Everything You Need to Know About Cloud Security in 30 Minutes or Less

Rich Mogull
Securosis, L.L.C.

A long time ago...

You know, 2008

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In a galaxy far far away

You know, the Internet

(Where all the porn is)

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These guys...

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Said, “Hey, we need the next big thing.”

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So this guy

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Said....

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“Hey, you know all those complicated diagram thingies customers are showing us?”

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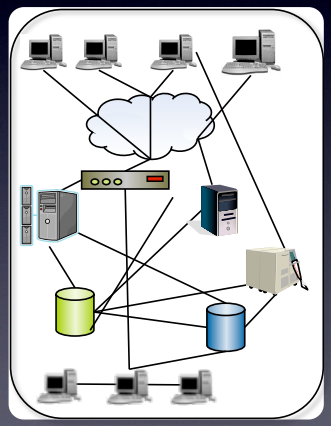
Like this?



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Notice something?

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They all have one of these

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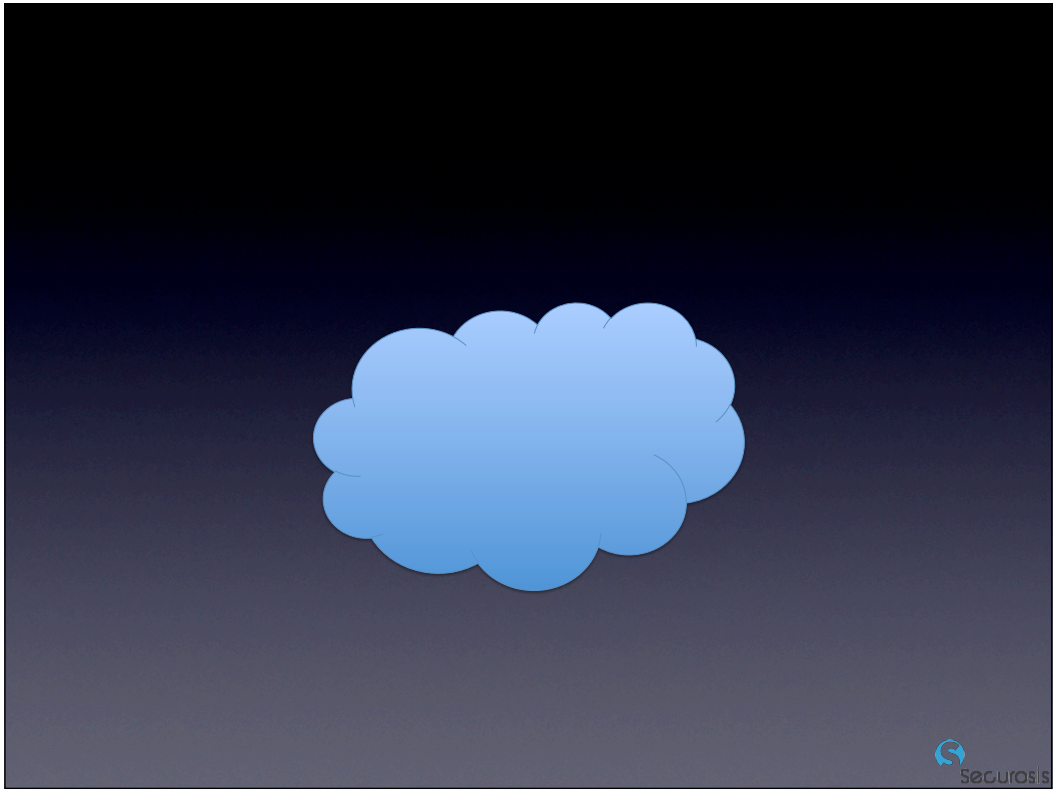
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And I've never seen a customer with one, so let's sell them *that*!

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Woah

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We can totally sell that!

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And thus THE CLOUD was born.

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And there was much rejoicing.

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Unless, of course, you were in IT security.

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And your developers
told you they moved
everything to the cloud.

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Last week.

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In which case, it was more like this...

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Why the cloud is a problem for security

- Poor understanding of cloud taxonomies and definitions.
- A generic term, frequently misused to refer to anything on the Internet.
- Lack of visibility into cloud deployments.
- Organic consumption.

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The CSA 5 Principle Characteristics of the Cloud

- Abstraction of Infrastructure
- Resource Democratization
- Services Oriented Architecture
- Elasticity/Dynamism of Resources
- Utility model of Consumption & Allocation

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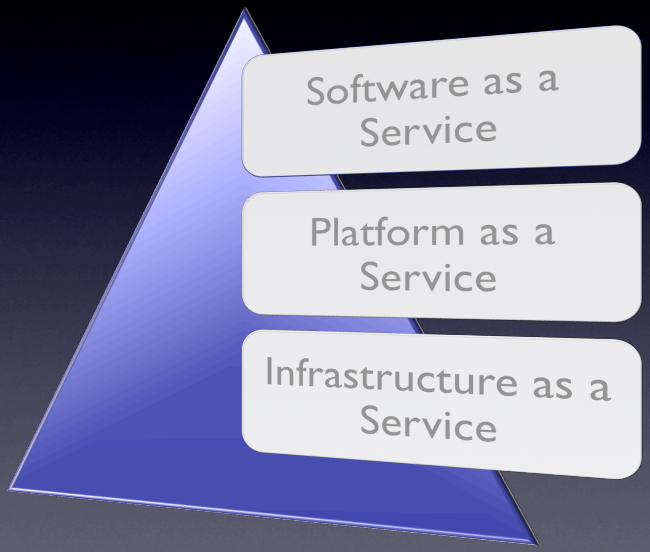
Three Delivery Models



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Security Implications

- Variable control.
- Variable visibility.
- Variable simplicity.
- Variable resources.

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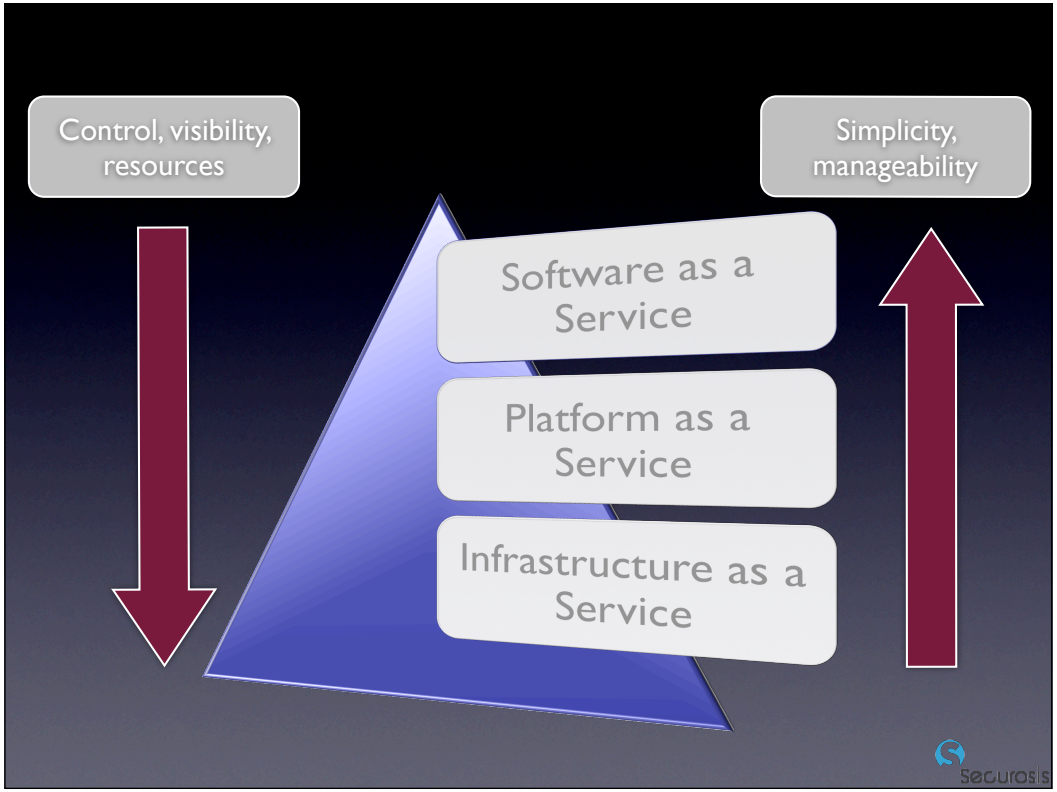
Control, visibility, resources
Simplicity, manageability
Software as a Service
Platform as a Service
Infrastructure as a Service
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But is the cloud more or less secure than we are now?

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It depends

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SaaS

- Most constrained.
- Most security managed by your provider.
- Least flexible.

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PaaS

- Less constrained.
- Security varies tremendously based on provider and application- shared responsibility.
- Security responsibility

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IaaS

- Most flexible.
- Most security managed by your developers.

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Specific issues

- Spillage and data security.
- Reliability/availability.
- Capability to apply traditional security controls in a dynamic environment.
- Lack of visibility into cloud usage.
- Changing development patterns/cycles.

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For example, where do you stick the WAF?

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Is vulnerability scanning your cloud legal?

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How do you use your static and dynamic analysis testing tools in the cloud?

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Where do you roll the cloud when it fails?

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How most organizations secure their clouds today...

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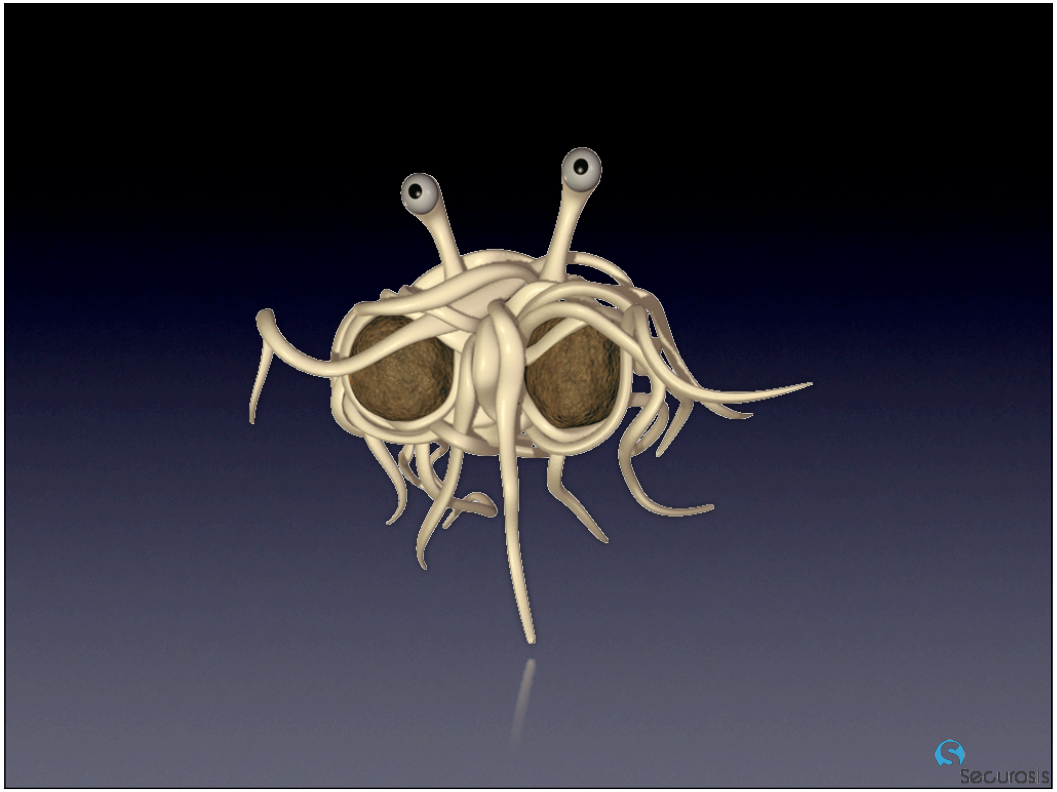
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Your Top 2 Cloud Security Defenses

Service Level Agreements

Security Understanding

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Understand Your SLAs

- Are there security-specific SLAs?
- Can you audit against those SLAs?
- Are there contractual penalties for non-compliance?
- Do your SLAs meet your risk tolerance requirements?

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Suggested SLAs

- Availability.
- Security audits- including third party.
- Data security/encryption.
- Personnel security.
- Security controls (depend based on service).
- User account management.
- Infrastructure changes.

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Understand Your Cloud

- What security controls are in your cloud?
- How can you manage and integrate with the controls?
- What security documentation is available?
- What contingency plans are available?

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Cloud Security Controls to Look For

- Data encryption/security (key management).
- Perimeter defenses.
- Auditing/logging.
- Authentication
- Segregation.
- Compliance.

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Cloud Security Macro Layers

- Network
- Service
- User
- Transaction
- Data

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Don't Trust

- SAS70 Audits.
- Documentation without verification.
- Non-contractual SLAs.
- Anything not in writing, with penalties for non-compliance.
- Anything you don't understand.

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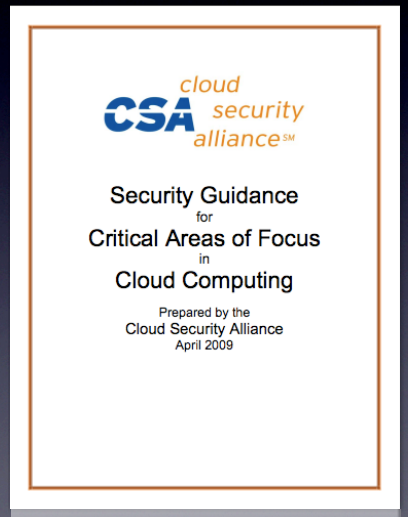
Resources

- Cloud Security Alliance
- Jericho Forum
- NIST



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What to Do

- Educate yourself.
- Engage with developers.
- Develop cloud security requirements.
- Understand risk/controls tradeoffs.
- Document and engage management.

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The 5 Stages of Cloud Computing Grief

- Denial: There is no cloud.
- Anger: Why the f&*k is this sales guy trying to sell me a cloud?
- Bargaining: Can you please just tell me what the f&^k your cloud is?
- Depression: The sales guy found my CIO. Now I have to by a cloud.
- Acceptance: There is no cloud.

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Rich Mogull

Securosis, L.L.C.

securosis.com
rmogull@securosis.com
Twitter: rmogull
Skype: rmogull