IPMICFG

User's Guide

Revision 1.4

Supermicro Utility IPMICFG User Guide

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Revision History

Date	Rev	Description
2017/06/20	1.4	1. Add DCMI commands. 2. Remove -recoverbiosinfo command.
2016/11/23	1.3	1. Modify -fru DMI feature description. 2. Modify -pminfo feature description. 3. Update “Operation Requirements.” chapter.
2016/08/23	1.2	1. Add Get/Set host name command.
2016/01/05	1.1	1. Add TAS commands. (Not supported DOS) 2. Update NVME commands. (Not supported DOS) 3. Add summary command.
2015/06/15	1. 0	Initial document.

Contents

1. IPMICFG Overview

IPMICFG is a utility for IPMI devices configuration. It is a command line tool providing IPMI commands and Supermicro proprietary OEM commands.

It is designed for easy to use and no pre-installation required. Use it for basic IPMI configuration and BMC status reading and monitoring.

1.1 Features

- Set up IPMI IP Address
- Set up IPMI Configuration
- Configure IPMI User Management
- Configure IPMI FRU
- Manage System Event Log (SEL)
- Manage IPMI by node management (NM) protocol

1.2 Operation Requirements

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

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	- DOS 5.0 or later version - Microsoft Windows 7 / 8 / 8.1 / 10 /Server 2003 32bit and 64bit / Server 2008 32bit and 64bit / Server 2012 / Server 2016 Operating system must be pre-installed Microsoft Visual C++ 2008 SP1 Redistributable Package. Download Link: http://www.microsoft.com/en-us/download/details.aspx?id=29 - Microsoft Windows 2008 R2 x64 must be pre-installed KB3033929 patch. Download Link: https://www.microsoft.com/en-us/download/details.aspx?id=46083 - Microsoft Windows 7 x64 must be pre-installed KB3033929 patch. Download Link: https://www.microsoft.com/en-us/download/details.aspx?id=46148 - Linux Kernel version 2.6.x or higher. Ex: 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

The software you should get in advance:

Program/Script	Description
\DOS\ IPMICFG.exe	IPMICFG DOS (DOS 5.0)
\Linux\32bit\IPMICFG-Linux.x86	IPMICFG Linux 32bit
\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
*.dat files	database for MB type and SEL event table

Additional driver installation:

Linux:

IPMICFG Linux version will automatically use linux built-in ipmi driver from ipmitool to access BMC. If there is no ipmi driver loaded, IPMICFG will use its internal API to access BMC. However, the performance will be slow.

Here is a step to load ipmi driver.

You should be type these command to activate openIPMI 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 (CLI) in Linux terminal mode.

Bold is used for the keyword needed to pay attention.

Italic is used for variable and section name.

enclose the parameters in syntax description.

`[shell]#` represents the prompt for input in Linux terminal mode.

| A vertical bar separates items in a list.

2. Installation and Setup

2.1 Installing IPMICFG

Get IPMICFG_x.xx.x_build.xxxxxx.zip installer. Then unzip it in your environment. You will see the directory list:

./DOS:

./Linux:

./Linux/32bit:

./Linux/64bit:

./Windows:

./Windows/32bit:

./Windows/64bit:

DOS:

Execute /DOS/IPMICFG.exe

Linux:

Execute \Linux\32bit\IPMICFG-Linux.x86

OR

Execute \Linux\32bit\IPMICFG-Linux.x86_64

Windows:

Execute /Windows/32bit/IPMICFG-Win.exe

OR

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

3. Basic User Operations

Usage:

```
[ipmicfg_HOME] > IPMICFG <option> [data...]
```

3.1 Set up IPMI IP Address

Options for Using IPMICFG	
-m	Show IP and MAC.
-m IP	Set IP (format: ###.###.###.###).
-a MAC	Set MAC (format: ##:##:##:##:##:##).
-k	Show Subnet Mask.
-k Mask	Set Subnet Mask (format: ###.###.###.###).
-dhcp	Get the DHCP status.
-dhcp on	Enable the DHCP.
-dhcp off	Disable the DHCP.
-g	Show Gateway IP.
-g IP	Set Gateway IP (format: ###.###.###.###).
-garp on	Enable the Gratuitous ARP.
-garp off	Disable the Gratuitous ARP.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe -m

IP=192.168.12.34

MAC=00:25:90:AB:CD:EF
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe -m 192.168.56.78

IP=192.168.56.78
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –dhcp

DHCP is currently disabled.
```

Example 4:

```
[ipmicfg_HOME] > IPMICFG.exe –k

Subnet Mask=255.255.255.0
```

Example 5:

```
[ipmicfg_HOME] > IPMICFG.exe –g

Gateway=192.168.12.254
```

Example 6:

```
[ipmicfg_HOME] > IPMICFG.exe –garp on

Failed to enable Gratuitous ARP, Completion Code=80h
```

Gratuitous ARP means Gratuitous ARP request and Gratuitous ARP reply. It is to update ARP table for MAC Address and IP Address mapping. But it is not supported by default for most network devices because there is security concern. If customer needs this function, please make sure the network devices to enable Gratuitous ARP function.

3.2 IPMI Management Functions

Options for Using IPMICFG	
-r	BMC cold reset.
-fd	Reset IPMI to the factory default. option: -d | Detected IPMI device for BMC reset.
-fdl	Reset IPMI to the factory default. (Clean LAN). option: -d | Detected IPMI device for BMC reset.
-fde	Reset IPMI to the factory default. (Clean FRU & LAN). option: -d | Detected IPMI device for BMC reset.
-ver	Get Firmware revision.
-vlan	Get VLAN status.
-vlan on <VLANtag>	Enable the VLAN and set the VLAN tag. If VLANtag is not given it uses previously saved value.
-vlan off	Disable the VLAN.
-selftest	Checking and reporting on the basic health of BMC.
-raw	Send a RAW IPMI request and print response. Format: NetFn LUN Cmd [Data1 ... DataN]
-fan	Get Fan Mode.
-fan <mode>	Set Fan Mode.
-clrint	Clear Chassis Intrusion.
-reset <index>	Reset System and force to boot from device.
-soft <index>	Initiate a soft-shutdown for OS and force
-summary	FW and BIOS Information.
-hostname [value]	Get/Set host name.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe -r
BMC cold reset successfully completed!
```

Example 2:

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

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –ver
Firmware Version: 01.87
```

Example 4:

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

Example 5:

```
[ipmicfg_HOME] > IPMICFG.exe –selftest
Selftest: Passed.
```

Example 6:

```
[ipmicfg_HOME] > IPMICFG.exe -raw 6 1
20 01 03 19 02 BF 7C 2A 00 34 06
```

Example 7:

```
[ipmicfg_HOME] > IPMICFG.exe –fan
Current Fan Speed Mode is [ Optimal Mode ]

Parameter for setting:
0:Standard
1:Full
2:Optimal
```

Example 8:

```
[ipmicfg_HOME] > IPMICFG.exe –fan 0
Done.
```

Example 9:

```
[ipmicfg_HOME] > IPMICFG.exe –clrint
Done.
```

Example 10:

```
[ipmicfg_HOME] > IPMICFG.exe –reset 0
Done.
```

Operations for Reboot Device Index	
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

Example 11:

```
[ipmicfg_HOME] > IPMICFG.exe –soft 0
Done.
```

Operations for Reboot Device Index	
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

Example 12:

```
[ipmicfg_HOME] > IPMICFG.exe –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
```

Example 13:

```
[ipmicfg_HOME] > IPMICFG.exe –hostname test
Done.
```

3.3 Node Management (NM) 2.0 Management Functions

Options for Using IPMICFG	
-nm nmsdr	Display NM SDR.
-nm seltime	Get SEL time.
-nm deviceid	Get ME Device ID.
-nm reset	Reboots ME.
-nm reset2default	Force ME reset to Default.
-nm updatemode	Force ME to Update Mode.
-nm selftest	Get Self Test Results.
-nm listimagesinfo	List ME Images information.
-nm oemgetpower	OEM Power command for ME.
-nm oemgettemp	OEM Temp. command for ME.
-nm pstate	Get Max allowed CPU P-State.
-nm tstate	Get Max allowed CPU T-State.
-nm cpumemtemp	Get CPU/Memory temperature.
-nm hostcpudata	Get host CPU data.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe –nm nmsdr
Record ID          = A7 08
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 Capailities Sensor Number  = 1Fh
Alert Threshold Exceeded Sensor Number = 20h
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe –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
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –nm listimagesinfo
Recovery Image:
Image Type = Recovery image
raw  = 57 01 00 02 01 02 09 55 00
```

Example 4:

```
[ipmicfg_HOME] > IPMICFG.exe –nm selftest
PSU Monitoring service error. < 80 03 >
PSU[1] is not responding.
PSU[2] is not responding.
```

Example 5:

```
[ipmicfg_HOME] > IPMICFG.exe –nm cpumemtemp
CPU#0 = 43(c)
CPU#1 = 44(c)
[CPU#0]CHANNEL#1, DIMM#0(P1_DIMMB1) = 39(c)
[CPU#1]CHANNEL#3, DIMM#0(P2_DIMMH1) = 31(c)
```

Example 6:

```
[ipmicfg_HOME] > IPMICFG.exe –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 & Configuration Management Functions

Options for Using IPMICFG	
-pminfo [full]	Power supply PMBus health.
-psfruinfo	Power supply FRU health.
-psbbpinfo	Battery backup power status.
-autodischarge <module> <day>	Set auto discharge by days.
-discharge <module>	Manually discharge battery.
-user list	List user privilege information.
-user help	Show user privilege code.
-user add <user id> <user name> <password> <privilege>	Add user.
-user del <user id>	Delete user.
-user level <user id> <privilege>	Update user privilege.
-user setpwd <user id> <password>	Update user password.
-conf upload <file> <option>	Upload IPMI configuration from binary file. option: -p | Bypass warning message.
-conf download <file>	Download IPMI configuration to binaryfile.
-conf tupload <file> <option>	Upload IPMI configuration from text file. option: -p | Bypass warning message.
-conf tdownload <file>	Download IPMI configuration to text file.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe –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             |      P441PAC17GW2358
 PWS Module Number             |          PWS-441P-1H
 PWS Revision                  |               REV1.0
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe –psfruinfo
[SlaveAddress = 70h] [Module 1]
 Item                          |                Value
 ----                          |                -----
 Status                        |                   On
 Temperature                   |             41C/106F
 Fan 1                         |              229 RPM
 Fan 2                         |                0 RPM
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –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]
```

Example 4: (With 2 default enabled users, one is hidden in command line.)

```
[ipmicfg_HOME] > IPMICFG.exe –user list
Maximum number of Users          : 10
Count of currently enabled Users : 2
User ID | User Name        | Privilege Level | Enable
------- | -----------      | --------------- | ------
      2 | ADMIN            | Administrator   | Yes
```

Example 5:

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

Operations for Privilege Level	
1	Callback
2	User
3	Operator
4	Administrator

Example 6:

```
[ipmicfg_HOME] > IPMICFG.exe –conf download ipmi.cfg.txt
Download file successfully
```

Example 7:

```
[ipmicfg_HOME] > IPMICFG.exe –conf upload ipmi.cfg.txt
This function may reboot the IPMI device.
Do you want to proceed?[y/n]: y
Upload file successfully
Please wait for 1 minute to reboot BMC.
```

3.5 IPMI Sensor & System Event Management

Options for Using IPMICFG	
-sel info	Show SEL info.
-sel list	Show SEL records.
-sel del	Delete all SEL records.
-sel raw	Show SEL raw data.
-sdr [full]	Show SDR records and reading.
-sdr del <SDR ID>	Delete SDR record.
-sdr ver <V1> <V2>	Get/Set SDR version. (V1 V2 are BCD format)

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe –sel list
  1 | 2012/11/11 15:16:12 | Chassis Intru
    | Assertion:General Chassis intrusion
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe –sel raw
SEL(   1) 01 00 02 48 00 00 00 20 00 04 05 51 6F F0 FF FF
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –sdr
Status | (#)Sensor                |      Reading | Low Limit | High Limit
------ | ---------                |      ------- | --------- | ----------
    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  |      3.31
  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

Options for Using IPMICFG	
-fru info	Show FRU inventory area Info.
-fru list	Show all FRU values.
-fru cthelp	Show chassis type code.
-fru help	Show help of FRU Write.
-fru <Field>	Show FRU field value.
-fru <Field> <Value>	Write FRU.
-fru 1m	Update Product-Manufacturer from DMITable to IPMI FRU.
-fru 1p	Update Product-Product Name from DMITable to IPMI FRU.
-fru 1s	Update Product-S/N from DMITable to IPMI FRU.
-fru 2m	Update Board-Manufacturer from DMITable to IPMI FRU.
-fru 2p	Update Board-Product Name from DMITable to IPMI FRU.
-fru 2s	Update Board-S/N from DMITable to IPMI FRU.
-fru 3s	Update Chassis-S/N from DMITable to IPMI FRU.
-fru backup <file>	Backup FRU to file <Binary format>.
-fru restore <file>	Restore FRU from file <Binary format>.
-fru tbackup <file>	Backup FRU to file <Text format>.
-fru trestore <file>	Restore FRU from file <Text format>.
-fru ver <V1> <V2>	Get/Set FRU version. (V1 V2 are BCD format)
-fru dmi <$1> <$2>	Input 14 parameters and write to FRU Chassis/Board/Product fields.
<$3> <$4> <$5>	$1 PRODUCT Manufacturer Name
<$6> <$7> <$8>	$2 PRODUCT Product Name
<$9> <$10> <$11>	$3 PRODUCT Part Number
<$12> <$13> <$14>	$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

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe –fru info
FRU size :1024 bytes (Device is accessed by bytes)
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe –fru help
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 3:

```
[ipmicfg_HOME] > IPMICFG.exe –fru BDT 201211121631
Chassis Type (CT)               = Unknown(02h)
Chassis Part number (CP)        =
Chassis Serial number (CS)      = 0123456789
Board Mfg. Date/Time(BDT)       = 2012/11/12 16:31:00 (DF 5D 87)
Board Manufacturer (BM)         = Supermicro
Board Product Name (BPN)        = X9DRD-iF
Board Serial number (BS)        = 0123456789
Board Part number (BP)          =
Product Manufacturer (PM)       = Supermicro
Product Name (PN)               = X9DRD-iF
Product Part/Model number (PPM) =
Product Version (PV)            =
Product Serial number (PS)      = 0123456789
Product Asset Tag (PAT)         =
```

Example 4:

```
[ipmicfg_HOME] > IPMICFG.exe –fru tbackup fru.txt
Backup FRU successfully.
```

Example 5:

```
[ipmicfg_HOME] > IPMICFG.exe –fru ver 1 1
Done.
FRU version is 01.01
```

3.7 Multi Node Management

Options for Using IPMICFG

-tp info	Get MCU Info.
-tp info <type>	Get MCU Type Info. (type: 1 - 3)
-tp nodeid	Get Node ID.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe -tp info 1
Node | Power    | IP              | Watts | Current | CPU1 | CPU2 | System
 ---- | -------- | --------------- | ----- | ------- | ---- | ---- | ------
    A | Active   | 10.136.33.31    |   35W |    3.4A |  42C |  N/A |    31C
    B | Active   | 10.136.33.32    |   27W |    2.2A |  43C |  N/A |    31C
    C | Active   | 10.136.33.33    |   46W |    3.8A |  45C |  N/A |    29C
    D | Active   | 10.136.33.34    |   24W |    2.0A |  39C |  N/A |    30C
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe -tp nodeid
B
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –tp info
Node | Power    | IP              | Watts | Current | CPU1 | CPU2 | System
 ---- | -------- | --------------- | ----- | ------- | ---- | ---- | ------
    A | Active   | 10.136.33.31    |   35W |    3.4A |  42C |  N/A |    31C
    B | Active   | 10.136.33.32    |   27W |    2.2A |  43C |  N/A |    31C
    C | Active   | 10.136.33.33    |   46W |    3.8A |  45C |  N/A |    29C
    D | Active   | 10.136.33.34    |   24W |    2.0A |  39C |  N/A |    30C

 Node | Node P/N                | Node S/N
 ---- | --------                | --------
    A | X9DRT-P                 | ZM141S022841
    B | X9DRT-P                 | ZM141S023245
    C | X9DRT-P                 | ZM141S022861
    D | X9DRT-P                 | ZM141S022860

Configuration ID   : 4
Current Node ID    : B
System Name        : Test
System P/N         : (Empty)
System S/N         : (Empty)
Chassis P/N        : (Empty)
Chassis S/N        : (Empty)
BackPlane P/N      : (Empty)
BackPlane S/N      : (Empty)
Chassis Location   : 00 00 00 00 00
BP Location        : N/A (FBh)
MCU Version        : 1.06
BPN Revision       : 1.23
```

3.7 TAS Management

Options for Using IPMICFG	
-tas info	Get TAS Information.
-tas pause	Pause TAS Service.
-tas resume	Resume TAS Service.
-tas refresh	Trigger TAS to recollect data.
-tas clear	Clear TAS collected data in BMC.
-tas period <sec>	Set TAS update period <limit 5 to 60 sec>.
-tas exec <cmd>	Execute a user's specified command.

Example 1:

```
[ipmicfg_HOME] > IPMICFG.exe –tas info
Item                      |                     Value
----                      |                     -----
Version                   |                     1.1.1
Build data                |                    150923
Protocol version          |                      0x01
Status                    |                   Running
TAS start time            | Mon Nov 23 13:39:35 2015
Last Update Time          | Thu Dec 10 17:21:00 2015
```

Example 2:

```
[ipmicfg_HOME] > IPMICFG.exe –tas pause
Done.
```

Example 3:

```
[ipmicfg_HOME] > IPMICFG.exe –tas resume
Done.
```

3.8 NVME Management

Options for Using IPMICFG		Requirement of TAS running on management system
-nvme list	Display the existing NVME SSD list.	Yes
-nvme info	NVME SSD information.	No
-nvme rescan	Rescan all devices by in band.	Yes
-nvme insert <aoc> <group> <slot>	Insert SSD by out of band.	No
-nvme locate <HDD Name>	Locate SSD. (in band)	Yes
-nvme locate <aoc> <group> <slot>	Locate SSD. (out of band)	No
-nvme stoplocate <HDD Name>	Stop Locate SSD. (in band)	Yes
-nvme stoplocate <aoc> <group> <slot>	Stop Locate SSD. (out of band)	No
-nvme remove <HDD Name> [option]	Remove NVME device. (in band) Usage: option 0: Do eject after remove (Default). option 1: Do not eject after remove.	Yes
-nvme remove <aoc> <group> <slot>	Remove NVME device. (out of band)	No
-nvme smartdata [HDD Name]	NVME SMART data.	Yes

Example 1:

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

Example 2:

```
 [ipmicfg_HOME] > IPMICFG.exe –nvme remove nvme0
Sending in band remove command...
Done.
Waiting for 10 secs to remove device...
Sending OOB eject command...
Done.
```

Example 3:

```
 [ipmicfg_HOME] > IPMICFG.exe -nvme list
Name      |               Vendor |   Capacity |   IB Temp. |   Locate |   Slot
----      |               ------ |   -------- |   -------- |   ------ |   ----
nvme0     |  INTEL SSDPE2ME400G4 |   372.6 GB |       25 C |       No |      0
```

Example 4:

```
[ipmicfg_HOME] > IPMICFG.exe -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         |                  80 Watts
```

Note: Skylake CPU not support all the NVME commands.

e.g., -nvme remove <aoc> <group> <slot> Remove NVME device. (out of band)

3.9 DCMI Management

Options for Using IPMICFG

-dcmi cap	List DCMI Capabilities Info.
-dcmi power	Get DCMI power reading.
-dcmi ctl [value]	Get/Set DCMI management controller ID string.

Example 1:

```
 [ipmicfg_HOME] > IPMICFG.exe –dcmi cap
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               | 0

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
```

Example 2:

```
 [ipmicfg_HOME] > IPMICFG.exe –dcmi power
Instantaneous Power Reading              | 14 Watts
Minimum During Sampling Period           | 6 Watts
Maximum During Sampling Period           | 86 Watts
Average Power Reading Over Sample Period | 15 Watts
IPMI Timestamp                           | 2017/02/24 14:00:22
Sampling Period                          | 172705000 Milliseconds
Power Reading State                      | Activated
```

Example 3:

```
 [ipmicfg_HOME] > IPMICFG.exe –dcmi ctl
(Empty)
```

4. Third Party Software

4.1 Phymem

Please refer to http://www.codeproject.com/Articles/35378/Access-Physical-Memory-Port-and-PCI-Configuration for more information.

4.2 IPMITool

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

Appendix A Compatibility Matrix

Model	IPMICFG
A1SA2-2750F	V1.21.0
A1SA7-2550F	V1.21.0
A1SA7-2750F	V1.21.0
A1SAI-2550F	V1.21.0
A1SAI-2750F	V1.21.0
A1SAM-2550F	V1.21.0
A1SAM-2750F	V1.21.0
A1SRI-2558F	V1.21.0
A1SRI-2758F	V1.21.0
A1SRM-2558F	V1.21.0
A1SRM-2758F	V1.21.0
A1SRM-LN5F-2358	V1.21.0
A1SRM-LN7F-2358	V1.21.0
A1SRM-LN7F-2758	V1.21.0
B10DRC	V1.21.0
B10DRI	V1.21.0
B10DRT-IBF	V1.21.0
B10DRT-IBF2	V1.21.0
B10DRT-TP	V1.21.0
B1DRI	V1.21.0
B1SA4-2550F	V1.21.0
B1SA4-2750F	V1.21.0
B1SA4-F	V1.21.0
B1SL1-F	V1.21.0
B9DR7	V1.21.0
B9DRG	V1.21.0
B9DRG-3M	V1.21.0
B9DRG-E	V1.21.0
B9DRI	V1.21.0
B9DRP	V1.21.0
B9DRT	V1.21.0
B9QR7	V1.21.0
B9QR7-TP	V1.21.0
C7X99-OCE-F	V1.21.0
C7Z97-M	V1.21.0
C7Z97-MF	V1.21.0
X10DBT-T	V1.21.0

X10DDW-I	V1.21.0
X10DDW-I3	V1.21.0
X10DDW-IN	V1.21.0
X10DGQ	V1.21.0
X10DRC-LN4+	V1.21.0
X10DRC-T4+	V1.21.0
X10DRD-I	V1.21.0
X10DRD-INT	V1.21.0
X10DRD-INTP	V1.21.0
X10DRD-IT	V1.21.0
X10DRD-ITP	V1.21.0
X10DRD-L	V1.21.0
X10DRD-LT	V1.21.0
X10DRD-LTP	V1.21.0
X10DRFF	V1.21.0
X10DRFF-C	V1.21.0
X10DRFR	V1.21.0
X10DRFR-N	V1.21.0
X10DRFR-NT	V1.21.0
X10DRFR-T	V1.21.0
X10DRG-H	V1.21.0
X10DRG-HT	V1.21.0
X10DRG-O+-CPU	V1.21.0
X10DRG-OT+-CPU	V1.21.0
X10DRG-Q	V1.21.0
X10DRH-C	V1.21.0
X10DRH-CT	V1.21.0
X10DRH-I	V1.22.0
X10DRH-IT	V1.22.0
X10DRI	V1.21.0
X10DRI-LN4+	V1.21.0
X10DRI-T	V1.21.0
X10DRI-T4+	V1.21.0
X10DRL-C	V1.21.0
X10DRL-CT	V1.21.0
X10DRL-I	V1.21.0
X10DRL-IT	V1.21.0
X10DRS	V1.21.0
X10DRT-H	V1.21.0
X10DRT-HIBF	V1.21.0
X10DRT-L	V1.21.0

X10DRT-LIBF	V1.21.0
X10DRT-LIBQ	V1.21.0
X10DRT-P	V1.21.0
X10DRT-PIBF	V1.21.0
X10DRT-PIBQ	V1.21.0
X10DRT-PT	V1.21.0
X10DRU-I+	V1.21.0
X10DRU-X	V1.21.0
X10DRU-XLL	V1.21.0
X10DRW-E	V1.21.0
X10DRW-ET	V1.21.0
X10DRW-I	V1.21.0
X10DRW-IT	V1.21.0
X10DRW-N	V1.21.0
X10DRW-NT	V1.21.0
X10DRX	V1.21.0
X10QBI	V1.21.0
X10SDV-4C-TLN2F	V1.21.0
X10SDV-8C+-LN2F	V1.21.0
X10SDV-8C-TLN4F	V1.21.0
X10SDV-F	V1.21.0
X10SDV-TLN4F	V1.21.0
X10SL7-F	V1.21.0
X10SLA-F	V1.21.0
X10SLD-F	V1.21.0
X10SLD-HF	V1.21.0
X10SLE-DF	V1.21.0
X10SLE-F	V1.21.0
X10SLE-HF	V1.21.0
X10SLH-F	V1.21.0
X10SLL+-F	V1.21.0
X10SLL-F	V1.21.0
X10SLL-S	V1.21.0
X10SLL-SF	V1.21.0
X10SLL-SF	V1.21.0
X10SLM+-F	V1.21.0
X10SLM+-LN4F	V1.21.0
X10SLM-F	V1.21.0
X10SLQ-L	V1.21.0
X10SLV-Q	V1.21.0
X10SRA-F	V1.21.0

X10SRD-F	V1.21.0
X10SRG-F	V1.21.0
X10SRH-CF	V1.21.0
X10SRH-CLN4F	V1.21.0
X10SRI-F	V1.21.0
X10SRL-F	V1.21.0
X10SRW-F	V1.21.0
X11SAE-F	V1.22.0
X11SAT-F	V1.24.0
X11SBA-F	V1.22.0
X11SBA-LN4F	V1.22.0
X11SSA-F	V1.22.0
X11SSH-F	V1.22.0
X11SSH-LN4F	V1.22.0
X11SSH-TF	V1.22.0
X11SSI-LN4F	V1.22.0
X11SSL-CF	V1.22.0
X11SSL-F	V1.22.0
X11SSL-F	V1.22.0
X11SSL-NF	V1.22.0
X11SSM-F	V1.22.0
X11SSW-F	V1.22.0
X11SSZ-F	V1.22.0
X11SSZ-QF	V1.22.0
X11SSZ-TLN4F	V1.22.0
X9DAX-7F	V1.21.0
X9DAX-7F-HFT	V1.21.0
X9DAX-7TF	V1.21.0
X9DAX-IF	V1.21.0
X9DAX-IF-HFT	V1.21.0
X9DAX-ITF	V1.21.0
X9DB3-F	V1.21.0
X9DB3-TPF	V1.21.0
X9DBI-F	V1.21.0
X9DBI-TPF	V1.21.0
X9DBL-3F	V1.21.0
X9DBL-IF	V1.21.0
X9DBS-F	V1.21.0
X9DBS-F-2U	V1.21.0
X9DBU-3F	V1.21.0
X9DBU-IF	V1.21.0

X9DR3-F	V1.21.0
X9DR3-LN4F+	V1.21.0
X9DR7-JLN4F	V1.21.0
X9DR7-LN4F	V1.21.0
X9DR7-LN4F-JBOD	V1.21.0
X9DR7-TF+	V1.21.0
X9DRD-7JLN4F	V1.21.0
X9DRD-7LN4F	V1.21.0
X9DRD-7LN4F-JBOD	V1.21.0
X9DRD-7LN4F-SSG	V1.21.0
X9DRD-CNT+	V1.21.0
X9DRD-CT+	V1.21.0
X9DRD-CT+	V1.21.0
X9DRD-EF	V1.21.0
X9DRD-IF	V1.21.0
X9DRD-IT+	V1.21.0
X9DRD-IT+	V1.21.0
X9DRD-LF	V1.21.0
X9DRE-LN4F	V1.21.0
X9DRE-TF+	V1.21.0
X9DRFF	V1.21.0
X9DRFF-7	V1.21.0
X9DRFF-7	V1.21.0
X9DRFF-7+	V1.21.0
X9DRFF-7G+	V1.21.0
X9DRFF-7T+	V1.21.0
X9DRFF-7TG+	V1.21.0
X9DRFF-I+	V1.21.0
X9DRFF-IG+	V1.21.0
X9DRFF-IT+	V1.21.0
X9DRFF-ITG+	V1.21.0
X9DRFR	V1.21.0
X9DRG-HF	V1.21.0
X9DRG-HF+	V1.21.0
X9DRG-HF+II	V1.21.0
X9DRG-HF-CLG	V1.21.0
X9DRG-HTF	V1.21.0
X9DRG-HTF+	V1.21.0
X9DRG-HTF+II	V1.21.0
X9DRG-OF-CPU	V1.21.0
X9DRG-O-PCIE	V1.21.0

X9DRG-OTF-CPU	V1.21.0
X9DRG-QF	V1.21.0
X9DRH-7F	V1.21.0
X9DRH-7TF	V1.21.0
X9DRH-IF	V1.21.0
X9DRH-IF-NV	V1.21.0
X9DRH-ITF	V1.21.0
X9DRI-F	V1.21.0
X9DRI-LN4F+	V1.21.0
X9DRL-3F	V1.21.0
X9DRL-7F	V1.21.0
X9DRL-EF	V1.21.0
X9DRL-IF	V1.21.0
X9DRT-F	V1.21.0
X9DRT-H6F	V1.21.0
X9DRT-H6IBFF	V1.21.0
X9DRT-H6IBQF	V1.21.0
X9DRT-HF	V1.21.0
X9DRT-HF+	V1.21.0
X9DRT-HIBFF	V1.21.0
X9DRT-HIBQF	V1.21.0
X9DRT-IBFF	V1.21.0
X9DRT-IBQF	V1.21.0
X9DRT-P	V1.21.0
X9DRW-3F	V1.21.0
X9DRW-3LN4F+	V1.21.0
X9DRW-3TF+	V1.21.0
X9DRW-7TPF	V1.21.0
X9DRW-7TPF+	V1.21.0
X9DRW-CF31	V1.21.0
X9DRW-CTF31	V1.21.0
X9DRW-ITPF	V1.21.0
X9DRW-ITPF+	V1.21.0
X9DRX+-F	V1.21.0
X9QR7-TF	V1.21.0
X9QR7-TF+	V1.21.0
X9QR7-TF-JBOD	V1.21.0
X9QRI-F	V1.21.0
X9QRI-F+	V1.21.0
X9SBAA-F	V1.21.0
X9SCA	V1.21.0

X9SCD+-F	V1.21.0
X9SCE-F	V1.21.0
X9SCFF-F	V1.21.0
X9SCL+-F	V1.21.0
X9SCM-IIF	V1.21.0
X9SPU-F	V1.21.0
X9SPV-F	V1.21.0
X9SRD-F	V1.21.0
X9SRE-3F	V1.21.0
X9SRE-F	V1.21.0
X9SRG-F	V1.21.0
X9SRH-7F	V1.21.0
X9SRH-7TF	V1.21.0
X9SRI-3F	V1.21.0
X9SRI-F	V1.21.0
X9SRL-F	V1.21.0
X9SRW-F	V1.21.0