**NR2241 CLI User Guide**

**CLI Features**

• Create a virtual disk (RAID only)

• Delete a virtual disk (RAID only)

• Namespace attachment

• View SMART of physical disk

• Set, get configuration of adapter and virtual disk (RAID only)

• Rebuild and initialize a virtual disk (RAID only)

**Starting Linux MNV\_CLI**

User shall add executable permission for mnv\_cli > chmod 777 mnv\_cli

To enter into CLI prompt: shell > sudo ./mnv\_cli

**Starting Windows MNV\_CLI**

Run // double click mnv\_cli.exe program. A Windows CMD Windows starts。

Limitations:

• In Windows, if the 88NR2241 adapter does not have a functional VD presented to the

OS, the CLI and API cannot find the adapter. This is a Windows inbox driver

limitation.

• Windows driver does not support NVMe notification and hot-plug. Hence, any newly created VD by CLI utility is not detected by Windows until the OS is rebooted (alternatively, the user can try disable/enable 88NR2241 NVMe controller and driver to force a device re-scan).

• Ns (Name Space) admin is not supported by Windows drivers.

• If current user not administrator, please run mnv\_cli.exe with administrator permission.

**Command Conventions and Built-in Help**

This command line utility now can be used in both Linux and Windows environment.

When the utility is used in the OS shell, the syntax is:

mnv\_cli [adapter id] command [<parameter …>] [-output <file>]

-output redirects output to the file.

When the utility is used in shell mode, the syntax is:

command [<parameter …>]

**Usage**

• mnv\_cli ?: provides help on all available command line options of the utility.

• mnv\_cli help [command]: provides detailed help on the command.

**Create a virtual disk**

Objective

This command creates a new virtual disk from a set of physical disks. The 88NR2241

is designed to create a maximum of four VDs and four namespaces. Only the VD

with namespace attached can be seen from the OS. There is only one VD controller

that has a namespace operation (such as, create/delete namespace).

Note: Not supported for JBOF mode.

**Command**

create -d <physical disk id list> -r <0|1|10|JBOD> [-n <name>][-i

<quick|none>] [-b <128|256|512|1024>] [-h]

It makes a new virtual disk from a set of physical disks.

**Parameters**

-r --raid mode <0|1> RAID level

-d --id <physical disk id list>

Physical disk IDs used to create the VD, separated by commas

-n --name <virtual disk name> Name of virtual disk

If not set, default is VD\_{VD ID}.

VD ID: start from 0. If in the first detect, the

VD ID does not exist, it is used (for example: If VD ID 0 does not exist, the name will be VD\_0).

If the blank character is in the name, <virtual disk name> must be quoted.

-i --init <quick|none>

Initialization mode (DEFAULT:quick).

Quick: The first 64KB space of the VD are filled with zero.

-b --strip block size <128|256|512|1024>

DEFAULT:128) stripe block size in KB unit.

-h --help

**Note:need reboot to take effect**

**Example**

**create -r 0 -d 0,1 -n “My vd”**

It creates a RAID 0 VD named 'My VD', using physical disk 0, 1.

For example:

The available size of VD for creating

namespace: 2048 GB.

Type namespace size list:

For example:

Create two namespaces: 20GB and 30GB

20,30

Create two namespace and last one use all remaining size of VD.

20,0

Create one namespace and use all of VD

0

Or type/enter directly without any character.

**create -r 1 -d 0,1**

Create a RAID 1 VD using disk 0, 1

**create -r JBOD -d 0**

Create a JBOD VD using disk 0

**create -r 1 -d 0,1 -b 512 C**

Create a RAID 1 VD using disk 0, 1 and strip block size is 512 KB

**create -r 1 -d 0,1 -i none**

Create a RAID 1 VD using disk 0, 1 and do not quick initialize

**Delete a virtual disk (RAID only)**

Objective

This command deletes a virtual disk.

Note: Not supported for JBOF mode.

Command

delete -i <id> [--waiveconfirmation] [-h]

-i --id <id> ID of LD will be deleted.

-h --help

**need reboot to take effect**

**Example**

**delete -i 0**

Delete virtual disk with ID equal to 0.

**Rebuild and initialize a virtual disk (RAID only)**

**Objective**

This command is a Simple API feature to start or stop VD rebuild on refer PD.

**Command**

rebuild [-a <start|stop>] -i <vd id> -d <pd id> [-h]

Note: Does not support JBOF mode.

**Parameters**

-a --action <start|stop>

(DEFAULT:start) - Rebuild action to be performed on VD.

-i --id <vd id> VD ID.

-d --pdid <id> PD ID.

-h --help

**Example**

rebuild -a start -i 0 -d 0

Start background rebuild on VD 0 with PD 0.

rebuild -a stop -i 0

Stop background rebuild on VD 0.

**Example**

mmui@mmui-desktop:~$ su root

Password:

root@mmui-desktop:/home/mmui# ls

Desktop

root@mmui-desktop:/home/mmui# cd Desktop/

root@mmui-desktop:/home/mmui/Desktop# ls

linux

root@mmui-desktop:/home/mmui/Desktop# cd linux/

root@mmui-desktop:/home/mmui/Desktop/linux# ls

32 64

root@mmui-desktop:/home/mmui/Desktop/linux# cd 64

root@mmui-desktop:/home/mmui/Desktop/linux/64# ls

mnv\_cli

root@mmui-desktop:/home/mmui/Desktop/linux/64# chmod 777 mnv\_cli

root@mmui-desktop:/home/mmui/Desktop/linux/64# sudo ./mnv\_cli

CLI Version: 1.0.0.1039

Welcome to NVMe Command Line Interface.

> info

Description:For display NVMe Controller(hba), virtual disk(vd), physical disk(pd) or Namespace(ns) information.

info -o <hba|vd|pd|ns> [-i <id>] [-t <host | vd>[-v <vd\_id>]] [-h]

Options:

-o, --object <hba|vd|pd|ns>

hba - NVMe Controller

vd - Virtual Disk

pd - Physical Disk

ns - Name Space

-i, --id <VD id|PD id|NS id>

Virtual disk id, Physcial disk id or Namespace id.

If not specified, all instances of the HBA, VD, PD or NS will be retrieved.

-t, --type <Host | VD>

For ns info only.

Host, namespace information which report for OS.

VD, namespace information which can be list from specific VD ID.

If not specified, default type is Host. CLI will list all namespace information which report for OS.

-v, --vd\_id <VD id>

For ns info of VD only. This is for list all namespace information of specific VD ID.

If not specified, all instances of the NS will be retrieved.

-h, --help

Examples:

info -o hba

Information of NVMe controller.

info -o vd -i 0

Information of VD ID 0.

info -o pd -i 0

Information of PD ID 0.

info -o ns

Information of all namespace which NVMe controller report to OS.

info -o ns -t vd -v 0

Information of all namespace which VD ID 0 contains.

> info -o hba

NVMe Controller ID 0

Bus Device Fun: 00:00.00

Device: /dev/nvme0

Slot ID: 48

SUBNQN: Not found

Firmware Version: 1.0.0.1029

VID: 0x1b4b

SVID: 0x1b4b

DID: 0x2241

SDID: 0x2241

RevisionID: B0V

Port Count: 2

Max PD of Per VD: 2

Max VD: 2

Max PD: 2

Max NS of Per VD: 1

Max NS: 4

Host ID: 0

Supported RAID Mode: RAID0 RAID1 JBOD

Cache: On

Supported BGA Features: Initialization Rebuild MediaPatrol

Support Stripe Size: 128KB 256KB 512KB

Supported Features: Import RAID Namespace Dump

Root Complex: 0

Link width: 2x

Max PCIe speed: 8Gb/s

Root Complex: 1

Link width: 2x

Max PCIe speed: 8Gb/s

End Point: 0

Link width: 8x

Max PCIe speed: 8Gb/s

Total # of HBA: 1

> creat -r 0 -d 0,1 -n mmui

e.g.

Create two namespace which are 20GB and 30GB

20,30

Create two namespace and last one use all remaining size of VD

20,0

Create one namespace and use all of VD

0

or type enter directly without any character.

Available Size of VD for creating namespace : 26 GB

Please type namespace size list:26,0

Create virtual disk successfully.

> info -o hba

NVMe Controller ID 0

Bus Device Fun: 00:00.00

Device: /dev/nvme0

Slot ID: 48

SUBNQN: Not found

Firmware Version: 1.0.0.1029

VID: 0x1b4b

SVID: 0x1b4b

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Root Complex: 1

Link width: 2x

Max PCIe speed: 8Gb/s

End Point: 0

Link width: 8x

Max PCIe speed: 8Gb/s

Total # of HBA: 1

> info -o vd

VD ID: 0

Name: mmui

Status: Functional

Importable: No

RAID Mode: RAID0

size: 26 GB

PD Count: 2

PDs: 0 1

Stripe Block Size: 128K

Sector Size: 512 bytes

Total # of VD: 1