Intel® HPC Orchestrator Overview
SchedMD Booth Presentation

Tom Krueger

Senior Business Development Manager

HPC Platform Software & Cloud

LEGAL NOTICES AND DISCLAIMERS

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Learn more at intel.com, or from the OEM or retailer.

No computer system can be absolutely secure.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit http://www.intel.com/performance.

Cost reduction scenarios described are intended as examples of how a given Intel- based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Intel, the Intel logo and others are trademarks of Intel Corporation in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

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
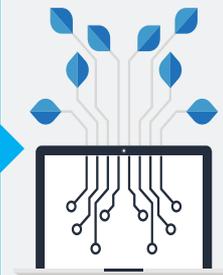
THE REALITY: We will not be able to get where we want to go without a major change in system software development

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
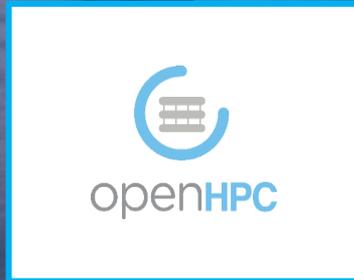
ISC'16
Product Announced

SC'16
Product Launch

openHPC ▶ Intel® HPC Orchestrator ▶ Intel® HPC Orchestrator

openHPC

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

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

29 Members

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

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

Courtesy of OpenHPC*

INTEL® HPC ORCHESTRATOR

WWW.OpenHPC.Community
*Other names and brands may be claimed as the property of others.

(intel) | 5

INTEL® HPC ORCHESTRATOR MODULAR VIEW

- Intra-stack APIs to allow for customization/differentiation (OEM enabling)
- Defined external APIs for consistency across versions (ISVs)
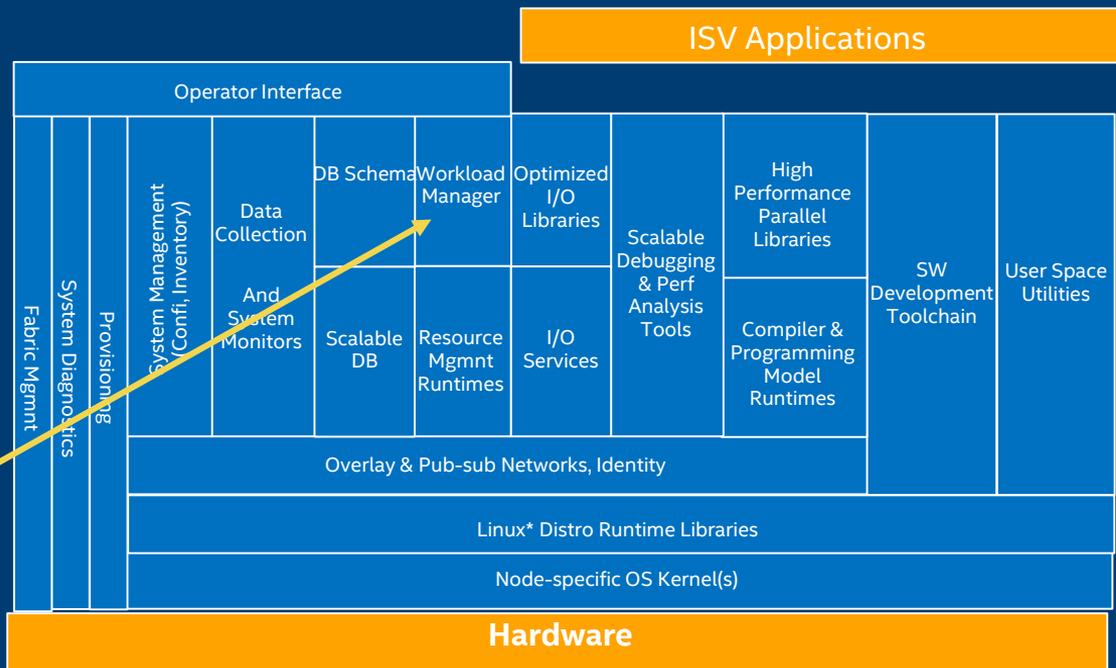
SLURM is included as a Workload Manager

*Other names and brands may be claimed as the property of others.

BASE STACK AND DERIVATIVES

"CUSTOM"

"ADVANCED"

- Sufficient performance and scalability
- Ease of Install

Additions Targeting Top 500 & Verticals

Additions Targeting High End Market

Common Core
(same across all offerings)

Additions Targeting Volume Market

Provides

- Performance & scalability
- Energy efficiency

Ease of administration across multiple tiers in the same data center

Provides

- Ease of use & administration
- Auto-configuration

"TURNKEY"

SOFTWARE INNOVATION, WITH SUPPORT
FOR INTEL® SCALABLE SYSTEM FRAMEWORK (INTEL® SSF) SOLUTIONS

Intel® Scalable System Framework
A Holistic Design Solution for All HPC

openHPC

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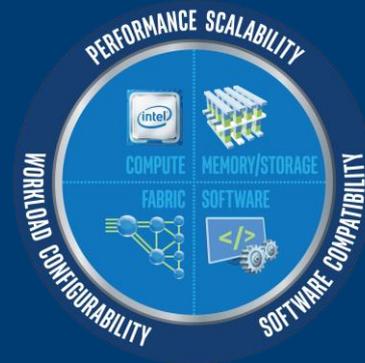
- Open Source community under Linux Foundation*
- Ecosystem innovation building a consistent HPC SW Platform
- Platform agnostic
- 29 global members
- End users / OEM / ISV mix

- Intel'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

- Provides software integration and validation of Intel SSF elements
- Optimization for Intel SSF configurations
- On-Premise and Cloud-Based

SC'16 ANNOUNCEMENTS

Intel® HPC Orchestrator system software is GA !

Available through two initial OEM partners

DELLEMC

FUJITSU

Intel® HPC Orchestrator	Target end user segment	Key Features
"ADVANCED" (available)	Top500: research & enterprise	- Sufficient performance and scalability - Ease of Install
"TURNKEY" (future)	Enterprise, workload specific	- Ease of use & administration - Auto-configuration
"CUSTOM" (future)	Top50: large scale, high perf.	- Performance & scalability - Energy efficiency

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:

Contact: Tom Krueger, Senior Business Development Manager
thomas.a.Krueger@intel.com

503-432-6619

THANK YOU!