FUT1429 - SUSE Application Delivery Portfolio

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SUSE Enables Digital Transformation
With a complete portfolio of IT transformation solutions
In Today’s Era of Digital Transformation
Every company is a technology company

Technology has become a driver of competitive advantage across the business

No longer a mere supporting actor
Accelerate Delivery of Modern Applications
To compete and win in the digital era

AGILITY
Increase responsiveness
Speed innovation

• **Reduce cycle times**, moving toward CI/CD (increase release frequency)
• **Deliver cloud native applications** that are highly and dynamically scalable, resilient, and rapidly evolvable
Transformation is Multifaceted and Multi-cloud

- **IT Infrastructure**
  - Datacenter
  - Hosted / Managed
  - Cloud

- **Application Deployment**
  - Physical Servers
  - Virtual Servers
  - Containers

- **Application Architecture**
  - Monolithic
  - N-Tier
  - Microservices

- **Development Process**
  - Waterfall
  - Agile
  - DevOps
Accelerate Application Delivery

Streamline application development and deployment

Build and deliver new cloud native applications

Modernize legacy applications
Accelerate Application Delivery

Streamline application development and deployment
Developers Use Containers to Package Code

Convenient to use
• Small
• Fast to start up
• Easy for developers to build and deploy themselves

Operate consistently in any environment
• Include everything needed to run
• Enhance productivity and facilitate collaboration
• Eliminate ‘works on my machine’
Automation Enables Deployment at Cloud Scale

Orchestration
• Scheduling
• Service discovery

Performance and availability
• Scaling
• Load balancing
• Self-healing
• Monitoring

Maintenance
• Rollout
• Rollback
Automation Enables Deployment at Cloud Scale

Orchestration
• Scheduling
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Performance and availability
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• Self-healing
• Monitoring

Maintenance
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• Rollback
Accelerate Application Delivery

Streamline application development and deployment

Build and deliver new cloud native applications
Instead of Large, Monolithic Applications…

Interdependent components
Application centric
Functionally organized teams
12-18 month release cycles
Increase Agility with Cloud Native Applications

Independent microservices
Automation centric
Small microservice-oriented DevOps teams
Cycle times on the order of weeks to hours
Accelerate Application Delivery

Streamline application development and deployment

Build and deliver new cloud native applications

Modernize legacy applications
Re-deploy to Virtual or Cloud Infrastructure

- Virtual Machine
- Private Cloud
- Public Cloud
- Physical Server
Modernize Application Architecture
Accelerate Application Delivery

Streamline application development and deployment

Build and deliver new cloud native applications

Modernize legacy applications
Application Delivery Transformation Journey

**Containerize**
Containerize & Orchestrate

**Modernize**
Microservices & DevOps

- Modernize legacy applications
- Build and deliver new cloud native applications

**Formalize**
Best practices, patterns, processes

- Discover & capture best practices, patterns, processes

**Standardize**
Consistency across the enterprise

- Factory-scale application production
Automate Lifecycle Management
Different approaches for different workloads

Stateful applications
Custom deployment process

Cloud native applications
Standard deployment process
SUSE Application Delivery Solutions
Transform Application Delivery with SUSE

Increase agility and speed innovation by accelerating application delivery.
Transform Application Delivery with SUSE

- **Increase agility and speed innovation** by accelerating application delivery
- **Lower costs** by increasing operational efficiency
Transform Application Delivery with SUSE

Increase agility and speed innovation by accelerating application delivery

Lower costs by increasing operational efficiency

Maximize return on investment with open, industry standards
SUSE Application Delivery Solutions
Accelerate development and deployment of containerized applications to speed application delivery and increase business agility

SUSE CaaS Platform
Container Management

SUSE Cloud Application Platform
Platform as a Service

Kubernetes for the Agile Enterprise
Best Kubernetes operator experience

Advanced Cloud Native Developer Experience
Proven productivity for Kubernetes
SUSE CaaS Platform
Kubernetes for the agile enterprise

Accelerate modern application delivery
with Kubernetes, today’s leading container management platform

Simplify Kubernetes administration
with an exceptional platform operator experience

Maximize return on investment
with a flexible, no lock-in solution
SUSE Cloud Application Platform
Advanced cloud native developer experience

Boost developer productivity
with one-step application deployment and your choice of languages and frameworks

Reduce complexity and increase efficiency
with a lean platform for rapid application delivery at scale

Maximize ROI
with industry-leading technology and investment protection
DevOps Workflows for Kubernetes
A spectrum of automation options

- Custom-made
- Assembled
- Modified
- Factory-built

SUSE Application Delivery Solutions

Greater flexibility and versatility

Faster time-to-deliver
Lower cost per unit
Higher re-use (more efficient)
More scalable production
Multi-cloud DevOps Solution Architecture

- **Flexible**
  - DevOps automation for custom workloads

- **Fast and easy**
  - DevOps automation for cloud native workloads

**Kubernetes**

- **Do-It-Yourself**

- **SUSE Cloud Application Platform**

**SUSE CaaS Platform**

- Amazon EKS
- Azure AKS
- Google GKE

Kubernetes user experience

Kubernetes workflow automation tooling

Kubernetes multi-cloud infrastructure

Visibility

Monitor Kubernetes or Cloud Foundry Endpoints
## Multi-cloud Management

Centralized management of clusters and workloads

### Endpoints

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Multi-cloud Management
Centralized management of clusters and workloads

Summary of Memory Usage for Last Hour
Mean: 127.1 MB
Maximum: 9.3 GB

Summary of CPU Usage for Last Hour
Mean: 22.14 secs
Maximum: 21,091.26 secs

Legend:
- winr32adfsfeed094fe...
- winr37abe890e97e17...
- winr7eboe877696a...
- winr3a06a6493f4e1...
- winr3821962af260e...
- kube-system/chapray...
- kube-system/kebe-...
- kube-system/chp-...
- kube-system/tildo-
- minbrokernodect...
- winbrokerseged-ch...
- sct api-group-0api-
- sct api-group-0loggr...
SUSE CaaS Platform Proposed Roadmap

3.0

Based on SUSE Linux Enterprise 12 SP 3
Kubernetes 1.9

During 3.0 lifetime

- LDAP Integration
- Customer certificates for user facing endpoints
- Airgapped install
- Nginx Ingress controller
- Documentation update
- Kubernetes 1.10 update

New Architecture:
- Kubeadm based
- Command line first
- More flexible

Container Host OS:
- Codebase: SUSE Linux Enterprise 15 SP1
- Cri-o as default container engine
- Monitoring (Prometheus)

Orchestration:
- Kubernetes 1.14 or 1.15
- Network options (Cilium as first plugin)

Overall themes
- Continue to make Kubernetes easy to install, update, operate, and secure
- Multi-cluster, Multi-cloud
- Integration into customer environments (storage, networking)

4.x

Planned for 4.x releases

Kubernetes version update
- GPU enablement
- CNI: Kuryr as Network plugin
- Istio
- Kata-container
- Support for MicroOS/SLES with transactional updates

Overall themes

- Continue to make Kubernetes easy to install, update, operate, and secure
- Multi-cluster, Multi-cloud
- Integration into customer environments (storage, networking)

Planned for 5.0 release

Based on SUSE Linux Enterprise 15 SP2
Kubernetes version updates
- ARM 64-bit support

* Information is forward looking and subject to change at any time.
SUSE Cloud Application Platform

1.0
- Cloud Foundry: built from upstream CF Bosh release (cf-release v280)
- 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
- Volume Service (NFS)
- MySQL service broker

1.1
- Cloud Foundry 2018 certification
- Supported on Azure Kubernetes Service (AKS)
- Backup/restore cf plugin
- PostgreSQL service broker
- CF updates - every point release
  - component releases
  - buildpacks

1.2
- Supported on Amazon EKS
- App-AutoScaler: Dynamic scaling based on performance metrics, time/date (with IBM*).
- OSBAPI Broker for Helm: MySQL, PostgreSQL, Redis, or MongoDB instances on Kubernetes (experimental).
- Stratos UI v2: service management, Angular updates
- Support for Azure Load Balancer

1.3
- CredHub: credential management
- Brokers: Minibroker (Helm), AWS, Azure OSBA
- Stratos UI: Kubernetes endpoint plugin and metrics reporting

1.4
- Supported on Google Kubernetes Engine (GKE)
- Support policy for BYO Kubernetes
- CF version updates and 2019 recertification
- CF v3 API features
- DRBD persistent store support

1.5
- Serverless: Function-as-a-Service in Cloud Foundry and Kubernetes
- Istio & Envoy in CF (pending upstream completion)
- Integrated CI/CD (Concourse, Jenkins, other)
- Git hosting: Github Enterprise, Gitlab, or Gitea
- Online IDE (e.g. Eclipse Che)
- CF App SSO via Oauth2/UAA: Route service for limiting access to CF-hosted applications.
- fluentd log normalization / filtering
- Better SNI/certificate management

2.0
- Eirini: Kubernetes-native app scheduling
- CF Containerization: integrating upstream BOSH PMC work on CF Operator
- CF-Abacus: Metering and aggregation

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- SUSE Application Delivery Platform Future [FUT1429]
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- Secure Modern Application Delivery with SUSE CaaS Platform [TUT1266]
  - Thursday @3:15
- Integrating Identity with LDAP for SUSE CaaS Platform [TUT1254]
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- openSUSE Kubic - exploring the containerized frontiers [DEV1111]
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Demo?
- Visit our Kiosk in the Technology Showcase
- Join the Kubic project in the Developer Lounge
Transform Application Delivery with SUSE

Increase business agility and speed innovation
- Enhance productivity
- Streamline application lifecycle management
- Build rapidly evolvable applications

Lower costs
- Save time
- Reduce errors and their impact
- Increase efficiency

Maximize return on investment
- Simplify platform operations
- Avoid vendor lock-in
- Leverage and extend existing investments
Thank You!