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Technical Note

Contents

MSA1000 External Boot for Blade (BL) Servers with Red Hat Advanced Server 2.1 or United Linux 1.0.

Abstract: This document outlines procedures for setting up boot from SAN and the following Linux operating systems: Red Hat Advanced Server 2.1 or United Linux 1.0

Notice

Prerequisites

The following steps must be completed before installing the operating system:

- Obtain the latest copy of the MSA1000 Support Software CD. The MSA1000 Support Software CD is located on the **Software, Firmware and Drivers** page of the MSA1000 website at www.hp.com/go/msa1000

- The iLO FW will need upgrading to version 1.40 or later. The iLO firmware is located under the specific server support page at www.hp.com/go/blades

- Obtain the latest copy of the MSA1000 Support Software CD.   The MSA1000 Support Software CD is located on www.hp.com/go/msa1000.

- Verify that the HBA firmware is at the latest version. After POST, a HBA FW version number will be displayed on the screen.

- Follow the supported MSA1000 SAN interconnect matrices for External boot. These matrices are located on www.hp.com/go/msa1000

- Verify that the latest version of Server firmware is installed. After POST, the server FW version will be displayed.

- Install 1.50 version of Rapid Deployment Pack (RDP) for Windows.

- If planning to install Array Configuration Utility (ACU) on the target server. Obtain the latest copy of Mozilla or Netscape browsers.

- If planning to install Red Hat Advanced Server 2.1, you will need a copy of Red Hat Advanced Server 2.1 Quarterly Update 2.

- If planning to install United Linux 1.0, you will need the following CDs; United Linux SP2a and United Linux 1.0

After completing all initial prerequisite steps, the following steps must be completed:
- ➢ Configuring a Boot LUN on the MSA1000
- ➢ Configuring ProLiant Server BIOS
- ➢ Configuring the HBA adapters for BL20p and FCA2214DC for BL40p
- ➢ Configuring the NFS and RDP server for deployment
- ➢ Installation of new HBA drivers and MSA1000 utilities

Configuring a Boot LUN on the MSA1000

NOTE: The computer being used for browsing to the iLO web interface is the CD-ROM drive for the virtual CD option.

1. Browse to the iLO web interface.
2. Select the **Virtual Devices** tab.
3. Install the MSA1000 Support CD in the drive.
4. **Connect** the virtual CD drive.
5. Power cycle the blade server.
   The blade server will now boot to the MSA1000 Support Software CD.

6. Select the ACU option.
       And use the ACU to configure a LUN.
7. After creating a LUN, in the ACU, select **Selective Storage Presentation**
8. Select **Enable**

   Note: Only enable one LUN for Boot to SAN. After the OS is installed, you can assign more LUNs.

9. Assign the only one LUN to the Worldwide Node Name (WNN) of the intended HBA. You may add other LUNS, when the OS is loaded
10. Change **Host Name** to Linux
11. Rename the **Connection Name**.
12. Save you changes.
13. Exit the ACU
14. Exit the MSA1000 Support Software CD
       Your server will reboot.
15. **Disconnect** the Virtual CD from the Virtual Media page.

Configuring the Server BIOS

1. At the prompt, for Servers BIOS, Press **F9** to start the RBSU (ROM Based Setup Utility).
2. Choose the **Boot Controller Order**, select the primary HBA port, and move it to Controller Order 1.
3. Select **PCI Devices –**
4. Select the **Smart Array Controller**
5. Select **Disable**
6. Exit and save the RBSU changes.

Configuring the HBA Adapter for Proliant BLADE Servers (BL20p) and BL40p with FCA2214DC

1. During the boot process, a Qlogic HBA message is displayed. At the prompt to enter the Fast!util, press **ctrl-Q** to enter the Fast!util.
2. In the **Select Host Adapter Menu**, choose the adapter you want to boot, then press Enter.
3. In the **Fast!Util Options Menu**, choose **Configuration Settings**, then press Enter.
4. In the **Configuration Settings** menu, choose **Host Adapter Settings**, then press Enter.
5. In the **Host Adapter Settings** menu, change the Host Adapter BIOS to **Enabled** by pressing Enter.
6. In the **Selectable Boot Settings** menu, enable the **Selectable Boot option**, then move the cursor to the **Primary Boot Port Name, Lun**:, then press Enter.
7. In the **Select Fibre Channel Device** menu, choose the device to boot from, then press Enter.
8. In the **Select LUN** menu, choose the supported LUN.
9. Save the changes by pressing ESC twice.
10. Exit Fast!Util

Configuring RDP and NFS Servers for Boot to SAN for Red Hat Advance Server 2.1 or United Linux 1.0

If need: If the RDP and NFS servers have not been updated to Red Hat Advance Server 2.1 QU2 or United Linux with sp2a, this will need to be performed before continuing.

Configuring the NFS Server

1. Install the RDP 1.50 CD into the NFS server.
2. Run the pim-setup.sh script located under the /pim-nfs directory.
3. Select the appropriate operating system.
4. Answer "yes" to all questions.
5. Then umount the RDP CD.

Configuring the RDP server with Red HAT

1. On the RDP server, select the job you want to deploy.
2. Click the newly created job
3. Delete the first **Run Script** entry
4. Delete the next **Power Management** entry.
5. Edit the last **Run Script** entry by entering the IP address of the NFS server.
6. Click Finish
7. Insert the first Red Hat Advance Server QU2 CD and locate the following two files in the ISOLINUX directory:
   - ❖ initrd.img
   - ❖ vmlinuz
8. Copy the files to \Program files\ALTIRIS\eXpress\Deployment Server\Deploy\cds\Compaq\ss.640\rhas21\dosutils\autoboot
9. Boot your target server.
10. Drag and Drop your new script on the server.
11. Follow the **Installation of new HBA drivers and MSA Utilities** directions.

Configuring the RDP server with United Linux 1.0

1. On the RDP server, select the job you want to deploy.
2. Click the newly created job.
3. Delete the first **Run Script** entry
4. Delete the next **Power Management** entry.
5. Edit the last **Run Script** entry by entering the IP address of the NFS server.
6. Click Finish
7. Insert the first United Linux 1.0 SP2a CD and locate the following two files in the \boot\loader directory:
   - ❖ initrd
   - ❖ linux
8. Copy the files to \Program files\ALTIRIS\eXpress\Deployment Server\Deploy\cds\Compaq\ss.640\ul10\dosutils\autoboot
9. Boot your target server. It will PXE boot if no Master Boot Record (MBR) is detected.
10. When the target server is present in the RDP deployment screen. Drag and drop your new script.
11. Browse to the iLO web address.
12. View your target server's display using the **Remote Console.**
13. An error message will be displayed **" No hard disk were found for the installation"**, Click **OK.**
14. An error message will be displayed **"An error occurred during the installation"**, Click **OK.**
15. At the Main menu, Select **Kernel Modules (hardware drivers)** and press **Enter.**
16. Select **IDE/RAID/SCSI modules** and press **Enter.**
17. Scroll down to select **qla2300** and press **Enter.**
    No parameters are required for this driver, press **Enter.**
18. Once the driver loads, Click **OK.**
19. Select **Back** to return to the Main Menu.
20. Select **Start installation / System** and press **Enter.**
21. Select **Start installation / update** and press **Enter.**
22. Type of installation, select **Network.**

23. Select **NFS**.
24. Select **eth0** and **Yes** to autoconfig via DHCP.
25. Please enter your IP address of the NFS Server
26. Please enter the directory of the server.
     a.   /usr/cpqrdp/ul10 , press **Enter**.
27. A popup message will appear **"Found USB storage"**, Click **OK**
28. Follow the next section **Installation of new HBA drivers and MSA Utilities**.

Installation of new HBA drivers and MSA Utilities

This section describes two methods of updating the drivers and installing MSA Utilities.. Select which method is more applicable to your needs.

Manual:
1.   Once the OS has installed and the server has booted. The HBA drivers, Array Configuration Utility (ACUxe) and Netscape will need to be installed.
2.   Browse to the iLO web interface.
3.   Select the **Virtual Devices** tab.
4.   Install the MSA1000 Support CD in the drive.
5.   **Connect** the virtual CD drive.
6.   Open a terminal window. **Mount** the MSA1000 Support CD.
7.   Browse the MSA1000 CD contents, locate the /RDP directory. Select the /Linux directory.
8.   If installing the Array Configuration Utility. Change directory to /ACU. Install **ACU** using command: rpm –Uvh *"insert ACU name"*
     NOTE: The latest Mozilla or Netscape will need to be installed for ACU to work correctly.
9.   Updating the drivers,
     a.   Red Hat: Change directory to /RDP/RHAS21. Install the **HBA** driver using the command:
          i.   rpm –Uvh *"insert HBA driver name"* **Follow the directions that may follow.**
     b.   United Linux: Change directory to /RDP/SLES8 . Install the HBA driver using the command:
          i.   rpm-Uvh *"insert HBA driver name"* **Follow the directions that may follow.**
10. Don't reboot, edit /etc/modules.conf
     a.   Red hat: Add the line "alias scsi_hostadapterX qla2300. Where X is 0 if it is the only scsi_hostadapter or use next higher number if another scsi_hostadapter is present.
     b.   United Linux: Add the line "alias scsi_hostadapterX qla2300. Where X is 0 if it is the only scsi_hostadapter or use next higher number if another scsi_hostadapter is present.
          i.   Edit the /etc/sysconfig/kernel file.
               Add qla2300 the following line:
               INITRD_MODULES="reiserfs qla2300"
11. Execute the command: uname –r
12. Then execute the command:
     a.   Red Hat: mkinitrd –f /boot/initrd_2.4.9-e24.img *insert the uname –r results*
     b.   United Linux: mkinitrd
13. **Disconnect** the Virtual CD from the Virtual Media page.
14. Reboot the Server. Everything is complete.

RDP:
1. Follow the Linux instructions for creating an RDP event, located in the MSA1000 and Proliant Blade RDP installation guide. http://www.hp.com/go/msa1000

Note: The *install_fc.sh* script will need modifying if more than one HBA driver version is located in the same directory.