环境关机 (nvmem.battery.capLowCrit)

https://kb-cn-stage.netapp.com/on-prem/ontap/OHW/OHW-KBs/Environmental_Shutdown_nvmem_bat…
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适用于

- FAS / AFF 系统
- ONTAP 9

问题描述

- 节点关闭，出现 `nvmem.battery.capLowCrit` 和 `nvmem.battery.fccLowCrit` 警报在 EMS 中。

```
[nodename:nvmem.battery.capLowCrit:EMERGENCY]: The NVMEM battery capacity is critically low (0 cycles). To prevent data loss, the system will shut down in 20 minutes.
[nodename:nvmem.battery.fccLowCrit:EMERGENCY]: The NVMEM battery full-charge capacity is critically low (25 %). To prevent data loss, the system will shut down in 20 minutes.
[nodename:callhome.battery.failure:EMERGENCY]: Call home for BATTERY (capacity low) CRITICAL.
[nodename:callhome.battery.failure:EMERGENCY]: Call home for BATTERY (full
```

```
charge capacity low) CRITICAL.
[nodename:monitor.nvramLowBattery:EMERGENCY]: NVRAM battery is dangerously low.
[nodename:callhome.battery.low:ALERT]: Call home for BATTERY_LOW.
[nodename:monitor.shutdown.nvramLowBattery.pending:ALERT]: NVRAM battery is
dangerously low. Halting system in 24 hours. Replace the battery immediately!
[nodename:monitor.shutdown.emergency:EMERGENCY]: Emergency shutdown:
Environmental Reason Shutdown (Battery remain capacity critical)
```

- 节点关闭，EMS_nvmem_battery_fccLowCrit 和 Battery PCT capacity critical 在 bmc_logs\bmc_status.txt 中发出警报。

```
13:14:01 BMC env_mgr[1822]: Bat_Pct_Cap report 30 %, below threshold value,
during active learning cycle
17:49:03 BMC env_mgr[1822]: Bat_Pct_Cap report 30 %, below threshold value,
during active learning cycle
18:09:39 BMC env_mgr[1822]: Payload action: splog_get(1, (null))
18:18:25 BMC env_mgr[1822]: SPEM Restart
18:18:25 BMC env_mgr[1822]: ENVD_SES: Attempt made to change a locked
threshold. Ignoring all but warning thresholds
18:18:25 BMC env_mgr[1822]: get_health_condition: 'Battery RemCap Desc'
description is NULL

18:19:25 BMC env_mgr[1822]: Payload EMS: EMS_callhome_battery_failure(BATTERY
(full charge capacity low))
18:19:25 BMC env_mgr[1822]: Payload EMS: EMS_nvmem_battery_fccLowCrit(30 %, 20)

18:38:27 BMC env_mgr[1822]: Payload action: env_halt(64, Battery PCT capacity
critical)

18:48:37 BMC env_mgr[13393]: P3.3V is critical low (0 mV).
18:48:37 BMC env_mgr[13393]: P12V is critical low (186 mV).
18:48:37 BMC env_mgr[13393]: P12V Curr is critical low (0 mA).
18:49:01 BMC env_mgr[13393]: P5V is critical low (52 mV).
18:49:01 BMC env_mgr[13393]: PVDDQ DDR4 AB is critical low (0 mV).
18:49:01 BMC env_mgr[13393]: PVTT DDR4 AB is critical low (0 mV).
18:49:06 BMC env_mgr[13393]: PSU1 Present, update fru
18:49:06 BMC env_mgr[13393]: PSU2 Present, update fru
18:50:01 BMC env_mgr[13393]: PVCCIN CPU is critical low (0 mV).
18:51:06 BMC env_mgr[13393]: CPU Temp Margin is not readable.
18:51:06 BMC env_mgr[13393]: CPU Core Temp is not readable.
```

- 关机发生在电池学习周期之后。

```
Record 310: Wed Dec 04 12:00:13.077637 2024 [IPMI.notice]: 002d | 02 | EVT:
0301ffff | Bat_Lrn_Active | Assertion Event, "State Asserted"
Record 311: Wed Dec 04 16:11:57.383621 2024 [IPMI.notice]: 002e | 02 | EVT:
0300ffff | Bat_Lrn_Active | Assertion Event, "State Deasserted"
Record 312: Wed Dec 04 16:16:16.348941 2024 [BMC.notice]: Defer switch update:
SSH connection is active
Record 313: Wed Dec 04 16:31:57.409161 2024 [IPMI.emergency]: env_mgr triggers
OS halt:Battery PCT capacity
Record 314: Wed Dec 04 16:32:53.177695 2024 [IPMI.notice]: 002f | 02 | EVT:
6f03ffff | Sensor 255 | Assertion Event, "Storage OS graceful shutdown"
Record 315: Wed Dec 04 16:32:53.000000 2024 [Controller.notice]: Appliance user
command halt.
Record 316: Wed Dec 04 16:32:53.205464 2024 [IPMI Event.critical]: System power
down"
```

- 故障 LED 亮起
- 节点无法通过电源重启，错误如下。

```
WARNING:  The battery is unfit to retain data during a power
      outage.  This is likely because the battery is
      discharged but could be due to other temporary
      conditions.
      When the battery is ready, the boot process will
      complete and services will be engaged.
      To override this delay, press 'c' followed by 'Enter'
```

或

```
WARNING:  The battery is experiencing a critical failure:
      - Battery full charge capacity is too low
      Without a working battery, the system cannot retain data
      during a power outage, which can result in data loss.
      Power down the system and verify that the battery is
      properly installed.
      To ignore this failure and boot the system in a mode
      where data loss might occur, press 'c' followed by 'Enter'
```