

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 2)
 - 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 *Intel® Server Deployment Toolkit* CD or with the `syscfg` command.
3. Update the software license keys (refer to “Updating Software License Keys” on page 7)

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 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-freedos.img`, where *NN*=BIOS revision.

2. 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
```

3. 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/sda
```

Note: Set the `of` parameter to the location where the drive is mounted (`/dev/sda` in the example above).

4. 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.
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. Access the `Advanced -> Storage Emulation` field of the BIOS menu, and set the `USB Flash Mem detection` option to `auto`; this ensures that BIOS correctly detects the bootable partition on the USB flash drive.
4. Use the BIOS `Boot Manager` menu to boot from the USB flash drive; a DOS prompt should appear.
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 three scripts that automatically set 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 factory defaults.
3. Press F10 to save your changes and reset the system.
4. Boot from the USB flash drive, and enter one of the following commands to run the appropriate script for your system:

`\setb1151a` (for an SGI Altix XE210 system with an active backplane)

`\setb1151p` (for an SGI Altix XE210 system with a passive backplane)

`\setb1152` (for an SGI Altix XE240 system)

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” on this page). Then, you can configure BMC for SOL. There are two options for configuring BMC for SOL:

- You can use the *Intel Server Deployment Toolkit* CD (P/N D36234-003) if the system has a DVD-ROM drive. (Refer to “Option 1: Configure the BMC for SOL via the Intel Server Deployment Toolkit CD (Systems with a DVD-ROM Drive)” on page 5.)
- You can use the `syscfg` command if the system does not have a DVD-ROM drive. (Refer to “Option 2: Configure the BMC for SOL via the syscfg Command (Systems without a DVD-ROM Drive)” on page 6.)

Configure the BIOS Settings

1. Connect a monitor, keyboard, and mouse to the SGI Altix XE210 or SGI Altix XE240 server.
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 verify that the following `Serial Port` settings are configured as shown:

<code>Serial B Enable</code>	<code>[Enabled]</code>
<code>Address</code>	<code>[2F8]</code>
<code>IRQ</code>	<code>[3]</code>

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

<code>Console Redirection</code>	<code>[Serial B]</code>
<code>Flow Control</code>	<code>[RTS/CTS]</code>
<code>Baud Rate</code>	<code>[38.4K]</code>
<code>Terminal Type</code>	<code>[VT100]</code>
<code>Legacy OS Redirection</code>	<code>[Enabled]</code>

6. Press the F9 key to save your changes and exit the BIOS menu.

Option 1: Configure the BMC for SOL via the Intel Server Deployment Toolkit CD (Systems with a DVD-ROM Drive)

If your system has a DVD-ROM drive, you can use the *Intel Server Deployment Toolkit* CD (P/N D36234-003) to configure the BMC for SOL:

Note: The *Intel Server Deployment Toolkit* CD (P/N D36234-003) shipped with your system. You can also download the ISO image from support.intel.com.

1. Insert the *Intel Server Deployment Toolkit* CD (P/N D36234-003) in the DVD-ROM drive of the head node and reset the system from the front control panel; a GUI menu should appear on the monitor.
2. Select `Configure a Server`.
3. Check the `Server Management Settings` box; then, click `Next`.
4. At the `Communications Options` menu, check the `LAN Channel 1 (onboard NIC1)` box to configure the BMC connected to the first onboard NIC, and check the `Direct Serial Connection` box; then, click `Next`.
5. Check the `Enable LAN Channel 1` box.
6. If necessary, assign a static IP address and netmask to the BMC; then, click `Next`.

```
IP Address      [10.0.30.n]
Netmask        [255.255.0.0]
```

Note: Use the IP address that corresponds to the compute-node hostname listed in the *SGI-XE-Cluster-Network-Checklist* that shipped with the system.

7. Check the `Enable Serial Over LAN` box; then, click `Next`.
8. At the `Serial Channel` menu, **uncheck** the `Enable Serial Channel` box; then, click `Next`.
9. On the `User` page, select `Anonymous User`; then, click `Edit`.
10. Click `Enable user account`.
11. Set the user privileges to `Admin`, and click `Next`; set the password to `admin`.
12. Click `Apply`; then, click `Exit`.

Option 2: Configure the BMC for SOL via the syscfg Command (Systems without a DVD-ROM Drive)

If your system does not have a DVD-ROM drive, you can use the `syscfg` command from a DOS-bootable USB flash drive to configure SOL.

1. If necessary, copy the `\SYSCFG` folder from the *Intel Server Deployment Toolkit* CD (P/N D36234-003) to your USB flash drive; the `S5000PAL_DOS.ISO` image contains this folder and is located in the `\Utilities\DOS` directory of the CD.

Note: The `usbflash-biosNN-freedos.img` contains a copy of the `\SYSCFG` folder.

2. Insert the USB flash drive in the front USB port of the SGI Altix XE210 or SGI Altix XE240 system that contains the replaced server board.
3. Power the system up, and press F2 to enter BIOS mode.
4. Go to the BIOS Boot Management menu, and select the USB flash drive; then, press Enter. The system should reset and boot from the USB flash drive.
5. When the DOS prompt appears, enter the following command to change to the `\SYSCFG` directory:

```
cd \syscfg
```

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

```
syscfg /d lan 1
```

7. If your LAN settings are incorrect, enter the following command to set the static IP address and netmask 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
```

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

```
syscfg /sole 1 enable admin 38400 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 38400 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. 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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