



Containerized OpenStack: Preview Inside



Session TUT1273

April 2019

T. R. Bosworth- Senior Product Manager
tbosworth@suse.com

Arun Kant - Senior Software Engineer
akant@suse.com

Agenda

- **Introduction to Containerized OpenStack**
- **Airship Open Source Project**
- **Technology Preview**
- **Demo**
- **Questions**

Containerized OpenStack Tech Preview

What is it?

- OpenStack services (e.g., Nova, Keystone, Neutron) packaged to run in containers as opposed to running as processes on bare metal
- Kubernetes installed onto bare metal, with OpenStack deployed within containers using Helm Charts
- Airship open source project foundation for lifecycle management

Why are we introducing it?

- Containers are more lightweight than VMs and easier to start up and terminate
 - OpenStack environment faster to start up and scale
- Easier to separate individual OpenStack projects
 - Easier to scale individual components up and down
 - Upgrades of individual components become easier
- Leverage Kubernetes' built-in HA
 - Designing a self-healing environment becomes simpler
- Securing individual services and components becomes easier, due to container isolation

Cloud 9 Containerized OpenStack

Tech Preview

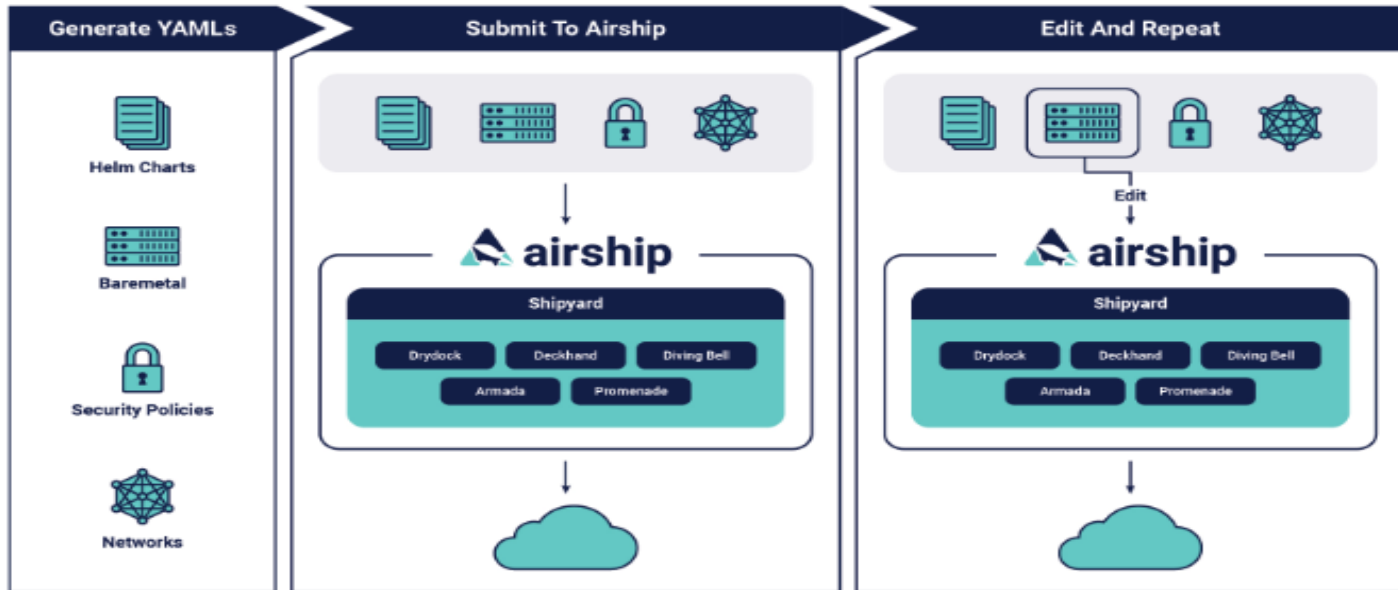
- Separately delivered – In parallel with Cloud 9 delivery
- Mandatory milestone for Cloud 10 roadmap
- Unification of Lifecycle Management
- Based on upstream Airship project

- SUSE Manager Integration Investigation – SUSE Manager Team
- Target for Delivery – May 2019
- Details linked from the Cloud 9 Beta page
<https://www.suse.com/betaprogram/cloud-beta/>

We need your Feedback!

What Is Airship?

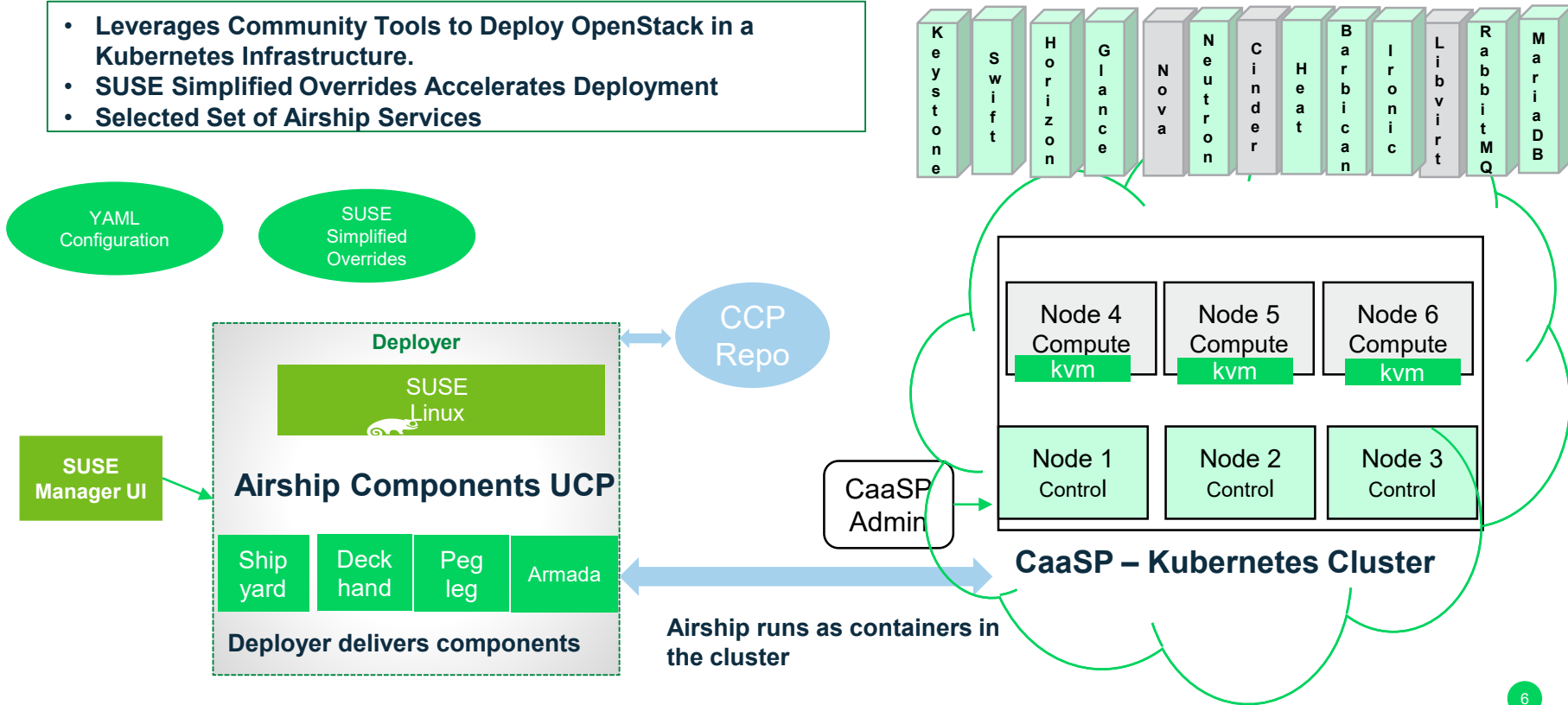
- Full Lifecycle Management of Data Center Infrastructure using Containerized OpenStack
- Uses OpenStack-Helm to Deploy OpenStack on a Kubernetes Infrastructure



Cloud Lifecycle Management Airship

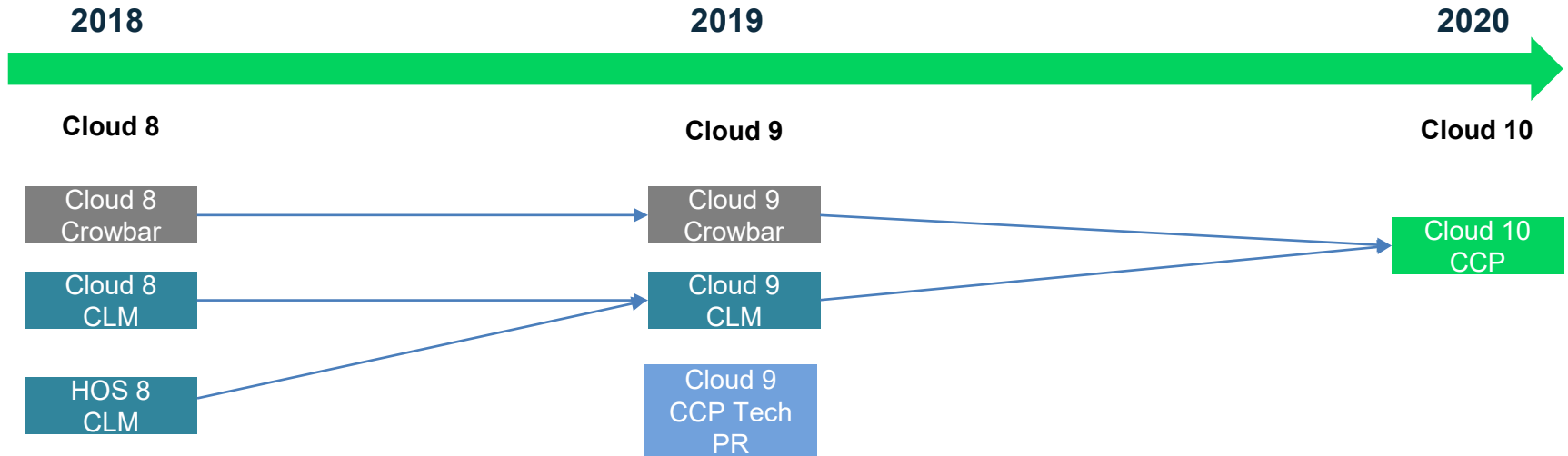
Containerized Deployment

- Leverages Community Tools to Deploy OpenStack in a Kubernetes Infrastructure.
- SUSE Simplified Overrides Accelerates Deployment
- Selected Set of Airship Services

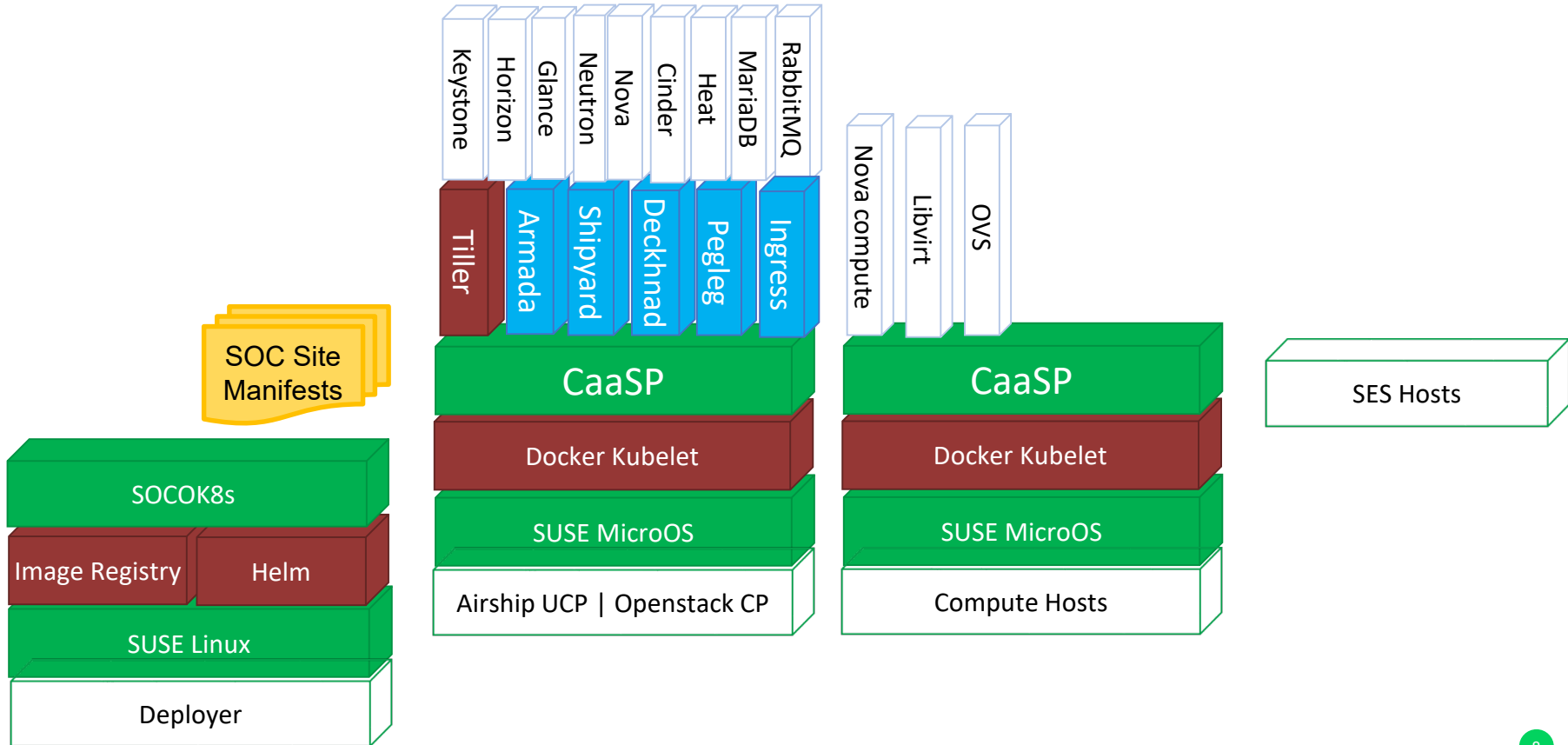


Lifecycle Upgrade Paths / Unification Plan

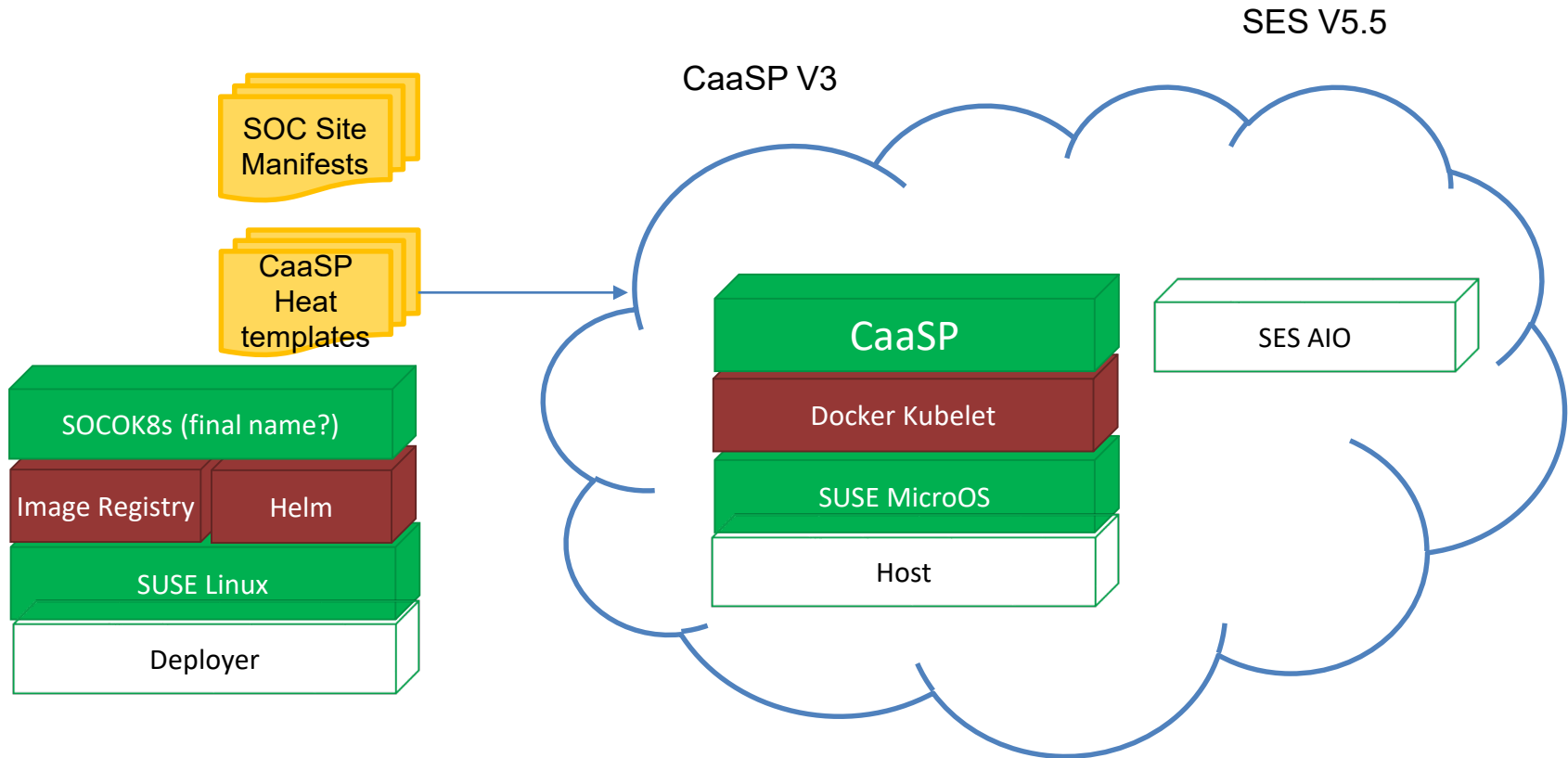
- SUSE OpenStack Cloud 10 Containerized Control Plane requires Lifecycle Manager conversion
- Provide Migration Path in Cloud 9 for both flavors
- Allows single customer conversion to CCP in Cloud 10
- Lifecycle Manager is more aligned with Upstream



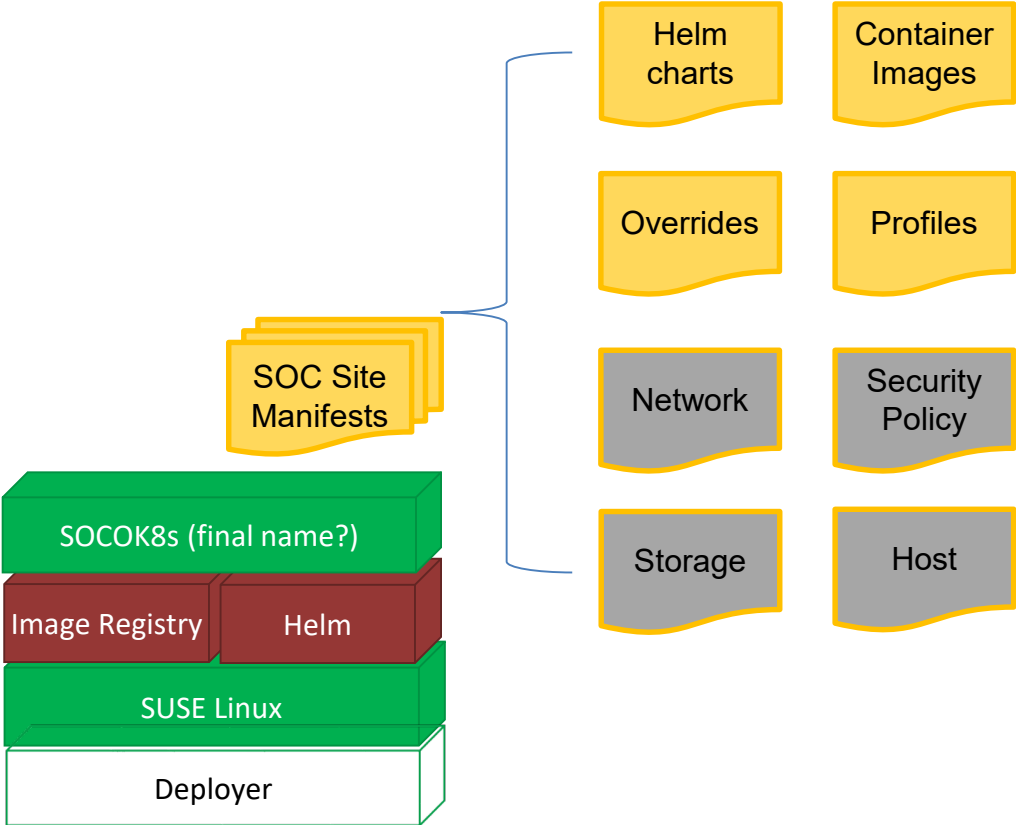
CCP Deployment on Existing CaaSP and SES



CCP Deployment – What if I Don't Already Have K8S?

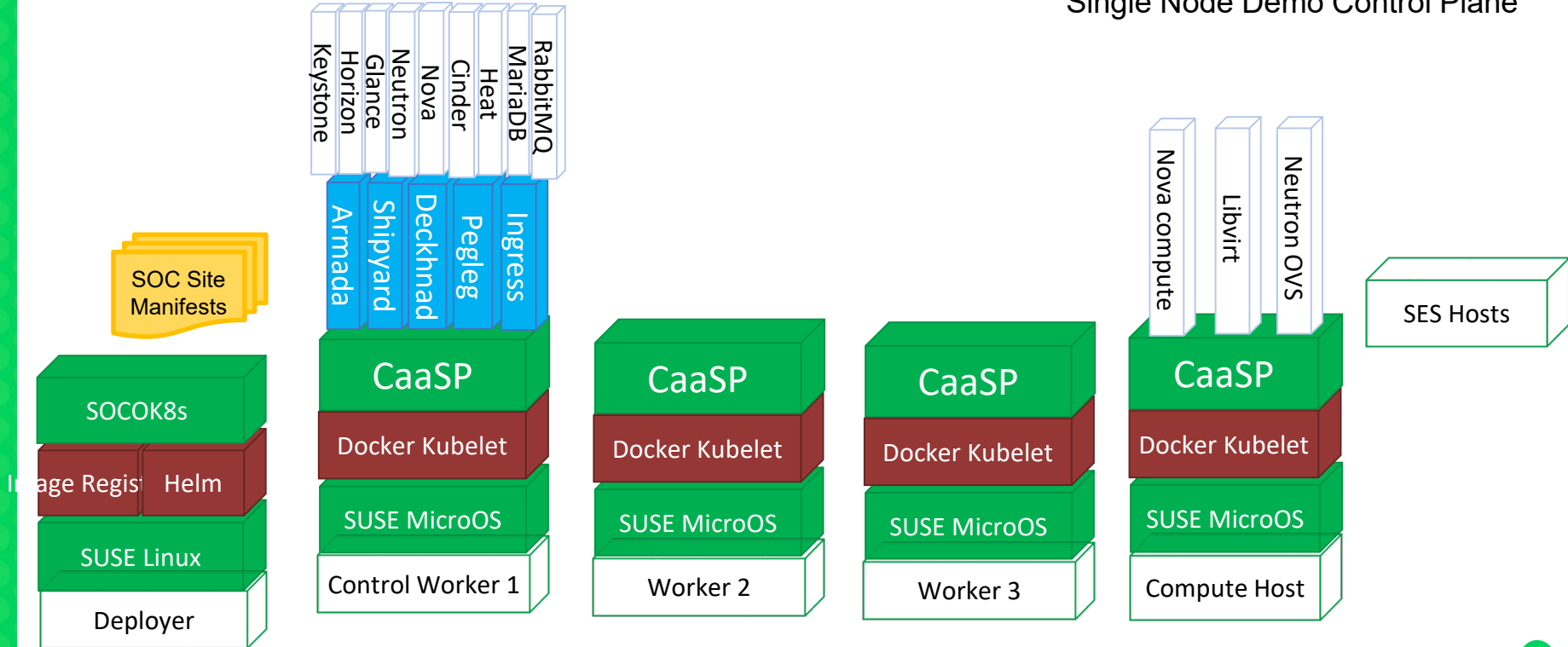


Declarative and Repetitive Cloud Infrastructure



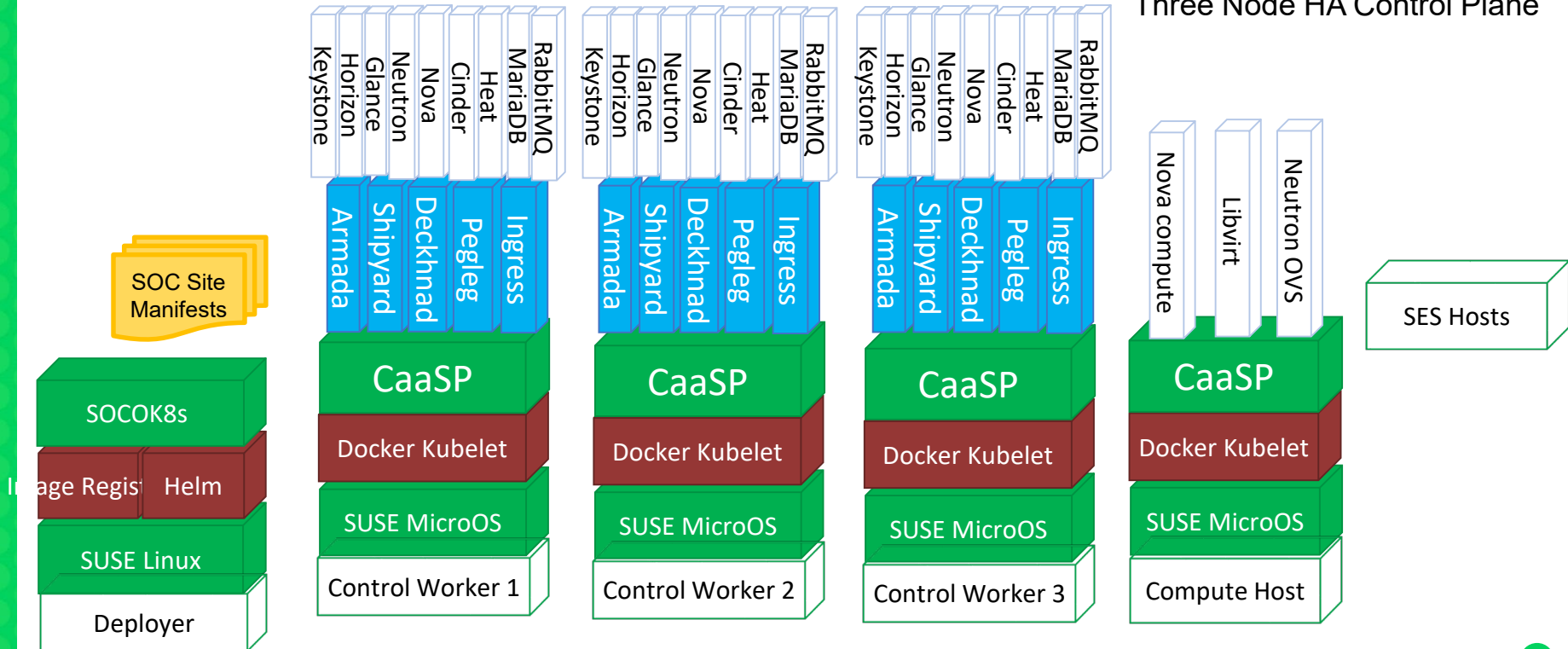
One Workflow for Lifecycle Management

Use Case 1: Scale out Control Plane



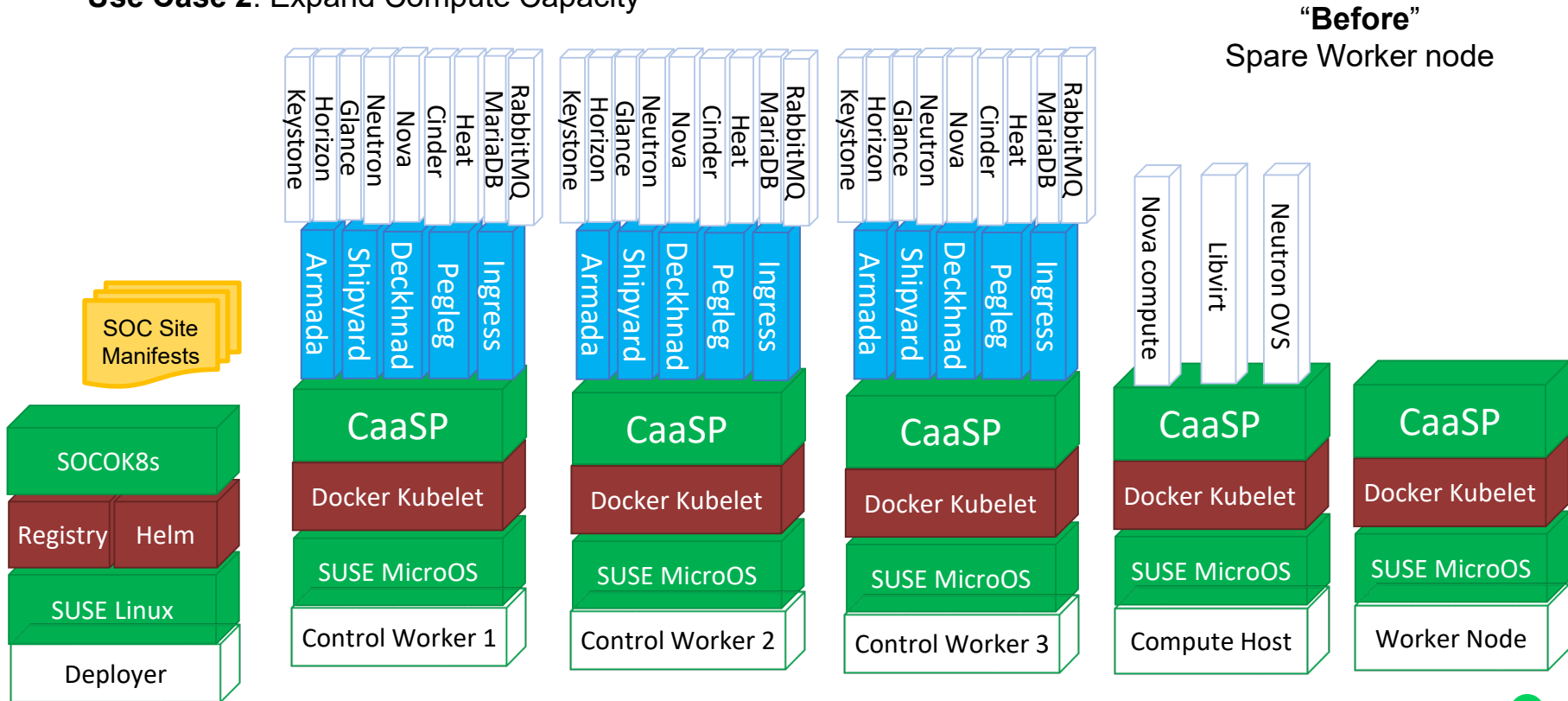
One Workflow for Lifecycle Management

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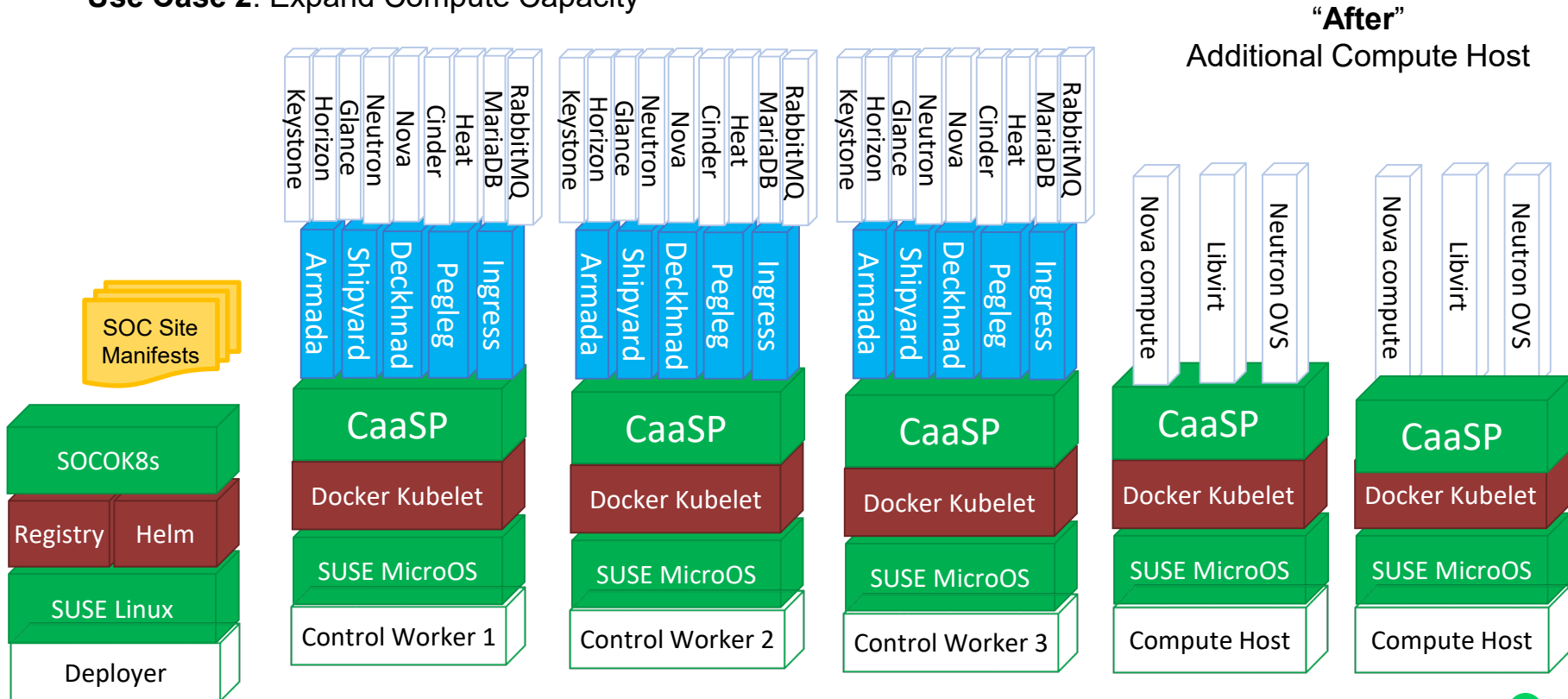
One Workflow for Lifecycle Management

Use Case 2: Expand Compute Capacity



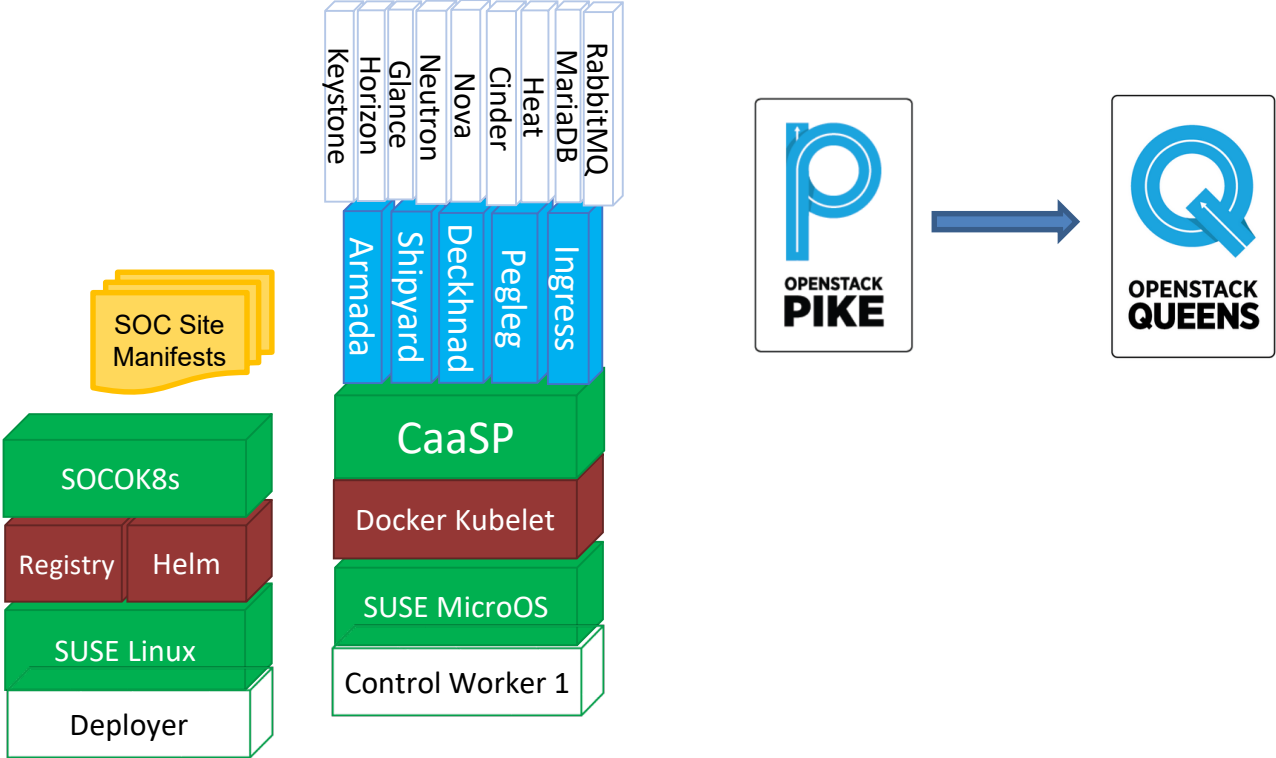
One Workflow for Lifecycle Management

Use Case 2: Expand Compute Capacity



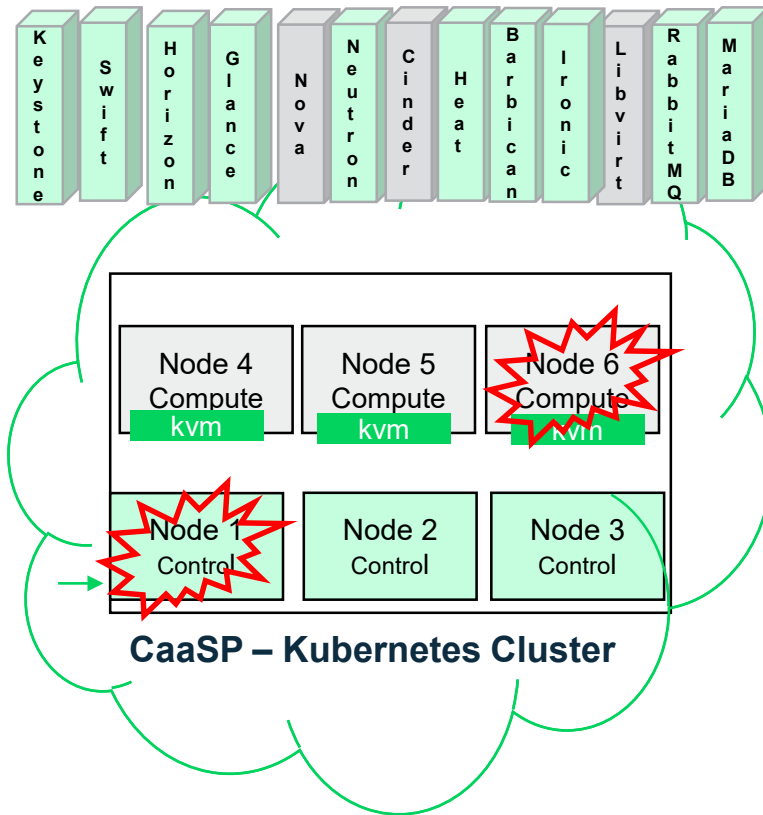
One Workflow for Lifecycle Management

Use Case 3: Upgrade Service from Pike to Queens



Resilience and Self-Healing

What happens when a node is lost?



- Leverages Kubernetes HA
- Airship Can Redeploy Components on New Node

Cloud 9 Containerized OpenStack

Details Linked from the Cloud 9 Beta Page

<https://www.suse.com/betaprogram/cloud-beta/>

Coming to you soon.. May 2019

We need your Feedback!!!



We adapt. You succeed.

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