CLOUD SECURITY AND IT’S EFFECT ON APPLICATION SECURITY

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Cloud taxonomies

- **Infrastructure as a Service (IaaS)**
  - set of virtualized components that can be used to construct and run an application.

- **Platform as a Service (PaaS)**
  - runtime environment for the application and an integrated application stack

- **Software as a Service (SaaS)**
  - Provides a fully functional application and potentially an API
Infrastructure as a Service (IaaS)

- Trusting the Virtual Machine Image
- Hardening Hosts
- Securing Inter-host Communication
- Managing Application Keys
IaaS Platform Impact on the Software Development Lifecycle

- All of the security issues related to application security still apply when applications move to a cloud platform
- Development life cycle crosses a trust boundary from an internal or “trusted” environment into the cloud.
PaaS Impact on Application Security Architecture

- PaaS provides a suite of building blocks to construct a custom application.
- PaaS platforms also provide the programming environment to access and utilize additional application building blocks.
- Issues related to a multi-tenant environment.
PaaS Impact on Application Security Architecture

- everything from IaaS plus..
  - PaaS programming environment
  - Managing Application Keys
  - Additional Requirements for Handling of Sensitive Information

- Software Development Lifecycle
  - Lack of secure design and coding patterns, technology specific application security standards and application security assurance tools for software built on this platform.
  - Enterprise looking to extend its current secure development lifecycle will have to develop this knowledge and tools.
Software as a Service (SaaS) Delivery Model Application Security

- The SaaS application’s capabilities provide end-user functions as well as become part of the programming platform.
- The application’s capabilities can be extended by adding custom code extensions.
- External applications can exchange data through the APIs the SaaS platform provides.
Trust.....but verify

Russian proverb "doveryai, no proveryai"

Ronald Regan: "Trust but verify"
Mikhail Gorbachev: "You repeat that at every meeting,
Reagan "I like it."
Areas of concern (v2 Guidance)

- Compliance
- Economics
- Metrics
- Tools & Services
- Vulnerabilities
- Software Development Life Cycle (SDLC)
- Application Security Architecture
- Identity Management