



Cyber Security and the Cloud

Where Does Your Data Feel Safer?



In the Pentagon...

Or on a Personal Computer?



But Even the Safest Places Can Be Attacked



Where Do Cyber Attacks Come From?

People with access to data, computers & networks

- Insiders: Employees and Vendors – Very Large
 - Malicious
 - Inadvertent
- Insider/Outsider Combination – Large
- Random Outsider: Exposing known weaknesses – Medium
- Purposeful Outsider: Known target - Small



*Attacks Can Be Reduced

Minimize people with access to data, computers, and networks

- Identity Theft: steal money
- *Ransomware: hold system hostage until paying
- Phishing: extract info for other attacks
- *Malware: destroy data/systems
- *Public WiFi: extract info for other attacks
- *BEC: Business Email Compromise – steal money
- *Passwords: access systems and steal information
- *Old Hard Drives: extract info for other attacks



Educated Customers

Your customers are more aware and sophisticated than ever before

- How are you protecting the data I am providing you?
- What security measures are you taking to protect the data I am providing you?
- They may ask you or your 3rd party vendor to fill out their IT departments security assessment form



The Cloud

NIST Definition

- Broad Network Access (ADAWATAB):
Access 24/7 from any device, any where, any time, any browser
- On Demand Self Service
- Shared Pool of Configurable Computing Resources: Servers, Storage, Applications
- Elastic and Rapidly Provisioned and Deployed
- Minimal and Outsourced Management
- Measured Service



True Cloud vs “Cloud Like” Services

Don't get fooled into thinking you are protected by the Cloud with “Cloud Like” services

- Public Cloud
 - Microsoft Azure
 - Amazon Web Services
 - Google Cloud Services
- Private Cloud
 - Dedicated hardware for a particular company hosted in a Cloud environment
- Hybrid Cloud
 - Mix of Public or Private Cloud and Local Computing Environment
- Hosted
 - A vendor is supporting one or more shared servers on their premises instead of yours
 - Not Cloud
 - Cyber Security protection only as good as the vendor
- Web-Based
 - The Web is NOT the Cloud - Just a type of software interface that uses a browser
 - Just because you are using a browser, doesn't mean that you are using the Cloud
- Mobile Apps
 - Mobile Apps are NOT the Cloud



Cyber Security Risks of On Premises Systems

People, data, computers, and networks are commingled

Passwords are shared, weak, and compromised

- O/S are not kept up to date
- Anti-virus not active or up to date
- Data and databases are unencrypted
- “Insiders” have more access and less controls
- Limited or no redundancy
- Limited resources to monitor and protect



Benefits of the Public Cloud

Separates people from data, computers, and networks and virtualizes it

- Physical Data Center Security
 - Manned Guards
 - Biometrics and Cameras
 - Visitor/Vendor Processing
 - White lists
 - Individual Access Control
- Network Intrusion Protection System
- Distributed Denial of Service Attack Detection
- 24/7 Monitoring
- Artificial Intelligence
- Attack Escalation
- Multiple Data Centers
- Hardware Redundancy
- Data Redundancy
- Infrastructure Redundancy – HVAC, Power and Internet Backup



Economics, Resources, Change & Sophistication

Can you afford to provide the services that are provided in the Public Cloud?

- Do you have the capital to make the necessary and ongoing investments?
- Do you have the internal IT expertise?
- Cyber security threats change constantly
- Cyber security threats become more sophisticated constantly
- Just like we don't maintain our own Police, Fire, EMT, Armed Forces – it is more efficient and cost effective to outsource those responsibilities to organizations who make it their business to be the best in those areas



Benefits of the Cloud Beyond Cyber Security

Physical Security Example



Multiple Site Administration and Control

Mobility – ADAWATAB

Administrative Efficiency

Real Time Control and Status from Anywhere

Unified System – Intelligence, Access, Alarms, Video, Visitor, Vendor, Elevator, Power

Notification – email, SMS, central station, first responder

Artificial Intelligence

Collaboration

System Health Monitoring

Remote Diagnostics and Support

Where is your data safest?

There is no perfect place, just less risky places

- All things considered, for most situations, the Public Cloud is now the safest place for your data and its security



Google Cloud Platform



Microsoft Azure

