



Power Capping

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Info

Power capping is supported on NVIDIA® BlueField®-3 only.

It is possible to adjust the system for reduced power consumption using the BMC. It is important to note that changes to power capping configuration only takes effect after BlueField reboot.

Redfish Power Capping Requests

Getting General Power Capping Information

Control information:

```
curl -k -u root:'<password>' -X GET  
https://<bmc_ip>/redfish/v1/Chassis/Card1/Controls/PowerLimit_0
```

Output example:

```
{  
  "@odata.id": "/redfish/v1/Chassis/Card1/Controls/PowerLimit_0",  
  "@odata.type": "#Control.v1_3_0.Control",  
  "AllowableMax": 300,  
  "AllowableMin": 200,  
  "ControlMode": "Manual",  
  "ControlType": "Power",  
  "Id": "PowerLimit_0",  
  "Name": "System Power Control",  
  "SetPoint": 10,  
  "SetPointUnits": "%",  
  "Status": {
```

```
    "Health": "OK",
    "HealthRollup": "OK",
    "State": "Enabled"
  }
}
```

Power consumption information:

```
curl -k -u root:'<password>' -X GET
https://<bmc_ip>/redfish/v1/Chassis/Card1/PowerSubsystem
```

Output example:

```
{
  "@odata.id": "/redfish/v1/Chassis/Card1/PowerSubsystem",
  "@odata.type": "#PowerSubsystem.v1_1_0.PowerSubsystem",
  "Allocation": {
    "AllocatedWatts": 200,
    "RequestedWatts": 30,
  },
  "CapacityWatts": 300,
  "Id": "PowerSubsystem",
  "Name": "Power Subsystem",
  "PowerSupplies": {
    "@odata.id":
"/redfish/v1/Chassis/Card1/PowerSubsystem/PowerSupplies"
  },
  "Status": {
    "Health": "OK",
    "State": "Enabled"
  }
}
```

```
}
```

Enabling/Disabling Adjustment of Power Capping

```
curl -k -u root:'<password>' -H "Content-Type: application/json"  
-X PATCH  
https://<bmc_ip>/redfish/v1/Chassis/Card1/Controls/PowerLimit_0 -  
d '{"ControlMode": "<Manual / Disabled>"}
```

Info

The ability to adjust power capping is disabled by default.

Setting Power Allocation Percentage

```
curl -k -u root:'<password>' -H "Content-Type: application/json"  
-X PATCH  
https://<bmc_ip>/redfish/v1/Chassis/Card1/Controls/PowerLimit_0 -  
d '{"SetPoint": <val>'}
```

Where `val` is the percentage of maximum capacity in Watts (`AllowableMax`).

Note

If user configuration is lower than the minimum capacity power, then the UEFI sets the system power to minimum capacity.

IPMI Power Capping Commands

Getting Power Capping Status

```
ipmitool raw 0x32 0xc4
```

Enabling/Disabling Adjustment of Power Capping

```
ipmitool raw 0x32 0xc5 <val>
```

Where `val`:

- 0 – disable
- 1 – enable

Note

Changeable only from BMC prompt using `admin` account.

Info

The ability to adjust power capping is disabled by default.

Getting Power Capping Percentage

```
ipmitool raw 0x32 0xc8
```

Setting Power Capping Percentage

```
ipmitool raw 0x32 0xc9 <val>
```

Where `val` is the value in percentage [0:100].

Note

Changeable only from BMC prompt using `admin` account.

For example, if the maximum power capacity is 120 Watts, then set the system to work at 60 Watts (50%) using the following command:

```
ipmitool raw 0x32 0xc9 50
```

Note

If user configuration is lower than the minimum capacity power, then the UEFI sets the system power to minimum capacity.

Getting Maximum Power Capacity

```
ipmitool raw 0x32 0xc6
```

Info

Power is given in watts.

Getting Minimum Power Capacity

```
ipmitool raw 0x32 0xca
```

Info

Power is given in watts.

Getting Capacity Allocation

```
ipmitool raw 0x32 0xce
```

The amount of power allocated to the system in Watts.

This value indicates if user configuration was accepted or ignored by the UEFI.

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