



# RBFS Resource Monitoring (Resmon)

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# 1. Overview

Monitoring the system resources is very crucial to analyze the health of devices. RBFS has a dedicated daemon called **resmond** to discover and monitor the device resources. Resmond polls the system resources to gather the status of the resource and store this data in the resource-specific BDS table.

The Resource Monitoring (resmon) functionality of RBFS provides support for monitoring the following components:

- CPU
- Memory
- Processes
- Disks
- Sensor
- Optics

## 1.1. CPU

Resmond collects CPU hardware information from the **global.chassis\_0.resource.cpu** table. In addition, Resmond calculates CPU usage dynamically and stores this information in the **global.chassis\_0.resource.cpu\_usage** table.

## 1.2. Memory

Resmond collects RAM hardware information from the **global.chassis\_0.resource.mem** table. In addition, Resmond gathers memory usage information in the **global.chassis\_0.resource.mem\_usage** table.

## 1.3. Processes

Resmond collects process usage information of Brick Daemon(BD) that runs in the RBFS and stores the information in the **global.chassis\_0.resource.proc\_usage** table. It dynamically gathers the process information and calculates the CPU and the memory usage of the individual Brick Daemons.

## 1.4. Disks

Resmond collects the disk information from the **global.chassis\_0.resource.disk** table. In addition, Resmond collects disk usage information in the **global.chassis\_0.resource.disk\_usage** table.

## 1.5. Sensor

Resmond collects the reading data of the hardware sensor such as temperature, fan, power-supply, and system LED. The data collected from the sensor are stored in the [global.chassis\\_0.resource.sensor](#) table.



The RBFS implementation supports pluggable optics modules on white box switches only.

## 1.6. System Clock

Resmond provides support for monitoring the system clock so that the system clock is always in sync with the NTP server clock. This ensures that the deviation from the NTP server clock always remains within acceptable limits. Resmond collects the system clock information from the [global.os.timex](#) table.



The RBFS implementation supports pluggable optics modules on white box switches only.

## 1.7. Optical Modules

Resmond monitors optical transceivers plugged onto the chassis. It reads transceivers EEPROM (Electrically Erasable Programmable Read-Only Memory) data and translates the data to respective fields in the BDS tables.

Resmond provides the following functionalities for monitoring optical transceivers:

- Provides a mechanism to discover and monitor optics modules. Supported optics modules include SFP, SFP+, QSFP, QSFP+, and QSFP28 (DAC is not supported).
- Provides CLIs to write to optics modules
- Provides show commands to see optics inventory and status of each module
- Logs the status of the optics module



The RBFS implementation supports monitoring of pluggable optics modules on white box switches only.

The following are some of the important tasks (but not limited to) that the Resmond application performs:

- Optics inventory: Identifying the following brief information of a discovered optics module and stores in table [global.chassis\\_0.resource.optics.inventory](#).
  - Port

- Type
- Vendor
- Serial Number
- Part Number
- Read the following optics data from a module and stores in the table: [global.chassis\\_0.resource.optics.module](#).
  - RX/TX alarming (loss of light and loss of signal)
- RX/TX power status
  - Voltage and BIAS status
  - Temperature
- Write the optics data to an optics module
  - Enabling high power class on QSFP28
  - Shutdown lasers (QSFP28, SFP+ and SFP)

### 1.7.1. Optics Logging

The **Resmond** can log the following Optics module events:

- Temperature high alarm
- Temperature high warning
- Temperature low alarm
- Temperature low warning
- Voltage high alarm
- Voltage high warning
- Voltage low alarm
- Voltage low warning
- Lane power high alarm
- Lane power high warning
- Lane power low alarm
- Lane power low warning
- Lane bias high alarm
- Lane bias high warning
- Lane bias low alarm
- Lane bias low warning

## 1.8. Q2C Resource Monitoring

Q2C platform resource-specific usage metrics are stored in the BDS table: [local.bcm.q2c.resource.monitor](#). Resource usage information enables you to understand the scale of services that the device performs and how it optimally leverages the resource usage.

The following table provides the list of supported resource types for monitoring in RBFS.

Resource Type	Description
EEDB_L2TP	EEDB is an Egress Encapsulation Data Base. This resource is consumed when L2TP subscribers are created in hardware.
EEDB_MPLS_TUNNEL	EEDB is an Egress Encapsulation Data Base. This resource is consumed when MPLS tunnels are created in the chip.
EEDB_PPPOE	EEDB_PPPOE is used for PPPoE encapsulation. This resource is consumed when PPPoE subscribers are created in hardware.
EEDB_PWE	This resource is consumed when L2X or cross-connection sessions are created in hardware.
IN_AC_C_C_VLAN_DB	This resource is consumed when an ingress logical interface for double-tagged VLAN is created.
IN_AC_C_VLAN_DB	This resource is consumed when an ingress logical interface for single tag VLAN is created.
IN_AC_UNTAGGED_DB	This resource is consumed when an ingress logical interface for untagged IFLs is created.
IPV4_MULTICAST_PRIVATE_LPM_FORWARD	LPM stands for Longest Prefix Match. This resource is consumed for multicast (source, group) entries.
IPV4_UNICAST_PRIVATE_LPM_FORWARD	This resource is consumed for non-default VRF instance IPv4 prefixes.
IPV4_UNICAST_PRIVATE_LPM_FORWARD_2	This resource is consumed for default VRF instance IPv4 prefixes.
IPV6_UNICAST_PRIVATE_LPM_FORWARD	This resource is consumed for non-default VRF instance IPv6 prefixes.
IPV6_UNICAST_PRIVATE_LPM_FORWARD_2	This resource is consumed for default VRF instance IPv6 prefixes.
L3_RIF	This resource is consumed for the L3 interfaces.
L2TPV2_DATA_MESSAGE_T	This resource is consumed when the L2TP subscribers are created in hardware.

Resource Type	Description
MPLS_FWD	This resource is consumed for MPLS entries for which forwarding actions are involved.
MPLS_TERMINATION_SINGLE_LABEL_DB	This resource is consumed for MPLS entries for which label termination is required.
MULTICAST_MCDB	This resource is consumed for multicast groups created in hardware.
PPPOE_O_ETH_TUNNEL_FULL_SA	This resource is consumed for PPPoE subscribers in hardware.

Example: Logical table information for the resource type EEDB\_L2TP

```

supervisor@ufi08.q2c.u23.r4.nbg.rtbrick.net: dbg> bcm "dbal table info
table=EEDB_L2TP"

Logical table info  EEDB_L2TP
=====

Access method: MDB
Table type: DIRECT
Touched status: Initialized
Entries Status: Max Capacity: HW dependent (see mapping), Committed 0
Bulk mode range NOT supported
Maturity_level: HIGH
Table Labels: L2, L3, MPLS, EEDB
Core mode: SBC
Max key value: 1048575
Max payload size in bits: 101

<...>

```

Example: Logical table information for the resource type EEDB\_MPLS\_TUNNEL

```

supervisor@rtbrick>ufi07.q2c.u21.r4.nbg.rtbrick.net: dbg> bcm "dbal table info
table=EEDB_MPLS_TUNNEL"

Logical table info  EEDB_MPLS_TUNNEL
=====

Access method: MDB
Table type: DIRECT
Touched status: Initialized
Entries Status: Max Capacity: HW dependent (see mapping), Committed 18
Bulk mode range NOT supported
Maturity_level: HIGH
Table Labels: L2, L3, MPLS, EEDB
Core mode: SBC
Max key value: 1048575
Max payload size in bits: 147

<...>

```



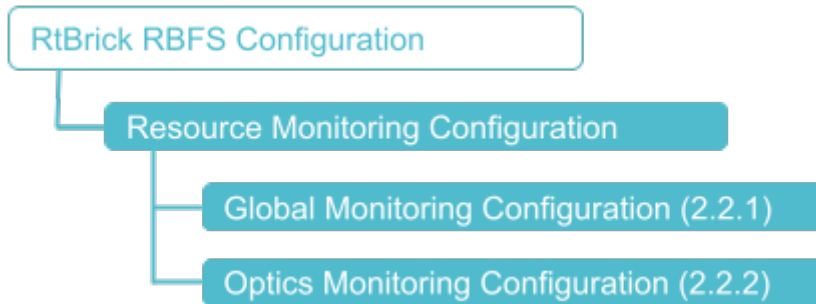
## 1.9. Supported Platforms

Not all features are necessarily supported on each hardware platform. Refer to the *Platform Guide* for the features and the sub-features that are or are not supported by each platform.

## 2. Resmon Configuration

### 2.1. Configuration Hierarchy

The diagram illustrates the Resmon configuration hierarchy.



### 2.2. Configuration Syntax and Commands

The following sections describe the Resmon configuration syntax and commands.

#### 2.2.1. Global Monitoring Configuration

This command sets the poll-interval for the resmond to discover optics.

**Syntax:**

**set resmon monitoring** <poll-interval>

Attribute	Description
poll_interval <poll-interval>	Specifies the interval (in seconds) at which optics should be polled. The interval can range from 3 to 10000 seconds. The default interval is 5 seconds.

#### 2.2.2. Optics Configuration

You can use this command to disable or enable (By, default enabled) tx laser or high-power class of an optics module on a specific interface.

**Syntax:**

**set resmon optics** <interface> ...

Attribute	Description
interface <interface-name>	Name of the interface

<b>Attribute</b>	<b>Description</b>
high-power-class [disable / enable]	Enable or disable high power class for optics module. Enabled, by default.
tx [disable / enable]	Enable or disable lasers for optics module. Enabled, by default.

## 3. Resmon Operational Commands

### 3.1. Resmon Show Commands

The Resmon show commands provide detailed information about the resources and their usage.

### 3.2. CPU Information

This command displays the CPU detail and CPU information.

#### Syntax:

**show cpu** <option>

Option	Description
summary	Displays the CPU information.
usage	Displays the CPU usage information

#### Example 1: CPU summary

```

supervisor@rtbrick: op> show cpu summary
CPU_0
Vendor           : GenuineIntel
Model            : Intel(R) Xeon(R) CPU D-1518 @ 2.20GHz
Architecture     : x86_64
Serial No       : 63 06 05 00 FF FB EB BF
Clock(MHz)      : 1996.620
BogoMIPS        : 4400.00
Physical cores  : 4
Logical cores   : 8
Endian          : True
Cache alignment : 64 Bytes
L1 data cache   : 32768 Bytes
L1 instruction cache : 32768 Bytes
L2 unified cache : 262144 Bytes
L3 unified cache : 6291456 Bytes
L4 unified cache : 0 Bytes
supervisor@rtbrick: op>

```

#### Example 2: CPU usage information.

```

supervisor@rtbrick: op> show cpu usage
Name          Total      User      System    Nice  I/O Wait   Idle      IRQ      Soft  IRQ
cpu           31%       23%       8%        0%    0%         68%      0%       0%    0%
cpu0          11%       4%        5%        0%    0%         88%      0%       2%    0%
cpu1          100%      63%       36%       0%    0%         0%       0%       0%    0%
cpu2          54%       51%       2%        0%    0%         45%      0%       0%    0%
cpu3          57%       55%       2%        0%    0%         42%      0%       0%    0%
cpu4          6%        1%        5%        0%    0%         93%      0%       0%    0%
cpu5          4%        2%        2%        0%    0%         95%      0%       0%    0%
cpu6          8%        3%        4%        0%    0%         91%      0%       0%    0%
cpu7          6%        1%        5%        0%    0%         94%      0%       0%    0%
supervisor@rtbrick: op>

```

### 3.3. Memory Details

This command displays the memory details and usage information.

#### Syntax:

**show memory** <option>

Option	Description
summary	Displays the system memory information.
usage	Displays the memory usage information.

#### Example 1: System memory information

```

supervisor@rtbrick: op> show memory summary
System Memory
  Maximum capacity          : 128 GB
  Error correction type     : Multi-bit ECC
  Number of memory slots available : 4
  Number of memory slots occupied : 2
Bank      Size      Location      Type      Speed      Configured Speed  Vendor      Serial
No      Part No
NODE 1    8192 MB    DIMM_A1      DDR4      2133 MT/s  2133 MT/s         Undefined   00000002
TS1GSH72V1H
NODE 1    8192 MB    DIMM_B1      DDR4      2133 MT/s  2133 MT/s         Undefined   00000027
TS1GSH72V1H

```

#### Example 2: System memory usage information.

```

supervisor@rtbrick: op> show memory usage
Name      Total      Used      Free      Shared      Buffers      Cached
RAM       16.69 GB  4.54 GB   10.08 GB  578.17 MB  103.12 MB   2.06 GB
SWAP      0 bytes   0 bytes   0 bytes   n/a        n/a         n/a

```

### 3.4. Process Details

This command displays the process usage information.

#### Syntax:

**show process usage** <option>

Option	Description
process-id <pid>	Displays the process usage for the specified process identifier.
process-name <process-name>	Displays the process usage for the specified process.
summary	Displays the process usage summary information.

## Example 1: Process usage summary information.

```

supervisor@rtbrick: op> show process usage summary
Name          PID      VIRT      Resident Memory    Sharable Memory    CPU Percentage
Memory Percentage  CPU Affinity
bgp.appd.1    4456     384.67 MB  122.69 MB          29.32 MB           0.81
0.74         0-7
bgp.iod.1     4469     694.63 MB  148.39 MB          30.22 MB           2.01
0.89         0-7
confd         213      1.24 GB   769.9 MB           31.89 MB           0.81
4.61         0-7
etcd          110      600.9 MB  196.4 MB           29.26 MB           1.21
1.18         0-7
fibd          288      13.68 GB  1.74 GB            210.79 MB          161.17
10.45        1
ifmd          147      496.74 MB 154.25 MB          29.99 MB           1.01
0.92         0-7
igmp.appd.1   4482     356.38 MB 100.29 MB          29.27 MB           1.01           0.6
0-7
igmp.iod.1    4495     540.14 MB 132.68 MB          29.41 MB           2.01           0.8
0-7
ipoed.1       175      503.51 MB 112.9 MB           29.3 MB            2.01
0.68         0-7
l2tpd.1       4508     475.71 MB 103.45 MB          29.26 MB           2.01
0.62         0-7
lldpd         128      368.32 MB 106.75 MB          29.29 MB           2.21
0.64         0-7
mribd         158      381.8 MB  115.57 MB          29.38 MB           1.01
0.69         0-7

```

## Example 2: Process usage for the specified process.

```

supervisor@rtbrick: op> show process usage process-name fibd
Process Name: fibd
  PID                : 288
  REST port          : 5522
  Debug port         : 5521
  Allowed CPU list   : 1
  CPU usage at user space : 25964
  CPU usage at kernel space : 12633
  CPU usage percentage : 152.815678
  Memory usage percentage : 10.452729
  Peak virtual memory usage : 13355692
  Current virtual memory usage : 13.68 GB
  <...>

```

## Example 3: Process usage for the specified process ID.

```

supervisor@rtbrick: op> show process usage process-id 4456
Process Name: bgp.appd.1
  PID                : 4456
  REST port          : 4102
  Debug port         : 4101
  Allowed CPU list   : 0-7
  CPU usage at user space : 20103
  CPU usage at kernel space : 18011
  CPU usage percentage : 1.011122
  Memory usage percentage : 0.735218
  Peak virtual memory usage : 375652
  Current virtual memory usage : 384.67 MB
  Locked virtual memory : n/a
  RSS virtual memory   : 122.69 MB
  <...>

```

## 3.5. Sensor Details

This command displays the fan, power-supply, system-led, and temperature information.

### Syntax:

**show sensor** <option>

Option	Description
fan	Displays information about the sensor fan.
power-supply	Displays the sensor power supply information.
system-led	Displays system LED information
temperature	Displays the sensor temperature information.
detail	You can specify <b>detail</b> at the end of any of the options above to display information in detail.

Example 1: Sensor temperature information.

```

supervisor@rtbrick: op> show sensor temperature
Name                Temperature      Status
CPU Core            54 °C           PRESENT
LM75-1-48           35 °C           PRESENT
LM75-2-49           30 °C           PRESENT
LM75-3-4A           33 °C           PRESENT
LM75-3-4B           30 °C           PRESENT
PSU-1 Thermal Sensor 1 31 °C           PRESENT
supervisor@rtbrick: op>

```

Example 2: Detailed information about the sensor temperature.

```

supervisor@rtbrick: op> show sensor temperature
Name                Temperature      Status
CPU Core            54 °C           PRESENT
LM75-1-48           36 °C           PRESENT
LM75-2-49           30 °C           PRESENT
LM75-3-4A           33 °C           PRESENT
LM75-3-4B           30 °C           PRESENT
PSU-1 Thermal Sensor 1 31 °C           PRESENT
supervisor@rtbrick: op>

```

### Example 3: Information about sensor fan

```

supervisor@rtbrick: op> show sensor fan
Name                Fan Speed (rpm)  Status
PSU 1 - Fan 1      26496            PRESENT, F2B
Chassis Fan - 1    8700              PRESENT, F2B
Chassis Fan - 2    8700              PRESENT, F2B
Chassis Fan - 3    8700              PRESENT, F2B
Chassis Fan - 4    8700              PRESENT, F2B
Chassis Fan - 5    8700              PRESENT, F2B
Chassis Fan - 6    8600              PRESENT, F2B
supervisor@rtbrick: op>

```

### Example 4: Detailed information about sensor fan.

```

supervisor@rtbrick: op> show sensor fan detail

PSU 1 - Fan 1
  Sensor resource ID : 8388614
  Vendor              : n/a
  Model               : NULL
  Serial No           : n/a
  Status              : PRESENT, F2B
  Status code         : 9
  Fan speed           : 26496 rpm
  Location            : PSU 1
Chassis Fan - 1
  Sensor resource ID : 8388608
  Vendor              : ALTERA
  Model               : 5M1270ZF256C5N
  Serial No           : n/a
  Status              : PRESENT, F2B
  Status code         : 9
  Fan speed           : 8700 rpm
  Location            : Fan Board
Chassis Fan - 2
  Sensor resource ID : 8388609
  Vendor              : ALTERA
  Model               : 5M1270ZF256C5N
  Serial No           : n/a
  Status              : PRESENT, F2B
  Status code         : 9
  Fan speed           : 8800 rpm
  Location            : Fan Board

```



## Example 5: Sensor power supply information

```

supervisor@rtbrick: op> show sensor power-supply
Name           Current In  Current Out Voltage In  Voltage Out Power In   Power Out  Status
PSU-1          0 mA       12109 mA   0 mV       11984 mV   0 mW      146000 mW PRESENT
PSU-2          0 mA       0 mA       0 mV       0 mV       0 mW      0 mW       PRESENT, UNPLUGGED
supervisor@rtbrick: op>

```

## Example 6: Detailed information about the sensor power supply.

```

supervisor@rtbrick: op> show sensor power-supply detail

PSU-1
  Sensor resource ID   : 16777216
  Vendor               : n/a
  Model                : YM-2651Y
  Serial No           : n/a
  Status               : PRESENT
  Status code          : 1
  Input current        : 0 mA
  Output current       : 12031 mA
  Input voltage        : 0 mV
  Output voltage       : 11984 mV
  Input power          : 0 mW
  Output power         : 144000 mW
  Location             : n/a

PSU-2
  Sensor resource ID   : 16777217
  Vendor               : n/a
  Model                : NULL
  Serial No           : n/a
  Status               : PRESENT, UNPLUGGED
  Status code          : 5
  Input current        : 0 mA
  Output current       : 0 mA
  Input voltage        : 0 mV
  Output voltage       : 0 mV
  Input power          : 0 mW
  Output power         : 0 mW
  Location             : n/a
supervisor@rtbrick: op>

```

## Example 7: Sensor system LED information

```

supervisor@rtbrick: op> show sensor system-led
Name           LED Mode      Status
Chassis LED 1 (LOC LED) OFF           PRESENT
Chassis LED 5 (FAN LED) AUTO           PRESENT, ON
Chassis LED 2 (DIAG LED) OFF           PRESENT
Chassis LED 3 (PSU1 LED) AUTO           PRESENT, ON
Chassis LED 4 (PSU2 LED) AUTO           PRESENT, ON
supervisor@rtbrick: op>

```

## Example 8: Detailed information about the system LED

```
supervisor@rtbrick: op> show sensor system-led detail
```

Chassis LED 1 (LOC LED)

```
Sensor resource ID : 12582912
LED mode           : OFF
Status             : PRESENT
Status code        : 1
Capability          : ON_OFF, ORANGE
Capability code     : 4097
```

Chassis LED 5 (FAN LED)

```
Sensor resource ID : 12582916
LED mode           : AUTO
Status             : PRESENT, ON
Status code        : 5
Capability          : ON_OFF, AUTO
Capability code     : 4194305
```

Chassis LED 2 (DIAG LED)

```
Sensor resource ID : 12582913
LED mode           : OFF
Status             : PRESENT
Status code        : 1
Capability          : ON_OFF, ORANGE, GREEN
Capability code     : 69633
```

## 3.6. Optics Details

This command displays optics information for inventory and interface.

### Syntax:

**show optics** <option>

Option	Description
interface <interface-name>	Displays optics information for the specified interface.
inventory	Displays optics inventory information.

Example: Optics information for the specified interface.

```

supervisor@rtbrick: op> show optics interface ifp-0/1/6
Physical Interface: ifp-0/1/6
Type                : QSFP28
Description          : 100G-CWDM4
Connector Type      : Lucent Connector
Vendor              : FS
Serial Number       : F2030882972
Part Number         : QSFP28-IR4-100G
Vendor Material Number : CMUIAMACAB10-3146-02
Power Class         : Class 4 (3.5W)
Power Class State   : HIGH
Wavelength          : 1310.000000
Lane Id             : 1
  Laser bias current      : 30.824 mA
  Laser tx power          : 1.496 mW / 1.749 dbm
  Laser rx power          : 1.084 mW / 0.35 dbm
  Module temperature     : 39.164 °C
  Module voltage         : 3.292 V
  Tx disable             : False
  High power class enable : True
  Laser Tx loss of signal : False
  Laser Tx loss of lock   : False
  Laser Rx loss of signal : False
  Laser Rx loss of lock   : False
  Laser bias current high alarm : False
  Laser bias current high warning : False
  Laser bias current low alarm  : False
  Laser bias current low warning : False
  Module voltage high alarm     : False
  Module voltage high warning   : False
<...>

```

Example 2: Optics inventory information.

```

supervisor@rtbrick: op> show optics inventory
Interface      Type      Description      Connector Type      Vendor      Part Number      Serial
Number  Material Number  Power Class      Power State
ifp-0/1/2      QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC005
G2110248549-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/3      QSFP28    100G-CWDM4      Lucent Connector      LambdaGain   LL1C31A2A      L12AA60027
T-UNIQSF40907038  Class 4 (3.5W)  HIGH
ifp-0/1/4      QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC01
G2006503747-2  n/a              Class 1 (1.5W)    LOW
ifp-0/1/5      QSFP28    100GBASE-LR4    Lucent Connector      LambdaGain   LL1S31B0A      L82A9S0018
T-UNIQSF40907039  Class 4 (3.5W)  HIGH
ifp-0/1/6      QSFP28    100G-CWDM4      Lucent Connector      FS          QSFP28-IR4-100G
F2030882972    CMUIAMACAB10-314  Class 4 (3.5W)  HIGH
ifp-0/1/8      QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC005
G2110248550-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/9      QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC005
G2110248551-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/11     QSFP28    100GBASE-CR4    No Seperable connector  Fiberstore   QSFP28-100G-DAC
F1800032252-2  n/a              Class 1 (1.5W)    LOW
ifp-0/1/14     QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC005
G2110248569-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/15     QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC01
G2006503745-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/18     QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC01
G2006503743-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/20     QSFP28    100G-CWDM4      Lucent Connector      LambdaGain   LL1C31A2A      L12AB20043
T-UNIQSF40907038  Class 4 (3.5W)  HIGH
ifp-0/1/27     QSFP28    100GBASE-LR4    Lucent Connector      LambdaGain   LL1S31B0A      L82A9S0025
T-UNIQSF40907039  Class 4 (3.5W)  HIGH
ifp-0/1/28     QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC01
G1810038309-1  n/a              Class 1 (1.5W)    LOW
ifp-0/1/31     QSFP28    100GBASE-CR4    No Seperable connector  FS          Q28-PC01
G1810038285-2  n/a              Class 1 (1.5W)    LOW
ifp-0/0/0      SFP       UNKNOWN         Copper Pigtail        FS          SFPP-PC015
S2108004616-2  n/a              Class 1 (1.5W)    LOW
ifp-0/0/1      SFP       UNKNOWN         Copper Pigtail        FS          SFPP-PC015
G2006548415-2  n/a              Class 1 (1.5W)    LOW

```

## 3.7. Disk Details

This command displays disk information.

### Syntax:

**show disk** <option>

Option	Description
summary	Displays the disk information.
usage	Displays the disk usage information.

Example: Summary of disks and their partitions.

```

supervisor@rtbrick: op> show disk summary
sda
  Size      : 29.8G
  Vendor    : ATA
  Model     : TS32ZBTMM1600
  Partitions
  Name      Size      Mountpoint
  sda1     256M     n/a
  sda2     128M     n/a
  sda3     2G       n/a
  sda4     128M     n/a
  sda5     128M     n/a
  sda6     2G       n/a
  sda7     25.2G    /platform
supervisor@rtbrick: op>

```

Example 2: Summary of disk usage information.

```

supervisor@rtbrick: op> show disk usage
Filesystem      Type      Size      Used      Available  Mountpoint  Usage %
none            tmpfs     492 KB    0 bytes   492 KB     /dev        0.0
tmpfs           tmpfs     8.15 GB   17.38 MB  8.13 GB    /run        0.21
tmpfs           tmpfs     6.29 GB   483.6 MB  5.81 GB    /shm        7.69
tmpfs           tmpfs     8.15 GB   62.74 MB  8.09 GB    /dev/shm    0.77
tmpfs           tmpfs     5.12 MB   0 bytes   5.12 MB    /run/lock   0.0
devtmpfs       devtmpfs  1.02 MB   0 bytes   1.02 MB    /dev/mem    0.0
/dev/sda7      ext4      25.87 GB  4.47 GB   20.06 GB   /var/log    18.21
tmpfs           tmpfs     1.63 GB   0 bytes   1.63 GB    /run/user/1000 0.0
tmpfs           tmpfs     8.15 GB   0 bytes   8.15 GB    /sys/fs/cgroup 0.0
tmpfs           tmpfs     1.63 GB   696 KB    1.63 GB    /var/run-ext/onl/r 0.04
/var/cache/rtbrick/imag overlay  25.87 GB  4.47 GB   20.06 GB   /           18.21
supervisor@rtbrick: op>

```

## 3.8. Platform Details

This command displays platform information.

### Syntax:

#### show platform

Example: Platform information

```
supervisor@rtbrick: op> show platform
x86_64-accton_as7316_26xb-r0
Vendor          : Edgecore
Manufacturer    : Accton
Manufacture date : 05/07/2021 16:55:51
MAC address     : 90:3c:b3:16:00:00
Part number     : F0PZZ5626002A-MACDDR-Nanya_NT5AD256M16D4_HRI
Serial number   : AAB2115ACA
Product name    : 7316-26XB-O-AC-F
Onie version    : 2019.11.00.07
Label revision  : R01C
Diag version    : 01.01.00.03
Country code    : TW
supervisor@rtbrick: op>
```