CLOUD FOUNDRY ON OPENSTACK
OPEN SOURCE ENTERPRISE PAAS

Jeff Ruby, Intel Open Source Technology Center

Acknowledgement: Jon Price, Intel IT

July 2015
Why We Are Here

Cloud Foundry and OpenStack attracting significant interest among cloud developers, users, vendors

- Cloud Foundry: 36% increase in code commits in last year. 2,100+ total developers¹
- OpenStack: 1,300 active contributors, deployed by 1200 companies²

As an open source developer you can

- Use Cloud Foundry to quickly deploy apps
- Contribute to the Cloud Foundry and OpenStack open source projects

² https://01.org/openstack/home/intel-openstack-solution-brief
Agenda

• Cloud Foundry and OpenStack
• Key learnings using Cloud Foundry and OpenStack
• Intel participation in the projects
• Summary
The Power of a Trusted, Private OpenStack* Cloud

Deploy services in minutes with the right service level

Business and IT Agility
through on-demand, self-service delivery

Operational Efficiency
through advanced orchestration

Lower Costs
through efficient resource sharing

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

Custom Application Hosting
- Rapid app hosting with no server provisioning
- Abstracted HW & SW Infrastructure
- Built to scale massively and be super efficient

Intel IT: From innovative Idea to production service in less than a day
The Intel IT Story

• Path finding work started in 2010
• Ultimately selected OpenStack and Cloud Foundry
• Full production in 2014, currently deployed two sites for internally-facing apps
• Hundreds of apps and users
• Future plans: global deployment with multiple sites and instances, hybrid cloud with public cloud providers
What is Cloud Foundry?

- Cloud Foundry is an open standard for cloud applications
- It is open source, multi-cloud, and multi-vendor
- It is hardened production infrastructure for global enterprises
- It is designed to make devops the normal state of computing
- It is built for fast-cycle innovation of cloud applications
Cloud Foundry

End Users

Browser

Mobile

IoT Devices

Elastic Runtime

Customer Applications

Internal Applications

Mobile Applications

Services

Core Services (MySQL/RiakCS)

Provider-Specific Services

User Provided Service Instances

Operations

Logging

Scaling

Platform Deployment

Health Monitoring

“Push and it works”

Pre-built: assemble apps faster

Full App management

Interoperable

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

- Integrated open source cloud stack to deploy applications
- Similar API-based services and message passing architecture
- Leading private IaaS and PaaS with broad industry support
- Supports private, private-hosted, public, hybrid PaaS

*Other names and brands may be claimed as the property of others.*
Intel IT Key Benefits

Developers

• Time to deploy
• Self-service
• Focus on app development
• Choice of programming languages
• Supports Agile and CI/CD

Operations

• Automation
• Rolling updates
• Resilient architecture
• Open: flexible, configurable
Intel IT Key Learnings

• Advantages deploying PaaS on top of IaaS
• Enterprise use of open source
• More cloud-aware apps
Intel Participation in the OpenStack Community

• Platinum member
• Important role in the Enterprise Workgroup
• Contributing across most major projects today (Top-10 across most modules)
• Working with the ecosystem to drive adoption

Significant Intel Contributions

Incubation / Not Integrated

1 – Identified as a Top-10 contributor on “Commits” at www.stackalytics.com

*Other names and brands may be claimed as the property of others.
Facilitating Enterprise OpenStack Adoption

Intel is a key participant in the Enterprise Workgroup at the OpenStack Foundation.
Intel Participation in the Cloud Foundry Community

• Platinum member
• Community Advisory Board
• Contributing Enterprise requirements
• Optimizing runtimes
• Working with the ecosystem to drive adoption

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

PaaS is a game changer to quickly deploy apps

Intel is making significant investment and contributions to open source

• OpenStack
• Cloud Foundry
• Runtimes - programming languages

As an open source developer you can

• **Try it out**: evaluate Cloud Foundry
• **Get involved**: contribute to the Cloud Foundry and OpenStack projects

“OpenStack is here, and it’s ready. Eleven Fortune 100 firms (eg. Best Buy, BMW, Comcast, Disney, Wal-Mart) are already using OpenStack for production environments, making its viability and presence in the market irrefutable”

- Forrester Research, Inc, 2015

“Cloud Foundry is among the most widely used open source PaaS technologies in the enterprise today.”

- 451 Research, March 2014

**Sources:**
1 "OpenStack is Ready – Are You?," by Forrester Research, May 18, 2015. See https://www.openstack.org/enterprise/forrester-report/
CONTACTS

Cloud Foundry
Nick Weaver  nicholas.weaver@intel.com
Jeff Ruby    jeff.ruby@intel.com

Runtimes
Dave Stewart  david.c.stewart@intel.com

Cloud Foundry @ Intel IT
Jon Price     jon.price@intel.com

OpenStack
Carol Barrett carol.l.barrett@intel.com

Resources
openstack.org  cloudfoundry.org  01.org/openstack
Legal Information

Intel technologies, features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

Intel’s compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice. Notice Revision #20110804

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

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications and roadmaps.

The products and services described may contain defects or errors known as errata which may cause deviations from published specifications. Current characterized errata are available on request.

Copies of documents which have an order number and are referenced in this document may be obtained by calling 1-800-548-4725 or by visiting www.intel.com/design/literature.htm.

Intel, the Intel logo, Intel vPro, Look Inside., the Look Inside. logo, Intel Xeon Phi, and Xeon 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.

© 2015 Intel Corporation.
THANK YOU
Q&A