RocketRAID 37xx/8xx/28xx SATA Controller

CentOS 7.9 Linux

Installation Guide

Version 1.0.0

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1 Overview

The purpose of this document is to provide clear instructions on how to install and use RR3740A Controller on CentOS 7.9 Linux system.

2 Installing CentOS 7.9 on RR3740A controller

If you would like to install CentOS 7.9 Linux onto drives attached to RR3740A controller, please perform the following operations:

Step 1 Prepare Your Hardware for Installation

Notcie: If your FT2000 motherboard is not directly connected to the SSD disk, it is normal for the buzzer to sound continuously. You can communicate with the motherboard supplier to mute it.

After you attach your hard disks to RR3740A controller, you can use RR3740A **EFI Utility** Utility to configure your hard disks as RAID arrays, or just use them as single disks.

Before installation, you must remove all the disk drives, which are not physically attached to RR3740A controller, from your system.

Note

If you have other SCSI adapters installed, you must make sure the RR3740A controller EFI will be loaded firstly. If not, try to move it to another PCI slot. Otherwise you may be unable to boot up your system.

Step 2 Check System EFI Settings

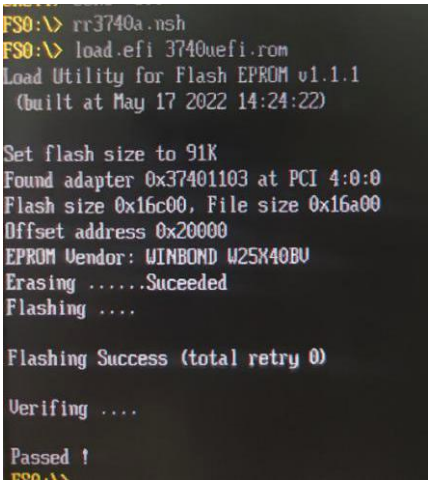
In your system BIOS SETUP menu, change **Boot Sequence** in such a way that the system will first boot from **EFI** CDROM, and then from SCSI. Refer to your SCSI manual to see how to set boot sequence.

If your EFI settings do not support such a boot sequence, you can first set it to boot from EFI CDROM. After you finish installation, set SCSI as the first boot device to boot up the system.

Step 3 Flash UEFI Rom to RR3740A

a. Unzip RR3740A UEFI package to root dir (/) of a USB flash driver, and insert the USB flash drive to the motherboard;
b. Booting from the UEFI USB flash and enter the UEFI environment;

c. Command with “rr3740a.nsh”, flash UEFI rom to RR3740A Controller and reboot;



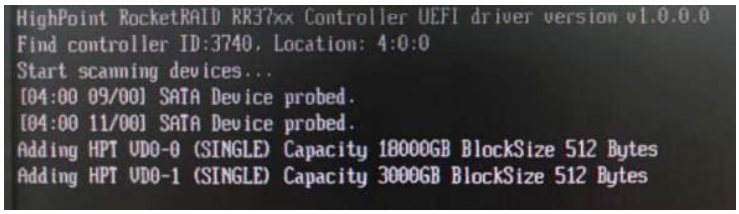
Step 4 Create Array

a. Attach two SATA to RR3740A Controller;

Note

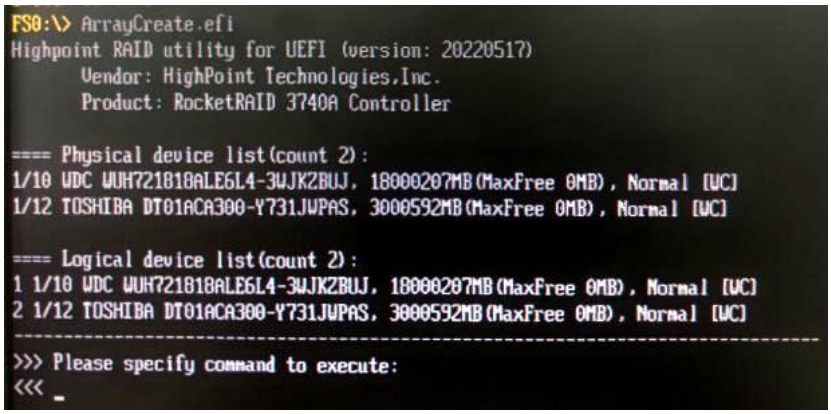
Make sure your USB flash partition format is FAT32.

b. Boot, in the presence of the motherboard Log screen, there will be SATA information：

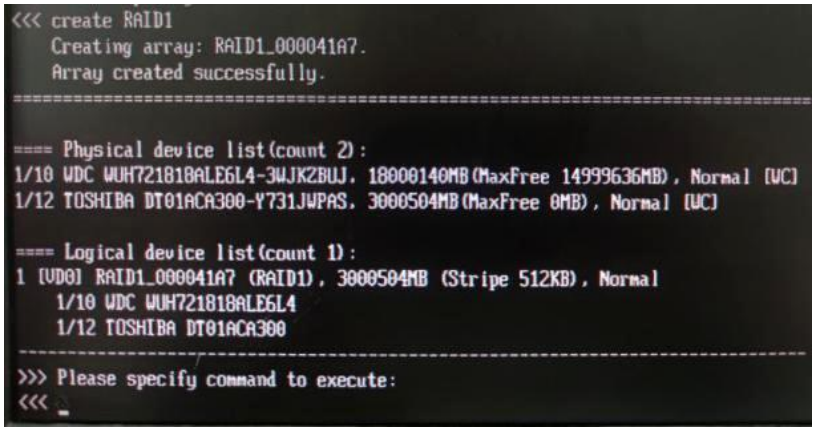


c. Enter the motherboard’s Boot List and select start from UEFI USB flash:

d. Command ”Arraycreate.efi” to enter the Utility:



e. Command “create RAID1 ”.
Create RAID1 array with all disks and with maximum capacity.



f. Command “exit”,exit the UEFI environment；

g. For more command usages, refer to Appendix A.

Step 5 Prepare the Driver Diskette

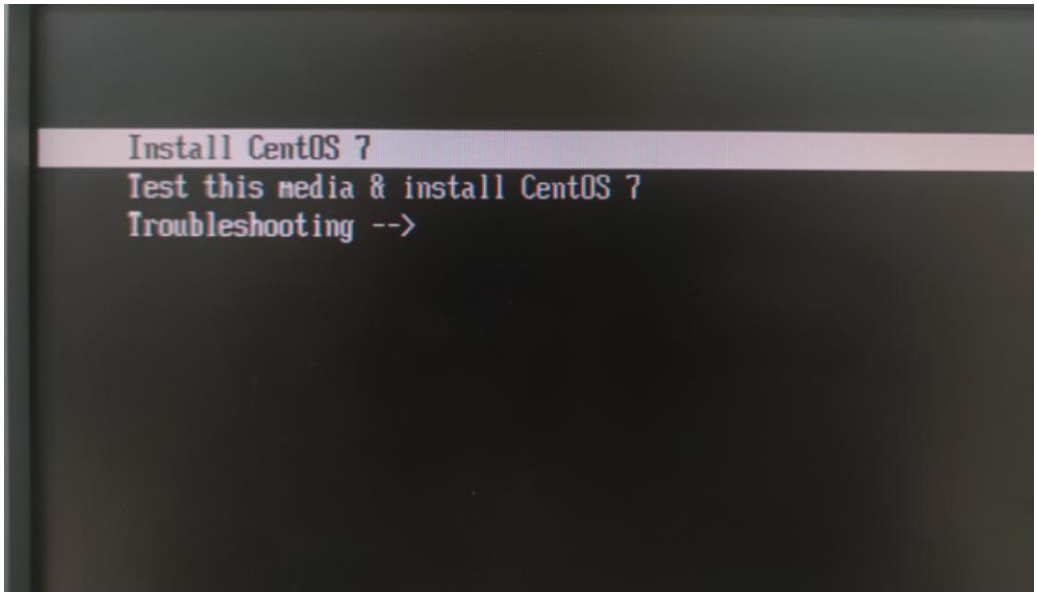
Extract **RR3740A_**CentOS 7.9**_V10_SP1_aarch64_vx.x.x_xx_xx_xx.tar.gz** to top(/) directory of an USB flash drive. It will look like:

```
hptdd/
hptdd/modules.dep
hptdd/modinfo
hptdd/modules.cgz
hptdd/modules.pcimap
hptdd/rhel-install-step1.sh
hptdd/rhel-install-step2.sh
hptdd/install.sh
hptdd/readme.txt
hptdd/modules.alias
hptdd/rhdd
hptdd/pcitable
```

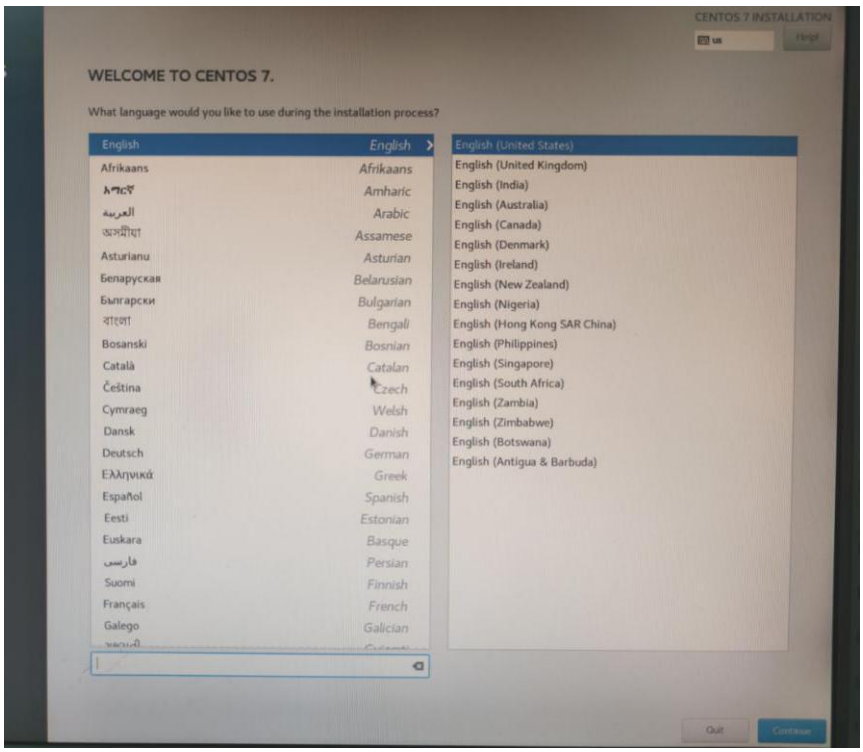
Step 6 Install CentOS 7.9 Linux

Insert the USB diskette in to the USB port.

1) Start installing CentOS 7.9 Linux by booting from the installation CD/DVD.
2) On the startup screen. Just select "**Install CentOS 7**", and then press **ENTER** to start installation.



3) When the installation switches to the graphical installation, press "**Ctrl+ALT+F2**" to switch the shell on console 2 before select "**Next**".



Type the following commands to load the RR3740A driver:

 # mkdir /dd

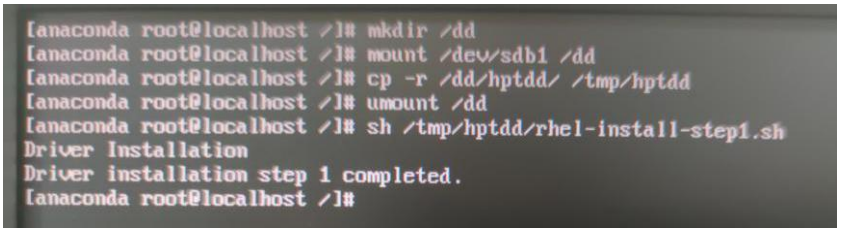
 # mount /dev/sda1 /dd

 # cp -r /dd/hptdd /tmp/hptdd

 # umount /dd

Unplug all USB storage devices from system before execute following command:

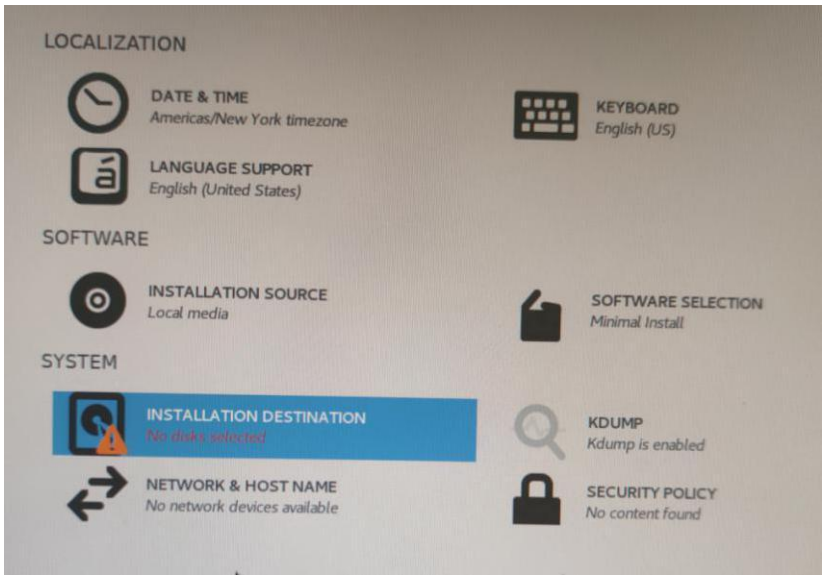
 # sh /tmp/hptdd/rhel-install-step1.sh



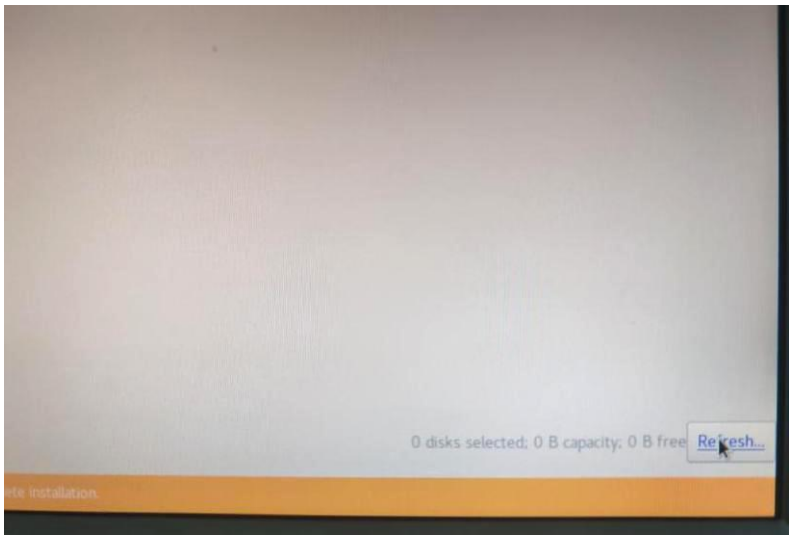
Press "**ALT+F6**" to switch back to installation screen and select "**Next**" to continue installation.

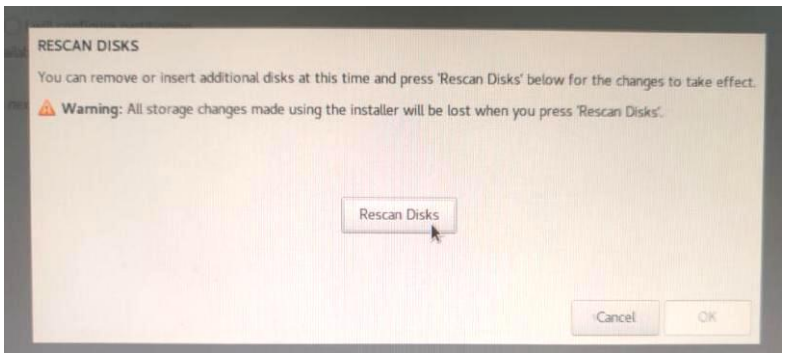
4) When the installation program comes to selecting the installation location.

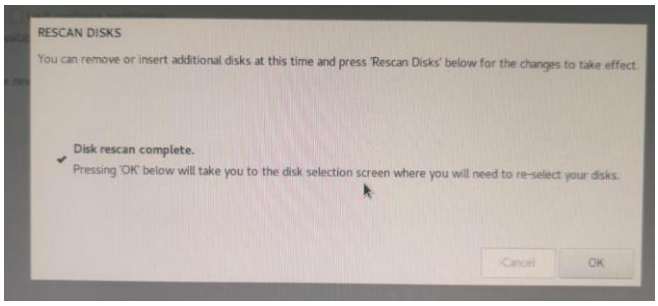
a) Click to select the **installation location**.



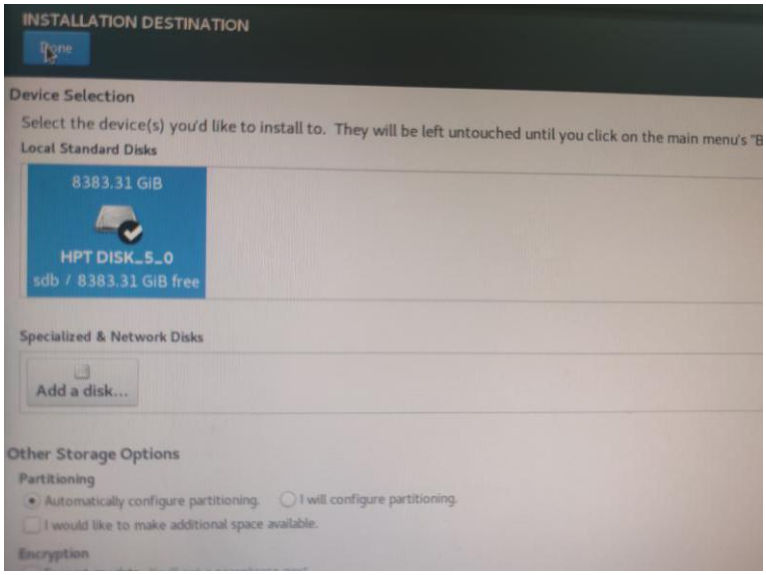
b) Click the **refresh** button to find the disk.



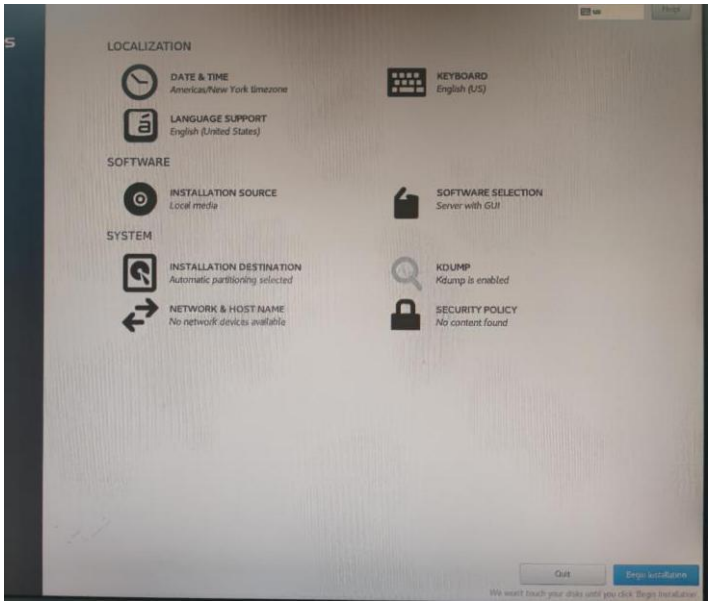




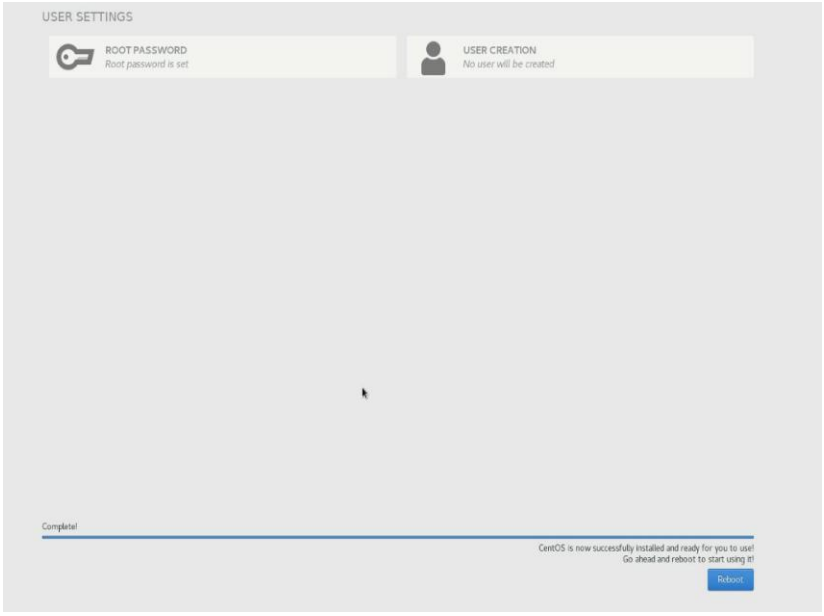
c) Select the disk and **customize the partition**.



d) Continue the installation.



5) Refer to CentOS7.9 Linux installation guide to continue the installation and when installation finishes and prompts you to reboot the system:



press "**CRL+ALT+F2**" to switch console 2 and type the following commands:

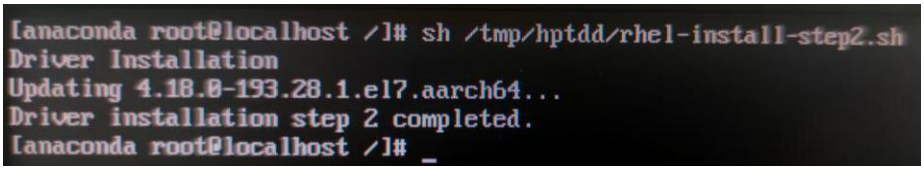
 # cp -r /tmp/hptdd /mnt/sysimage/tmp/hptdd

 # chroot /mnt/sysimage

 # sh /tmp/hptdd/rhel-install-step2.sh

 # rm -rf /tmp/hptdd

 # exit



Then switch back to console 6 and finish the installation.

3 Installing RR3740A driver on an Existing System

Note

If you use a SCSI adapter to boot your system, you must make sure the RR3740A controller EFI will be loaded after that adapter's EFI. If not, try to move it to another PCI slot. Otherwise you may be unable to boot up your system.

Step 1 Obtain and install the Driver Module

Extract the driver archive to a temporary directory and execute the **install.sh** to install the driver to the system. For example:

mkdir /tmp/dd

tar xzvf RR3740A_CentOS_7u9_2009_aarch64_vx.xx.x_xx_xx_xx.tar.gz -C /tmp/dd

cd /tmp/dd

sh install.sh

If the driver of previous version has been in the initrd image, the installer will update the initrd image or it will make the driver automatically loaded while system up.

Step 2 Configure System to Mount Volumes when Startup

Now you can inform the system to automatically mount the array by modifying the file /etc/fstab. E.g. you can add the following line to tell the system to mount **/dev/sda1** to location **/mnt/raid** after startup:

/dev/sda1 /mnt/raid ext3 defaults 0 0

4 Monitoring the Driver

Once the driver is running, you can monitor it through the Linux proc file system support. There is a special file under /proc/scsi/rr3740a/. Through this file you can view driver status and send control commands to the driver.

Note

The file name is the SCSI host number allocated by OS. If you have no other SCSI cards installed, it will be 0. In the following sections, we will use x to represent this number.

Using the following command to show driver status:

cat /proc/scsi/rr3740a/x

This command will show the driver version number, physical device list and logical device list.

5 Installing RAID Management Software

HighPoint RAID Management Software is used to configure and keep track of your hard disks and RAID arrays attached to RR3740A controller. Installation of the management software is optional but recommended.

Please refer to HighPoint RAID Management Software documents for more information.

6 Rebuilding Driver Module for System Update

When the system updates the kernel packages, the driver module rr3740a.ko should be built and installed manually before reboot.

To build the driver module, the RR3740A open source package and the following building packages are needed: gcc, kernel-devel. The open source package can be got from HighPoint website: http://www.highpoint-tech.com while the building tools can be installed from CentOS website: http://www.centos.org

Note: the package version of kernel-devel should be the same to the updated kernel package.

Refer to the REAME file distributed with HighPoint RR3740A open source package on how to build and install the driver module.

Appendix A

Support command: help/info/quit/exit/create/delete.

- **Create Command**

Syntax

Create Array Type (RAID0/RAID1/RAID10) Member Disk list (1/1,1/2|*)Capacity(100|*)

Examples

<<< create RAID0

<<< create RAID0 *

<<< create RAID0 * *

Create RAID1 array with all disks and with maximum capacity.

<<< create RAID1 1/1, 1/3 10

Create RAID1 array with disk 1/1 and 1/3 and with 10GB capacity.

<<< create RAID10 *

Create RAID10 array with all disk and with maximum capacity.

- **Delete Command**

Syntax

delete {array ID}

Examples

<<< delete 1

Delete the first array from Logical device list.

<<< delete 2

Delete the second array from Logical device list.

- **Info Command**

Syntax

info

Display physical device list and logical list

- **Exit Command**

Syntax

Q/q/quit/exit

Quit the application

- **Help Command**

Syntax

H/h/help

This is help message.