

Linux系统如何通过ipmitool工具与BMC (iLO) 通讯? 并实现远程调用访问目标主机?

如果系统下执行命令"ipmitool session info all"

输出报错提示:"Could not open device at /dev/ipmi 0 or /dev/ipmi/0 or /dev/ipmidev/0: No such file or directory" 如何解决?

出现"Could not open device at /dev/ipmi 0 or /dev/ipmi/0 or /dev/ipmidev/0: No such file or directory" 报错是因为ipmi驱动没有加载成功

### ipmitool简介:

ipmitool 是一种可用在 linux 系统下的命令行方式的 ipmi 平台管理工具, 通过它可以实现获取传感器的信息、显示系统日志内容、网络远程开关机等功能。ipmitool 有两种使用方式:

- 1、本地调用, 通过操作系统内核提供接口与bmc通信
- 2、远程调用, 通过网络以 udp 报文形式与bmc通信

### 安装与使用:

1、挂载系统盘, 进入/run/media/zhaoxj/CentOS 7 x86\_64/Packages目录下找到ipmitool<TAB补齐> 和 OpenIPMI-modalias<TAB补齐> 两个rpm包同时安装即可

```
[root@localhost Desktop]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/mapper/centos-root 50G  3.7G  47G   8% /
devtmpfs        7.7G  0      7.7G  0% /dev
tmpfs           7.8G  184K  7.8G  1% /dev/shm
tmpfs           7.8G  9.4M  7.7G  1% /run
tmpfs           7.8G  0      7.8G  0% /sys/fs/cgroup
/dev/sdal       497M  159M  339M  32% /boot
/dev/mapper/centos-home 221G  38M  221G  1% /home
tmpfs           1.6G  24K   1.6G  1% /run/user/1000
/dev/sr0        7.3G  7.3G  0 100% /run/media/zhaoxj/CentOS 7 x86_64
```

```
OpenIPMI-devel-2.0.19-11.el7-1.686.rpm
[root@localhost Packages]# rpm -ivh ipmitool-1.8.13-8.el7_1.x86_64.rpm OpenIPMI-modalias-2.0.19-11.el7.x86_64.rpm
warning: ipmitool-1.8.13-8.el7_1.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID f4a80eb5: NOKEY
Preparing...##### [100%]
Updating / installing...
 1:OpenIPMI-modalias-2.0.19-11.el7 ##### [ 50%]
 2:ipmitool-1.8.13-8.el7_1 ##### [100%]
[root@localhost Packages]# pwd
/run/media/zhaoxj/CentOS 7 x86_64/Packages
在这个路径下执行上面的命令安装ipmitool工具, TAB键可以补齐
```

2、本地调用访问: ipmitool -U user -P password chassis status

//查看主板相关信息(本地访问user和password是系统用户, 若远程其他机器加 -H IP, 其中IP为iLO的管理IP, 用户名和密码使用iLO用户名和密码)

如有如下图报错提示, 可以手动加载ipmi驱动

- modprobe ipmi\_devintf //加载驱动
- lsmod | grep ipmi //查看驱动是否加载成功
- service ipmi restart //重启ipmi服务

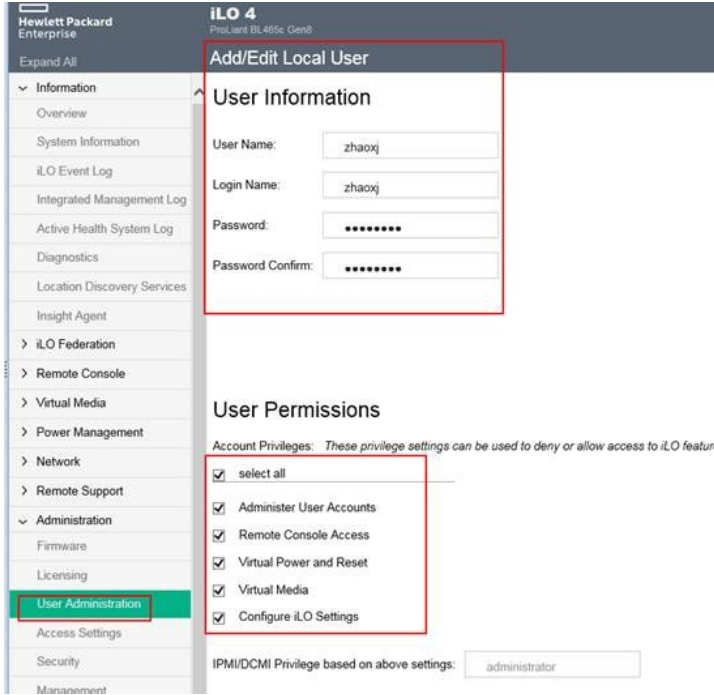
```
Session Commands: info _active | all | id 0xpppppppp | handle 0xnn>
suse11sp3:/var/log # ipmitool session info all
Could not open device at /dev/ipmi0 or /dev/ipmi/0 or /dev/ipmidev/0: No such file or directory.
Get Session Info command failed
suse11sp3:/var/log # modprobe ipmi_devintf
suse11sp3:/var/log # lsmod | grep ipmi
ipmi_devintf 17509 0
ipmi_mesghandler 49981 1 ipmi_devintf
suse11sp3:/var/log # service ipmi restart
Stopping all ipmi drivers:
Starting ipmi drivers:
suse11sp3:/var/log # ipmitool -U zyxj -P password chassis status
System Power : on
Power Overload : false
Power Interlock : inactive
Main Power Fault : false
Power Control Fault : false
Power Restore Policy : always-on
Last Power Event :
Chassis Intrusion : inactive
Front-Panel Lockout : inactive
Drive Fault : false
Cooling/Fan Fault : false
Front Panel Control : none
suse11sp3:/var/log #
```

3、远程调用, 访问目标主机, 可以直接iLO的管理账号和密码, 或者新建一个有权限的用户, 无所谓目标主机操作系统, 也无需安装ipmitool工具

ipmitool -I lanplus -H iLO\_IP -U iLO\_user -P password chassis power status //远程查看机器电源状态

```
[root@localhost Packages]# ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password chassis power status
Chassis Power is on
[root@localhost Packages]# ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password chassis status
System Power : on
Power Overload : false
Power Interlock : inactive
Main Power Fault : false
Power Control Fault : false
Power Restore Policy : always-on
Last Power Event :
Chassis Intrusion : inactive
Front-Panel Lockout : inactive
Drive Fault : false
Cooling/Fan Fault : false
Front Panel Control : none
[root@localhost Packages]#
```

如果不知道Administrator密码,可以通过OA创建一个有限权的账号



ipmitool -I lanplus -H iLO\_IP -U iLO\_user -P password fru //远程调用查看机器硬件信息

```
[root@localhost Packages]# ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password fru
FRU Device Description : BuiltIn FRU Device (ID 0)
Chassis Type           : Main Server Chassis
Chassis Serial        : 6CU252VN6P
Chassis Extra         : d0b5003700fc010101
Chassis Extra         : d4f401dc000000
Board Mfg Date        : Sat Sep 22 08:00:00 2007
Board Mfg             : HP
Board Product         : HP ProLiant BL420c Gen8
Board Serial          : PBYRA0CTM2Y015
Board Part Number     : 654608-001
Board Extra           : d23043
Board Extra           : d5641000b001
Product Manufacturer  : HP
Product Name          : HP ProLiant BL420c Gen8
Product Part Number   : 668359-B21
Product Version       : G8
Product Serial        : 6CU252VN6P

FRU Device Description : BMC CONTROLLER (ID 238)
Product Manufacturer   : HPE
Product Name           : BMC CONTROLLER
Product Part Number    : iLO 4

FRU Device Description : MB BIOS (ID 239)
Product Manufacturer   : HPE
Product Name           : SYSTEM BIOS
Product Part Number    : I30
Product Version        : 11/03/2014

FRU Device Description : CPU 1 (ID 16)
Product Manufacturer   : Intel
Product Name           : Intel(R) Xeon(R) CPU E5-2403 0 @ 1.90GHz
```

ipmitool -I lanplus -H iLO\_IP -U iLO\_user -P password sensor list //远程调用查看机器传感器列表

```
[root@localhost Packages]# ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password sensor list
UID Light             0x0 discrete 0x0180 na na na na na
Sys. Health LED      na discrete na na na na na na na
01-Inlet Ambient     23.000 degrees C ok na na na na 42.000 46.000
02-CPU 1             40.000 degrees C ok na na na na 70.000 na
03-CPU 2             na na na na na na na 70.000 na
04-P1 DIMM 1-6       29.000 degrees C ok na na na na 87.000 na
05-P2 DIMM 1-8       na na na na na na na 87.000 na
06-P1 Mem Zone       30.000 degrees C ok na na na na 90.000 95.000
07-P1 Mem Zone       30.000 degrees C ok na na na na 90.000 95.000
08-P2 Mem Zone       27.000 degrees C ok na na na na 90.000 95.000
09-P2 Mem Zone       28.000 degrees C ok na na na na 90.000 95.000
10-HD Max            na na na na na na na 90.000 na
11-Chipset           44.000 degrees C ok na na na na 105.000 na
12-VR P1             31.000 degrees C ok na na na na 115.000 120.000
13-VR P2             29.000 degrees C ok na na na na 115.000 120.000
14-VR P1 Zone        33.000 degrees C ok na na na na 90.000 95.000
15-VR P1 Mem         30.000 degrees C ok na na na na 115.000 120.000
16-VR P2 Mem         27.000 degrees C ok na na na na 115.000 120.000
17-SuperCap Max      na na na na na na na 95.000 na
18-HD controller     na na na na na na na 100.000 na
19-HDcntlInlet       na na na na na na na 70.000 na
20-Mezz 1            40.000 degrees C ok na na na na 100.000 na
21-Mezz 1 Inlet      40.000 degrees C ok na na na na 100.000 na
22-Mezz 2            na na na na na na na 100.000 na
23-Mezz 2 Inlet      na na na na na na na 70.000 na
24-LOM Card          40.000 degrees C ok na na na na 100.000 na
25-LOM Card Zone     na na na na na na na 70.000 na
26-I/O Zone          31.000 degrees C ok na na na na 90.000 95.000
27-I/O Zone          na na na na na na na 90.000 95.000
28-I/O Zone          34.000 degrees C ok na na na na 90.000 95.000
29-I/O Zone          35.000 degrees C ok na na na na 90.000 95.000
30-System Board      32.000 degrees C ok na na na na 90.000 95.000
31-System Board      26.000 degrees C ok na na na na 90.000 95.000
32-Sys Exhaust       31.000 degrees C ok na na na na 90.000 95.000
33-Sys Exhaust       33.000 degrees C ok na na na na 90.000 95.000
Virtual Fan          33.320 percent ok na na na na na na
Power Meter          36 watts ok na na na na na na
Enclosure Status     0x0 discrete 0x0060 na na na na na na
Memory Status        0x0 discrete 0x4060 na na na na na na
[root@localhost Packages]#
```

电源管理常用命令（其中zhaoxj是我创建的iLO账号，password是zhaoxj账号的密码）：

**通用命令行格式：ipmitool -I lanplus -H iLO\_IP -U iLO\_user -P password command**

举例：

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password power off //硬关机直接断电源，慎用

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password power soft //软关机即轻按一下开机键

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password power on //硬开机

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password power reset //硬重启慎用，避免RAID数据丢失

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password power status //获取当前电源状态

ipmitool -I lanplus -H 1.1.34.65 -U zhaoxj -P password chassis bootdev pxe //从PXE启动