Troubleshoot Battery Backup Units (BBU) on Connected Grid Routers(CGRs) & Industrial Routers

Contents

Introduction

This document describes the commands related to the Battery Backup Unit (BBU) on the CGRs & the IR 8140 along with the limitations of the BBU PIDs. The BBU provides the router with an emergency power source if the AC power source is unavailable.

Background

The router supports up to three BBU units installed at one time. The CGR has the BBUs mounted on the door. However, the IR8140H has the BBUs mounted in their own module and inserted into a battery slot.The total amount of time that the installed BBUs can supply power to the router depends on the configuration of the FAR and how many BBUs are installed in the router. The BBU can be installed in the router while the router is powered on and operating normally.

The BBU PID - CGR-BATT-4AH is End of its Life and has been replaced with **IRMH-BATT-4AH** (newer PID) BBU. It is designed to be backward compatible, so it is supported by all CGR1240 Cisco IOS® and IR8140 Cisco IOS® XE images.

Important BBU commands

IR8140:

```
show platform hardware battery short
show platform hardware battery unit
show platform hardware battery details
```

CGR1240:

```
show platform battery short
show platform battery unit
```

```
show platform battery details
```

Troubleshooting

The status including values of various registers & can be seen with the commands outlined below

```
show platform hardware battery details (IR8140)
show platform battery details (CGR1240)
```

There is also an event log that contains information that can be very useful.

```
show platform hardware battery event-log (IR8140)
show platform battery event-log (CGR1240 - From 15.9 & later)
```

BBUs (Specifically the CGR-BATT-4AH PID) can be temporarily locked out for up to 48 hours for safety reasons such as momentary voltage cell imbalance or overtemperature. The BBU will recover itself but the show commands will continue to show it as locked out until the unlock command is executed or the system is restarted. If the BBU is reported to have a lockout, you need to wait at least 2 days, and only if it still hasn€™t cleared after that it can be considered a true lockout.

Scenario #1

1. IR8140 router is running IOS-XE version 17.8.1 or older
2. There are batteries installed and one of them is detected to have a bad cell.
3. The battery is replaced with a new one, which does not have a bad cell.
4. The system has not been reloaded since the replacement of the battery and the "request platform hardware battery unlock" command has not been executed after the replacement of the battery.

Scenario #2 (Temporary lockout)

1. IR8140 router is running IOS-XE version 17.8.1 or older
2. BMZ battery has entered self lockout
3. BMZ battery recovers
4. Show commands are used to check the battery lockout status

If a battery with a bad cell is replaced without reloading the router, run the command "request platform hardware battery unlock" in order to get the correct information about the new battery state in the show commands.

If a BMZ battery shows that a bad cell has been detected:
1. Wait for up to 48 hours
2. Run "request platform hardware battery unlock" and wait for at least one minute
3. Check if the battery state in the show command output now shows normal. If it still shows a bad cell,

there may be a hardware problem with the battery.

Limitations

- CGR-BATT-4AH (Older PID) canâ€™t mix with IRMH-BATT-4AH (newer PID) BBU on the same CGR stack.

- Need to replace all the CGR-BATT-4AH (Older PID) BBUs in a stack with the IRMH-BATT-4AH (newer PID) BBUs when an RMA is requested.

- If they were purchased as spares, then only one IRHM BBU will be returned per CGR BBU.

- When replacing CGR BBUs with IRMH BBUs, the original order for the CGR BBU will be checked to see how many BBUs were purchased on the original order.

- If a CGR BBU was purchased as part of a multiple BBU chassis configuration, then the original number of BBUs will be returned for only the first one being returned. No RMAs will be allowed for the remaining CGR BBUs in that original order for that chassis.

- If the BBU shows a lockout condition with a 0% state of charge, the BBU will not be replaced as it was allowed to sit for more than a year without charging which is not normal use for a battery.

- Failed IRMH-BATT-4AH BBU units need to be returned to Cisco as a part of the RMA process. The older BBU CGR-BATT-4AH units need not be returned.