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Sun Fire™ B10p SSL Proxy Blade Product Notes

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Sun Fire™ B10p SSL Proxy Blade Product Notes

This document contains important information about the Sun Fire™ B10p software. This document also covers the Sun Fire™ B10n content load balancing blade application software update P1.2.

Viewing the Latest Documentation

Additional issues may arise after the publication of this version of the product notes. For the latest information, refer to the latest version of this document currently available at the following web site:

```
http://www.sun.com/products-n-solutions/hardware/docs/Servers/
Workgroup_Servers/Sun_Fire_Blade_Platform/Sun_Fire_b100s/
index.html
```

Open Issues

Please refer to the most recent version of this document located at the above URL for the latest known bugs. The following bugs were open at the release of this version of the product notes.

Problem: HTTPS File is not Downloading Completely (Bug ID 4906357)

The HTTPS file might not download completely. If this problem occurs, the connection resets.

Workaround:

If this occurs retry the download.

VLANs Required for the SSL Proxy Blade

When using the Sun Fire B10p SSL proxy blade, VLANs must be used within the Sun Fire B1600 blade system. These VLANs are configured at the SSC switches to create logical groups of endpoints that can communicate as if they were on the same LAN. VLANs also prevent or restrict traffic between endpoints on separate VLANs. For details, refer to the "Why VLANs are Required for the SSL Proxy Blade" section of the *Sun Fire B10p SSL Proxy Blade Administration Guide*.

Updating the Software and Firmware

Before you setup and configure the Sun Fire B10p SSL proxy blade you need to ensure you have the latest software and firmware for the SSL proxy blade, the B10n content load balancing blade, and the Sun Fire™ B1600 blade system chassis. The minimum versions are listed in TABLE 1.

The latest software and firmware versions can be downloaded from:

`http://wwws.sun.com/software/download/network.html`

Hardware and Software Requirements

Before using the Sun Fire B10p blade, make sure your system meets the following hardware and software requirements.

TABLE 1   Hardware and Software Requirements

Hardware and Software	Requirements
Hardware	• Sun Fire B10n content load balancing blade (at least one Sun Fire B10n blade for every four SSL proxy blades) • Sun Fire B1600 blade system chassis and other horizontally scaled Sun platforms • Sun Fire™ B100s blade server
Software	• Sun Fire B10p application software version 1.865 or subsequent equivalent version • Sun Fire B10p BSC Firmware version v5.1.0-SUNW* • Sun Fire B100s blade server Solaris 8 HW 3/03 or HW 7/03 operating system or subsequent compatible version • Sun Fire B1600 SC (system controller) 1.2 or subsequent compatible system controller firmware • Sun GigaSwift Ethernet Adapter Patch ID 111883-18 or subsequent compatible patch for supported versions of the Solaris 8 operating environment. Sun GigaSwift Ethernet Adapter Patch ID 112817-10 or subsequent compatible patch for supported versions of the Solaris 9 operating environment..** • Sun Ethernet VLAN Patch ID 112119-04 or subsequent compatible patch for supported versions of the Solaris 8 operating environment.. Sun Ethernet VLAN Patch ID 114600-02 or subsequent compatible patch supported versions of the Solaris 9 operating environment..**

* The version number displayed from the `showsc -v` command from the Sun Fire B1600 SC CLI printout refers to the BSC firmware version. The application software version is observed using the console `show version` command.

** The patch currently installed can be displayed by entering `showrev -p | grep <patch-id without the rev>` for example: `showrev -p | grep 111883`. You can download patches from `sunsolve.sun.com`

Checking the Software Versions

▼ To Check the Sun Fire B1600 Software Version

● **Type the** `showsc -v` **command:**

```
sc> showsc -v
Sun Advanced Lights Out Manager for Blade Servers 1.2
Copyright 2003 Sun Microsystems, Inc. All Rights Reserved.
ALOM-B 1.2

Release: 1.2.6
```

▼ To Check the Sun Fire B10n Content Load Balancing Blade Application Software

● **Type the** `console s1` **and** `show system` **commands:**

```
sc> console s1
puma{admin}# show system
Boot Options:
==============================================================================
Config Type    Config File    Boot Image          Diag Level    Verbose Mode
------------------------------------------------------------------------------
running                    1   1 (1.1.9)                    0                0
next                       1   1 (1.1.9)                    0                0
==============================================================================


Image Information Table:
==============================================================================
Image    Blade    Image Type      Version      Build Date:Time      Size
------------------------------------------------------------------------------
1        B10n     Load Balancer   1.1.9        10/14/03 : 23:16     4035122
2        B10n     Load Balancer   1.1.8        09/29/03 : 14:30     4022705
diag     B10n     Diagnostics     1.1.9        10/20/03 : 16:55     2410797
==============================================================================

Flash FS /RFA0 free space = 17,600,512 bytes
```

▼ To Check the Sun Fire B10p SSL Proxy Blade Application Software Version

● **Type the** `console s2` **and** `show version` **commands:**

```
sc> console s2
CLI# show version
    software version: 1.863
```

▼ To Check any Sun Fire Blade BSC Firmware Version

● **Type the** `showsc -v` **command:**

```
sc> showsc -v
FRU    Software Version             Software Release Date
-----------------------------------------------------------
S0    v5.1.0-SUNW,B10p,SecureBlade1   Jun 16 2003 16:41:38
S6    v5.1.3-SUNW,B10n,NetBlade1      Aug  6 2003 15:43:56
```

Software Architecture

The Sun Fire B10p SSL proxy blade delivers high performance by utilizing optimized hardware engines and a tightly coupled embedded processor running a real time operating system. The code that runs on this processor is called the application software and can be updated using an FTP process.

In addition to the embedded processor, there is a micro controller called the blade support controller (BSC). The BSC is the primary interface to the Sun Fire B1600 service controllers (SCs) and performs the advanced lights out management (ALOM) functions for a given blade. These functions include powering on and off, and the resetting and monitoring functions. The code that runs on this device is called the BSC firmware and can be updated using the `flashupdate` command which involves using TFTP.

The Sun Fire B10p software components are as follows:

■ Application software
■ BSC firmware

Check the following web site to ensure you have the latest software:

`http://wwws.sun.com/software/download/network.html`

Command-Line and Console Interfaces

There are two types of command-line interfaces when working with blades in a Sun Fire B1600 system. The first type is the system controller or sc> interface. The commands for this interface are detailed in the *Sun Fire B1600 Blade System Chassis Software Setup Guide*. You will recognize this interface by the sc> prompt.

The second type is the switch interface and is accessed with the console command. The individual blades in the chassis are accessed through the console command that is entered at the sc> prompt, for example:

```
sc> console sn
```

Where *n* is the blade slot you wish to access, for example:

```
sc> console s0
```

Once the blade has been powered on and you are at the blade console prompt and have logged into the desired blade, you can administer the commands as outlined, in the *Sun Fire B10p SSL Proxy Blade Administration Guide*. You will recognize this interface by the CLI# prompt.

You can return to the sc> interface by using the #. key sequence. (that is, the hash (#) character followed by the dot (.) character.

Application Software

The Sun Fire B10p SSL proxy blade has the ability to hold three versions of the application software: an active image, a backup image, and a factory image. This capability ensures that you can revert to a safe image of the application software if a problem occurs with the current version or a problem occurs when updating the software. The software images are stored and loaded as follows:

- Active image – Primary image stored in Flash and loaded into RAM on bootup
- Backup image – Secondary image stored in Flash and can be moved to the Active image. This image is over written when a new image is uploaded
- Factory image – Loaded into Flash at time of manufacture. Used in case both Active and Backup images are corrupted.

The typical operations associated with images are:

- Booting – loading the permanent active image into RAM and starting the system (automatic on power up)

■ Upgrading – loading a new image as permanent. The backup image and the factory image are protection mechanisms to ensure recovery from failed or undesired upgrades.

There is also a configuration file that holds the configuration data (see the "Configuration Storage" section of the *Sun Fire B10p SSL Proxy Blade Administration Guide*). The operator will be prompted to overwrite the permanent configuration. It is important to backup the configuration of the system prior to the time when new software is uploaded.

FIGURE 1 shows the various images and how various CLI commands alter or copy them.
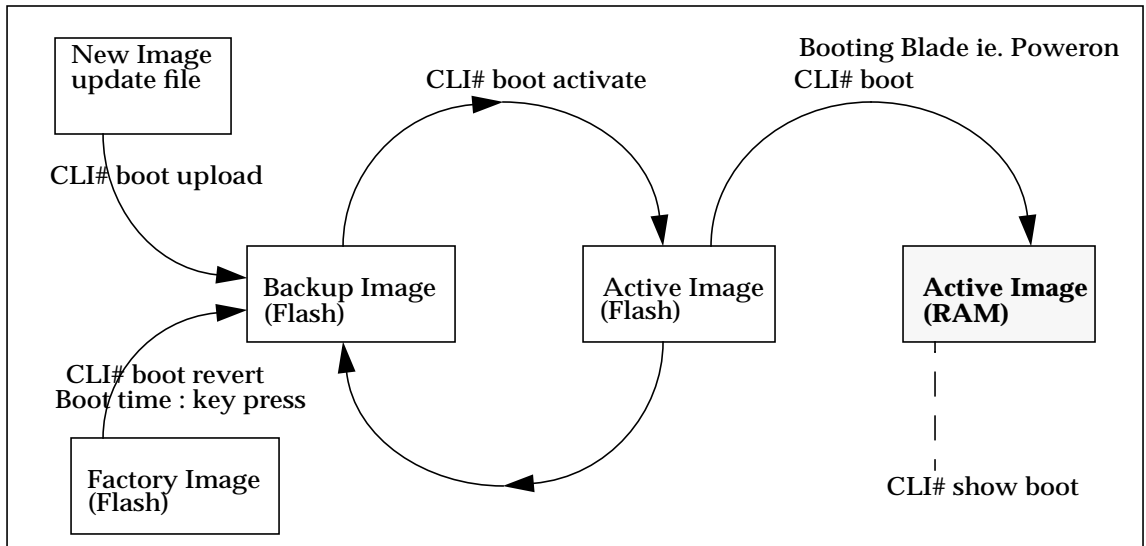
FIGURE 1   SSL Proxy Blade Images and CLI Commands

BSC Firmware

The BSC is the primary interface to the Sun Fire B1600 SCs. There is a single image stored in the micro controller that can be overwritten through the flashupdate process. If there is a problem during the BSC flashupdate process the recovery is just a matter of repeating the update as the SC software is managing the process.

Updating the Sun Fire B1600 System Controller

Before you install the Sun Fire B10p SSL proxy blade in your Sun Fire B1600 chassis, you must first update the system controller (`sc`) firmware version `SC1.2`. You can download the latest version of the `sc` firmware from Sun's download site:

`http://wwws.sun.com/software/download/network.html`

You need to set up a TFTP boot server to update the `sc` firmware. See the "Setting Up a TFTP Server" section of the *Sun Fire B10p SSL Proxy Blade Administration Guide.*

You can access all the Sun Fire B1600 documentation from the following web site:

`http://www.sun.com/products-n-solutions/hardware/docs/Servers/`
`Workgroup_Servers/Sun_Fire_b100s/index.html`

▼ To Update the System Controller Firmware

1. **At the** `sc>` **prompt, type the following command:**

```
sc> flashupdate -s install server -f path SSCn/SC.
```

In the following example, 10.4.128.25 is the IP address for your TFTP boot server and `stiletto.1.1/c8/SunFireB1600-sc-v1.1.6.flash` is the path to the file:

```
sc> flashupdate -s 10.4.128.25 -f stiletto.1.1/c8/SunFireB1600-sc-v1.1.6.flash
SSC0/SC
Warning: Are you sure you want to flashupdate the SSC0/SC flash image (y/n)? y
SSC0/SC: Preparing to flashupdate.
flashupdate: erasing segment 36 programming address ffedfffd
SSC0/SC: flashupdate complete.
```

2. **Reset the system using** `resetsc` **to load the new image.**

Updating the Sun Fire B10n Application Software and BSC Firmware

It is important to verify that you have the latest software for the Sun Fire B10n content load balancing blade. Check the following web site for the latest software and documentation:

`http://wwws.sun.com/software/download/network.html`

You need to set up a TFTP boot server to update the BSC firmware. See the "Setting Up a TFTP Server" section of the *Sun Fire B10p SSL Proxy Blade Administration Guide.*

You also need to configure the management IP address and default gateway address. Refer to the "Configuring the Networking" section of the *Sun Fire B10n Content Load Balancing Blade Administration Guide.*

Note – If you are updating both the B10n application software and BSC firmware, be sure to update the B10n application software *first*.

▼ To Update the Sun Fire B10p Application Software

The SSL proxy blade supports the ability to perform network based software upgrades to the device. The software upgrades to the SSL proxy blade are encrypted and authenticated in order to preserve their security. Normal operation of the SSL proxy blade must be stopped during the upgrade process because a reboot is required after activating an upgrade.

Note – Read this section completely before proceeding to perform a software upgrade.

Download the application software to a local FTP/TFTP server before performing the upgrade.

Upgrades are a two step process. First, verify and copy the upgrade package as the backup image of the software. Then activate the new software using the `boot activate` command. This command swaps the active software with the backup, thus making the upgrade active on the next boot.

The upgrade sequence is as follows. You need to login as so (security officer) to perform upgrades.

▼ Executing Boot Upload Commands

1. Use FTP or TFTP to copy the package from the specified FTP or TFTP server.

The upgrade package is automatically decrypted and verified for authenticity. The successfully verified package is placed in the backup image location within the SSL proxy blade. An upgrade package can be up to three Megabytes in size and may take up to one minute to copy from a local FTP server. A spinning cursor shows activity during the process.

Note – **The FTP/TFTP server IP address must be on the same subnet as the management (admin) IP address of the SSL proxy blade.**

■ Executing boot upload commands using an FTP server:

```
CLI# boot upload
Enter remote file name (520-3440-02.pkcs ): package_name
Enter remote path (releases): directory
Enter remote IP Address: (192.168.0.28): ip-addr
Enter remote user name (labuser): username
Enter remote user password (): password
 starting to load image
 Verification Successful.
 image loaded.
 Type boot activate to install.
```

■ Executing boot upload commands using a TFTP server:

```
CLI# boot upload-tftp
Enter remote file name (520-3440-02.pkcs ): package_name
Enter remote IP Address: (192.168.0.28): ip-addr
 starting to load image
 Verification Successful.
 image loaded.
 Type boot activate to install.
```

If the upgrade package is not successfully verified, then contact the Sun Microsystems support service to report the problem.

> **Note –** A particular upgrade package may require some additional installation steps. For example, you may need to import a new key. Please read the release notes carefully before performing any upgrade.

2. **Once the upgrade is in the backup location, activate it:**

```
CLI# boot activate
Do you want to overwrite your existing flash.cfg file (Yes/No)? No
*** Warning. Do not turn off the power! ***
activating boot.
image updated.
reboot to run new image.
```

3. **After the upgrade is activated, reboot the SSL proxy blade:**

```
CLI# reboot
```

Verifying the Upgrade

As soon as the upgrade is finished:

- Verify that the SSL proxy blade boots properly
- Perform some basic tests to make sure the SSL proxy blade operates correctly

Reverting to Previous Versions of Software

You can always revert to the previous version of software by upgrading to a previous version. Also, the boot activate command will swap the current and backup versions, but this does not swap the boot images. If the upgrade documentation indicates that a new version of the boot image is part of the upgrade, then do not use boot activate to revert to the previous version.

Factory Image

The SSL proxy blade has a built in Factory image that guarantees the SSL proxy blade platform is recoverable even if an unbootable image is loaded on it. Because SSL proxy blade software is authenticated, image corruption is extremely unlikely.

Although the Factory image can be used to process SSL traffic, it is intended to provide a safe mode to load the latest available software version for the SSL proxy blade.

The Factory image should be used only if the SSL proxy blade is not booting to a point where new software can be loaded. Before booting from the factory image, connect a serial terminal and reboot to inspect the boot up messages. The boot problem could be associated with some internal hardware malfunction. If this is the case, call support.

To boot from the Factory image, power on the SSL proxy blade and hold the `Esc` key down until prompted for input. When the boot menu is displayed, press `r` to revert to the Factory image. Under normal system operation, the command `boot revert` also reboots from the Factory image.

If the SSL proxy blade loses power during the upgrade process, the Backup image might be corrupted. In this case, it is best to ignore the Backup image and perform the upgrade process again.

Image Commands

The description of each CLI command relevant to software image and booting is given below.

show version

Use the `show version` command to display the current version of the software.

● **As any user, enter the** `show version` **command:**

```
CLI# show version
    software version: 1.863
```

reboot

Use the `reboot` command to restart the blade. You will be prompted to save the configuration, if needed. This command resets all connections and reboots the system.

● **As** `so`**, reboot the device:**

```
CLI# reboot
```

show boot

Use the `show boot` command to display version information for all system software components.

- **As** `so` **or** `admin`, **enter the** `show boot` **command:**

```
CLI# show boot
    versions:
    BBID: 66 CPLD version: 65
    preboot 1855 Jul 16 2003
    boot 1863 Oct  1 2003
    app  1863 Oct  1 2003
    Buff: BUFF3108.GZ
    Mash: MASH1005.GZ

    Active:   BAPP: 1863, BOOT: 1863, MASH: 1005, BUFF: 3108
    Backup:   BAPP: 1863, BOOT: 1863, MASH: 1005, BUFF: 3108
    Required: BAPP: 1863, MASH: 1005, BUFF: 3108, CPLD: 65.22D
```

boot activate

Use the `boot activate` command to activate the backup software version. The current active version is saved as the backup. This command is used after uploading a new software version. There may be a prompt to confirm overwriting the flash configuration (which should have been previously exported). You can also use this command to revert to a backup version.

- **As** `so`, **enter the** `boot activate` **command:**

```
CLI# boot activate
Do you want to overwrite your existing flash.cfg file (Yes/No)? Yes
*** Warning. Do not turn off power! ***
activating boot.
image updated.
reboot to run new image.
```

boot revert

Use the `boot revert` command to restore the factory installed software version. This command also clears the flash memory, removing *all* information including configuration, log files, and other information. This command reboots the SSL proxy blade and performs the operation.

- **As** so**, enter the** `boot revert` **command:**

```
CLI# boot revert
This will reformat the system and erase all system files
Are you sure you want to do this (Yes/No)?
```

boot upload

Use the `boot upload` command to load new images of the software using FTP.

- **As** so**, enter the** `boot upload` **command:**

```
CLI# boot upload
Enter remote file name (520-3440-02.pkcs ): filename
Enter remote path (releases):  directory
Enter remote IP Address: (192.168.0.28): ip-addr
Enter remote user name (labuser): username
Enter remote user password (): password
Connecting to 192.168.0.28
starting to load image
Verification Successful.
image loaded.
Type boot activate to install.
```

boot upload-tftp

Use the `boot upload-tftp` command to load new images of the software using TFTP.

- **As** so**, enter the** `boot upload-tftp` **command:**

```
CLI# boot upload-tftp
Enter remote file name (520-3440-02.pkcs ): image_filename
Enter remote IP Address: (192.168.0.28): ip-addr
Connecting to 192.168.0.28
starting to load image
Verification Successful.
image loaded.
Type boot activate to install.
```

▼ To Update the BSC Firmware

1. Escape to the system controller console:

```
puma{admin}# #.
```

2. At the `sc` prompt, check the current version of the BSC firmware:

```
sc> showsc -v
FRU    Software Version           Software Release Date
----------------------------------------------------------
S0     v5.1.4-SUNW,B10n,NetBlade1  Aug 12 2003 15:31:48
```

3. At the `sc` prompt, enter the following command:

```
sc> flashupdate -s TFTP_ip-addr -f filename sn
```

Known Problems With the Documentation

The Declaration of Conformity is incorrect and is missing the Compliance Model Number in the *Sun Fire B10p SSL Proxy Blade Administration Guide*. The following Declaration of Conformity document contains all of the correct information for the Sun Fire B10p SSL Proxy Blade.

Declaration of Conformity

Compliance Model Number: BP-5
Product Family Name: Sun Fire B10p SSL proxy blade

EMC

USA - FCC Class A

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This equipment may not cause harmful interference.

2) This equipment must accept any interference that may cause undesired operation.

European Union

This equipment complies with the following requirements of the EMC Directive 89/336/EEC:

As Telecommunication Network Equipment (TNE) in both Telecom Centers and Other Than Telecom Centers per (as applicable):
EN300-386 V.1.3.1 (09-2001) Required Limits:

EN55022/CISPR22		Class A
	EN61000-3-2	Pass
	EN61000-3-3	Pass
	EN61000-4-2	6 kV (Direct), 8 kV (Air)
	EN61000-4-3	3 V/m 80-1000MHz, 10 V/m 800-960 MHz and 1400-2000 MHz
	EN61000-4-4	1kV AC and DC Power Lines, 0.5 kV Signal Lines.
	EN61000-4-5	2 kV AC Line-Gnd, 1 kV AC Line-Line and Outdoor Signal Lines, 0.5 kV Indoor Signal Lines > 10m.
	EN61000-4-6	3 V
	EN61000-4-11	Pass

As information Technology Equipment (ITE) Class A per (as applicable):

EN55022:1998/CISPR22:1997		Class A
EN55024:1998 Required Limits:		
	EN61000-4-2	4 kV (Direct), 8 kV (Air)
	EN61000-4-3	3 V/m
	EN61000-4-4	1kV AC Power Lines, 0.5 kV Signal and DC Power Lines.
	EN61000-4-5	1 kV AC Line-Line and Outdoor Signal Lines, 2 kV AC Line-Gnd, 0.5 kV DC Power Lines
	EN61000-4-6	3 V
	EN61000-4-8	1 A/m
	EN61000-4-11	Pass
EN61000-3-2:1995 + A1, A2, A14		Pass
EN61000-3-3:1995		Pass

Safety

This equipment complies with the following requirements of the Low Voltage Directive 73/23/EEC:

EC Type Examination Certificates:

EN60950:2000, 3rd Edition	TÜV Rheinland Certificate No. Not Required
IEC 60950:1999, 3rd Edition,	CB Scheme Certificate No. US/6982/UL
Evaluated to all CB Countries	
UL 60950, 3rd Edition, CSA C22.2 No. 60950-00	File:E138989-A10-UL-1

Supplementary Information

This product was tested and complies with all the requirements for the CE Mark.

/S/ 20 APR 03

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