replacing a Supercap" on page 12.
8. Install the NVDIMMs, see "Replacing an NVDIMM" on page 9.

    Important: Keep the original NVDIMM configuration and installation sequence to avoid data loss. See Table 6 on page 7 for more details.

9. Install the memory modules, using the instructions in your server documentation.

    Important: Keep the original NVDIMM configuration and installation sequence to avoid data loss. See Table 6 on page 7 for more details.

10. Install the USB embedded hypervisor key, using the instructions in your server documentation.

11. Install the dual-port network adapter, using the instructions in your server documentation.

12. Install the ServeRAID SAS/SATA controller, using the instructions in your server documentation.

13. Install the air baffle, using the instructions in your server documentation.

14. Install the PCI riser-card assemblies and adapters, if any were installed, using the instructions in your server documentation.

15. If necessary, install the virtual media key.

16. Install the system battery, using the instructions in your server documentation.

17. Install the cover, using the instructions in your server documentation.

18. Push the power supplies back into the server.

19. Slide the server into the rack.

20. Reconnect the power cords and any cables that you removed.

Installing the firmware

Use this information to install the firmware and configure the server.

Note: Insert the bootable USB key you created in "Before going to the customer's site" on page 13 into the front top USB slot on the appliance.

To install the firmware, complete the following steps:
1. "Configuring UEFI settings."
2. "Booting from the USB key" on page 24.
3. "Completing the installation" on page 24.
4. "Verifying IBM MessageSight™ operation" on page 25.

Configuring UEFI settings:

Use this information to configure UEFI settings.

About this task

To configure UEFI settings, complete the following steps:

Procedure
1. Turn on the appliance.
2. When the prompt <F1 Setup> is displayed, press F1.

Configuring UEFI boot settings:

Use this information to configure UEFI boot settings.

About this task

To configure UEFI boot settings, complete the following steps:

Procedure
1. Change the **Primary Boot Sequence** settings.
   a. Select **Boot Manager** > **Add Boot Option** > **Physically Present Device** > **USB1:Storage**.
   b. **Commit Changes**.
   c. Select **Boot Manager** > **Delete Boot Option**. Remove all other options except for the option you just created in step 1a.
   d. **Commit Changes**.

e. Select **Boot Manager** > **Change Boot Order**. Change the order to **USB1:Storage**.

   Note: No other options should be available.

   f. **Commit Changes**.

2. Change the **Secondary (WOL) Boot Sequence** settings.

   a. Select **Boot Manager** > **Add WOL Boot Option** > **Generic Boot Option** > **USB Storage**.

   b. Select **Boot Manager** > **Delete WOL Boot Option**. Remove all other options except for the option you just created in step 2a.

   c. **Commit Changes**.

   d. Select **Boot Manager** > **Change WOL Boot Order**. Change the order to **USB Storage**.

   Note: No other options should be available.

   e. **Commit Changes**.

Setting UEFI administrator password:

Use this information to set UEFI administrator password.

About this task

To set UEFI administrator password, complete the following steps:

Procedure

1. Select **User Security** > **Set Admin Password**.
2. Enter the password `xtrmisma` and press Enter.
3. Enter the password `xtrmisma` again to confirm.

   Note: This is a fixed password for the IBM MessageSight™ appliance and should be known only to IBM support personnel. The password is different from the password you obtained in "Obtaining the password for the bootable USB key" on page 15.

Making sure there is no DIMM errors:

Use this information to ensure there is no DIMM errors.

About this task

If you see [S.58008] `A DIMM has failed the POST memory test.`, complete the following steps to correct the DIMM status failure:

Procedure

1. Select **System Settings** > **Memory** > **System Memory Details** > **DIMM Details For Processor 1**. Set any DIMM with status of **Disable** to **Enable**
2. Repeat step 1 for microprocessor 2.

Saving UEFI settings:

Use this information to save UEFI settings.

About this task

To save UEFI settings, complete the following steps:

Procedure

1. Return to main menu.
2. Select **Save Settings** and **Restore Settings**.

    Note: This is a precaution to ensure that the backup copy of the UEFI settings is the same as the primary UEFI settings.

3. Select **Exit Setup**. Press Y to exit the Setup Utility.

Booting from the USB key:

Use this information to boot from the USB key.

About this task

After exiting the Setup Utility, the appliance restarts. Complete the following steps to boot from the USB key:

Procedure

1. Use the **Boot Manager**.
    a. When the prompt `<F12> Select Boot Device` is displayed, press F12.
    b. Type `UEFI Admin Password` you set previously.
    c. Select **USB Port 1 Front** (or similar strings with "front"). Press Enter to start the boot process.
2. When the prompt `Welcome to Bedrock Installer`, select **Install Bedrock**.

    ```
    Welcome to the Bedrock manufacturing script.
    Replace the bootable manufacturing ISO in the internal USB slot with the USB key to be manufactured.
    1) To continue
    2) Reboot
    ```

3. Type 1 and press Enter to continue.
4. Type the key you got in "Obtaining the password for the bootable USB key" on page 15 and press Enter to continue.

    Note: If you type the password wrong, the prompt `Authentication failed`. You have to restart the appliance to return to the prompt `Welcome`.

5. Enter the appliance model type and serial number. The appliance model type and serial number are printed on the ID label on the front of the server.

    ```
    Enter Asset MTM
    Enter Asset Serial Number
    ```

Results

The firmware installation starts. Use the Advanced Settings Utility (ASU) program to customize UEFI settings. It might take an hour or more to complete. The appliance might also restart several times during this process.

Completing the installation:

Use this information to complete the installation.

About this task

The installation is complete when the login prompt.

Note: Do not login to the appliance yet. Save the optimized UEFI configuration settings first.

To save UEFI settings, complete the following steps:

Procedure
1. Remove the bootable USB key from the front USB connector.
2. Restart the appliance by pressing the power button on the front panel to turn it off, and then turn it on.
3. When the prompt <F1 Setup> is displayed, press F1.
4. Type UEFI Admin Password you set previously.
5. Select **Save Settings** and **Restore Settings**.
6. Select **Exit Setup**. Press Y to exit the Setup Utility.

Verifying IBM MessageSight™ operation:

Use this information to complete the installation.

About this task

The appliance starts and prompt the user to login. The default user ID and password are both "admin".

Refer to *Quick Start Guide* to perform the initial network configuration, log in to the Web User Interface, and accept the licenses for the appliance.

After you accept the product licenses using the Web User Interface, log in to the appliance to complete the following steps:

Procedure
1. When the prompt Console>, type status imaserver.

   ```
   Console> status imaserver
   Status = Running
   ```

2. Refer the customers to http://pic.dhe.ibm.com/infocenter/ism/v1r0m0/index.jsp for information on how to restore from the appliance configuration backup if necessary.

Getting help and technical assistance

Using the documentation

Please visit http://www.ibm.com/supportportal for information on how to obtain the latest documentation for IBM MessageSight or see the IBM MessageSight Information Center at http://pic.dhe.ibm.com/infocenter/ism/v1r0m0/index.jsp.

Software service and support

When calling IBM for service please select the Software Service Option as the Product type for your IBM MessageSight. You are required to provide your IBM Customer Number for Support.

All Service Support calls should be directed to the IBM MessageSight software support team. The software support team owns the engagement with the customer and will engage the hardware support team when necessary.