



*Fast Innovation
requires Fast IT*



Trends and Data Centre Innovation

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Agenda



- Application trends
- Current data centre trends
- IT Cloud integration
- Automation and orchestration

Application Trends

Application History



Monolithic (1980-1990)

- Mega-scale “single” compute needed to deal with app scale
- Development as waterfall process, major projects for development, upgrades, etc.

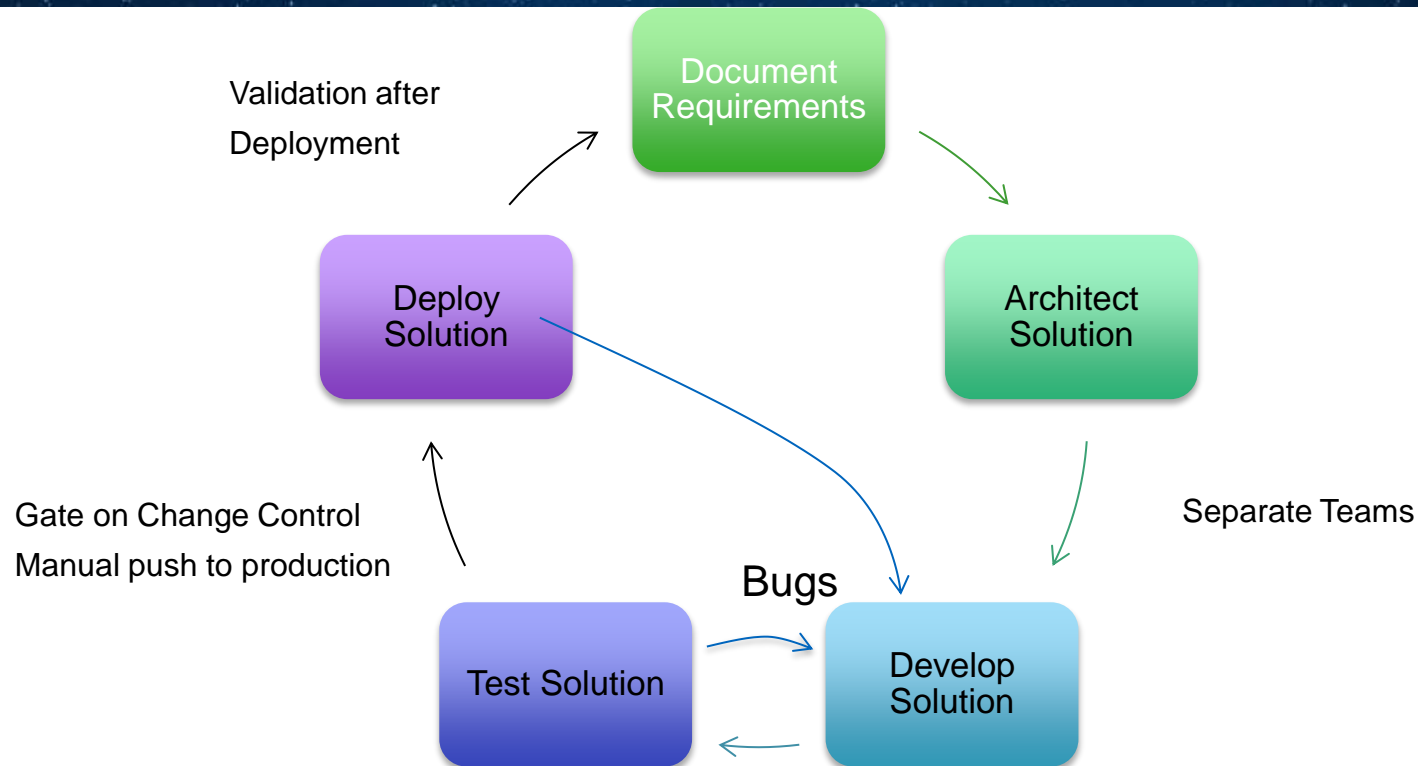
Distributed (1990-2010)

- * C
- Application broken into scalable units
- Development still waterfall, with complex management and staging required for component upgrades

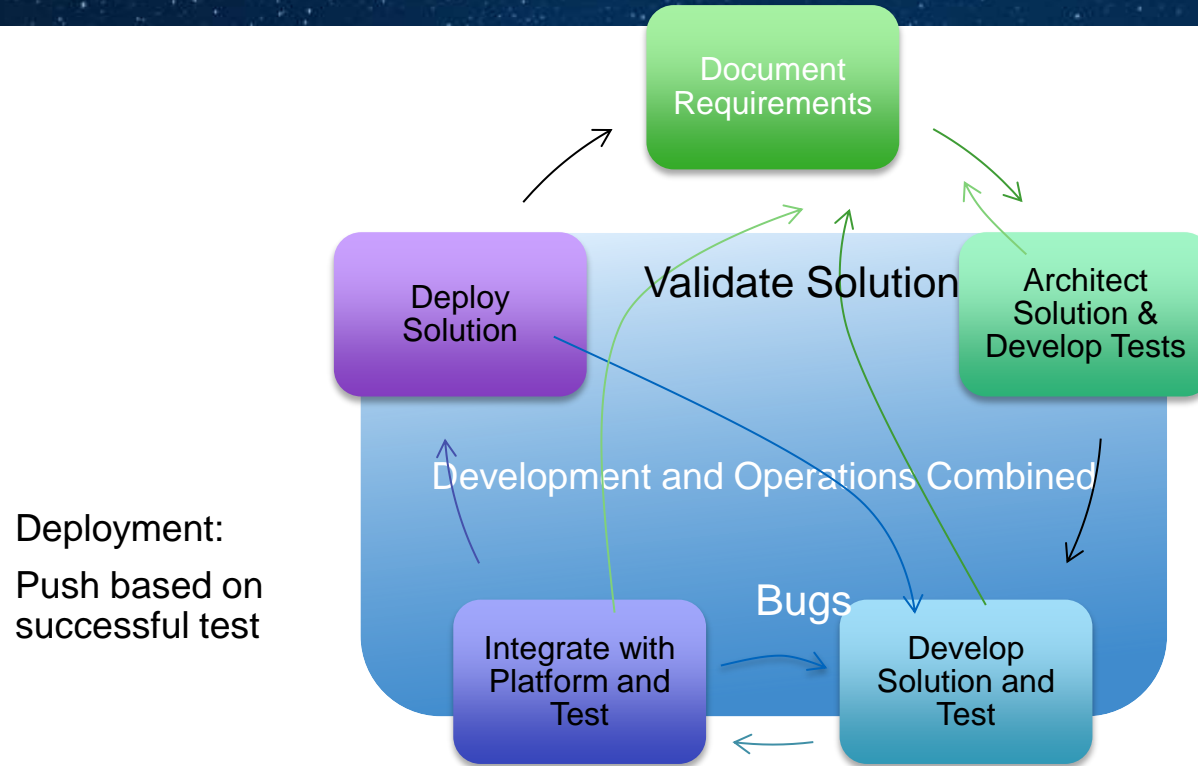
WebScale (2010-Present)

- Applications broken into smaller easy-to-replace units with managed APIs for interaction
- “Agile” development with Continuous Integration (embedded test) and Continuous Deployment (embedded operations)
- Distributed security, either in the app or at the network edge
- Current super-scale web services and rapidly developed super-custom apps

Application Development-Waterfall



A Change to Application Development-Agile

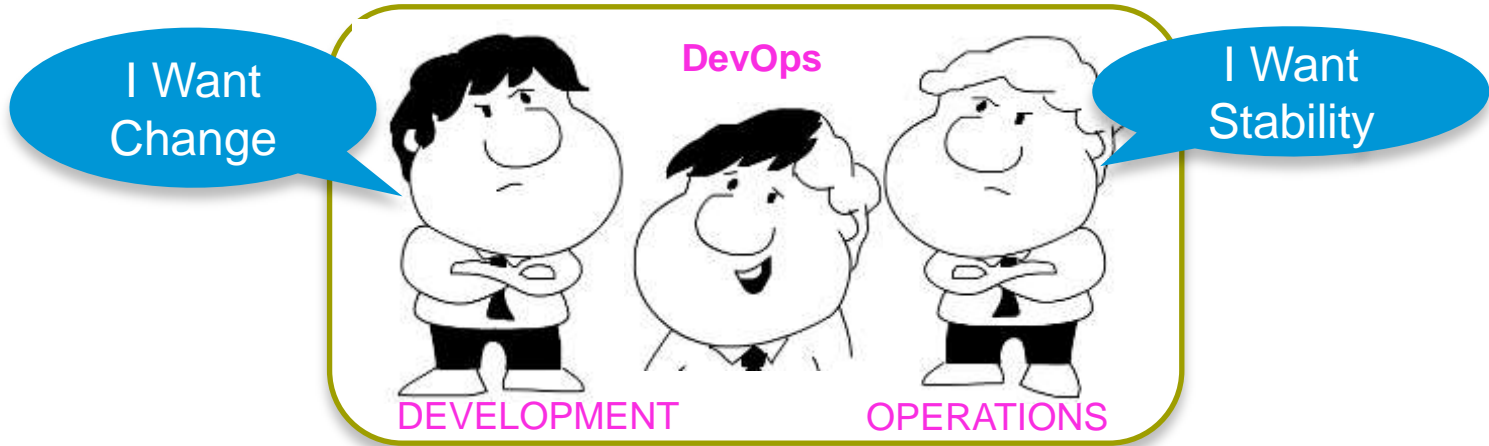


The Effects of Changing Application and Business Needs on DevOps



Global enterprises, on an average, are planning on adding 46 new applications in 2013 IDC

“IT is perceived by CEO’s as the single greatest barrier to change” Gartner

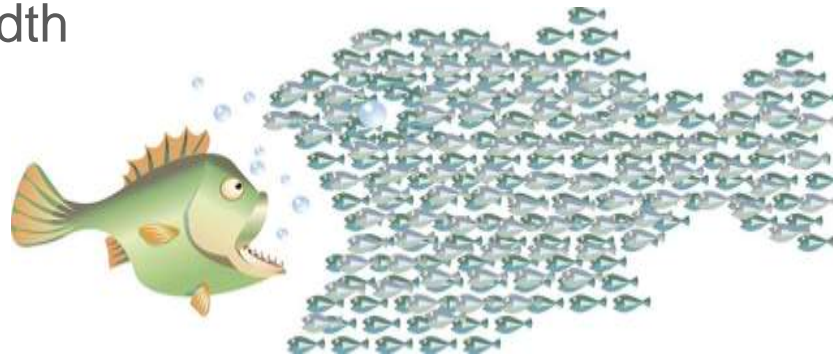


“...70% of IT budgets on maintenance, 30 to 35% for new investments.” Forrester, Research Study

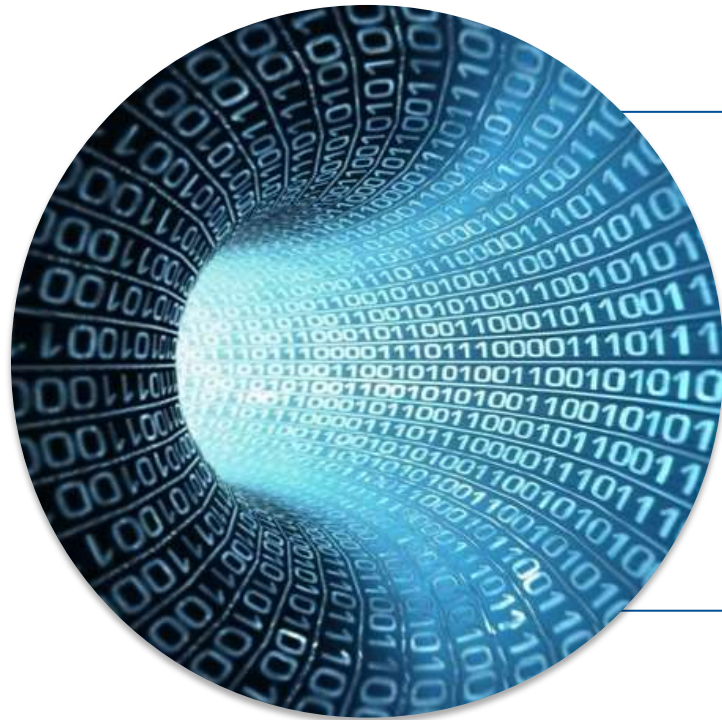
“Only 30% of IT Projects are deemed successful..” Gartner, Standish Group

Application Requirements in a Nut Shell

- Need for elasticity for workload mobility
- High availability within the infrastructure and hypervisor
- No application silos in the data center
- Further visibility into the virtual infrastructure
- Higher More Efficient Bandwidth



More Data. Faster Data. Complex Data.



Volume (Capacity)

- Continually collect as much data as possible



Velocity (Time)

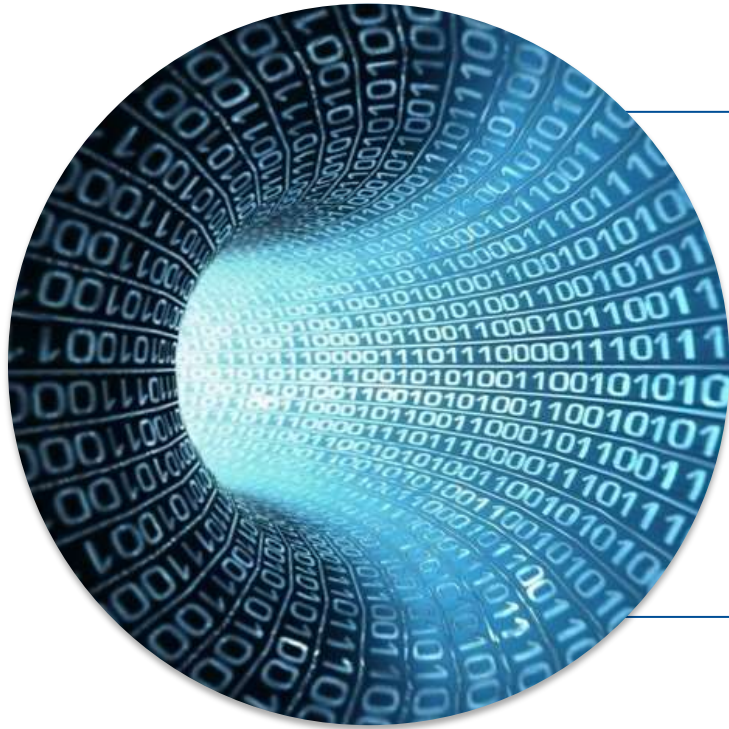
- Accelerate the writing and reading of application workload data



Variety (Type)

- Understand different sources and formats together

Rapid Time To Value Is Key In Today's Competitive Climate



MORE DATA



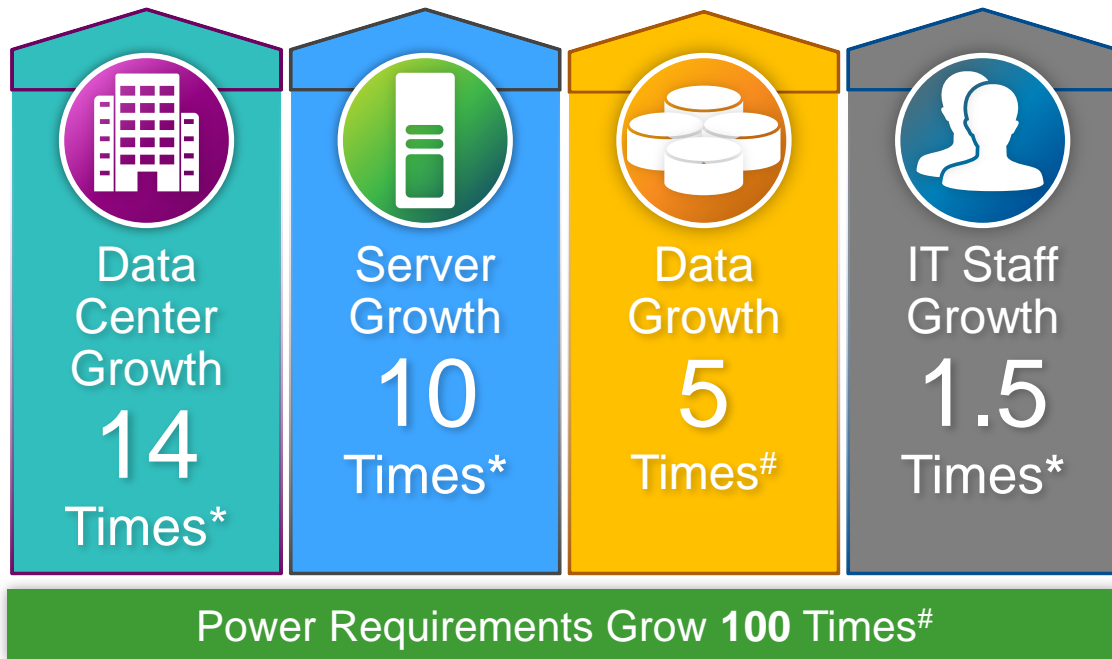
MANIPULATED FASTER



QUICKER DECISIONS

Current Data Centre Trends

Data Center Growth



- Application Consistency
- Simplification
- Agility
- Efficiency and Scale
- Business Alignment

Source: * 2012 IDC Digital Universe Study By 2020 and # Gartner

Evolution to Intelligent Infrastructure



Configurable
Infrastructure



SECURE ORCHESTRATED
INFRASTRUCTURE

App Aware Networks



APPLICATION CENTRIC
INFRASTRUCTURE

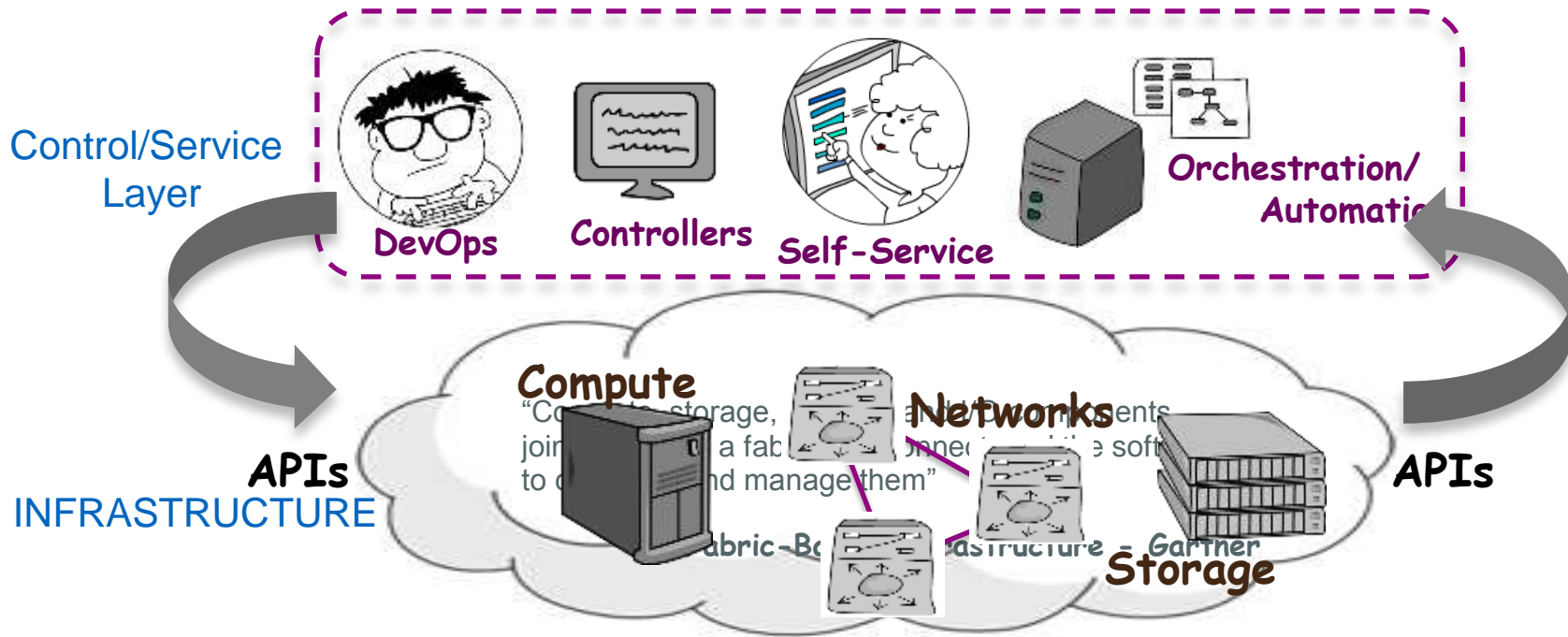
Network Interfaces



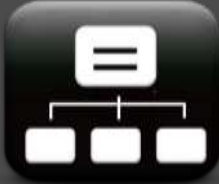
PROGRAMMATIC
INTERFACES

FASTER TIME to VALUE

The Need for Converged Infrastructure



KEY REQUIREMENTS



Key Requirements of Today's Data Centre

Simplified Provisioning

Dynamic workloads
Centralized Management
Physical/Virtual agnostic

Dynamic Scaling

Dynamic
On-Demand
Physical + Virtual
Location independent

Centralized Management

Centralized policy for network & security

Automated Policy Management

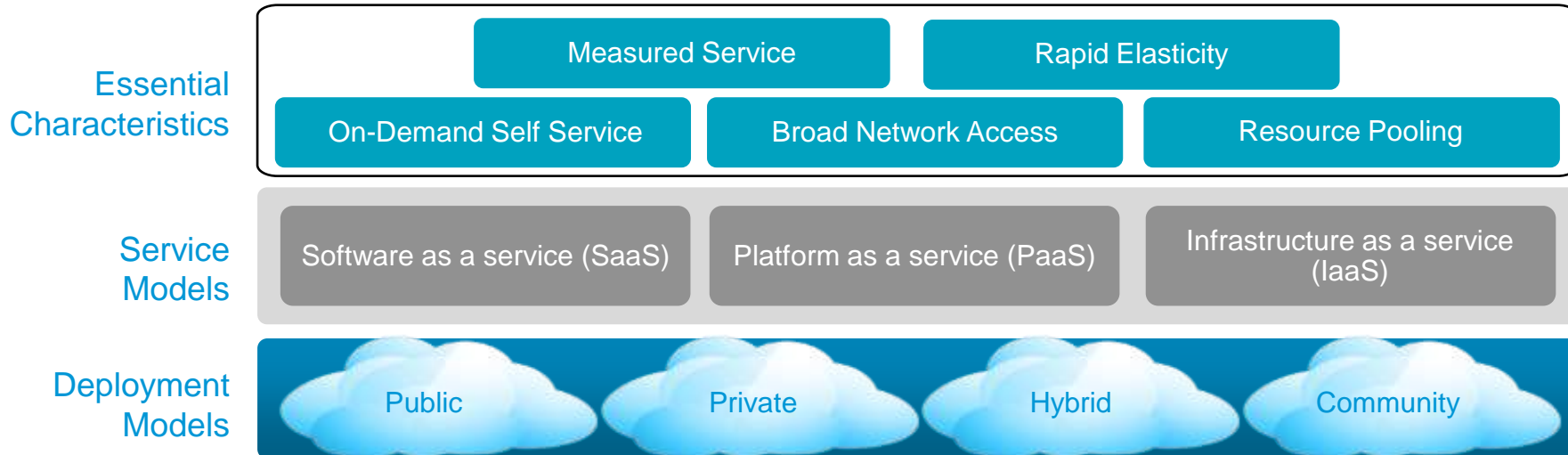
Dynamic ACL insertion / removal

Open Architecture

Hypervisor agnostic
vSwitch compatible
Programmable
Multi-tenant & App aware

IT Cloud Integration

IT resources and services that are abstracted from the underlying infrastructure provided “on-demand” and “at scale” in a multi-tenant environment



Why Hybrid Clouds? It's All About the Workload



- Fixed workloads
- Control and compliance



- Choice to build and rent across providers
- Workload portability
- Consistent security



- Elastic workloads
- Quick ramp



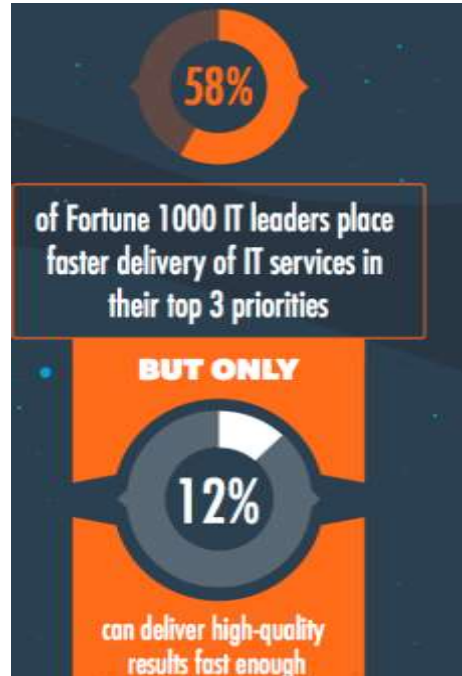
The Challenge of Application Delivery Today



IT Roadblocks

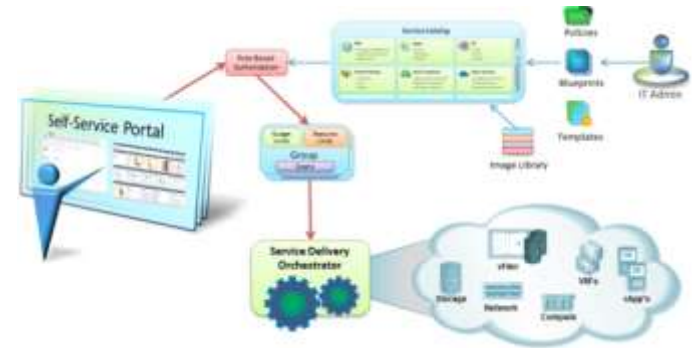


- Change management processes cause change to move at a very slow pace
- Often times, the business puts further pressure on IT by cutting resources or outsourcing them in an effort to reduce costs
- The future of IT without automation is a myth



User Shift to Self Service

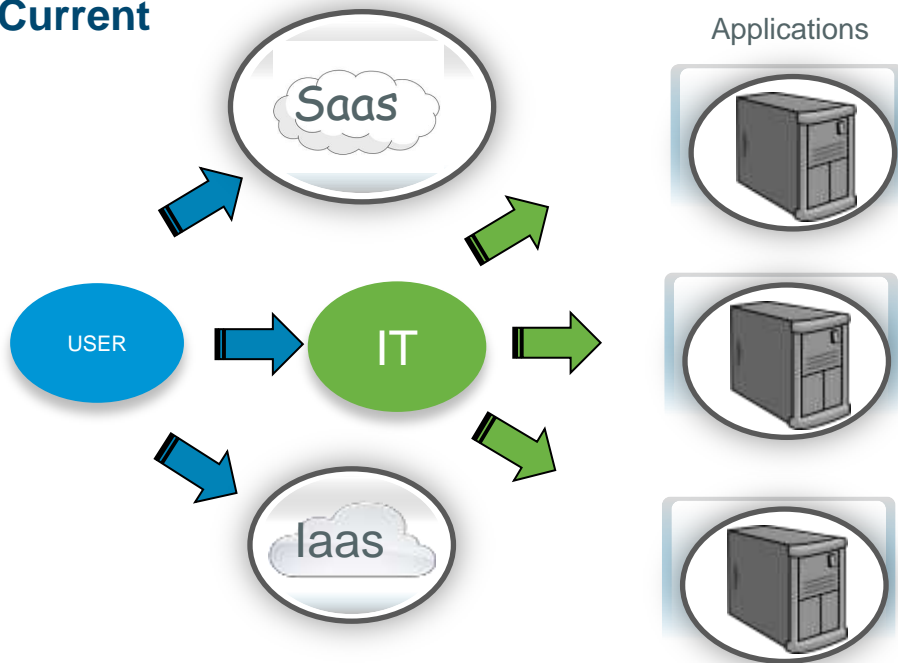
- Users of a public, private, and hybrid cloud all like having the on-demand option of deploying applications
- This typically is modeled after most public cloud operations where the user can simply select an application from a catalog and have it deployed instantly
- Lifecycle management, chargeback, and accounting need to be tied into this as well



Changing Role of IT – Provide Cloud Ready Services

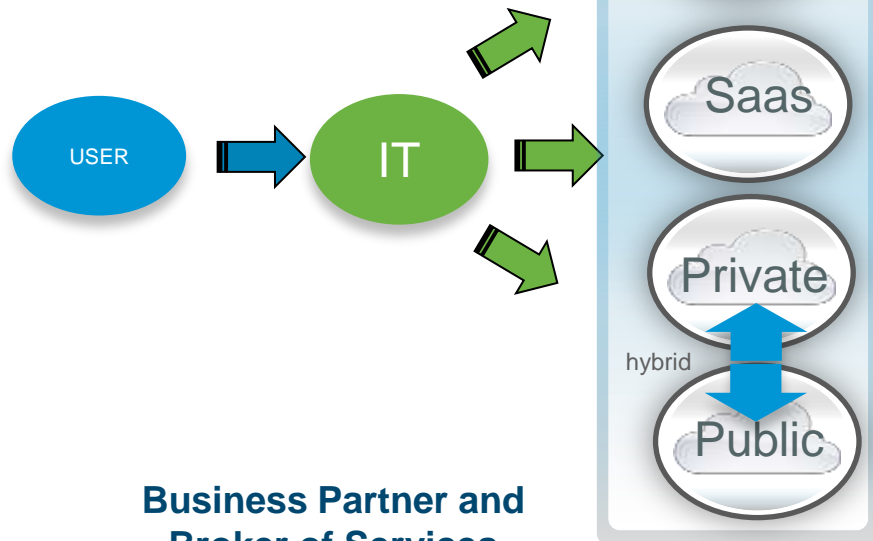


Current



Provider of Infrastructure

Future



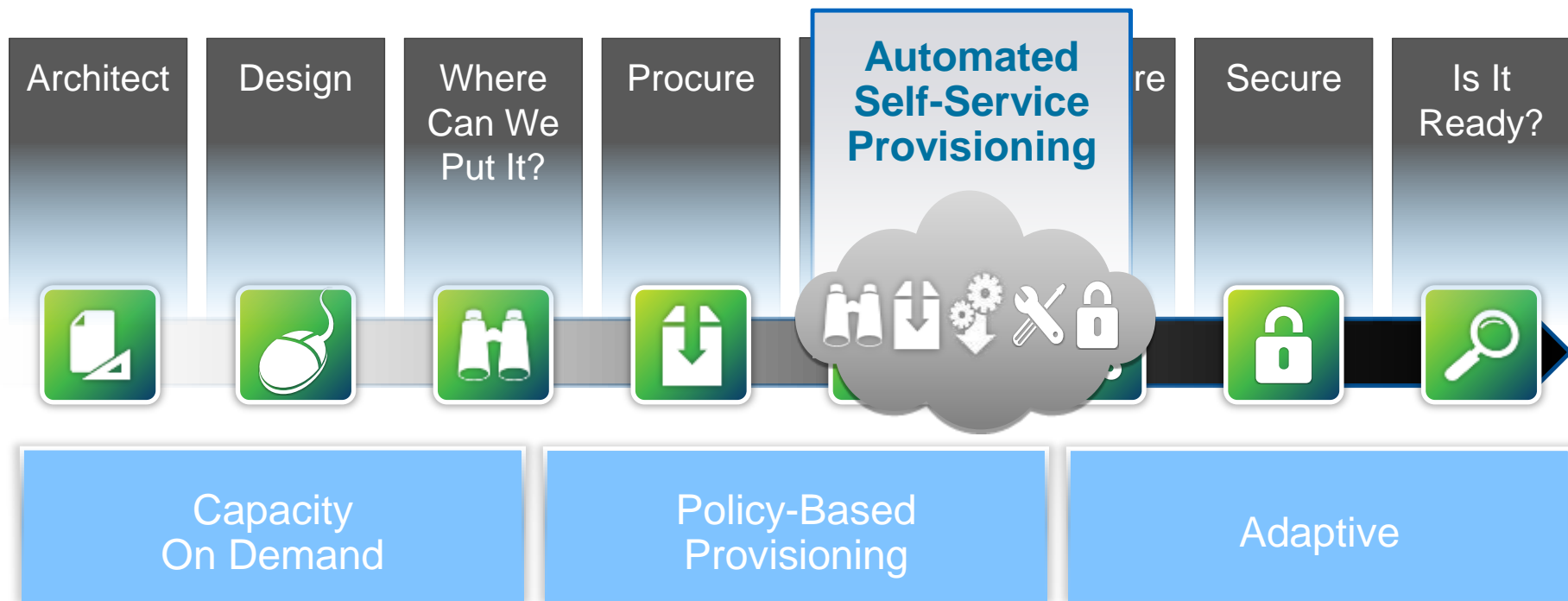
Business Partner and
Broker of Services

Orchestration and Automation

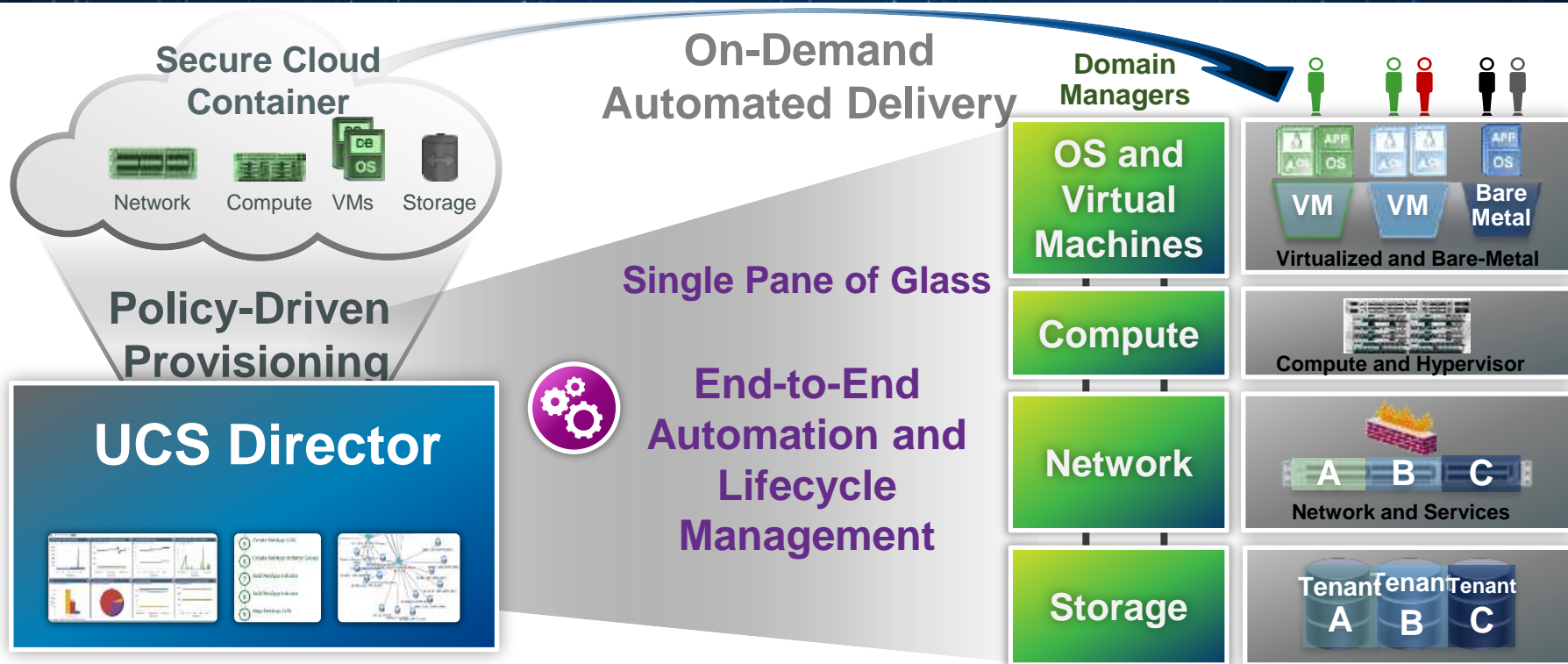
Automate Service Delivery



From Weeks to Minutes



Cisco UCS Director Turn-Key Solution



Seamless Infrastructure Management

Automation Powered by UCS Director



Simplicity

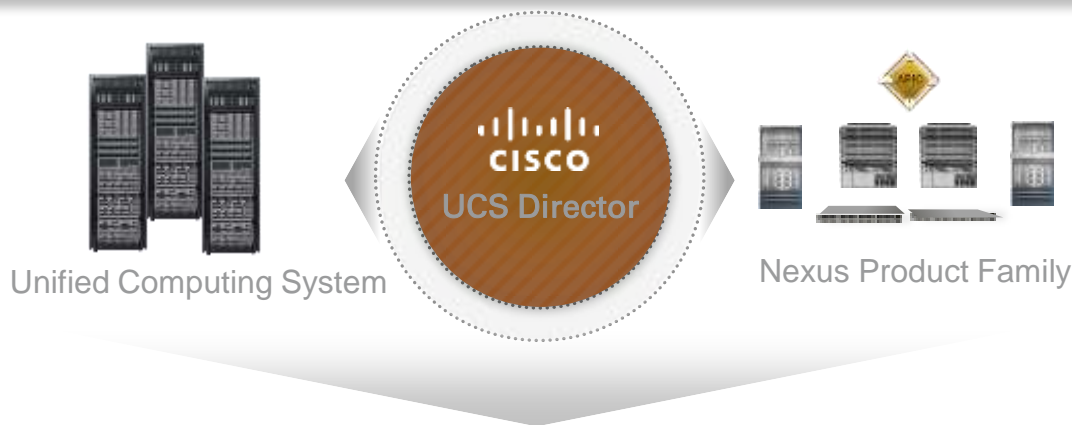
Ready for Use in Hours

Velocity

Rapidly Deploy Applications

Quality

Enforce IT Best Practices



L4-7 Services



Storage



Virtualization



New!

Integrated application containers for secure workload provisioning



New!

Hadoop integration to easily manage large clusters



New!

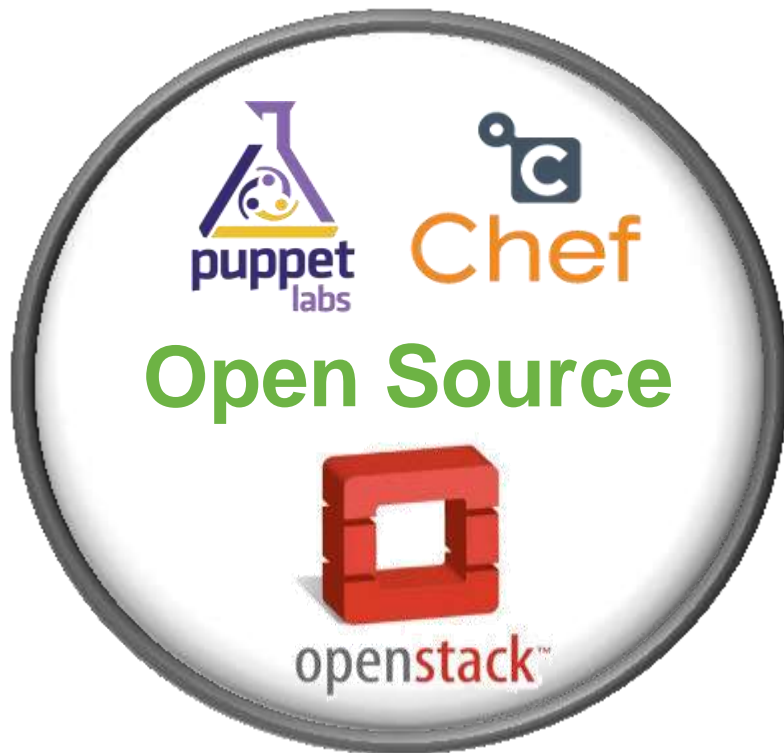
Application Centric Infrastructure configuration



New!

Open developer kit for ecosystem acceleration

The Rise of Open Source



Open source solutions are gaining mindshare:

- Configuration tools like Puppet/Chef
- Hypervisors like KVM or Docker (container solution)
- Cloud solutions for orchestration such as OpenStack
- Networking management solutions (controller) like Open Daylight



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