Session 1428

SUSE Cloud Application Platform
Version 1.4, 2.0, and 2.x Roadmap

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Agenda

- Mission Statement
- Roadmap
- Key features
- Life-cycle
- New pricing model
SUSE: Underpinning Digital Transformation

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

Open, Secure, Proven
Mission Statement:
Supply a turn-key container application platform that manages applications through their life-cycle -- from code to deployment, managing dependencies, application health, and upkeep.
SUSE Cloud Application Platform

Key Focus for the next year

Hybrid, multi-cloud Cloud Application Platform

- Provide Kubernetes with an application viewpoint
- Automate application deployment and management for Kubernetes
- Uses native Kubernetes runtime to orchestrate workloads on prem or in the cloud
- Extending developer productivity beyond Kubernetes with PaaS capabilities
- Extending developer productivity beyond PaaS with FaaS capabilities
- Extensive application management for deploying and managing container app
- Provide tight integration into Public Cloud Managed Kubernetes Platforms
**SUSE Cloud Application Platform**

<table>
<thead>
<tr>
<th>Version</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tbody>
<tr>
<td>v1.0</td>
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<td>v1.1</td>
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<td>v1.2</td>
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<td>V2.0</td>
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**1.0**
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- SUSE Linux Enterprise stemcells
- SUSE stacks compatible with CF buildpacks
- Kubernetes 1.7 (SUSE CaaS Platform 2)
- Stratos-UI 1.0 web console
- HA pod configuration
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SUSE Cloud Application Platform 1.4
Support for Google Cloud GKE

SUSE CAP has always worked on GKE, but with v2 it will be fully documented.

Activities for GKE support
- QA and validation for all builds will use GKE
- Produce detailed documentation on setup of clusters, installation, and configuration of CAP
SUSE Cloud Application Platform 1.4
Support policy for 'bring your own' Kubernetes

SUSE CAP designed to work on any 'standard' Kubernetes

Basic support coverage:

• CAP supported on any compatible K8s platform on best effort basis

• SUSE to address issues if they can be re-created on any of our documented K8s platforms (CaaS Platform, AKS, EKS, GKE)

• Will provide L3 with guidelines for support boundaries on untested 3rd party Kubernetes
• All CAP point releases include updated CF releases to maintain certification.
• 2019 Cloud Foundry Certification Requirements same as 2018.
• CAP 2.0 will ship with Diego and Eirini. Operator chooses during deployment.
• Continue to support upstream CF Community
  • enable cloud.gov to adopt Stratos
  • allow extensions to be published separately
  • extend feature set
• AutoScaler UI (building upstream with IBM)
• Graduate from incubation
• Build out Kubernetes feature set
• Allow Stratos to be used without Cloud Foundry
• Improve UI usability
• Improve metrics support (add Grafana and leverage open-source dashboards for CF and K8S)
SUSE Cloud Application Platform 1.4
SES or DRBD

Adding DRBD support for persistent storage

SLE HA Extension as an optional entitlement – contains DRBD
- CAP requires a Kubernetes storage class
- CF Volume Services require an NFS file system
- DRBD will tailored to cover storage needs for small to medium deployments
- Offered as an alternative to the SES entitlement
SUSE Cloud Application Platform 2.0
Eirini: Kubernetes-native app scheduling

- Compiles, packages, and deploys container apps to Kubernetes clusters, using OCI images and Kube deployments
- Allows replacement of the CF-specific Diego container scheduler with native Kubernetes orchestration
- User experience is still a simple single step process (e.g. cf push works the same)
- Designed to incorporate Knative as a back end
- Radically simplified operator environment – no container in container – Kubernetes is the entire control plane and workload orchestrator
SUSE Cloud Application Platform 1.x

Diego cells as Kubernetes Pods

BYO Containers

SUSE CaaS Platform, CSP managed K8s

Kubernetes

SUSE Cloud Application Platform

Diego

BYO Containers

Application execution: SUSE Linux Enterprise containers

Broker

UAA

Volume

Router

CC API

Logging

SLE

SLE

SLE

SLE

SLE

SLE

Control plane: SUSE Linux Enterprise containers

SLE

CAP's Status Management

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SUSE Cloud Application Platform 2.x
Eirini for Kubernetes-native app scheduling

BYO Containers

SUSE CaaS Platform, CSP managed K8s, Other K8s

Control plane: SUSE Linux Enterprise containers

Application execution: SUSE Linux Enterprise containers

SLE SLE SLE SLE SLE

Kubernetes

Eirini

SLE SLE SLE SLE SLE

SUSE Cloud Application Platform

Broker UAA Volume Router CC API Logging

SLE SLE SLE SLE SLE
SUSE Cloud Application Platform 2.0
CF-Containerization (CF-Operator)

Move CAP onto the upstream containerization project

Why?
• CAP was built on a precursor to the containerization project
• Zero downtime upgrades
• Rollback
• Canary deployments
• More granular configurability

**cf-operator** will enable the deployment of BOSH Releases to Kubernetes. Implemented as a Kubernetes operator, an active controller component which acts upon custom Kubernetes resources.
• Incubation Proposal: [Containerizing Cloud Foundry](#)
• Slack: #cf-containers on [https://slack.cloudfoundry.org](https://slack.cloudfoundry.org)
• Backlog: [Pivotal Tracker](https://pivotaltracker.com/)
The ability to capture data to create billing reports

- Adding upstream CF-Abacus project
- Abacus provides usage metering and aggregation for Cloud Foundry (CF) services that can be used for billing. This capability is implemented as a set of REST micro-services which collect usage data, apply metering formulas, and aggregate usage at several levels within a deployment organization.
- Abacus provides a REST API allowing cloud service providers to submit usage data, and a REST API allowing usage dashboards and billing systems to retrieve usage reports.
SUSE Cloud Application Platform 2.0
1-click install for CSPs

Turn-key reference architecture ready to start

- Targeted for Azure AKS, AWS EKS, Google GKE
- Production ready implementation
- Documented for extensibility
- "Easy Button" launch of a framework integrated and configured Cloud Application Platform
Incorporation of upstream Cloud Foundry work to replace Gorouter with Istio and Envoy.

- Will add new capabilities for east-west routing between applications and services.
- Work with upstream activities will allow this to happen in 2019, but targeting late in the calendar year.
SUSE Cloud Application Platform 2.x

Serverless

Allow the CF workflow to facilitate packaging and deployment of FaaS functions

- Adoption of one of the FaaS platforms
- Build support for handling 'functions' into the current application workflow

Allow CF applications to have managed access to FaaS functions

This is targeted to late 2019
SUSE Cloud Application Platform 2.x
Other 2.x Features

• Container registry interface (Portus)
• Supported CI/CD integrations (Jenkins, Concourse, GitLab, or other)
• Online IDE integrated with CF and Kubernetes (Eclipse Che)
• Certificate management interface
• Bundled Git interface (GitLab or other)
### SUSE Cloud Application Platform

#### Lifecycle – updated for 2019

<table>
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<tr>
<th>CAP v1.0</th>
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<th>CAP v1.3</th>
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- Major releases every year, supported for two years L1-L2
- Minor and point releases are “rolling” (released when ready) in-place updates
  - Minor releases to sync with upstream CF and add new features
  - Rolling point/patch releases include bug and CVE fixes as necessary
  - Rolling updates do not increment life-cycle (i.e. do not delay end of support for the major release)
New Packaging and Pricing Model

SUSE CAP is priced per Core or vCPU pair -- '1-Core / 2-vCPUs'

Count cores on single tenant hardware / Count vCPUs on virtualized platforms

1-Core equals 2 vCPUs (pricing is quoted at 2-vCPU or 1-Core)

Pricing per vCPU equates to:

1-year priority subscription with entitlements* -- $1660.00 USD per 2-vCPU or 1-Core

* CaaS and SES or DRBD entitlement are included with full SUSE CAP SKUs, migration SKUs supply CAP without entitlements

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<th>Description</th>
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<td>SUSE Cloud Application Platform, x86-64, 2-vCPU or 1-Core, Priority Subscription, 1 Year</td>
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Sample on-prem layout

- Three 12 Core Servers running SUSE CAP components and workloads with entitlements
- Requires acquisition of QTY 36 (3 servers x 12 Cores per server) SUSE CAP 1-Core or 2-vCPU priority 1 year
- MSRP is ~$1,660 per Core, extended price is $59,760
- Metrics for CAP are Cores running CAP or its workloads. Cores supporting K8s and SES infrastructure beyond CAP workloads are not counted.
Sample AKS, EKS, or GKE layout

- Three 24 vCPU Instances for AKS running SUSE CAP components and workloads (no entitlements)
- Requires acquisition of QTY 36 (3 Instances x 24 vCPUs) SUSE CAP Migration 1-Core or 2-vCPU priority 1 year
- MSRP is $1,350 per Core or 2-vCPUs, extended price is $48,600
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