Intel® HPC Orchestrator Overview
SchedMD Booth Presentation
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HPC Platform Software & Cloud
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THE HPC SOFTWARE ECOSYSTEM CHALLENGE WE’RE SOLVING

Fragmented efforts across the ecosystem, with minimal commercial investment

“Everyone building their own solution”

A desire to get exascale performance & speed up software adoption of HW innovation

New complex workloads (ML, Big Data, etc.) drive more complexity into the software stack

THE REALITY: We will not be able to get where we want to go without a major change in system software development
Introducing INTEL® HPC ORCHESTRATOR
HPC modular system software platform that simplifies integration, validation, & maintenance.

Reduces complexity and duplicated effort & includes Intel Technical Support

Launching at SC’16!

SC’15 Project Launched
ISC’16 Product Announced
SC’16 Product Launch

openHPC
Intel® HPC Orchestrator
Intel® HPC Orchestrator
PARTICIPATION IN OPENHPC AS OF NOVEMBER 2016

OpenHPC is a Linux Foundation* Project which gained wide participation right away.

The goal is to collaboratively advance the state of the software ecosystem.

Governing board is composed of Platinum members plus reps from Silver, Academic, Technical committees.

29 Members

- Argonne National Laboratory
- Center for Research in Extreme Scale Technologies – Indiana University

www.OpenHPC.Comunity

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• Intra-stack APIs to allow for customization/differentiation (OEM enabling)
• Defined external APIs for consistency across versions (ISVs)

SLURM is included as a Workload Manager

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BASE STACK AND DERIVATIVES

“CUSTOM”

Additions Targeting High End Market

Common Core
(same across all offerings)

- Performance & scalability
- Energy efficiency

Ease of administration across multiple tiers in the same data center

“ADVANCED”

- Sufficient performance and scalability
- Ease of Install

Additions Targeting Top 500 & Verticals

“TURNKEY”

Additions Targeting Volume Market

- Ease of use & administration
- Auto-configuration

“CUSTOM”

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- Energy efficiency

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**Software Innovation, with Support for Intel® Scalable System Framework (Intel® SSF) Solutions**

- Open Source community under Linux Foundation*
- Ecosystem innovation building a consistent HPC SW Platform
- Platform agnostic
- 29 global members
- End users / OEM / ISV mix

**Intel® HPC Orchestrator**

- Intel's distribution of OpenHPC*
- 3 products to serve differing HPC user segment needs
- Intel HW optimized
- Advanced testing, premium features
- Product technical support & updates provided by Intel

**Intel® Scalable System Framework**

A Holistic Design Solution for All HPC

- Provides software integration and validation of Intel SSF elements
- Optimization for Intel SSF configurations
- On-Premise and Cloud-Based
## Intel® HPC Orchestrator system software is GA!

Available through two initial OEM partners

<table>
<thead>
<tr>
<th>Intel® HPC Orchestrator</th>
<th>Target end user segment</th>
<th>Key Features</th>
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<tbody>
<tr>
<td>“ADVANCED” (available)</td>
<td>Top500: research &amp; enterprise</td>
<td>- Sufficient performance and scalability</td>
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<td></td>
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<td>- Ease of Install</td>
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<tr>
<td>“TURNKEY” (future)</td>
<td>Enterprise, workload specific</td>
<td>- Ease of use &amp; administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Auto-configuration</td>
</tr>
<tr>
<td>“CUSTOM” (future)</td>
<td>Top50: large scale, high perf.</td>
<td>- Performance &amp; scalability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Energy efficiency</td>
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**Q1’17 New Feature:** PBS Pro* added as workload manager option with Technical Support
Adding to currently available SLURM Technical Support

*Additional partner announcements expected shortly
*Other names and brands may be claimed as the property of others.
FOR MORE INFORMATION:

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THANK YOU!