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Hardware Fault Management Subproject
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Status Update

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Hardware Fault Management Subproject

An incubation subproject of Hardware Management Project

Contributing participants include Intel, Microsoft, Facebook, HPE, Google, Dell, amongst others.

We meet every Friday @2 PM PST

The Hardware Fault Management Sub-Project is under the direction of the OCP Hardware Management Project Group.
Hardware Fault Management Subproject

- Charter - address the pain-points in managing hardware faults at scale

- Methodology:
  1. Collaborate with OCP/industry stakeholders* to develop a shared knowledgebase of universal fault taxonomy and scalable methods.
  2. Improve hardware fault management by leveraging and expanding existing industry standards e.g. Redfish, ACPI and OpenBMC, etc.

*Stakeholders – including but not limited to System HW & SW Vendors (SoC, Memory, IO, GPU, BMC, OS, Hypervisor, BIOS, System/Rack Manager etc.), System Integrators, Conventional Enterprise, Cloud and Hyperscale Datacenters Fleet Operators.

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Recap – Past Updates


Common Pain-points
- Target uptime
- Performance impact
- Diagnostic capability
- Validation coverage

Common Taxonomy
- Universal hardware fault classification
- Define common error reporting format
- Common fault handling interface
- Enhance existing industry standards

Outlining:
- HW Fault Mgmt Pain-points
- HW Error Classification
- HW Error Reporting Formats
- Framework for HW FM Infrastructure
- Best Practices – case studies
## Goals and Activities:

<table>
<thead>
<tr>
<th>HW Fault Mgmt Goal</th>
<th>Activities and Deliverable</th>
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<tbody>
<tr>
<td>Identify requirements for hardware fault management to guide activities of this sub-project</td>
<td><strong>Capture, classify and prioritize actionable HW Fault Management pain-points:</strong> Status – ongoing accessible at - <a href="#">OCP-PainpointList</a></td>
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| Standardizing system behavior under hardware failures | **Hardware Error Reporting format Standardization:** Status: version 0.5 accessible at - [HW error reporting format](#)  
**Create Hardware Error Classification:** Status: under review accessible at - [HW Error Classification](#) |
| Standardizing interface to monitoring HW Infrastructure errors at scale | **Fault Management Infrastructure Proposal:** Status: under review accessible at - [OCP Fault Management Infrastructure Proposal](#) |
| Provide reference and guidance on system hardware failure management | **A Compendium of HW Fault Mgmt handling Best Practices and Case Studies following the above proposals:** Status: version 0.1 is accessible at - [OCP-BestPractice](#) |
Call to Action

• Our work has just started, and community participation is essential:
  ✓ **Join the conversation:** Subproject meets every Friday at 2 PM PST
  ✓ **Share your thoughts:** Review documents and proposals offline
  ✓ **Stay around** for the following hardware Fault Management sessions:
    ➢ 3:10pm - 3:35pm | Memory Corrected Error profiling (via Linux EDAC Driver) within large-scale cloud infrastructure
    ➢ 3:35pm - 3:50pm | Hardware Error Reporting Standardization for Cloud-scale and Edge Infrastructure

Links:
• Subproject Wiki: [https://www.opencompute.org/wiki/Hardware_Management/Hardware_Fault_Management](https://www.opencompute.org/wiki/Hardware_Management/Hardware_Fault_Management)
• Join the mailing list: [https://ocp-all.groups.io/g/OCP-HWFaultMgt/](https://ocp-all.groups.io/g/OCP-HWFaultMgt/)
• Propose discussion topics via email: ramab@microsoft.com; zhengyuyang@fb.com; Yogesh.Varma@intel.com
Thank you!