ipmitool: Reset and manage IPMI (Intelligent Platform Management Interface) / ILO (Integrated Lights Out) remote board on Linux servers

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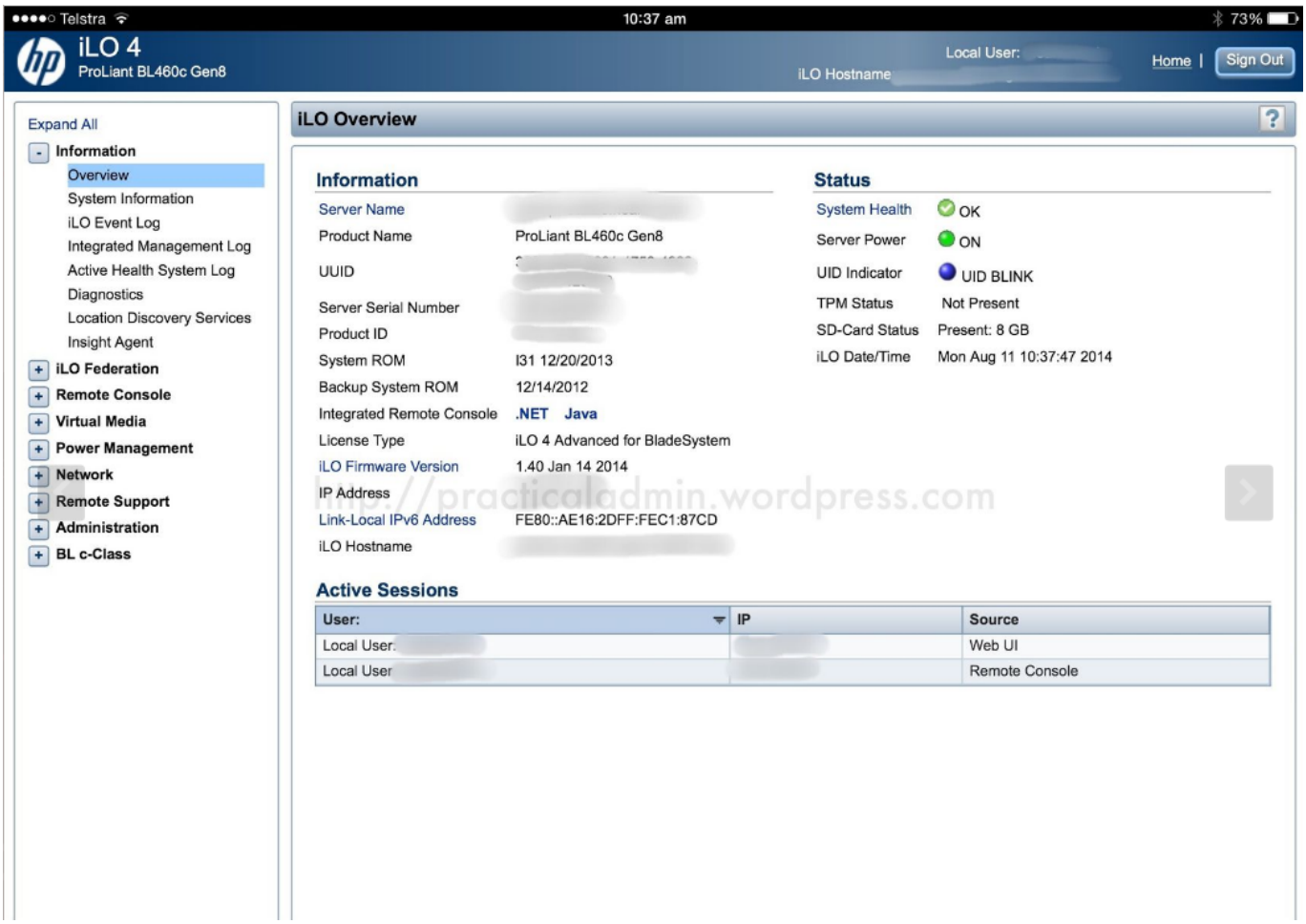
As a system administration nomatter whether you manage a bunch of server in a own brew and run **Data Center** location with some **Rack mounted Hardware** like ***PowerEdge M600 / ProLiant DL360e G8 / ProLiant DL360 Gen9 (755258-B21)*** or you're managing a bunch of Dedicated Servers, you're or will be faced at some point to use the embedded in many Rack mountable rack servers **IPMI / ILO interface remote console board management. If IPMI / ILO terms are new for you I suggest you quickly read my earlier article** What is IPMI / IPKVM / ILO / DRAC Remote Management interfaces to server .

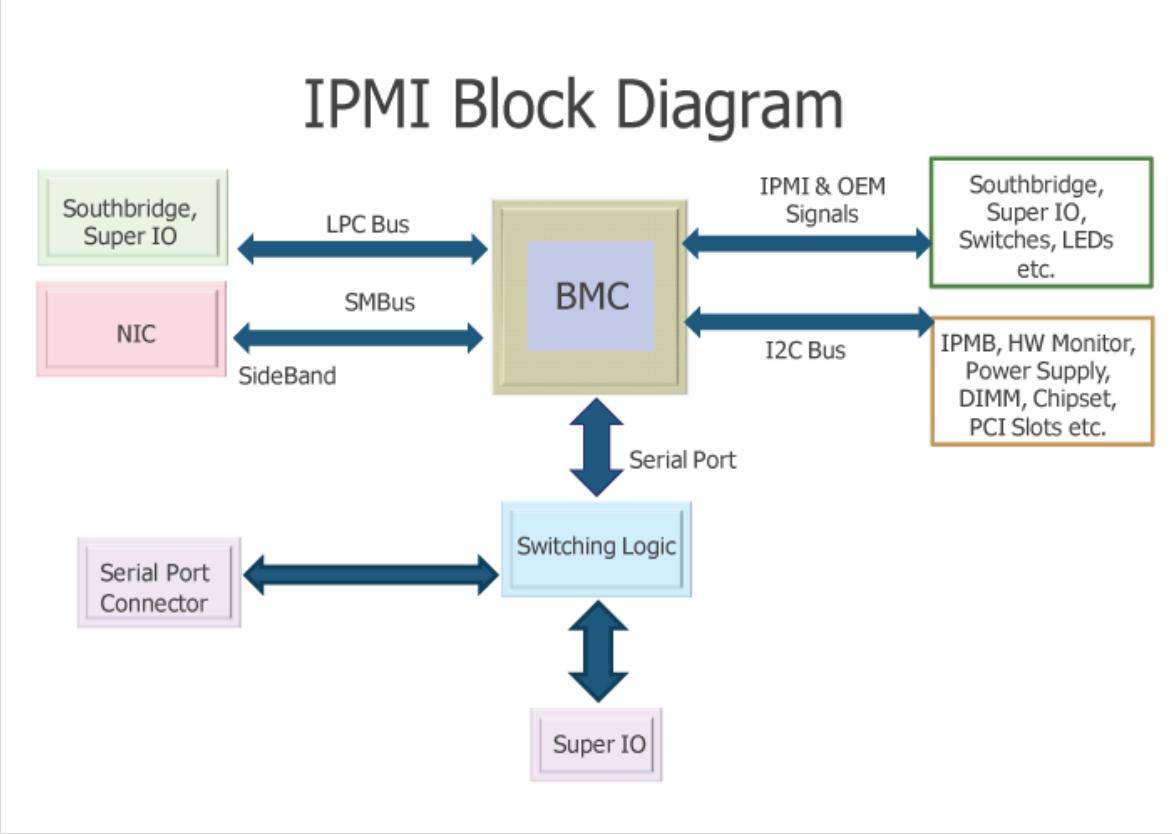


HP Proliant BL460 C IPMI (ILO) Web management interface

In short Remote Management Interface is a way that gives you access to the server just like if you had a **Monitor and a Keyboard plugged in** directly to server.

When a remote computer is down the sysadmin can access it through IPMI and utilize a text console to the boot screen.

The IPMI protocol specification is led by Intel and was first published on September 16, 1998. and currently is supported by more than 200 computer system vendors, such as **Cisco, Dell, Hewlett Packard Enterprise, Intel, NEC Corporation, SuperMicro** and **Tyan** and is a **standard for remote board management for servers**.



As you can see from diagram Baseboard Management Controllers (BMCs) is like the heart of IPMI.

Having this ILO / IPMI access is usually via a **Web Interface Java** interface that gives you the console and usually many of the machines also have an IP address via which a normal SSH command prompt is available giving you ability to **execute diagnostic commands to the ILO on the status of attached hardware components of the server / get information about the attached system sensors** to get report about things such as:

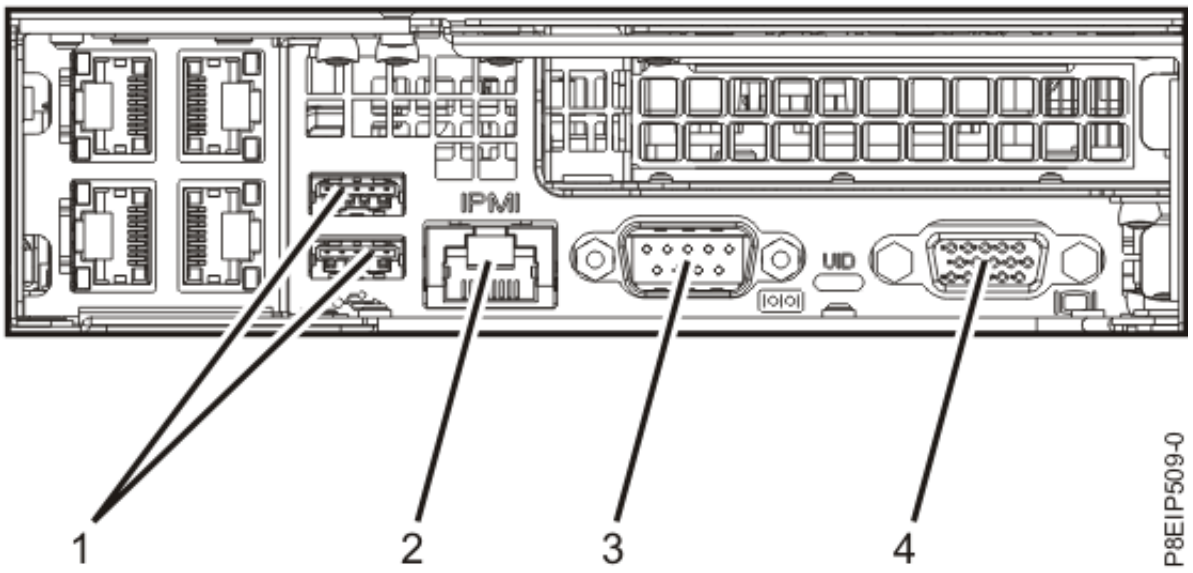
- **The System Overall heat**
- **CPU heat temperature**
- **System fan rotation speed cycles**
- **Extract information about the server chassis**
- **Query info about various system peripherals**
- **Configure BIOS or UEFI on a remote system with no monitor / keyboard attached**

Having a IPMI (**Intelligent Platform Management Interface**) firmware embedded into the server Motherboard is essential for system administration because besides this goodies it allows you to remotely Install Operating System to a server without any **pre-installed OS** right after it is bought and mounted to the planned **Data Center Rack nest**, just like if you have a plugged **Monitor / Keyboard and Mouse** and being physically in the remote location.

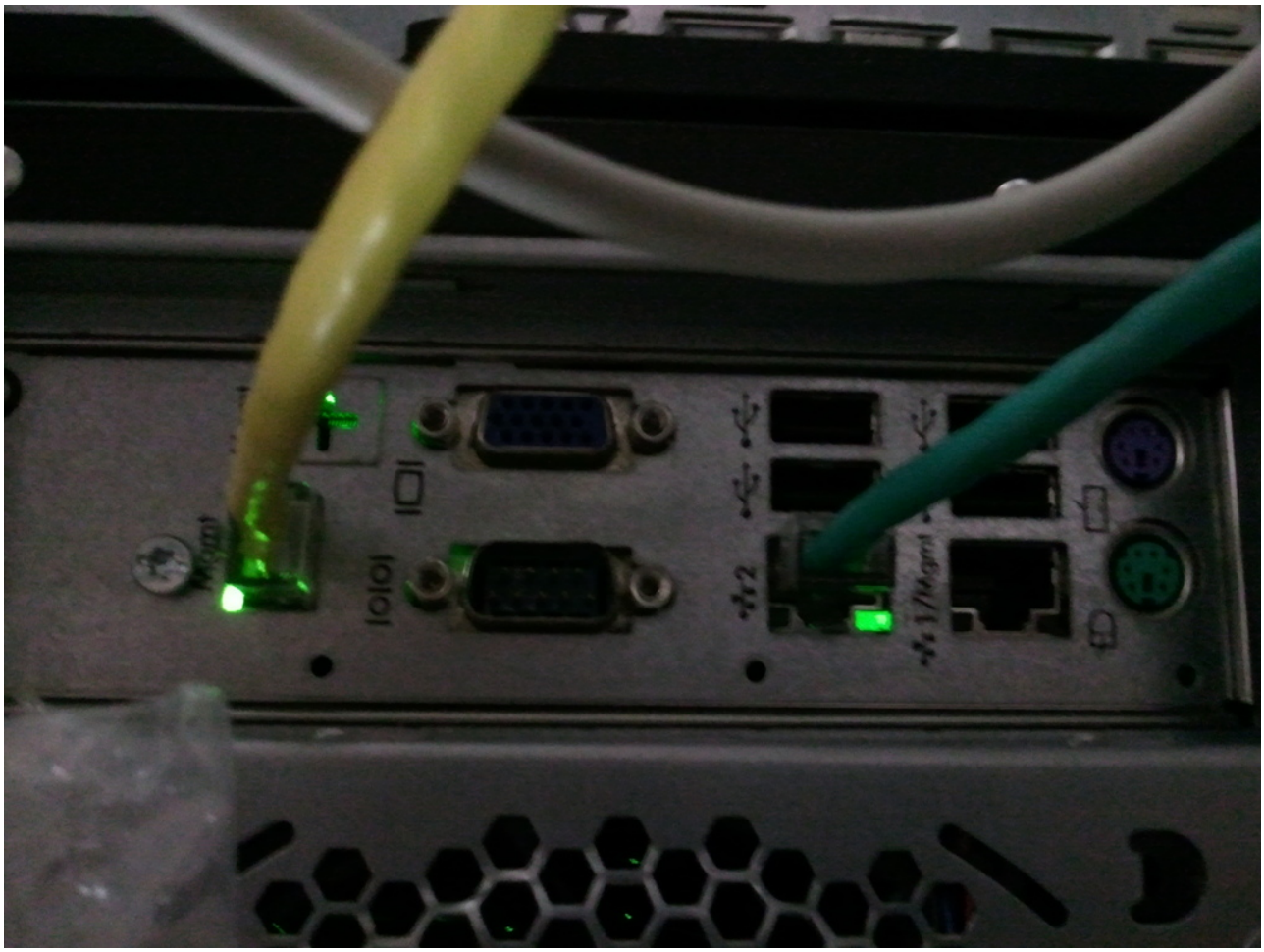
IPMI is mega useful for system administration also in case of Linux / Windows system updates that requires reboot in which essential **System Libraries** or binaries are updated and a System reboot is

required, because often after system Large bundle updates or Release updates the system fails to boot and you need a way to **run a diagnostic stuff from a System rescue Operating System** living on a plugged in via a ***USB stick*** or ***CD Drive***.
As prior said IPMI remote board is usually accessed and used via some **Remote HTTPS encrypted web interface** or via **Secure Shell crypted session but sometimes the Web server behind the IPMI Web Interface is hanging especially when multiple sysadmins try to access it or due to other stuff and at times due to strange stuff even console SSH access might not be there, thansfully those who run a GNU / Linux Operating system on the Hardware node can use ipmitool tool** http://ipmitool.sourceforge.net/ **written for Linux that is capable to do a number of useful things with the IPMI management board including a Cold Reset of it so it turns back to working state / adding users / grasping the System hardware and components information health status, changing the Listener address of the IPMI access Interface and even having ability to update the IPMI version firmware.**

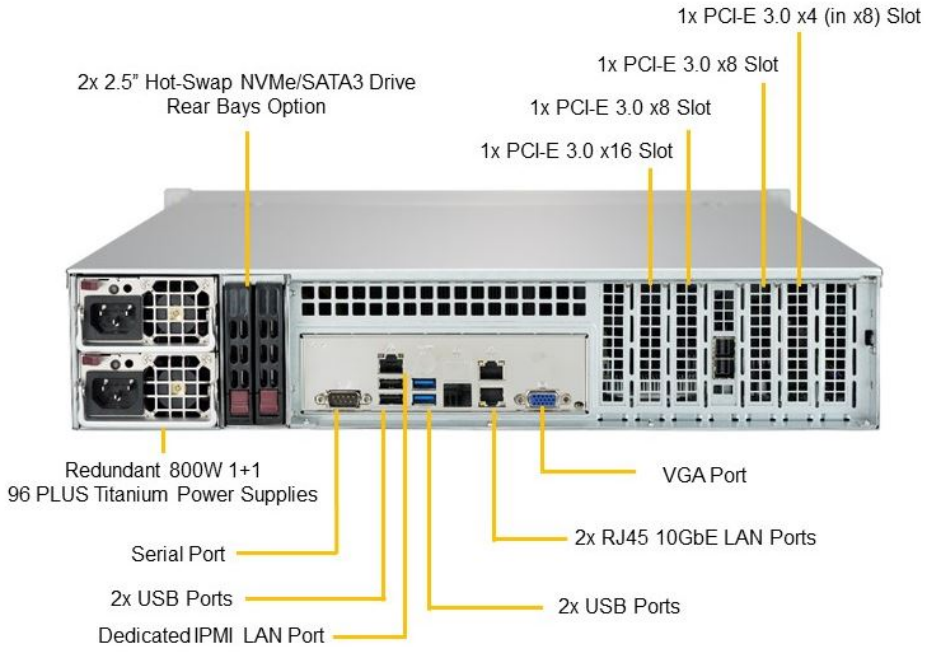
Prior to be able to access IPMI remotely it has to be enabled usually via a UTP cable connected to the Network from which you expect it to be accesible. The location of the IPMI port on different server vendors is different.



IBM Power 9 Server IPMI port



HP IPMI console called ILO (Integrated Lights-Out) Port cabled with yellow cable (usually labelled as Management Port MGMT)



Supermicro server IPMI Dedicated Lan Port

In this article I'll shortly explain how IPMITool is available and can be installed and used across ***GNU / Linux Debia***n / Ubuntu and other deb based Linuxes with **apt** or on **Fedora / CentOS (RPM)** based with yum etc.

1. Install IPMITool

- On Debian

 # apt-get install --yes ipmitool

- On CentOS

 # yum install ipmitool OpenIPMI-tools

 # ipmitool -V
ipmitool version 1.8.14

On CentOS ipmitool can run as a service and collect data and do some nice stuff to run it:

[root@linux ~]# **chkconfig ipmi on**

[root@linux ~]# **service ipmi start**

Before start using it is worthy to give here short description from **ipmitool man page**

DESCRIPTION

This program lets you manage Intelligent Platform Management Interface (IPMI) functions of either the local system, via a kernel device driver, or a remote system, using IPMI v1.5 and IPMI v2.0.

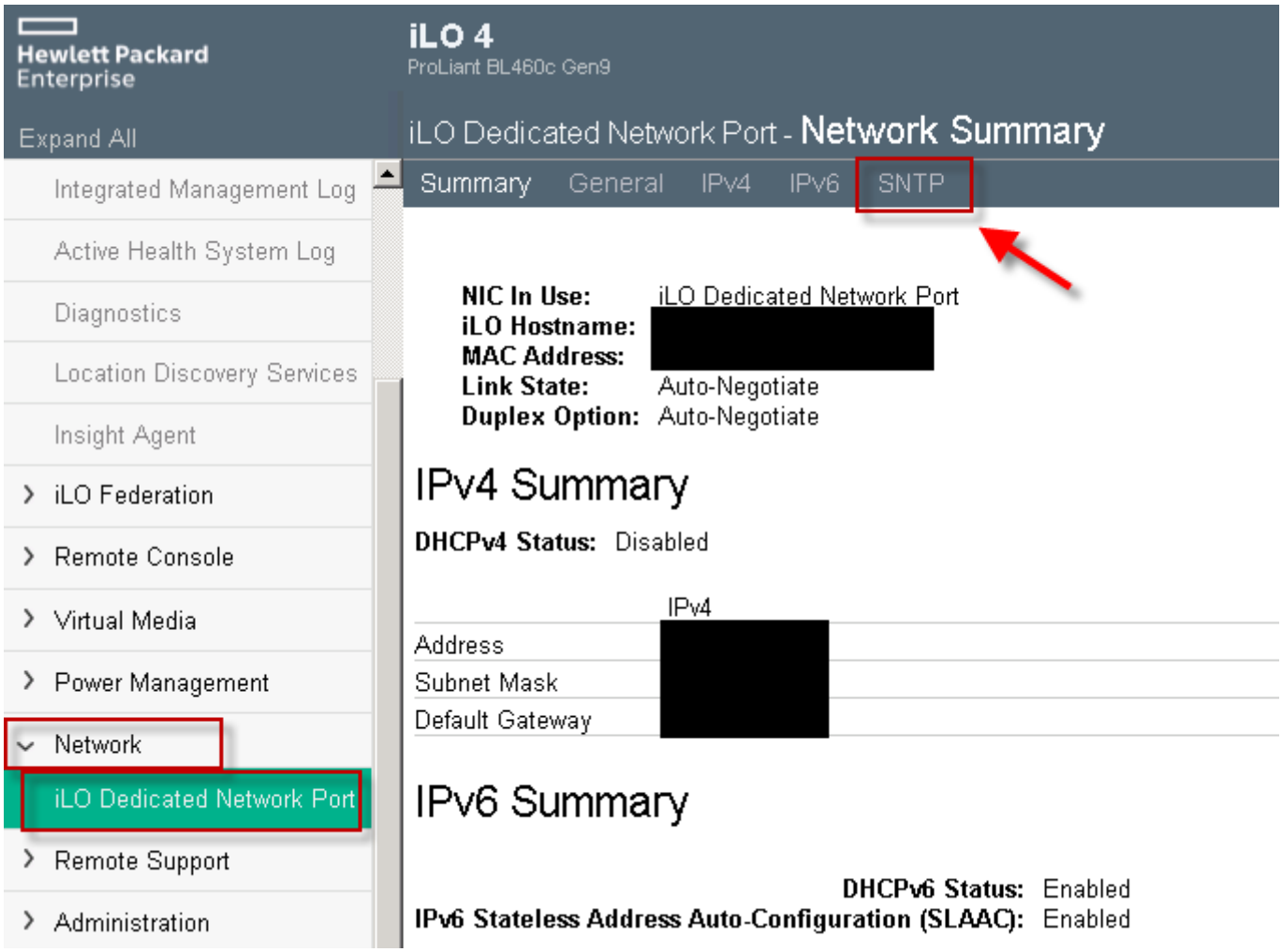
These functions include printing FRU information, LAN configuration, sensor readings, and remote chassis power control.

IPMI management of a local system interface requires a compatible IPMI kernel driver to be installed and configured. On Linux this driver is called OpenIPMI and it is included in standard dis?

tributions. On Solaris this driver is called BMC and is included in Solaris 10. Management of a remote station requires the IPMI-over-LAN interface to be enabled and configured. Depending on

the particular requirements of each system it may be possible to enable the LAN interface using ipmitool over the system interface.

2. Get ADMIN IP configured for access



To get a list of what is the current listener IP with no access to above Web frontend via which IPMI can be accessed (if it is cabled to the **Access / Admin LAN port**).

```
# ipmitool lan print 1
Set in Progress         : Set Complete
Auth Type Support       : NONE MD2 MD5 PASSWORD
Auth Type Enable        : Callback : MD2 MD5 PASSWORD
                        : User     : MD2 MD5 PASSWORD
                        : Operator : MD2 MD5 PASSWORD
                        : Admin    : MD2 MD5 PASSWORD
                        : OEM      :
IP Address Source       : Static Address
```

IP Address : 10.253.41.127
Subnet Mask : 255.255.254.0
MAC Address : 0c:c4:7a:4b:1f:70
SNMP Community String : public
IP Header : TTL=0x00 Flags=0x00 Precedence=0x00 TOS=0x00
BMC ARP Control : ARP Responses Enabled, Gratuitous ARP Disabled
Default Gateway IP : 10.253.41.254
Default Gateway MAC : 00:00:0c:07:ac:7b
Backup Gateway IP : 10.253.41.254
Backup Gateway MAC : 00:00:00:00:00:00
802.1q VLAN ID : 8
802.1q VLAN Priority : 0
RMCP+ Cipher Suites : 1,2,3,6,7,8,11,12
Cipher Suite Priv Max : aaaaXXaaaXXaaXX
: X=Cipher Suite Unused
: c=CALLBACK
: u=USER
: o=OPERATOR
: a=ADMIN
: O=OEM

3. Configure custom access IP and gateway for IPMI

[root@linux ~]# **ipmitool lan set 1 ipsrc static**

[root@linux ~]# **ipmitool lan set 1 ipaddr 192.168.1.211**
Setting LAN IP Address to 192.168.1.211

[root@linux ~]# **ipmitool lan set 1 netmask 255.255.255.0**
Setting LAN Subnet Mask to 255.255.255.0

[root@linux ~]# **ipmitool lan set 1 defgw ipaddr 192.168.1.254**
Setting LAN Default Gateway IP to 192.168.1.254

[root@linux ~]# **ipmitool lan set 1 defgw macaddr 00:0e:0c:aa:8e:13**
Setting LAN Default Gateway MAC to 00:0e:0c:aa:8e:13

[root@linux ~]# **ipmitool lan set 1 arp respond on**
Enabling BMC-generated ARP responses

[root@linux ~]# **ipmitool lan set 1 auth ADMIN MD5**

[root@linux ~]# **ipmitool lan set 1 access on**

4. Getting a list of IPMI existing users

ipmitool user list 1

ID	Name	Callin	Link Auth	IPMI Msg	Channel Priv Limit
2	admin1	false	false	true	ADMINISTRATOR
3	ovh_dontchange	true	false	true	ADMINISTRATOR
4	ro_dontchange	true	true	true	USER
6		true	true	true	NO ACCESS
7		true	true	true	NO ACCESS
8		true	true	true	NO ACCESS
9		true	true	true	NO ACCESS
10		true	true	true	NO ACCESS

- *To get summary of existing users*

ipmitool user summary

Maximum IDs : 10
Enabled User Count : 4
Fixed Name Count : 2

5. Create new Admin username into IPMI board

```
[root@linux ~]# ipmitool user set name 2 Your-New-Username
```

```
[root@linux ~]# ipmitool user set password 2
Password for user 2:
Password for user 2:
```

```
[root@linux ~]# ipmitool channel setaccess 1 2 link=on ipmi=on callin=on privilege=4
```

```
[root@linux ~]# ipmitool user enable 2
[root@linux ~]#
```

6. Configure non-privilege user into IPMI board

If a user should only be used for querying sensor data, a custom privilege level can be setup for that. This user then has no rights for activating or deactivating the server, for example. A user named monitor will be created for this in the following example:

```
[root@linux ~]# ipmitool user set name 3 monitor
```

```
[root@linux ~]# ipmitool user set password 3
Password for user 3:
Password for user 3:
```

```
[root@linux ~]# ipmitool channel setaccess 1 3 link=on ipmi=on callin=on privilege=2
```

```
[root@linux ~]# ipmitool user enable 3
```

The importance of the various privilege numbers will be displayed when ipmitool channel is called without any additional parameters.

```
[root@linux ~]# ipmitool channel
Channel Commands: authcap
                  getaccess [user id]
                  setaccess [callin=on|off] [ipmi=on|off] [link=on|off] [privilege=level]
                  info      [channel number]
                  getciphers [channel]
```

```
Possible privilege levels are:
 1   Callback level
 2   User level
 3   Operator level
 4   Administrator level
 5   OEM Proprietary level
15   No access
[root@linux ~]#
```

The user just created (named 'monitor') has been assigned the USER privilege level. So that LAN access is allowed for this user, you must activate MD5 authentication for LAN access for this user group (USER privilege level).

```
[root@linux ~]# ipmitool channel getaccess 1 3
Maximum User IDs     : 15
Enabled User IDs     : 2

User ID              : 3
User Name            : monitor
Fixed Name           : No
Access Available     : call-in / callback
Link Authentication  : enabled
IPMI Messaging       : enabled
Privilege Level      : USER
```

```
[root@linux ~]#
```

7. Check server firmware version on a server via IPMI

```
 # ipmitool mc info
Device ID                 : 32
Device Revision           : 1
Firmware Revision         : 3.31
IPMI Version              : 2.0
Manufacturer ID           : 10876
Manufacturer Name         : Supermicro
Product ID                : 1579 (0x062b)
Product Name              : Unknown (0x62B)
Device Available          : yes
Provides Device SDRs      : no
Additional Device Support :
    Sensor Device
    SDR Repository Device
    SEL Device
    FRU Inventory Device
    IPMB Event Receiver
    IPMB Event Generator
    Chassis Device
```

ipmitool mc info is actually an alias for the **ipmitool bmc info** cmd.

8. Reset IPMI management controller or BMC if hanged

As earlier said **if for some reason Web GUI access or SSH to IPMI is lost, reset** with:

```
root@linux:/root#  ipmitool mc reset
[ warm | cold ]
```

If you want to stop electricity for a second to IPMI and bring it on use the **cold** reset (this usually should be done if warm reset does not work).

```
root@linux:/root# ipmitool mc reset cold
```

otherwise soft / **warm** is with:

```
ipmitool mc reset warm
```

Sometimes the **BMC component of IPMI** hangs and only fix to restore access to **server Remote board** is to reset also **BMC**

root@linux:/root# **ipmitool bmc reset cold**

9. Print hardware system event log

root@linux:/root# **ipmitool sel info**
SEL Information
Version : 1.5 (v1.5, v2 compliant)
Entries : 0
Free Space : 10240 bytes
Percent Used : 0%
Last Add Time : Not Available
Last Del Time : 07/02/2015 17:22:34
Overflow : false
Supported Cmds : 'Reserve' 'Get Alloc Info'
# of Alloc Units : 512
Alloc Unit Size : 20
 # Free Units : 512
Largest Free Blk : 512
Max Record Size : 20

ipmitool sel list
SEL has no entries

In this particular case the system shows no entres as it was run on a tiny **Microtik 1U machine**, however usually on most Dell **PowerEdge / HP Proliant / Lenovo System X** machines this will return plenty of messages.

ipmitool sel elist

ipmitool sel clear

To clear anything if such logged

ipmitool sel clear

10. Print Field Replaceable Units (FRUs) on the server

[root@linux ~]# **ipmitool fru print**

FRU Device Description : Builtin FRU Device (ID 0)
Chassis Type : Other
Chassis Serial : KD5V59B
Chassis Extra : c3903ebb6237363698cdbae3e991bbed
Board Mfg Date : Mon Sep 24 02:00:00 2012
Board Mfg : IBM
Board Product : System Board
Board Serial : XXXXXXXXXXX
Board Part Number : 00J6528
Board Extra : 00W2671
Board Extra : 1400
Board Extra : 0000
Board Extra : 5000
Board Extra : 10
...
Product Manufacturer : IBM
Product Name : System x3650 M4
Product Part Number : 1955B2G
Product Serial : KD7V59K
Product Asset Tag :

FRU Device Description : Power Supply 1 (ID 1)
Board Mfg Date : Mon Jan 1 01:00:00 1996
Board Mfg : ACBE
Board Product : IBM Designed Device
Board Serial : YK151127R1RN
Board Part Number : ZZZZZZZ
Board Extra : ZZZZZZ
Board Extra : 0200
Board Extra : 00
Board Extra : 0080
Board Extra : 1

FRU Device Description : Power Supply 2 (ID 2)
Board Mfg Date : Mon Jan 1 01:00:00 1996
Board Mfg : ACBE
Board Product : IBM Designed Device
Board Serial : YK131127M1LE
Board Part Number : ZZZZZ
Board Extra : ZZZZZ
Board Extra : 0200
Board Extra : 00
Board Extra : 0080
Board Extra : 1

FRU Device Description : DASD Backplane 1 (ID 3)

....

Worthy to mention here is some cheaper server vendors such as Trendmicro might show no data here (no idea whether this is a protocol incompitability or IPMItool issue).

11. Get output about system sensors Temperature / Fan / Power Supply

Most newer servers have sensors to track temperature / voltage / fanspeed peripherals temp overall system temp etc.
To **get a full list of sensors statistics from IPMI**

```
# ipmitool sensor
CPU Temp         | 29.000     | degrees C  | ok    | 0.000     | 0.000     | 0.000     | 95.000    | 98.000
| 100.000
System Temp      | 40.000     | degrees C  | ok    | -9.000    | -7.000    | -5.000    | 80.000    | 85.000
| 90.000
Peripheral Temp  | 41.000     | degrees C  | ok    | -9.000    | -7.000    | -5.000    | 80.000    | 85.000
| 90.000
PCH Temp         | 56.000     | degrees C  | ok    | -11.000   | -8.000    | -5.000    | 90.000    | 95.000
| 100.000
FAN 1            | na         |            | na    | na        | na        | na        | na        | na
FAN 2            | na         |            | na    | na        | na        | na        | na        | na
FAN 3            | na         |            | na    | na        | na        | na        | na        | na
FAN 4            | na         |            | na    | na        | na        | na        | na        | na
FAN A            | na         |            | na    | na        | na        | na        | na        | na
Vcore            | 0.824      | Volts      | ok    | 0.480     | 0.512     | 0.544     | 1.488     | 1.520     | 1.552
3.3VCC           | 3.296      | Volts      | ok    | 2.816     | 2.880     | 2.944     | 3.584     | 3.648     |
3.712
12V              | 12.137     | Volts      | ok    | 10.494    | 10.600    | 10.706    | 13.091    | 13.197    |
13.303
VDIMM            | 1.496      | Volts      | ok    | 1.152     | 1.216     | 1.280     | 1.760     | 1.776     |
1.792
```

5VCC | 4.992 | Volts | ok | 4.096 | 4.320 | 4.576 | 5.344 | 5.600 | 5.632
CPU VTT | 1.008 | Volts | ok | 0.872 | 0.896 | 0.920 | 1.344 | 1.368 | 1.392
VBAT | 3.200 | Volts | ok | 2.816 | 2.880 | 2.944 | 3.584 | 3.648 | 3.712
VSB | 3.328 | Volts | ok | 2.816 | 2.880 | 2.944 | 3.584 | 3.648 | 3.712
AVCC | 3.312 | Volts | ok | 2.816 | 2.880 | 2.944 | 3.584 | 3.648 | 3.712
Chassis Intru | 0x1 | discrete | 0x0100| na | na | na | na | na | na

To *get only partial sensors data from the SDR (Sensor Data Repositry) entries and readings*

[root@linux ~]# **ipmitool sdr list**

Planar 3.3V | 3.31 Volts | ok
Planar 5V | 5.06 Volts | ok
Planar 12V | 12.26 Volts | ok
Planar VBAT | 3.14 Volts | ok
Avg Power | 80 Watts | ok
PCH Temp | 45 degrees C | ok
Ambient Temp | 19 degrees C | ok
PCI Riser 1 Temp | 25 degrees C | ok
PCI Riser 2 Temp | no reading | ns
Mezz Card Temp | no reading | ns
Fan 1A Tach | 3071 RPM | ok
Fan 1B Tach | 2592 RPM | ok
Fan 2A Tach | 3145 RPM | ok
Fan 2B Tach | 2624 RPM | ok
Fan 3A Tach | 3108 RPM | ok
Fan 3B Tach | 2592 RPM | ok
Fan 4A Tach | no reading | ns
Fan 4B Tach | no reading | ns
CPU1 VR Temp | 27 degrees C | ok
CPU2 VR Temp | 27 degrees C | ok
DIMM AB VR Temp | 24 degrees C | ok
DIMM CD VR Temp | 23 degrees C | ok
DIMM EF VR Temp | 25 degrees C | ok
DIMM GH VR Temp | 24 degrees C | ok
Host Power | 0x00 | ok

IPMI Watchdog | 0x00 | ok

[root@linux ~]# **ipmitool sdr type Temperature**

PCH Temp | 31h | ok | 45.1 | 45 degrees C
Ambient Temp | 32h | ok | 12.1 | 19 degrees C
PCI Riser 1 Temp | 3Ah | ok | 16.1 | 25 degrees C
PCI Riser 2 Temp | 3Bh | ns | 16.2 | No Reading
Mezz Card Temp | 3Ch | ns | 44.1 | No Reading
CPU1 VR Temp | F7h | ok | 20.1 | 27 degrees C
CPU2 VR Temp | F8h | ok | 20.2 | 27 degrees C
DIMM AB VR Temp | F9h | ok | 20.3 | 25 degrees C
DIMM CD VR Temp | FAh | ok | 20.4 | 23 degrees C
DIMM EF VR Temp | FBh | ok | 20.5 | 26 degrees C
DIMM GH VR Temp | FCh | ok | 20.6 | 24 degrees C
Ambient Status | 8Eh | ok | 12.1 |
CPU 1 OverTemp | A0h | ok | 3.1 | Transition to OK
CPU 2 OverTemp | A1h | ok | 3.2 | Transition to OK

[root@linux ~]# **ipmitool sdr type Fan**

Fan 1A Tach | 40h | ok | 29.1 | 3034 RPM
Fan 1B Tach | 41h | ok | 29.1 | 2592 RPM
Fan 2A Tach | 42h | ok | 29.2 | 3145 RPM
Fan 2B Tach | 43h | ok | 29.2 | 2624 RPM
Fan 3A Tach | 44h | ok | 29.3 | 3108 RPM
Fan 3B Tach | 45h | ok | 29.3 | 2592 RPM
Fan 4A Tach | 46h | ns | 29.4 | No Reading
Fan 4B Tach | 47h | ns | 29.4 | No Reading
PS 1 Fan Fault | 73h | ok | 10.1 | Transition to OK
PS 2 Fan Fault | 74h | ok | 10.2 | Transition to OK

[root@linux ~]# **ipmitool sdr type 'Power Supply'**
Sensor Type "'Power" not found.
Sensor Types:
Temperature (0x01) Voltage (0x02)
Current (0x03) Fan (0x04)
Physical Security (0x05) Platform Security (0x06)
Processor (0x07) Power Supply (0x08)
Power Unit (0x09) Cooling Device (0x0a)
Other (0x0b) Memory (0x0c)
Drive Slot / Bay (0x0d) POST Memory Resize (0x0e)
System Firmwares (0x0f) Event Logging Disabled (0x10)
Watchdog1 (0x11) System Event (0x12)
Critical Interrupt (0x13) Button (0x14)
Module / Board (0x15) Microcontroller (0x16)
Add-in Card (0x17) Chassis (0x18)
Chip Set (0x19) Other FRU (0x1a)
Cable / Interconnect (0x1b) Terminator (0x1c)
System Boot Initiated (0x1d) Boot Error (0x1e)
OS Boot (0x1f) OS Critical Stop (0x20)
Slot / Connector (0x21) System ACPI Power State (0x22)
Watchdog2 (0x23) Platform Alert (0x24)
Entity Presence (0x25) Monitor ASIC (0x26)
LAN (0x27) Management Subsys Health (0x28)
Battery (0x29) Session Audit (0x2a)
Version Change (0x2b) FRU State (0x2c)

12. Using System Chassis to initiate power on / off / reset / soft shutdown

!!!!! Beware only run this if you know what you're realling doing don't just paste into a production system, If you do so it is your responsibility !!!!!

- *do a soft-shutdown via acpi*

ipmitool [chassis] power soft

- issue a hard power off, wait 1s, power on

ipmitool [chassis] power cycle

- run a hard power off

ipmitool [chassis] power off

- do a hard power on

ipmitool [chassis] power on

- *issue a hard reset*

ipmitool [chassis] power reset

- *Get system power status*

ipmitool chassis power status

13. Use IPMI (SoL) Serial over Lan to execute commands remotely

Besides using ipmitool locally on server that had its IPMI / ILO / DRAC console disabled it could be used also to query and make server do stuff remotely.

If not loaded you will have to load lanplus kernel module.

modprobe lanplus

ipmitool -I lanplus -H 192.168.99.1 -U user -P pass chassis power status

ipmitool -I lanplus -H 192.168.98.1 -U user -P pass chassis power status

ipmitool -I lanplus -H 192.168.98.1 -U user -P pass chassis power reset

ipmitool -I lanplus -H 192.168.98.1 -U user -P pass chassis power reset

ipmitool -I lanplus -H 192.168.98.1 -U user -P pass password sol activate

- Deactivating Sol server capabilities

ipmitool -I lanplus -H 192.168.99.1 -U user -P pass sol deactivate

14. Modify boot device order on next boot

!!!!! Do not run this except you want to really modify Boot device order, carelessly copy pasting could leave your server unbootable on next boot !!!!!

- *Set first boot device to be as BIOS*

```
ipmitool chassis bootdev bios
```

- *Set first boot device to be CD Drive*

```
ipmitool chassis bootdev cdrom
```

- *Set first boot device to be via Network Boot PXE protocol*

```
ipmitool chassis bootdev pxe
```

15. Using ipmitool shell

```
root@iqtestfb:~# ipmitool shell
ipmitool> help
Commands:
        raw           Send a RAW IPMI request and print response
        i2c           Send an I2C Master Write-Read command and print response
        spd           Print SPD info from remote I2C device
        lan           Configure LAN Channels
        chassis       Get chassis status and set power state
        power         Shortcut to chassis power commands
        event         Send pre-defined events to MC
        mc            Management Controller status and global enables
        sdr           Print Sensor Data Repository entries and readings
        sensor        Print detailed sensor information
        fru           Print built-in FRU and scan SDR for FRU locators
        gendev        Read/Write Device associated with Generic Device locators sdr
        sel           Print System Event Log (SEL)
        pef           Configure Platform Event Filtering (PEF)
        sol           Configure and connect IPMIv2.0 Serial-over-LAN
        tsol          Configure and connect with Tyan IPMIv1.5 Serial-over-LAN
        isol          Configure IPMIv1.5 Serial-over-LAN
        user          Configure Management Controller users
        channel       Configure Management Controller channels
        session       Print session information
        dcmi          Data Center Management Interface
        sunoem        OEM Commands for Sun servers
        kontronoem    OEM Commands for Kontron devices
        picmg         Run a PICMG/ATCA extended cmd
        fwum          Update IPMC using Kontron OEM Firmware Update Manager
        firewall      Configure Firmware Firewall
        delloem       OEM Commands for Dell systems
        shell         Launch interactive IPMI shell
        exec          Run list of commands from file
        set           Set runtime variable for shell and exec
        hpm           Update HPM components using PICMG HPM.1 file
        ekanalyzer    run FRU-Ekeying analyzer using FRU files
        ime           Update Intel Manageability Engine Firmware
ipmitool>
```

16. Changing BMC / DRAC time setting

```
# ipmitool -H XXX.XXX.XXX.XXX -U root -P pass sel time set "01/21/2011 16:20:44"
```

17. Loading script of IPMI commands

```
# ipmitool exec /path-to-script/script-with-instructions.txt
```

Closure

As you saw **ipmitool** can be used to do plenty of cool things both locally or remotely on a server that had **IPMI server interface** available. The tool is mega useful in case if **ILO console** gets hanged as it can be used to reset it.
I explained shortly what is **Intelligent Platform Management Interface**, how it can be accessed and used on Linux via ipmitool**.** I went through some of its basic use, how it can be used to print the configured ILO access IP how
this **Admin IP** and **Network configuration** can be changed, how to print the IPMI existing users and **how to add new Admin and non-privileged users**.
Then I've shown how a s**ystem hardware** and firmware could be shown, how **IPMI management BMC** could be reset in case if it hanging and how hardware system even logs can be printed (useful in case of hardware failure errors etc.), how to print reports on current system **fan / power supply** and **temperature. Finally explained how server chassis could be used for soft and cold server reboots locally or via SoL (Serial Over Lan) and how boot order of system could be modified.**

ipmitool is a great tool to further automate different sysadmin tasks with shell scrpts for stuff such as tracking servers for a failing hardware and auto-reboot of inacessible failed servers to guarantee Higher Level of availability.
Hope you enjoyed artcle .. It wll be interested to hear of any other known ipmitool scripts or use, if you know such please share it.