



پژوهشکده پولی و بانکی
بانک مرکزی جمهوری اسلامی ایران



شرکت داده پردازی ایران
پیشستان فناوری اطلاعات در ایران

Cloud Computing Overview

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Gartner :

2012

2013

Top 10 Technology Priorities in 2011	Ranking
Cloud Computing	1
Virtualization	2
Mobile Technologies	3
IT management	4
Business Intelligence	5
Networking, Voice and Data Communications	6
Enterprise Applications	7
Collaboration Technologies	8
Infrastructure	9
Web 2.0 and Web 3.0	10

Media Tablets

Mobile-Centric Applications

Social User Experience

Internet of Things

App Stores and Marketplaces

Next-Generation Analytics

Big Data

In-Memory Computing

Low-Energy Servers

Cloud Computing

Mobile Device Battles

Mobile Applications

Personal Cloud

Enterprise App Stores

The Internet of Things

Hybrid Cloud Computing

Strategic Big Data

Actionable Analytics

In Memory Computing

Integrated Ecosystems



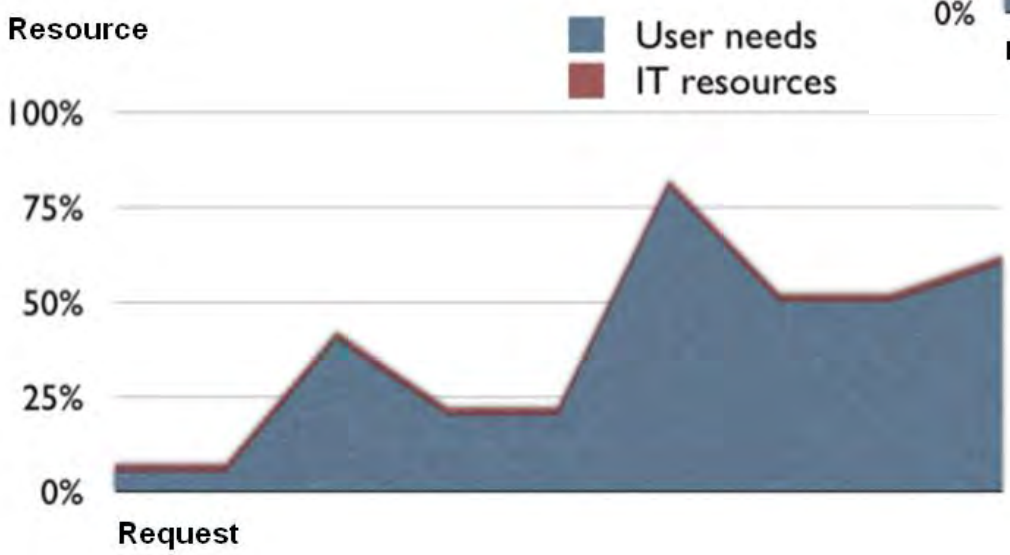
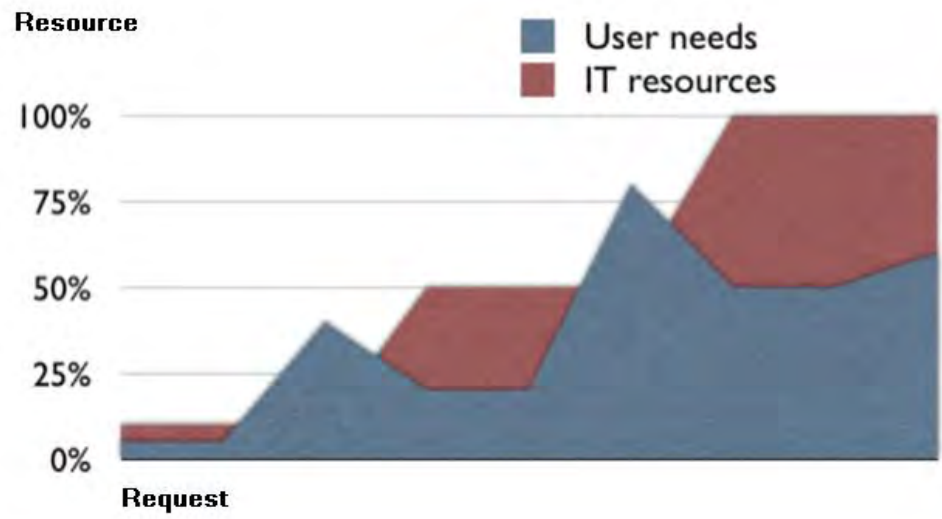


Why We Need Cloud Services ?

Because We Need **Green IT**

Modern IT

Traditional IT





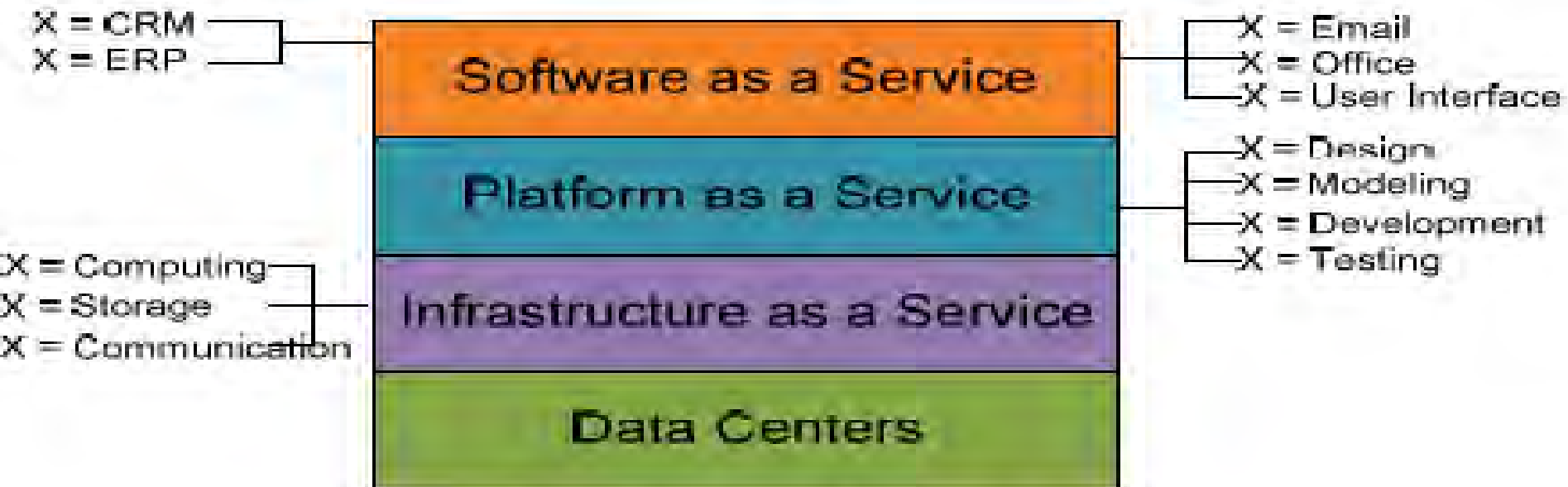
Modular Datacenter(Green D.C)





Cloud Computing : Everything as a Service (pay-as-you-Go)

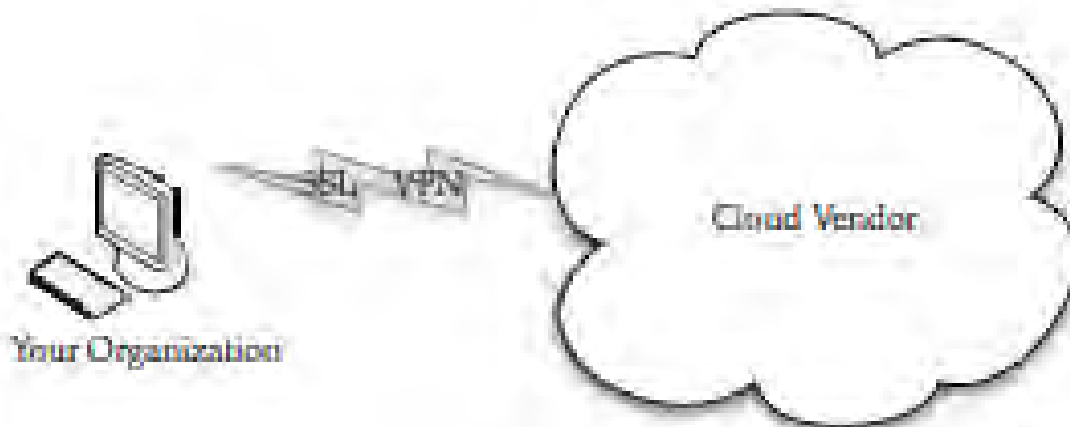
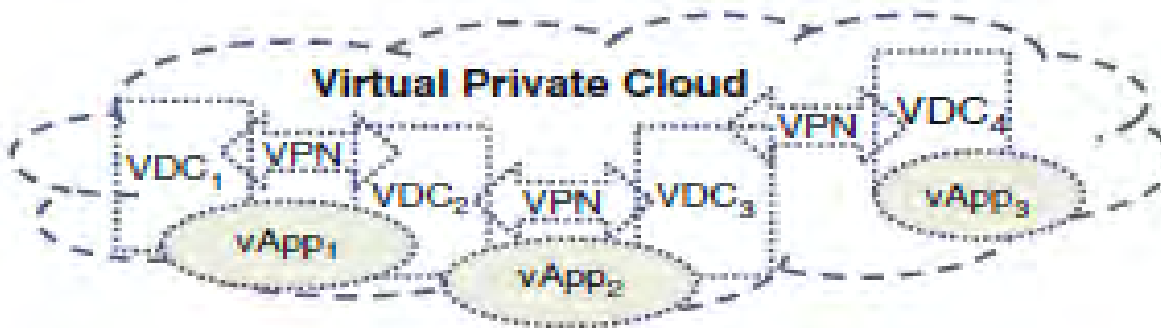
- Cloud Software as a Service (SaaS)
Use provider's applications over a network
- Cloud Platform as a Service (PaaS)
Deploy customer-created applications to a cloud (Ex: Microsoft /.Net , Linux/J2EE)
- Cloud Infrastructure as a Service (IaaS)
Rent processing, storage, network capacity, and other fundamental computing resources



Everything as a Service



Virtualization Applications & Services Runs on a Virtual Data Centers

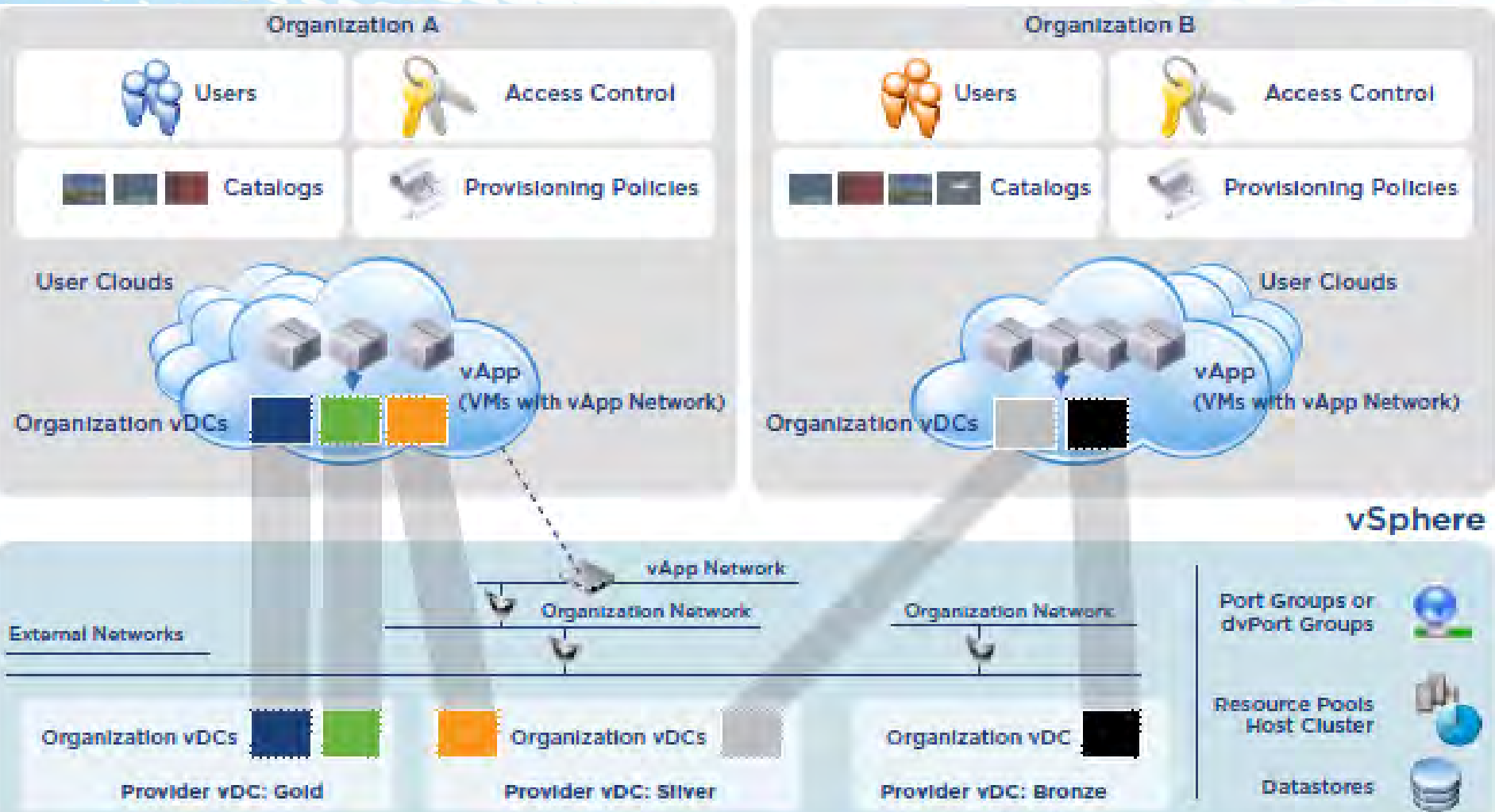


Virtual applications run across one or more private virtual data centers (VDCs), connected by virtual private networks (VPNs)





Virtualization Applications & Services Runs on a Virtual Data Centers



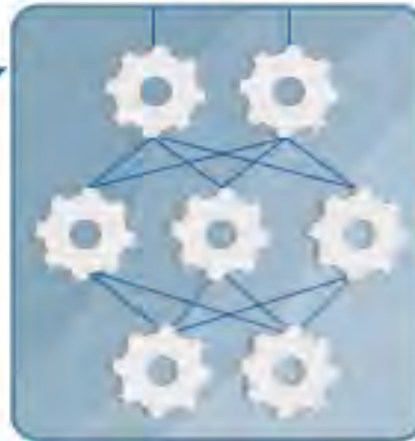


Cloud-Based Deployment

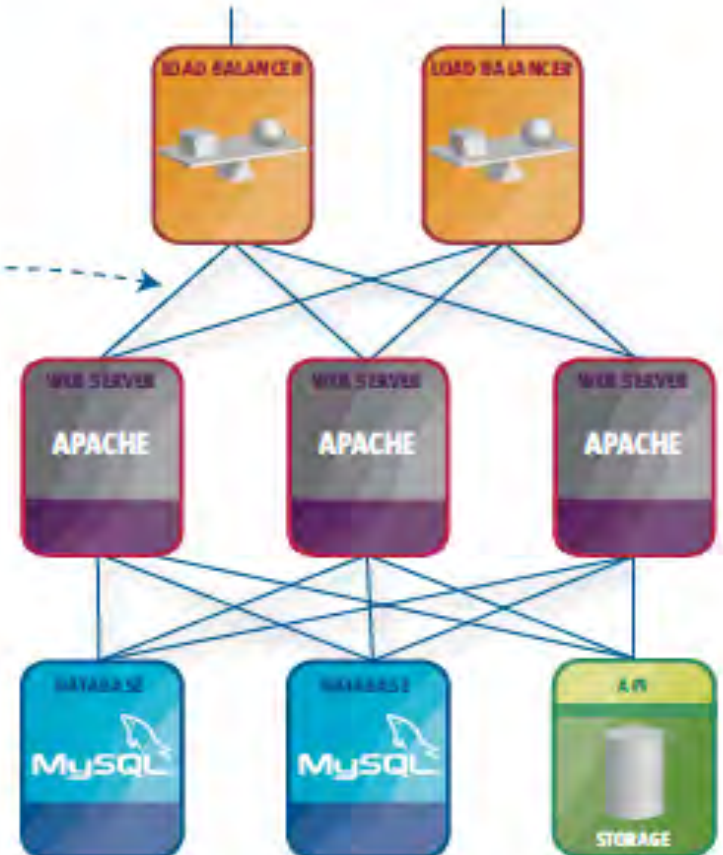
SELECT FROM
LIBRARY



CONFIGURE
PATTERN



DEPLOY





Cloud Delivery Models

Public Cloud

Public Cloud

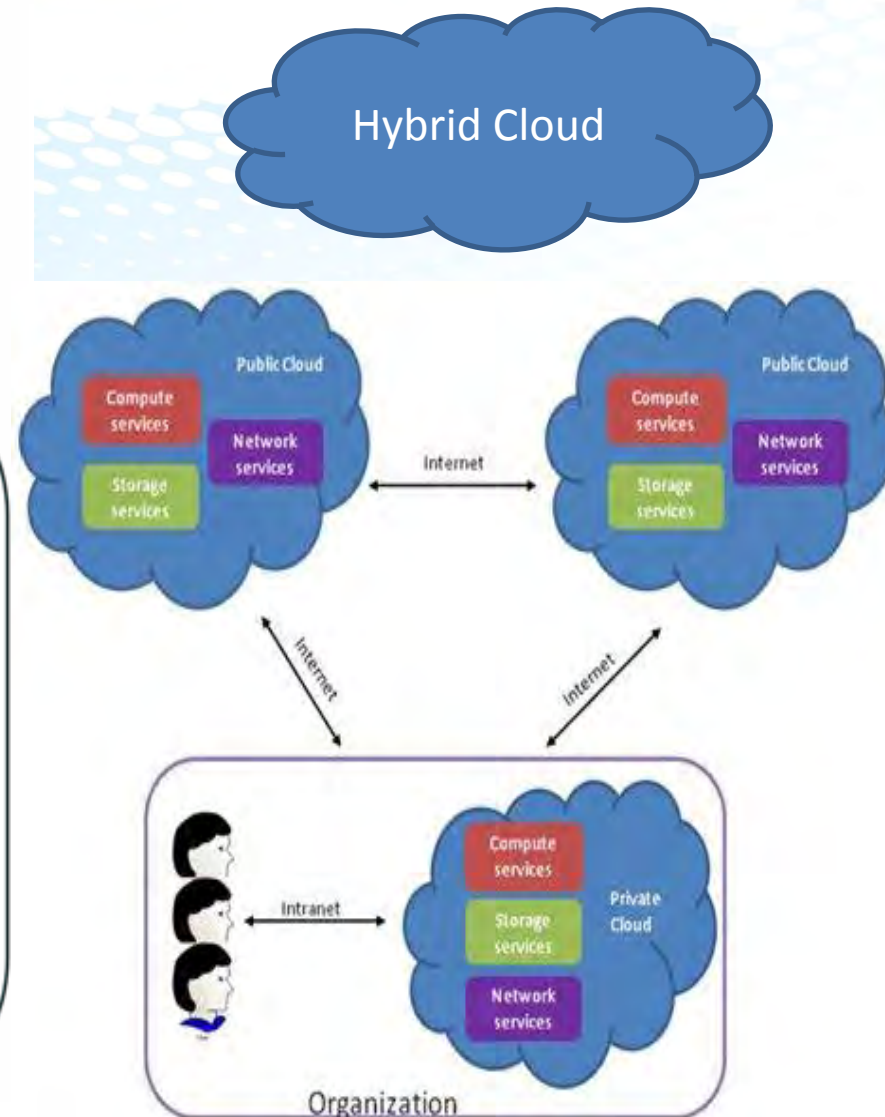
- Hosted at a Service Provider Site
- Supports multiple customers
- Often utilizes shared infrastructure
- Supports connectivity over the internet
- Suited for information that is not sensitive
- Can be cheaper than private cloud

Private Cloud

Private Cloud

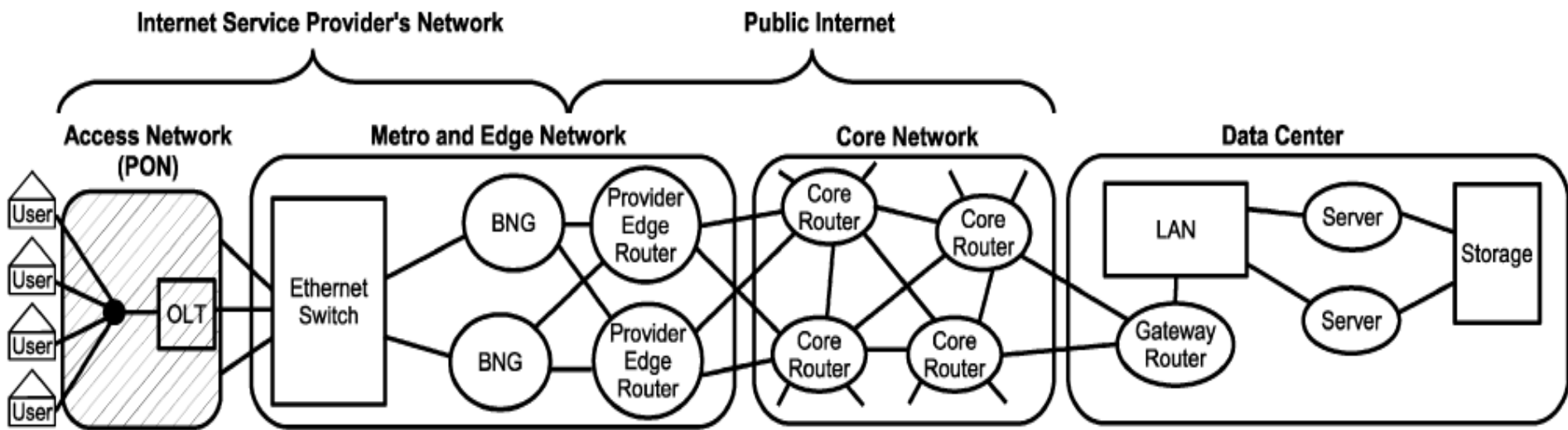
- Hosted at an Enterprise or a Service Provider site
- Supports one customer
- Does not utilize shared infrastructure
- Connectivity over private network/ fiber or the internet
- Suited for information that needs a high level of security

Hybrid Cloud



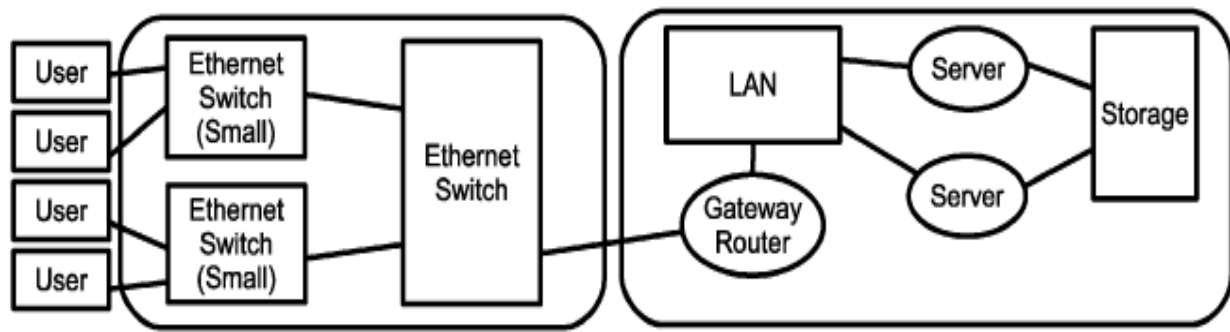


Public Cloud



(a)

Private Cloud



(b)



Microsoft & VMware Private Cloud Products

Customer Scenario	Industry Capability	Microsoft Private Cloud Products	VMware Private Cloud Products
Application Management	Application Self-Service	App Controller, Service Manager	vCloud Director
	Application Performance Management	Operations Manager	vFabric Application Performance Manager (APM)
	Application Management Across Clouds	Virtual Machine Manager	vCloud Director, vCloud Connector
Service Delivery & Automation	IT Service Management	Service Manager	VMware Service Manager
	IT Service Reporting (Operations)	Service Manager	vCenter Operations Management Suite
	Process Automation & Orchestration	Orchestrator	vCenter Orchestrator
Infrastructure Management	Cloud Creation & Delegation	Virtual Machine Manager	vCloud Director
	Data Protection & Disaster Recovery	Data Protection Manager, Orchestrator	vCenter Site Recovery Manager
	Monitoring	Operations Manager	vCenter Operations Management Suite
	Configuration & Compliance	Configuration Manager	vCenter Operations Management Suite
Virtualization Platform	Hypervisor & VM Management	Windows Server 2008 R2 Hyper-V, Virtual Machine Manager	vSphere 5.0, vCenter 5.0

System Center 2012



Open-Source Cloud Solutions

- Availability and access to source code
- No license fees
- Ease of adoption for first-time users
- Ease of development and integration of new applications
- Ability to modify, extend, and redistribute software
- No payment for patches and upgrades
- Open file formats
- Avoidance of vendor lock-in
- Low barriers for new users to try the software

SOURCE	PLATFORM	COMMENT
University of Chicago (http://workspace.globus.org)	Globus Nimbus	Supports developing a computing cluster that supports an Infrastructure-as-a-Service (IaaS) cloud incorporating the Xen hypervisor
University of California, Santa Barbara; Eucalyptus Systems (http://www.eucalyptus.com/)	Eucalyptus	Supports the installation of on-premise private and hybrid clouds using the existing hardware and software
European Union/IBM (http://www.reservoir-fp7.eu/)	RESERVOIR (Resources and Services Virtualization without Barriers)	Provides for the large-scale deployment of IT services across multiple, different administrative domains
Enomoly (www.enomoly.com/)	Enomalism	Supports the creation of cloud capacity and management of virtual machines
Abiquo (www.abiquo.com/)	Abicloud	Infrastructure software for development and management of public and private clouds
Xen (www.Xen.org)	Xen Cloud Platform (XCP)	Cloud infrastructure platform for delivery of customizable, multi-tenant cloud services





Cloud Service Providers

Salesforce.com

e-Science Central

Google Docs

IBM Smart Cloud Docs

Microsoft Office 365

Software
(SaaS)

Google App Engine

Amazon

Windows Azure

-Elastic Map Reduce

- Sharepoint

-Simple DB

- SQL Services

-Simple Queue Service

- .Net services

Platform
(PaaS)

Amazon (EC2 & S3)

IBM (EC12 Cloud Base Mainframe)

Infrastructure
(IaaS)

simultaneously manage thousands of **virtualized** workloads





IBM zEnterprise EC12 (Aug 2012)

- ❑ Next generation IBM zEnterprise® System for hybrid computing design and manage workloads on multiple platforms (deploy and integrate workloads across mainframe, POWER7 and System x servers)
- ❑ New 5.5 GHz processors deliver increased performance and cross platform virtualization solutions and capable of executing more than 78,000 millions of instructions per second (MIPS)
- ❑ provide increased flexibility for disaster recovery solutions





IBM® SmartCloud™ Enterprise+

- Cloud management with the added value of choice and automation above and beyond provisioning of virtual machines
- IBM SmartCloud Enterprise+ With flexible configuration options
- Multiple OS Support
 - x86 OS
 - Red Hat Enterprise Linux
 - Microsoft Windows
 - IBM Power Systems
 - IBM AIX® 6.1
 - z/OS
- Cloud management services based on ITIL practices to provide governance and control

Monitoring and management of OS include:

Monitoring and patch management of OS components
Accounting of software licenses
OS-level security and compliance
Security policy management and compliance support

ITIL-based managed services include:

Service catalog
Service request – activation and deactivation
Incident, problem and change management
Event management
Configuration management
Asset management





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Benefits of Cloud Computing

- ✓ Security
- ✓ Scalability
- ✓ Availability
- ✓ Performance
- ✓ Cost-effective
- ✓ Acquire resources on demand
- ✓ Release resources when no longer needed
- ✓ Pay for what you use
- ✓ Turn fixed cost into variable cost



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Thank You



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