Cisco Cloud Strategy

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Hyper Explosion of Applications & Data

- 277X: Data created by IoE devices v. end-user
- 78%: Workloads processed in Cloud DCs by 2018
- 5TB+: 5TB+ of data per person by 2020
- 30M: New devices connected every week by 2018
- 180B: Mobile apps downloaded in 2015
- 50B: Things connected by 2020

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Hyper-Distribution of Applications and Data

- **SaaS**
- **PaaS**
- **IaaS**

Data Center

Cloud

IoT and Edge Computing

Security Everywhere
New Approach to Reach and Analyze Data

- Structured Data
  - Traditional Data Warehouse

- Unstructured Data
  - Big Data Store

- Data Streaming at the Edge

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Analytics 1.0
Days/Hours

Analytics 2.0
Hours/Minutes/Seconds

Analytics 3.0
Seconds/Milliseconds
New Approach for Application Development

Existing IT

- App
- App
- App
- Web Servers
- App Servers
- Physical Infrastructure

Cloud-Enabled

- App
- App
- Web Servers
- App Servers
- Service
- Local
- Dedicated
- Shared

Cloud-Native (Containers)

- App
- Service
- .rb
- .py
- .go
- Java
- Runtime Micro-services on Containers
In words: Cisco Cloud Strategy

1. Cisco delivers XaaS via Cisco Partner
2. Cloud Infrastructure Stacks
3. Multi Cloud Orchestration
4. Platform as a Service
5. Cisco Cloud Services
6. Cisco IoT Software Stack
Cisco Cloud Strategy – 6 streams
Cisco Architecture for Hybrid Clouds

Type of Workloads

Bare Metal / Virtual

Cloud-Enabled

Cloud-Native

Cisco Hybrid Cloud Orchestration & Management

Traditional / Converged

Application
DB / DV/ Middleware
OS
Hypervisor
Infrastructure

Hyper Converged Infrastructure

Cisco HyperFlex

OpenStack

Application
DB / Middleware
OS
KVM
Virtual Infrastructure

Containers

Cluster Managers
Containers
HDFS
Lightweight Linux
Scale out Infra.

Streaming Data & Analytics

Kafka, Spark
Containers
Object HDFS
Lightweight Linux
Scale out Infra.
Multi Cloud Management Platform

Business (ITSM)
Prime Service Catalog, ServiceNow, Custom

Development (DevOps)
CliQr, Jenkins

Application-Centric Lifecycle Management
Model - Benchmark Deploy - Manage

Application Profiles

Datacenter
Private Cloud
Public Cloud

UCS
Director
ACI

UCS
Storage
Nexus
Switching

Hyper-V
Azure Pack
Windows Azure
Google Cloud Platform
Amazon Web Services
SoftLayer
Microsoft Azure Government
Kubernetes
Mesosphere
Metapod
OpenStack

Cisco ONE Enterprise Cloud Suite

Cisco CloudCenter

- Cisco Prime™ Service Catalog Self-Service Portal
- Cisco UCS Performance Manager
- Cisco Energy Mgmt
- Integrated Infrastructure Management Cisco UCS® Director
- Cisco® Virtual Application Cloud Segmentation
- Hybrid Cloud Management Cisco Intercloud Fabric

Cloud Operations (Cloud Assurance) (3rd-Party Billing, Assurance, Resource Mgmt)

End User/Developer or Consumer

IT App Designer

Infrastructure Admin

3. Multi Cloud Orchestration

Multivendor Computing, Network, Storage, and Virtualization

Ecosystem of Service Providers

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Cisco Platform as a Service Solutions

Eco Partnership

- Legacy Application and .Net Support with Apprenda
- Cloud Native Development with Pivotal and Cloud Foundry

Cisco Container Stack

- Container Management Kubernetes or MESOS
- Network affinity through Contiv
4. Platform as a Service

Cisco PaaS Management Service
Environment registration, deployment, data collection and health monitoring.
Cloud-native CI/CD View

Dev -> Laptop -> Sandbox

GitHub -> CI Drone -> Shipped Deploy

Microservice Infrastructure:
- Cisco MetaStack
- Cisco Intercloud
- AWS/Azure/Google
- Partner Cloud

Marketplace -> Catalog

Environment

4. Platform as a Service
IoT Blueprint

Things

Gateways

Cloud Managed Services

Customer Premise

Public / Private Cloud

Device Interface

IoT Ready Fog Nodes

Network Interface

IOT Trusted Data Pathway

Customer Value Added Services

- Customer Control of Data
- Tools for Application Developers
- Data Storage Integration w/ Big Data
- Integration with Analytics
- Event Management
- APIs for Dashboards

Service Interface

Clients

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...based on Policy-Driven-Infrastructure
Why Policy?

- Operational Simplicity
- Application Centricity
- Security and Compliance
- Multi-Vendor Innovation
SIM Cards and Application Profiles

SIM Card Identity for a Phone

Service Profile Identity for Compute

Application Profile Identity for the Network

Service Profile
- Network Policy
- Storage Policy
- Compute Policy
CloudCenter Manager
Single Intuitive Platform
CliQr-Hosted SaaS or Onsite Deployment
Full N-Tier Multi-Tenancy
Integrated Security
Highly Scalable Distributed Architecture

CloudCenter Orchestrator
Automated Provisioning and Deployment
Native, No Overhead
Summary
Cisco Cloud Reference Architecture

Software-as-a-Service
- Cisco Cloud Services

Platform-as-a-Service / Container Stacks
- Cisco and Partner PaaS
- Cisco Container Stacks

Cloud Management
- Multi-Cloud Application Management

Clouds
- Cisco, Partner and Public Clouds (Private – Public – Hybrid)

Cloud Infrastructure
- Infrastructure-as-Code, Automation & Hardware

Computes
- UCS, Converged Infrastructure and Hyper-converged

SDN
- ACI and N9K

Network Services Orchestrator
Key Take Aways

1. Full Hybrid-Cloud Stack
2. Cisco Cloud Services (IoT & NFV & SaaS)
3. Partner Cloud Landscape (Cisco powered)