

Successful laaS

The underlying Infrastructure DOES matter

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Introduction



CISCO_x



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Why do organisations want to move to laaS?

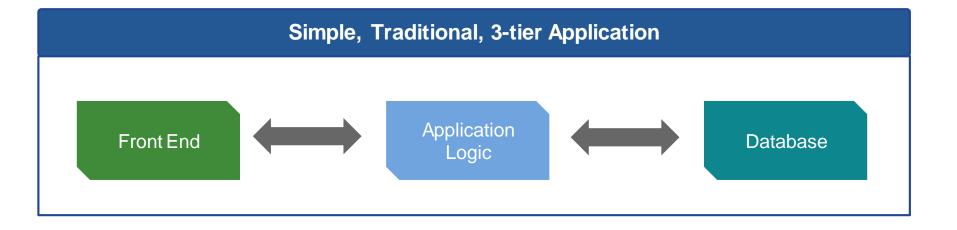
- laaS is now a commodity, so
 - Has a price advantage through scale benefits
 - Has security and reliability advantages
- Running a Datacenter should not be Core Business
- Make more effective use of people
- IT infrastructure experts difficult to hire and retain
- Applications are moving to Cloud, own DC becomes smaller



Let's get started with laaS!



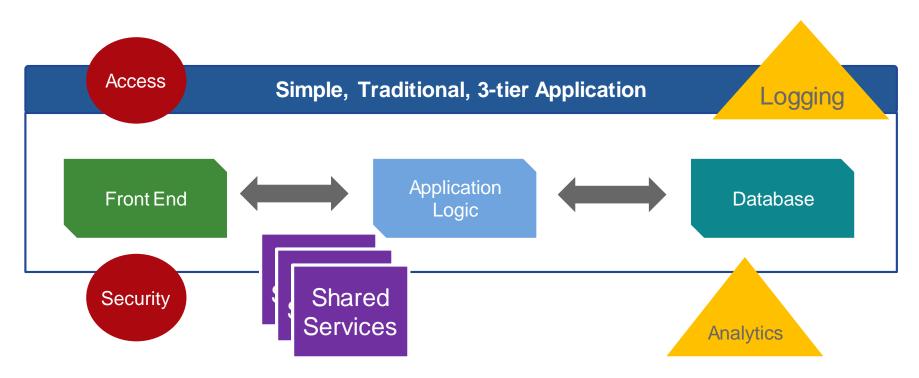
Organisation wants to get started with laaS



Difficult to put only parts of this "chain" at an laaS provider



Organisation wants to get started with laaS



Adding in the parts that make the application work in the customer environment



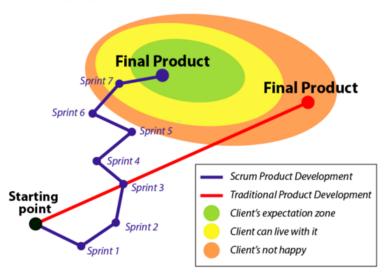
Gartner "Bimodal IT"

Type 1

"Traditional" (reliable IT) Type 2

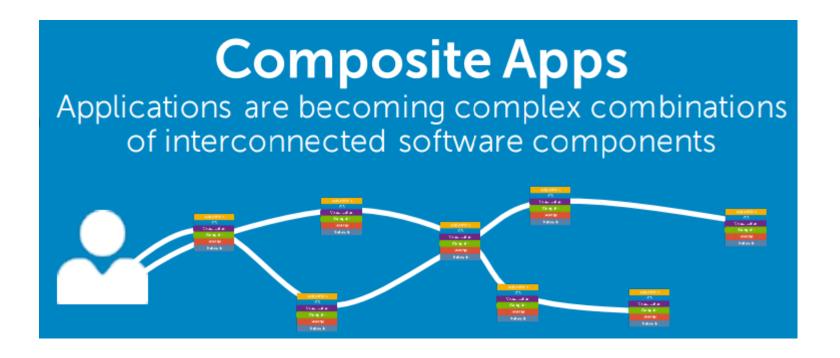
"Cloud Scale"
(agile IT)
DevOps/Scrum

Scrum vs. Traditional





"Mode 2" applications make it even more complex





DEVELOPER TOOLS

MICROSERVICES ECOSYSTEM

DATA CENTER

SOURCE

Atlassian GitHub Gitlab

SECURITY & COMPLIANCE

Illumio Twistlock

Conjur

Apcera CloudP Redlock Palo Al Scalock

CloudPassage Banyan Palo Alto Networks StackRox

MONITORING | LOG ANALYSIS

Wavefront Nagios Runscope DataDog Gencore New Relic

Apcera

Sysdig
App Dynamics
SignalFX

Elastic Logentries

SumoLogic Splunk

INFRASTRUCTURE AUTOMATION

HashiCorp Ansible (Red Hat)
Puppet SaltStack

Chef

CONTINUOUS INTEGRATION

Atlassian CloudBees
JFrog Codeship
CircleCl Werker
Shippable

INTER-SERVICE COMMUNICATIONS

 Confluent
 Tensyr
 Rabbit (Pivotal)

 Hystrix
 Thrift
 Finagle

 NATS
 gRPC

ORCHESTRATION

Docker Mesosphere Kubernetes HashiCorp

PLATFORM MANAGEMENT

 Docker
 Mesosphere
 AppFormix

 Nirmata
 Rancher
 Stack Engine (Oracle)

 Apcera
 Flexiant
 Containership

 ManagelQ
 Kubernetes

MANAGEMENT ClusterHQ M

ClusterHQ Minio MongoDB Crate.io

DATABASE & DATA

Cockroach

NETWORK

CONTAINER REGISTRY

Docker Amazon Google

API MANAGEMENT

Mulesoft Akana Apigee Runscope Kong WSO2 3Scale Mashery

REGISTRATION

Zookeeper CoreOS

Docker

LOAD BALANCING

Rabbit (Pivotal)

Kafka (Confluent)

NGINX Datawire Buoyant HAProxy Traefik

Cumulus Docker Big Switch Weaveworks

Calico

FBOSS

OpenSwitch

SERVICE DISCOVERY & PLANNING

Docker Kubernetes Hashicorp

MICROSERVICES

Get small to get big. Microservices is an approach to building software that shifts away from large monolithic applications towards small, loosely coupled and composable autonomous pieces.

Container —— API —— Message Bus

CONVERGED INFRASTRUCTURE

Ceph (Red Hat) Datawise Springpath Portworx

PLATFORMS

OpenShift Joyent
Cloud Foundry Deis

Docker

SERVICE OPTIMIZATION

Force12.io

OPERATING SYSTEM

Linux UNIX

Windows

CoreOS

OpenStack

Mesosphere

PUBLIC CLOUD

 AWS
 DigitalOcean

 Azure
 VMware

 IBM
 Google

Now imagine having to move to another laaS



Conclusion on IaaS

Using laaS does not take away the complexity

It takes away the simple infrastructure management tasks

Managing applications that run on PaaS is much easier



Fundamentals which should help in working with laaS providers (and Hybrid situations)



The Policy Defined Datacenter









Storage

Server

Network

Best Practices for:

- Consistence
- Fast deployment
- Less manual steps
- Less mistakes



Experts determine policies for infrastructure components

Template Specification

Individual Profiles

Uplink port configuration, VLAN, VSAN, QoS, & EtherChannels

Server port configuration including LAN & SAN settings

Network interface card (NIC) configuration: MAC address, VLAN, & QoS settings; host bus adapter HBA configuration: worldwide names (WWNs), VSANs and bandwidth constraints; and firmware revisions

Unique user ID (UUID), firmware revisions, and RAID controller settings

Service profile assigned to server, chassis slot, or pool

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Engineer builds policies into Templates for App Deployment

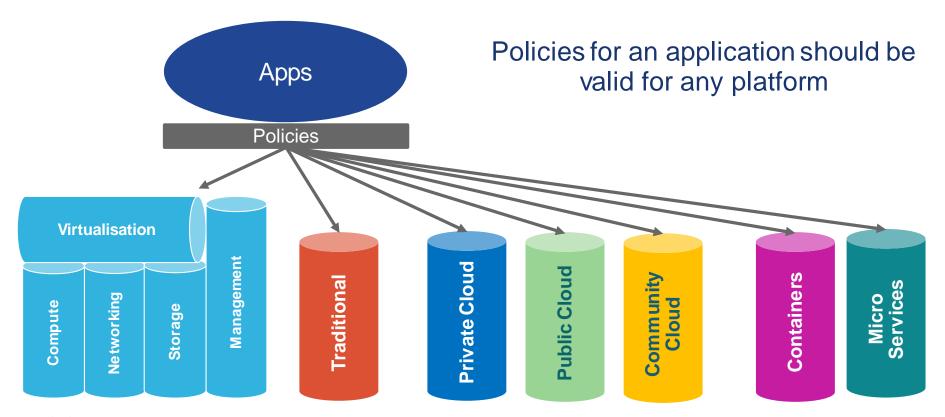


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Users instantiate a template to deploy their functionality and adapt instance to required price/performance



Consistent Policies across deployment platforms





End-to-end Orchestration

that understands policies

Cisco Technologies in conjunction with 3rd party

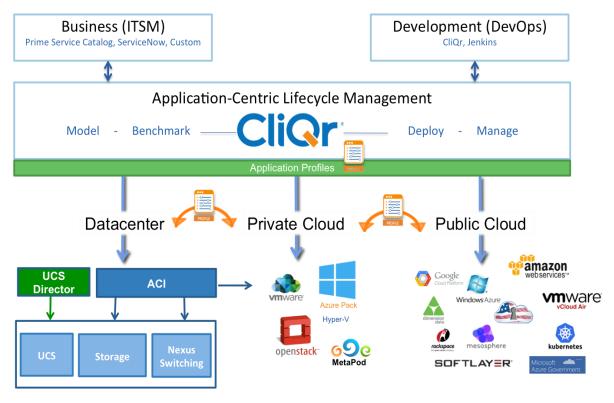
Self Service Front End

Service Orchestration to any destination platform

> Deployment Automation

Destination Platform





Use the network as a Sensor



- The network can be used to examine all data streams.
- Real-time analytics on the data stream gives you the ability to
 - Gain Performance and Reliability insight on all parts of an application chain
 - Add Security and Compliance functionality to the data stream while in transit

Embedded Security, Analytics, and Telemetry at 100G Wire Rate

An laaS provider using the network as a sensor is able to provide their customers with better

- Management information about what is going on in their applications
- Efficiency of their IT experts

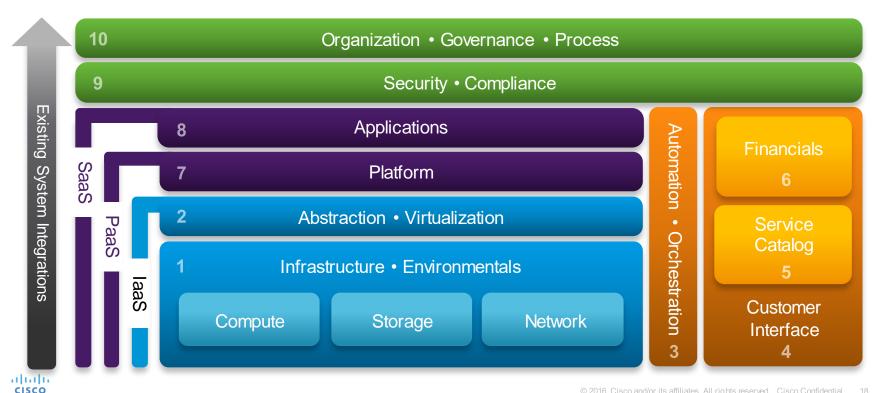


Services that can help customers and providers with improving adoption and success

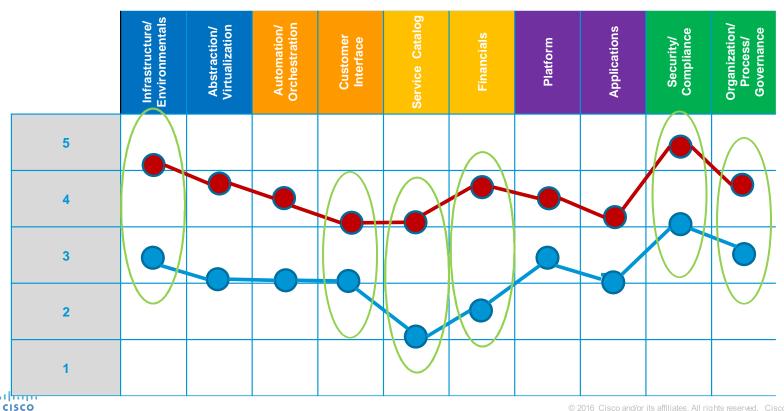


Transform your IT: Domain 10 framework

Cisco Services



Free Workshop to determine current and desired state



Sample IT Transformational roadmap

24 months

Target Domains:	Current Assess	Phase I Pilot	Phase 2 Limited Launch	Phase 3 Enhance	Phase 4 Manage
Infrastructure/ Environmentals (Domain 1)	Analyze current infrastructure for standardization LLD for any required modif cations to current design to support '737' approach	Implement changes identif ed in LLD Deploy suf cient capacity to support initial pilot services	Deploy additional FlexPods to support second wave of services and migrations	Deploy additional FlexPods to support additional workloads and services Develop capacity management model	Deploy additional FlexPods Implement capacity management models
Customer Interface (Domain 4)	Determine Portal requirements based on customer segments, end- state goal	Select portal solution that meets end state requirements	Implement basic Portal with limited functionality to support pilot services	Add incremental functionality to the portal to support additional services	Continue to move toward 'end state portal' to support customer segments
Service Catalog	Understand demand patterns for services Identify up to 3 most commonly requer	Implement limited service catalog for select services	Connect initial limited service catalog as part of use portal.	Enhance service catalog to expand net new environments. Limited production	Continue ref nement of service catalog ifecycle ant





laaS based on OpenStack

	DIY OpenStack	OpenStack Distro	Cisco Metapod
Product roadmap w/upgrades	None	OpenStack software only	Entire OpenStack system
SLAs	No	Sometimes (depends on Distro vendor)	Yes - 99.99%
Support	None	Software only	Full stack
Production timeline	Unpredictable	More predictable	Predictable
OpenStack skill sets required	High	Medium	Low
Operational complexity	High	Medium	Low



Summary

- Application Dependancies are the cause of complexity in IT Infrastructure
- Using Policies in your datacenter allows IT personnel to focus on exceptions and automating everything else
- Cisco provides technology that supports using laaS for the Policy Defined Datacenter
- Cisco and her partners provide the comprehensive services to help customers succesfully adopt and migrate to laaS providers
- Cisco provides solutions that help laaS Providers create services that better match the needs of their customers

The underlying infrastructure does matter!





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Summary

- Help your customers understand that laaS doesn't magically take away the complexity of their IT Infrastructure
- Using Policies in your datacenter allows IT personnel to focus on exceptions and automatoming everything else
- Cisco provides technology that supports using laaS for the Policy Defined Datacenter
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- Cisco provides solutions that help laaS Providers create succesfull offerings to the Community participants



Running your Infrastructure as a Service

- Establish Governance, Manage the Service → New skills for IT personnel
- Standardization on unit of consumption to compare price/performance of providers
- Billing, Payments and assigning cost centers
- Management of services between Provider, Partner and Consumer
- The flexibility and freedom of the underlying technology
- How to put Complex Services into a Catalogue / Portal?
- Ensuring end users actually consume the laaS and don't go rogue
- Migration Scenarios to and between providers
- Integrate existing environment with the laaS



Notes

- Security aspect
- Showcase demo Saxion
- Trial runs
- 1hr 11:30 am GMT, Monday/Thursday, 4wks prep
- Make description
- Webinar 1st, Workshop later, Adobe Connect

