Clouds?

Joe Baguley

Chief Technologist, EMEA, VMware Office of the CTO

@joebaguley

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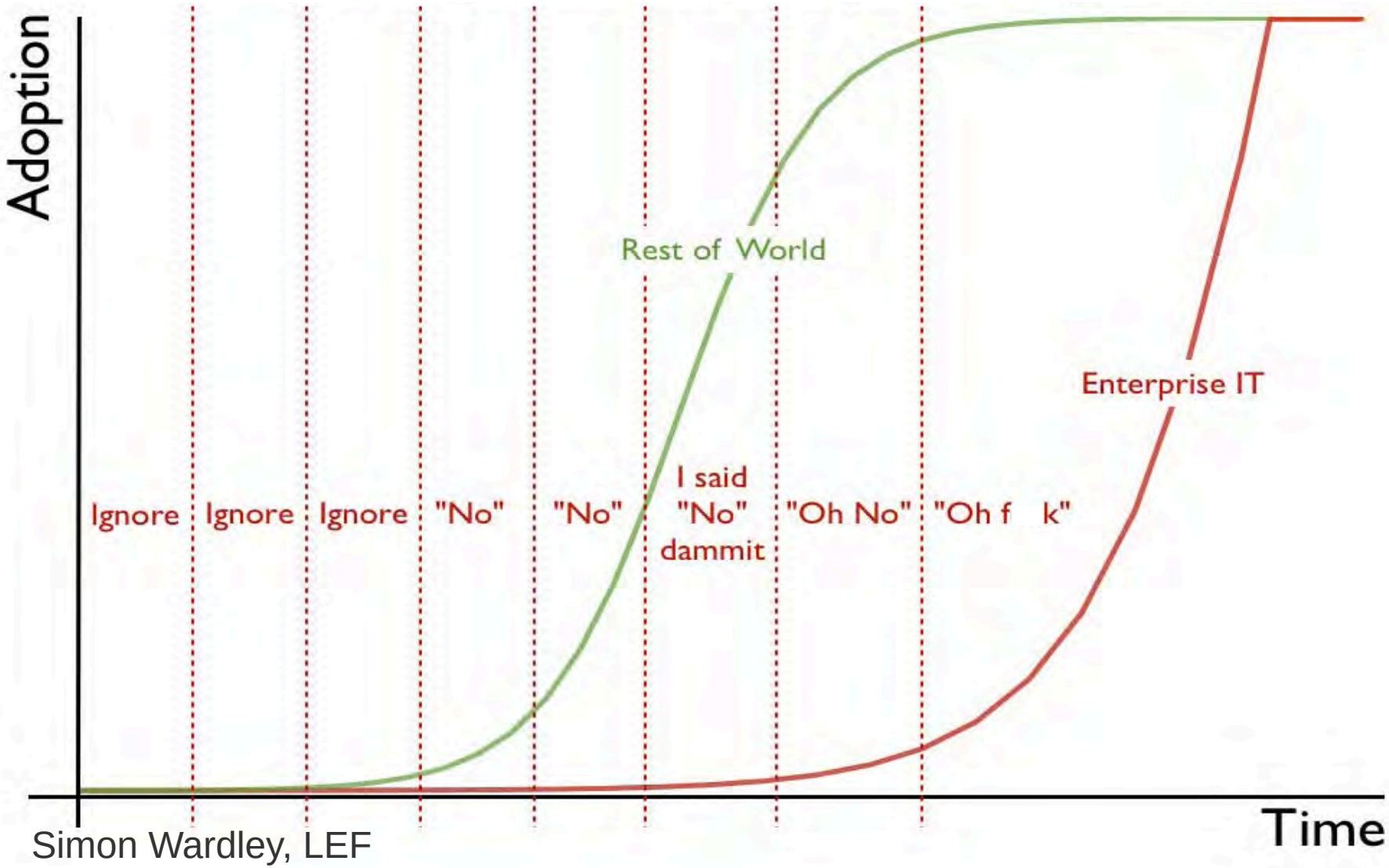
Enterprise IT Adoption Cycle



Simon Wardley, LEF

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Technology

Necessary evil, or weapon?

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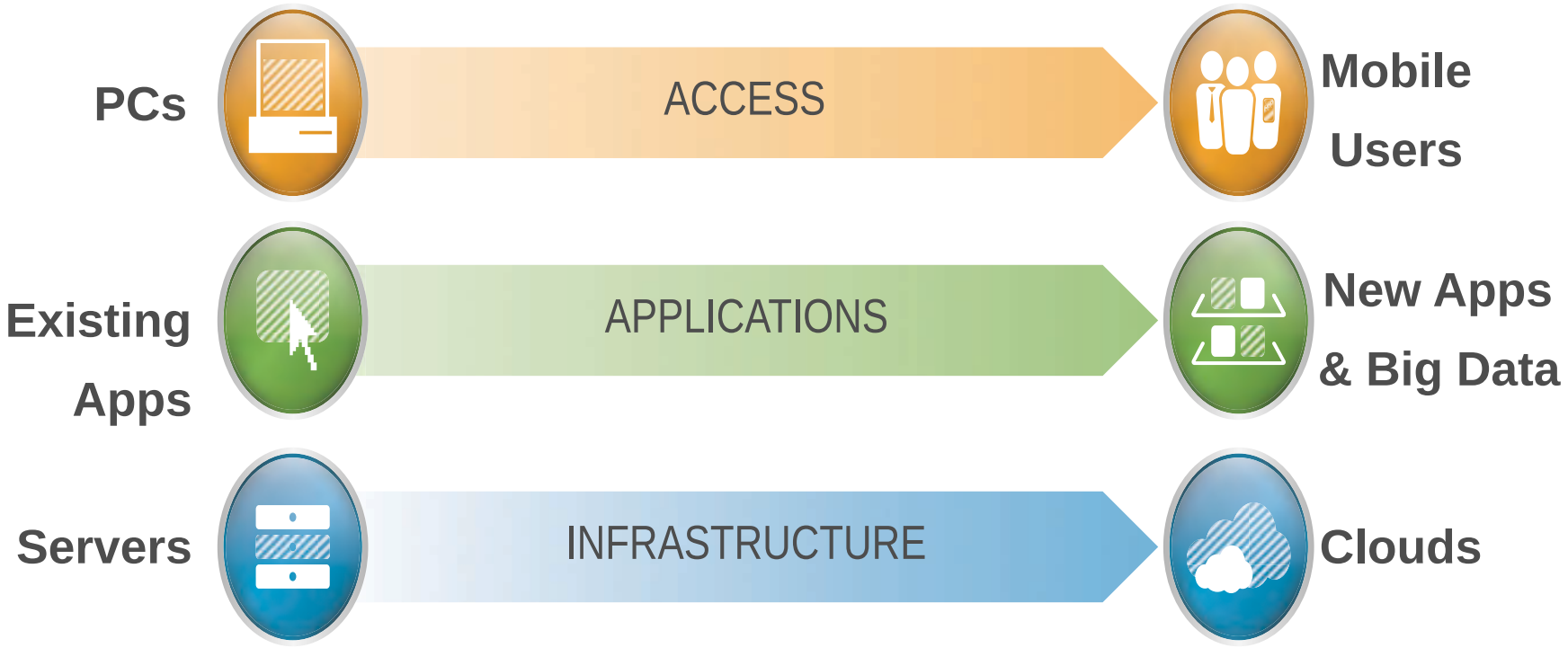
Technology

Necessary evil, or weapon?


PCs
ACCESS
Mobile Users
Existing Apps
APPLICATIONS
New Apps & Big Data
Servers
INFRASTRUCTURE
Clouds

A New Consumption Model For IT!

Self Service

Instantly Provisioned

Pay For Use

Efficient

Scale Up & Down

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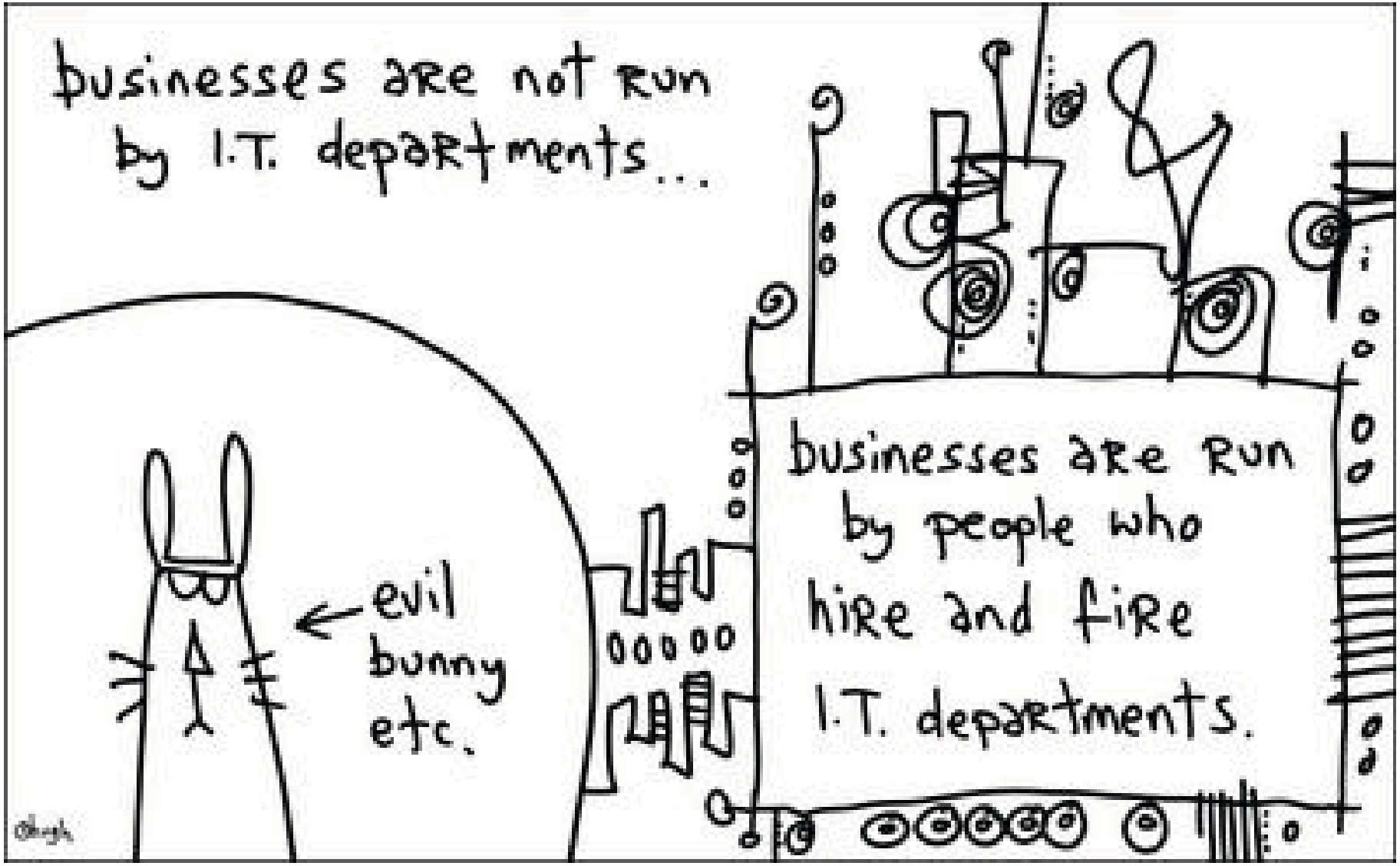
businesses are not run by I.T. departments...
evil bunny etc.
businesses are run by people who hire and fire I.T. departments.

Enabling Cloud - A Tale Of Two Trends

Software

Monolithic Applications

Distributed Services

Platform

Loosely Connected, Discrete Resources

Virtualized Fabric Of Resources

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Platforms to Build Services

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ABSTRACT. POOL. AUTOMATE.

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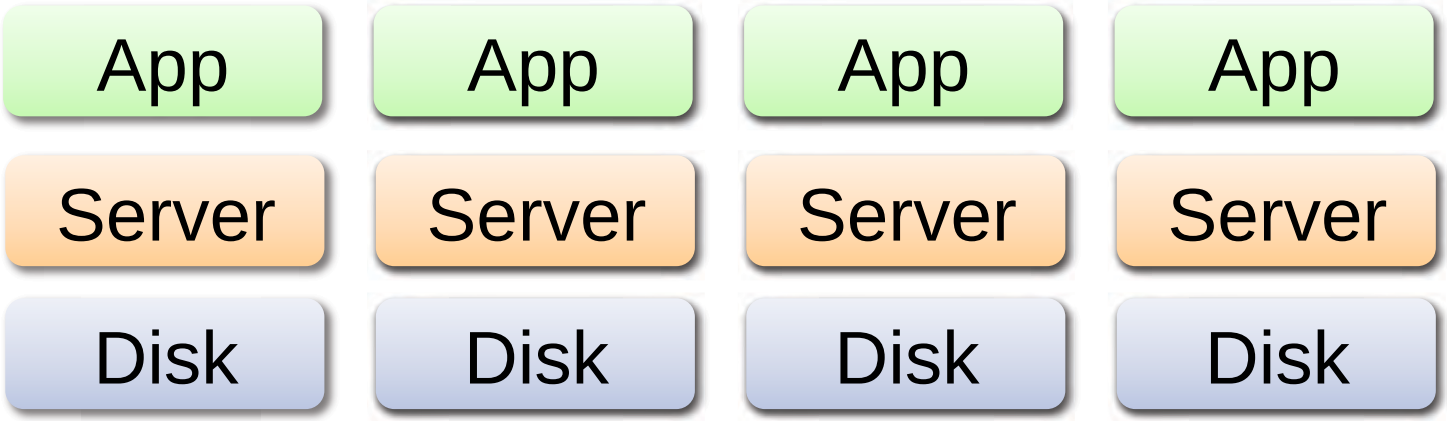
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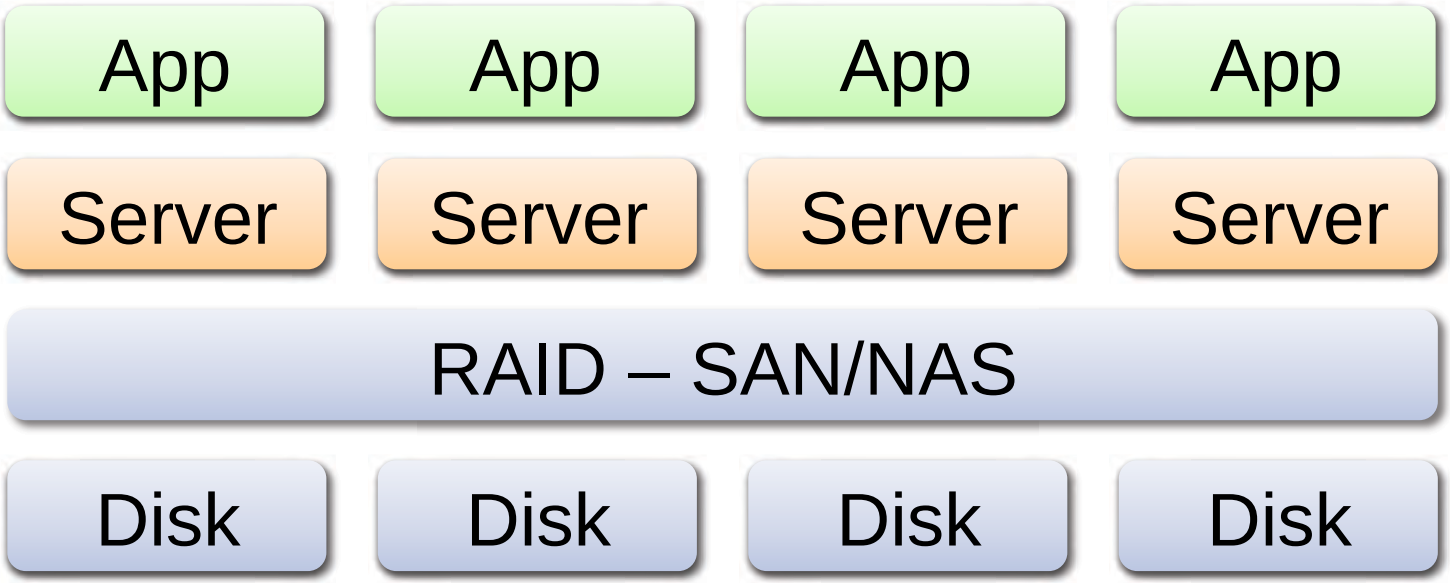
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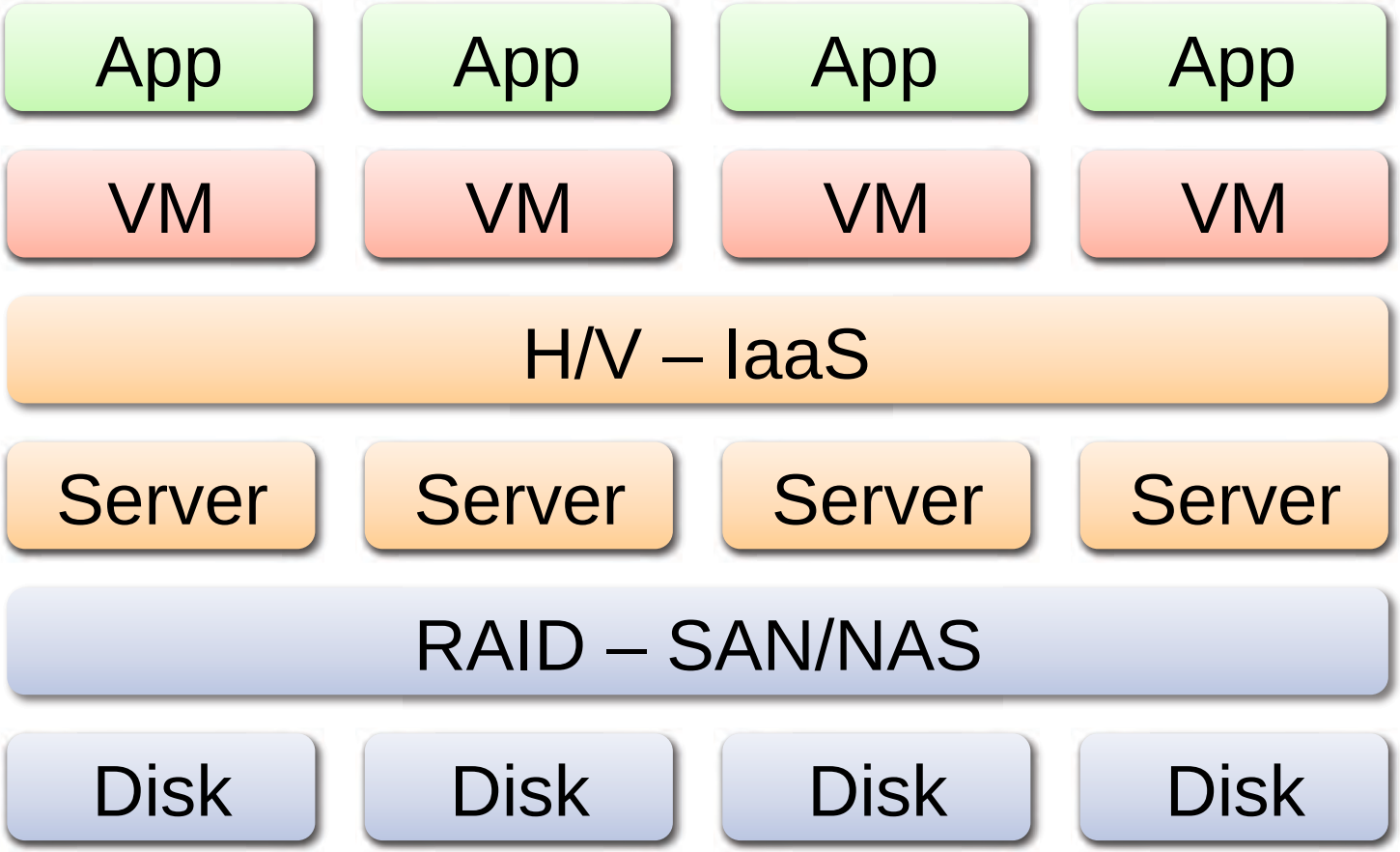
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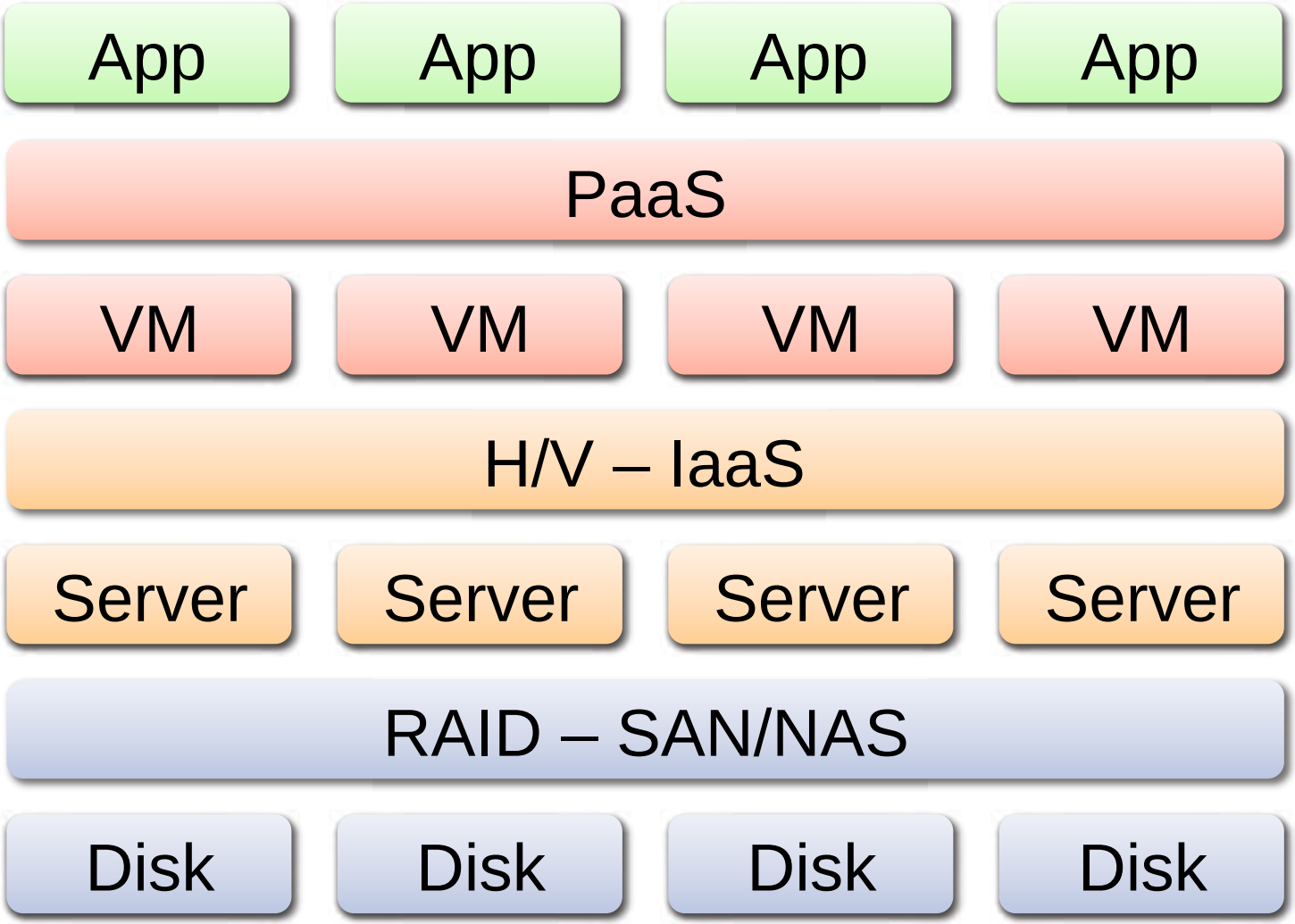
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Platforms to Build Services

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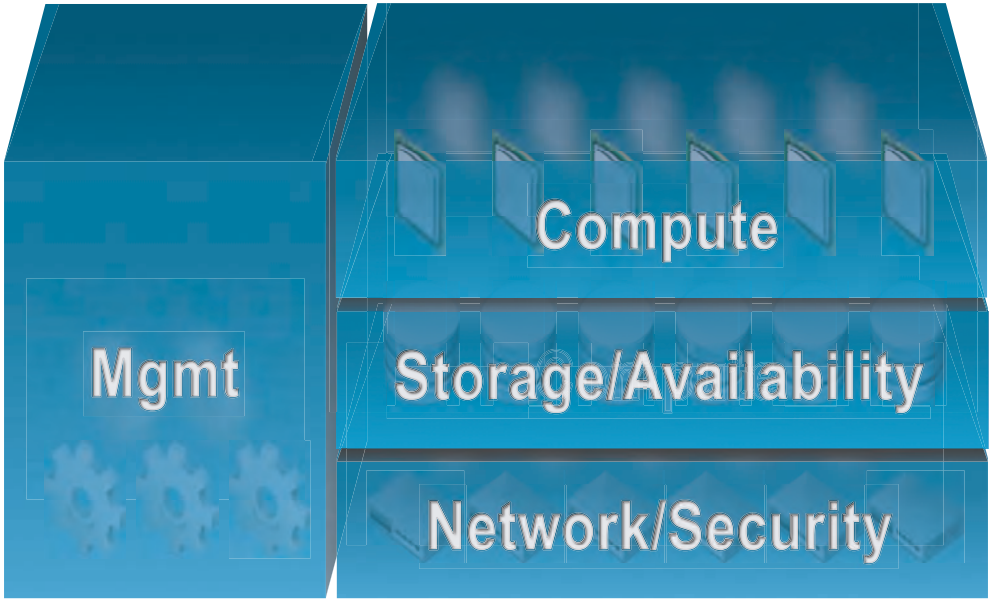

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Business have been transformed, and so will IT

Containerization

Automation

Globalization

Standardization

Markets of One

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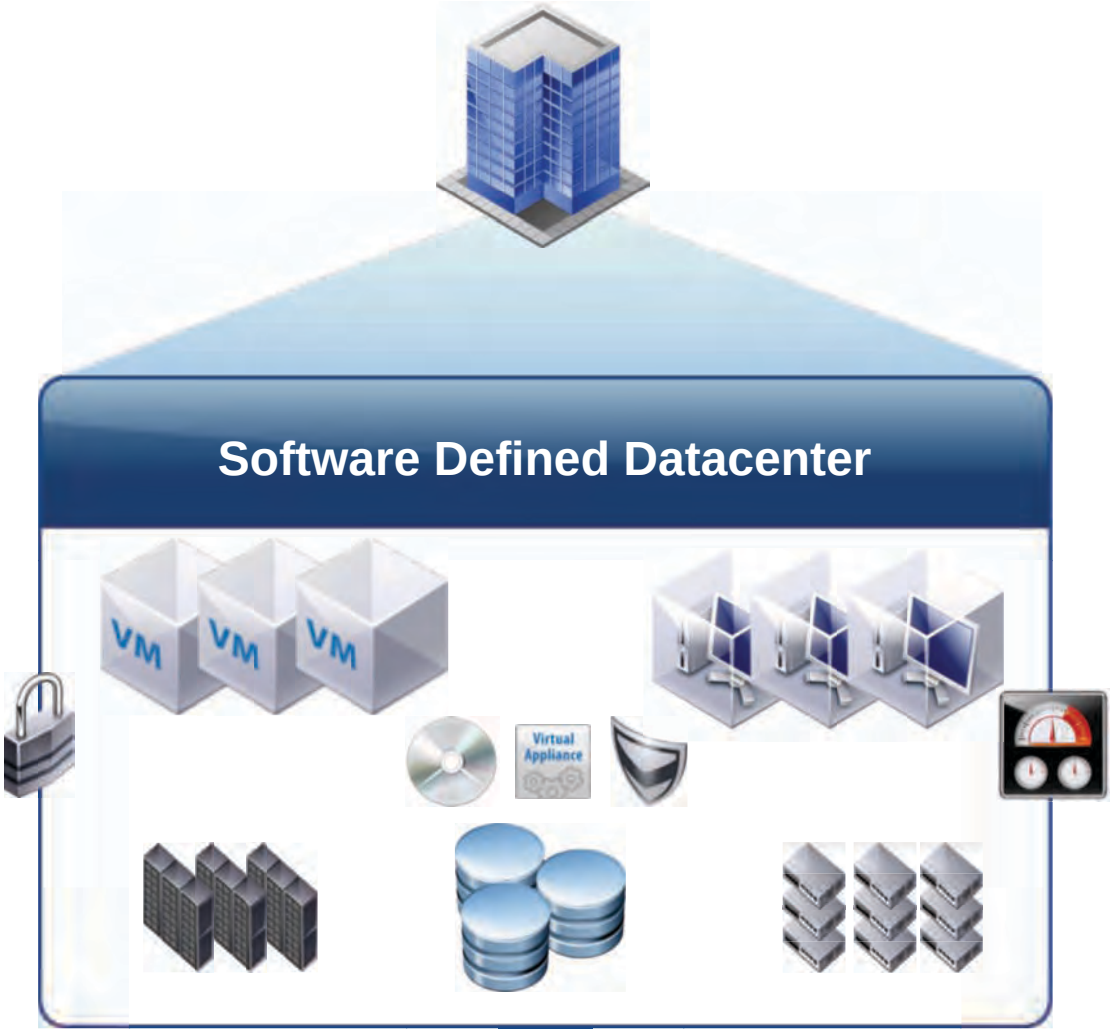
CONTAINERIZATION

Containerization and IT



Virtualization is the container for the modern business world.

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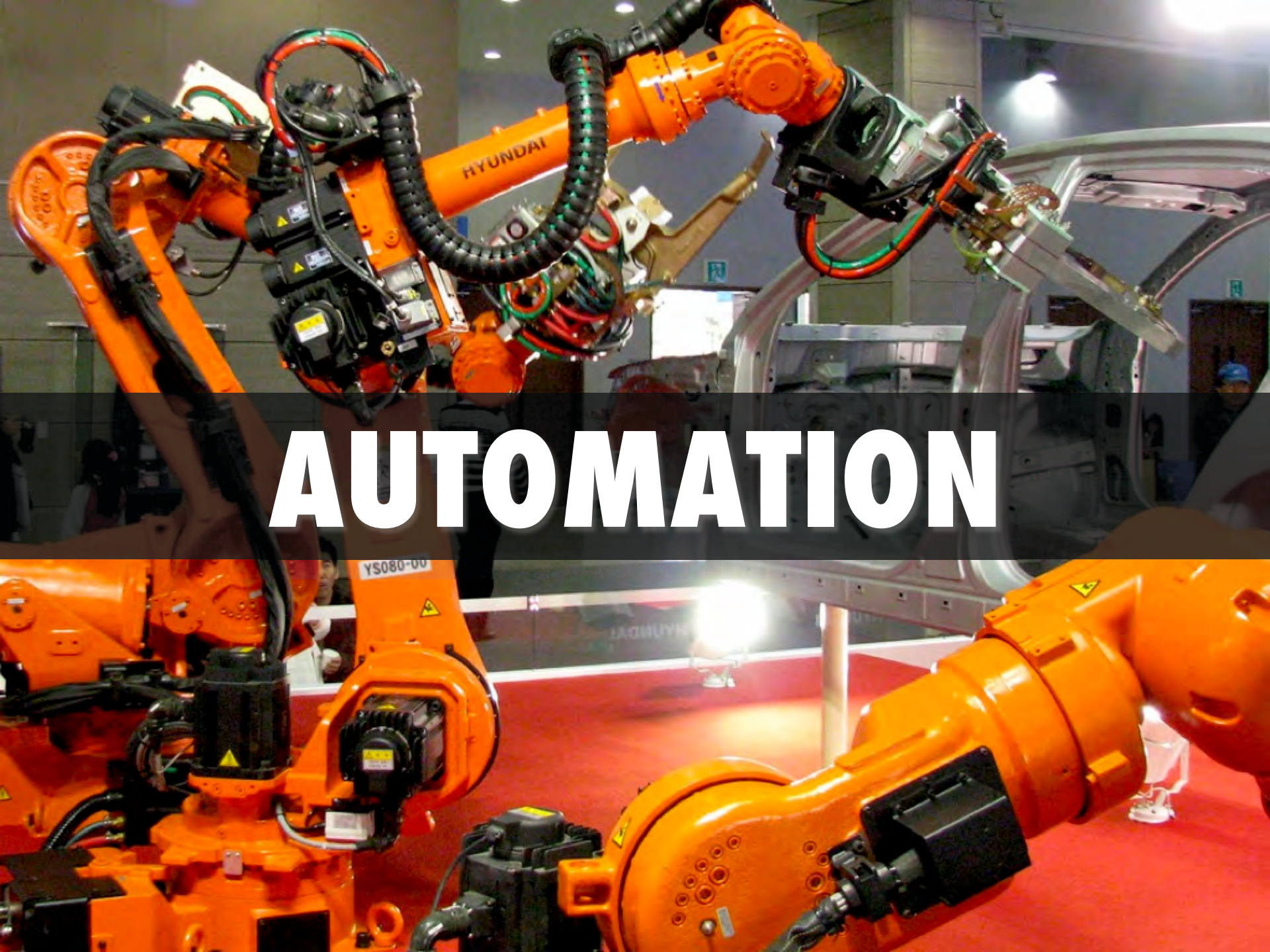
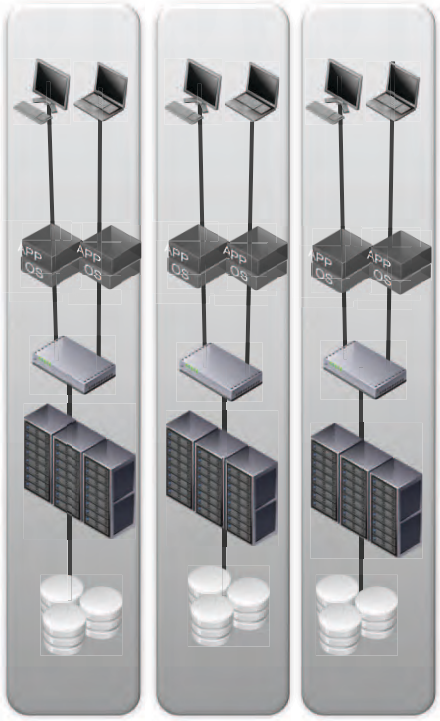

HYUNDAI
AUTOMATION

Cloud Requires a New Approach

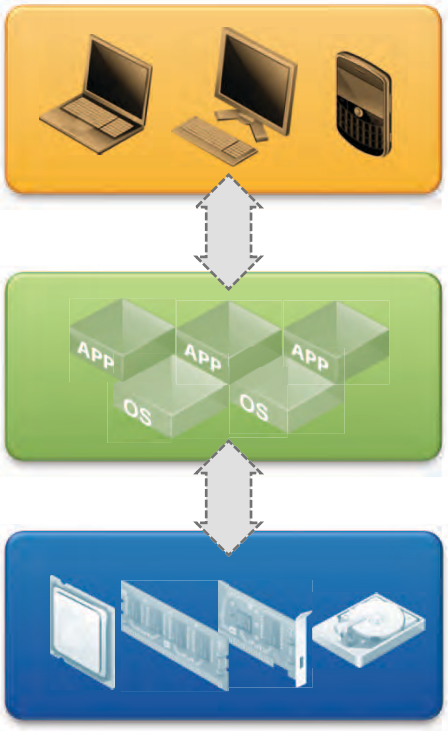
Traditional IT Management



Services and assets tied together in complex, brittle, vertical stacks that are hard to change and manage

Business agility suffers

Cloud Management



Service components are abstracted and sourced from dynamic resource pools with horizontal layers loosely bound into services

IT able to keep up with speed of the business

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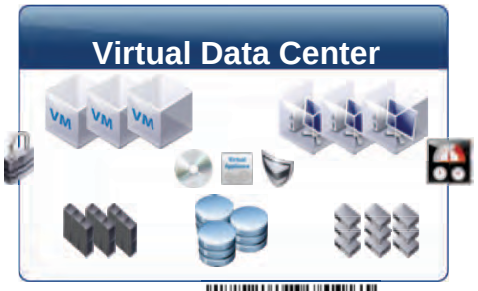
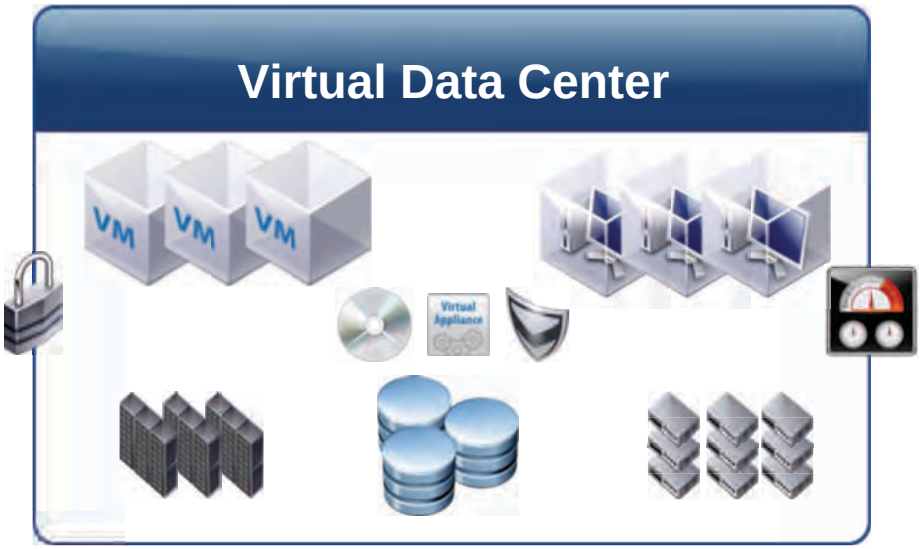
STANDARDIZATION

Standardization and IT

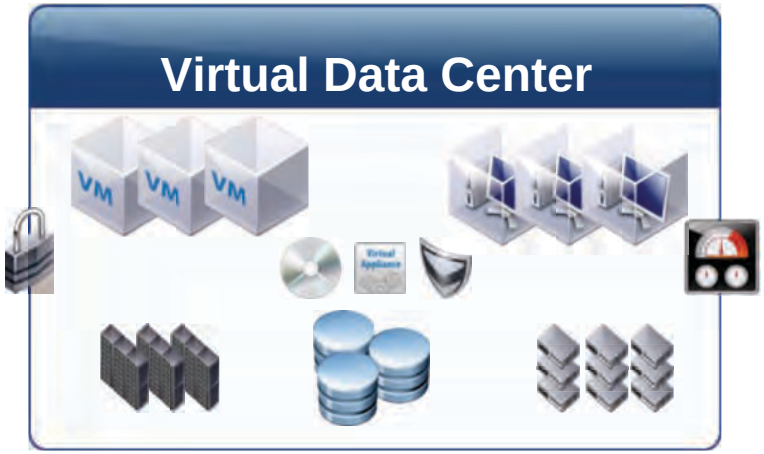


SOX

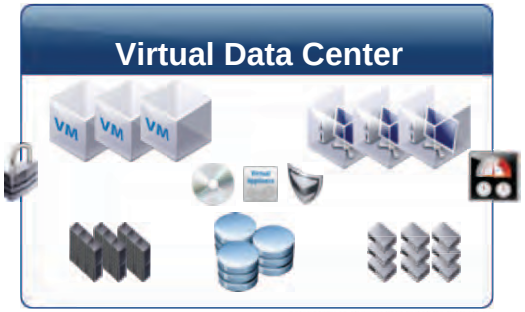
PCI



HIPPA



SAP



DEV/TEST

■ ■ ■

2

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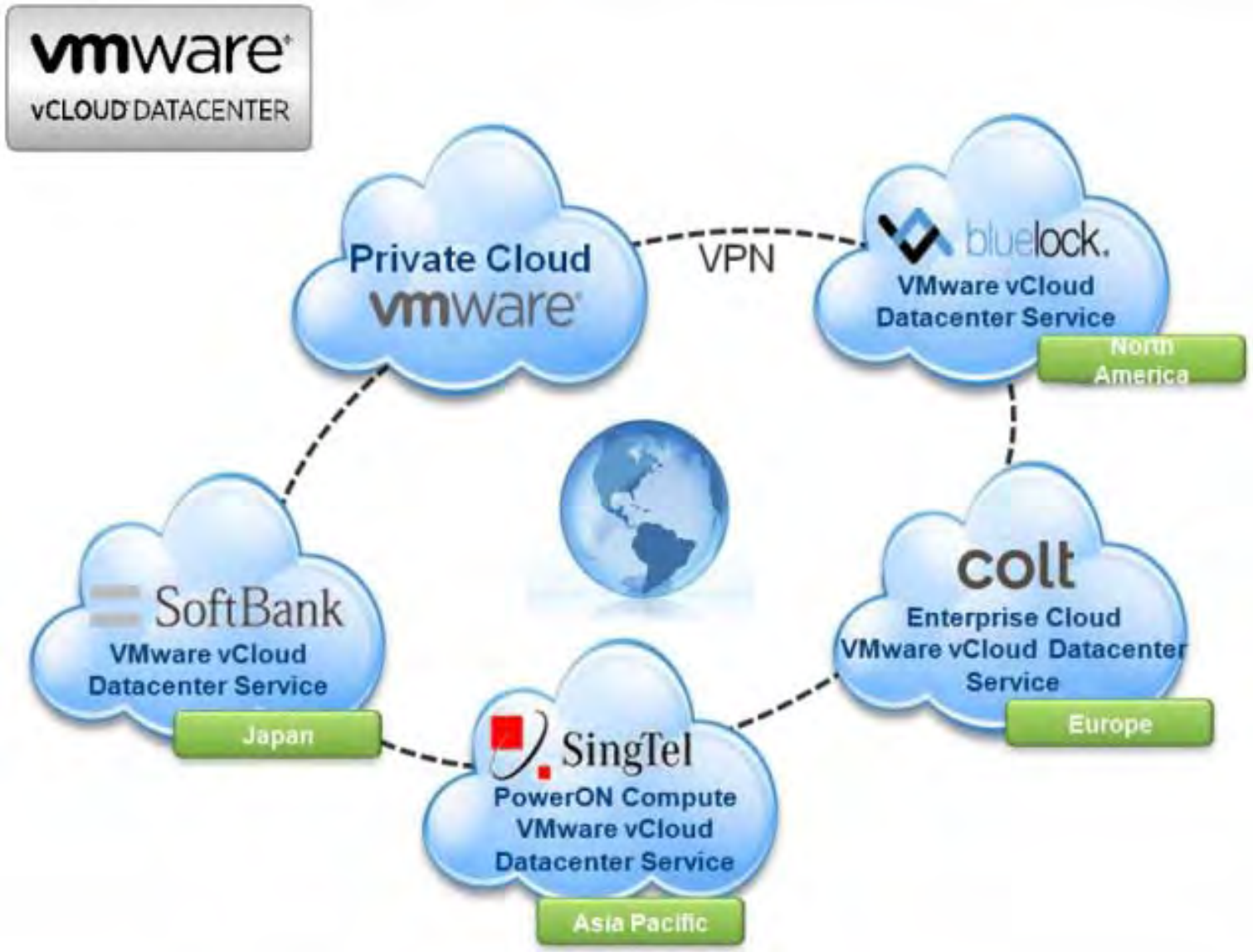
GLOBALIZATION

Globalization and IT

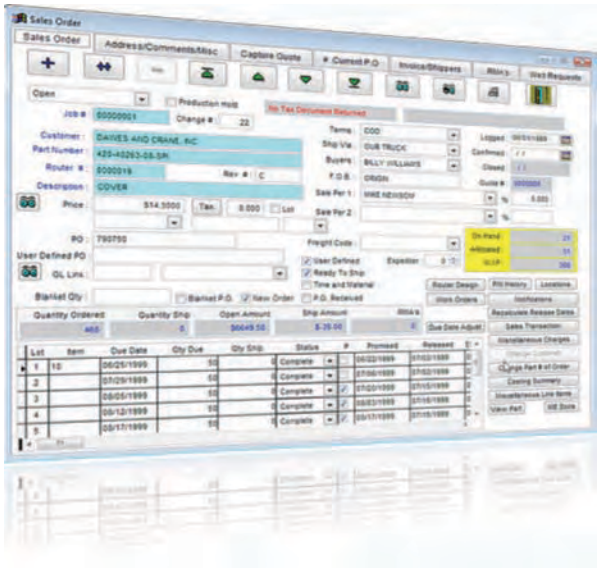


2

MARKETS OF ONE

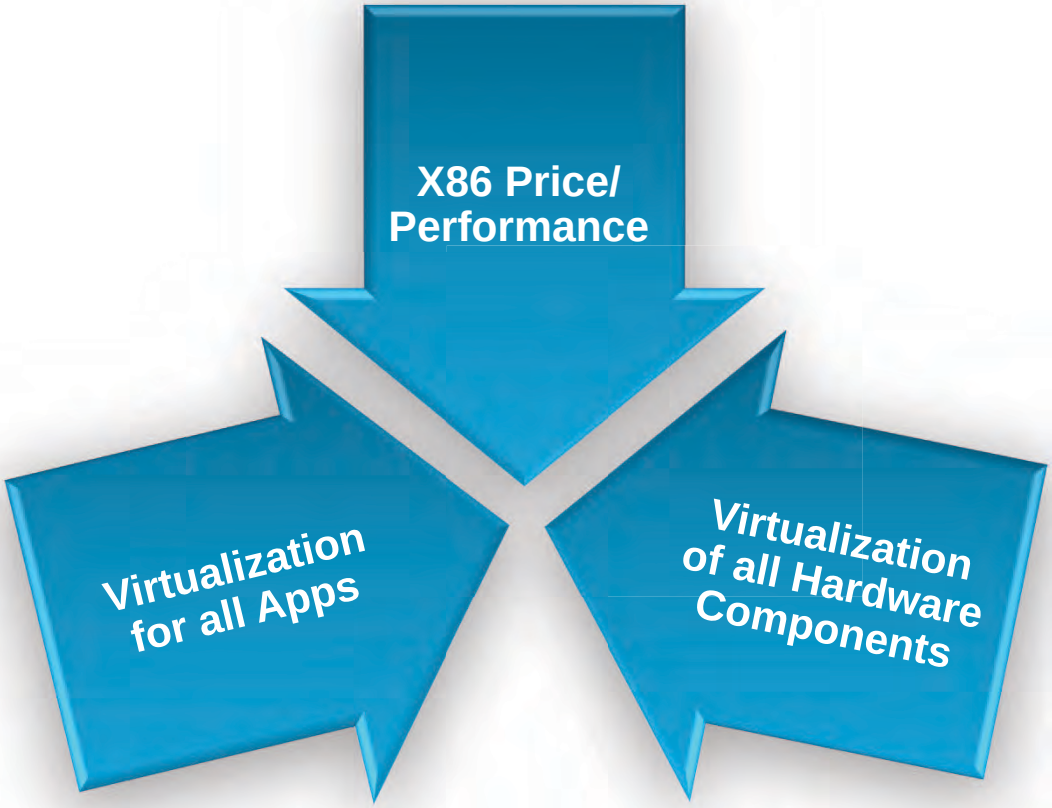
Markets of One and IT

From desk-bound, one size fits all



To the personal experience, any where, any time and on any device

SOFTWARE-DEFINED DATACENTER


X86 Price/
Performance
Virtualization
for all Apps
Virtualization
of all Hardware
Components

Past

$10,000
10 weeks

Present

$1,800
5 days, 2 minutes

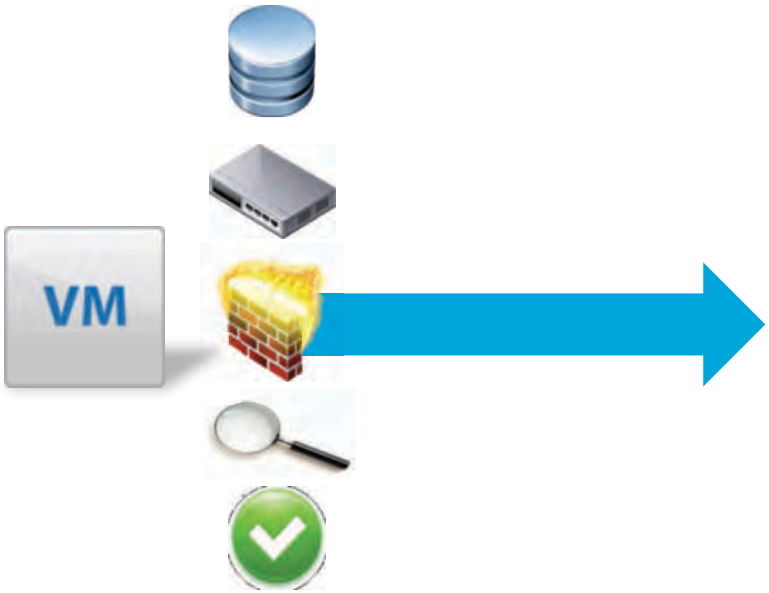
Enterprise storage

VLAN networks

Firewall, load-balancer

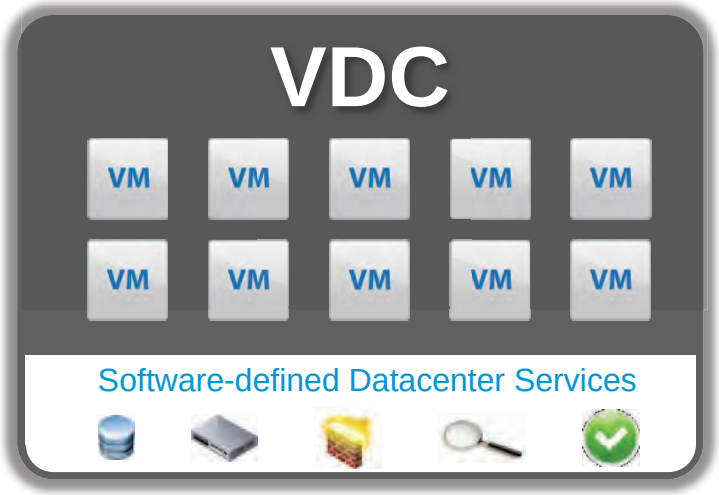
IDS, security, monitoring

Availability

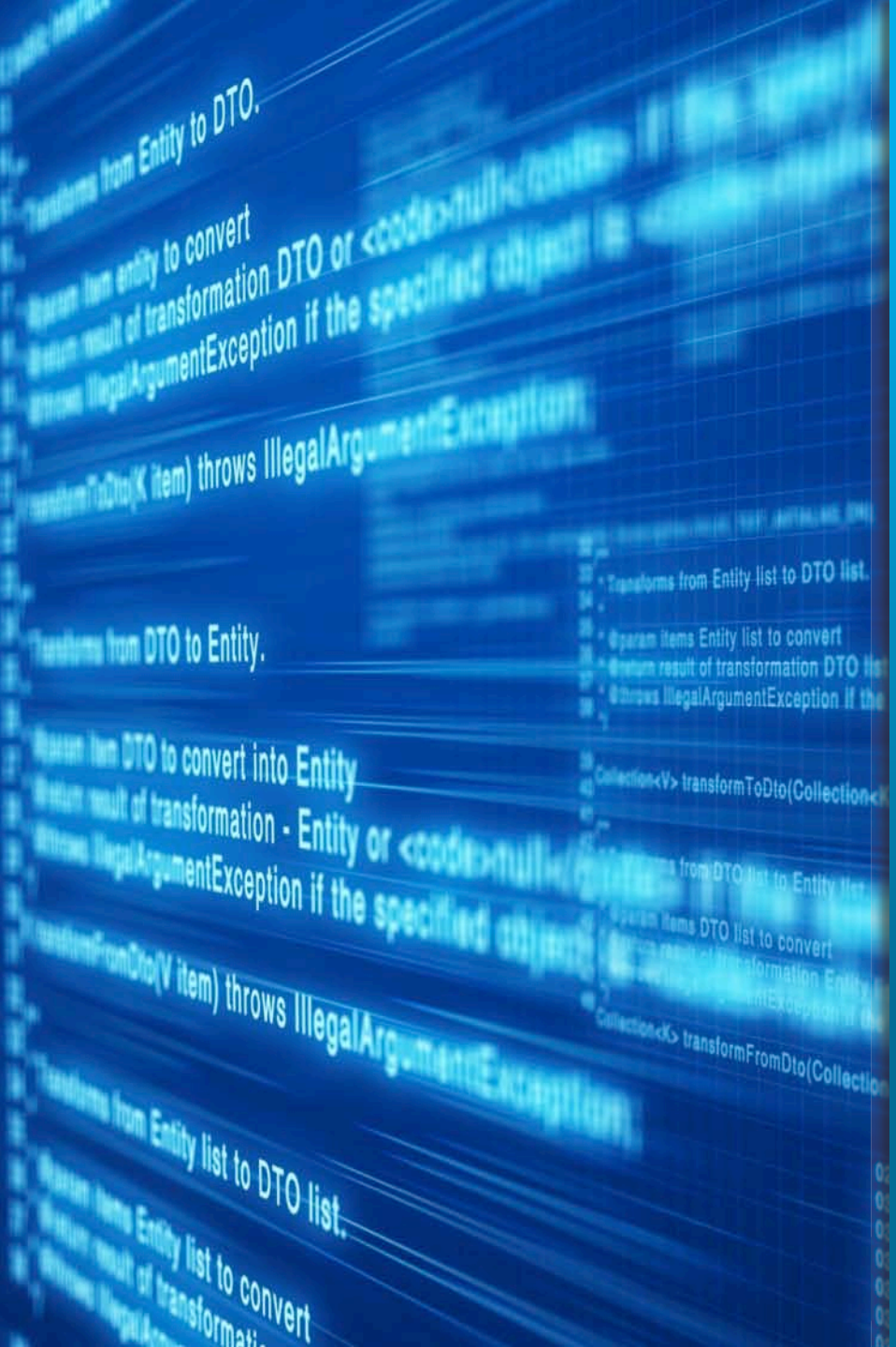


5 days, 2 minutes

Future



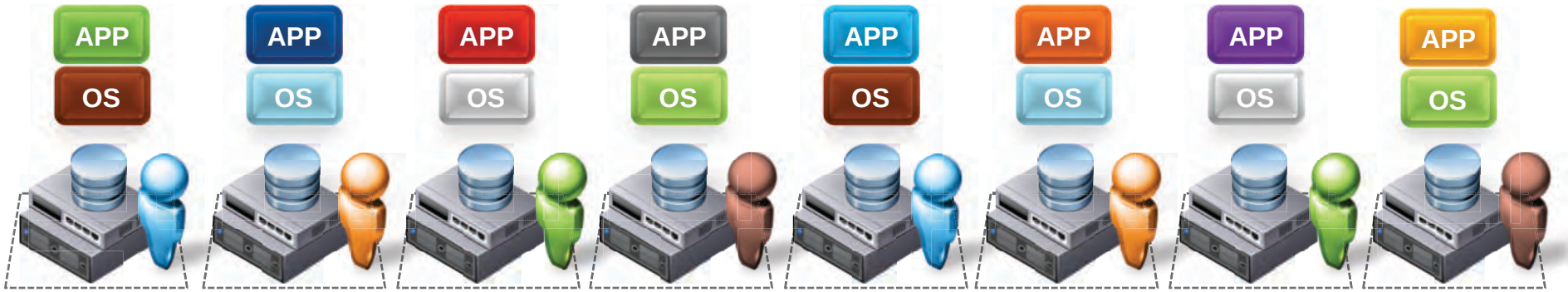
3 minutes



In a Software-Defined Datacenter

All infrastructure services are *delivered as software*

And, the *control of this datacenter is entirely driven by software*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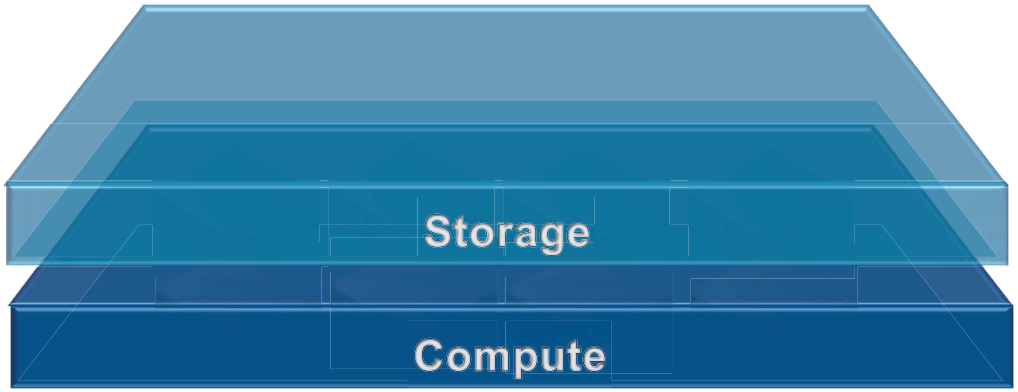
Storage
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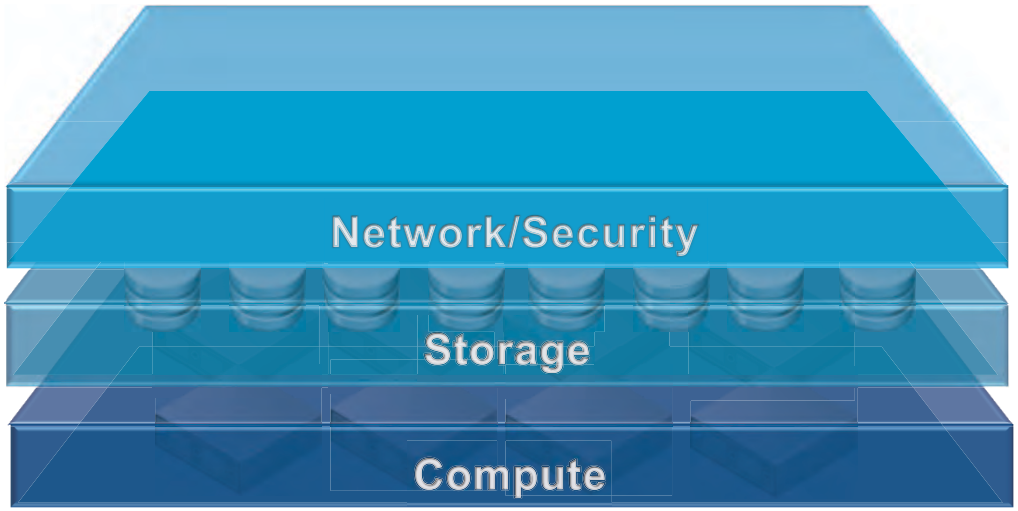
Network/Security
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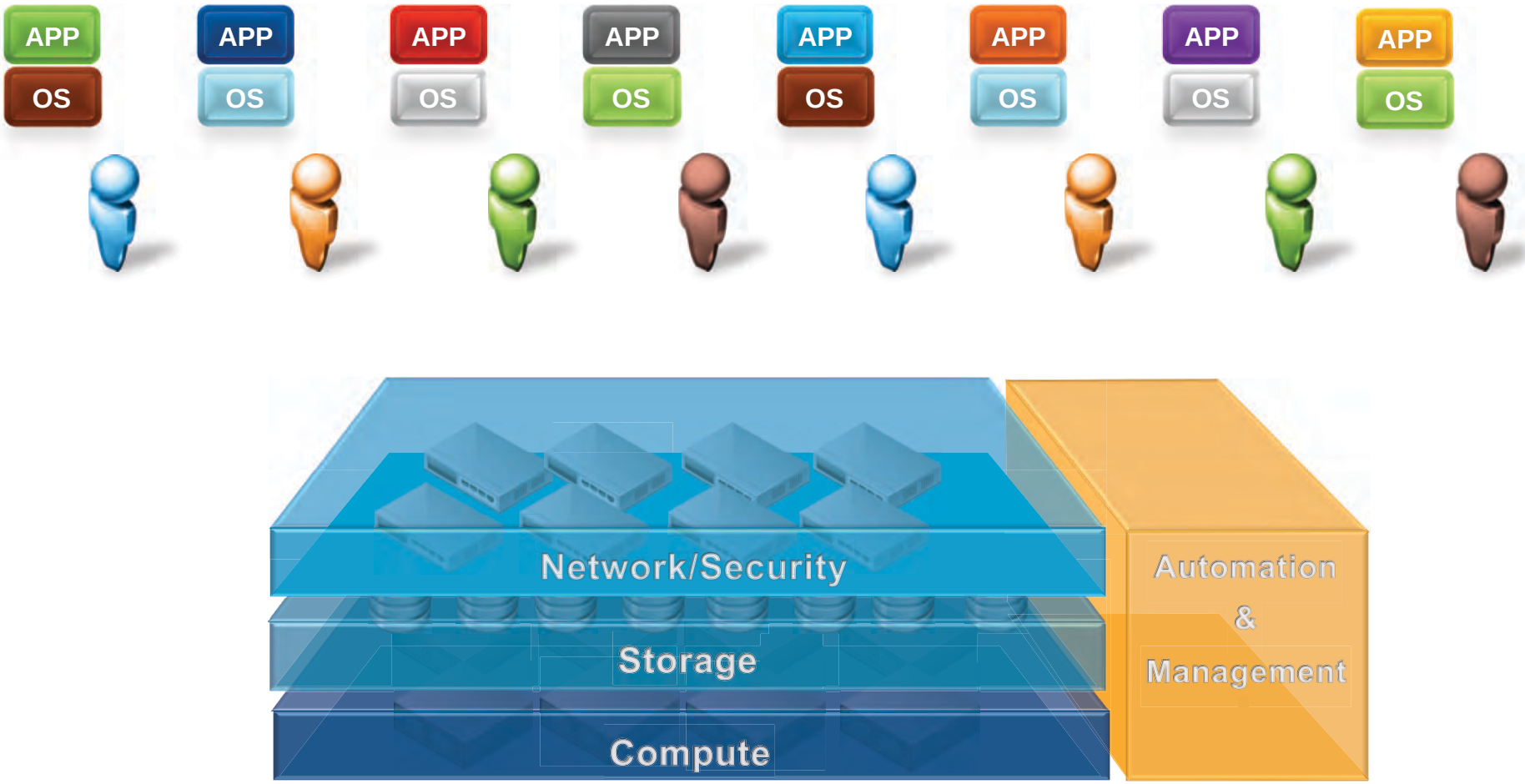
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Automation
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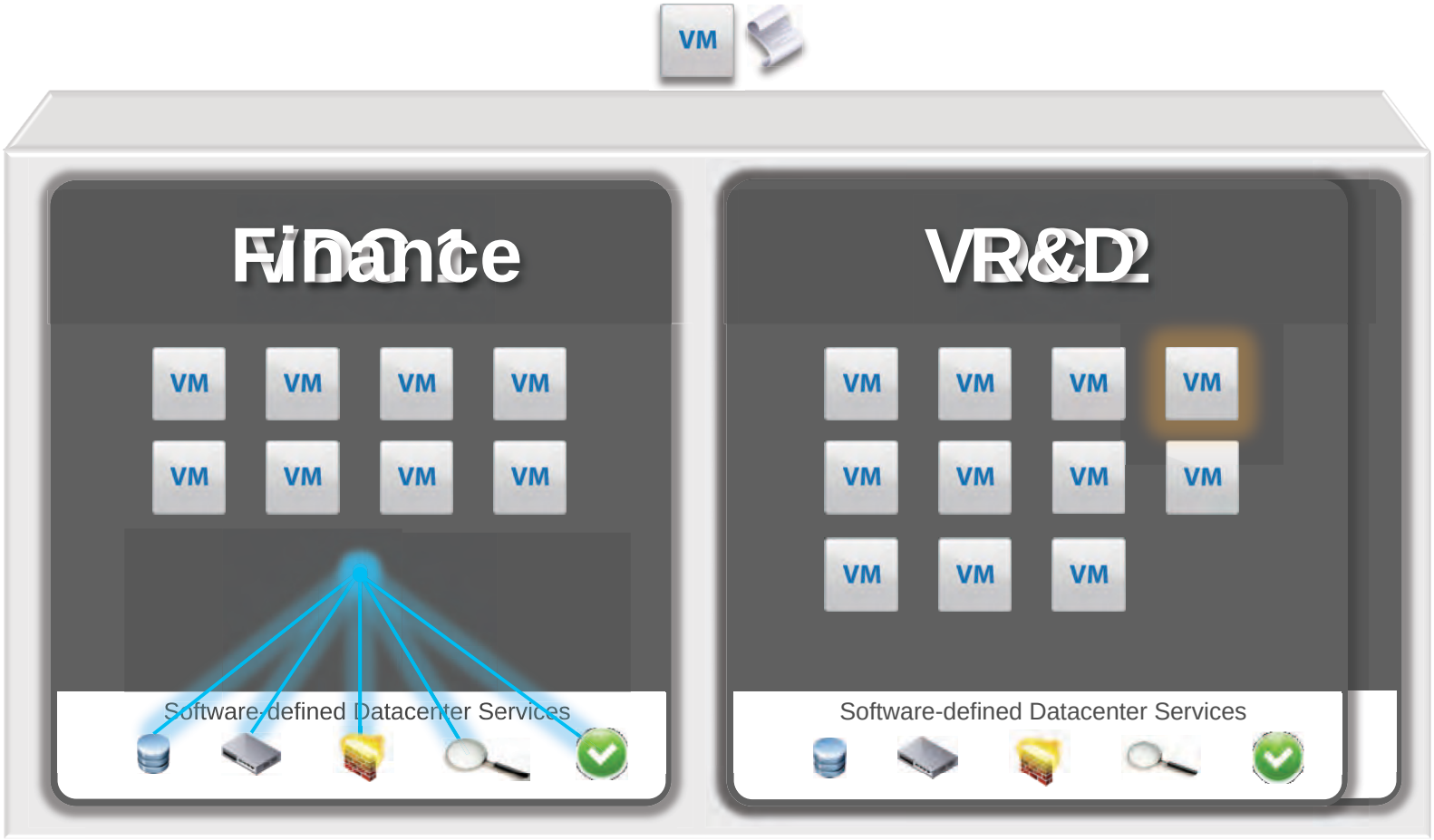
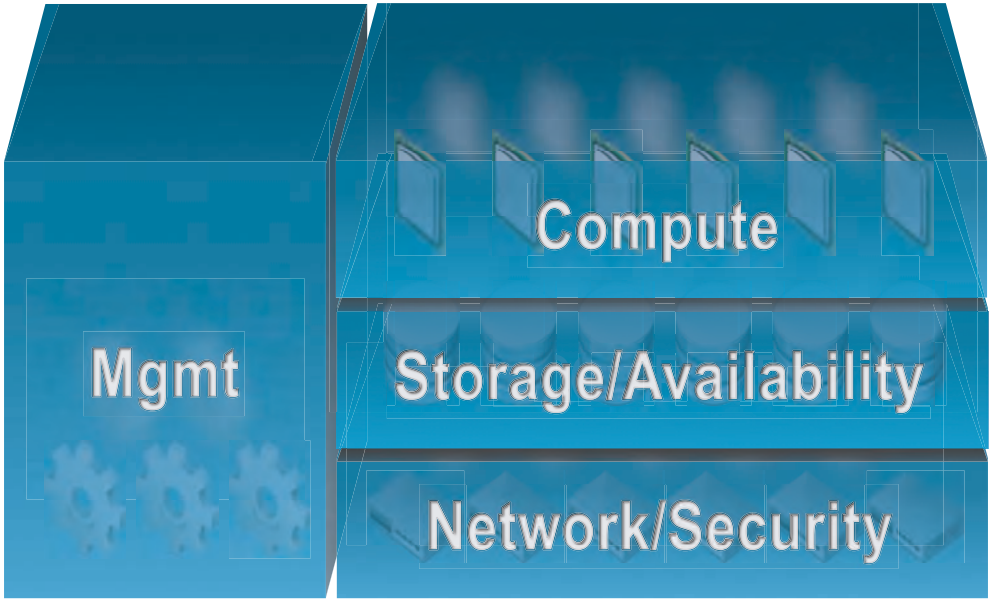
Management



Software-defined Datacenter

ABSTRACT. POOL. AUTOMATE.



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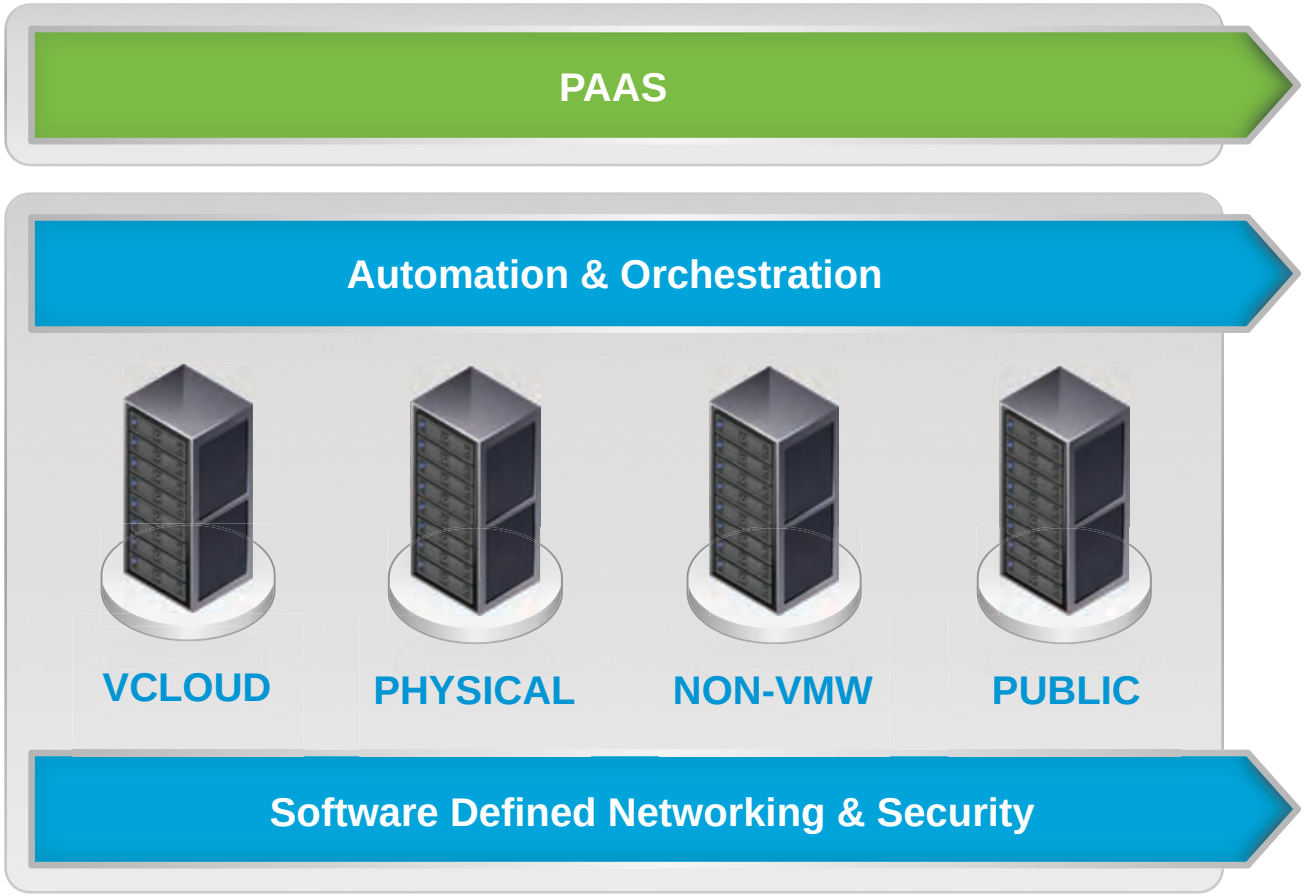
Addressing a Multi-Cloud World

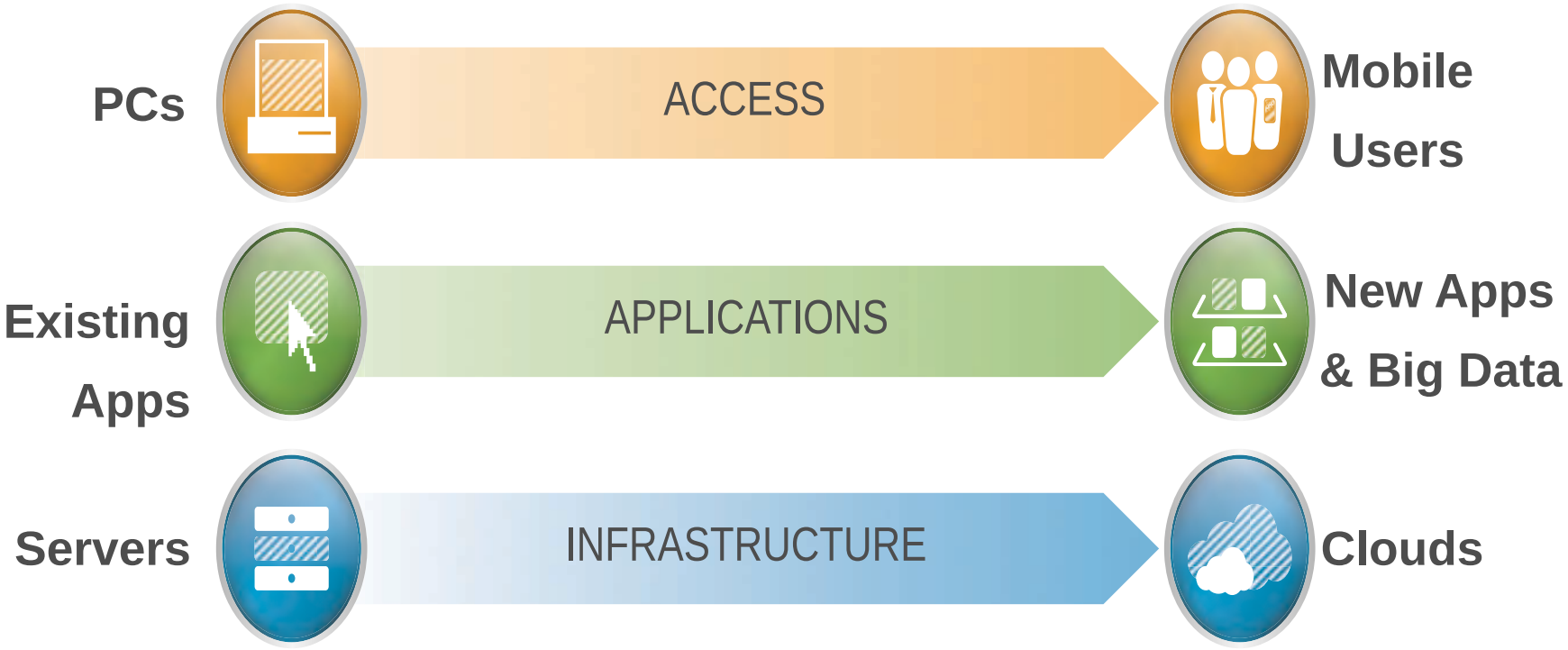


CLOUD FOUNDRY™

DynamicOps®

nicira

vmware®


PCs
ACCESS
Mobile Users
Existing Apps
APPLICATIONS
New Apps & Big Data
Servers
INFRASTRUCTURE
Clouds

What's Happening with Applications Today?

- **Written with frameworks**
  - Developer productivity and innovation

- **New Application Types**
  - Mobile, SaaS, social
  - Apps released early and often

- **Data intensive**
  - Emerging requirements: *elasticity, multi-cloud*
  - Web orientation drives exponential data volumes

- **Deployed on virtual and cloud infrastructure**

Applications Today

Deployed on virtual and cloud infrastructure

Span across Private, Public and Hybrid Clouds

Developed with ‘agile’ or ‘iterative’ methodologies

Apps released early and often

Written in diverse frameworks

Traditional (Java, .Net) and Modern Frameworks

Expanding into new application types

Mobile, SaaS, social

Cloud Operating Model

- *Driven by the Cloud Journey*
- *Leads to distinction of ownership and collaboration*

DevOps

- *Apps released early and often*
- *Businesses need frequent changes and expect higher service level.*

Source: http://en.wikipedia.org/wiki/Agile_software_development

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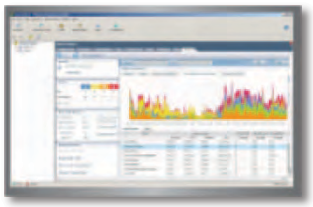
The Paradigm Shift – Separate the Layers

Cloud Consumers

Application Developers
- Performance
- Availability
- Usage
- Cost



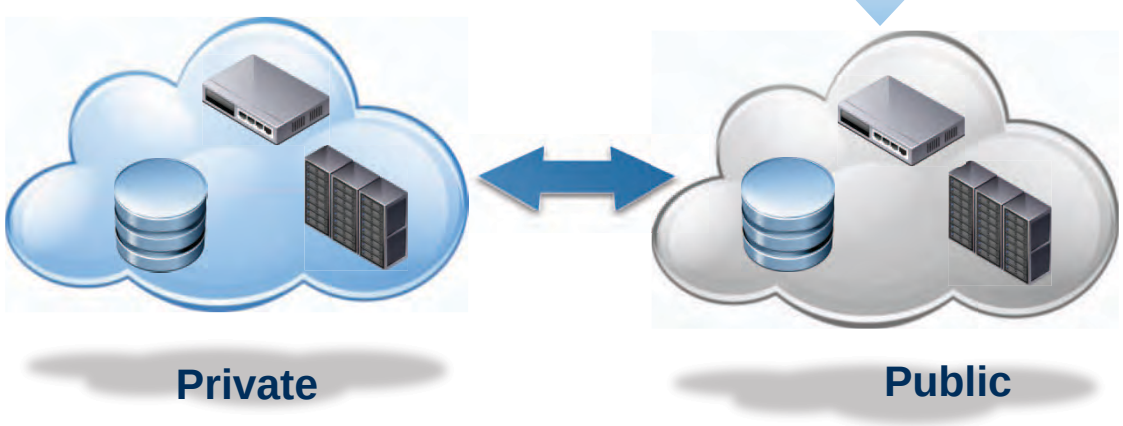
Application Operations
- Performance
- Availability
- Usage
- Cost

- Utilization
- Application Visibility

- Infrastructure Service
- Health
- Cost

Cloud Providers

Cloud Ops (Infra-NOC)
- Performance
- Capacity
- Config
- Security



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Big Data?

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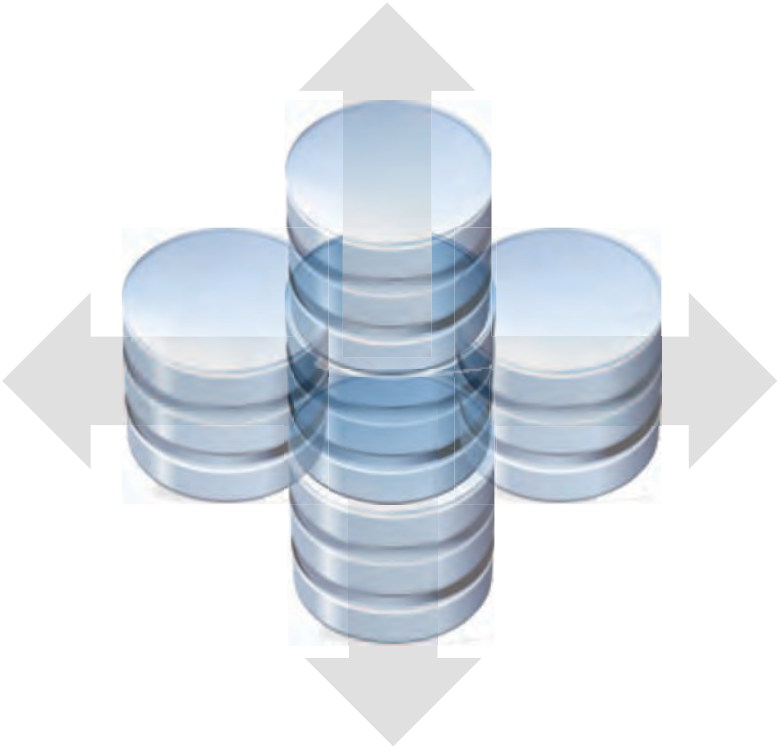
The Database is Being Stretched

Fast Data

- Global access patterns
- Mobile app proliferation

Big Data

- Petabytes vs. Gigabytes
- Democratize BI



Flexible Data

- Unstructured data
- Developer productivity

Cloud Delivery

- Virtualized
- Offered “-as-a-Service”

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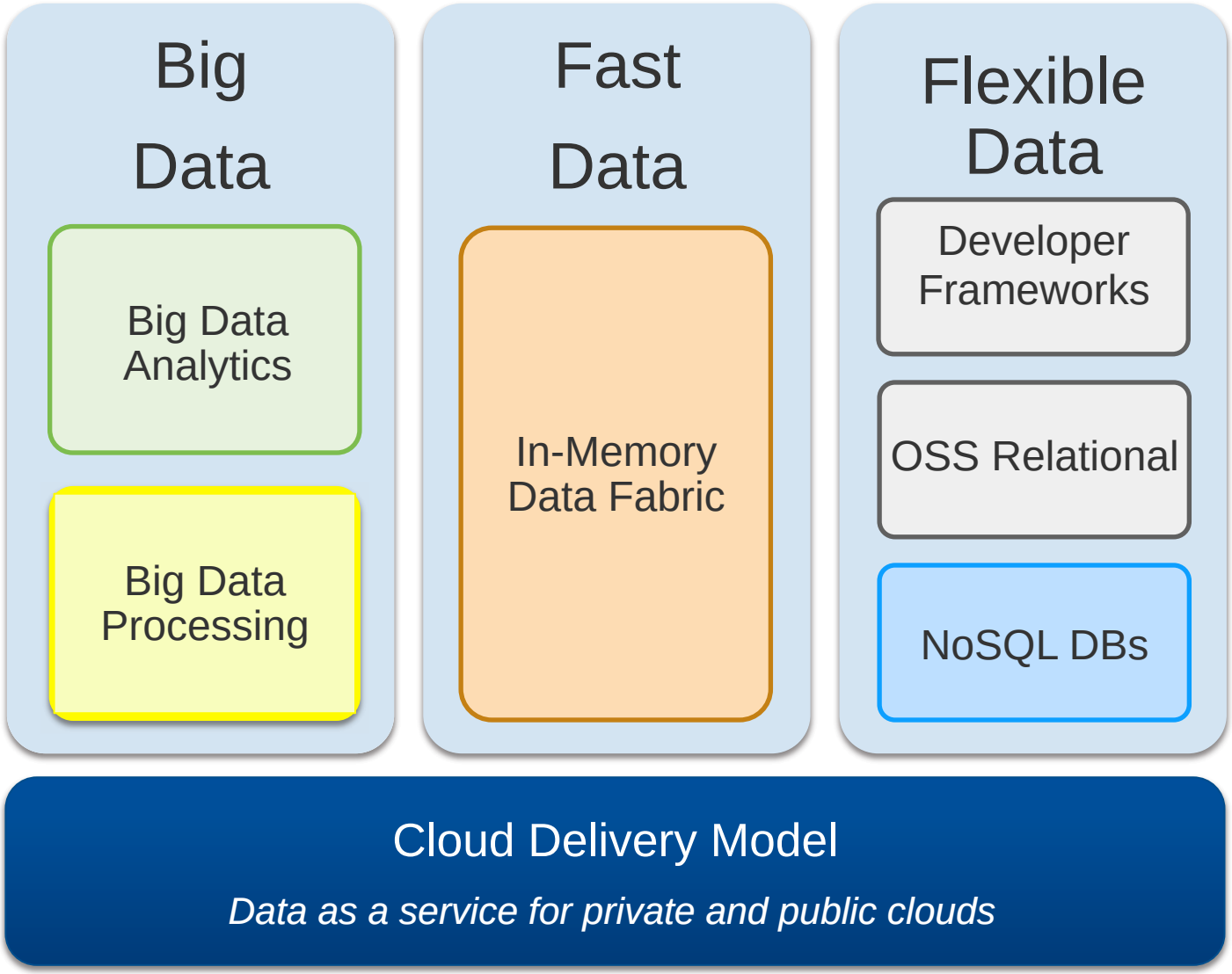
Big, Fast and Flexible Data



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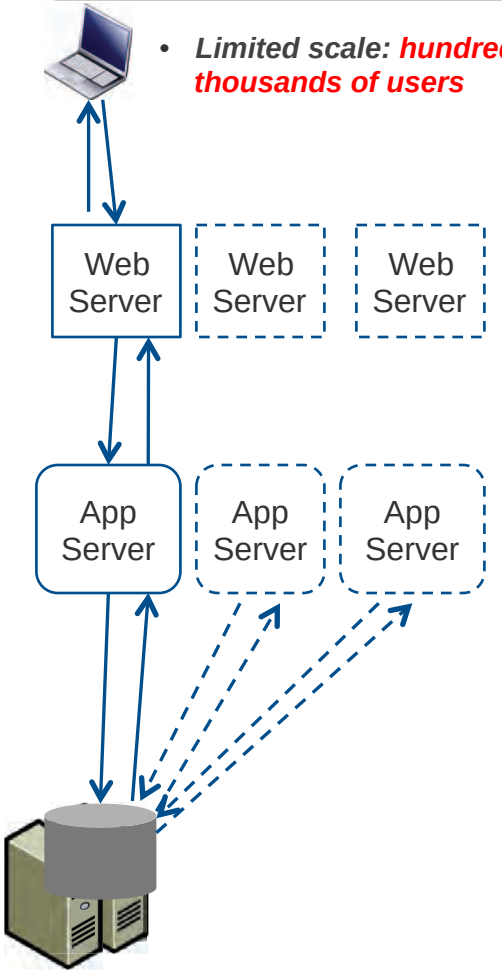
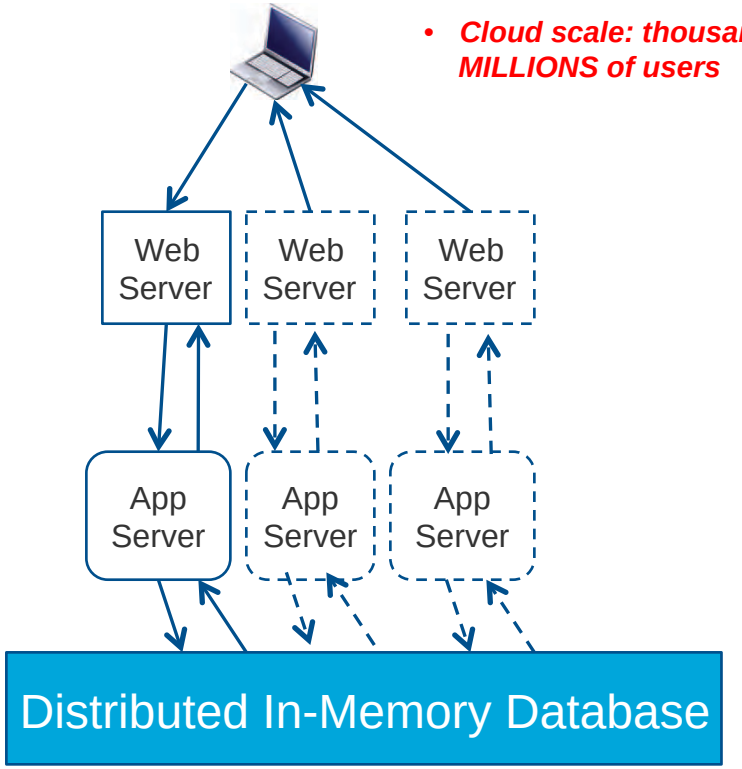
Cloud Era Apps Driving a Shift to In-Memory at the Data Tier

Traditional Application



- ***Limited scale: hundreds / thousands of users***

Cloud Era Application



- ***Cloud scale: thousands / MILLIONS of users***

- ***Changing scale expectations requires a fundamental shift at the data tier: distributed, in-memory***

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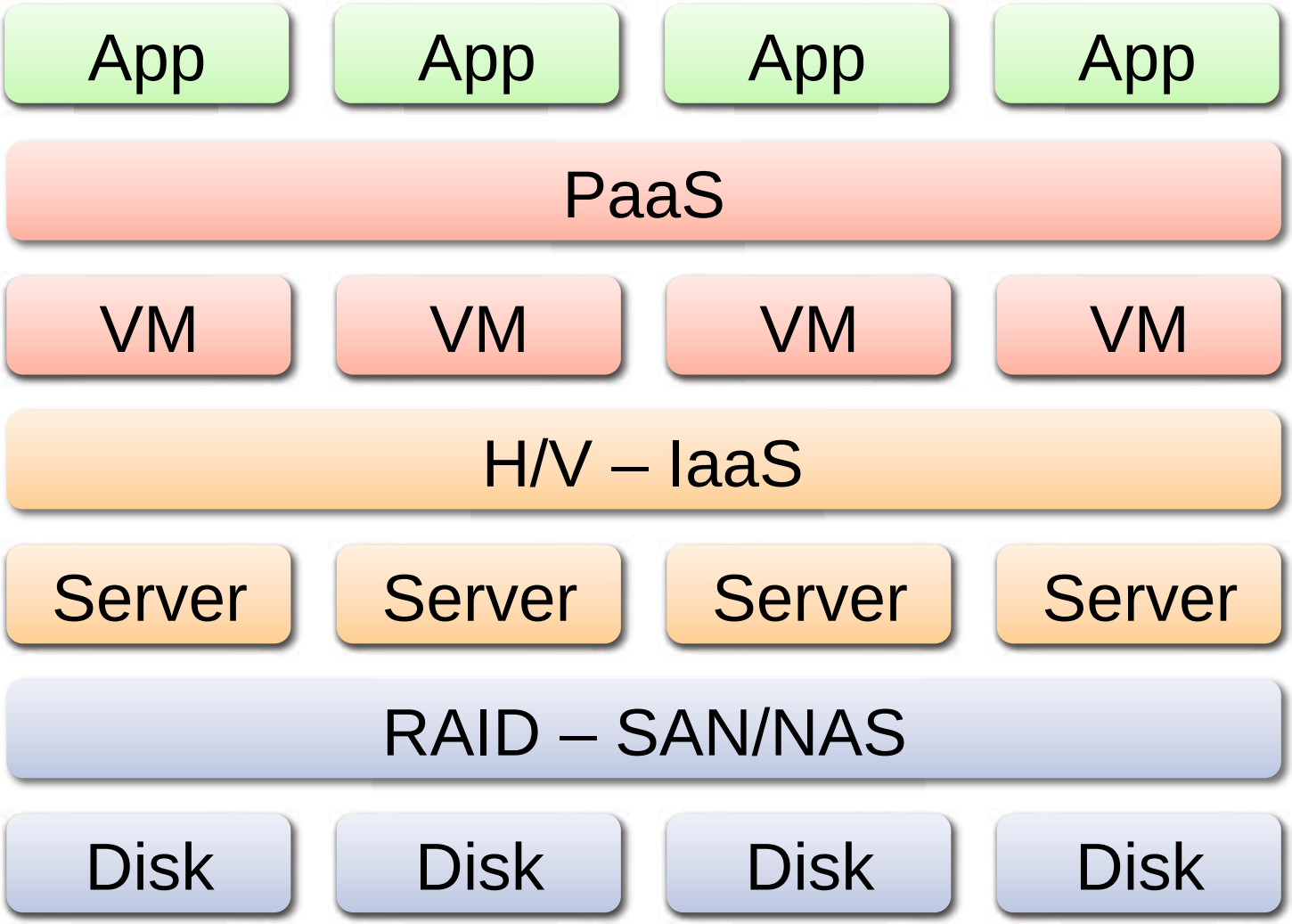
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The risk of an “Incomplete PaaS”

PaaS solutions today are not complete

Introduces significant inhibitors to mainstream/enterprise adoption

- Limited to a single framework (Azure and .NET)
- Require “special” frameworks (Azure, Google App Engine)
- Limited to a single provider (Heroku, Azure, Google)
- No on-premise solutions
- Can’t move between clouds

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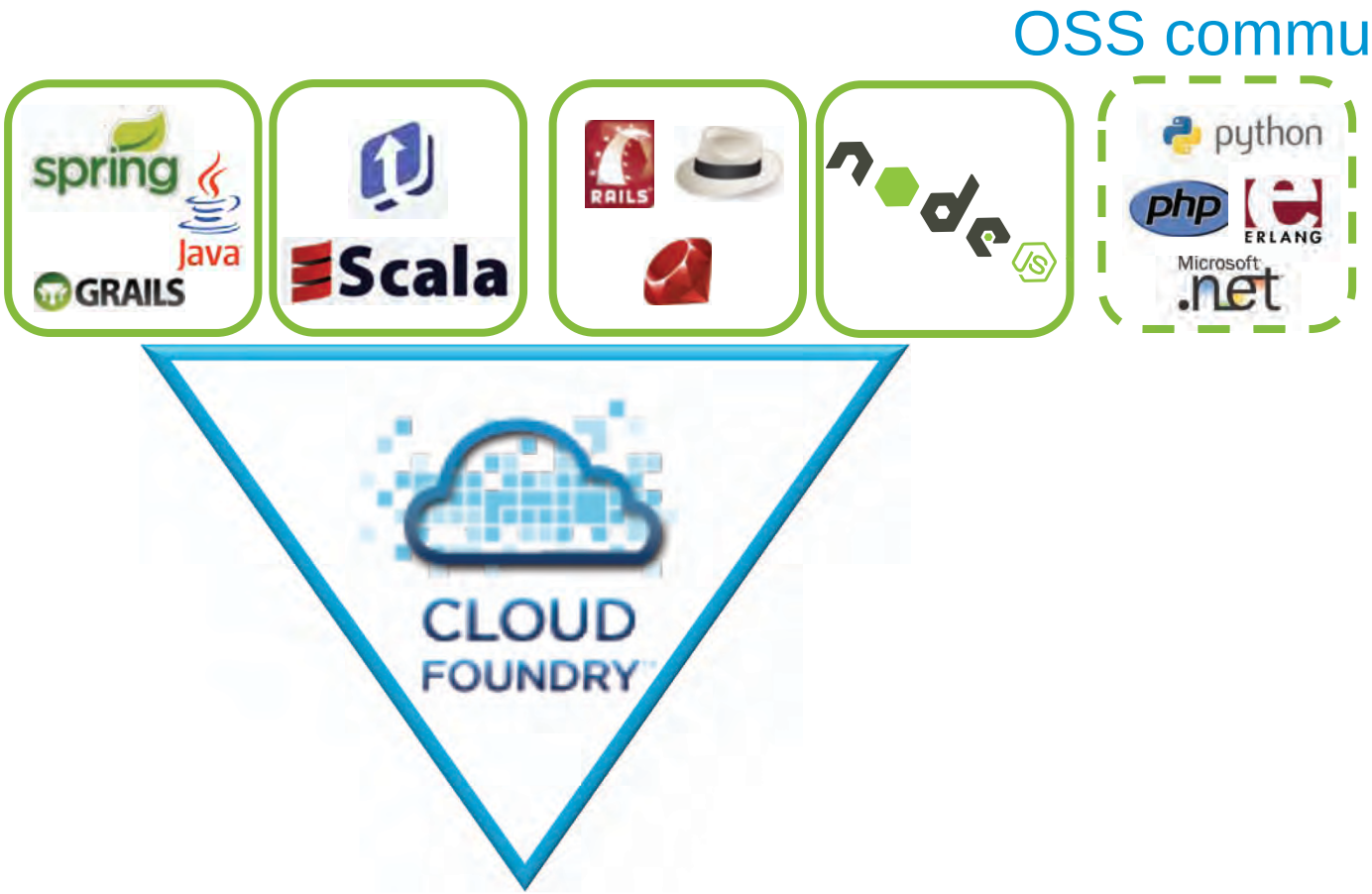
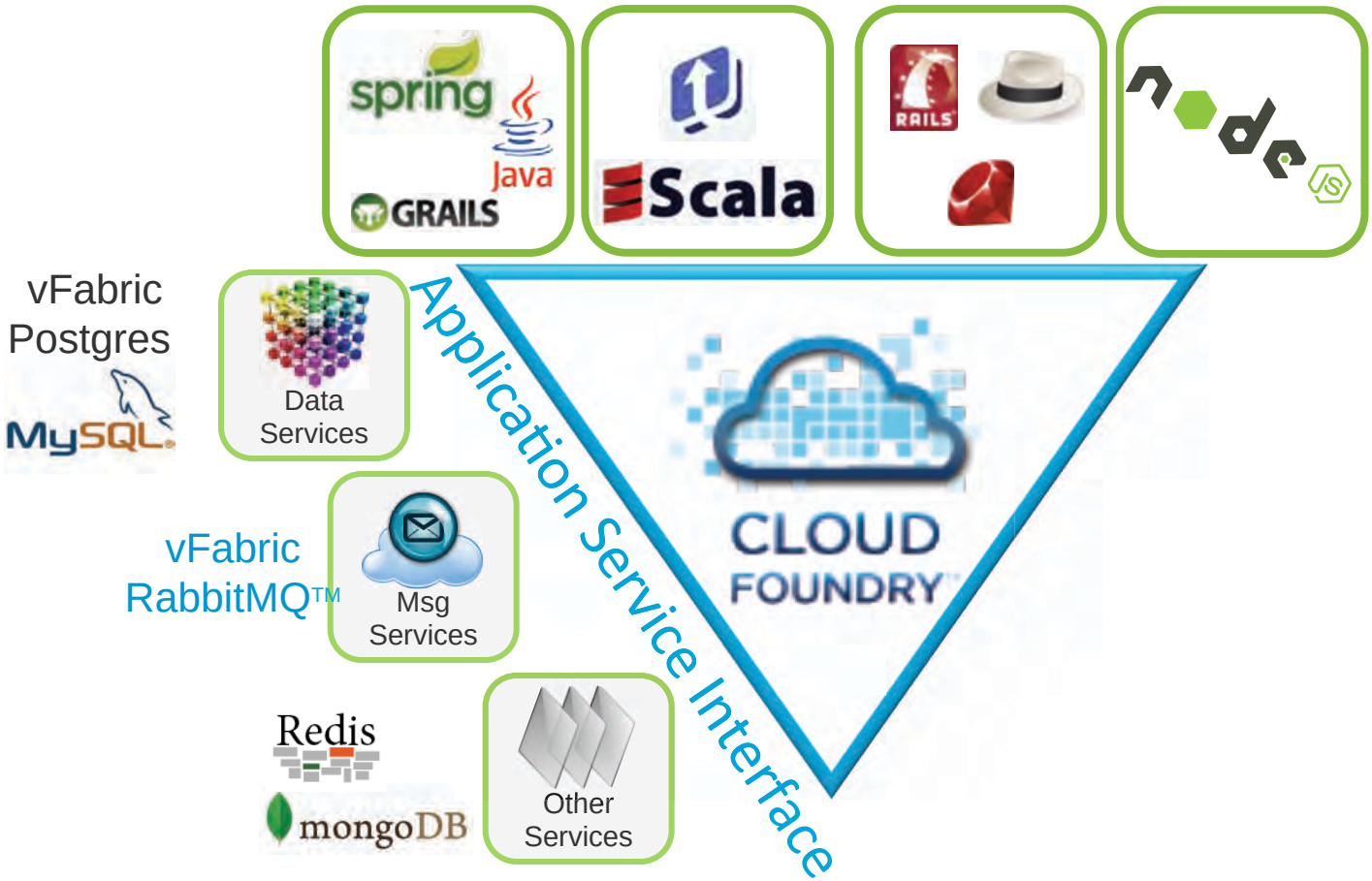
Cloud Foundry open PaaS - Choice of frameworks



Cloud Foundry open PaaS - Choice of application services



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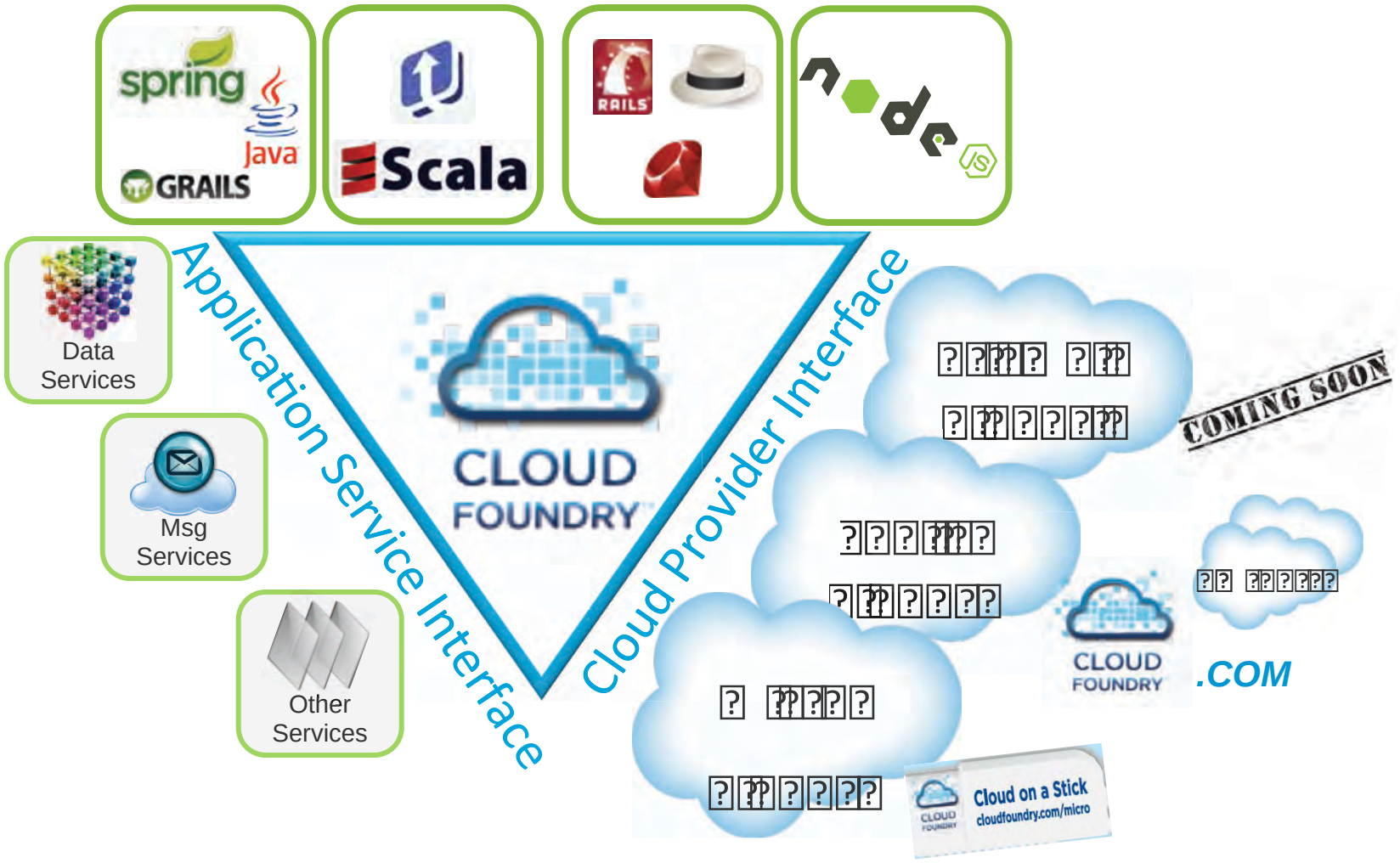
Cloud Foundry open PaaS - Choice of clouds



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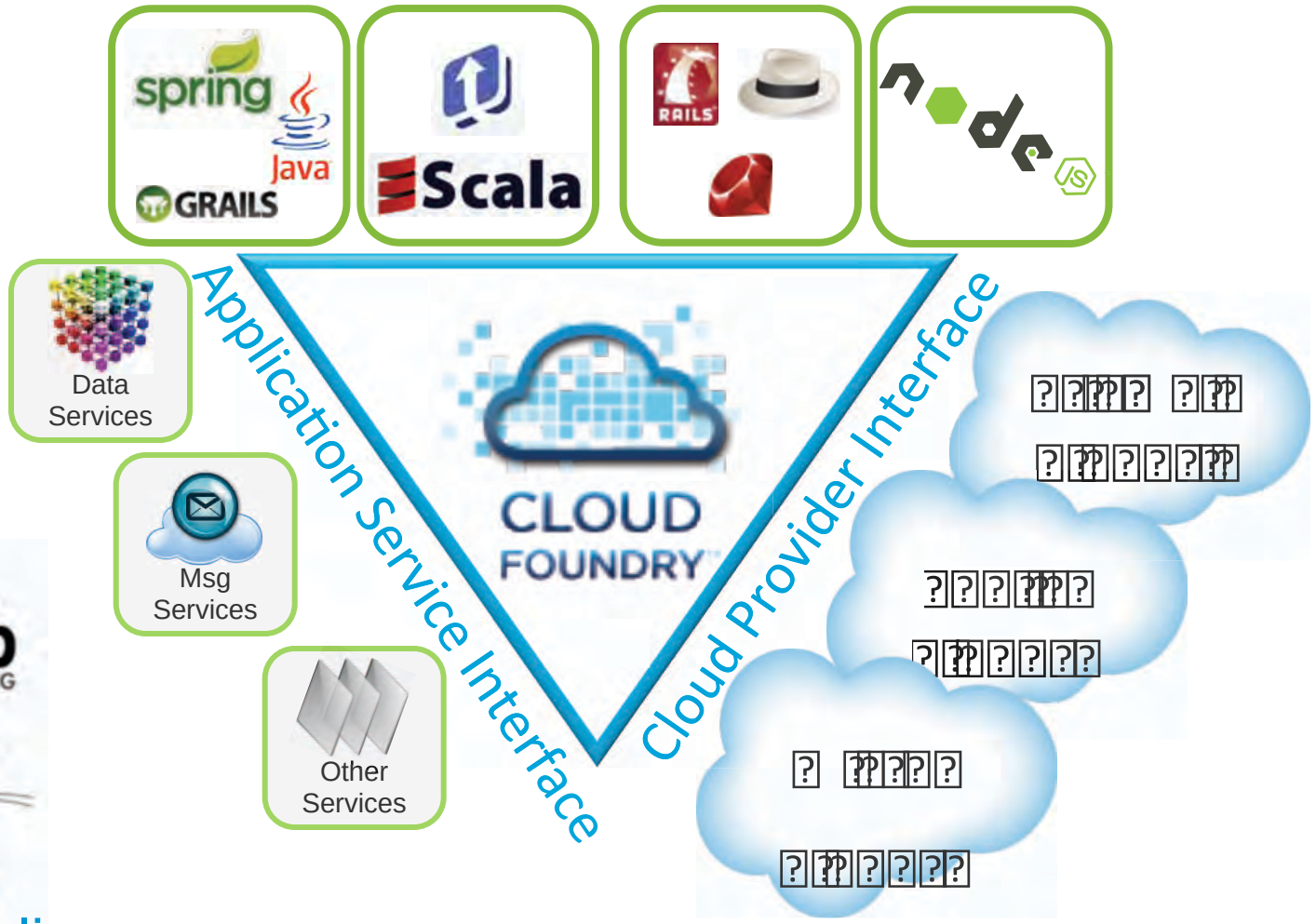
Cloud Foundry open PaaS - It's open source



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