MPT Utility User Guide

V1.03- June 20, 2025

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1. Overview

MPT Utility is a comprehensive tool that enables users to easily view detailed AIC information, view trace log, event log, securely update firmware, and efficiently collect AIC status information, providing solid technical support for stable AIC operation and efficient management.

The following table lists the NVMe RAID AICs and operating system that supported.

Table 1: Supported NVMe RAID AICs and operating system

Supported NVMe RAID AICs	R1528D R1604A R1608A R1628A RS8531AW RS8631CW
Supported operating system	Windows 10 (Version: 22H2) and later Windows Server 2022 and later Red Hat Enterprise Linux 9 and later Debian 12.7 and later Ubuntu 24.04 and later Fedora 40 and later

1.1. Advanced Features of the MPT Utility

- Update firmware
- Collect log information
- View Device Information

2. MPT Utility

This section describes the various MPT Utility commands: help, list, select, info, trace, sensor, event, otc, set, param, dl, clear, exit, version.

2.1. Start the MPT Utility

There are two methods to use MPT Utility. One is to use it in interactive mode; the other is to use it in batch mode.

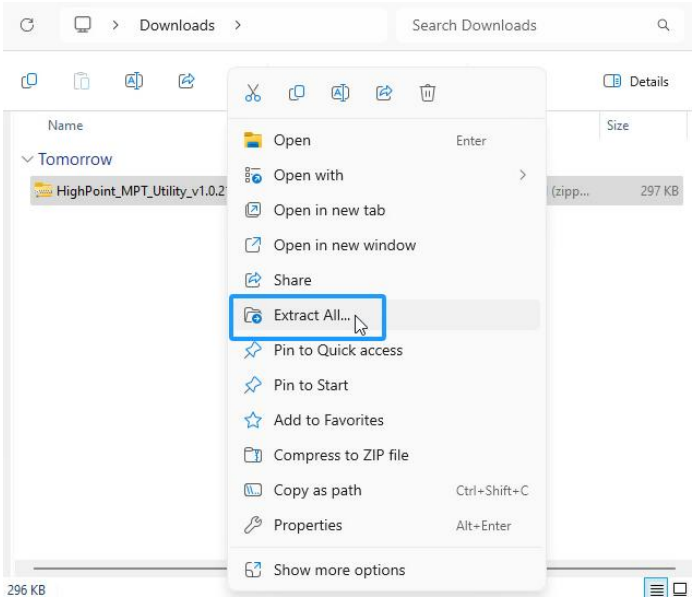
- **Interactive Mode**-Using the MPT Utility in interactive mode allows the user to interact with the MPT Utility intuitively through a command line interface, where the user can instantly enter commands or data and get an immediate response or processing result from the software.
- **Batch Mode**-Using MPT Utility in batch mode, users can combine multiple commands into a batch file and submit it to MPT Utility for execution at once. This processing greatly improves efficiency.

MPT Utility Prerequisites

1. Use administrator privileges on the system.
2. Download the firmware file.
3. Unzip the MPT Utility zip file.

- **For Windows User**

1) Locate the MPT Utility file download.
2) Right-click on the MPT Utility ZIP file.
3) Select **Extract All...** to complete unzip the ZIP file.



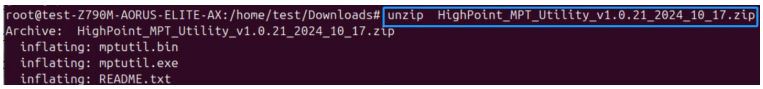
- **For Linux User**

1) Open a terminal with root privileges and enter the path where the MPT Utility is located.

   e.g. #cd /home/test/Downloads/

2) Unzip the MPT Utility zip file.

   #unzip HighPoint_MPT_Utility_v1.x.x_24_xx_xx.zip

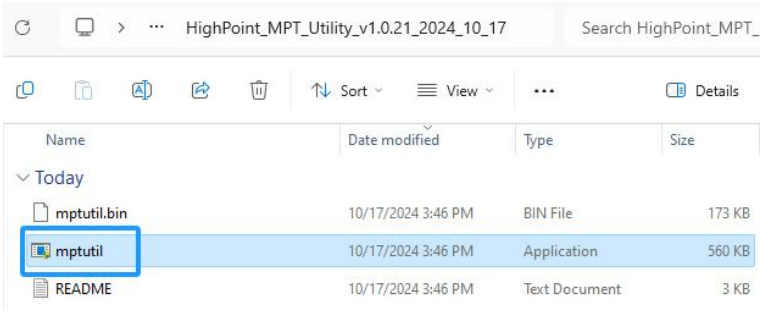


2.1.1. Start the MPT Utility on Windows

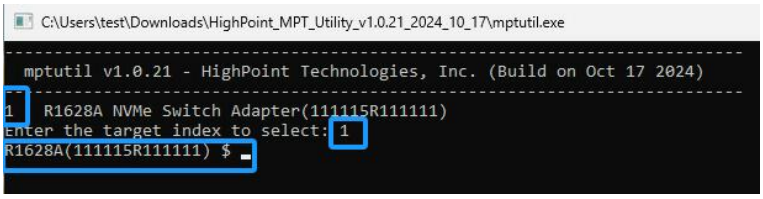
To start the MPT Utility on the Windows operating system, perform the following steps.

Method 1: Interactive Mode

1. Locate the MPT Utility download and open the file.
2. Use the Administrator Privileges to click the **mptutil.exe**.

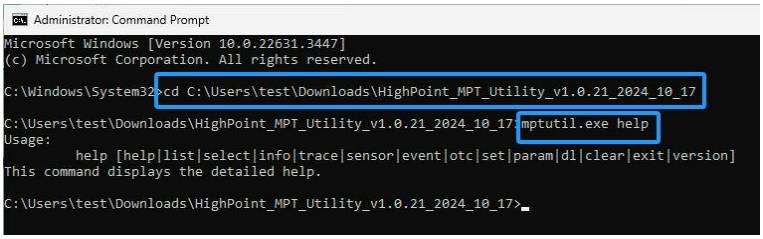


3. Enter the AIC number to select the corresponding AIC.



Method 2: Batch Mode

1. Run Command Promptas Administrator.
2. Enter the following command to enter the path where the MPT Utility is located.
3. Enter **mptutil.exe help**, display generic help about this utility.



4. Follow the command prompt in the help output and enter the command you want to execute.

2.1.2. Start the MPT Utility on Linux

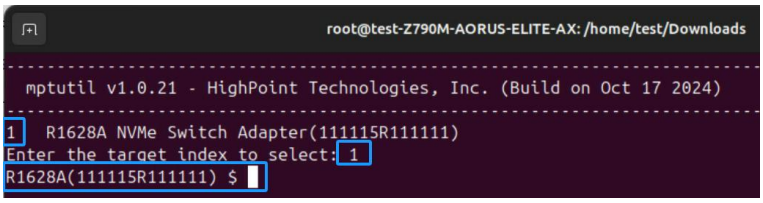
To start the MPT Utility on the Linux operating system, perform the following steps.

Method 1: Interactive Mode

1. Enter the following command to start the MPT Utility.

   #./mptutil.bin

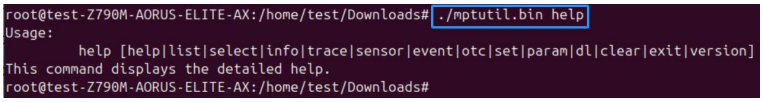
2. Enter the AIC number to select the corresponding AIC.



Method 2: Batch Mode

1. Enter the following command to display generic help about this utility.

   #./mptutil.bin help



2. Follow the command prompt in the help output and enter the command you want to execute.

2.2. help Command

You can use help commands to find the supported commands.

```
R1628A(111115R111111) $ help
Usage:
        help [help|list|select|info|trace|sensor|event|otc|set|param|dl|clear|exit|version]
This command displays the detailed help.
```

The following table lists and describes the properties of the help command.

Table 2: Properties for help Commands

cmd	Property Name	Description
help	N/A	This command displays generic help about this utility.
help	{command}	This command displays help about a specific command.

2.2.1. Show the Generic Help Command

AIC (SN) $ help

This command displays generic help about this utility.

Input example:

AIC (SN) $ help

```
R1628A(111115R111111) $ help
Usage:
        help [help|list|select|info|trace|sensor|event|otc|set|param|dl|clear|exit|version]
This command displays the detailed help.
```

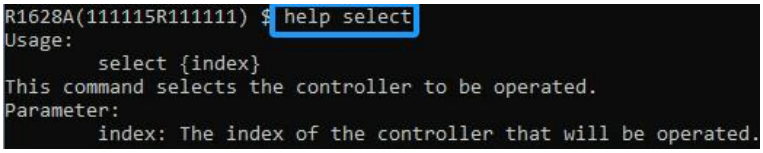
2.2.2. Show the Specific Command Help

AIC (SN) $ help {command}

Show help about a specific command.

Input example:

AIC (SN) $ help select



2.3. list Command

You can use the list command to list all supported AICs.

```
R1628A(111115R111111) $ help list
Usage:
       list
This command lists all supported controllers.
```

The following table lists and describes the properties of the list command.

Table 3: Properties for list Command

cmd	Property Name	Description
list	N/A	This command lists all supported AICs.

2.3.1. List All AICs

AIC (SN) $ list

This command lists all supported AICs.

Input example:

AIC (SN) $ list

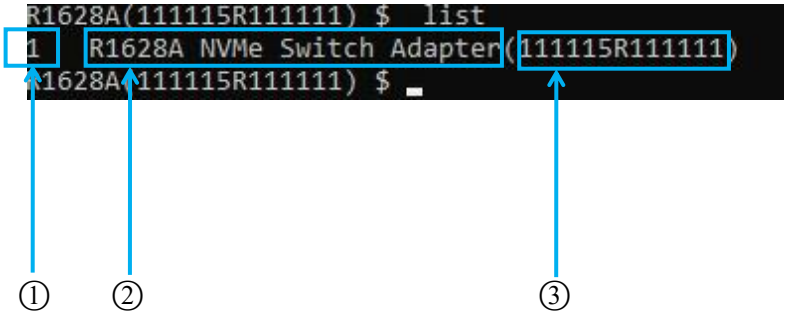


Table 4: List Description

No	Property Name	Description
①	Number	The AIC's number. Number starting from 1.
②	Name	The AIC's model name.
③	Serial Number	The AIC's serial number.

2.4. select Command

You can use the select command to select the serial number of the AIC to be operated.

Note: This command is not supported in batch mode.

```
R1628A(111115R111111) $ help select
Usage:
        select {index}
This command selects the controller to be operated.
Parameter:
        index: The index of the controller that will be operated.
```

The following table lists and describes the properties of the select command.

Table 5: Properties for select Command

cmd	Property Name	Value Range	Description
select	{index}	The AICs number hosted by the system	This command selects the number of the AIC to be operated.

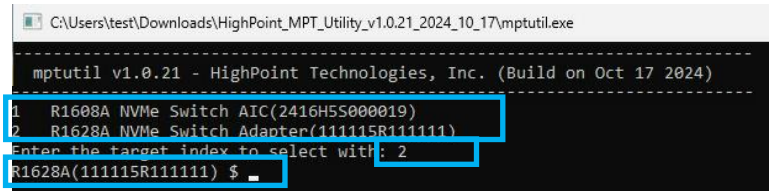
2.4.1. Select the AIC

AIC (SN) $ select {index}

This command selects the serial number of the AIC to be operated.

Input example:

AIC (SN) $ select 2



2.5.info Command

You can use the info command to display detailed information about the AIC, including key data such as model name, serial number, and so on.

```
R1628A(111115R111111) $ help info
Usage:
        info
This command displays information about the selected controller.
```

The following table lists and describes the properties of the info command.

Table 6: Properties for info Command

cmd	Property Name	Description
info	N/A	This command displays detailed information about the AIC.

2.5.1. View the AIC Information

AIC (SN) $ info

This command displays detailed information about the AIC.

Input example 1:

AIC (SN) $ info

```
R1634D(111116D111111) $ info
Product:                        R1634D
Vendor:                         HighPoint Technologies, Inc.
Model:                          RS8631CW External PCIe Chassis
SN:                             111116D111111

PCB Version:                    1.0
Firmware Version:               5.12.72.0
MCU Version(Rescue Mode):       1.0.51
Retimer Version:                2.12.0

Chip temperature:               59 (C)/138 (F)
HIB chip temperature:           59 (C)/138 (F)
Enclosure 3.3V Voltage:         3.320 V
Enclosure 12V Voltage:          12.080 V
Enclosure 5V Voltage:           5.056 V
Power Consumption:              10.86 W
Fan Speed:                      Auto(780 RPM, 720 RPM, 1860 RPM)

Channel(Port) Status MaxLinkSpeed LinkSpeed MaxLinkWidth LinkWidth
      1(  16)     ON    32.0 GT/s  2.5 GT/s          x16       x16
------------------------------------------------------------------------------
                            Vital Product Data
------------------------------------------------------------------------------
Product Name:                   HighPoint Rocket 1634D Gen5 NVMe Switch Adapter
[PN] Part number:               R1634D-41C0000
[EC] Engineering changes:       0000
[MN] Manufacture ID:            1103
[SN] Serial number:             111116D111111
[V0] Vendor specific:           HighPoint Technologies
[V1] Vendor specific:           Broadcom PEX89048
```

- **Product** — The name of the AIC.
- **Vendor** — The manufacturer of the AIC.
- **Model** — The model name of the AIC.
- **SN** — The serial number of the AIC.
- **PCB Version** — The hardware version of the AIC.
- **Firmware Version** — The firmware version of the AIC.
- **MCU Version(Rescue Mode)** — The MCU Version of the AIC.
- **Retimer Version** — The Retimer Version of the AIC.
- **Chip Temperature —** The temperature of the AIC's chip.
- **Board 3.3V Voltage** — The board 3.3V voltage of the AIC. When the voltage exceeds 3.3V (±8%), the voltage is displayed in red.
- **Board 12V Voltage** — The board 12V voltage of the AIC. When the voltage exceeds 12V (±8%), the voltage is displayed in red.
- **Power Consumption** — Total power consumption of the AIC, disks, and external power supply (provided by the PCIe host interface)

  Notes:

  For the R1000 series products using M.2 disks, the power consumption is the sum of the power consumption of the PCIe device, the disk, and the external power supply.

  For the R1000 series products using U.2 disks, the power consumption is only the power consumption of the PCIe device.

  For the RS8531AW and RS8631CW, the power consumption is only the power consumption of the PCIe device.
- **Fan Speed** — The current fan speed and status of the AIC.

  Note: The RS8631CW has three fan speeds, in order, the Enclosure rear upper fan speed, the Enclosure rear lower fan speed, and the Enclosure internal Retimer fan speed.
- **Port** — The physical disk location.
- **Max Link Speed** — The maximum link bandwidth of the disks.
- **Link Speed** — The current link bandwidth of the disks.
- **Max Link Width —** The maximum PCIe width occupied by the current disks.
- **Link Width —** The PCIe width occupied by the current disks.
- **[PN] Part number —** The part number of the AIC.
- **[EC] Engineering changes —** The engineering change of the AIC.
- **[MN] Manufacture ID —** The manufacture ID of the AIC.
- **[SN] Serial number —** The serial number of the AIC.

- **[V0] Vendor specific —** The manufacturer of the AIC.
- **[V1] Vendor specific —** The chip model of the AIC.

2.6. trace Command

You can use the trace command to display the printout of the initialization and running process of this boot of firmware. It can be used to check the loading and running of firmware.

```
R1628A(111115R111111) $ help trace
Usage:
       trace
This command displays firmware trace information for the selected controller.
R1628A(111115R111111) $
```

The following table lists and describes the properties of the trace command.

Table 7: Properties for trace Command

cmd	Property Name	Description
trace	N/A	This command displays the firmware trace of the selected AIC.

2.6.1. View the Trace Log

AIC (SN) $ trace

This command displays the firmware trace of the selected AIC.

Input example:

AIC (SN) $ trace

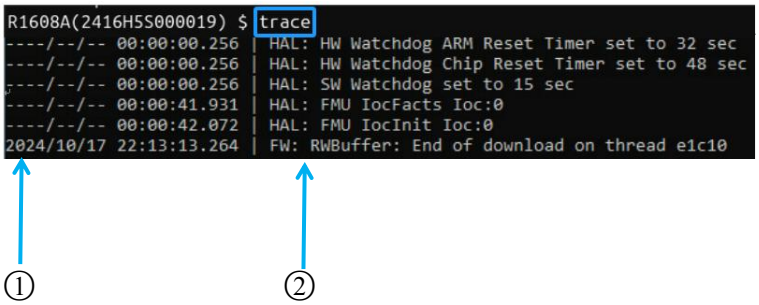


Table 8: Trace Description

No	Property Name	Description
①	Trace Time	Displays the exact time of the trace.
②	Trace Content	Displays the specifics of the firmware trace.

2.7. sensor Command

You can use the sensor command to display the 20 most recent sensor records. It supports optional page numbering (up to 20 pages).

```
R1628A(111115R111111) $ help sensor
Usage:
       sensor [page]
This command displays 20 sensor records for the selected controller by the specified page number.
Optional parameter:
       page: The page number of the sensor records to display, up to 20 pages. The default is 1.
```

The following table lists and describes the properties of the sensor command.

Table 9: Properties for sensor Command

cmd	Property Name	Value Range	Description
sensor	N/A	N/A	This command displays the 20 recent sensor records of the selected AIC.
	[page]	1-20	This command displays the 20 sensor records of the selected AIC by the specified page.

2.7.1. View the AIC Sensor Information

AIC (SN) $ sensor [page]

This command displays the 20 sensor records of the selected AIC by the specified page.

Input example:

AIC (SN) $ sensor 1

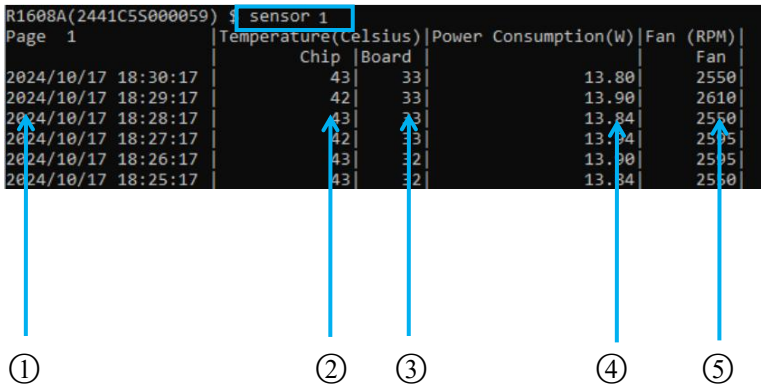


Table 10: Sensor Description

No	Property Name	Description
①	Time	Displays the exact recording time of the sensor.
②	Chip	The AIC's chip temperature. This data is obtained from the chip.
③	Board	The AIC's board temperature. This data is obtained from the sensor element.
④	Power Consumption	Total power consumption of the AIC, disks, and external power supply (provided by the PCIe host interface) Notes: For products using M.2 disks, the power is the sum of the power of the AIC, disks, and external power supply; For products using U.2 disks, the power is the sum of the power of the AIC and the external power supply.
⑤	Fan Speed	The current fan speed of the AIC.

2.8. event Command

You can use the event command to display the 20 most recent event logs. The output contains information such as connected disks, failed disks, fan speed adjustments and disk temperature alarms, etc. It supports optional page numbering (up to 20 pages).

```
R1628A(111115R111111) $ help event
Usage:
       event [page]
This command displays 20 events for the selected controller by the specified page number.
Optional parameter:
       page: The page number of the events to display, up to 20 pages. The default is 1.
```

The following table lists and describes the properties of the event command.

Table 11: Properties for event Command

cmd	Property Name	Value Range	Description
event	N/A	N/A	This command displays the recent 20 event logs of the selected AIC.
	[page]	1-20	This command displays the 20 event logs of the selected AIC by the specified page.

2.8.1. View the Event Log

AIC (SN) $ event [page]

This command displays the 20 event logs of the selected AIC by the specified page.

Input example:

AIC (SN) $ event 1

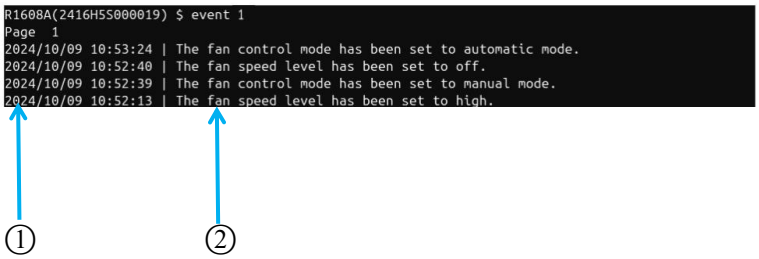


Table 12: Event Description

No	Property Name	Description
①	Event Time	Displays the exact time of the event.
②	Event Content	Displays the specifics of the event that occurred.

2.9. otc Command

The otc command is a unique feature of our HighPoint MPT Utility. It provides an information collection system for troubleshooting. It will gather all necessary system information, PCI information, AIC information, port information, factory data, user data, sensor information, event log, and trace log and compile it into a single file, which can be transmitted directly to our FAE Team via our Online Support Portal.

```
R1628A(111115R111111) $ help otc
Usage:
        otc
This command collects all the controller information.
```

The following table lists and describes the properties of the otc command.

Table 13: Properties for otc Command

cmd	Property Name	Description
otc	N/A	This command allows you to collect and save the necessary firmware log for troubleshooting. This file will be saved in the MPT Utility next level directory.

2.9.1. Save the Firmware Log

AIC (SN) $ otc

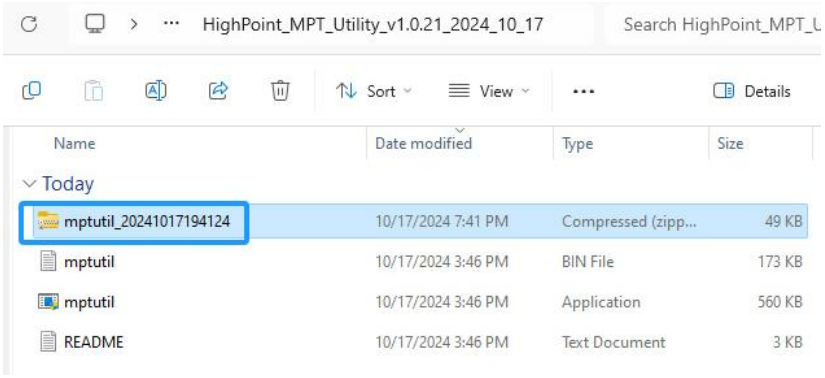
This command allows you to collect the necessary firmware log.

Input example:

AIC (SN) $ otc

```
R1628A(111115R111111) $ otc
OTC is processing.
OTC has been completed, and the file 'mptutil_20241017194124.zip' has been saved.
```

- **For Windows User**



- **For Linux User**

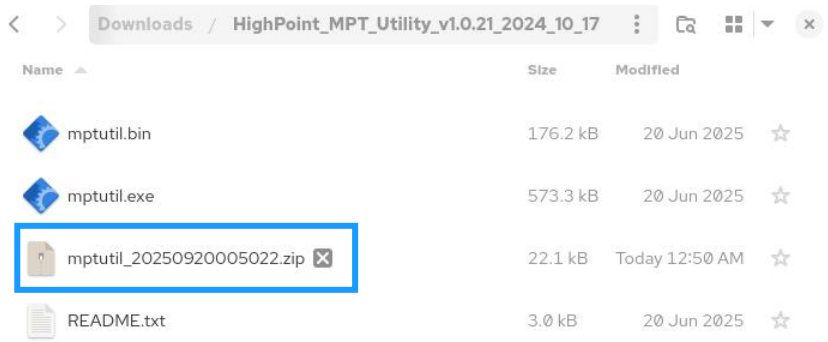


Table 14: Description of each folder in the log zip file

Folder	Property	Description
pci	pci.txt	Information about all PCIe devices connected to the motherboard.
system	system.txt	CPU configuration of the current system, OS and disks in the current system.
*-switch	event.txt	Collect sensor information every minute, including power voltage, fan speed, and temperature.
	info.txt	Collect AIC information, including firmware, SN, PCB version, firmware version, chip/board temperature, voltage/power, and fan speed.
	sensor.txt	Collect sensor information.
	trace.txt	Collect firmware runtime log.
	{xxx}.bin	AIC factory data, including the initial setup parameters.

2.10. set Command

You can change the AIC settings by set command according to your preferred behavior and requirements.

```
R1628A(111115R111111) $ help set
Usage:
       set FS [level]
This command sets the fan speed of the selected controller.
Optional parameter:
       level: The fan level to set. This value should be 'Auto|ULow|Low|Medium|High|Full'.
```

The following table lists and describes the properties of the set command.

Table 15: Properties for set Command

cmd	Property Name	Description
set	FS	Change the AIC Fan Speed. This supports setting different levels of fan speed {Auto|ULow|Low|Medium|High|Full} Note: The command takes effect immediately upon success.

2.10.1.Set the AIC Fan Speed

AIC (SN) $ set FS [Auto|ULow|Low|Medium| High|Full]

Change the AIC Fan Speed.

Input example:

AIC (SN) $ set FS Low

```
R1608A(2441C55000059) $ set FS LOW
The fan operation mode has been set to 'LOW'.
```

2.11. param Command

You can use the param command to change the parameter of the selected AIC. This parameter setting supports setting the Hotplug compatibility mode. Enabled Hotplug compatibility mode causes performance degradation on all disks hosted by the AIC.

This setting needs to be adjusted to **Enabled** when the following situations occur.

- Connect disks with Payload=256k
- Inserting an older model disk into the system, but the system does not recognize the disk.

```
R1628A(111115R111111) $ help param
Usage:
        param [ID] [Value]
This command changes the parameter of the selected controller.
Optional parameter:
        ID: The parameter id.
        Value: the parameter value to set.
```

The following table lists and describes the properties of the param command.

Table 16: Properties for param Command

cmd	Property Name	Value Range	Description	
param	N/A	N/A	Display or set the AIC parameter settings.	
	[ID]	Parameter ID number	2001	Hotplug compatibility mode
			2003	Status LED
			2004	Fault LED
			2005	SSD LED
	[Option]	Enabled/ Disabled	Set the AIC parameter settings. This Parameter Setting supports setting the **Hotplug compatibility mode and LED (Status/ Fault/ SSD) on/off** . Notes: Enabled Hotplug compatibility mode causes performance degradation on all disks hosted by the AIC. This Hotplug compatibility mode setting applies only to U.2 series products.	

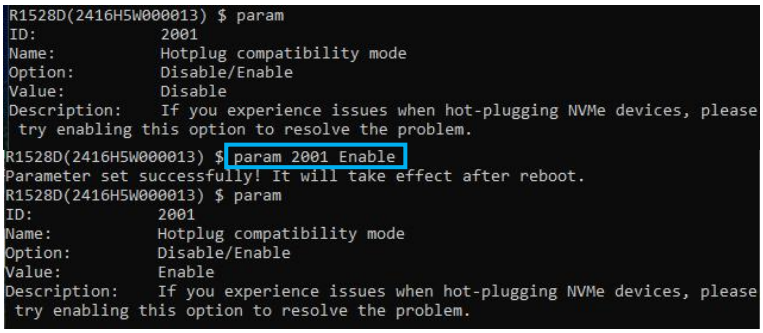
2.11.1. Set Hotplug Compatibility Mode

AIC (SN) $ param [ID] [Option]

This Parameter Setting supports setting the **Hotplug compatibility mode**.

Input example:

AIC (SN) $ param 2001 Enable



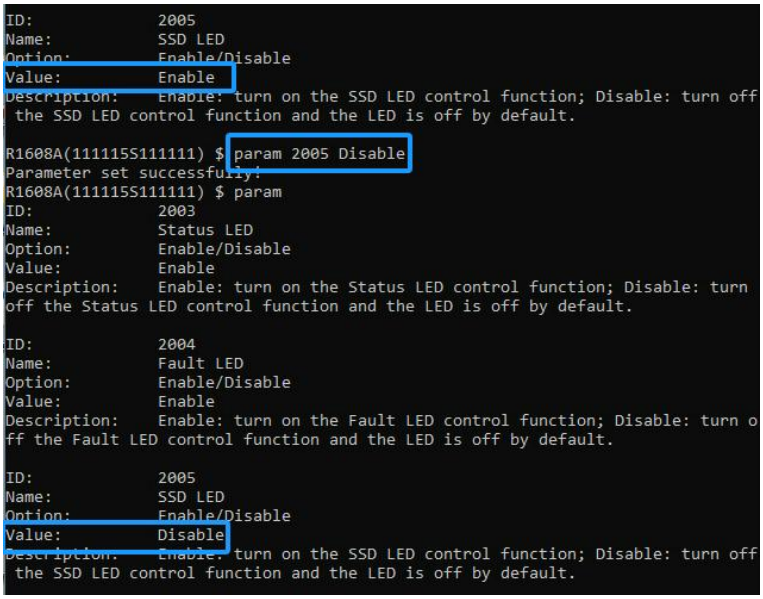
2.11.2. Set LED On/Off

AIC (SN) $ param [ID] [Option]

This Parameter Setting supports setting the LED (Status/ Fault/ SSD) on/off .

Input example:

AIC (SN) $ param 2005 Disable



2.12. dl Command

You can upgrade to a newer version of firmware here. This help update the firmware version.

```
R1628A(111115R111111) $ help dl
Usage:
        dl {file.blf} [force]
This command downloads the firmware to the controller.
Parameter:
        file.blf: The firmware file 'file.blf' to be downloaded.
Optional parameter:
        force: Download firmware file without prompting.
```

The following table lists and describes the properties of the dl command.

Table 17: Properties for dl Command

cmd	Property Name	Value Range	Description
dl	{file.blf}	{file_path}	This command allows you to update the AIC firmware version. Note: Parameter 'force' should be provided to update firmware in batch mode.
	[force]	N/A	

2.12.1.Update the AIC Firmware

AIC (SN) $ dl {file path}

This command allows you to update the AIC firmware version. Reboot the system when prompted to make the new firmware take effect.

Input example (Windows):

AIC (SN) $ dl C:\Users\test\Desktop\R1628ASSW_Signed_v***_20**_**_**.blf

```
R1628A(111115R111111) $ dl C:\Users\test\Desktop\R1628ASSW_Signed_v5.12.4.0_2024_04_01.blf
The Version of the selected controller: Firmware: 5.12.4.0
The Version of the specified file: Firmware: 5.12.4.0
Do you want to download the firmware(Y/N): y
Firmware is downloading...
The firmware download is completed.
Please reboot to activate the new firmware.
```

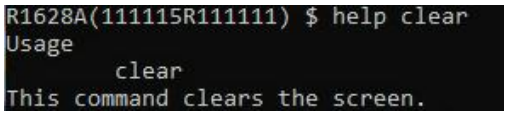
Input example (Linux):

AIC (SN) $ dl C:\Users\test\Desktop\R1628ASSW_Signed_v***_20**_**_**.blf

```
R1528D(111115W111111) $ dl /home/test/Downloads/R1528D_v100.8.3.0_2025_03_21.blf
The version of the selected controller: Firmware: 0.8.53.0
The version of the specified file: Firmware: 100.8.3.0
WARNING: The specified firmware file version is earlier than the running firmware.
Do you want to download the firmware(Y/N): y
Firmware is downloading...
The firmware download is completed.
Please reboot to activate the new firmware.
```

2.13. clear Command

This command is used to clear the screen.



2.13.1.Clear the Utility Screen

AIC (SN) $ clear

This command allows you to clear the screen.

Input example:

AIC (SN) $ clear

2.14. exit Command

Exit from the interactive mode and close the window.

Note: This command is not supported in batch mode.

```
R1628A(111115R111111) $ help exit
Usage
        exit
This command exits this utility.
```

2.14.1.Exit the Utility

AIC (SN) $ exit

This command lets you exit the interactive mode and close the window.

Input example:

AIC (SN) $ exit

```
R1628A(111115R111111) $ exit
```

2.15. ver Command

Displays the version of MPT Utility currently in use.

```
R1628A(111115R111111) $ help version
Usage:
        version
This command displays the version of the utility.
```

2.15.1.Show the Utility Version

AIC (SN) $ version

This command displays you the version of RAID Management currently in use.

Input example:

AIC (SN) $ version

```
R1628A(111115R111111) $ version
v1.0.21
R1628A(111115R111111) $
```

3. Revision History

3.1. Version 1.00, October 18, 2024

Initial version.

3.2. Version 1.01, March 3, 2025

1. Add Set LED On/Off.
2. Add Explanation of parameter ID number.
3. Add RS8531AW support.

3.3. Version 1.02, March 25, 2025

1. Add R1604A support.
2. Add Vital Product Data Information.

3.4. Version 1.03, June 20, 2025

Add RS8631CW support.

Add Linux otc&dl screenshots.