

NumaManager Appliance Upgrading

numascale

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Current version is at <https://resources.numascale.com/nma-upgrade.pdf>

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Upgrading

1.1 Overview

Upgrading the NumaManager Appliance (NMA) is required to ensure customers have a consistent and issue-free experience with managing NumaConnect-enabled servers.

1. Prepare the NMA with serial console access (requires microUSB to USB cable)
2. Unpack upgrade archive to TFTP-visible directory
3. Export archive contents over NFS with read-write permission
4. Boot the NMA from the unpacked kernel image and root filesystem
5. Run upgrade script
6. Setup standalone boot parameters

1.2 Console access

To upgrade the NMA, access to its console is required. The console is available only through the NMA's internal serial to USB bridge, which can be connected with the microUSB "Console" socket.

1. Connect the supplied (or any standard) microUSB to USB cable to the NMA's microUSB "Console" socket
2. Connect the other end (type A USB) to a linux system and install minicom
3. Set minicom's parameters to use ttyUSB0, 115200 BAUD rate, 8N1 parity, hardware flow control disabled and software flow control enabled
4. Power on the NMA, and interrupt the automatic boot within three seconds by pressing space

Please note that enabling hardware flow control may prevent keypresses being sent, so ensure it is disabled.

1.3 Unpack upgrade archive

The new software release includes the operating system (kernel and root filesystem) and NMA application software.

1. Fetch <https://resources.numascale.com/nma-upgrade.tar.bz2>
2. Copy this archive to your PXE server's TFTP root, eg `/var/lib/tftpboot/nma-upgrade.tar.bz2`
3. Remove any existing "nma-upgrade" directory in the TFTP root
4. Unpack as root with: `tar -xjpf nma-upgrade.tar.bz2`

1.4 Network booting NMA

To perform the upgrade, the NMA must be booted from network to allow the upgrade script to rewrite the internal storage.

1. From another linux system, ensure that directory containing the unpacked NMA upgrade archive is exported over NFS and can be mounted, using IP addresses and paths appropriate to your environment, eg:

```
1 $ sudo mount -t nfs -o vers=3,tcp 192.168.30.251:/diskless/  
   tftpboot/nma-upgrade /mnt  
2 $ ls /mnt  
3 bin boot dev etc home lib media mnt net opt proc  
   root run sbin selinux srv sys tmp usr var  
4 $ sudo umount /mnt
```

2. If the mounting fails, or the you see different directory contents, you need to correct the NFS-export and/or the mount IP address and/or path parameters.
3. Next, reapply power to the NMA, and interrupt automatic boot when prompted by pressing space, giving a "Marvell>>" prompt. If unable to interrupt boot, ensure hardware flow control is disabled.
4. Using the appropriate IP addresses and paths, set `ipaddr`, `netmask`, `serverip`, `gatewayip` and `rootpath`, load and boot the NMA kernel substituting the appropriate IP addresses and paths for the environment, eg:

```
1 setenv ipaddr 192.168.30.250  
2 setenv netmask 255.255.255.0  
3 setenv serverip 192.168.30.251  
4 setenv gatewayip 192.168.30.252  
5 setenv rootpath /diskless/tftpboot/nma-upgrade  
6 setenv bootargs console=ttyS0,115200 ip=${ipaddr}::${gatewayip  
   }:${netmask} nfsroot=${serverip}:${rootpath},nfsvers=3,tcp  
7 tftpboot 0x2000000 nma-kernel  
8 bootm 0x2000000
```

If a message similar to "Unable to mount root fs via NFS" is received, the mount parameters need to be corrected.

1.5 Performing upgrade

1. From the serial console, login as user "master", password "master".
2. Begin the upgrade via `sudo /root/nma-upgrade`
3. After the upgrade finishes in a few minutes, reboot via `sudo shutdown -h now` and `powercycle`
4. Interrupt automatic bootup by pressing space within three seconds of console activity

1.6 Setting boot parameters

To ensure the NMA boots from it's internal storage, enter:

```
1 setenv enaCpuStream yes
2 setenv enaVpuPower no
3 setenv enaGpuPower no
4 setenv bootargs console=ttyS0,115200 root=/dev/mmcblk0p2 rw
   rootwait --no-log
5 setenv bootcmd "mmcinfo; fatload mmc 0:1 0x2000000 uImage; bootm 0
   x2000000"
6 save
```

Finally, power off the NMA; it is ready for use.