Agenda

- OpenStack “Rocky” Release Overview
- Pilot Projects Updates
  - Airship
  - Kata Containers
  - StarlingX
  - Zuul
- Berlin Summit Updates
OpenStack Rocky
August 30, 2018
Rocky Feature
Increasing interest in bare metal
OpenStack User Survey
Ironic usage
2016: 11% in production
2017: 15% in production
2018: Coming soon!
Ramdisk deployment interface

New interface in Ironic supports diskless deployments

For ephemeral workloads, no writing to local storage

Large-scale computing, quick deployment
Management for BIOS settings

Ironic adds ability for users to manage BIOS

Giving flexibility and customization options

Enable virtualization/hyperthreading; enable SR-IOV, DPDK
Improving the upgrade experience
Fast Forward Upgrades

TripleO helps users quickly get to newer releases
Bug fixes and testing in the Rocky cycle

Users can speed from N→N+3 release
Delivering Rocky on Day 1

A user story of being on OpenStack Rocky out of the gates, and delivering the latest to customers
Advances in new components
FaaS for OpenStack clouds

Qinling 1.0.0

Function-as-a-Service on top of OpenStack

Uses K8S for containers that run on OpenStack clouds; servers “hidden” from the user
Introspective instance monitoring

Expanding Masakari’s monitoring to include internal VM faults

Hung guest OS, scheduling failures by the guest OS, data corruption
FPGA programming support

Cyborg lets users reprogram FPGA devices

FPGA used as CPU accelerator: Machine learning, image recognition, POCs

REST API for FPGA now in Cyborg
Ease of operations and expanding functionality
Community Wide Goals

Enable mutable configuration across projects

Ability to change configuration options without a service restart
Port forwarding for floating IPs
Forwarding for TCP and UDP supported via Neutron

When operators have limited IP addresses, lets them reuse floating IP addresses

Access to port-mapping tools in the larger ecosystem
Specifying AZ in reservations

Blazar expanding availability zone awareness

Expanding Blazar’s awareness of availability zones to support multiple AZs, and let users specify an AZ at reservation
Introducing “hidden” images
Glance image service adds the option to “hide” images

Operators can hide an image from the image list (outdated, not to be used), but have it available for rebuilds if needed
UDP support in load balancing

Octavia adds load balancing for User Datagram Protocol

UDP used in streaming, voice, video, real-time performance applications
Secure hash to verify image integrity

Glance image service adds hash support

Operators can generate a secure hash to be used by image consumers to verify integrity of an image
Rocky Release Resources

openstack.org/software/rocky

releases.openstack.org/rocky/highlights.html
Pilot Project Updates
Airship makes managing the life cycle of open infrastructure simple, repeatable, and resilient.

Join the Community
Mailing Lists: lists.airshipit.org
Freenode IRC: #airshipit
Kata Containers
Project Update

August 30th, 2018
Eric Ernst
PROCESS A

PROCESS B

PROCESS C

LINUX KERNEL
Who is Kata?

Architecture committee:
- Intel, Huawei, Hyper.sh, Google, Microsoft

Who's been getting involved?
- AMD, ARM, Branch Metrics, Dell/EMC, Google, Huawei, Hyper, IBM, Intel, Microsoft, Nvidia, Open Stack Foundation, Oracle, Redhat, Suse, 99Cloud

Who's been looking at using Kata?
- ...more...
Kata Status

- 1.0.0 release May 22

- Currently at 1.2: new features include:
  - vm-factory,
  - AMD, Arm and IBM support,
  - vssock support
  - supported k8s daemonset deployment
Looking forward

- 1.3 scheduled mid-September: targeting
  - full network and storage hotplug,
  - open-tracing support,
  - CNI-macvlan support

- Notable future work:
  - security enhancements,
  - more native integration into ecosystem,
  - live upgrade,
  - performance optimizations
Containers in cloud today

Kata Containers

- Each container/pod is hypervisor isolated.
- Seamless integration with the container ecosystem and management layers.
Join the Community
Mailing Lists: lists.katacontainers.io
Freenode IRC: #kata-dev
Slack: bit.ly/KataSlack
GitHub: github.com/kata-containers
StarlingX - Built for Edge Computing

- High Availability and Robust Solutions,
- High Performance & Low Latency,
- Highly Secure Solutions,
- Scale from Single Server Deployments to 100+ Server Deployments,
- Ensure Small Footprint of StarlingX infrastructure,
- Meet all Edge Computing Requirements,
- Simplicity & Usability.
StarlingX*: Physical Solution Architecture

Standard Configuration

- The StarlingX "Standard Configuration" consists of:
  - 2 Node High Availability Controller Node cluster
  - 2-100 Compute Node cluster (Note: Up to 100 only with Ceph* Storage Node cluster)
  - Optional: 2-9 Node Ceph Storage Node cluster

- StarlingX Service Manager provides Cluster Management for HA Control Node cluster

- Neutron’s L3 Networking Services are distributed across Compute Nodes

- Cinder backend can be:
  - LVM on Controllers (DRBD synched for HA) and/or
  - On Ceph Storage Nodes

- Glance backend can be:
  - File system on Controllers (DRBD synched for HA) and/or
  - On Ceph Storage Nodes

- Swift backend is only supported on Ceph Storage Nodes

- Ceph Storage Nodes can be deployed in 'replication groups'
  - Groups of 2x Storage Nodes for replication factor of 2
  - Groups of 3x Storage Nodes for replication factor of 3

*[Other names and brands may be claimed as the property of others.]*
StarlingX – Controller/Compute S/W Stacks

Controller S/W Stack

OpenStack (Pike)
- cinder
- ironic
- magnum
- swift-api
- murano
- nova
- keystone
- horizon
- neutron
- glance
- heat
- telemetry

StarlingX Services
- configuration management
- fault management
- host management
- service management

Open Source Building Blocks
- postgres
- ftpboot server
- openssh/ssl
- openldap
- lighttpd
- libp
- drbd
- snmp
- xmlrpc
- s/w repo
- anaconda
- installer

Infrastructure Orchestration

Compute S/W Stack

Networking
- ovs-dpdk
- sr-iov
- pci-passthrough

Virtualization
- libvirt
- qemu

OpenStack (Pike)
- nova-compute
- neutron-agents
- telemetry

StarlingX Services
- configuration management
- fault management
- software management
- host management
- service management

Open Source Building Blocks
- dhcp server
- openssh/ssl
- ldtp
- syslog-ng
- lscsi
- collectd
- anaconda
- installer
- puppet/modules

Centos

Centos (standard or kernel-rt)
For more information

- [http://starlingx.io](http://starlingx.io)
  - info and email list signup (starlingx-discuss@lists.starlingx.io)
- Overview presentation
  - [https://www.starlingx.io/assets/StarlingX-Overview-Presentation.pdf](https://www.starlingx.io/assets/StarlingX-Overview-Presentation.pdf)
- Freenode IRC: #starlingx
- Documentation is at [https://wiki.openstack.org/wiki/StarlingX](https://wiki.openstack.org/wiki/StarlingX)
- Meet the StarlingX team at the Denver PTG (Wednesday)

Contributors and operators welcome!
Stop Merging Broken Code

Get Involved: zuul-ci.org
Zuul is Continuous Everything

- Merged CI/CD workflow w/ Ansible
- Fully dynamic configuration
- Gerrit and GitHub support
**Berlin Summit**  
November 13-15

- **Headline sponsors:** Canonical, Deutsche Telekom, Huawei, Intel and Red Hat  
- Premier, Spotlight and Exhibitor level sponsorships still available  
- Interested? Email [summit@openstack.org](mailto:summit@openstack.org)  
- Registration prices increase October 22 at 11:59 pm PT  
- **Hacking the Edge:** an OpenStack hackathon hosted by Open Telekom Cloud  
  - Saturday - Sunday, November 10-11  
- Open Source Days
The agenda is live featuring sessions around:

- CI/CD
- Container Infrastructure
- Edge Computing
- HPC / AI / GPU

- Open Source Community
- Private & Hybrid Cloud
- Public Cloud
- Telecom & NFV