



Cloud Security

What you need to know

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June 8, 2016

What are we going to talk about

- ▶ Basic Principals
- ▶ Outsourcing vs. the Cloud
- ▶ Current Models
- ▶ The Concerns
- ▶ Where is it Headed
- ▶ What to Do
- ▶ Sample List of Providers
- ▶ Summary



Basic Principals

- ▶ Clouds use standard models which saves money for the cloud providers
- ▶ Intended to save IT costs for companies
- ▶ However, Cloud models force Businesses to change their own way of doing business
- ▶ They are almost all international



Outsourcing vs. the Cloud

- ▶ They are basically the same
 - ▶ Outsourcing tends to be more physical
 - ▶ Outsourcing tends to absorb company model
 - ▶ Some companies are doing both
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- ▶ Cloud is Internet based
 - ▶ Cloud models can be more restrictive
 - ▶ Cloud models can be cost effective than physical outsourcing



Current Models of the Cloud

- ▶ SaaS – Software as a Service
- ▶ PaaS – Platform as a Service
- ▶ IaaS – Infrastructure as a Service

- ▶ Hybrid – Internal and external combination
- ▶ Public – Less expensive
- ▶ Private – Preferred by governments
- ▶ Community – Sharing services
- ▶ Custom – Most expensive option



The Concerns – Data

- ▶ Little isolation of services
 - Cloud services will share Hardware, Software, and Network – extensive use of Virtualization
- ▶ Losing control of where the data is
 - Cloud provider picks where to put it
- ▶ Lost of Privacy
 - Foreign laws much different than U.S.
- ▶ How is Recovery accomplished
 - Who, Where, What, How, and Why



The Concerns – Legal

- ▶ Laws and Regulations
 - There have been injunctions against Cloud providers
- ▶ Third Party Services being used
 - Cloud Brokers offering services
- ▶ Legal not being involved throughout the process– The Cloud is new for Lawyers
- ▶ Turmoil in the Cloud Business
 - Companies going out of business or bought out



The Concerns – Security

- ▶ How do Cloud providers keep up to date
 - Patching
 - Operating Systems
- ▶ What happens when a breach occurs
 - Determining Fault
 - Who notifies the customer
- ▶ Separation of Duties
 - Who has access to infrastructure
- ▶ What policies are to be followed
 - Yours or Theirs



Where is the Cloud Headed

- ▶ Cloud Data Centers will be almost all foreign
- ▶ Small Businesses will be the biggest customers
- ▶ More and More data will be in the Cloud
- ▶ Privacy could be a thing of the past
- ▶ Multi-factor Identification will be used more
- ▶ Private Clouds will increase
- ▶ Less need for programming



What to Do – Contract

- ▶ There needs to be a contract in place
 - Legal and Security must get involved
 - What is the termination process
 - Is there a use of a third party, Foreign entity
- ▶ What are the restrictions and penalties
 - Where do the Liabilities remain
 - Contract should be detailed and with no assumptions



What to Do – Services

- ▶ Details of the service(s) being provided
 - Who does what
- ▶ Responsibilities must be clearly defined
 - Who are the contacts for issues
 - Is there a timeline defined to resolve an issue
- ▶ Cloud Provider Human Resource process
 - Background checks
 - Termination of employees



What to Do – Data Protection

- ▶ Where is the data and its backup
 - What classification process is being used
 - Is the data in the United States
 - Who has access on both sides of the agreement
- ▶ What is the recovery process
 - Where will the recovery happen
 - Who performs this recovery
- ▶ Privacy Concerns
 - The Government could request access



What to Do – Breach and Audit

- ▶ What happens when a breach occurs
 - Breach Laws are different in each state
 - International breach laws are different
 - Process needs to be defined
- ▶ Have there been independent audits
 - When was the last audit
 - Was there any Penetration/Vulnerability tests performed
 - Are there issues still open
 - Can the Business perform its own audit



What to Do – General Concerns

- ▶ Financial
 - Costs vs. Savings
- ▶ Was a Risk Assessment performed
 - Businesses will take the risk to save money
- ▶ Who was involved in making the decision
 - IT, C-level, Security, Business, Internal Audit
- ▶ Are other parts of the company looking at the Cloud
- ▶ Have standards been created for moving to the Cloud



Top Cloud Providers

- ▶ Salesforce.com
- ▶ Microsoft
- ▶ Amazon
- ▶ IBM
- ▶ Oracle
- ▶ Google
- ▶ SAP
- ▶ Workday
- ▶ Citrix Systems



Top SaaS Providers

- ▶ DropBox – Storage, File Sharing
- ▶ McAfee – Hardware Security
- ▶ LogMein – manage Apps, Identity Management
- ▶ EMC – Infrastructure
- ▶ Box.com – Storage, File Sharing
- ▶ Autotask – Business Solutions
- ▶ Intermedia – Host email, VOIP, file sharing
- ▶ ConnectWise – Service Automation
- ▶ Dell – SecureWorks, Infrastructure



Summary

- ▶ Cloud will continued to be used
- ▶ Some instability in the Cloud offerings
- ▶ The contract is the driver
- ▶ Data protection and classification is critical
- ▶ Be diligent in doing an audit
- ▶ Don't assume anything



Thanks

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