

Important Note for Replacing a Server Board in SGI® Altix® XE210 and SGI® Altix® XE240 Systems

Note: This procedure assumes that you have already replaced the server board in your SGI Altix XE210 or SGI Altix XE240 system. The procedure for replacing the server board is located in the *SGI Altix XE210 User's Guide*, publication number 007-4870-00x, and the *SGI Altix XE240 User's Guide*, publication number 007-4873-00x.

After you replace the server board (also called the baseboard or motherboard) in an SGI Altix XE210 or SGI Altix XE240 system, you must perform the following procedure to ensure that the system functions correctly.

1. Upgrade the firmware (refer to “Upgrading the Firmware” on page 1)
 - Create a bootable USB flash drive.
 - Flash the firmware images via the USB flash drive.
 - Restore the SGI recommended BIOS settings.
2. Configure the Baseboard Management Console (BMC) for Serial Over LAN (SOL) (cluster systems only) (refer to “Configuring the BMC and Serial Over LAN (Cluster Systems Only)” on page 4)
 - Configure the BIOS settings.
 - Configure the BMC for SOL with the `syscfg` command.
3. Update the software license keys (refer to “Updating Software License Keys” on page 6)

Upgrading the Firmware

SGI Altix XE210 and SGI Altix XE240 systems have three separate firmware images that you must upgrade after replacing a server board: BIOS, BMC, and FRUSDR. You can update the firmware by using a DOS-bootable USB flash drive.

Create a Bootable USB Flash Drive

Use the following procedure to create a bootable USB flash drive that has the BIOS, BMC, and FRUSDR flash images installed. You can then use this drive to upgrade the firmware on your SGI Altix XE210 or SGI Altix XE240 system.

1. Log in to the Supportfolio™ website and download the latest BIOS image file to a system running the Linux® operating system. The BIOS image file is named `usbflash-biosNN-NN-NN-freedos.img`, where *NN*=revision information.

Tip: Use the Power Search feature on the Supportfolio website to locate the download. (A useful search string is “Altix XE 210/240 usbflash-bios*freedos.img”.)

2. Verify that the BIOS image was properly downloaded by comparing the `md5sum` of your download with the `md5sum` listed on Supportfolio, which is similar to the following example:

```
ef2edc97ee1462408a8208fdf464d0fc usbflash-bios74-58-40-freedos.img
```

3. Plug a USB flash drive into the system that contains the downloaded BIOS image file, and enter the following command to see where the drive was mounted (typically `/dev/sda`):

```
tail -f /var/log/messages
```

4. Enter the following command to copy the BIOS flash image to the USB flash drive; this command performs a sector copy to the drive and creates a boot partition:

```
dd if=usbflash-biosNN-freedos.img of=/dev/sdN
```

Note: Set the `of` parameter to the location where the drive is mounted (for example, `/dev/sda`). Do **not** enter `/dev/sdN1`.

5. When the command completes, remove the USB flash drive from the system.

Flash the Firmware Images

1. Connect a monitor, keyboard, and mouse to the SGI Altix XE210 or SGI Altix XE240 system that you want to flash.

Note: Some newer PS/2 keyboards do not work correctly with the BIOS setup menu; if you experience keyboard problems, use a USB keyboard instead.

2. Insert the USB flash drive in the front port of the system, then reboot and enter the BIOS menu by pressing the F2 key.
3. Go to the BIOS Boot Manager menu; the USB drive should appear in the list of boot devices.
4. Use the arrow keys to highlight the USB drive, and then press Enter; a DOS prompt should appear.

Note: If you cannot boot from the USB drive, return to the BIOS setup menu. Then, go to the Advanced -> USB Configuration menu; verify that the USB drive appears under Storage Emulation and is set to Auto.

5. At the DOS prompt, enter the following command to update the BIOS, BMC, and FRUSDR images on the system; the script prompts you to press any key in between each flash segment:

```
flashsys.bat
```

6. The FRUSDR update script prompts you to select from a menu of five options; select option 1: Update both the FRUs and the SDR repository.

7. The script then prompts you to select the system type: `SR1500AL` (for an SGI Altix XE210 system) or `SR2500AL` (for an SGI Altix XE240 system). Choose the type that matches your system.
8. Next, the script asks if you want to enter the chassis part and serial number; you should always do this after replacing the server board.

You can locate the chassis serial number on a sticker attached to the rear of the chassis; you will find the system serial numbers on a sticker at the bottom-rear of the system rack.

Example part and serial numbers are shown below:

Chassis part number: 013-5302-001
Chassis serial number: X0000123
System serial number: X1000012

Restore the SGI Recommended BIOS Settings

The image on your USB flash drive provides a script that automatically sets the SGI recommended BIOS settings.

Note: You must reset the BIOS to factory defaults before running these scripts. (You will do this in Step 2 below.)

1. Reset the system; then, press F2 to enter the BIOS setup menu.
2. Press F9 to reset BIOS to the Intel® defaults.
3. Press F10 to save your changes and reset the system.
4. Boot from the USB flash drive, and enter the following command:
`\set115`
5. Remove the USB flash drive, and reset the system.

Configuring the BMC and Serial Over LAN (Cluster Systems Only)

If the SGI Altix XE210 or SGI Altix XE240 system is a node in a cluster, you also need to configure the Baseboard Management Console (BMC) for Serial-Over-LAN (SOL) functionality.

Start by configuring the BIOS settings. (Refer to “Configure the BIOS Settings for SOL” on this page). Then, you can configure the BMC for SOL. (Refer to “Configure the BMC for SOL via the syscfg Command” on page 5.)

Configure the BIOS Settings for SOL

1. Connect a monitor, keyboard, and mouse to the SGI Altix XE210 or SGI Altix XE240 system that contains the replaced server board.

Note: Some newer PS/2 keyboards do not work correctly with the BIOS setup menu; if you experience keyboard problems, use a USB keyboard instead.

2. Power the system on.
3. When the POST memory test completes, press the F2 function key to enter BIOS setup mode.
4. Click on the `Advanced` tab, and ensure that the following `Serial Port` settings are configured as shown:

```
Serial B Enable      [Enabled]
Address              [2F8]
IRQ                  [3]
```

5. Click on the `Server Management` tab, and ensure the following `Console Redirection` settings are configured as shown:

```
Console Redirection [Serial B]
Flow Control        [RTS/CTS]
Baud Rate           [115.2K]
Terminal Type       [VT100+]
Legacy OS Redirection [Enabled]
```

6. Press the F10 key to save your changes and exit the BIOS menu.

Configure the BMC for SOL via the syscfg Command

Perform the following procedure to use the `syscfg` command from a DOS-bootable USB flash drive to configure SOL:

1. Connect a monitor, keyboard, and mouse to the SGI Altix XE210 or SGI Altix XE240 system that contains the replaced server board.

Note: Some newer PS/2 keyboards do not work correctly with the BIOS setup menu; if you experience keyboard problems, use a USB keyboard instead.

2. Insert the USB flash drive in the front USB port of the system.
3. Power the system up, and press F2 to enter BIOS mode.
4. Go to the BIOS `Boot Manager` menu; the USB drive should appear in the list of boot devices.
5. Use the arrow keys to highlight the USB drive, and then press Enter; a DOS prompt should appear.

Note: If you cannot boot from the USB drive, return to the BIOS setup menu. Then, go to the `Advanced -> USB Configuration` menu; verify that the USB drive appears under `Storage Emulation` and is set to `Auto`.

6. When the DOS prompt appears, enter the following command to change to the `\SYSCFG` directory:

```
cd \syscfg
```

7. Enter the following commands to set the static IP address, netmask, and network gateway of LAN 1; you can obtain the correct BMC IP address for the node from the *SGI-XE-Cluster-Network-Checklist* that shipped with the system:

```
syscfg /le 1 static <ipaddress> 255.255.0.0
```

```
syscfg /lc 1 12 <gateway>
```

8. Enter the following command to enable SOL on LAN 1:

```
syscfg /sole 1 enable admin 115200 6 20
```

9. Enter the following commands to configure the LAN channel:

```
syscfg /lc 1 10 enable
```

```
syscfg /lc 1 11 5000
```

10. Enter the following commands to configure the BMC channels:

```
syscfg /c 1 4 straight+md5
```

```
syscfg /c 1 7 always
```

11. Enter the following commands to set the default BMC user name and password and to enable the BMC user:

```
syscfg /u 2 admin admin
```

```
syscfg /ue 2 enable 1
```

```
syscfg /up 2 1 admin sol
```

12. Enter the following command to set console redirection on COM2:

```
syscfg /bcr COM2 115200 CTS VT100
```

13. Enter the following command to display the current settings of LAN 1; verify that they are correct:

```
syscfg /d lan 1
```

14. Remove the USB flash drive, and reset the system.

Updating Software License Keys

Note: The following information applies only to SGI software products, such as XVM and FFIO. For other software products, please contact the vendor for additional information and assistance.

Some SGI software products on your system might be protected by software license keys that are tied to the MAC Ethernet address stored on the server board. When you replace the server board, you might need to obtain new software license keys that correspond to the MAC Ethernet address stored on the replacement server board.

If invalid software license keys cause any software to fail on your system after you replace the server board, please contact your local customer support office to obtain new software license keys. You will need to provide the MAC Ethernet address of the new server board to obtain the new software license keys.

Refer to the following URL for customer support contact information:

<http://www.sgi.com/support/supportcenters.html>

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