Lifecycle Management for the Software Defined Infrastructure

From the Far Edge to the Datacenter

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Buzzword Alert!
Buzzword Alert?
Setting the expectations

Infrastructure as code and containerized control planes aren't just buzzwords, but two of the paradigms of SUSE's next generation Software Defined Infrastructure stack. In this talk we'll give an outlook on our ongoing efforts to bring container-based Software Defined Infrastructure not just to your datacenter, but also to
distributed environments like retail infrastructure or even IoT.
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Delivering Digital Transformation
Numerous Models Increase Complexity

EDGE

CORE

CLOUD
The Seamless Edge to Core to Cloud

Application Delivery Platform

Software-defined Infrastructure
- Consistent platform edge to core
- Enterprise resiliency and scale
- Deployment and life-cycle governance

Application Delivery Platform
- Traditional to cloud native applications
- Tool choices to fit business requirements
- Centrally managed edge to core to cloud
Enter Your SUSE Portfolio

Enabling businesses to innovate and execute their digital solutions when, where and how the business needs in support of their customers.
SUSE Delivers from Edge to Core to Cloud

Application Delivery

- Container Management
  - SUSE CaaS Platform
- Platform as a Service
  - SUSE Cloud Application Platform

Software-defined Infrastructure

- Private Cloud / IaaS
  - SUSE OpenStack Cloud
- Compute
  - Virtual Machine & Container
- Storage
  - SUSE Enterprise Storage
- Networking
  - SDN and NFV
- Multimodal Operating System
  - SUSE Linux Enterprise Server

Physical Infrastructure: Multi-platform Servers, Switches, Storage

Services

- SUSE Global Services
- Consulting Services
- Select Services
  - Premium Support Services
SUSE Delivers from Edge to Core to Cloud

**Application Delivery**

- Container Management: SUSE CaaS Platform
- Platform as a Service: SUSE Cloud Application Platform

**Software-defined Infrastructure**

- Private Cloud / IaaS: SUSE OpenStack Cloud
- Compute: Virtual Machine & Container
- Storage: SUSE Enterprise Storage
- Networking: SDN and NFV
- Multimodal Operating System: SUSE Linux Enterprise Server

**Physical Infrastructure:** Multi-platform Servers, Switches, Storage

**Services**

- SUSE Global Services
- Consulting Services
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SUSE Delivers from Edge to Core to Cloud
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Services
- SUSE Global Services
- Consulting Services
- Select Services
- Premium Support Services
This is in an early stage!

The (digital) ink isn’t dry yet!
This is where the journey will go:

- Containers are everywhere!
- Infrastructure as Code!
- Linux from
  - the Edge to
  - the Core to
  - the Cloud!
Containers are everywhere
Infrastructure as Code!
From the Edge to the Core to the Cloud
Datacenter deployment:
Proposed architecture

- **LOB User**
- **SDI Admin**

**Cluster Manager UI**
- Uyuni
- airship

**Stratos**
- Containers
- PaaS
- IaaS

**Kubernetes Cluster**
- Cloud Foundry
- OpenStack
- Ceph (with)

**Bare Metal**
- PXE/bare metal deployer (e.g. Yomi/SaltBoot)

**VM Platform**
- API
- (not in combination with OpenStack)
Why Airship?

- Mindshare in the OpenStack community and telco industry
- Project vision is a perfect match for “infrastructure as code” done right
- Parts that are overly complex can be fixed/simplified
- For a full lifecycle management, the complexity is required!
## Clusters

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe’s OpenStack</td>
<td>Ok</td>
<td>OpenStack</td>
</tr>
<tr>
<td>Pete’s Storage Cluster</td>
<td>Installing</td>
<td>Ceph</td>
</tr>
<tr>
<td>Yaroslav’s CAP</td>
<td>Needs patching!</td>
<td>Cloud Foundry</td>
</tr>
<tr>
<td>AJ’s Kubernetes</td>
<td>DOWN</td>
<td>Kubernetes (non-HA)</td>
</tr>
</tbody>
</table>
Add Cluster

- OpenStack (large)
- OpenStack (medium)
- OpenStack (small)
- SES (large)
- SES (medium)
- SES (small)
- CAP (large)
- CAP (medium)
- CAP (small)
Add Cluster

Name:

_________________________

Lots of other questions
## Select hardware

<table>
<thead>
<tr>
<th></th>
<th>System</th>
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<th>Tags</th>
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<td>5TB</td>
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<td>HPE</td>
<td>unassigned</td>
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<td>[x]</td>
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<td>4TB</td>
<td>Compute</td>
<td>Dell</td>
<td>reserved</td>
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<tr>
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<td>-</td>
<td>HPE</td>
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Monitoring: Prometheus with Grafana/Stratos

- SDI Admin
- Grafana
  - Dashboards
- Prometheus
- Uyuni
- Bare Metal SLES

- LOB User 1
- Stratos
  - Containers
  - PaaS
    - Cloud Foundry
- Kubernetes Cluster
- OpenStack
- Ceph (with other items like containers, PaaS, etc.)
Datacenter deployment: OpenStack as “undercloud”

- SDI Admin
- Cluster Manager UI
  - Uyuni
  - Airship (+ Gardener?)
  - kubeadm
  - API-driven VM deployment

- Containers
- PaaS
- Kubernetes Cluster
- OpenStack
- Kubernetes Cluster
- Cloud Foundry

- Stratos

- ☺LOB User 1

- ☺LOB User 2
SUSE Manager: Where the journey is going

Linux System Lifecycle Management → Cluster Lifecycle Management
SUSE Manager: Where the journey is going

Linux System Lifecycle Management

Clusters Lifecycle Management
SUSE Manager: Where the journey is going

Linux System Lifecycle Management

Clusters Lifecycle Management
✔ Software Defined Infrastructure
✔ Containers
✔ Configuration as Code
✔ DevOps
✔ GitOps
✔ Hybrid Cloud
✔ Multi-Cloud!
Thank you!