SANBlaze Technology August 13, 2012 Version 1.0.4

# **Release Notes**

Document Revision 2.0

### SB-ATCA1000

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## SANBlaze® SB-ATCA1000 Release Notes

Thank you for choosing products from SANBlaze Technology.

This document contains important information about this product release that may not appear in the standard product documentation. We encourage you to read these notes before installing this product.

#### Identifying the correct firmware image

#### Code release file name: ATCA1000\_V1.0.4.tar.gz

This is the latest firmware for the ATCA1000; SANBlaze distributes the code as gunuzip (\*.gz) file. The distribution will contain the following three files:

File	Description
Rootfs.ext.gz.uboot	compressed file system firmware image file (version denoted by timestamp)
uImage	Compressed linux kernel firmware image
U-boot.bin	Compressed u-boot firmware code image

#### Identifying the correct hardware

This code release is compatible with certain ATCA1000 products marked as version 0002 or greater. Before proceeding, Use the web GUI, and check the version shown on the Maintenance->ATCA\_Status page:

ATCA1000 ATCA1000 Blade 1 (0x96) Status							
Vendor	IANA ID	Name	HW Revision	H8 FW Revision	IPMI Rev	Model	Serial
SANBlaze Technology, Inc.	76a4	ATCA1000	0002	01.10	01.50	SB-ATCA1000	100LYMMSSSS

Alternatively, the IPMI command "GetDeviceID" command can be issued to determine compatibility; specifically inspect the response for board/device revision (byte 3 of the GetDeviceID response):

GetDeviceID board/device revision	Description
01	Please contact SANBlaze before upgrading.
02 (or greater)	Hardware is compatible. You may upgrade the blade.

#### Web flash tool, update procedure details

SANBlaze offers the ability to update the carrier firmware using secure html connections. The user must establish Web access to use this utility. The following procedure is a detailed description of the web-based flash update procedure:

#### ▼ Upgrade firmware procedure

ATCA1000 ATCA1000 Maintenance Page					
File Name	Revision	Build Date			
Software Release Kit	V1.0	Date: 2010/09/27 19:44:14			
u-boot	1.3.0	Apr 27 2009 - 17:44:03			
Linux	2.6.23	#77 Wed Oct 20 11:21:04 EDT 2010			
atca_blade	Revision: 1.189.2.1	Date: 2010/09/27 19:44:14			

ATCA	ATCA1000 ATCA1000 System Maintenance				
Import Software Update	Choose File. No File chosen	Import			
Import System Configuration	Choose File No File chosen	Import			
Export System Configuration	/backup/nvdisk.tar.gz	Export			
Export System Log Files	/dev/shm/logfile.tar.gz	Export			
GUI Inactivity Timeout	600 Seconds Min =60 Max = 7200	Set Timeout			

#### ▼ Follow these instructions to flash new firmware

- Step 1. Click the 'Choose File' button, navigate to find the new \*.gz firmware file.
- Step 2. Click the **'Import'** button. The import can take 1 to 5 minutes; the user must wait, and not navigate away from the open browser window.
- Step 3. The following screen will appear. Click the software component(s) to upgrade and click the **'Update'** button.

StoreBlade99 ATCA1000 System Maintenance			
Apply Software Update	/dev/shm/ATCA1000_VXXrcxx/u-boot /dev/shm/ATCA1000_VXXrcxx/uImage_2.6.23 /dev/shm/ATCA1000_VXXrcxx/rootfs	<b>y</b> <b>y</b>	Update
Export System Backup	/backup/nvdisk.tar.gz		Export

- Step 4. A Pop-up window notifies the user when the flash update completes. The new software becomes active at next reboot.
- Step 5. (optional) Perform Factory Reset
   Issue this command at any time to restore blade defaults. Recommended if your current version is RC4 or older.
   NOTICE: This command will erase all existing blade configurations (network settings, volumes, shares etc), but guarantees proper installation of the upgrade.
  - i. Login into shell window as admin (username=admin, password=admin)

#### SB-ATCA1000 Release Notes, Version 1.0.4

- ii. At console prompt, type: atca\_blade set\_factory 1 Y 2 Y 3 Y 4 Y +
- Step 6. A blade reboot button is available on the 'ATCA Status' menu, or via shell console prompt, as root using: # reboot

#### CLI tool, update procedure details.

Please See ATCA user manual.

# **Resignaturing VMware ESX volumes**

If upgrading blade firmware that was V1.0.1 or older, existing iSCSI datastores are assigned new LUN ID (UUID or serial numbers). VMware ESX may subsequently report these datastores as disabled or unexpectedly missing because the LUN ID is used to help identify a datastore. In this case, you must resignature these datastores using the following rescan procedure. The procedure is executed only one-time and is non-destructive.

Step 1. Power off all virtual machines stored on the affected volume(s)

Step 2. Log into each host, and execute the following four commands:

```
# echo "1" > /proc/vmware/config/LVM/EnableResignature
# vmkfstools -V
# echo "0" > /proc/vmware/config/LVM/EnableResignature
# vmkfstools -V
```

Step 3. Reinventory the virtual machines.

- a. Open VI Client to the VCenter Server. (The affected virtual machines will show as "Unknown (inaccessible)".
- b. Right-click on a virtual machine and click Remove From Inventory.



- c. A popup appears. Click "Yes" to confirm removal.
- d. With the local host highlighted, click "Configuration", Storage Adapters, and Rescan...

🕝 192.168.100.117 - VMwaye	Infrastructure Client			
<u>File E</u> dit Vie <u>w</u> I <u>n</u> ventory Administr	ration <u>P</u> lugins <u>H</u> elp	N		
<ul> <li>localhost.localdomain</li> <li>New Virtual Machine 1</li> <li>Unknown (inaccessible)</li> </ul>	localhost.localdomain VMware ESX Ser Getting Started Summary Virtual Mac	ver, 3.5.0, 207095   Evaluation (59 day(s) remainin hines Resource Allocation Performance Configuration	ion Users & Groups Events	Permistins
Unknown 1 (inaccessible)	Hardware	Storage Adapters	1	Rescan 📤
та Unknown 2 (Inaccessible)	Health Status Processors Memory Storage Networking > Storage Adapters	Device ISCSI Software Adapter Vmhba32	iscsi i	5AN Identifier
	Network Adapters			>
🚰 Tasks				root

٨

e. With the local host highlighted, click the "Summary" tab.

🖉 192.168.100.117 - VMware	Infrastructure Client	
<u>File E</u> dit Vie <u>w</u> I <u>n</u> ventory Adminis	stration Plugins Help	
Iocalhost.localdomain     Iocalhost.localdomain     Inknown (inaccessible)     Unknown 1 (inaccessible)	localhost.localdomain VMware ESX Server, 3.5.0, 207095   Evalu Getting Stated Summary Virtual Machines Resource Allocation	uation (60 day(s) remaining) Performance Configuration Users & Groups Events Permissic 4 D
🗿 Unknown 2 (inaccessible)	General	Resources
	Manufacturer: Intel Corporation	CPU usage: 10 MHz
	Processors: 2 CPU x 1.599 GHz	Memory usage: 756 00 MB
	Processor Type: Intel(R) Xeon(R) CPU E5504 @ 2.00GHz	
	Hyperthreading: Inactive	f Rename
	Number of NICs: 2	Datastore Properties
	State: connected	snap-zhezarub-largeo_Lunix v 1 snap-te673590-Targeto_Lunix 1: Remove
	VMotion Enabled: N/A	snap-1a7c0d9d-Target0_Lun2
	Active Tasks:	i snap-3ed093c1-Target1_Lun5 Σ
		Gar Snap-7a01a030-1arget1_cun0 219.75 GB
	Commande	
🚰 Tasks		root 🥢

- f. Rescanned datastores appear under the **Resources** menu. You will notice a text prefix was added to each datastore name: "snap-abcd1234-". If desired, right-click the datastore to rename and remove this prefix
- g. Again, right-click each Datastore, and select: **Browse Datastore**... to bring up this browser menu.

🕝 Datastore Browser -	[Target0_Lu	n1]						
B 🕅 🖊 🚳	8 🖻 🕽	< 🤇	2					
Folders Search		[Taro	get0_Lun1] New Virtual Mac	himat				
⊡- <b>[</b> 2] /		Nam	ie	h	Size	Туре	Modified	
👘 🦳 📂 New Virtual Mach	ine 1	E	New Virtual Machine 1.vmx	Add to Townshows	2.02 KB	Virtual Machine	9/10/2012 11:40:33 AM	
		2	New Virtual Machine 1.vmdk	Add to Inventory	8.00 KB (ح	Virtual Disk	9/10/2012 11:50:33 AM	
			New Virtual Machine 1.nvram .	Go to Polder	8.48 KB	Non-volatile memory file	9/10/2012 12:44:07 PM	
		0	vmware-0.log	Cut	32.09 KB	Virtual Machine log file	9/10/2012 9:50:08 AM	
			vmware.log	Сору	24.73 KB	Virtual Machine log file	9/10/2012 12:44:09 PM	
			New Virtual Machine 1.vmxf	Paste	0.27 KB	File	9/10/2012 11:39:22 AM	
			New Virtual Machine 1.vmsd	Download	0.00 KB	File	9/10/2012 8:18:59 AM	
				Download				
				Depame				2
1 object selected 2.02 KB				Kenanie	-			
				New Folder				
				Delete from Disk				

- h. With a virtual machine highlighted, Right-click the virtual machine file (extension .vmx) or template file (extension .vmtx). Click **Add to Inventory** and follow the wizard.
- i. When the wizard completes, the virtual will appear correctly under the local host. Repeat step 3 for all additional re-scanned datastore(s).

	🖉 192.168.100.117 - VMware Infrastructure Client				
	<u>File E</u> dit Vie <u>w</u> I <u>n</u> ventory <u>A</u> dminis	stration <u>P</u> lugins <u>H</u> elp			
Î	Iocalhost Jocaldomain     Solution     Iocalhost Jocaldomain     Mew Virtual Machine     Joknown (inaccessible)	Iocalhost.localdomain VMware ESX Server, 3 Getting Started Summary Virtual Machines	5.0, 207095   Evaluation (60 day(s) remaining) Resource Allocation Performance Configuration Users & Groups Events Permissic (1)		
	<ul> <li>Unknown 1 (inaccessible)</li> <li>Unknown 2 (inaccessible)</li> </ul>	General	Resources		
		Manufacturer: Intel Corporation Model: 55520HC Processors: 2 CPU v 1 599 GHz	CPU usage: 11 MHz 2 x 1.599 GHz		

# **Resignaturing VMware ESXi volumes**

If upgrading blade firmware that was V1.0.1 or older, existing iSCSI datastores are assigned new LUN ID (UUID or serial numbers). VMware ESXi may subsequently report these datastores as disabled or unexpectedly missing because the LUN ID is used to help identify a datastore. In this case, you must resignature these datastores using the following rescan procedure. The procedure is executed only one-time and is non-destructive.

Step 1. Power off all virtual machines stored on the affected volume(s)

Step 2. Log into each host, and execute the following four commands:

```
# esxcfg-advcfg -s 1 /LVM/EnableResignature
# vmkfstools -V
# esxcfg-advcfg -s 0 /LVM/EnableResignature
# vmkfstools -V
```

Step 3. Follow the same steps shown in step 3 of Resignaturing VMware ESX volumes.

#### New firmware features and Errata fixes V1.0.4

Item-1	-new- Solaris, Long SCSI names.
Description	·
This firmware of	offers the ability to use long scsi names when communicating with iSCSI
targets created	on the storage blade. For example:
Old name: /de New name: /de The new namir disk). This driv	v/dsk/c3t1d0s7 ev/dsk/c4t600110D03B18A2B40000000100000000d0s7 ng scheme is achieved by activating the solaris "ssd" driver (SAN SCSI rer is a more modern driver, with capabilities to complement newer
networked dev sequence follo	ices like iSCSI. Activation is enabled by executing the following CLI wing the firmware upgrade:
<pre># su root # mkdir /et # touch /et # reboot</pre>	c/iet c/iet/force_alua_on
Note1: If a use	r wishes to use short names, the above sequence is not necessary.

Note2: If a user issues a factory reset, the blade reverts to using short names. The above sequence must be completed again if the user wants to use long names instead.

#### New firmware features and Errata fixes V1.0.3

Item-2	-new- Auto Rebuild Offline RAID set.	
<b>Description</b> This firmware automatically in	can detect the presence of an offline RAID set during boot, and nitiate an assemble and rebuild if necessary.	

#### New firmware features and Errata fixes V1.0.2

Item-3	-fix- Various optimizations to meet VMware VMready certification requirments.
<b>Description</b> This firmware ware ware the certification reconstruction reconstruction reconstruction reconstruction from the certification of the certificat	version makes subtle changes that enable the firmware to pass VMReady quirements. For example, the number of supported NAS shares was 40 to 256.

#### New firmware features and Errata fixes V1.0.1

lte	m	-1	1
ILC			L

#### -fix- iSCSI task management

#### Description

This firmware version corrects the response to a SCSI task management sequence used in the iSCSI stack. The symptom was that as disks were heated to 55C for extended periods, the iSCSI targets would go offline on some systems. A blade reset was required to re-establish connection.

Item-2

#### -fix- Active Domain join

#### Description

This firmware corrects a bug which sometimes prevented the blade from registering and joining with an Active Domain (AD) server.

#### New firmware features and Errata fixes V1.0

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ne	Ш	- 1	

#### -Info- Revision identifier

#### Description

This firmware version identifier string will now show as: V1.0.

item-2	
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#### Description

This feature lets users adjust the inactivity period threshold before forcing a user logout. When shipped from the factory, the default threshold is 600 seconds (5 minutes) of inactivity. This feature appears on the maintenance menu:

ATCA1000 ATCA1000 System Maintenance				
Import Software Update	Choose File No File chosen	Import		
Import System Configuration	Choose File No File chosen	Import		
Export System Configuration	/backup/nvdisk.tar.gz	Export		
Export System Log Files	/dev/shm/logfile.tar.gz	Export		
GUI Inactivity Timeout	600 Seconds Min =60 Max = 7200	Set Timeout		

#### Item-3

#### -new- Add iSCSI filter to allow or deny initiators per target

#### Description

users may limit access to a specific list of initiators, and/or block specific initiators from accessing an iSCSI target device.

Item-4

#### -fix- Add iSCSI filter to allow or deny initiators per LUN

#### Description

Fix windows explorer file name issue, which would cause import update to fail.

#### Item-5 -fix- Quick Start command line tool

#### Description

Fix CLI tool named quickstart.sh. for IPV6 compatibility. It is intended to simplify initial configuration of the blades 5 Ethernet ports.

#### New firmware features and Errata fixes rc92

#### Item-1 -fix- Support RAID5 and RAID6 volumes greater than 2TB.

#### Description

This version of firmware properly handles software RAID volumes that exceed 2TB size. With this enhancement, users may create very large RAID5 or RAID6 volumes (example 12TB) and then divide this capacity into multiple logical volumes. Each logical volume can be any size up to 1800GB.

Item-2

-new- IPv6 support

#### Description

This firmware adds IPv6 (128 bit IP-address) support in addition to IPv4 (32 bit IP-address). While the majority of today's ATCA backplanes still run IPv4, this feature will ensure the storage blade is ready when deployments require it.

GUI changes:

The GUI will continue to show IPv4 network fields, which are used to set addresses using dotted decimal entries like this: [192.168.100.33]

The GUI will also show new IPv6 network fields, which are used to set addresses using any of the following hexadecimal syntax entries:

[ 2001:0000:0000:0000:0000:C0A8:6421]

[ 2001 : : 192.168.100.33]

[ 2001 : : C0A8:6421]

The IPv6 service running n the storage blade automatically assigns unique address values to each Ethernet port.

CLI changes:

The firmware additions include new CLI command 'ping6' to send ICMP echo requests on IPv6 network.

Item-3 -fix- Corrected task abort set implementation

#### Description

When processing large I/O (>1MB), previous firmware versions could reply to an initiator's task management request (abort\_task or abort\_task\_set) with success, but then later complete a command which should have been included amongst the aborted

tasks. In this event, an initiator might then incorrectly associate returned data with a new active I\_T\_L Nexus, overwriting good data.





#### Item-7

#### -new- Export System log files, for diagnostic purposes.

#### Description

Diagnostic information for the software running on your blade is kept on your blade in the form of system log files and error reports. This feature gathers all relevant files and bundles them into a single download archive file. Users may then send this archive file to a support contact to help diagnose and fix a problem.

Note: These message and log files contain no user data information that may be stored on iSCSI, NFS or CIF/Samba volumes.

Added to 'Maintenance' tool page:

StoreBl	ade99 ATCA1000 System Maintenance	
Import Software Update	Choose File No File chosen	Import
Import System Configuration	Choose File No File chosen	Import
Export System Configuration	/backup/nvdisk.tar.gz	Export
Export System Log Files	/dev/shm/logfile.tar.gz	Export

Item-8

#### -new- Active Directory (AD) integration

#### Description

This service enables a windows server to authenticate user logins to SB-ATCA1000 CIF/samba volumes. It is included as part of the Network Wizard tool, with additional advanced options appearing under the 'Maintenance' menu.

SANBLATE
SANBlaze ATCA1000     Quick Start Wizard
<ul> <li><u>Network</u></li> <li><u>Volume Group</u></li> <li><u>Storage Services</u></li> </ul>
<ul> <li> <b>i</b> <u>SCSI</u> </li> <li> <b>n</b><u>fs</u> </li> <li> <b>m</b><u>b</u> </li> </ul>
$ \begin{array}{c} \hline \\ \hline $
$\begin{array}{c} \blacksquare \\ \blacksquare \\ \hline \\ \blacksquare \\ \blacksquare \\ \blacksquare \\ \blacksquare \\ \hline \\ \blacksquare \\ \blacksquare \\$
□ <u>Maintenance</u> ■ <u>Network</u> ■ <u>Active Directory</u>
■ <u>Shelf</u> ■ <u>I/O Status</u>
■ <u>CFO Status</u> ■ <u>ATCA Status</u>

Item-9

#### Description

This release of code includes the ability to define bonds using the GUI. Previously, bond creation required CLI command configurations. Bonding (802.3AD trunking) allows you to aggregate multiple Ethernet ports into a single group, effectively combining the bandwidth into a single connection. For example, you can aggregate the ATCA base channel ports (1 Gb/s each) into a bond, providing 2Gb/s cumulative bandwidth, fault tolerance and optional load balancing.

□			StorBI	ade99 ATC	A1000 Netw	ork Configura	ation		
Duick Start Wizard     Joseph Strate Wizard	Submit All	Network Char	iges Submit	Add N	ew VLAN	0 VLAN Ind	ex eth0 💌 li	nterface 🔲 Add	bond0
$\pm$ nfs			S	ystem Ide	ntification ar	nd TimeZone			
		HostName	DomainName	Date	Time	TimeZone	Nameservers	NTP Server List	Time source
$ \begin{array}{c} \blacksquare \square LVM2 \\ \blacksquare \square MD RAID \\ \blacksquare \square \end{array} $	Active Settings	StorBlade99	domain.com	4/6/2009	08:51:59	New_York	0.0.0.0	tick.usask.ca tock.usask.ca	ntp
<ul> <li>Hardware RAID</li> <li>Physical Disks</li> <li>Maintenance</li> </ul>	New Settings	StorBlade99	domain.com	4/6/2009	08:51:59	New_Yo	0.0.0.0	tick.usask.ca	NTP
I <u>Network</u>									
■ <u>I/O Status</u> ■ <u>CPU Status</u> ■ <u>ATCA Status</u>									

#### Item-10 -new- Web tool, browser tab reflects active menu name

#### Description

This release prints the active web tool page-name in both the browsers title bar and browsers tab as a means of identifying what menu page is active.

#### -fix- Web tool, Some browsers would auto complete fields, Item-11 unintentionally filling username and passwords.

#### Description

Browsers with auto-complete features would often auto fill iscsi username/password. This release includes a fix to add 'autocomplete=off' to all web-tool menu pages.

Item-1	2

#### -fix- Web tool, no mechanism to prevent multiple logins

#### Description

Add host tracking to prevent simultaneous web management logins from multiple systems.

Item-13	-fix- CLI tool, backspace key, functionality fix
---------	--

#### Description

When making text entries with atca\_blade tool, the keyboard backspace key now operates properly.

# Item-14 -fix- CLI tool, menu item renamed to match function Description The release renames a sub-menu item shown by the atca\_blade CLI: "9. Web gui enable (set\_gui)" menu option. Old: "Allow CLI Access while Web GUI in use?" New: ""Enable CLI Override?" This new description more accurately describes the function, which permits a user to launch the CLI tool, even if there is an active web tool session. Remote web-tool

access is suspended while the CLI session is active.

SB-ATCA1000 Release Notes, Version 1.0.4

#### Known Issues with Blade firmware

The following issues are known to exist at the time of this release:

Item-1	E-key settings on 10Gb speed for zone-2 XAUI ports sometimes ignored.
Description	
The blade assi 10Gb switch-bl	gns an E-key option for the XAUI ports at 10G only. DTI and other model ades sometimes attempt to auto-negotiate 10Gb, effectively ignoring the
E-key setting to	o operate at 10G only. These switches must be manually set to operate
the fabric conn	ections at 10Gb rather than AUTO.
Work-around	(preferred)
1. Ensure your	DTI switch has firmware 1.2.1.0, or greater.
The new firmwa	are enables you to select '10G only' from the normal user interface and
save it in the sy	vstem configuration.
Work-around	for older firmware; Procedure required at each boot or power cycle)
1. Establish a F	RS232 console connection to the DTI switch
2. Reboot the s	witch
3. Press '2' whe	en prompted to get to the pre-boot shell
4. Press 'b' to g	et into the Broadcom shell
5. issue this co	mmand to force the ports to 10Gb :
port xe aut	oneg=off speed=10000

#### Known Issues with the command line configuration tool

The following issues were known to exist at the time of this release:

Item-1	CLI does not enforce maximum logical volume size of 1.8TB
Description	
Users may create large RAID volumes that exceed 21B, and subsequently split this capacity into smaller logical volumes. This firmware release supports a maximum logical volume size of size of 1800GB (1.8TB). The CLI tool does not enforce this size limit, and any volumes that exceed this limit will operate incorrectly.	
Work-around (1) Use the GU (2) Ensure that	I tool to create logical volumes. (GUI enforces the maximum LV size) neither user nor user-scripts limit logical volume size of 1.8TB.

#### Known Issues with the web configuration tool

The following issues were known to exist at the time of this release:

	Web tool, menu screen does not re-draw when new disks are
Item-1	live-inserted.

#### Description

Physical drives such as AMC disk cards to not automatically appear in the physical disk

window. The user must manually click the "re-draw" button for these resources to appear.

#### Work-around

The user must manually click the "re-draw" button for these resources to appear.

#### Item-2 Disks may display incorrectly following RAID config

#### Description

Hardware RAID \*will\* alter the number, name, and order of disks available to the OS. In some cases, Linux may not properly pickup /dev/sdx devices, and thus configuration menus may display erroneous information. Reboot to rectify this.

Item-3	I/O performance monitor shows Zero following RAID config

#### Description

Hardware RAID \*will\* alter the number, name, and order of disks available to the OS. In some cases, Linux may not properly pickup /dev/sdx devices, and thus configuration menus may display erroneous information. Reboot to rectify this.

Item-4	Cannot delete NFS sharename exceeding 10 Characters
Decerintian	

#### Description

Normally, the webtool will suggest a share name such as "share0", but allow the user to assign an alternate name.

If a user assigns a sharename exceeding 10 characters, they are unable to later delete the sharename. This issue is caused because the longer name when combined with other path info, exceeds one of the string compares in the webtool code.

#### Work-around

(1) If assigning a new sharename, ensure it does do not exceed 10 characters.

(2) Manually remove <long sharename>:

rm -rf /mnt/shr/file/lvc0/longsharename
rm -rf /export/nfs/longsharename
rm -rf /export/smb/longsharename

You MUST be careful that there is no data in the shares files!