

OpenStack Community Meeting

August 30, 2018

Agenda

- **OpenStack “Rocky” Release Overview**
- **Pilot Projects Updates**
 - Airship
 - Kata Containers
 - StarlingX
 - Zuul
- **Berlin Summit Updates**

OpenStack Rocky

August 30, 2018

Rocky Feature

High Level Category

Potential Use Case

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

Scalability

HPC

Management for BIOS settings

Ironic adds ability for users to manage BIOS

Giving flexibility and customization options

Enable virtualization/hyperthreading; enable SR-IOV,
DPDK

Manageability

Performance

NFV

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 $N \rightarrow N+3$ release

Upgrades

Manageability

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

Scalability

FaaS / Serverless

Introspective instance monitoring

Expanding Masakari's monitoring to include internal VM faults

Hung guest OS, scheduling failures by the guest OS,
data corruption

Stability

HA

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

Scalability

Manageability

HPC

Ease of operations and expanding functionality

Community Wide Goals

Enable mutable configuration across projects

Ability to change configuration options without a service restart

Manageability

Performance

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

Manageability

Ops

Integration

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

Compliance

Manageability

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

Security

Manageability

Ops

UDP support in load balancing

Octavia adds load balancing for User Datagram Protocol

UDP used in streaming, voice, video, real-time performance applications

Scalability

IoT/Edge

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

Security

Ops

Rocky Release Resources

openstack.org/software/rocky

releases.openstack.org/rocky/highlights.html

Pilot Project Updates

airship

Airship makes managing the life cycle of open infrastructure simple, repeatable, and resilient.

Join the Community

Mailing Lists: lists.airshipit.org

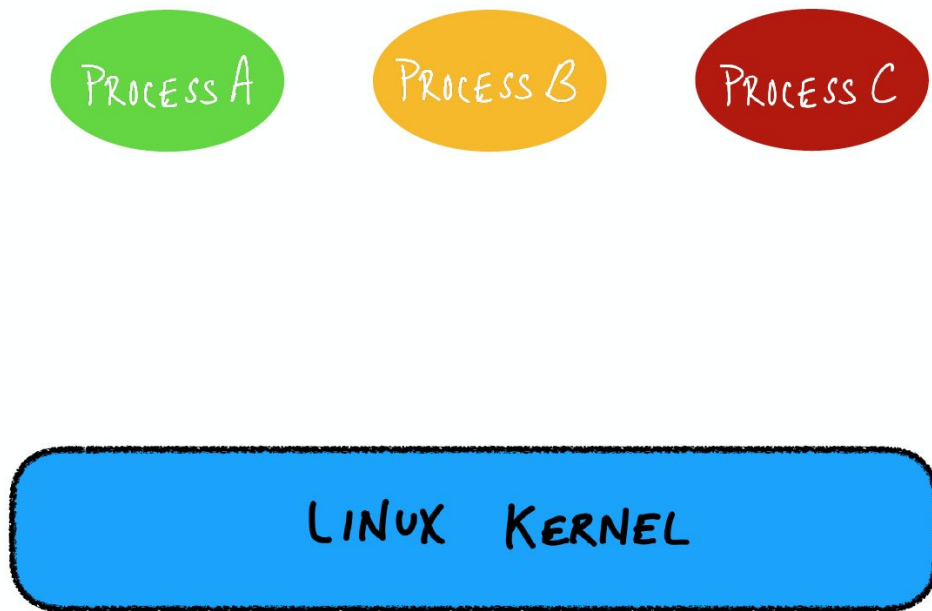
Freenode IRC: [#airshipit](https://freenode.net/irc)

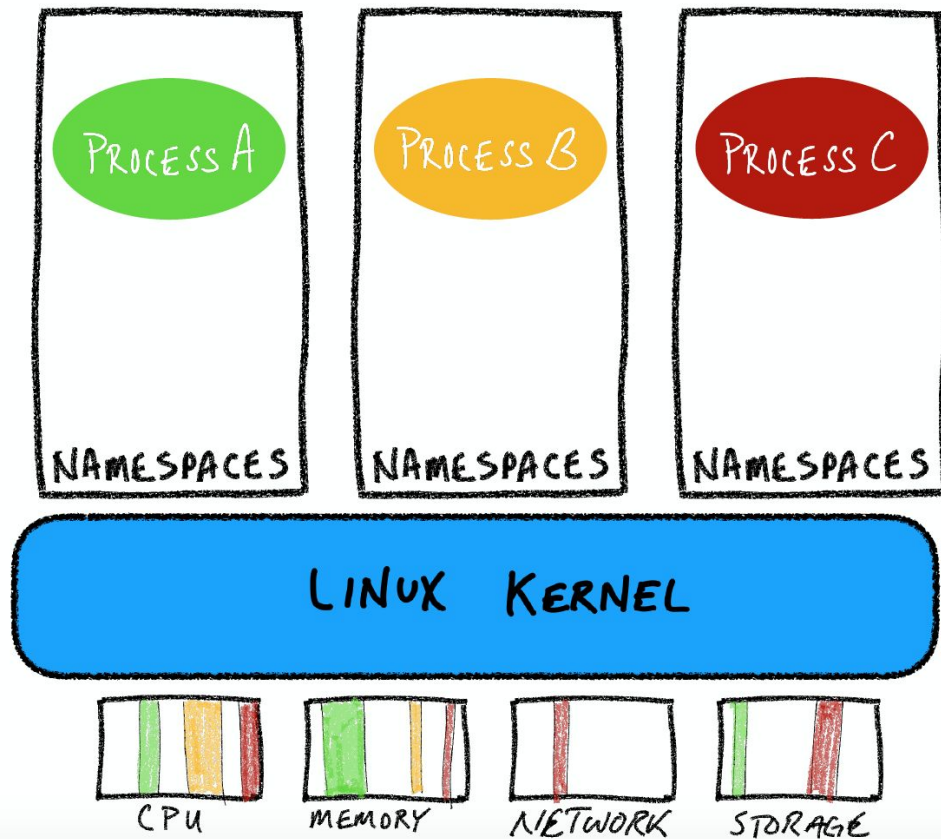
Kata Containers

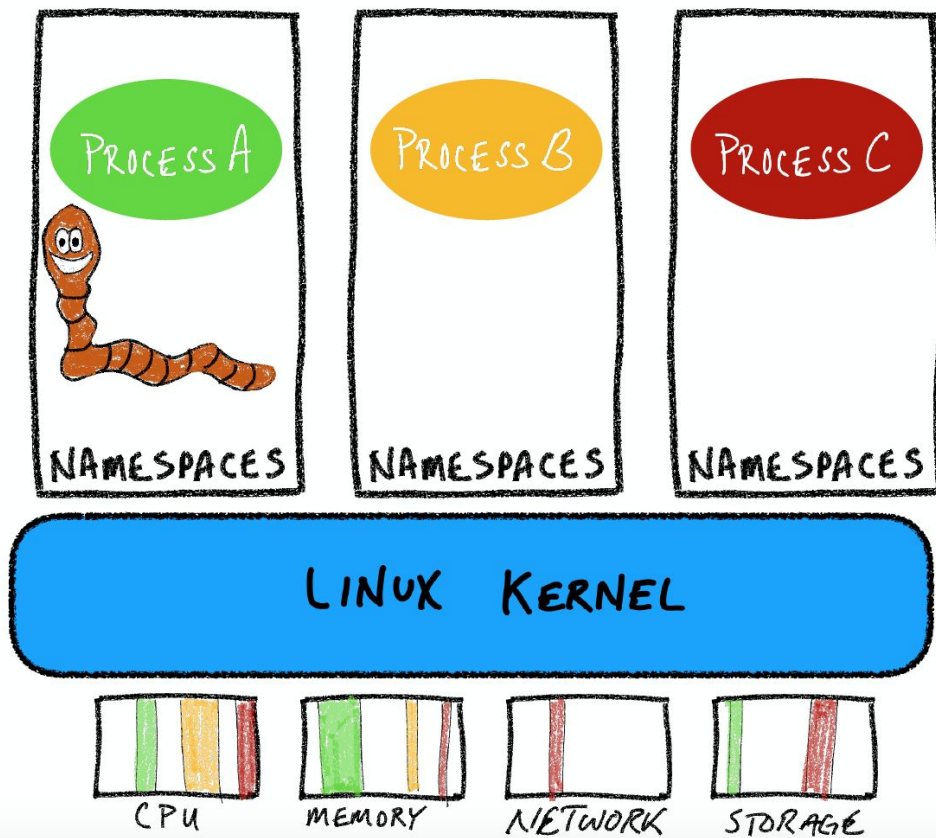
Project Update

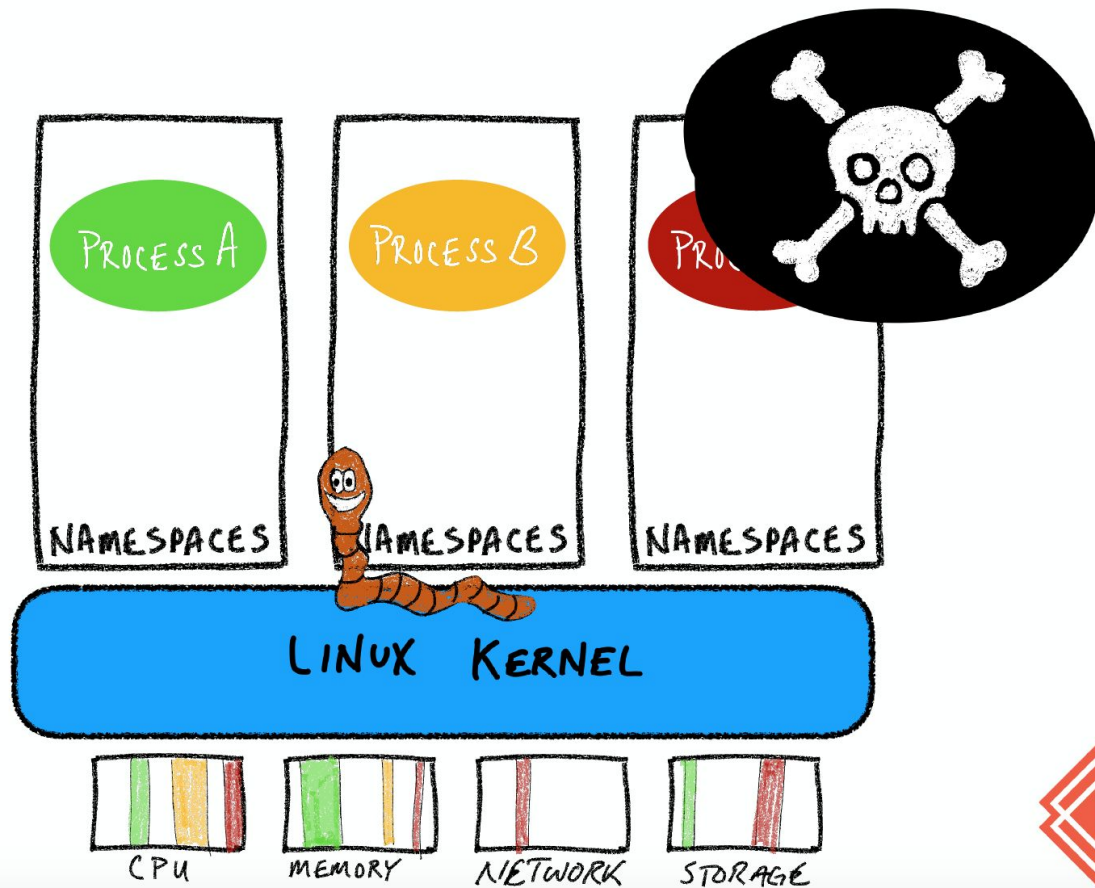
August 30th, 2018
Eric Ernst

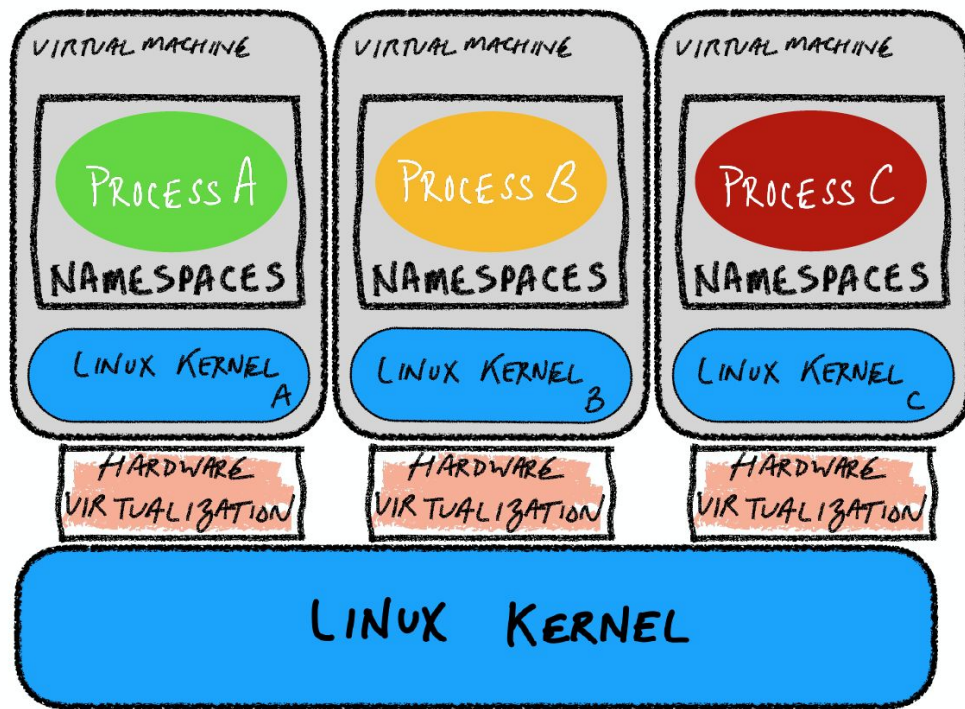


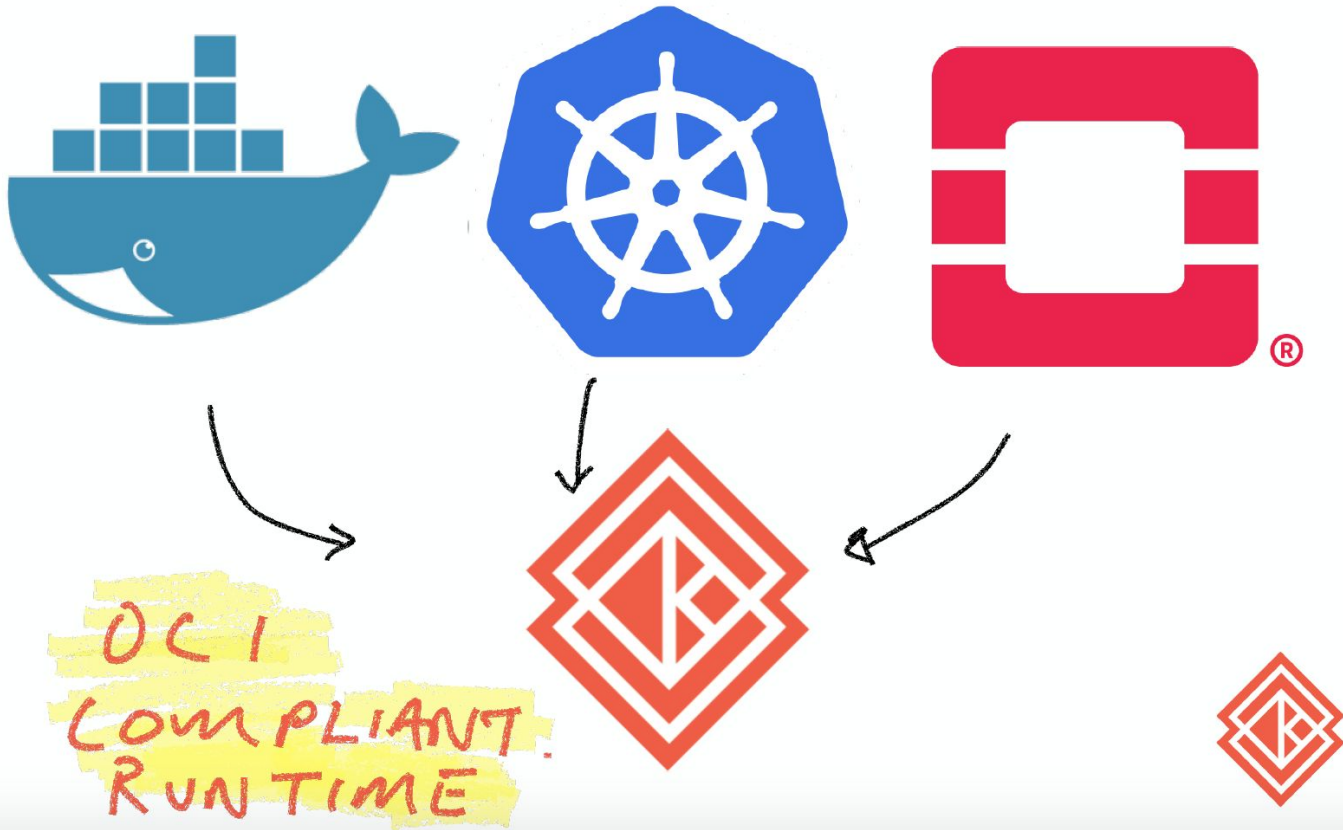












Who is Kata?

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,
 - vsock support
 - supported k8s daemonset deployment

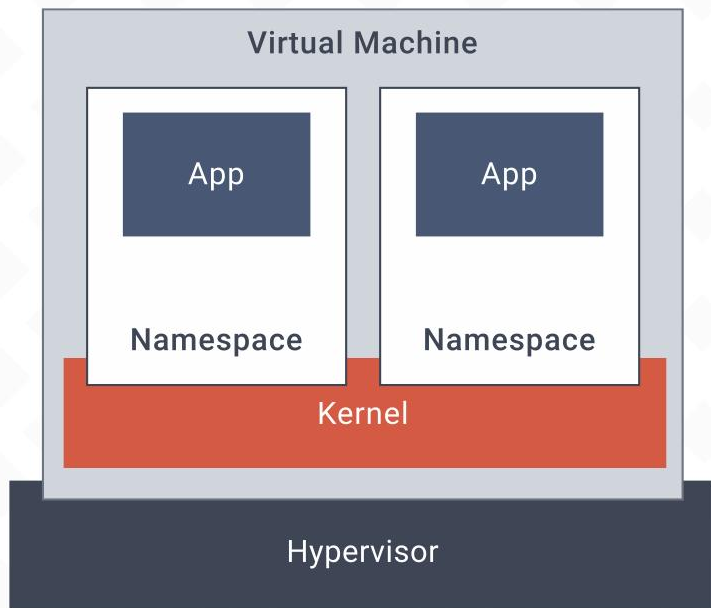


Looking forward

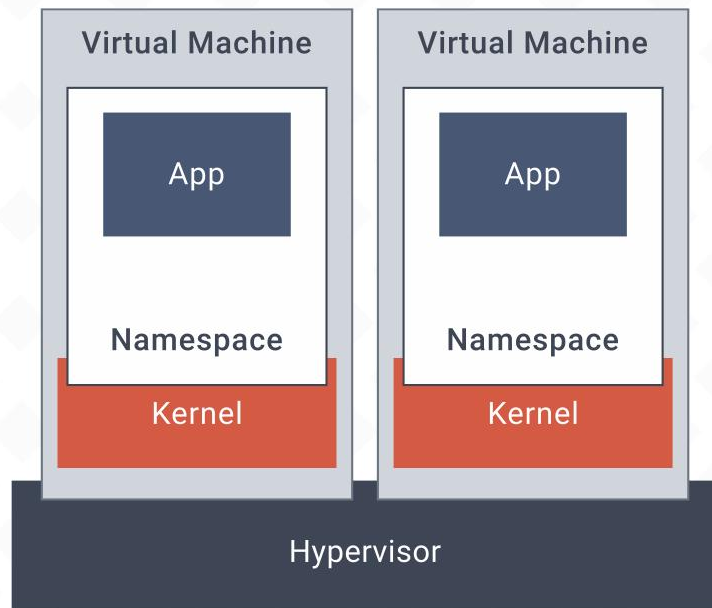
- 1.3 scheduled mid-September: targeting
 - full network and storage hotplug,
 - open-tracing support,
 - CNI-macvlan support
- Notable future work:
 - security enhancements,
 - more native integration into ecosystem,
 - live upgrade,
 - performance optimizations



Containers in cloud today



Kata Containers



katacontainers



- 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](https://freenode.net/channels/#kata-dev)

Slack: bit.ly/KataSlack

GitHub: github.com/kata-containers



StarlingX - Built for Edge Computing

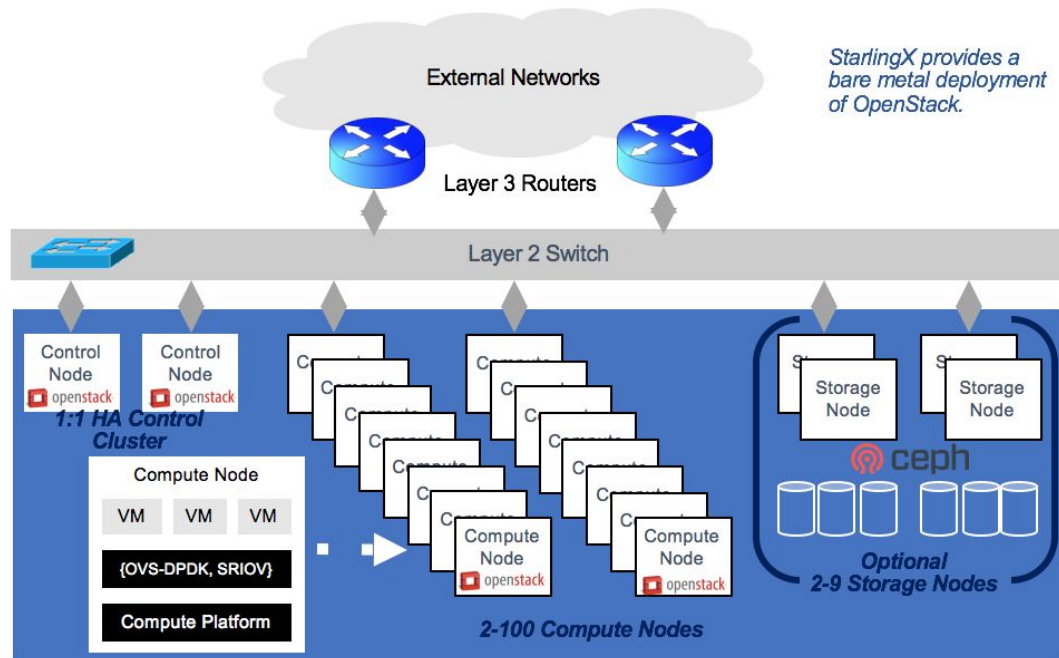
- High Availability and Robust Solutions,
- High Performance & Low Latency,
- Highly Secure Solutions,
- Scale from Single Server Deployments to 100+ Server Deployments,
- Ensure Small Footprint of StarlingX infrastructure,
- Meet all Edge Computing Requirements,
- Simplicity & Usability.



STARLINGX

StarlingX*: Physical Solution Architecture

Standard Configuration



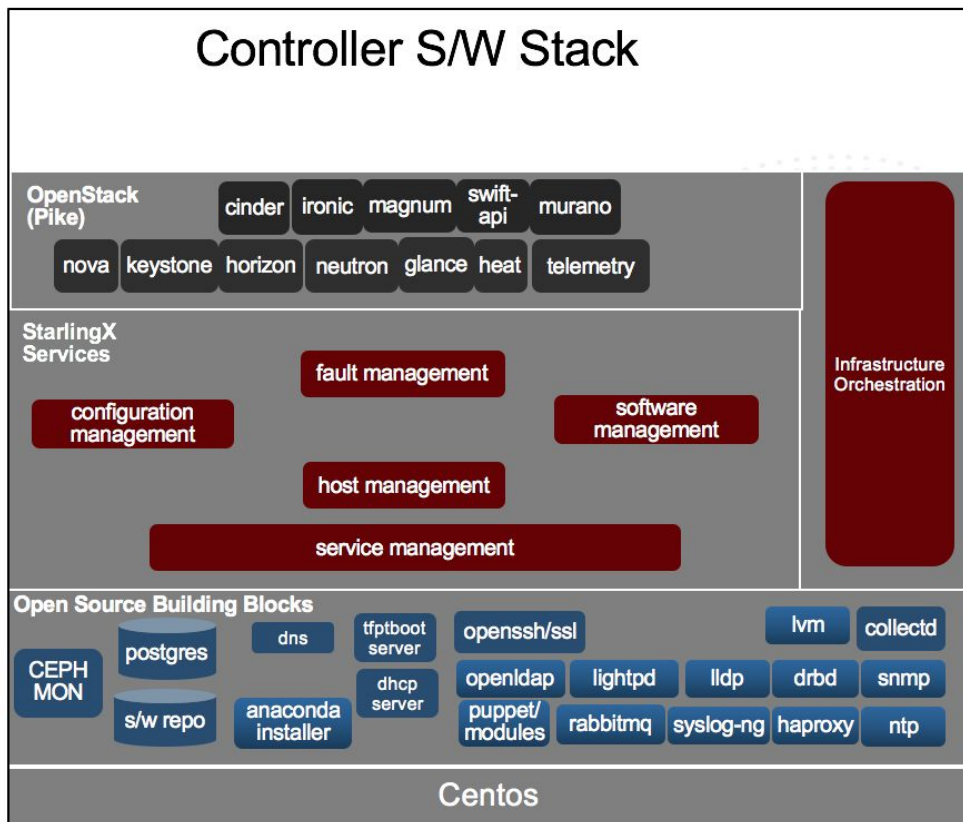
- The StarlingX 'Standard Configuration' consists of:
 - 2 Node High Availability Controller Node cluster
 - 2-100 Compute Node cluster (Note: Up to 100 only with Ceph* Storage Node cluster)
 - Optional: 2-9 Node Ceph Storage Node cluster
- StarlingX Service Manager provides Cluster Management for HA 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.

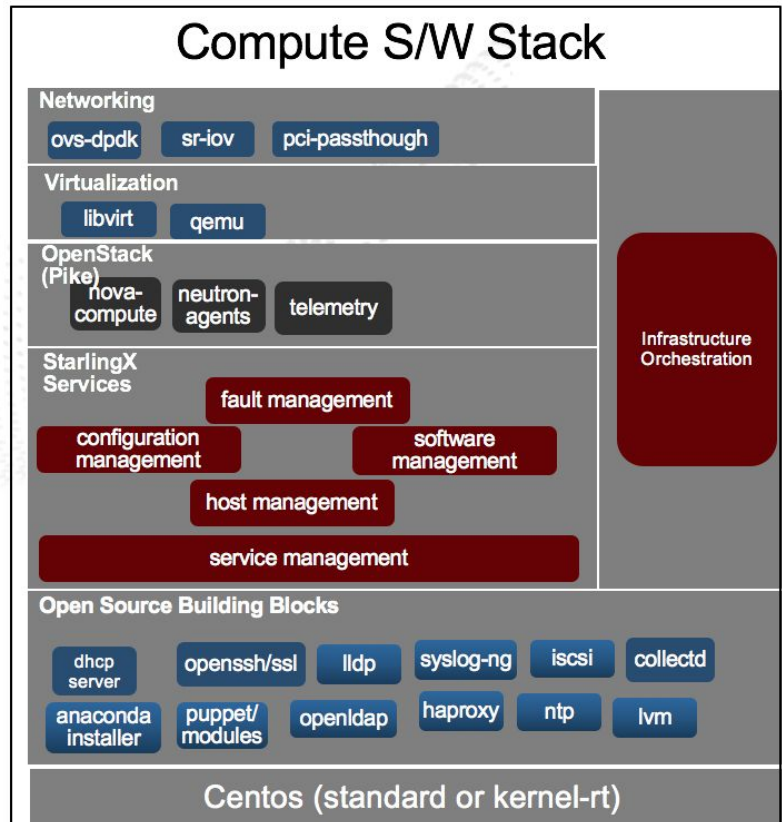


StarlingX – Controller/Compute S/W Stacks

Controller S/W Stack



Compute S/W Stack



For more information

- <http://starlingx.io>
 - info and email list signup (starlingx-discuss@lists.starlingx.io)
- Overview presentation
 - <https://www.starlingx.io/assets/StarlingX-Overview-Presentation.pdf>
- Freenode IRC: #starlingx
- Documentation is at <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

OpenStack Summit Berlin

November 13-15, 2018

openstack.org/summit/berlin-2018/



Berlin Summit

November 13-15

openstack.org/summit

- **Headline sponsors:** Canonical, Deutsche Telekom, Huawei, Intel and Red Hat
- Premier, Spotlight and Exhibitor level sponsorships still available
- Interested? Email 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



Berlin Summit

November 13-15

openstack.org/summit

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



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