

WebSphere DataPower Integration Blade XI52B Type
8436



Addendum to IBM BladeCenter HS23 Type 7875 and 1929 Problem Determination and Service Guide

First Edition

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Note

Before you use this information and the product it supports, refer to the safety information in the *IBM BladeCenter HS23 Types 7875 and 1929: Problem Determination and Service Guide* and read the general information under Notices in this document.

The most recent version of the *IBM BladeCenter HS23 Types 7875 and 1929: Problem Determination and Service Guide* is available on the IBM Support Portal at <http://www.ibm.com/support>.

First Edition (August 2014)

This edition applies to IBM WebSphere DataPower Integration Blade XI52B Type 8436-4BX appliances until otherwise indicated in new editions.

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Contents

Safety v
Guidelines for trained technicians vi
 Inspecting for unsafe conditions vi
 Guidelines for servicing electrical equipment vii
Safety statements viii

Preface xv

**Removing and replacing blade server
components 1**
Before you go to a customer 1

Creating the service key 2
Field-reflashing the internal key 4

Notices 15
Trademarks 15

Safety

Before installing this product, read the Safety Information.

Arabic

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية.

Brazilian Portuguese

Antes de instalar este produto, leia as Informações de Segurança.

Chinese (simplified)

在安装本产品之前，请仔细阅读 **Safety Information** (安全信息)。

Chinese (traditional)

安裝本產品之前，請先閱讀「安全資訊」。

Croatian

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Czech Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Danish

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Dutch Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Finnish

Ennen kuin asennat tämän tuotten, lue turvaohjeet kohdasta Safety Information.

French

Avant d'installer ce produit, lisez les consignes de sécurité.

German

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Greek Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφαλείας (safety information).

Hebrew

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

Hungarian

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Italian Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

Japanese

製品の設置の前に、安全情報をお読みください。

Korean

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Macedonian

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Norwegian

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Polish Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Portuguese

Antes de instalar este produto, leia as Informações sobre Segurança.

Russian

Перед установкой продукта прочтите инструкции по технике безопасности.

Slovak

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Slovenian

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Spanish

Antes de instalar este producto, lea la información seguridad.

Swedish

Läs säkerhetsinformationen innan du installerar den här produkten.

Guidelines for trained technicians

Information for trained technicians to follow on service engagements.

Inspecting for unsafe conditions

Use this procedure to identify potential unsafe conditions in an IBM® product that you are working on.

About this task

Each IBM product, as it was designed and manufactured, has required safety requirements to protect users and service technicians from injury. Use good judgment to identify potential unsafe conditions that might be caused by attachment of non-IBM features or options that are not addressed in this section. If you identify an unsafe condition, you must determine how serious the hazard is and whether you must correct the problem before you work on the product.

Consider the following conditions, and the safety hazards that they present:

- Electrical hazards (especially primary power). Primary voltage on the frame can cause serious or fatal electrical shock.
- Explosive hazards, such as a damaged CRT face or a bulging capacitor.
- Mechanical hazards, such as loose or missing hardware.

Procedure

To inspect the product for potential unsafe conditions, complete the following steps:

1. Make sure that the power is off and the power cords are disconnected.
2. Make sure that the exterior cover is not damaged or broken, and observe any sharp edges.
3. Check the power cords:
 - Make sure that the third-wire ground connector is in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and the frame ground.

- Make sure that the power cords are the correct type.
 - Make sure that the insulation is not frayed or worn.
4. Remove the cover.
 5. Check for any obvious non-IBM alterations. Use good judgment as to the safety of any non-IBM alterations.
 6. Check inside the system for any obvious unsafe conditions, such as metal filings, contamination, water or other liquid, or signs of fire or smoke damage.
 7. Check for worn, frayed, or pinched cables.
 8. Make sure that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Guidelines for servicing electrical equipment

Observe these guidelines when you service electrical equipment.

- Check the area for electrical hazards such as moist floors, nongrounded power extension cords, and missing safety grounds.
- Use only approved tools and test equipment. Some hand tools have handles that are covered with a soft material that does not provide insulation from live electrical current.
- Regularly inspect and maintain your electrical hand tools for safe operational condition. Do not use worn or broken tools or testers.
- Do not touch the reflective surface of a dental mirror to a live electrical circuit. The surface is conductive and can cause personal injury or equipment damage if it touches a live electrical circuit.
- Some rubber floor mats contain small conductive fibers to decrease electrostatic discharge. Do not use this type of mat to protect yourself from electrical shock.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Locate the emergency power-off (EPO) switch, disconnecting switch, or electrical outlet so that you can turn off the power quickly in the event of an electrical accident.
- Disconnect all power before you perform a mechanical inspection, work near power supplies, or remove or install main units.
- Before you work on the equipment, disconnect the power cord. If you cannot disconnect the power cord, have the customer power-off the wall box that supplies power to the equipment and lock the wall box in the off position.
- Never assume that power has been disconnected from a circuit. Check it to make sure that it has been disconnected.
- If you must work on equipment with exposed electrical circuits, observe the following precautions:
 - Make sure that another person who is familiar with the power-off controls is near you and is available to turn off the power if necessary.
 - When you work with powered-on electrical equipment, use only one hand. Keep the other hand in your pocket or behind your back to avoid creating a complete circuit that could cause an electrical shock.
 - When you use a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
 - Stand on a suitable rubber mat to insulate you from grounds such as metal floor strips and equipment frames.
- Use extreme care when you measure high voltages.

- To ensure proper grounding of components such as power supplies, pumps, blowers, fans, and motor generators, do not service these components outside of their normal operating locations.
- If an electrical accident occurs, use caution, turn off the power, and send another person to get medical aid.

Safety statements

These statements provide the caution and danger information that is used in this documentation.

Important:

Each caution and danger statement in this documentation is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document.

For example, if a caution statement is labeled "Statement 1", translations for that caution statement are in the *Safety Information* document under "Statement 1".

Be sure to read all caution and danger statements in this documentation before you perform the procedures. Read any additional safety information that comes with your system or optional device before you install the device.

Statement 1



DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

To connect

1. Turn everything OFF.
2. Attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

To disconnect:

1. Turn everything OFF.
2. Remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

Statement 2



CAUTION:

When replacing the lithium battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:

- Throw or immerse into water.
- Heat to more than 100°C (212°F).
- Repair or disassemble.

Dispose of the battery as required by local ordinances or regulations.

Statement 3



CAUTION:

When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.



DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Class 1 Laser Product

Laser Klasse 1

Laser Klass 1

Luokan 1 Laserlaite

Appareil Á Laser de Classe 1

Statement 8



CAUTION:

Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Statement 12



CAUTION:

The following label indicates a hot surface nearby.



Statement 13



DANGER

Overloading a branch circuit is potentially a fire hazard and a shock hazard under certain conditions. To avoid these hazards, ensure that your system electrical requirements do not exceed branch circuit protection requirements. Refer to the information that is provided with your device for electrical specifications.

Statement 21



CAUTION:

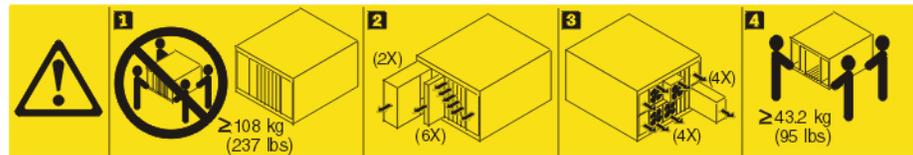
Hazardous energy is present when the blade is connected to the power source. Always replace the blade cover before installing the blade.

Statement 32



CAUTION:

To avoid personal injury, before lifting the unit, remove all the blades, power supplies, and removable modules to reduce the weight.



Statement 33



CAUTION:

This device does not provide a power control button. Removing power supply modules or turning off the server blades does not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



Rack Safety Information, Statement 2



DANGER

- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- Always install servers and optional devices starting from the bottom of the rack cabinet.
- Always install the heaviest devices in the bottom of the rack cabinet.

UL regulatory information

This device is for use only with supported blade chassis.

Preface

This publication relates the problem determination and service for IBM WebSphere® DataPower® Integration Blade XI52B Type 8436-4BX appliances.

The information in this document is in addition to the information in the *IBM BladeCenter HS23 Types 7875 and 1929: Problem Determination and Service Guide*, which applies to BladeCenter® Type 7875-AC1.

Note: The **BoMCSft** or **BoMCSft2** tool cannot be used by the IBM SSR to support this product. See the field-reflash procedure, which allows the firmware to be updated and the VPD to be set.

WebSphere DataPower Integration Blade XI52B appliances (MTM 8436-4BX) consist of an IBM BladeCenter HS23 unit (MTM 7875-AC1) with the XI52B firmware installed.

In the BladeCenter HS23 product documentation, the following information might not apply to your specific XI52B appliance:

- The warranty period.
- Parts replacement procedure.
- Service support call flow.

This addendum provides detailed instructions to field-reflash the internal key after you replace the internal USB flash key or the system board in DataPower Integration Blade XI52B Type 8436-4BX appliances. For instruction on removing and installing the internal USB flash key or the system board, see the *IBM BladeCenter HS23 Types 7875 and 1929: Problem Determination and Service Guide*. Keep this documentation with your other server documentation.

Removing and replacing blade server components

This procedure discusses how to remove and replace components on DataPower Integration Blade XI52B Type 8436-4BX appliances.

Before you begin

If you replace the appliance internal key or the system board, you must create the USB key, which is known as the *service key*. Before you go to a customer, you must understand field-reflash and the procedures to manage the field-reflash.

Procedure

1. Create the service key.
2. Field-reflash the internal key.

Related concepts:

“Before you go to a customer”

Before you begin, you must understand the importance of the field-reflash.

Related tasks:

“Creating the service key” on page 2

If you replace the appliance internal key or the system board, you must create the service key.

“Field-reflashing the internal key” on page 4

After you replace the internal USB flash key or the system board, you must initialize the blade appliance from a service key.

Before you go to a customer

Before you begin, you must understand the importance of the field-reflash.

Read the following information:

- IBM WebSphere DataPower Integration Blade XI52B appliances have a USB flash key that is plugged into the system board of the device. This key is referred to as the *internal key*. If the system board or the internal key is replaced, you must reflash the internal key from a service key. The FRU part number for the service key is 41Y8279.
- When you replace the internal key or the system board, the field-reflash procedure causes all data that is stored on the internal key to be erased. Check with the customer to verify that they have a complete backup of the system data or that they previously exported their data to another computer. After you reflash the internal key, the customer can use this backup to restore data to the internal key.
- The field-reflash procedure requires you to enter the serial number of the target blade appliance. Before you service the blade appliance, ensure that you have the correct serial number of that appliance. The serial number is 78xxxxx, where xxxxx is five alphanumeric characters.
- Some steps require that the blade appliance is turned on. Do not manually restart the blade appliance unless you are instructed to do so. If you suspect there is a high risk of power failure (for example, due to a thunderstorm), do not proceed with the procedure provided in this document.

- After you install a new internal key in the blade appliance, you must return the old internal key to IBM. The customer can reformat the old internal key to erase any sensitive data as required by their local policy. Ensure that you follow all packaging instructions and use any packaging materials that are supplied to you.
- If the blade appliance includes a licensed feature, contact IBM Support for a special .scrypt3 image to re-enable licensed features.

Related tasks:

“Creating the service key”

If you replace the appliance internal key or the system board, you must create the service key.

Creating the service key

If you replace the appliance internal key or the system board, you must create the service key.

Before you begin

Before you go to the customer site, you must create the USB key, which is known as the *service key*. Before you create a service key, you need the following items:

- The USB key (FRU part number 41Y8279).
- A computer with Windows or Linux.
- A bootable image file and its associated hash file.

About this task

1. Create the service key, which requires access to the IBM internal network. Perform this procedure at an IBM site before you go to the customer site.
2. Record SC01 activity for the time to create the service key.
3. After you use the service key, remove it and keep it with you. Do not reuse the service key unless you verified that the most recent bootable image file matches the image on your service key. If the bootable image changed, re-create the service key.

Procedure

Obtain the bootable image file.

1. Go to <https://datapower-production-images.dp.rtp.raleigh.ibm.com>. You need your IBM Internet ID and password.
2. Download three files. These files have the same basic name: `usb-flash-8436-4BX-number.extension`, where *number* is a unique numeric identifier.
 - `usb-flash-8436-4BX-200163.img`
 - `usb-flash-8436-4BX-200163.img.md5`
 - `usb-flash-8436-4BX-200163.img.password.txt`

The file with the `.img` extension is the bootable image file. The file with the `.img.md5` extension is the hash file to validate the image file. The file with the `img.password.txt` extension contains the password to install and boot the flash image.

3. Transfer the bootable image to the USB on Windows or Linux.
 - Transfer on Windows.

- a. Obtain the Win32 Disk Imager tool or any other tool that can create a bootable USB key.
 - You can get 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 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.
- b. Insert the USB key into a USB port on your computer.
- c. Start Win32DiskImager.exe.
- d. Select the USB drive for **Device** field.
- e. Select the .img file for **Image File** field.
- f. Select the **MD5 Hash** check box.
- g. Compare the result with the value in the .img.md5 file.
- h. If the value matches, select **Write**.
- i. When complete, select **Exit**.
- j. Eject the USB key from your computer.
- Transfer on Linux.
 - a. Insert the USB key into a USB port on your computer.
 - b. Verify that the .img file downloaded successfully.
 - 1) Run **md5sum** against the .img file.
 - 2) Compare the results with the contents of the .img.md5 file. The values must match.
 - c. Become the root user.
 - d. Run the **fdisk -l** command to determine the USB drive device name; for example, /dev/sdb.

Attention: Verify the USB drive device name after you insert it into your computer. The wrong device name in the **dd** command can result in damage.
 - e. Assuming the identifier for the .img file is 200163, run the following commands:


```
dd if=usb-flash-8436-4BX-200163.img of=/dev/sdb bs=256k; sync; sync
```
 - f. Remove the USB key from your computer.

The USB key is ready to use as a service key for the field-reflash.

4. Obtain the password for the service key. You need a password to unlock the image when you boot the appliance from the service key. The password is in a password file (extension .img.password.txt) that you obtained from <https://datapower-production-images.dp.rtp.raleigh.ibm.com>. The password is specific to a bootable image file. You can use the password in the usb-flash-8436-4BX-200163.img.password.txt file with only the usb-flash-8436-4BX-200163.img file.

What to do next

After you replace the internal USB flash key or the system board, field-reflash the internal key on the blade appliance.

Related tasks:

“Field-reflashing the internal key”

After you replace the internal USB flash key or the system board, you must initialize the blade appliance from a service key.

Field-reflashing the internal key

After you replace the internal USB flash key or the system board, you must initialize the blade appliance from a service key.

About this task

For instruction on removing and installing the internal USB flash key or the system board, see the *IBM BladeCenter HS23 Types 7875 and 1929: Problem Determination and Service Guide*.

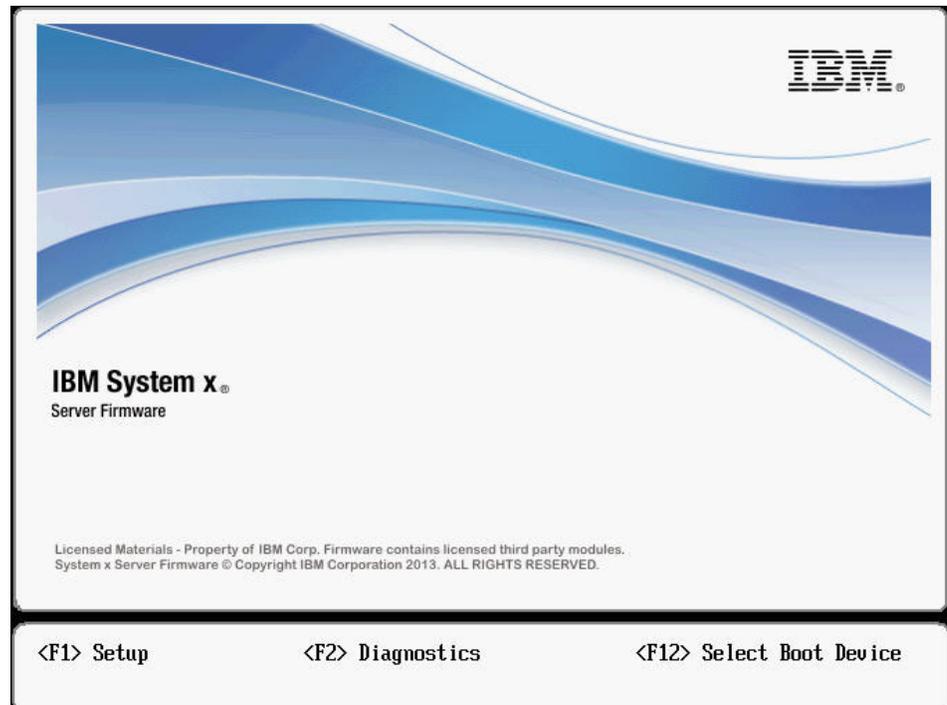
The service key comes with a password that must be used to complete the reflash operation. You retain ownership of the service key and its password. When this procedure is complete, remove the service key for safe keeping. For information about creating the service key, see “Creating the service key” on page 2. Do not reuse the service key unless you verified that it contains the most recent bootable image.

Attention: Do not power off the blade appliance unless you are instructed to do so. If the blade appliance is powered off at the wrong time, the results of the process are unpredictable.

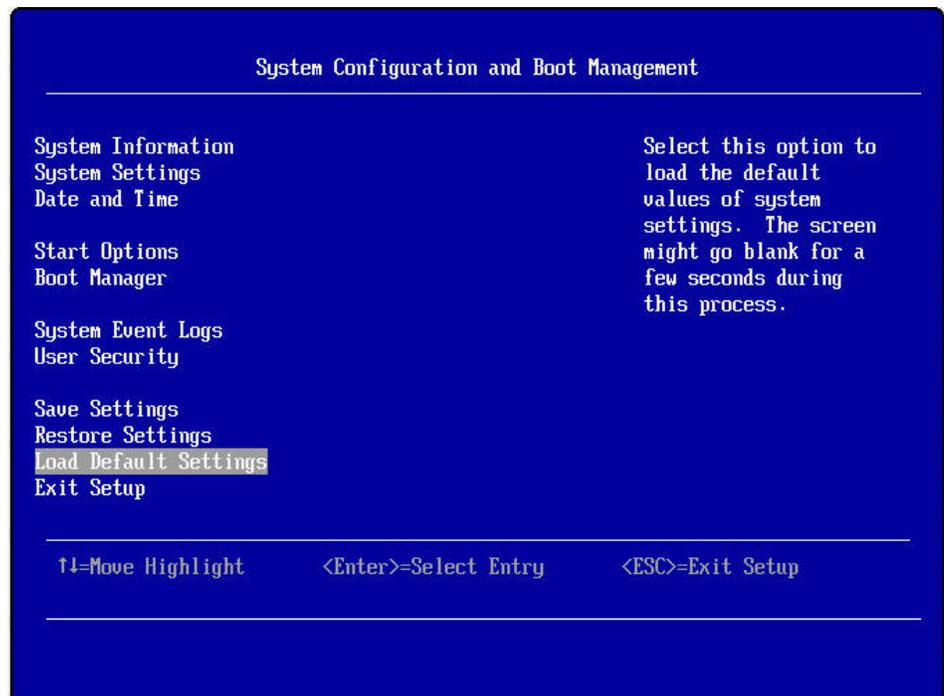
Procedure

1. The target blade appliance must be powered off. See the *Installation and User's Guide* that came with the blade appliance for instructions.
2. Use the AMM remote console or KVM switch to establish a video console connection to the target blade appliance. For more information, see the *IBM BladeCenter Advanced Management Module User's Guide*.
3. Use the AMM to assign ownership of the media tray to the target blade appliance. For more information, see the *IBM BladeCenter Advanced Management Module User's Guide*.
4. Insert the service key into the USB port on the BladeCenter chassis.
5. Press the power button or use the AMM to power on the appliance. For more information, see the *IBM BladeCenter Advanced Management Module User's Guide*.
6. The system start bring you to the IBM splash screen.

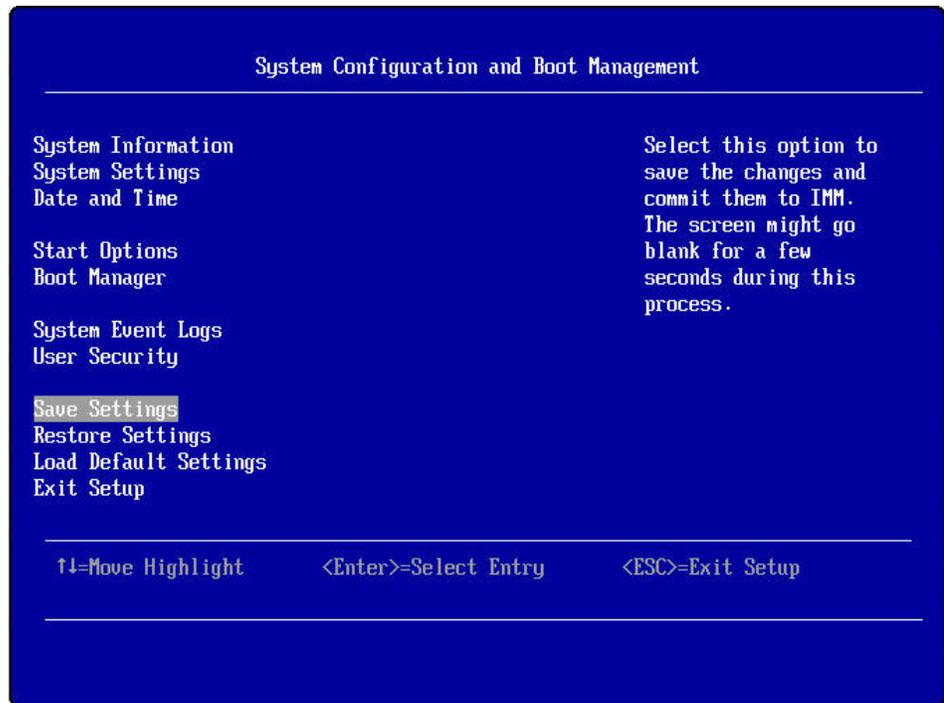
7. From the IBM System x screen, select <F1> Setup.



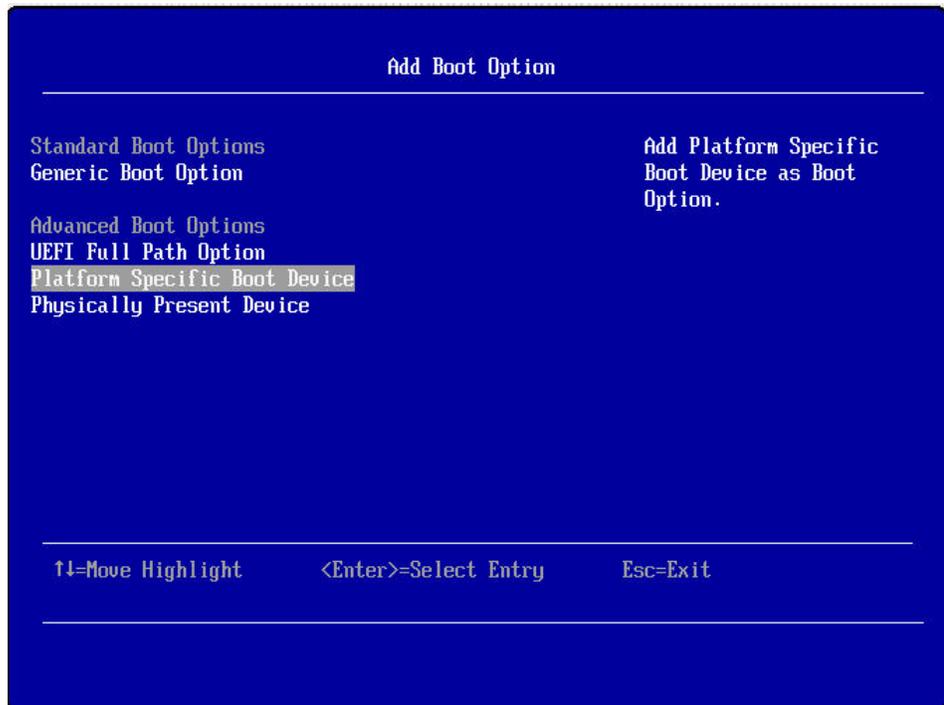
8. From the System Configuration and Boot Management screen, select Load Default Settings.



9. After the load default settings process completes, select **Save Settings**.



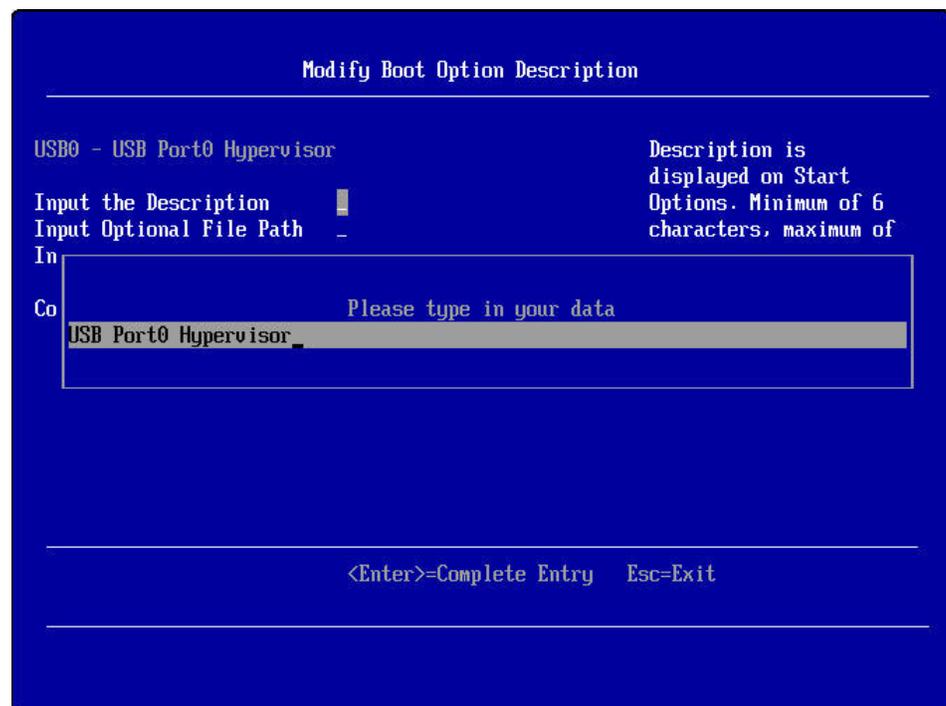
10. Select **Boot Manager** and then **Add Boot Option**. From this panel, select **Platform Specific Boot Device**.



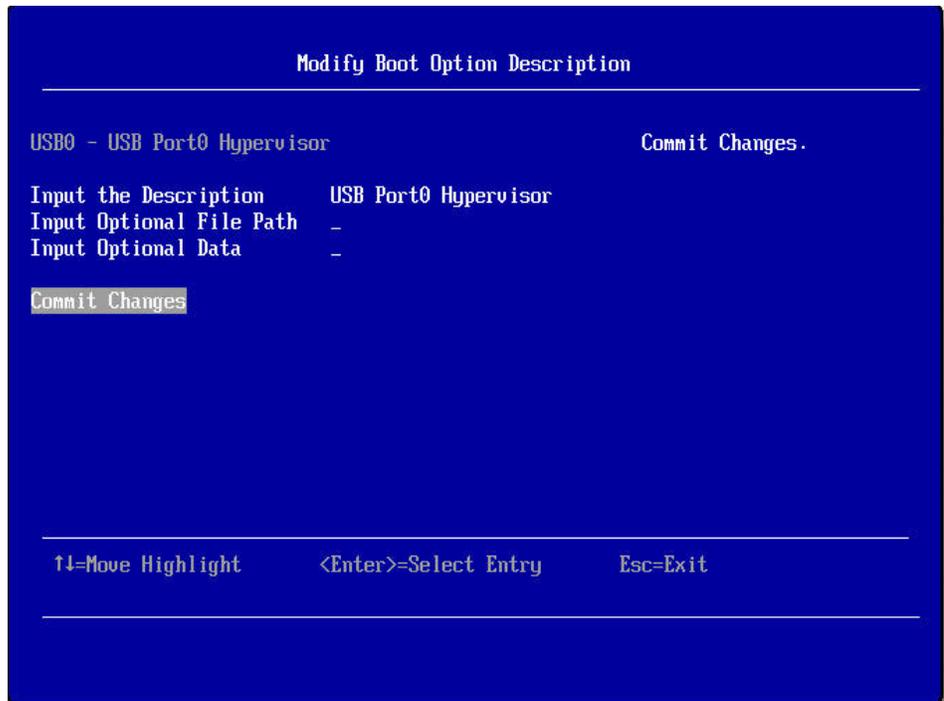
11. Select **USB0 – USB Port0 Hypervisor**.



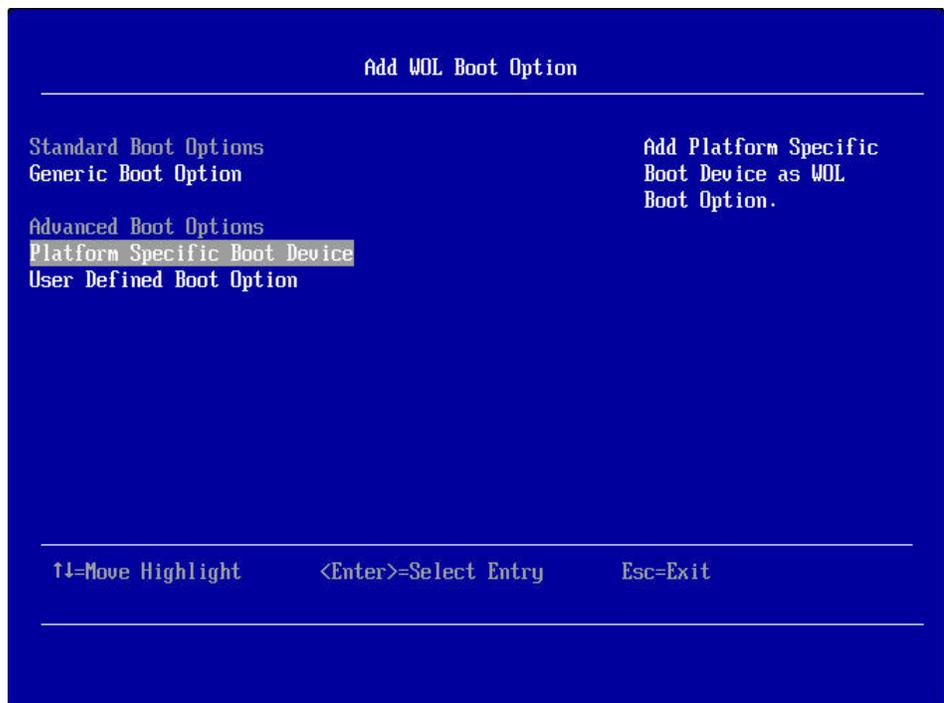
12. Select the **Description** field, and for description enter USB Port0 Hypervisor as shown.



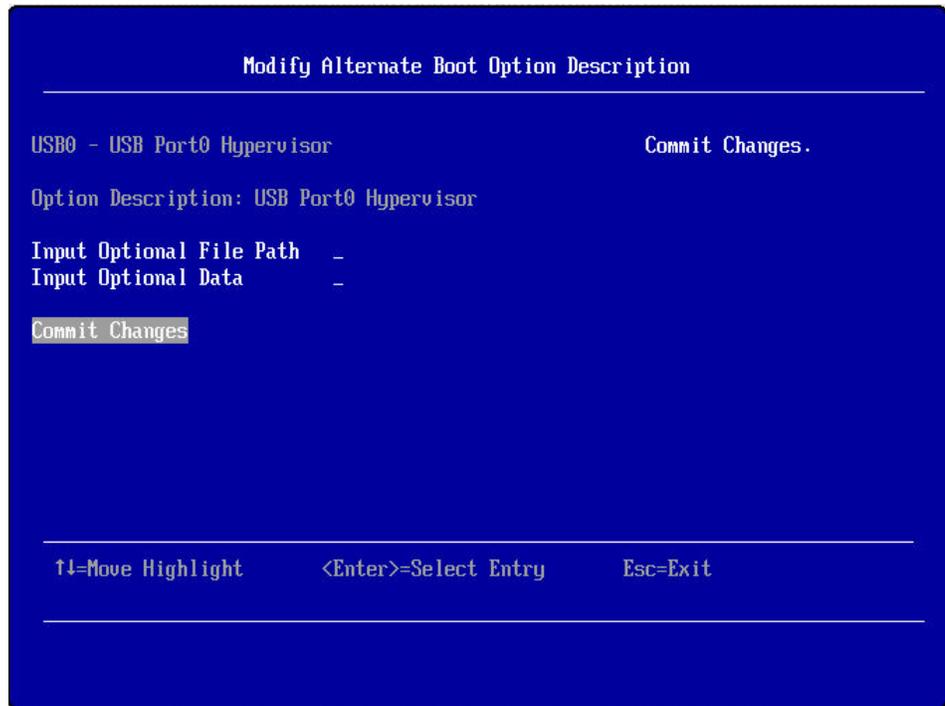
13. With the description in place, select **Commit Changes** and press **Enter**.



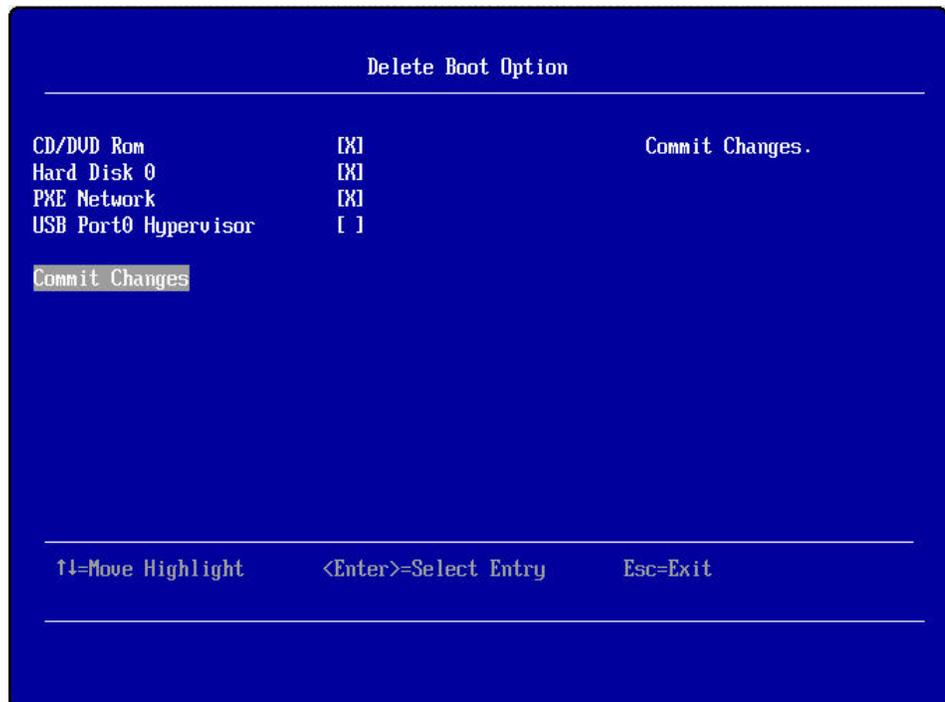
14. Press **Esc** to return to the Boot Manager panel and then **Add WOL Boot Option**. From this panel, select **Platform Specific Boot Device**. Again, choose **USB0 – USB Port0 Hypervisor**.



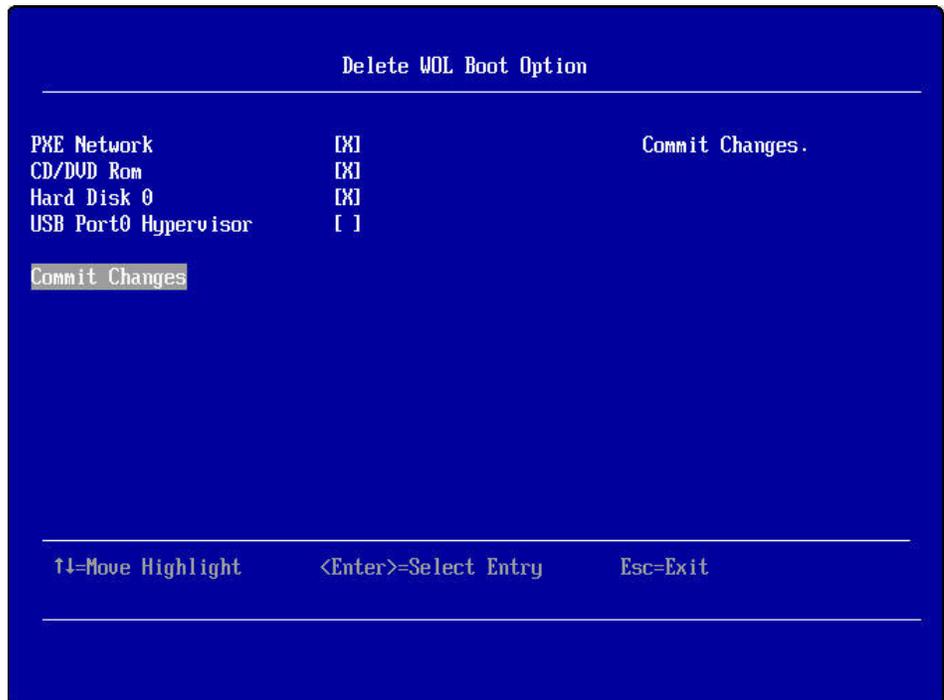
15. The description is already provided. Select **Commit Changes** and press **Enter**.



16. Press **Esc** to return to the Boot Manager panel. Select **Delete Boot Option**. On this panel, press **Space** to select each of the boot options except **USB Port0 Hypervisor**. Position the cursor at **Commit Changes** and press **Enter**.



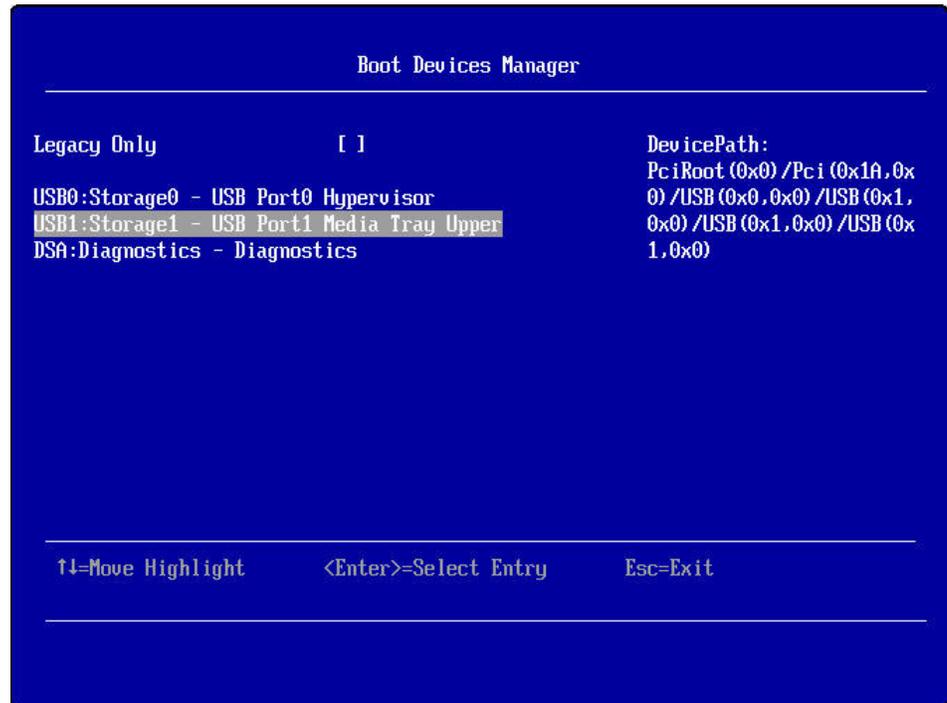
17. Press **Esc** to return to the Boot Manager panel. Select **Delete WOL Boot Option**. On this panel, press **Space** to select each of the boot options except **USB Port0 Hypervisor**. Position the cursor at **Commit Changes** and press **Enter**.



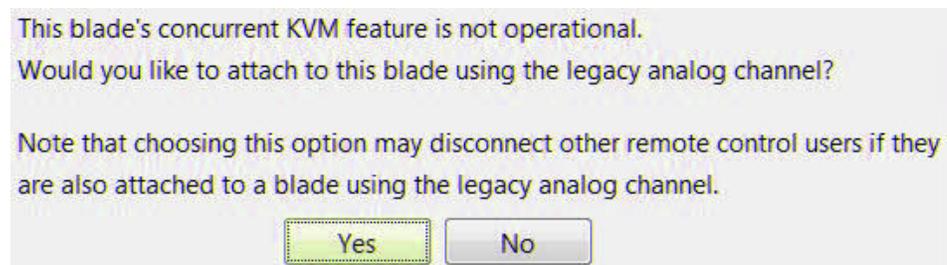
18. Press **Esc** to return to the Boot Manager panel. Select **Boot From Device**.



19. From the list of displayed devices, select the device at which the service key was inserted. In this example, the service key was inserted in the top slot of the media tray on the front of the BladeCenter chassis.



20. Press **Enter** and the appliance boots from the service key. The system reboots one or more times. The IBM System x screen might appear again. Let it time out and proceed.
21. For a remote KVM session, you might see the following dialog. Select **Yes** and the session should resume.



22. When you are prompted to enter the password, enter the password that corresponds to the service key that is plugged into the chassis. This password was obtained when the service key was created.



23. When prompted, enter and confirm the serial number of the blade appliance.
Attention: The serial number is for entitlement. Be careful to enter the serial number correctly. The serial number for the blade appliance is 78xxxxx, where xxxxx is five alphanumeric characters.

```

Press any key to enter the menu

Booting IBM WebSphere DataPower XI52B Field Replacement Flash in 0 seconds...Pro
bing EDD (edd=off to disable)... ok
>> Parsing ELF... OK.
Enter Password:*****
Copying firmware
Creating dev nodes
Enabling loopback interface
Enter Datapower Serial Number-> 060A0L6
Verify the serial number is 060A0L6 ? (Y/N)Y_

```

24. The system automatically updates the firmware (Ethernet, RAID, uEFI, and IMM) on the blade appliance if needed. The update process can take up to 30 minutes. Wait until the update process is complete. During this process, the blade appliance restarts multiple times, KVM connectivity can be lost, and the screen can blank out due to inactivity. You can press **Enter** to refresh.
Attention: Do not power off the blade appliance during this step. If the blade appliance is powered off, the results are unpredictable.
25. The DataPower firmware image initializes and prompts for a login.

```

DATAPOWER: Finding flash device
DATAPOWER: Waiting to find encrypted flash
DATAPOWER: Found encrypted flash
DATAPOWER: Creating ramdisk 1
DATAPOWER: Enabling loopback interface
DATAPOWER: Enabling LUKS-encrypted flash device
DATAPOWER: Starting tcspd
DATAPOWER: Waiting for tcspd to startup
DATAPOWER: Unlocking LUKS from TPM key
DATAPOWER: Unlocking LUKS from upgrade/bootstrap key
DATAPOWER: Unlocked LUKS from upgrade/bootstrap key
DATAPOWER: Deleting any old TPM key
DATAPOWER: Establishing TPM key
Requesting random number
Received random number
DATAPOWER: Created TPM key
DATAPOWER: Installed TPM key
DATAPOWER: Removed upgrade key
DATAPOWER: Checking flash filesystems
DATAPOWER: Stopping tcspd
DATAPOWER: Stopping udev before executing supervisor
DATAPOWER: Executing supervisor process
(unknown)
Unauthorized access prohibited.
login:

```

26. When the DataPower login screen displays, check the firmware version of the blade appliance in the AMM (select **Monitors > Firmware VPD**). For more information, see the *IBM BladeCenter Advanced Management Module User's Guide*. You should see versions at this level or higher.

FW/BIOS	TKE136VUS	01/20/2014	1.51
Diagnostics	DSYTB6E	04/18/2013	9.33
Blade Sys Mgmt Processor	1A0050C		3.60

27. Remove the service key from the BladeCenter chassis for safe keeping.

What to do next

After you complete this procedure, notify the customer administrator contact that the appliance is ready to be verified and receive initial configuration through remote serial access.

Note: The customer must contact IBM Support to confirm that the licenses are correctly displayed on the repaired appliance.

Related tasks:

“Creating the service key” on page 2

If you replace the appliance internal key or the system board, you must create the service key.

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