



Portwell OOB Utility User's Manual

2026/03/16

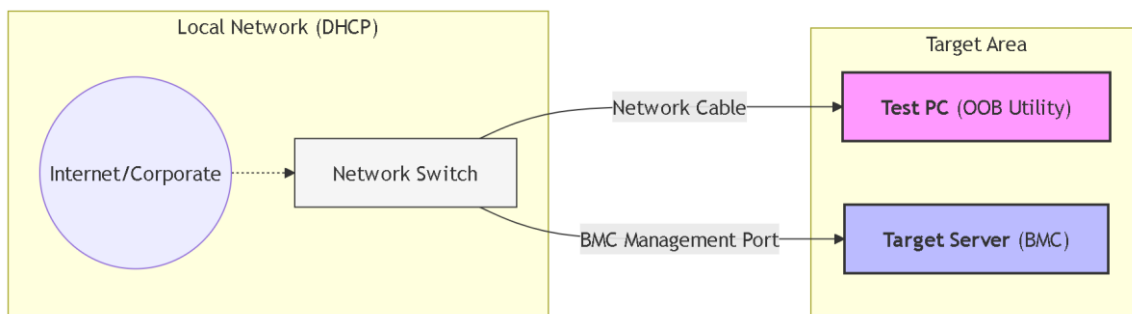


1 Description

The Portwell OOB (Out-of-Band) Utility provides a robust suite of functionalities designed to monitor, manage, and maintain your server infrastructure effectively. By leveraging underlying IPMI protocols, it provides a user-friendly graphical interface for centralized BMC discovery, power control, hardware health and sensor monitoring, System Event Log (SEL) management, Serial Over LAN (SOL) console access, and remote HPM firmware upgrades.

2 Prerequisites

- 2.1 Test PC (Client):** Must run a Windows operating system. A modern web browser, such as Google Chrome (Recommended) or Microsoft Edge, must be installed.
- 2.2 Target Server (BMC):** Power must be connected (standby power is sufficient), and the network cable must be plugged into the Dedicated BMC Management Port.
- 2.3 Network Equipment:** Both the Test PC and the Target Server must be connected to the same Switch or Hub and reside within the same Local Area Network (subnet) for the IP discovery feature to function properly.



3 Config

- 3.1 System Configuration (config.json)** You can determine the system's execution mode upon startup and specify the paths for the underlying dependency tools by modifying the configuration file (config.json) located in the same directory as the main executable.
- 3.2 Configuration Example (config.json):**

```

{
  "mode": "server",
  "ipmitool_path": "ipmitool"
}
  
```



3.3 Key Parameter Descriptions:

- **mode (Execution Mode):** Determines how the application is presented when launched.
 - "desktop" Launches a standalone local application window.
 - "server" (Web Server Mode): Runs as a background web server. Access remotely via browser at <http://localhost:5000>.
- **ipmitool_path (Tool Path):** The folder path for the IPMI tools. The default is "ipmitool" (located in the same directory as the executable). Modify this only if using a custom path.

4 Multi device management

4.1 Device Scan

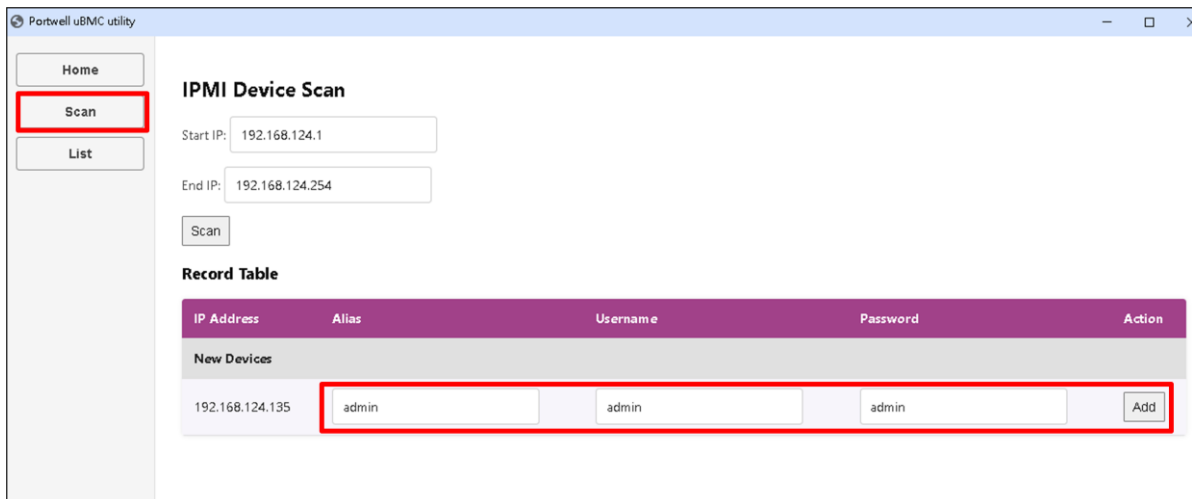
This feature scans the local network to quickly locate and list available online BMC devices for centralized management.

Key Features & Mechanisms:

- **Auto-Detection & Fast Scanning:** Automatically detects your local IP and suggests a standard /24 subnet range (max 254 IPs) to ensure high-speed scanning without freezing the application.
- **Status Synchronization:** Scan results are automatically cross-referenced with your saved records and categorized into:
 - **New Devices:** BMCs found on the network that are not yet saved.
 - **Existing Devices (Alive):** Saved devices that are currently online.
 - **Existing Devices (Offline):** Saved devices that did not respond during the scan.

Operational Steps:

1. Navigate to the Scan page and verify the auto-populated "Start IP" and "End IP".
2. If you need to scan a different subnet, manually adjust the IP range.
3. Click the Scan button and wait for the scan to complete.
4. Review the discovered devices. For new devices, input the Alias, Username, and Password, then click **Add** to save them to your records.

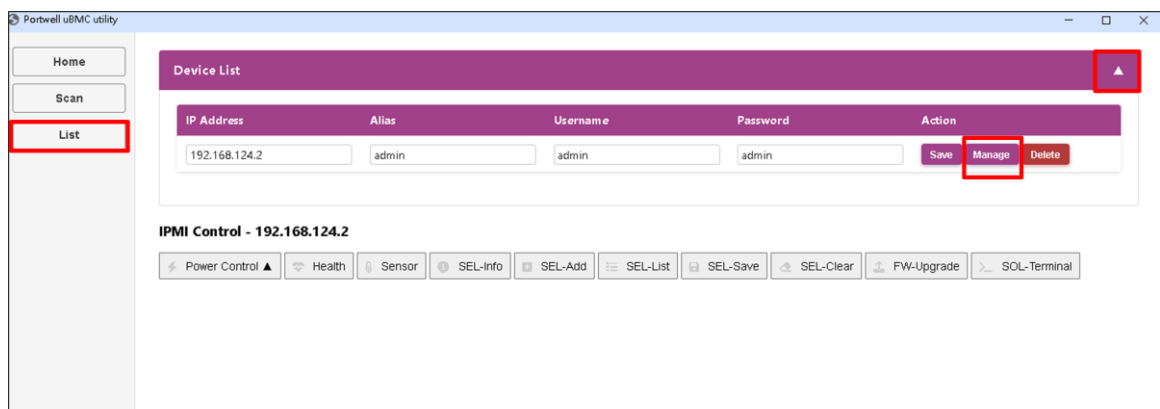
The screenshot shows the 'IPMI Device Scan' window. On the left, there is a sidebar with 'Home', 'Scan' (highlighted with a red box), and 'List' buttons. The main area contains a 'Start IP' field (192.168.124.1) and an 'End IP' field (192.168.124.254), followed by a 'Scan' button. Below this is a 'Record Table' with columns: IP Address, Alias, Username, Password, and Action. Under the 'New Devices' section, there is a table with one row for IP 192.168.124.135. The 'Alias', 'Username', and 'Password' fields in this row are all set to 'admin' and are highlighted with a red box. An 'Add' button is at the end of the row.

4.2 Device List

This page serves as the centralized management dashboard. By expanding the Device List section, you can view all saved device information.

Key Action Buttons:

- **Save:** You can directly modify a device's Alias, Username, or Password within the table cells. Click **Save** to apply the changes to your records.
- **Delete:** Click to permanently remove a retired or unnecessary device from your list (a confirmation prompt will appear).
- **Manage:** Clicking **Manage** on a specific device will open the dedicated **IPMI Control** panel for that device, allowing for advanced remote operations.



The screenshot shows the 'Device List' section. The 'List' button in the sidebar is highlighted with a red box. The 'Device List' table has columns: IP Address, Alias, Username, Password, and Action. The first row shows IP 192.168.124.2 with Alias 'admin', Username 'admin', and Password 'admin'. The 'Action' column for this row has three buttons: 'Save', 'Manage' (highlighted with a red box), and 'Delete'. Below the table, the 'IPMI Control - 192.168.124.2' panel is visible, showing various control buttons like Power Control, Health, Sensor, SEL-Info, SEL-Add, SEL-List, SEL-Save, SEL-Clear, FW-Upgrade, and SOL-Terminal.

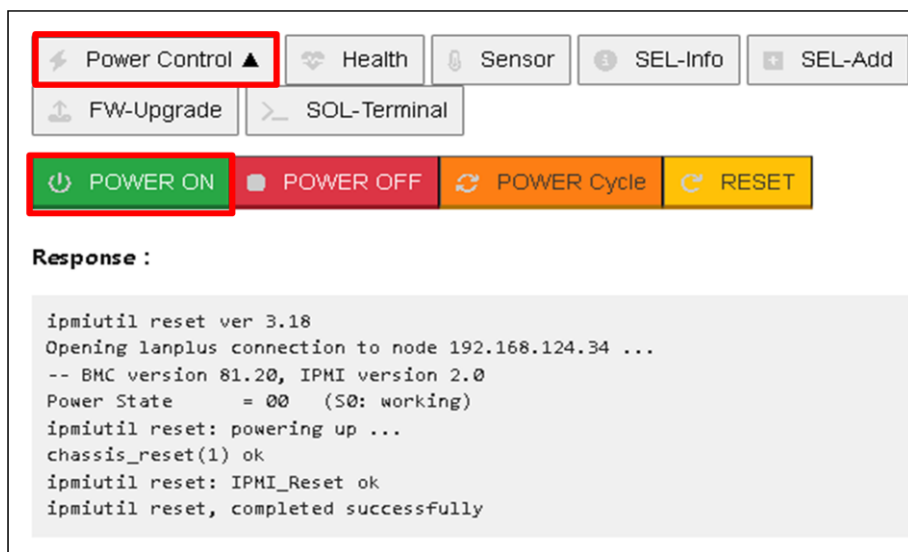
After clicking **Manage** in the device list, you will enter the **IPMI Control** interface. Here, you can execute various Out-of-Band (OOB) management commands for the selected BMC. All command outputs will be displayed in the **Response** section below.



5 Power Control

5.1 POWER ON:

- **Function:** Sends a power-up command to the system.
- **Usage:** Use this to turn on a remote device that is currently powered off.

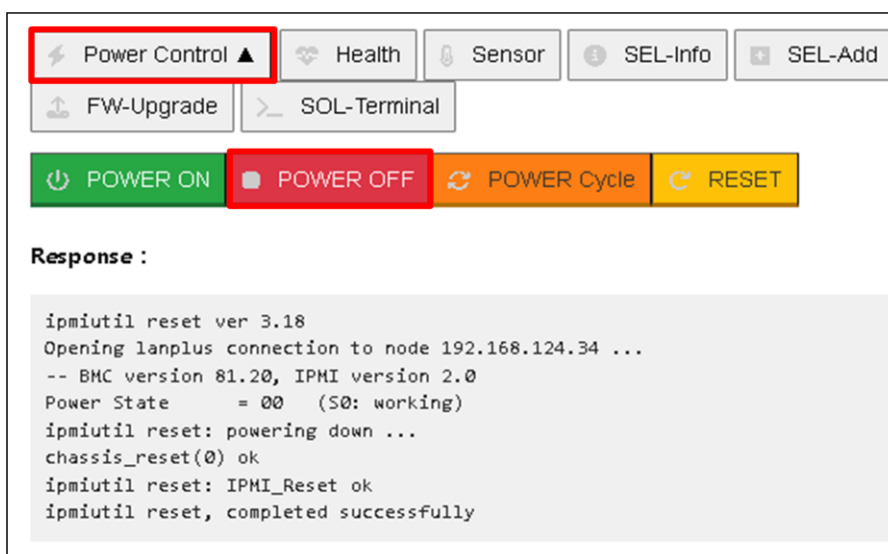


The screenshot shows the Portwell Power Control interface. At the top, there are several tabs: 'Power Control' (highlighted with a red box), 'Health', 'Sensor', 'SEL-Info', and 'SEL-Add'. Below these are 'FW-Upgrade' and 'SOL-Terminal' buttons. In the center, there are four large buttons: 'POWER ON' (green, highlighted with a red box), 'POWER OFF' (red), 'POWER Cycle' (orange), and 'RESET' (yellow). Below the buttons, the 'Response' section displays the following text:

```
ipmiutil reset ver 3.18
Opening lanplus connection to node 192.168.124.34 ...
-- BMC version 81.20, IPMI version 2.0
Power State      = 00 (S0: working)
ipmiutil reset: powering up ...
chassis_reset(1) ok
ipmiutil reset: IPMI_Reset ok
ipmiutil reset, completed successfully
```

5.2 POWER OFF:

- **Function:** Instantly cuts power to the system.
- **Usage:** Use this to force a hard shutdown when the operating system is completely unresponsive. (Note: Unsaved data may be lost).



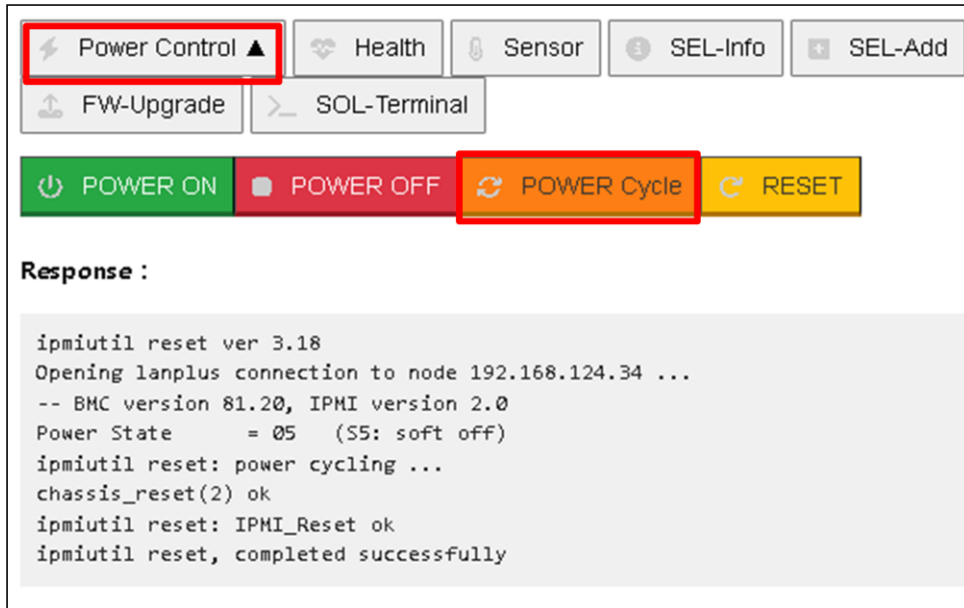
The screenshot shows the Portwell Power Control interface. At the top, there are several tabs: 'Power Control' (highlighted with a red box), 'Health', 'Sensor', 'SEL-Info', and 'SEL-Add'. Below these are 'FW-Upgrade' and 'SOL-Terminal' buttons. In the center, there are four large buttons: 'POWER ON' (green), 'POWER OFF' (red, highlighted with a red box), 'POWER Cycle' (orange), and 'RESET' (yellow). Below the buttons, the 'Response' section displays the following text:

```
ipmiutil reset ver 3.18
Opening lanplus connection to node 192.168.124.34 ...
-- BMC version 81.20, IPMI version 2.0
Power State      = 00 (S0: working)
ipmiutil reset: powering down ...
chassis_reset(0) ok
ipmiutil reset: IPMI_Reset ok
ipmiutil reset, completed successfully
```



5.3 POWER Cycle:

- **Function:** Forces the system to power down, waits briefly, and automatically powers it back on.
- **Usage:** Use this to perform a cold boot, which is helpful for clearing severe hardware-level errors.



Power Control ▲ Health Sensor SEL-Info SEL-Add
FW-Upgrade SOL-Terminal

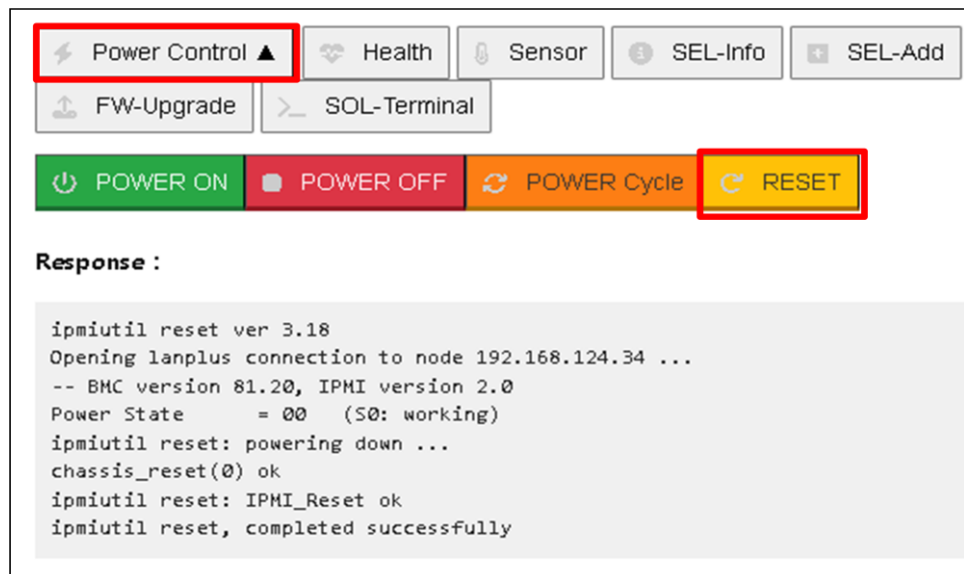
POWER ON **POWER OFF** **POWER Cycle** **RESET**

Response :

```
ipmiutil reset ver 3.18
Opening lanplus connection to node 192.168.124.34 ...
-- BMC version 81.20, IPMI version 2.0
Power State      = 05 (S5: soft off)
ipmiutil reset: power cycling ...
chassis_reset(2) ok
ipmiutil reset: IPMI_Reset ok
ipmiutil reset, completed successfully
```

5.4 RESET:

- **Function:** Sends a system reset signal without cutting power to the motherboard.
- **Usage:** Use this to perform a warm boot (similar to pressing the physical reset button on a chassis) for a quick system reboot.



Power Control ▲ Health Sensor SEL-Info SEL-Add
FW-Upgrade SOL-Terminal

POWER ON **POWER OFF** **POWER Cycle** **RESET**

Response :

```
ipmiutil reset ver 3.18
Opening lanplus connection to node 192.168.124.34 ...
-- BMC version 81.20, IPMI version 2.0
Power State      = 00 (S0: working)
ipmiutil reset: powering down ...
chassis_reset(0) ok
ipmiutil reset: IPMI_Reset ok
ipmiutil reset, completed successfully
```

6 Health

This feature is used to quickly view the overall baseline health and system summary of the BMC chip and the server motherboard.

- **Operation:** In the **IPMI Control** panel, click the **Health** button.
- **Display Result:** The system will run a background health check. To improve readability, it automatically filters out redundant execution logs and organizes the key data into a clean table format, displayed in the **Response** section below.
- **Common Information Includes:**
 - **BMC manufacturer:** The BMC manufacturer name and product ID.
 - **Self Test Status:** The BMC self-test status, used to verify if the management chip is functioning correctly.
 - **System Overview:** Other system-level hardware metrics presented via the **Item** and **Value** columns in the table.

Power Control ▲

Health

Sensor

SEL-Info

SEL-Add

SEL-List

SEL-Save

SEL-Clear

FW-Upgrade

SOL-Terminal

Response :

Item	Value
BMC manufacturer	002728 (ITE Tech. Inc), product product 5792
BMC version	81.19, IPMI v2.0
IPMI driver type	9 (lan2)
Power State	05 (S5: soft off)
Selftest status	0056 (Error)
Chassis Status	00 00 00 00 (off, see below)
chassis_power	off
pwr_restore_policy	stay_off
chassis_intrusion	inactive
front_panel_lockout	inactive
drive_fault	false
cooling_fan_fault	false
Power On Hours	1 hours (0 days)
BMC LAN Channels	



7 Sensor

This feature provides real-time monitoring of the physical operating metrics for various hardware components on the server motherboard, such as temperatures, fan speeds, and voltages. It helps you detect potential hardware anomalies early.

- **Operation:** In the **IPMI Control** panel, click the **Sensor** button.
- **Display Result:** The system requests the latest sensor readings from the BMC and generates a structured data table in the **Response** section below.
- **Table Column Descriptions:**
 - **ID:** The unique identifier for the sensor.
 - **Type:** The category of the sensor (e.g., Temperature, Fan, Voltage).
 - **Name:** The specific hardware component the sensor is monitoring (e.g., CPU Temp, SYS Fan 1).
 - **Status:** The current health indicator (typically displays "OK"; anomalies may show as "Warning" or "Critical").
 - **Reading:** The real-time value and its measurement unit (e.g., 45 C, 3200 RPM, 12.00 V).

Power Control ▲	Health	Sensor	SEL-Info	SEL-Add	SEL-List	SEL-Save	SEL-Clear	FW-Upgrade	SOL-Terminal
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Response :

ID	Type	Name	Status	Reading
0000	Temperature	CPU Temp	OK	0.000 C
0001	Temperature	Temp_1	OK	93.000 C
0002	Temperature	Temp_2	OK	89.000 C
0003	Fan	CPU FAN	OK	5269.000 RPM
0004	Fan	Chassis FAN	OK	0.000 RPM
0005	Voltage	VSTBY	OK	3.390 V
0006	Voltage	VBAT	OK	3.120 V
0007	Voltage	VIN	OK	0.171 V
0008	Voltage	VCORE	OK	0.162 V
0009	FRU Sensor	S0_Duration	OK	0.000 sec



8 System Event Log (SEL)

8.1 SEL-Info:

- Retrieves a summary of the SEL status (e.g., total number of entries, used space, last add time). The system automatically converts the raw text output into a clean **Item / Value table** displayed in the Response section.

Power Control ▲
Health
Sensor
SEL-Info
SEL-Add
SEL-List
SEL-Save
SEL-Clear
FW-Upgrade
SOL-Terminal

Response :

Item	Value
Version	1.5 (v1.5, v2 compliant)
Entries	16
Free Space	3840 bytes
Percent Used	6%
Last Add Time	01/02/2026 17:40:38
Last Del Time	01/02/2026 17:39:26
Overflow	true
Supported Cmds	None

8.2 SEL-Add:

- Opens a file selection dialog, allowing you to upload a local text file. The system will then append the contents of this file into the BMC's event log database.

Power Control ▲
Health
Sensor
SEL-Info
SEL-Add
SEL-List
SEL-Save
SEL-Clear
FW-Upgrade
SOL-Terminal

Response :

```

0 | Pre-Init | 0000000000 | Temperature #0x10 | | Asserted
0 | Pre-Init | 0000000000 | Voltage #0x11 | | Asserted
0 | Pre-Init | 0000000000 | Current #0x12 | | Asserted
0 | Pre-Init | 0000000000 | Fan #0x13 | | Asserted
0 | Pre-Init | 0000000000 | Physical Security #0x14 | | Asserted
0 | Pre-Init | 0000000000 | Platform Security #0x15 | | Asserted
0 | Pre-Init | 0000000000 | Processor #0x16 | | Asserted
0 | Pre-Init | 0000000000 | Power Supply #0x17 | | Asserted
0 | Pre-Init | 0000000000 | Power Unit #0x18 | | Asserted
0 | Pre-Init | 0000000000 | Cooling Device #0x19 | | Asserted
0 | Pre-Init | 0000000000 | Other #0x1a | | Asserted
0 | Pre-Init | 0000000000 | Memory #0x1b | | Asserted
0 | Pre-Init | 0000000000 | Drive Slot / Bay #0x1c | | Asserted
0 | Pre-Init | 0000000000 | POST Memory Resize #0x1d | | Asserted
0 | Pre-Init | 0000000000 | System Firmwares #0x1e | | Asserted
0 | Pre-Init | 0000000000 | Event Logging Disabled #0x1f | | Asserted
    
```

- Power Control ▲

Health

Sensor

SEL-Info

SEL-Add

SEL-List

SEL-Save

SEL-Clear

FW-Upgrade

SOL-Terminal

Response :

```

0 | 01/02/2026 | 17:40:38 | Temperature #0x10 | | Asserted
1 | 01/02/2026 | 17:40:38 | Voltage #0x11 | | Asserted
2 | 01/02/2026 | 17:40:38 | Current #0x12 | | Asserted
3 | 01/02/2026 | 17:40:38 | Fan #0x13 | | Asserted
4 | 01/02/2026 | 17:40:38 | Physical Security #0x14 | | Asserted
5 | 01/02/2026 | 17:40:38 | Platform Security #0x15 | | Asserted
6 | 01/02/2026 | 17:40:38 | Processor #0x16 | | Asserted
7 | 01/02/2026 | 17:40:38 | Power Supply #0x17 | | Asserted
8 | 01/02/2026 | 17:40:38 | Power Unit #0x18 | | Asserted
9 | 01/02/2026 | 17:40:38 | Cooling Device #0x19 | | Asserted
a | 01/02/2026 | 17:40:38 | Other #0x1a | | Asserted
b | 01/02/2026 | 17:40:38 | Memory #0x1b | | Asserted
c | 01/02/2026 | 17:40:38 | Drive Slot / Bay #0x1c | | Asserted
d | 01/02/2026 | 17:40:38 | POST Memory Resize #0x1d | | Asserted
e | 01/02/2026 | 17:40:38 | System Firmwares #0x1e | | Asserted
f | 01/02/2026 | 17:40:38 | Event Logging Disabled #0x1f | | Asserted

```

Response :

The screenshot shows a file explorer window titled 'Log file downloaded'. The left sidebar shows the 'Downloads' folder selected. The main pane displays a list of files: 'sel_log (5).txt', 'sel_log.txt', 'sel_log (4).txt', and 'sel_log (2).txt'. The file 'sel_log (6).txt' is highlighted in the list. At the bottom, the 'Save' button is highlighted with a red box.



8.5 SEL-Clear:

- Use this when the log space is full or when you want to clear old debugging records. Clicking this sends a specific raw command to completely erase all existing event records within the BMC.



The screenshot shows a web interface with a top navigation bar containing several buttons: Power Control ▲, Health, Sensor, SEL-Info, SEL-Add, SEL-List, SEL-Save, and SEL-Clear. The SEL-Save button is highlighted with a red border. Below the navigation bar, there is a section labeled "Response :" followed by a large, empty light gray rectangular area.



9 Firmware Upgrade (FW-upgrade)

This feature allows you to remotely update the BMC firmware and monitor the flashing progress in real-time.

Operational Steps:

1. Click **FW-Upgrade** to expand the section.
2. Set the **Packet Size (PKTSIZE)**:
 - Keep the default **1000** for stable local networks.
 - Lower it (e.g., to **256**) for unstable networks to improve reliability (Note: This increases total upgrade time).
3. Click **Upload Firmware (.hpm)** to select your firmware file.
4. Click **Start Upgrade**. The terminal window will automatically expand to show real-time progress.

WARNING & Important Notes:

- **DO NOT** refresh the page, close the browser window, or click other buttons during the upgrade. Doing so may corrupt the BMC.
- Once the "Upgrade Successful!" alert appears, you must perform a manual reboot (e.g., via **POWER Cycle** or **RESET**) to apply the new firmware.

Power Control ▲

Health

Sensor

SEL-Info

SEL-Add

SEL-List

SEL-Save

SEL-Clear

FW-Upgrade

SOL-Terminal

Response :

```

-----
|ID | Name |           Active | Versions      | % |
| |      |           Backup |      File     |   |
|-----|-----|-----|-----|
|* 0|BIOS | 0.00 00000000 | 1.00 00000100 |100%|
| |      | Upload Time: 08:47 | Image Size: 33554432 bytes |
|-----|-----|-----|-----|
(*} Component requires Payload Cold Reset
Performing activation stage:
    Waiting firmware activation...OK

Firmware upgrade procedure successful
韌體寫入程序已完成。=== 升級流程結束 ===
    
```

Packet Size (PKTSIZE):

1000

Upload Firmware (.hpm):

選擇檔案

RUBY-D722G...60116T00.hpm

Start Upgrade



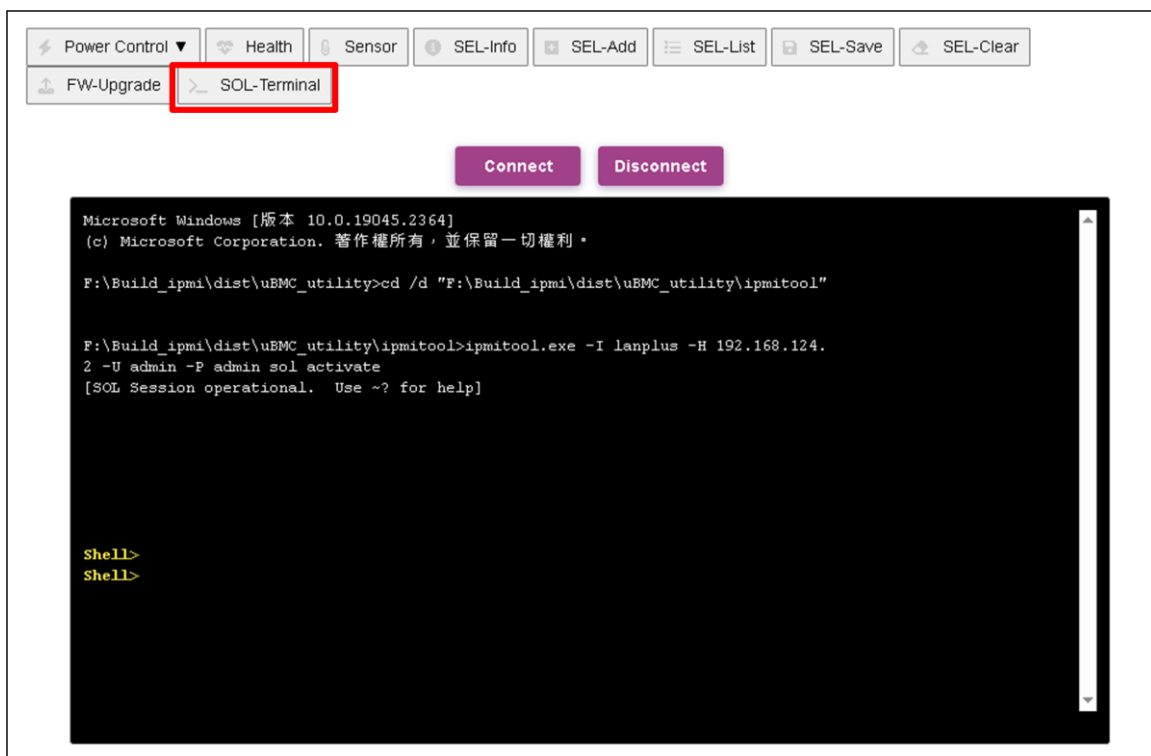
10 Serial Over LAN (SOL-terminal)

10.1 SOL-terminal

This feature provides direct access to the server's serial console (e.g., BIOS setup, boot POST, or OS command line) directly from your web browser.

Operational Steps:

1. Click **SOL-Terminal** to expand the terminal interface.
2. Click **Connect** to establish the session. Once connected, click inside the black terminal window to type commands.
3. Click **Disconnect** when finished to safely close the connection and release BMC resources.





10.2 OS Recovery (via SOL)

This procedure allows you to remotely restore the server's operating system to its factory default or a clean state using a pre-installed recovery SD card via the Serial Over LAN (SOL) interface.

Prerequisite: Ensure that a bootable SD card containing the OS recovery program is physically inserted into the target server.

Operational Steps:

1. Expand the **Power Control** section and click **RESET** (or **POWER Cycle**) to reboot the server.
2. Immediately switch to the **SOL-Terminal** section and click **Connect** to establish the remote console session.
3. Watch the terminal screen. During the system boot (POST) process, press the designated key (typically Delete or F2) within the terminal window to enter the BIOS Setup utility.
4. Use your keyboard arrow keys to navigate to the **Save & Exit** tab.
5. Locate the **Boot Override** section, select the **SD card** that contains the recovery program, and press Enter.
6. The automated OS recovery process will now begin. Simply leave the terminal open and wait for the execution to complete.

