Cisco UCS C890 M5 Rack Server Configuration Guide

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1   Cisco UCS C890 M5 Server Configuration Overview

The Cisco UCS C890 M5 Rack Server, with eight sockets, is designed for workloads that demand high-reliability, intensive compute operations with best-in-industry management costs. This server delivers an impressive 605,730 SAPS by incorporating eight Intel® Xeon® Platinum 8268, 8276, or 8280L processors. This server meets the critical workload demands for SAPS/4 HANA, BW/4 HANA, Epic Caché databases, and other massive virtualization workload consolidation C890-M5-AOC-40NCC890-M5-RISER-B=C890-M5-8280LBLADC890-M5-256G-PMEM=C890-M5-32T-SSDC890-M5-64T-SSD=LBL-7932-CI025C890-M5-CABLE-C=IPMICFG Overview

IPMICFG is a command line tool utility, providing IPMI commands and Supermicro proprietary OEM commands to configure and monitor IPMI devices. It requires no pre-installation and is easy to use for basic IPMI configuration and BMC status reading and monitoring.

1.1   Features

- Setting up IPMI IP addresses

- Setting up IPMI configurations

- Configuring IPMI User Management

- Configuring IPMI FRU

- Managing the System Event Log (SEL)

- Managing IPMI with the Node Management (NM) protocol

1.2   Operation Requirements

To run basic operations, you must meet the following requirements.

1.2.1   System Requirements

Environment	Requirements
Hardware	Free Disk Space: 200 MB
	Available RAM: 64 MB
	Baseboard Management Controller (BMC) must support Intelligent Platform Management Interface (IPMI) version 2.0 specifications.
Operating System	- Microsoft Windows 10. Download link: https://www.microsoft.com/en-us/software-download/windows10ISO - Linux Kernel version 2.6.x or higher. For example, Red Hat Enterprise Linux (RHEL) 6.8 and 7.2 SUSE Linux Enterprise Server (SLES) 11 SP4 and 12 SP1 Ubuntu Server 14.04 LTS and 16.04 LTS - UEFI Shell

1.2.2   Software Requirements

Program/Script	Description
\DOS\IPMICFG.exe	IPMICFG DOS (DOS 5.0)
\Linux\64bit\IPMICFG-Linux.x86_64	IPMICFG Linux 64bit
\Windows\32bit\IPMICFG-Win.exe	IPMICFG Windows 32bit
\Windows\64bit\IPMICFG-Win.exe	IPMICFG Windows 64bit
\UEFI\IPMICFG.efi	IPMICFG UEFI
*.dat files	database for MB type and SEL event table

1.2.3   Installing Additional Drivers

Linux:

The Linux version of IPMICFG will automatically use the built-in Linux IPMI driver from ipmitool to access BMC. If no IPMI driver is available, IPMICFG will use its internal API to access BMC, however the performance will be slow.

To load an IPMI driver, type the following commands to access the IPMI driver:

1. # modprobe ipmi_msghandler

2. # modprobe ipmi_devintf

3. # modprobe ipmi_si

1.3   Typographical Conventions

This manual uses the following typographical conventions.

Courier-New font size 10 represents command line instructions (in CLI) in terminal mode.

Bold is used for emphasizing keywords.

Italic is used for variables and section titles.

< > enclose the parameters in syntax description.

[ipmicfg_HOME] represents the prompt for inputs in terminal mode.

| A vertical bar separates items in a list

2   Installation and Setup

2.1   Installing IPMICFG

Download IPMICFG from
https://www.supermicro.com/SwDownload/SwSelect_Free.aspx?cat=IPMI

Get the IPMICFG_x.xx.x_build.xxxxxx.zip installer, and then unzip it in your environment.

2.1.1   Linux 64bit:

Execute /Linux/64bit/IPMICFG-Linux.x86_64

2.1.2   Windows 64bit:

Execute \Windows\64bit\IPMICFG-Win.exe

2.1.3   UEFI Shell:

Execute \UEFI\IPMICFG.efi

3   Basic User Operations

Usage:

[ipmicfg_HOME] > IPMICFG <command> [option/data...]

Note: To display sets of commands, use the command `[ipmicfg_HOME] > IPMICFG`

<command> -help

Here is an example of displaying the set of `-sdr` commands to illustrate the steps.
Example:

[ipmicfg_HOME] > IPMICFG -sdr -help Command: -sdr

Command(s):

-sdr [full]   Show SDR records and reading

-sdr del <sdr id>   Delete SDR record

3.1   Setting Up IPMI Addresses

Options for Using IPMICFG	
-m	Displays IPv4 address and MAC.
-m <ip>	Sets IPv4 address (format: ###.###.###.###).
-a <mac>	Sets MAC (format: ##:##:##:##:##:##).
-k	Displays Subnet Mask.
-k <mask>	Sets Subnet Mask (format: ###.###.###.###).
-dhcp	Gets the DHCP status.
-dhcp on	Enables the DHCP.
-dhcp off	Disables the DHCP.
-g	Displays a Gateway IP.
-g <gateway>	Sets a Gateway IP (format: ###.###.###.###).
-garp on	Enables the Gratuitous ARP.
-garp off	Disables the Gratuitous ARP.
-ipv6 mode	Displays the IPv6 mode.
-ipv6 mode <mode>	Sets the IPv6 mode.
-ipv6 autoconfig	Displays IPv6 auto configuration.
-ipv6 autoconfig on	Enables IPv6 auto configuration.
-ipv6 autoconfig off	Disables IPv6 auto configuration.
-ipv6 list	Lists IPv6 static and dynamic addresses.
-ipv6 duid	Displays IPv6 DUID.
-ipv6 dns [IPv6 addr]	Gets/sets IPv6 DNS server.
-ipv6 add <id> <IPv6 addr> <prefix>	Adds IPv6 static address.
-ipv6 remove <id>	Removes IPv6 static address.
-ipv6 route	Displays IPv6 static route.
-ipv6 route on	Enables IPv6 static route.
-ipv6 route off	Disables IPv6 static route.
-ipv6 route list	Lists IPv6 static router information.
-ipv6 route <id> <prefix value> <prefix length> <IPv6 addr>	Sets IPv6 static router information.
-ipv6 route clear <id>	Clears IPv6 static router information.
-addrptl [option]	Gets/sets IP address protocol
-lockdown [option]	Checks the system's status mode or puts the system in lockdown mode.

3.1.1 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.1.1.1 Example 1. Showing IPv4 address and MAC

[ipmicfg_HOME] > IPMICFG.exe -m IP=192.168.12.34 MAC=00:25:90:AB:CD:EF

3.1.1.2 Example 2. Setting IPv4 address

[ipmicfg_HOME] > IPMICFG.exe –m 192.168.56.78 IP=192.168.56.78

3.1.1.3 Example 3. Getting the DHCP status

[ipmicfg_HOME] > IPMICFG.exe –dhcp DHCP is currently disabled.

3.1.1.4 Example 4. Showing Subnet Mask

[ipmicfg_HOME] > IPMICFG.exe –k Subnet Mask=255.255.255.0

3.1.1.5 Example 5. Showing a Gateway IP

[ipmicfg_HOME] > IPMICFG.exe –g Gateway=192.168.12.254

3.1.1.6 Example 6: Enabling the Gratuitous ARP

[ipmicfg_HOME] > IPMICFG.exe –garp on

Failed to enable Gratuitous ARP, Completion Code=80h

Note: Gratuitous ARP includes Gratuitous ARP requests and replies, updating ARP tables to map MAC addresses and IP addresses. Due to security concerns, it is not supported by default for most network devices. If you want to use this function, ensure the Gratuitous ARP function is enabled on your network devices.

3.1.1.7 Example 7. Showing the IPv6 mode.

[ipmicfg_HOME] > IPMICFG.exe -ipv6 mode Current IPv6 mode is [Stateless] Supported IPv6 modes:

0:Stateless 1:Stateful

3.1.1.8 Example 8. Showing IPv6 auto configuration.

[ipmicfg_HOME] > IPMICFG.exe -ipv6 autoconfig Auto Configuration is currently enabled

3.1.1.9 Example 9. Listing IPv6 static and dynamic addresses.

[ipmicfg_HOME] > IPMICFG.exe -ipv6 list Maximum number of IPv6 static address: 5

ID	IPv6 Static Address	Prefix
0	FE80:0000:0000:0000:0225:90FF:FEEE:59E5	64
1	3333:2222:0000:0000:0000:0000:0000:0000	32
2	Disabled	N/A
3	Disabled	N/A
4	FE80:0000:0000:0000:0225:90FF:FEEE:59E9	64

Maximum number of IPv6 dynamic address: 4

ID	IPv6 Dynamic Address	Prefix
	FE80:0000:0000:0000:0225:90FF:FEEE:59F1	64

3.1.1.10 Example 10. Displaying IPv6 static router info.

[ipmicfg_HOME] > IPMICFG.exe -ipv6 route Router 1:

Prefix to Route: 0000:0000:0000:0000:0000:0000:0000:0000/255 Router Address: 0000:0000:0000:0000:0000:0000:0000:0000

Router 2:

Prefix to Route: 0000:0000:0000:0000:0000:0000:0000:0000/255 Router Address: 0000:0000:0000:0000:0000:0000:0000:0000

3.1.1.11 Example 11. Showing IP address protocol.

[ipmicfg_HOME] > IPMICFG.exe -addrptl Address Protocol is [Dual]

Address Protocol Types:

1:IPv4

2:IPv6

3:Dual

3.1.1.12 Example 12. Setting up an IP address protocol.

[ipmicfg_HOME] > IPMICFG.exe -addrptl 3 Done.

3.1.1.13 Example 13. Checking the system's status mode.

[ipmicfg_HOME] > IPMICFG.exe -lockdown System Lockdown Mode: Unlocked

3.1.1.14 Example 14. Putting a system in lockdown mode.

```
[ipmicfg_HOME] > IPMICFG.exe -lockdown on
Done.
```

3.2　　　IPMI Management Functions

Option	Description
-r	Performs a BMC cold reset.
-fd <option>	Resets to the factory defaults without preserving configurations.
	*To meet various needs, set [option] to 1, 2, or 3. 1: Preserves the configurations in the "Users" section. 2: Restores the factory defaults and the default password of the motherboard. 3: Sets user's password to ADMIN.
-fdl	Resets IPMI to the factory default. (Clean LAN).
-fde	Resets IPMI to the factory default. (Clean FRU & LAN).
-d	Detects if a BMC reset was successfully performed on the IPMI device. Note that this option can be only used after -r, -fd, -fdl or -fde.
-ver	Gets firmware revision.
-vlan	Gets VLAN status.
-vlan on <VLAN tag>	Enables the VLAN and sets the VLAN tag. If VLAN tag is not given, it uses the previously saved value.
-vlan off	Disables the VLAN.
-selftest	Checks and reports the basic health status of the BMC.
-raw	Sends a RAW IPMI request and prints a response. *Command format: NetFn/LUN Cmd [Data1 ... DataN]
-fan	Gets the fan mode.
-fan <mode>	Sets the fan mode. *Mode parameters, such as 0 or 1, may vary by motherboards. .
-clrint	Clears chassis intrusion.
-reset <index>	Resets system and forces to boot from the selected device. *For the list of index options for a reboot device, find it in the note below.
-soft <index>	Initiates a soft shutdown for OS and forces system to boot from the selected device. *For the list of index options for a reboot device, find it in the note below.
-summary	Displays FW and BIOS information.

-hostname [value]	Gets/Sets a host name.

Option	Description
-mel list	Shows BMC maintenance event log.
-mel download <file>	Downloads a BMC maintenance event log to a file.
-mel clear	Clears a BMC maintenance event log.

Notes:

This is the list of index options for a reboot device.

Index Option	Reboot Device
1	PXE
2	Hard drive
3	CD/DVD
4	Bios
5	USB KEY
6	USB HDD
7	USB Floppy
8	USB CD/DVD
9	UEFI Hard drive
10	UEFI CD/DVD
11	UEFI USB KEY
12	UEFI USB HDD
13	UEFI USB CD/DVD
14	UEFI PXE

3.2.1 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.2.1.1 Example 1. Performing a BMC cold reset

[ipmicfg_HOME] > IPMICFG -r

BMC cold reset successfully completed!

3.2.1.2 Example 2. Resetting IPMI to the factory default

[ipmicfg_HOME] > IPMICFG -fd 2 Reset to the factory default completed.

3.2.1.3 Example 3. Getting the firmware revision

[ipmicfg_HOME] > IPMICFG –ver Firmware Version: 01.87

3.2.1.4 Example 4. Getting the VLAN status

[ipmicfg_HOME] > IPMICFG –vlan VLAN is now disabled.

3.2.1.5 Example 5. Checking and reporting the basic health status of the BMC

[ipmicfg_HOME] > IPMICFG –selftest: Passed.

3.2.1.6 Example 6. Sending a RAW IPMI request and printing a response

[ipmicfg_HOME] > IPMICFG -raw 6 1

20 01 03 19 02 BF 7C 2A 00 34 06

3.2.1.7 Example 7. Getting the fan mode

[ipmicfg_HOME] > IPMICFG –fan

Current Fan Speed Mode is [Optimal Mode]

Parameter for setting:

0: Standard

1: Full

2: Optimal

3.2.1.8 Example 8. Setting the fan mode

[ipmicfg_HOME] > IPMICFG –fan 0 Done.

3.2.1.9 Example 9. Clearing chassis intrusion

[ipmicfg_HOME] > IPMICFG –clrint Done.

3.2.1.10 Example 10. Resetting the system and forcing it to boot from the selected device

[ipmicfg_HOME] > IPMICFG –reset 0 Done.

3.2.1.11 Example 11. Initiating a soft shutdown for OS and forcing the system to boot from the selected device

[ipmicfg_HOME] > IPMICFG –soft 0 Done.

3.2.1.12 Example 12. Displaying FW and BIOS information

[ipmicfg_HOME] > IPMICFG –summary Summary

```
--------------------------------------------------------------
IP                      : 10.136.33.107
MAC Address             : 00:25:90:EE:58:E7
Firmware Revision       : 2.18
Firmware Build Date     : 09/17/2015
BIOS Version            : 1.0
BIOS Build Date         : 11/13/2013
System MAC Address 1    : 00:25:90:E8:70:64
System MAC Address 2    : 00:25:90:E8:70:65
```

3.2.1.13 Example 13. Setting a host name

[ipmicfg_HOME] > IPMICFG –hostname dnsserver Done.

3.2.1.14 Example 14. Listing BMC maintenance log

[ipmicfg_HOME] > IPMICFG –mel list

Event:1   Time:2020/06/09 13:30:02 Interface:RMCP

User:ADMIN(ADMIN) Source:10.159.128.244 Desc:IPMI configuration was restored to default successfully.

Event:2   Time:2020/06/09 13:30:02 Interface:RMCP

User:ADMIN(ADMIN) Source:10.159.128.244 Desc:BMC was reset successfully.

Event:3   Time:2020/06/09 14:00:34 Interface:KCS   User:ADMIN(ADMIN) Source:Localhost Desc:SOL was configured enable successfully.

Event:4   Time:2020/06/09 14:01:08 Interface:Redfish   User:ADMIN(ADMIN) Source:10.138.160.64 Desc:Redfish session was created successfully.

Event:5   Time:2020/06/09 14:01:08 Interface:Web   User:ADMIN(ADMIN) Source:10.138.160.64 Desc:Web login was successful.

3.2.1.15 Example 15. Downloading a BMC maintenance log to a file

[ipmicfg_HOME] > IPMICFG –mel download mel.txt Downloaded file successfully.

Note: The "`-mel download`" command is not supported when you see the "Prepare download file timeout" message.

3.3 Node Management (NM) 2.0 Functions

Option	Description
-nm nmsdr	Displays NM SDR.
-nm seltime	Gets SEL time.
-nm deviceid	Gets the ID of an ME device.
-nm reset	Reboots ME.
-nm reset2default	Forces ME to reset to default settings.
-nm updatemode	Forces ME to enter the update mode.
-nm selftest	Gets self-test results.
-nm listimagesinfo	Lists ME information of images.
-nm oemgetpower	OEM Power command for ME.
-nm oemgettemp	OEM Temp. command for ME.
-nm pstate	Gets the maximum allowed CPU P-State.
-nm tstate	Gets the maximum allowed CPU T-State.
-nm cpumemtemp	Gets CPU/memory temperature.
-nm hostcpudata	Gets the host CPU data.

3.3.1 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.3.1.1 Example 1. Displaying NM SDR

[ipmicfg_HOME] > IPMICFG –nm nmsdr Record ID = A708

SDR Version   = 51h

Record Type   = C0h

Record Length   = 0Bh

OEM ID   = 57 01 00 h

Record Subtype = 0Dh Subtype Version = 01h Salve Address   = 2Ch

Channel   = 00h

Health Event Sensor Number = 1Dh

Exception Event Sensor Number   = 1Eh Operational Capabilities Sensor Number = 1Fh Alert Threshold Exceeded Sensor Number = 20h

3.3.1.2   Example 2. Getting the ID of an ME device

[ipmicfg_HOME] > IPMICFG –nm deviceid Device ID   = 50h

Firmware Version   = 2.1.5.95 IPMI Version   = 2.0 Manufacturer ID   = 57 01 00

Product ID Minor Ver = Romley platform Firmware implemented version = NM Revision 2.0 Image Flag = operational image 1

raw   = 50 01 02 15 02 21 57 01 00 02 0b 02 09 50 01

3.3.1.3   Example 3. Listing information of ME images

[ipmicfg_HOME] > IPMICFG –nm listimagesinfo Recovery Image:

Image Type = Recovery image

raw   = 57 01 00 02 01 02 09 55 00

3.3.1.4   Example 4. Getting self-test results

[ipmicfg_HOME] > IPMICFG –nm selftest PSU Monitoring service error. < 80 03 > PSU[1] is not responding.

PSU[2] is not responding.

3.3.1.5   Example 5. Getting CPU and memory temperature

[ipmicfg_HOME] > IPMICFG –nm cpumemtemp CPU#0 = 43(c)

CPU#1 = 44(c)

[CPU#0]CHANNEL#1, DIMM#0 = 39(c) [CPU#1]CHANNEL#3, DIMM#0 = 31(c)

3.3.1.6 Example 6. Getting the host CPU data

[ipmicfg_HOME] > IPMICFG –nm hostcpudata Host CPU data:

End of POST notification was received

Host CPU discovery data provided with that command is valid Number of P-States = 10

Number of T-States = 15

Number of installed CPUs/socket = 2

```
Processor Discovery Data-1 = 19 19 18 18 17 17 17 17
Processor Discovery Data-2 = 00 00 00 00 00 00 00 00
```

3.4   IPMI User and Configuration Management Functions

Option	Description
-pminfo [full]	Displays PMBus health information of power supply.
-psfruinfo	Displays FRU health information of power supply.
-psbbpinfo	Displays status of the backup battery.
-autodischarge <module> <day>	Sets auto discharge by days.
-discharge <module>	Manually discharges a battery.
-user list	Lists user privileges.
-user help	Shows a user privilege code.
-user add <user id> <user name> <password> <privilege>	Adds a user. * For the list of privilege levels, find it in the note below.
-user del <user id>	Deletes users.
-user level <user id> <privilege>	Updates user privileges.
-user setpwd <user id> <password>	Updates a user password.
-conf download <file>	Downloads IPMI configuration to a binary file.
-conf upload <file> <option>	Uploads IPMI configuration from a binary file. *To bypass a warning message, use the option -p.
-conf tdownload <file>	Downloads IPMI configuration to a text file.
-conf tupload <file> <option>	Uploads IPMI configuration from a text file. *To bypass a warning message, use the option -p.

The following displays a list of privilege levels.

Level	Privilege
1	Callback
2	User
3	Operator
4	Administrator

3.4.1   Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.4.1.1   Example 1. Displaying PMBus health information of the power supply

[ipmicfg_HOME] > IPMICFG –pminfo [SlaveAddress = 78h] [Module 1]

Item		Value
----	|	-----
Status	|	[STATUS OK](00h)
AC Input Voltage	|	121.5 V
AC Input Current	|	0.56 A

DC	12V Output	Voltage	|	12.19	V
DC	12V Output	Current	|	3.18	A
Temperature 1			|	43C/109F	
Temperature 2			|	41C/106F	
Fan 1			|	224 RPM	
Fan 2			|	0 RPM	
DC 12V Output Power			|	42 W	
AC Input Power			|	65 W	
PMBus Revision			|	0x8B22	
PWS Serial Number			|	ABC123456789	
PWS Module Number			|	PWS-441P-1H	
PWS Revision			|	REV1.0	

3.4.1.2 Example 2. Displaying FRU health information of the power supply

[ipmicfg_HOME] > IPMICFG –psfruinfo [SlaveAddress = 70h] [Module 1]

Item	Value
----	-----
Status	On
Temperature	41C/106F
Fan 1	229 RPM
Fan 2	0 RPM

3.4.1.3 Example 3. Displays status of the backup battery

[ipmicfg_HOME] > IPMICFG –psbbpinfo [SlaveAddress = 70h] [Module 1]

```
Item                    |              Value
----                    |              -----
Manufacturer            |          SUPERMICRO
Model Name              |         PWS-206B-1R
Serial Number           |      TEST1234567890A
Product Version         |                 1.2
Firmware version        |                 1.0
-----                   |
Battery Voltage         |             16.27 V
Battery Current         |                0 mA
Battery Pack Temp       |             30C/86F
Board Temp              |                 N/A
Power Wattage           |                200W
Cycle Count             |                   6
-----                   |
Battery Power Status    |              Normal
Remaining Energy        |                 99%
Discharge Status        |                None
Discharge Setting       |       Auto (30 days)
Discharge Remaining Days |            30 days
Battery Status          |              0xC0E0
                        |      [FULLY CHARGED]
                        |       [DISCHARGING]
                        |   [TERMINATE CHARGE]
```

3.4.1.4 Example 4. Listing user privileges

(In this example, two users are enabled by default, and one user is hidden in the command line.)

[ipmicfg_HOME] > IPMICFG –user list Maximum number of Users: 10

Count of currently enabled Users: 2

User ID	User Name	Privilege Level	Enable
2	ADMIN	Administrator	Yes

3.4.1.5 Example 5. Adding a user

[ipmicfg_HOME] > IPMICFG–user add 3 ADMINTEST TESTADMIN 4 Done.

3.4.1.6 Example 6. Downloading IPMI configuration to a binary file

[ipmicfg_HOME] > IPMICFG –conf download ipmi.cfg.txt Downloaded file successfully

3.4.1.7 Example 7. Uploads IPMI configuration from a binary file

[ipmicfg_HOME] > IPMICFG –conf upload ipmi.cfg.txt This function may reboot the IPMI device.

Do you want to proceed?[y/n]: y Uploaded file successfully

Wait for 1 minute to reboot the BMC.

Note: The "`-conf (t)download`" command is not supported when you see the "Prepare download file timeout" message.
The "`-conf (t)upload`" command is not supported when you see the

"Upload file failed, Completion Code=xxh" message.

3.5   IPMI Sensor & System Event Management

Option	Description
-sel info	Shows SEL information.
-sel list	Shows SEL records.
-sel del	Deletes all SEL records.
-sel raw	Shows SEL raw data.
-sdr [full]	Shows SDR records and readings.
-sdr del <sdr id>	Deletes the SDR record.
-sdr ver <v1> <v2>	Gets/Sets the SDR version. (<v1> and <v2> are BCD-format)

3.5.1   Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.5.1.1   Example 1. Showing SEL records

[ipmicfg_HOME] > IPMICFG –sel list

1 | 2012/11/11 15:16:12 | Chassis Intru

| Assertion:General Chassis intrusion

3.5.1.2   Example 2. Showing SEL raw data

[ipmicfg_HOME] > IPMICFG –sel raw

SEL(1) 01 00 02 48 00 00 00 20 00 04 05 51 6F F0 FF

3.5.1.3　Example 3. Showing SDR records and readings

Status	(#) Sensor	Reading	Low Limit	High Limit
[ipmicfg_HOME] > IPMICFG	-sdr			
OK	(4) CPU1 Temp	44C/111F	0C/32F	86C/187F
OK	(71) CPU2 Temp	44C/111F	0C/32F	86C/187F
OK	(138) System Temp	31C/88F	-5C/23F	80C/176F
OK	(205) Peripheral Temp	44C/111F	-5C/23F	80C/176F
OK	(272) PCH Temp	57C/135F	-5C/23F	90C/194F
OK	(339) FAN1	1800 RPM	600 RPM	18975 RPM
OK	(406) FAN2	1800 RPM	600 RPM	18975 RPM
	(473) FAN3	N/A	N/A	N/A
	(540) FAN4	N/A	N/A	N/A
	(607) FAN5	N/A	N/A	N/A
	(674) FAN6	N/A	N/A	N/A
	(741) FAN7	N/A	N/A	N/A
	(808) FAN8	N/A	N/A	N/A
OK	(875) VTT	1.05 V	0.91 V	1.34 V
OK	(942) CPU1 Vcore	0.89 V	0.54 V	1.48 V
OK	(1009) CPU2 Vcore	0.76 V	0.54 V	1.48 V
OK	(1076) VDIMM ABCD	1.48 V	1.20 V	1.64 V
OK	(1143) VDIMM EFGH	1.50 V	1.20 V	1.64 V
OK	(1210) +1.5 V	1.47 V	1.34 V	1.64 V
OK	(1277) 3.3V	3.31 V	2.92 V	3.64 V
OK	(1344) +3.3VSB	3.31 V	2.92 V	3.64 V
OK	(1411) 5V	5.05 V	4.48 V	5.50 V
OK	(1478) 12V	12.29 V	10.81 V	13.25 V
OK	(1545) VBAT	3.26 V	2.68 V	3.31 V
OK	(1612) HDD Status	0.00	2.68 V	3.31 V
Fail	(1679) Chassis Intru	01 C0 01 00	N/A	N/A
OK	(1746) PS1 Status	01 C0 01 00	N/A	N/A

3.6 FRU Management

Option	Description
-fru info	Shows information of the FRU inventory area.
-fru list	Shows all FRU values.
-fru cthelp	Shows chassis type code.
-fru help	Shows help of FRU Write.
-fru <field>	Shows FRU field value.
-fru <field> <value>	Writes FRU.
-fru backup <file>	Backs up FRU to a file <Binary format>.
-fru restore <file>	Restores FRU from a file <Binary format>.
-fru tbackup <file>	Backs up FRU to a file <Text format>.
-fru trestore <file>	Restores FRU from a file <Text format>.
-fru ver <v1> <v2>	Gets/Sets the FRU version. *<v1> and ,<v2> are BCD-format.)
-fru dmi <$1> <$2> <$3> <$4> <$5> <$6> <$7> <$8> <$9> <$10> <$11> <$12> <$13> <$14>	Inputs 14 parameters and writes to FRU Chassis/Board/Product fields. $1 PRODUCT Manufacturer Name $2 PRODUCT Product Name $3 PRODUCT Part Number $4 PRODUCT Product Version $5 PRODUCT Serial Number $6 PRODUCT Asset Tag $7 BOARD mfg/DateTime $8 BOARD Board Manufacturer $9 BOARD Product Name $10 BOARD Part Number $11 BOARD Serial Number $12 CHASSIS Type (HEX value, ex:01,02,03 ...) $13 CHASSIS Part Number $14 CHASSIS Serial Number

3.6.1 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.6.1.1 Example 1. Showing information of the FRU inventory area

[ipmicfg_HOME] > IPMICFG –fru info FRU size: 256 bytes

3.6.1.2 Example 2. Showing help of FRU Write

[ipmicfg_HOME] > IPMICFG –fru help Available Fields for FRU

```
Available Fields for FRU
Chassis Info Fields:
CT   ;Chassis Type
CP   ;Chassis Part Number
CS   ;Chassis Serial Number
Board Info Fields:
BDT ;Board Mfg. Date/Time (YYYYMMDDhhmm)
BM   ;Board Manufacturer
BPN ;Board Product Name
BS   ;Board Serial Name
BP   ;Board Part Number
Product Info Fields:
PM   ;Product Manufacturer
PN   ;Product Name
PPM ;Product Part/Model Number
PV   ;Product Version
PS   ;Product Serial Number
PAT ;Asset Tag
Example:
ipmicfg -fru PS                  ;read product serial number
ipmicfg -fru PS 123456789        ;write product serial number
```

Example:

ipmicfg -fru PS ;read product serial number ipmicfg -fru PS 123456789   ;write product serial number

3.6.1.3 Example 4. Backing up FRU to a file

[ipmicfg_HOME] > IPMICFG.exe –fru backup fru.txt Backed up FRU successfully.

3.7 NVME Management

Option	Description	Requirement of TAS running on management systems
-nvme list	Displays the existing NVME SSD list.	Yes
-nvme info	Displays NVME SSD information.	No
-nvme rescan	Rescans all devices by in-band.	Yes
-nvme insert <aoc> <group> <slot>	Inserts SSD by out-of-band.	No
-nvme locate <HDD name>	Locates SSD. (in-band)	Yes
-nvme locate <aoc> <group> <slot>	Locates SSD. (out-of-band)	No
-nvme stoplocate <HDD name>	Stops locating SSD. (in-band)	Yes
-nvme stoplocate <aoc> <group> <slot>	Stops locating SSD. (out-of-band)	No
-nvme remove <HDD name> [option1] [option2]	Removes NVME device. (in-band) *To disconnect an NVME device on the OS and then eject from BMC, use 0 for [option1]. (By default.) *To disconnect an NVME device on the OS but not eject from BMC afterwards, use 1 for [option1]. *To bypass a warning message, use -p for [option2].	Yes
-nvme remove <aoc> <group> <slot> [option]	Removes NVME device. (out-of-band) *To bypass a warning message, use the option -p.	No
-nvme smartdata [HDD name]	NVME S.M.A.R.T data.	Yes

3.8 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.8.1 Example 1. Inserting an SSD by out-of-band access

[ipmicfg_HOME] > IPMICFG.exe –nvme insert 0 0 0 Done

3.8.2 Example 2. Removing an NVME device

[ipmicfg_HOME] > IPMICFG.exe –nvme remove nvme0 -p Sending in band remove command...

Done.

Waiting for 10 secs to remove device... Sending OOB eject command...

Done.

3.8.3 Example 3. Displaying the existing NVME SSD list

[ipmicfg_HOME] > IPMICFG –nvme list

Name	Vendor	Capacity	IB Temp.	Locate	Slot
Nvme0	INTEL SSDPE2ME400G4	372.6 GB	25 C	No	0

3.8.4 Example 4. Displaying NVME SSD information

[ipmicfg_HOME] > IPMICFG –nvme info [AOC Number: 0] [Firmware Info: 00 00]

Item			Value
Slot			0
Located			NO
OOB Temp.			36 C
Class Code			02 08 01
ID			80 86
Serial Number			CVMD44500004400FGN
Model Number			INTEL SSDPE2ME400G4
Port0 Max Link	Speed		8.0 GT/s
Port0 Max Link	Width		x4
Port1 Max Link	Speed		8.0 GT/s

Port1 Max Link	Width		x4
Init Power Requirement				25 Watts
Max Power Requirement				25 Watts

3.9 DCMI Management

Option	Description
-dcmi cap	Lists information of DCMI capabilities.
-dcmi power	Gets the DCMI power readings.
-dcmi ctl [value]	Gets/Sets the DCMI management controller ID string.

3.9.1 Examples of Command Executions

The following are selected options from the above table to illustrate their execution.

3.9.1.1 Example 1. Listing info of DCMI capabilities

```
[ipmicfg_HOME] > IPMICFG –dcmi cap Mandatory Platform Capabilities
Mandatory Platform capabilities
--------------------------------
Temperature Monitor        | Compliant
Chassis Power              | Compliant
SEL Logging                | Compliant
Identification Support     | Compliant

Optional Platform capabilities
------------------------------
Power Management           | Compliant

Manageability Access Capabilities
---------------------------------
VLAN Capable                       | Available
SOL Supported                      | Available
OOB Primary LAN Channel Available  | Available
OOB Secondary LAN Channel Available| Not Present
OOB Serial TMODE Available         | Not Present
In-Band KCS Channel Available      | Available

SEL Attributes
--------------
SEL Automatic Rollover Enabled     | Not Present
Number Of SEL Entries              | 2

Identification Attributes
-------------------------
Asset Tag Support          | Available
DHCP Host Name Support     | Not Present
GUID Support               | Available

Temperature Monitoring
----------------------
Baseboard temperature      | At least 1
Processors temperature     | At least 1
Inlet temperature          | At least 1

Power Management Device Slave Address
-------------------------------------
7-bit I2C Slave Address Of Device On IPMB     | 10h

Power Management Controller Channel Number
------------------------------------------
Channel Number             | 00h
Device Revision            | 01h

Manageability Access Attributes
-------------------------------
```

```
Mandatory Primary LAN OOB Support (RMCP+ Support Only)    | Supported
Optional Secondary LAN OOB Support (RMCP+ Support Only)  | Not Supported
Optional Serial OOB TMODE Capability                     | Not Supported
```

3.9.1.2 Example 2. Getting the DCMI power readingss

[ipmicfg_HOME] > IPMICFG –dcmi power

```
Instantaneous Power Reading              | 83 Watts
Minimum During Sampling Period           | 7 Watts
Maximum During Sampling Period           | 173 Watts
Average Power Reading Over Sample Period | 86 Watts
IPMI Timestamp                           | 2021/04/12 16:51:06
Sampling Period                          | 366670000 Milliseconds
Power Reading State                      | Activated
```

3.9.1.3 Example 3. Getting or setting the DCMI management controller ID string

[ipmicfg_HOME] > IPMICFG –dcmi ctl (Em

4   Third Party Software

4.1   IPMI Tool

Refer to http://sourceforge.net/projects/ipmitool for more information.

4.2   IPMICFG Tool

Refer to Supermicro for more information.