Cloudy Topics

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Topics

- **Introduction to Cloud computing**
  - Including Software as a Service (SaaS), Information as a Service (IaaS) and Platform as a Service (PaaS) aspects

- **Customer vs. Provider responsibilities**
  - Including Third Party Content issues
Introduction to Cloud computing: Definitions

- Cloud computing is Internet ("cloud") based development and use of computer technology ("computing"). It is a style of computing in which dynamically **scalable** and often virtualized resources are provided as a service over the Internet. Users **need not have knowledge** of, expertise in, or control over the technology infrastructure "in the cloud" that supports them. Wikipedia 3-06-09

- An emerging computing model by which users can gain access to their applications from anywhere, through any connected device. A user-centric interface makes the cloud infrastructure supporting the applications **transparent** to users. The applications reside in massively **scalable** data centers where computational resources can be dynamically provisioned and shared to achieve significant economies of scale. - IBM
Is Cloud computing new?

- Cloud computing evolved from existing technologies
- Not the same as Grid computing – but similar goals
- Not the same as Utility computing – but can provide utility computing
- Not just Provisioning – but use provisioning
- See “Above the Clouds: A Berkeley View of Cloud Computing” at 
  http://d1smfj0g31qzek.cloudfront.net/abovetheclouds.pdf for additional discourse
Evolution to Cloud computing

- Remote Location for Processing / Storage – Not Committed
- Data Transferred by Public Internet

1950s
- Service Bureau
  - Punch Cards
  - Mailed to Processor Location
  - Finished Results Sent Back

1990s
- Outsourcing
  - Remote Committed Location for Processing / Storage
  - Data Transferred to/ from on Dedicated Lines

2000s
- Cloud

2010
Types of Cloud computing

**Public Cloud:**
- Cloud computing involves providing applications, data and IT resources as services to users over the web
- Cloud computing is a way of managing large numbers of virtualized resources such that they resemble a single large resource

**Private Cloud:**
- An Interim Solution...
  - Converting existing Data Centers into Cloud computing centers
    - Reduces some of the security, management, control issues
    - Allows a focus on a subset of applications and their interactions
- Private Clouds provide many of the benefits of Cloud computing for people with existing Data Centers
- Allow a near term focus on optimizing the management of the data center
- Allows utilization of existing infrastructure and capacity planning
Why is There Interest in Cloud computing?

- Dramatic increase in the amount of data which companies must process and manage (ie, offload to others)
- Corresponding increase in IT systems and services costs (ie, cost effectiveness)
- Complexities associated with a rapidly growing IT environment (ie, potentially less complex)
- Availability of systems and applications (ie, ready supply, easier deployment)
- Energy costs and requirements (ie, potential reductions)
Various models of Cloud computing

Consumers & Organizations

BUSINESS MODELS

SERVICES

Service Integration

Enterprise IT

Enterprise

Service Integration

Enterprise Cloud

Service Integration

Public Clouds

Various cloud components

Virtualization

Virtual Private Cloud

SaaS

PaaS

IaaS
## Cloud Usage Models

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td><strong>End User to Cloud</strong> - Application running on the cloud with access for end-users</td>
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<td>2.</td>
<td><strong>Enterprise to Cloud to End-user (Interoperability)</strong> - Applications running in the public cloud – access from employees and customers</td>
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<td>3.</td>
<td><strong>Enterprise to Cloud (Integration)</strong> - Cloud application integrated with internal IT capabilities</td>
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<td>4.</td>
<td><strong>Enterprise to Cloud to Enterprise (Interoperability)</strong> - Cloud application running in the public cloud and interoperates with partner applications (supply chain)</td>
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<td>5.</td>
<td><strong>Enterprise to Cloud (Portability)</strong> - Cloud application running in the cloud – flexibility to move to a different cloud provider in the future or in-house</td>
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<td>6.</td>
<td><strong>Private (intra) Clouds</strong> - Interoperability / integration within elements of a private cloud and between a private cloud and a traditional Services Oriented Architecture environment</td>
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Customer vs. Provider Responsibilities
Customer vs. Provider Responsibilities

- Public Cloud Agreement, Sec. 1.5 Online Policies
- IBM’s Acceptable Internet Use Policy for IBM Services at www.ibm.com/services/e-business/aup.html (“Acceptable Use Policy”) and IBM’s Privacy Practice at www.ibm.com/privacy (“Privacy Practice”) are also part of this Agreement and apply to all Services.
Customer vs. Provider Responsibilities

- **Public Cloud Agreement, Sec. 5.1 Ownership**

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Customer vs. Provider Responsibilities

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  - c. LOST PROFITS, BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.
Miscellaneous Resources

- Privacy in the Clouds: http://www.ipc.on.ca/images/Resources/privacyintheclouds.pdf
- IBM offerings: http://www.ibm.com/ibm/cloud/