SANBlaze Software-Only Configuration and Quick Start Guide

November 2024

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Certified Systems SANBlaze Runs On

The SANBlaze VirtuaLUN Software product is designed to run on a variety of hardware platforms. SANBlaze recommends using a system that has been tested and certified; reference certified systems listing below.

Vendor	Model #		
Dell	R710 R720 R730	R805 R820 T5400	M910 M620
HP	DL360G6 DL360G8 DL370G5 DL370G6	585G6	DL380G6 DL380G7 DP380G8 DL380G9
IBM	x3650	x3650M2 x3650M4	x3650M3 x3850
Cisco	C250M	220M3 C210M2	220M4 C460M4
Intel	R2000GZ		
SuperMicro	6017R-N3RF4+ - H12SSW-NT (GEN4 AMD platform with 7402p processor) is the currently supported PCIe Gen4 configuration. Other configurations may be added as additional qualification is completed. - X11, X12, X13, and Intel-based SuperMicro systems		

SANBlaze Certified Adapter Cards

The software requires Fibre Channel, Ethernet, or SAS HBAs to use for emulation. The following cards are supported and **must be used** for the various protocols.

Speed	Vendor	Model #
64G Fibre Channel	Emulex	LPe36002-M64
64G Fibre Channel	QLogic	2800 series
32G Fibre Channel	Qlogic	QLE2694U QLE2742
	Emulex	LPe32000 LPe32002
16G Fibre Channel	Brocade	1860
	Emulex	LPe16000B LPe16002B
8GFibre Channel	Emulex	LPe12000 LPe12002 LPe12004
4G Fibre Channel	Emulex	LPe1100 LPe11002 LPe11004
200/100/50/25G iSCSI	Mellanox	ConnectX-4 family ConnectX-5 family ConnectX-6 family
25GbE and 100GbE iSCSI	Qlogic	45000 series
40G FCoE/iSCSI	Emulex	OCe14401
40G iSCSI	Intel	XL710
10G FCoE/iSCSI	Intel	E10G42BFSR (X520) X540-T2 (RJ45 Copper)

SAS	LSI/Broadcom Broadcom 24G	LSISAS9200-8e (6 G) LSISAS92-7-8e (6 G)
	Broadcom 64G	LSISAS9300-8e (12 G) LSISAS9400-16e (12 G)

Optional system configurations

In the event a customer would like to use a system other than those listed above, the following minimum requirements must be met to support the SANBlaze software.

Processor: x86 Intel Xeon or AMD Opteron processor. We recommend at least 2 processor cores per physical emulation port in the system. Optimal performance will be attained when all processor sockets are populated.

Memory: 2 GB minimum. At least 2GB of memory per physical emulation port are required in the system. Optimal performance will be attained when all memory slots are populated.

HDD: Single SAS/SATA HDD in the chassis. Larger sized HDD's allow for more emulation configurations to be saved. (**NOTE**: The system HDD will be overwritten during the SANBlaze software load).

CDROM: IDE/USB CDROM. The software is installed via a bootable DVD and requires an IDE or USB CDROM to boot from.

USB port: The software is licensed by USB dongle. System must have a USB port dedicated to the dongle for proper operation.

BIOS: The software needs Legacy bios mode to be installed. UEFI is NOT supported.

Software Installation Procedure

Insert USB License Dongle into USB port on target system. Software will not properly function without a valid Licensed Dongle.

Connect monitor and keyboard to target system.

Insert installation CD into target system and power on. When the CD loads a menu with the following options will be presented:

> 0) Boot from the Hard Disk (No changes to system)

> 1) Install SANBlaze Software (Destructive to all files!)

Select option '1' to install to target system. As indicated, this will destroy any data on the HDD in the

target system.

Once the software is finished installing, the system will return to the # prompt. Type 'reboot -f' to reset the machine.

Eject the CD as the system is powering up. VirtuaLUN software will then automatically load. Once the system is booted, proceed to network configuration below.

Network Quick Start

Configuring the SANBlaze VirtuaLUN™ can be done via a web browser or Telnet session, using the Ethernet port (10/100/1000 auto sensing) on the front panel. The software uses the 'eth0' interface provided under Linux. Please connect to the 'eth0' interface of your target machine.

To connect via a Web Browser:

   IP Address: **192.168.1.222**
   Default Gateway: **192.168.1.1**

Requires Java version 6u26 or newer running on the client web browser.

   User Name: **system**
   Password: **SANBlaze** (case sensitive)

Changing the IP address

Once the VirtuaLUN system has been accessed, the IP address, system name, and gateway can be changed, using the main web page.

To connect via Telnet:

   Telnet 192.168.1.222

Note: If your host is not in the VLUN's *etc/hosts* file, the system will take a few seconds to reply.

   User Name: **vlun**

   Password: **SANBlaze** (case sensitive)

Upon successful log-in, issue the **su** command to get superuser access.

   # **su**

   Password: **SANBlaze**

To connect via Command Line:

In addition to the Ethernet based connectivity methods, the VirtuaLUN can be accessed via the command line if desired. Connecting a monitor and keyboard to the product will allow direct access to the command line.

Once booted, the system will prompt for user name/password:

> User Name: **vlun**
> Password: **SANBlaze** (case sensitive)

Upon successful log-in, issue the **su** command to get superuser access.

> **#su**

> Password: **SANBlaze**

To Change IP address at the command line:

Run the network config script:

> **# /virtualun/scripts/config_network.sh**

The script will then prompt you for all the necessary network settings.

To change the graphical mapping of ports in the GUI

This will allow you to map the physical ports in your system to reflect properly within the GUI. The GUI can then be setup to show ports in the same order as they are physically laid out. Instructions for mapping out the physical layout of VLUN system ports:

You will need:

1) Physical access to the VLUN system.
2) A switch or loop back connector that can bring a port online.
3) Console or ssh access to the VLUN system.

Steps:

1) Open an ssh session or login from the console to the VLUN.
2) At the command prompt, type [root@virtualun ~]# **config_portmap**
3) Follow the instructions, enter Slot orientation, number of slots and number of ports in each slot.
4) Then use a connection to a switch or loopback connector to bring each port online, one by one.
5) When the command finishes, you will have mapped out the ports. You can then go back to the GUI and the port order and graphics should reflect the physical map of the chassis.

Disable BIOS on SAS adapters

If using SAS adapters, the card BIOS needs to be disabled for proper operation. A script is provided on the system to do this. First make sure all cables are disconnected from the cards you wish to use. Then ssh into the system or login via the console and execute the following command and follow the instructions:

```
[root@virtualun ~]# lsi_sas_disable_bios.sh
```

SANBlaze Quick Configuration Guide

This document describes how to quickly configure the VirtuaLUN product to enable specific protocols. Complete the three sections to configure the system:

1. Reset to Factory Configuration
2. Protocol Configuration
3. Port Mode Configuration

Reset to Factory Configuration

If the state of the current system is unknown, it is best to reset back to factory defaults. This can be done via the 'Poweroff/Reset' link the left-hand menu. Once that is clicked you will be presented with a 'Reboot with Factory Defaults' button. Clicking that will clear the configuration and reboot the system. Once it has rebooted, you can continue on with your configuration.
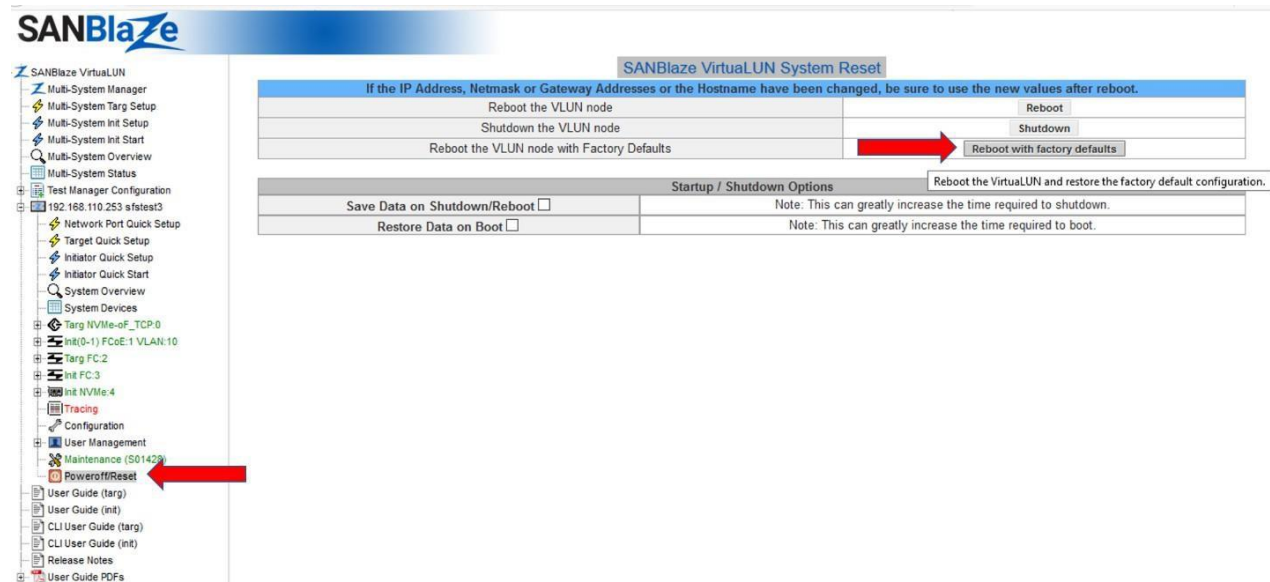
Figure 1: Reset the VirtuaLUN System

Protocol Configuration

Configuring for NVMe-oF Operation

Select the Port you want to configure, and then select the NVMe-oF protocol as shown below.
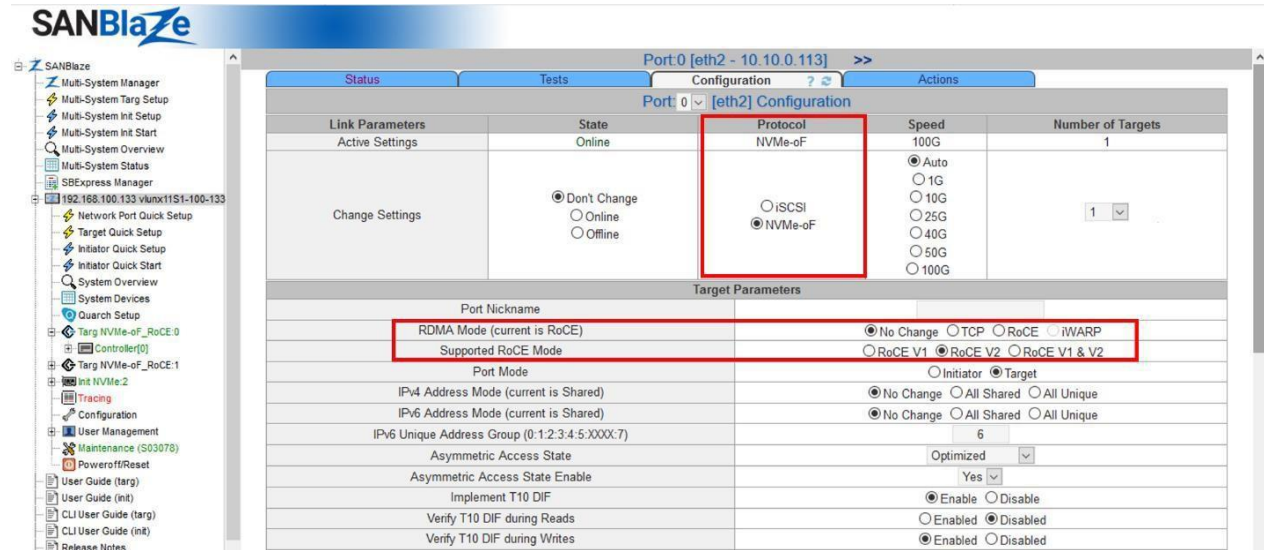
Figure 2: Protocol Configuration for NVMe-oF

Next, select the RDMA Mode. It displays the current selection, so you can select "No Change" or TCP, RoCE or iWARP. In the Supported RoCE Mode field chose RoCE v1, RoCE v2 or both RoCE v1 & v2.

Configuring for FCoE Operation

Click the 'Network Port Quick Setup' link in the left hand menu of the GUI. On the right hand side select the ports you want to change to FCoE mode, set the protocol to FcoE and then select the desired mode (initiator or target). Then hit 'Apply'.

Figure 3: Protocol Configuration for FCoE

Configuring for iSCSI Operation

Click the 'Network Port Quick Setup' link in the left hand menu of the GUI. On the right hand side select the ports you want to change to iSCSI mode, set the protocol to iSCSI, set IP addresses if needed and select the desired mode (initiator or target). Then hit 'Apply'.

Figure 4: Configuring Protocols for iSCSI

Configuring for FC/SAS Operation

There is no protocol to set for FC/SAS ports but you can quickly change the port mode (initiator or target) via the 'Multi-System Manager' page. Select the option you want and click **Apply**.

Figure 5: Configuring Protocols for FC/SAS

Port Mode Configuration

Configuring Target Ports

Once a port is in target mode you can quickly configure the number of targets and LUNs on each port via the 'Target Quick Setup' page from the left-hand menu. Select how many targets and LUNs you want on each port and click **Apply**.

Figure 6: Configuring Target Ports

Configuring Initiator Ports

Once a port is in initiator mode you can quickly configure the number of initiators on each port via the 'Initiator Quick Setup' page from the left-hand menu. Select how many initiators you want on each port and click **Apply**.
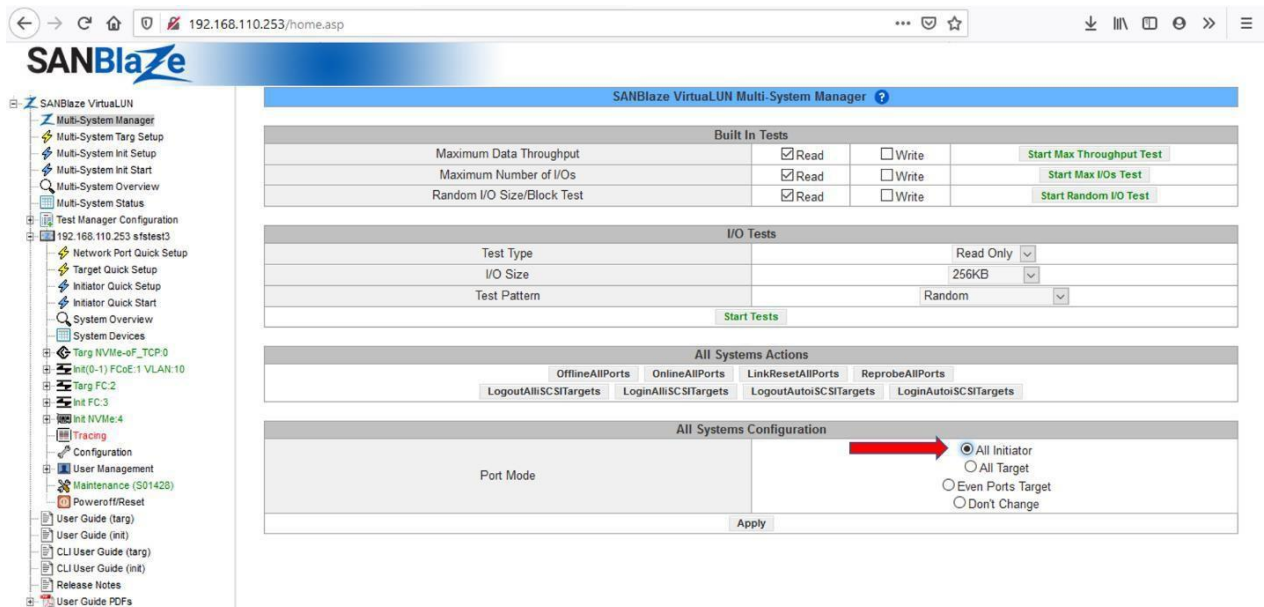

Figure 7: Configuring Initiator Ports

This concludes the set-up of SANBlaze's software only solution. For more information or if you have any questions, please contact SANBlaze support (details below).

Contact Support

STORAGE TESTING SUPPORT

If you need technical support, please click on the SANBlaze Help Center or email us by clicking Email Support below.

SANBlaze Help Center | Email Support

For additional information on SANBlaze Storage Emulation Testing solutions, please access the areas listed below. If you need additional information that you cannot find here, please contact us via phone @ (978) 679-1400. Additional information on storage testing products:

Data Sheets – A list of all of the data sheets available for SANBlaze products.

Video Training Library – The videos provide training on a number of tasks associated with the setup and deployment of SANBlaze storage emulation systems and software.

White Papers – A list of all white papers available for SANBlaze products.