

OSF Edge Computing Activities - Update

ILDIKO VANCSA - OPENSTACK FOUNDATION, ILDIKO@OPENSTACK.ORG

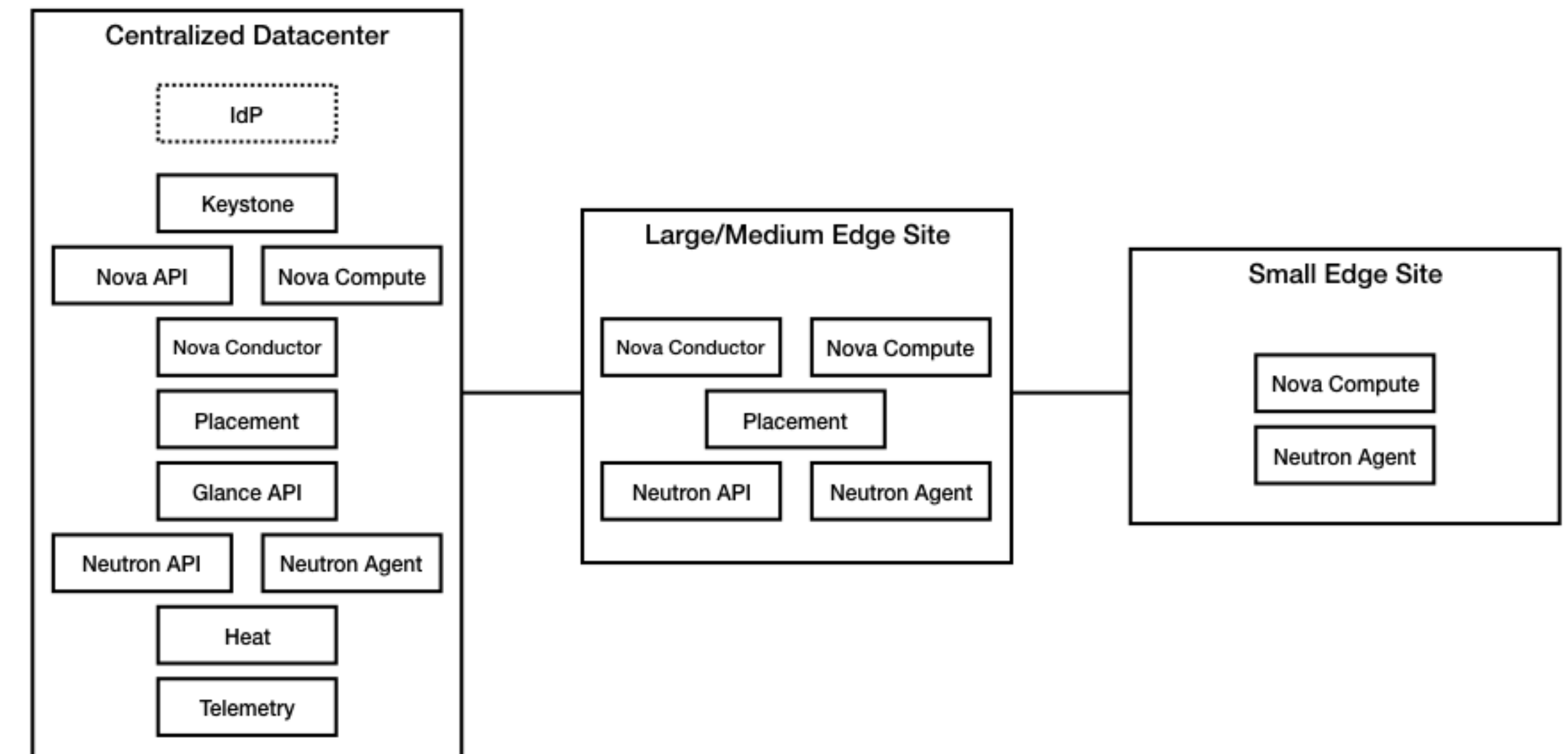
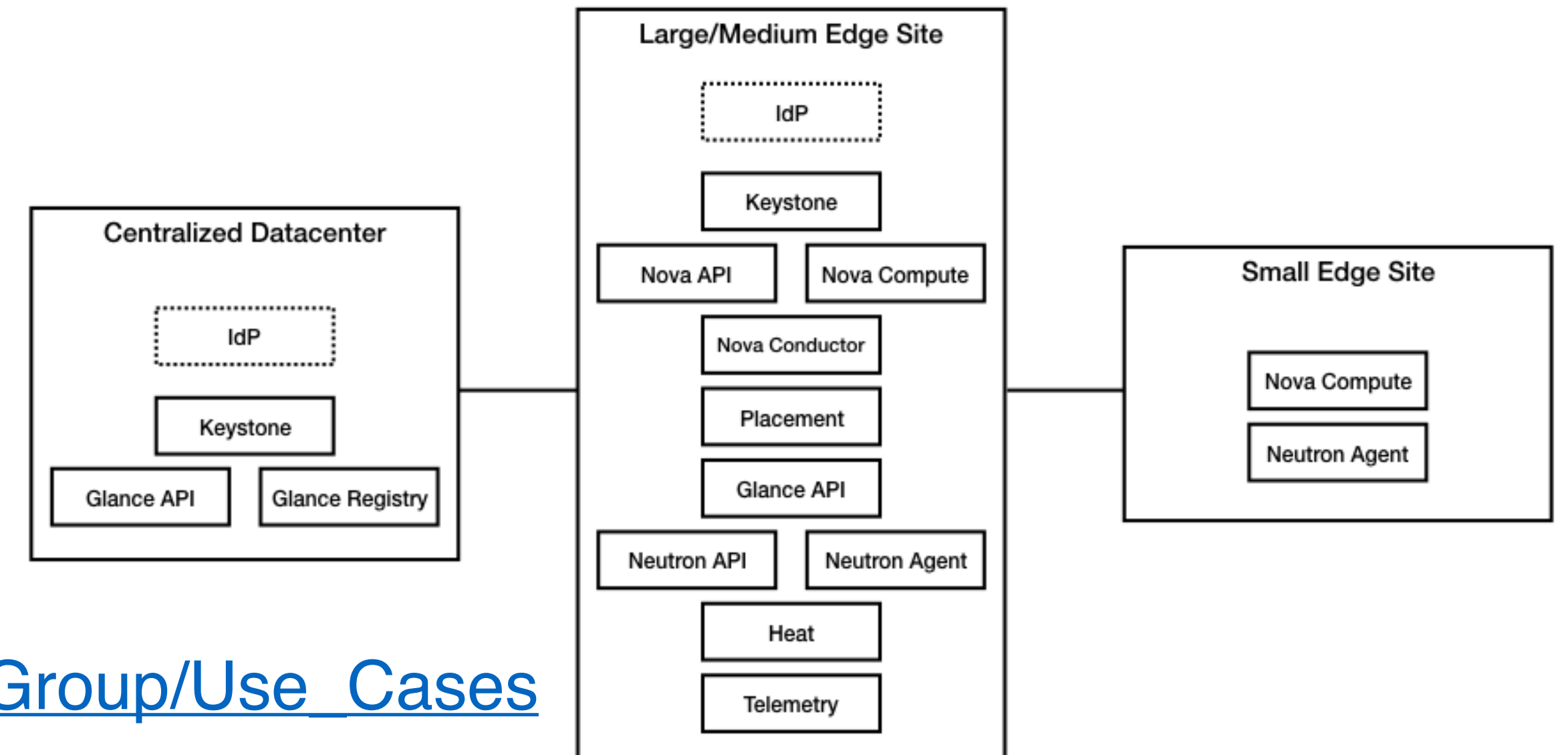
OSF Edge Computing Group

- ➔ Focus on challenges and solutions in the IaaS layer
 - Find common requirements and define common edge computing architectures
 - Design and implement
 - Enhancements to existing projects and services to provide a better fit for edge
 - New projects and services to implement missing functionality
- ➔ Emphasize the importance of open infrastructure
- ➔ Encourage industry-wide collaboration
- ➔ Whitepapers
 - https://www.openstack.org/edge-computing/cloud-edge-computing-beyond-the-data-center?lang=en_US
 - Second whitepaper is in progress

Current Activities

➔ Next steps on the Reference Architecture models

- https://wiki.openstack.org/wiki/Edge_Computing_Group/Use_Cases
- https://wiki.openstack.org/wiki/Edge_Computing_Group/Edge_Reference_Architectures
- Adding further projects to the architecture models
 - Bare metal provisioning - Ironic
 - Hardware acceleration support - Cyborg



Current Activities

➔ Testing

- Turning the Reference Architectures into Reference Implementations
 - Test environments on Packet.com hardware
 - Using StarlingX for the Distributed Control Plane configuration
 - Using TripleO for the Centralized Control Plane configuration
 - Looking for further donated lab environments
 - Overcoming some limitations in provisioning the test environments
 - Building a geographically distributed environment
 - Target use cases and workloads: Cloud gaming and vRAN
 - Case study from Rakuten: <https://www.openstack.org/summit/shanghai-2019/summit-schedule/events/24451/worlds-first-all-virtualized-mobile-network-on-openstack-including-vran>
- Keystone federation testing and other project level test improvements

Current Activities

➔ Project level enhancements

- Neutron
 - Network segment range management: <https://bugs.launchpad.net/neutron/+bug/1832526>
 - In progress, target OpenStack release is Ussuri
- Ironic
 - L3 based deployment - <https://specs.openstack.org/openstack/ironic-specs/specs/not-implemented/L3-based-deployment.html>
 - Discussions on items such as
 - Booting from URL
 - Single step HW configuration

Current Activities

➡ Project level enhancements

- Cyborg
 - HW acceleration framework
 - Identifying edge needs based on use cases such as vRAN and uCPE

➡ Roadmap items for H1, 2020

- Discussions on containerized workloads and container based edge sites
- Cross-community collaboration

➡ Recap from the Open Infrastructure Summit and PTG, Shanghai, 2019

- <http://lists.openstack.org/pipermail/edge-computing/2019-December/000664.html>
- <https://www.starlingx.io/blog/starlingx-shanghai-recap.html>

Collaboration

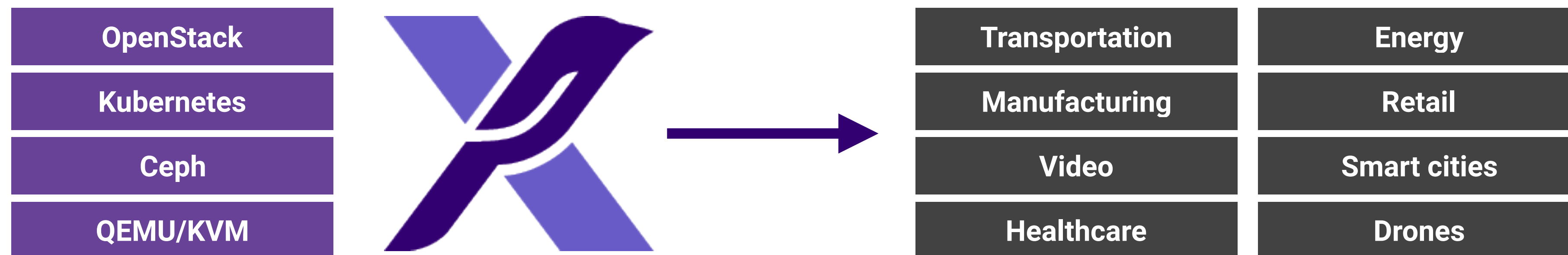
- ➔ Weekly meetings
 - Zoom calls and/or IRC meetings
 - https://wiki.openstack.org/wiki/Edge_Computing_Group#Meetings
- ➔ [mailing list](#)
- ➔ IRC - #edge-computing-group on Freenode



*A Fully Featured Cloud
For The Distributed Edge*

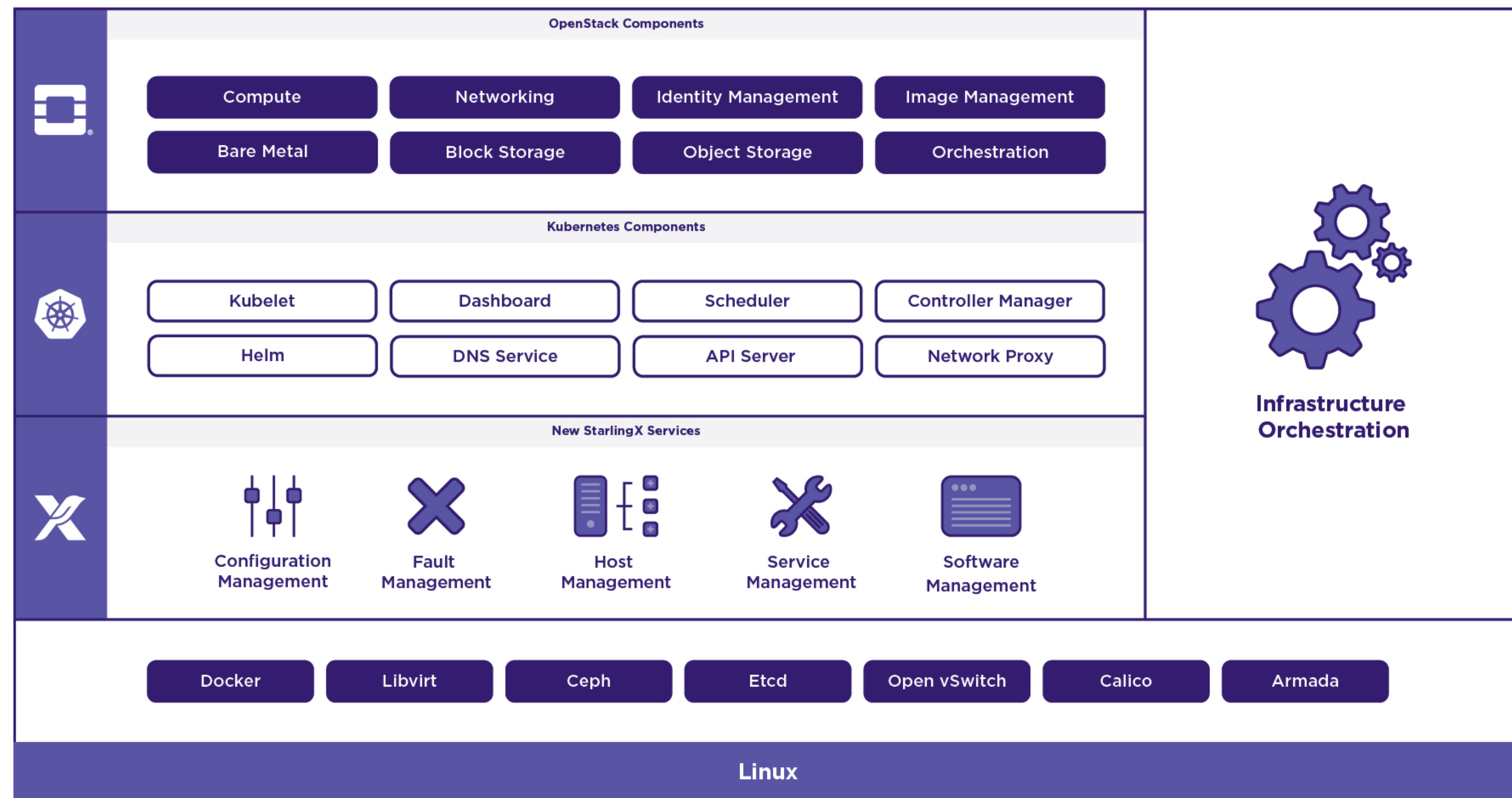
StarlingX Overview

- Top-level OpenStack Foundation pilot project
- Software stack providing high performance, low latency, and high availability for Edge Cloud applications
- Latest release is StarlingX 2.0



StarlingX Update

- A hardened cloud-native platform integrating OpenStack and Kubernetes on dedicated physical servers
- Containerized OpenStack services based on the Stein release
- Closely aligned with the current OpenStack code base
 - As StarlingX integrates the Train release this fall the platform will no longer carry any out-of-tree patches
- Kubernetes-based edge sites for containerized workloads



There are more OpenStack and Kubernetes components used than represented in this diagram.

Thank You!

Questions?



openstack



@OpenStack



openstack



OpenStackFoundation