



How to leverage the cloud for real world business requirements

Private, Public and Utility cloud computing –

7 Key Offerings That Can Evolve and Revolutionize your IT Business

Andy Nichols
Enterprise Technologist
Dell Inc.

Everyone wants a cloud – now what?”

- **“Cloud’ is an overused buzzword**
- **Get your stakeholders to define what they mean when they talk about “Cloud”**
- **Are they hoping to build their own, or leverage an expert?**
- **Dell has answers either way**



1911

Every factory included
its own power plant

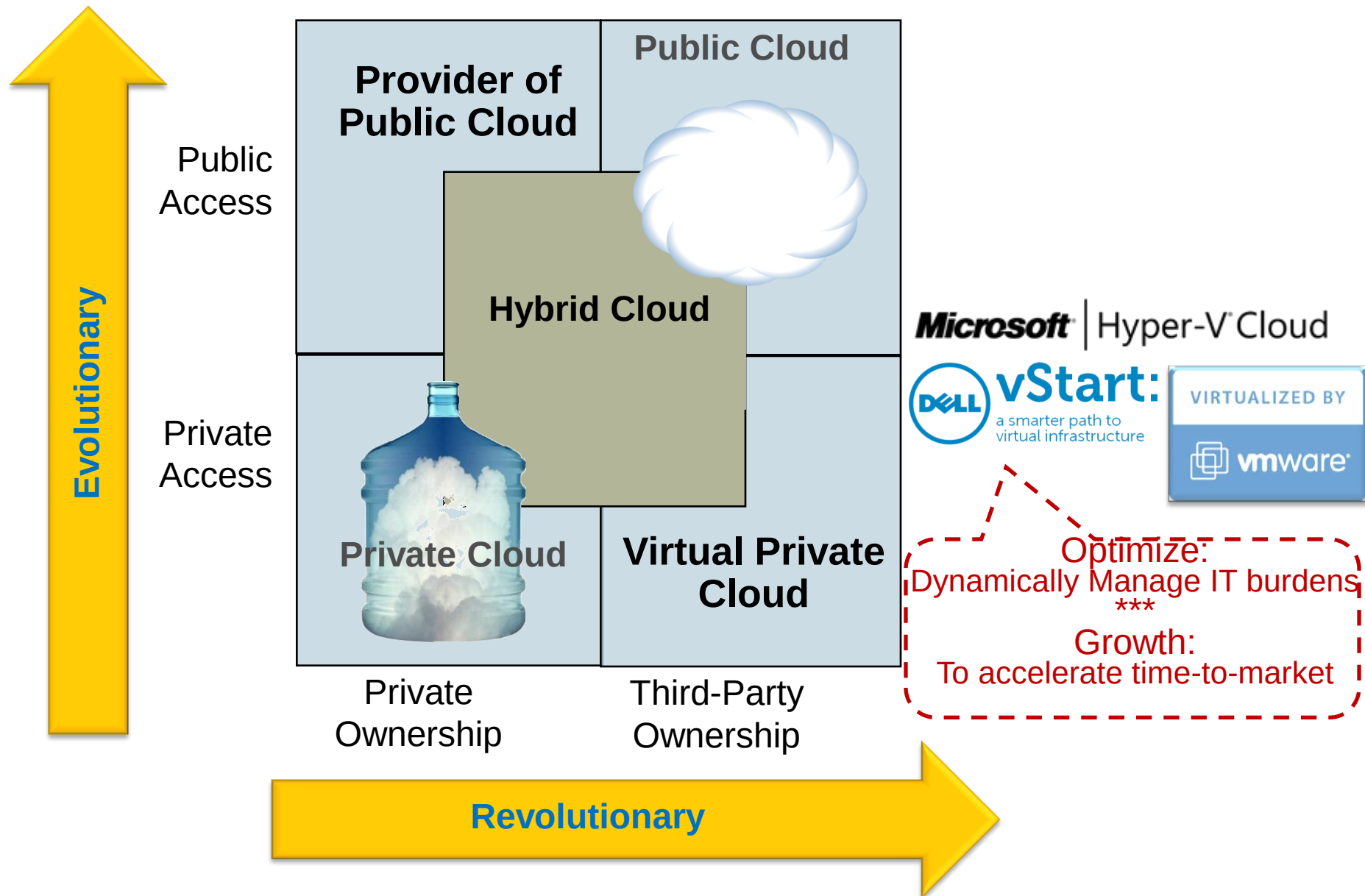


2011

**Business Runs It's Own IT
Assets, in Silos**



Where could I move my Assets?



Two Approaches

Private and public, evolutionary and revolutionary

Revolutionary

- “Leapfrog” Efficiency Gains
- Platform-based
- Application-oriented
- New benchmark of CIO's
- Dell is powering 20 of 25 largest

**Platform
as a Service**

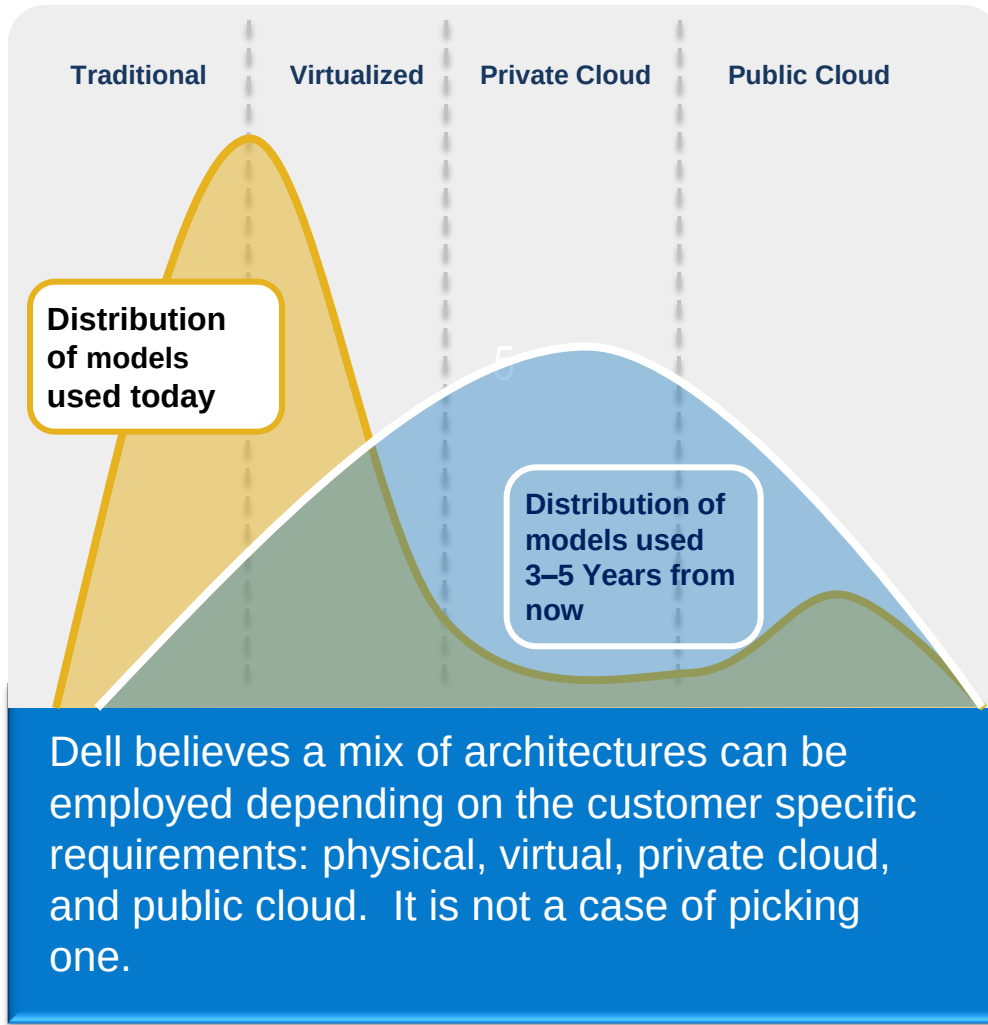
**Software
as a Service**

**Infrastructure
as a Service**

Evolutionary

- Incremental Efficiency Gains
- Virtualization-based
- Infrastructure-oriented

Cloud is a Foundation of ITaaS



A computing model in which applications are bound to specific physical servers and storage

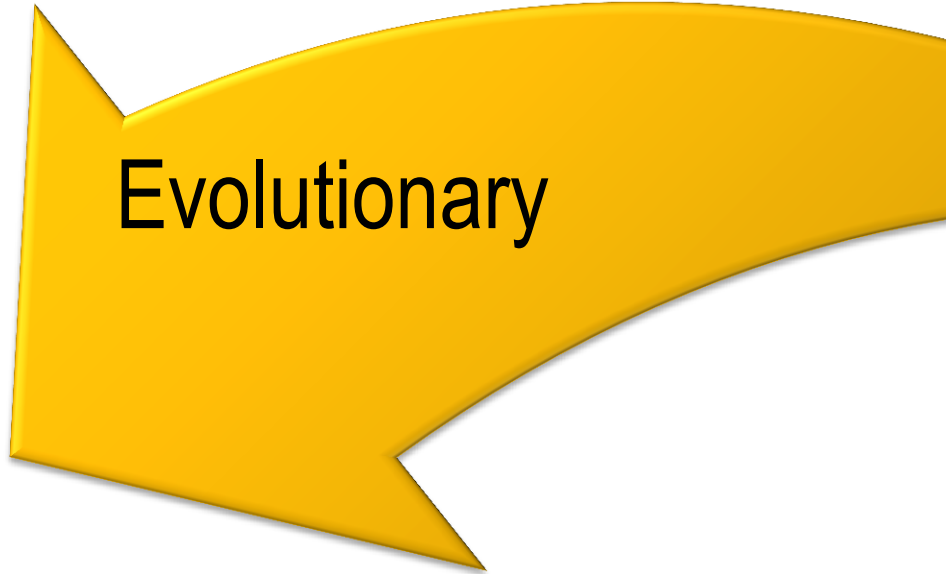
Open to any number of organization and individual users, the public cloud enables agility and efficiency with vast scale

A computing model in which applications are both bound to specific physical servers and also capable of being accessed off device

A customers cloud infrastructure could also be a hybrid of more types of clouds. The benefit is that it allows data and application portability between public and private worlds

Operate and hosted by either enterprise IT or an external provider (for internal use). Is far more flexible than a traditional IT environment by is not truly limitless in scalability

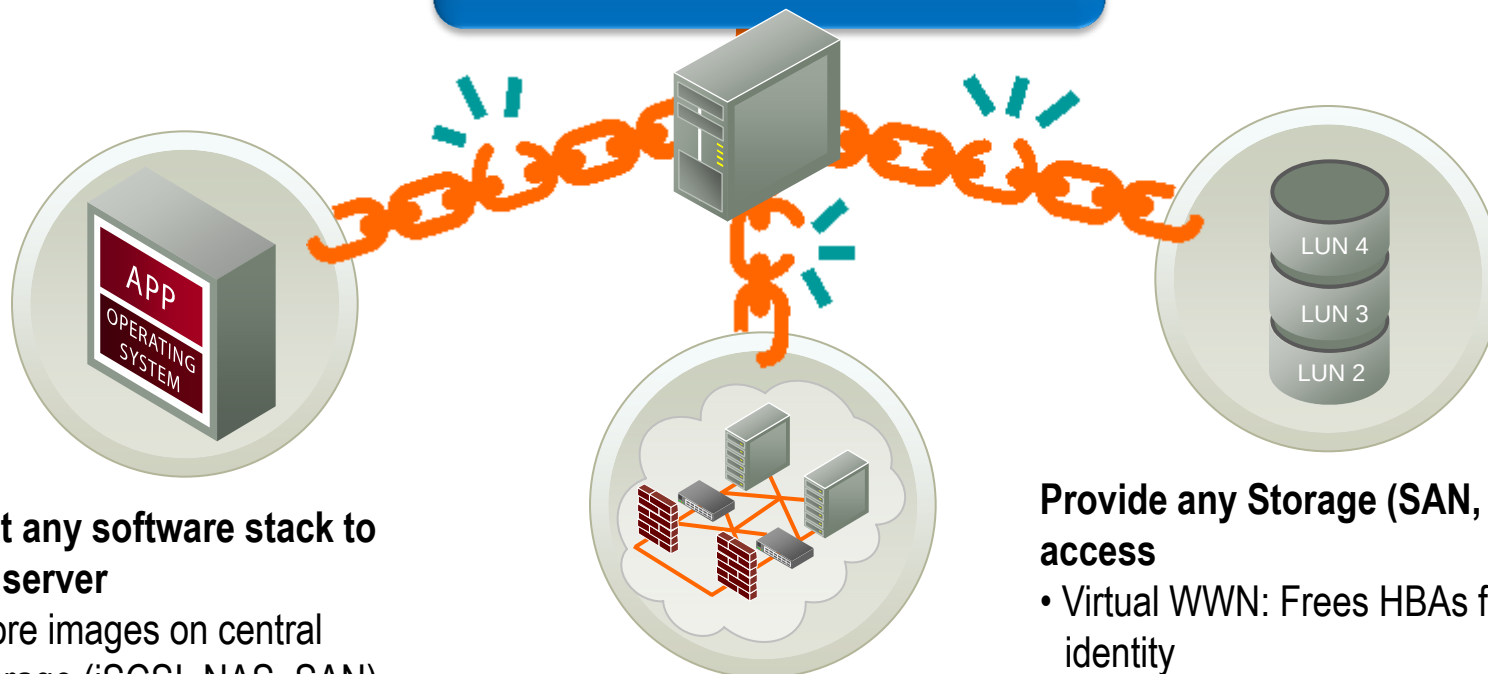
Dell Virtual Integrated System



Evolutionary

Dell Virtual Integrated System (VIS)

Dell Infrastructure Manager



Boot any software stack to any server

- Store images on central storage (iSCSI, NAS, SAN)
- Place on suitable virtual or physical machines, when needed

Provide any Storage (SAN, NAS) access

- Virtual WWN: Frees HBAs from physical identity

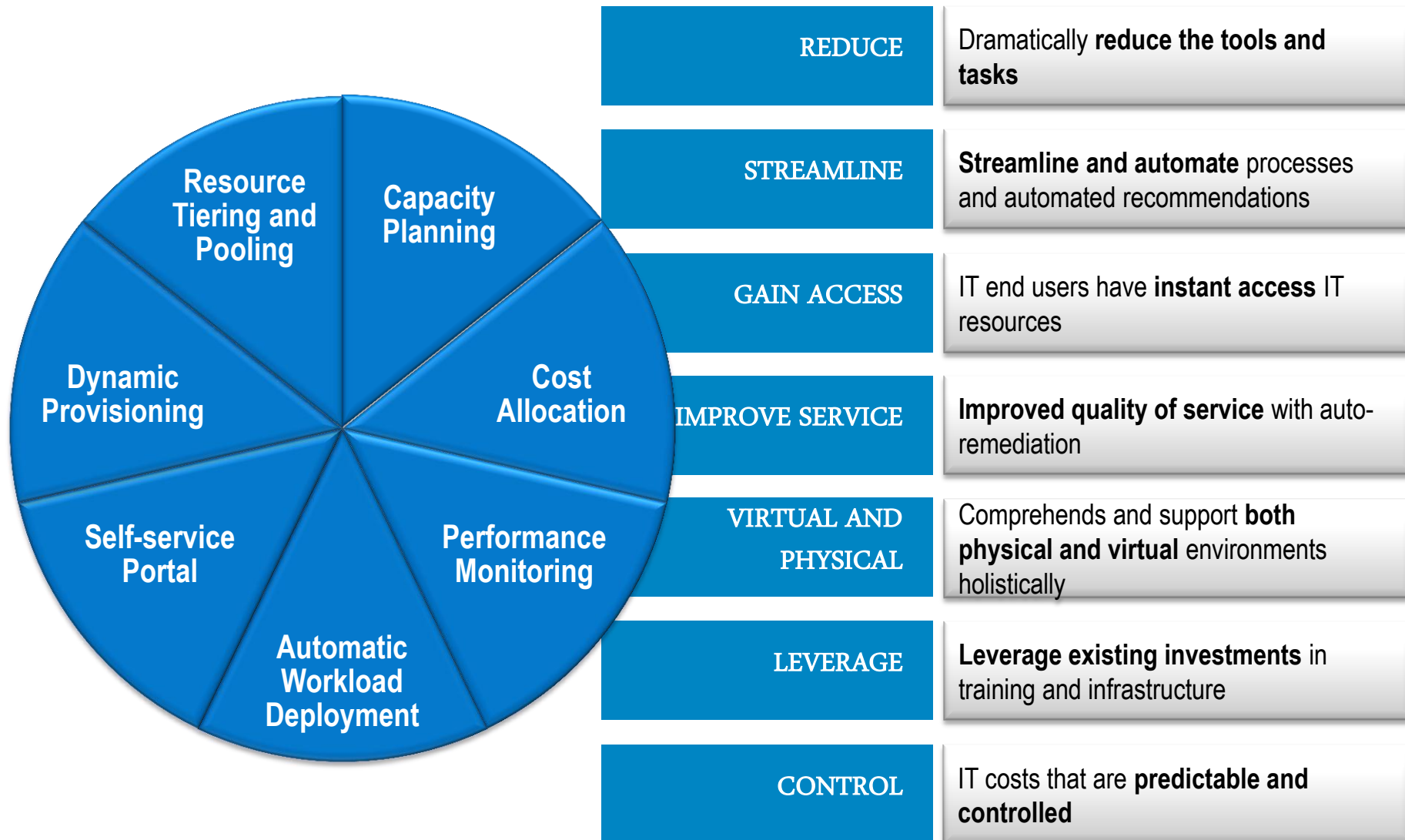
Power on & Provide any LAN Connectivity

- Virtual NICs free OS from NICs
- Virtual LANs free NICs from LANs

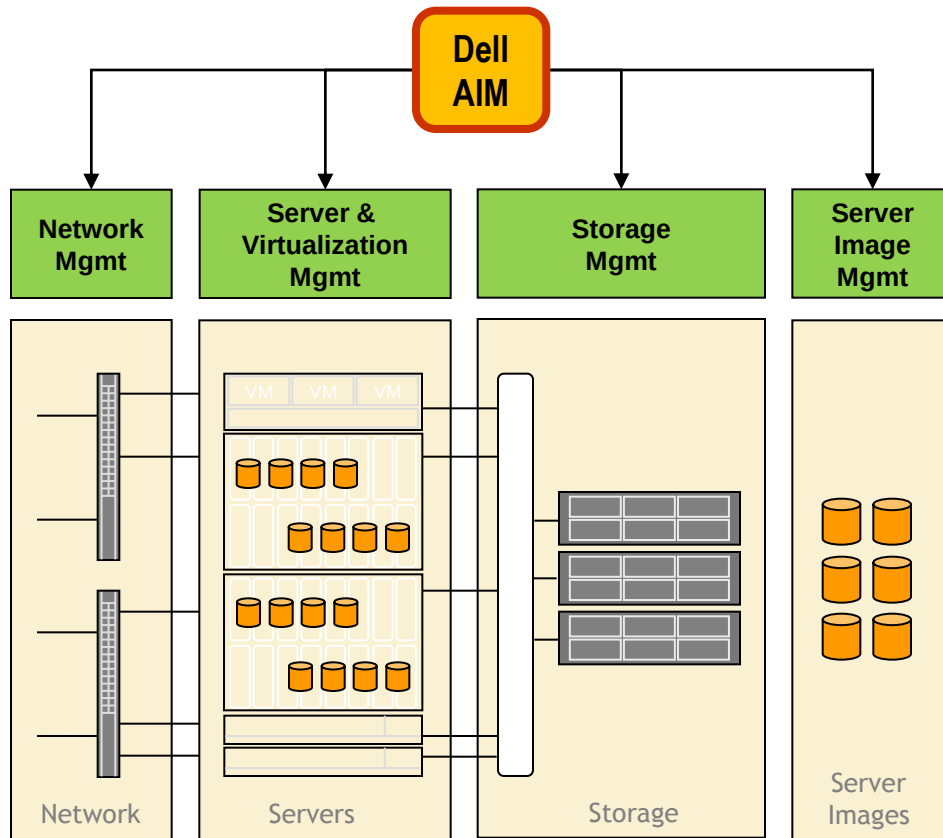
Rack Once, Cable Once; Reconfigure Repeatedly, Effortlessly, As Needed

Dell Virtual Integrated System (VIS)

IT operational efficiency without sacrificing flexibility and choice.



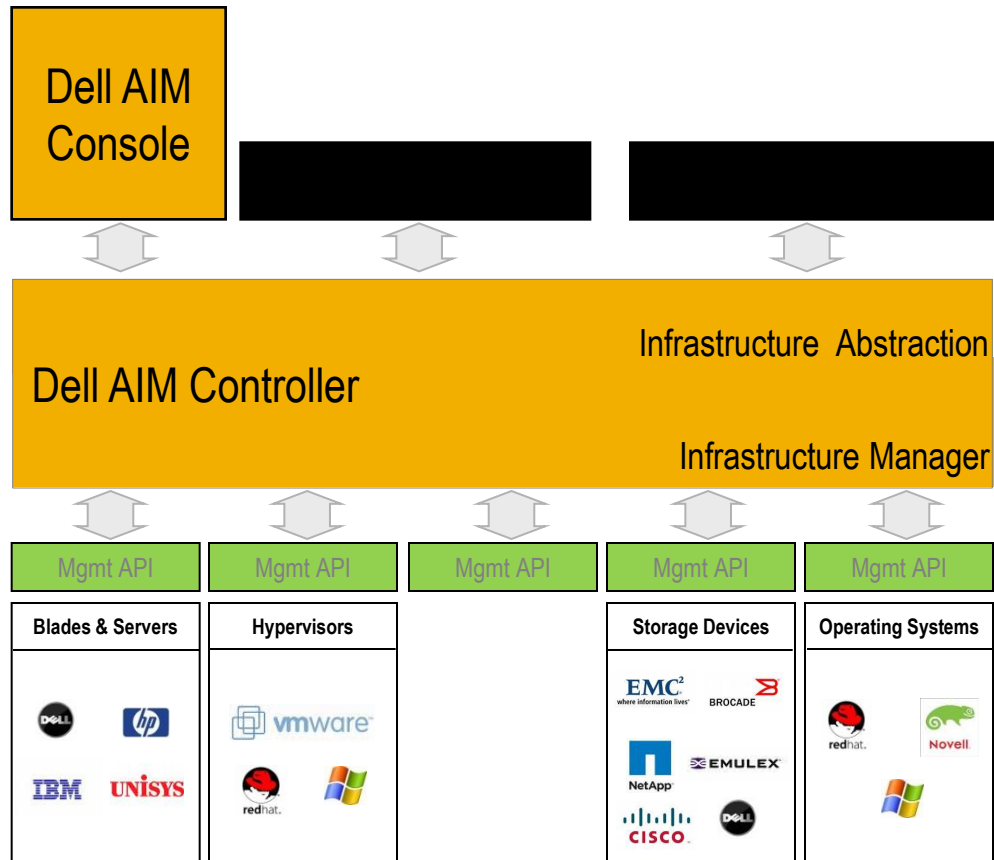
Dynamic IT Infrastructure



1. Typical data center infrastructure is divided into 3 technology silos – servers, network, storage
2. Each silo is managed by specific set of tools supplied by multiple vendors
3. Servers are immovably tied to specific server images. Change is complicated and requires manual cross-silo coordination
4. In a dynamic IT infrastructure, server images are disassociated from servers – making images mobile, and the servers re-purpose-able
5. Dell AIM automates cross-silo coordination and simplifies infrastructure moves, adds, and changes

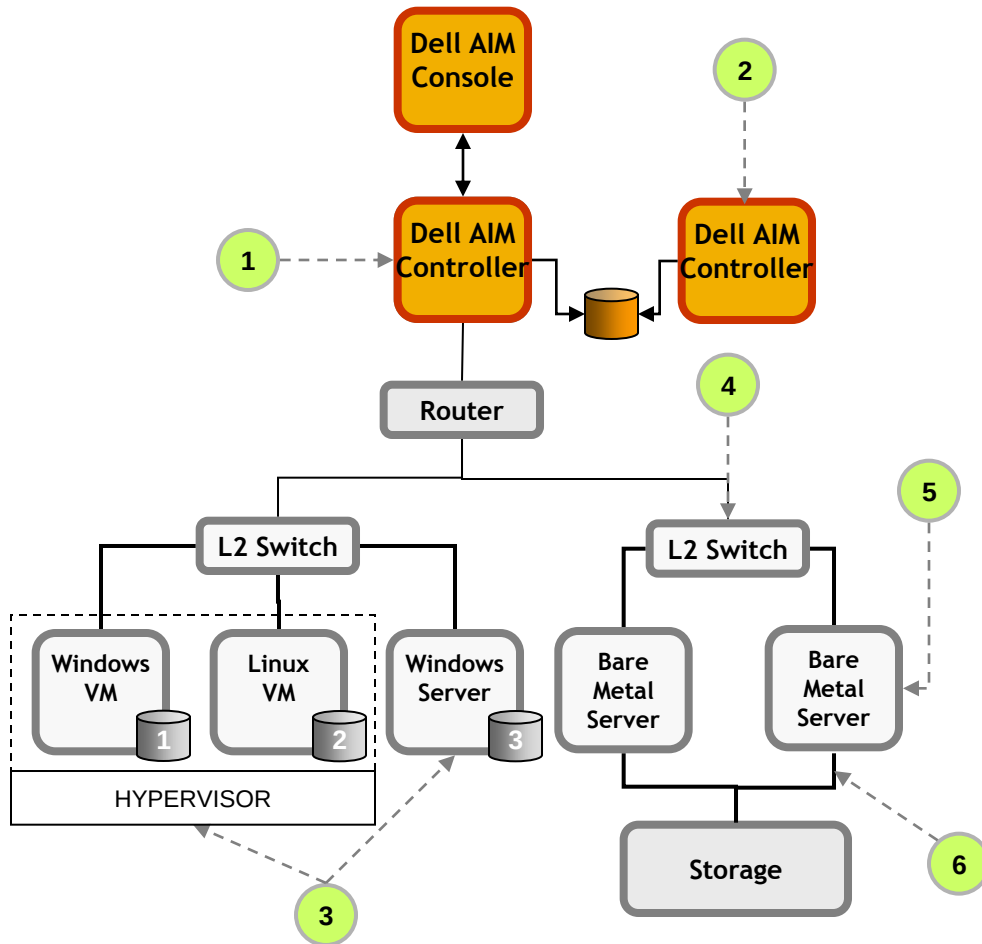


Dell AIM in the Management Ecosystem



1. Dell AIM operates in the “control plane” of the data center
2. Dell AIM interfaces with infrastructure components using vendor supplied and supported APIs
3. Dell AIM offers an abstraction that unifies the management of multi-vendor infrastructure
4. Dell AIM offers scriptable CLI and convenient Web services for use by other management software
5. Dell AIM provides a browser-based graphical console with “drag-and-drop”, “point-and-click” simplicity

Deploying a Dell AIM Environment



1. Install Dell AIM Controller on a physical server or virtual machine
2. Optionally, install a redundant Controller
3. Identify existing servers, VMs, hypervisors to add to the Dell AIM environment
4. Identify network switches to add to the Dell AIM environment
5. Identify new bare-metal servers and configure them to network boot
6. Cable the new servers to networks and storage

Dell AIM solution delivered in 2 ways:



Advanced Infrastructure Manager (AIM)

“Real-time infrastructure deployment”

AIM software available as a **media kit drop-in-the-box** with one of the certified Dell platforms:

- PowerEdge M-series blades or
- PowerEdge Rack servers or
- Equallogic storage or
- Available as download from Dell-Scalent’s website.

Business Ready Configuration

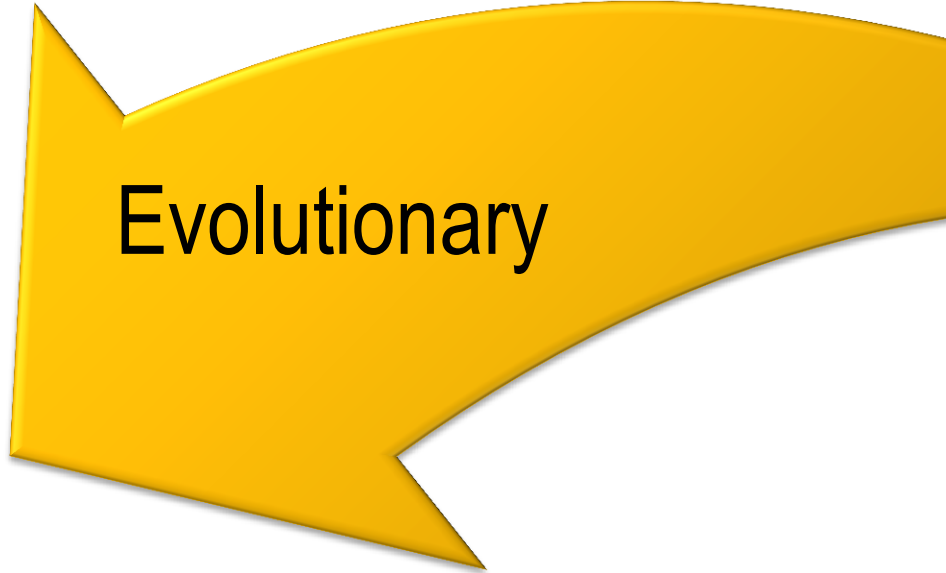
“A dynamic datacenter building block”

Dell’s **Business Ready Configurations for Virtual Ready Infrastructure** are high-performance, dynamic, datacenter solutions which are tested and validated configurations that combine

- PowerEdge M-series blades and
- EqualLogic PS6000 SAN, with
- PowerConnect switches and
- Dell Advanced Infrastructure Manager

Virtual Private Cloud –

How Dell can Help
you optimize your
VMWare or Hyper-
V Investment



Evolutionary

vStart:

a smarter path to
virtual infrastructure

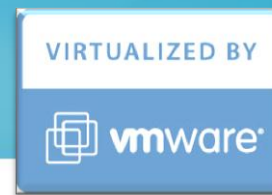
vStart is

The simplest, fastest
and smartest path to
hosting virtual
machines.

- **Pre-Sized**
- **Pre-Racked**
- **Pre-Wired**
- **Pre-Tested**
- **Pre-Integrated**



vStart: Open, Capable and Affordable



Servers

- Energy Smart management
- Increased memory per CPU socket
- Hypervisor redundancy in server
- Embedded management



Storage

- Award-winning storage arrays
- Intelligent and automated
- Engineered for virtualization
- Self-optimizing
- Full integration with VMware vStorage APIs



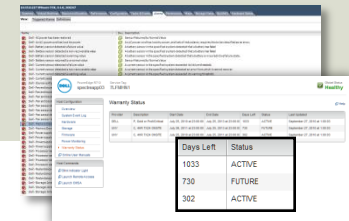
Network

- High density
- Scale by stacking
- Advanced security and QoS
- Standards-based, IPv6 certified
- Auto-config on startup



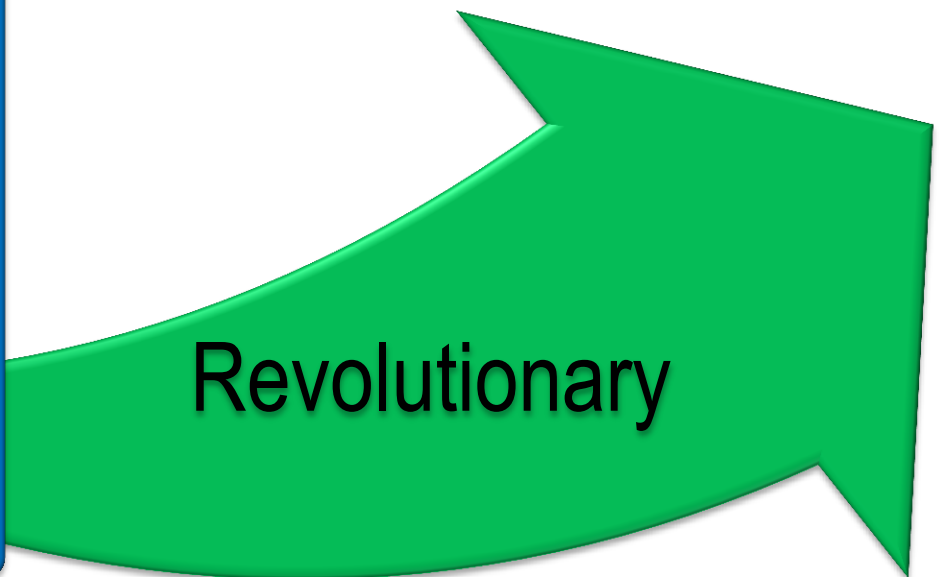
Management

- Native VMware vCenter plug-ins for systems management
- Targeted to IT generalists
- Open to work within existing frameworks



PAAS and SAAS—

Dell's Cloud
Platform Portfolio



Revolutionary

Dell is the Foundation of the Leading “Platform as Service Providers – On and Off Premises

Platform as a Service



Features

- New applications only
- True cloud application scale
- Full application mobility

Software as a Service



Features

- Best of breed software components
- Pay by the drink
- Ramp up and down as business needs
- Able to migrate component needs

Infrastructure as a Service



Features

- Supports existing applications
- Provides operational scale
- Some level of peak load capacity

Dell's PAAS Portfolio



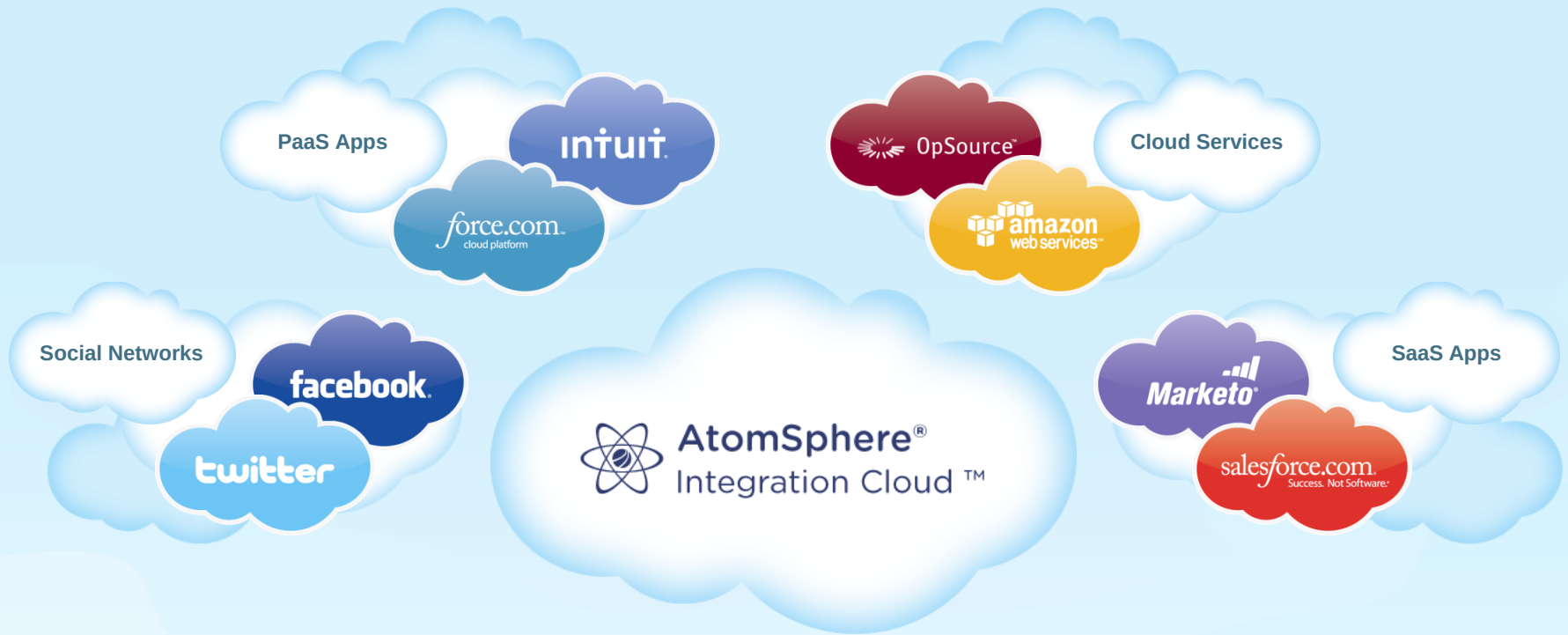
Dell Offers Customer Choice and the Best of Breed solution for the use case

	DELL VIS (Maverick)	VMWare VSphere/ Redwood	VMWare w/Spring	Open Stack	Canonical UEC	Joyent	Microsoft Azure (Talisker)
What?	Priv. IaaS /Dynamic DC	Private IaaS	Private PaaS for Java/ Apache tomcat	Private & Public IaaS	Private IaaS	PaaS for Web 2.0	Private PaaS .NET/IIS MS SQL, Java
Evolution/ Revolution	Evo.	Evo.	Revo.	Both	Evo.	Revo.	Revo.
Applications	General Purpose	General Purpose	Apache Tomcat	Scale out	Scale out, AMI	Scale out: Apache/Tomcat, SQL, Zues, many others open source web & databases	IIS, MS SQL, Windows executables, 3rd party Tomcat, MySQL, MemCache
Development environments	N/A	N/A	Java	tbd	tbd	Java, Ruby, PHP, PERL, Python,...	.net, Java, PHP, Ruby, Python, Visual Studio, Eclipse
Management API		vCloud	vCloud	Rackspace, Amazon	Amazon	Joyent	Azure REST
Customer segements	LE, Pub and SMB Mid market	LE, Pub both large and Mid-Market	SP, G500+, P50+	SP, LE, Pub	SP, LE, Pub	SP, LE, mid-market web 2.0	Very Large SP, G500, P50
Potential Target accts.	10k+ Enterprises	10k+ accounts	100 - 1000	10k+ accounts	10k+ accounts	100+ very targeted accounts	100-300 accounts
Availability	Elements Q3; Integrated Q2 FY12	VM Now w/ Maverick	TBD	6-12 months	Q3	Q3	OEM 24 months
		TBD - Redwood					as a service – Q2 CY2011
SW IP	High	Medium	Medium	Large	Medium	Small	Small
Dell Biz Models	•Package & Sell to End users	•Integrate w/ Maverick & vanilla OEM	•Integrate w/ Maverick & vanilla OEM	•Package & Sell (turnkey or RA)		•Package & Sell Turnkey	•Package & Sell Appliance
	•Dell Hosted IaaS			•Integrate w/ Maverick			•Dell Hosted PaaS

THANK YOU

Backup

The Industry's #1 Integration Cloud™

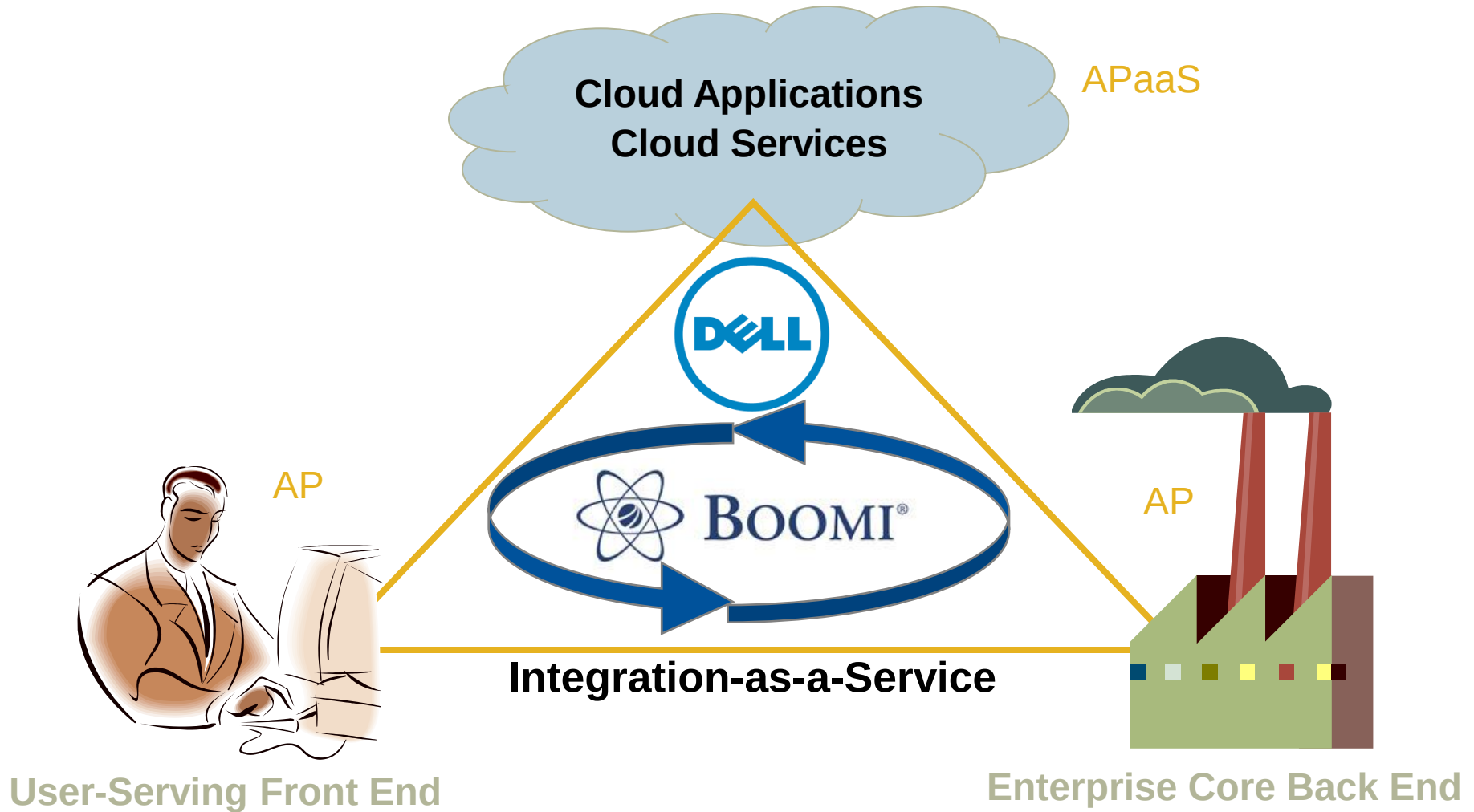


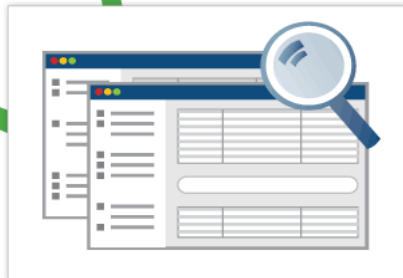
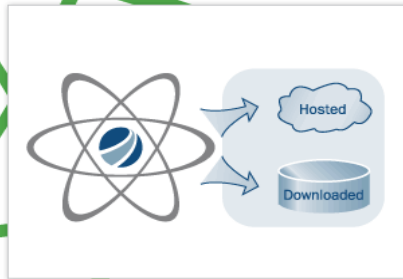
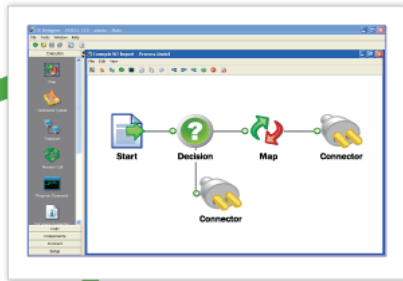
ORACLE®

On-Premise Applications



Cloud-Aware Enterprise: Three Platforms, Integrated by the Fourth





1. Build

Using the AtomSphere library of connectors and maps, visually design your integration processes and load them into a lightweight, dynamic run-time engine called an “Atom” for execution.

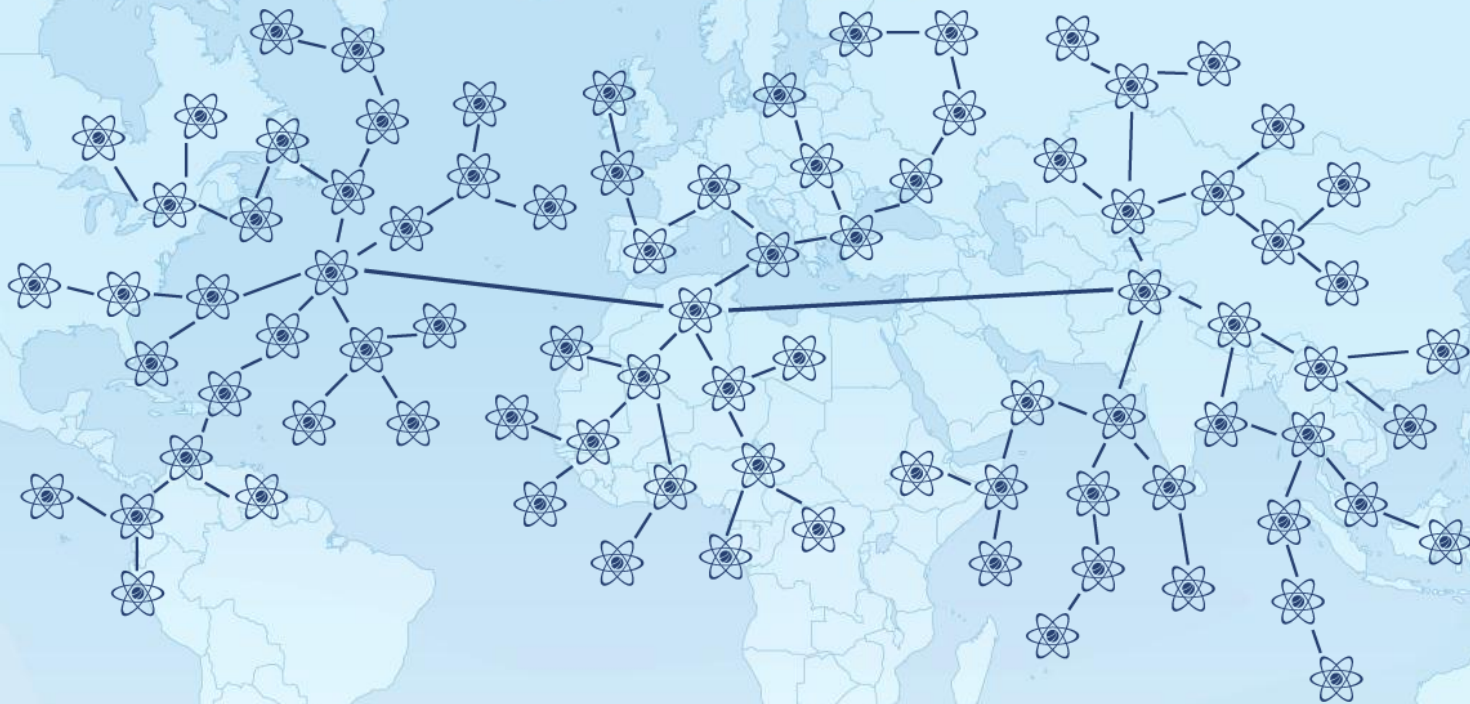
2. Deploy

Deploy your Atoms to the AtomSphere for SaaS, PaaS, or Cloud integration or safely behind your firewall for on-premise applications.

3. Manage

Monitor and maintain the status of all your deployed Atoms, integration processes and trading partners, regardless of location, using a feature-rich web-based dashboard.

Distributed Architecture



Patent-Pending Atom™ Technology

Centralized Control

Distributed Execution

Infinitely Scalable

No Single Point of Failure

- **Boomi Molecule**
 - Load Balancing
 - High Availability
 - Disaster Recovery
- **Boomi Connect**
 - Real-Time
 - Event-Based
 - SOA
- **Parallel Processing**
- **Environments**
- **Advanced User Security**

Where is the PAAS Cloud REALLY Catching on?

 Microsoft
Dynamics CRM Online

 Windows Live

 Microsoft
Office SharePoint Online

 salesforce.com
Success On Demand.™



Saas

APaaS

Paas

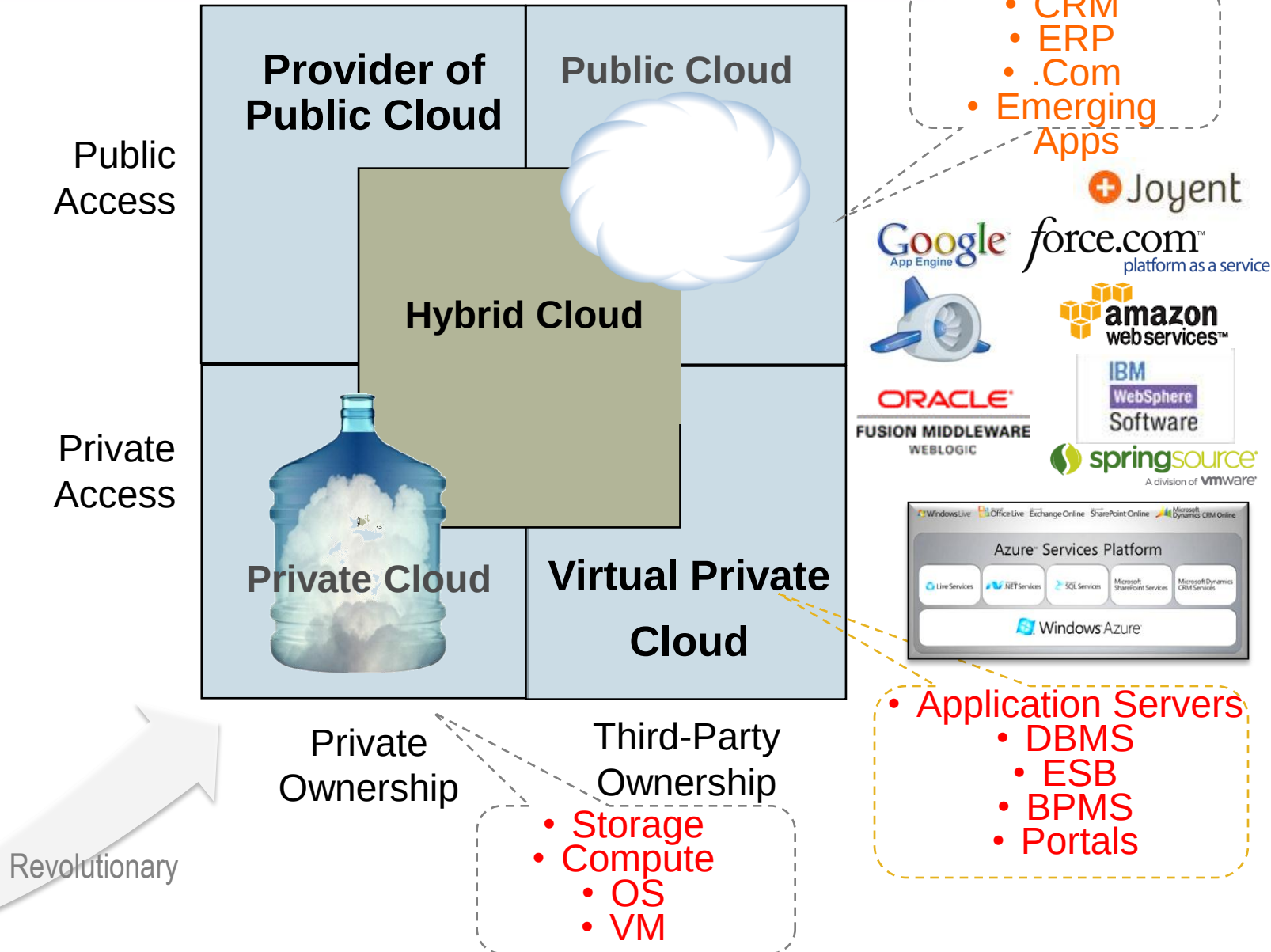
 Google App Engine
 force.com™
platform as a service™
 amazon
web services™

 springsource
A division of vmware

ITaas



Revolutionize Your IT Business

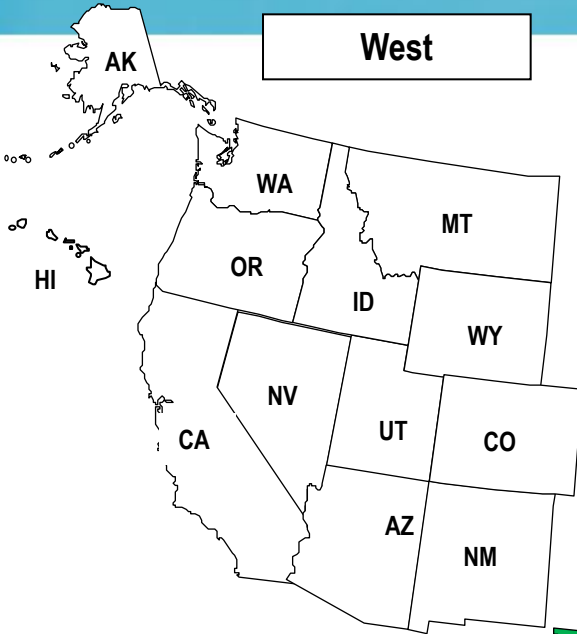


DCS – Who to call

West

Central

East



Large Enterprise – West

Brian Harris, Cupertino, CA
Brian_A.Harris@Dell.com
Office – (408) 440-0333
Cell - (408) 391-5967

Large Enterprise – West

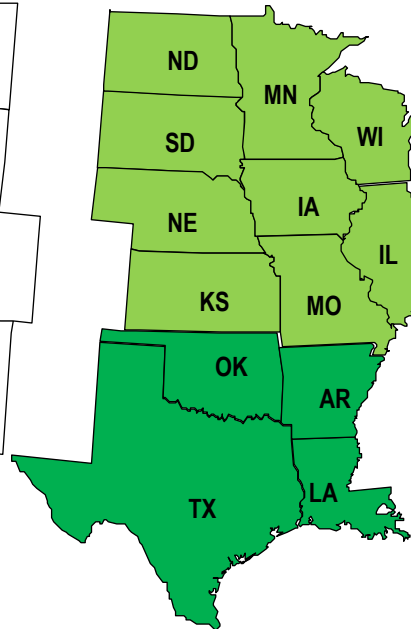
Ted Arden, Start date – 7/26

SMB – West/Central

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Rafael_Zamora@Dell.com
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Public – West/Central:

Travis Martin, OKC, OK
Travis_Martin@Dell.com
Cell - (405) 305-2414

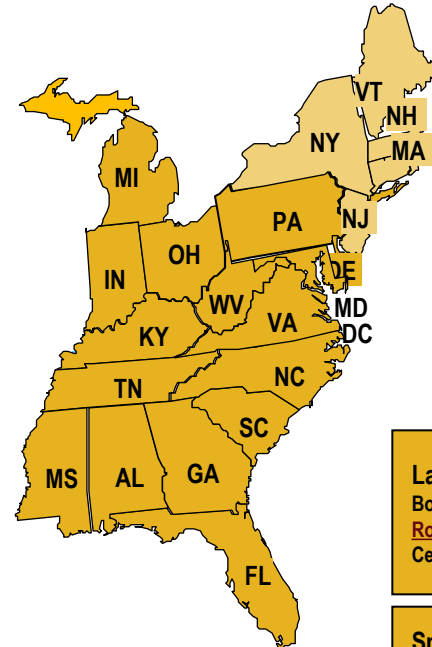


Large Enterprise – North Central

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Matt McCarthy – Start date Q3

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