



What is Cloud Computing?

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About the Cloud Security Alliance

- Global, not-for-profit organization
- Inclusive membership, supporting broad spectrum of subject matter expertise: cloud experts, security, legal, compliance, virtualization, and on and on...
- We believe Cloud Computing has a robust future, we want to make it better

“To promote the use of best practices for providing security assurance within Cloud Computing, and provide education on the uses of Cloud Computing to help secure all other forms of computing.”

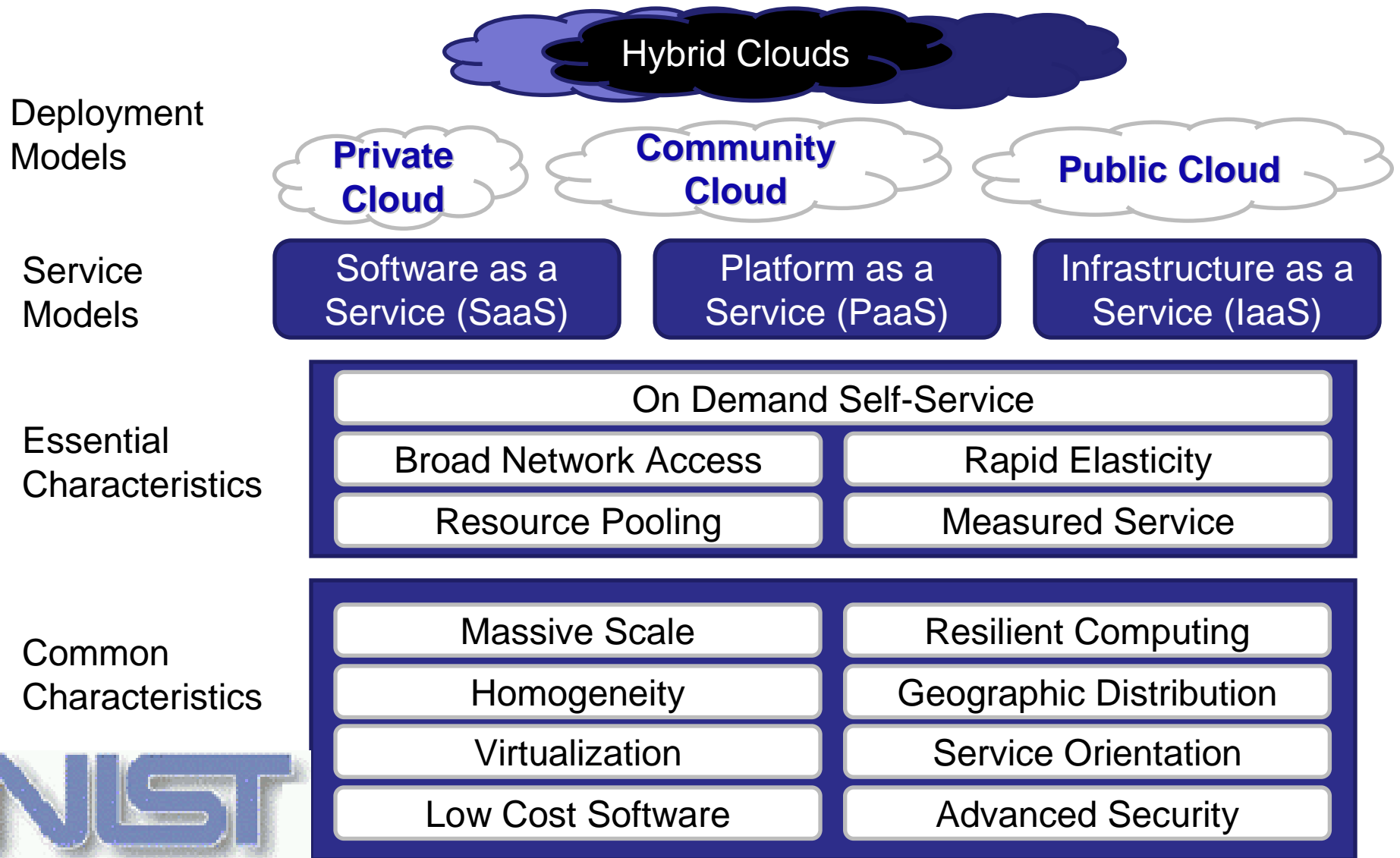
What is Cloud Computing?

- On demand model for allocation and consumption of computing as a utility
 - Immediacy
 - Elasticity
 - Multi-tenancy
- Next major platform for software applications
 - Mainframe > Client/Server > Cloud
- Business transformation
 - Enable rapid

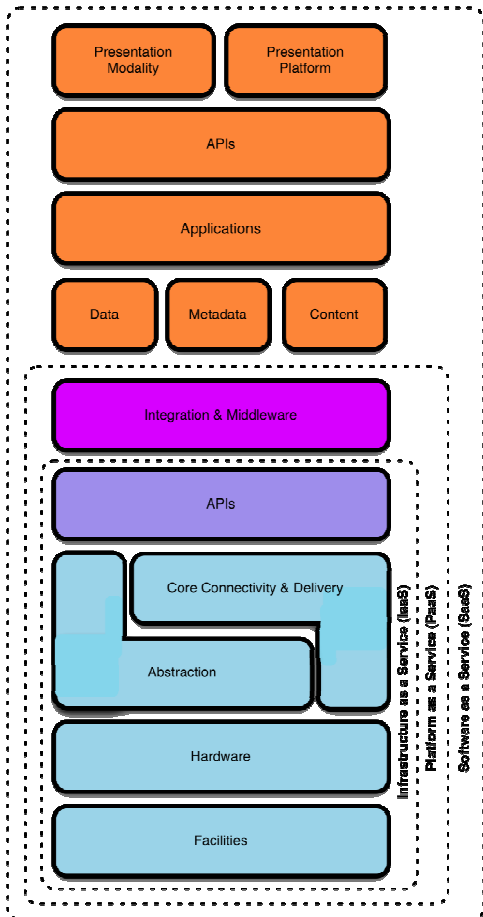
What has driven Cloud Computing?

- Hyperconnectivity: massive DotCom infrastructure investments
- Moore's Law: driving costs of compute & storage towards zero
- Scale: major providers mastering complexity of delivering massive scale, creating the argument of economy
- Service Oriented Architecture: self-describing protocols accelerate application development

The NIST Cloud Definition Framework



Cloud Framework



- CSA Cloud Reference Model
- IaaS is the foundation
- PaaS adds middleware to IaaS
- SaaS represents complete applications on top of PaaS

S-P-I Model

You "RFP" security in

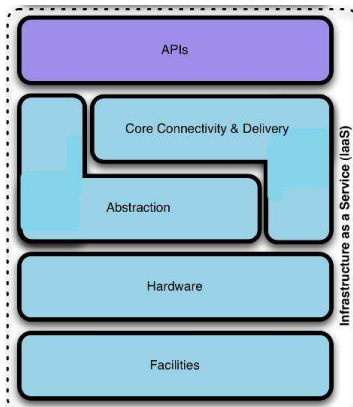
SaaS

Software as a Service

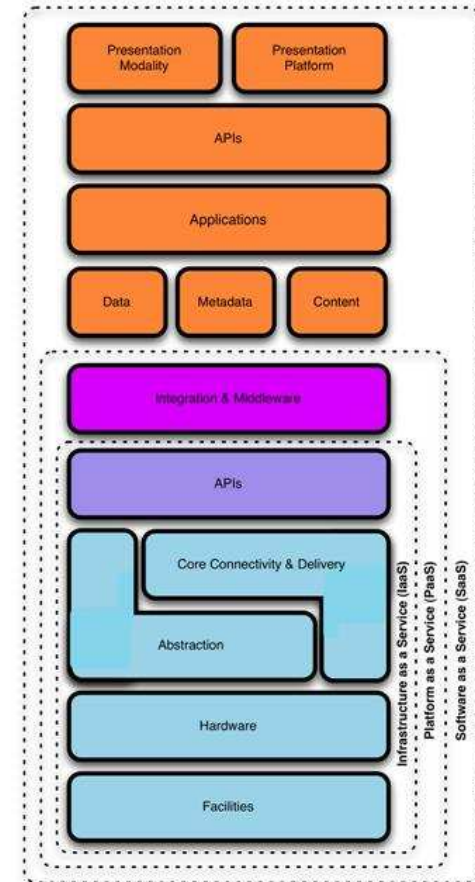
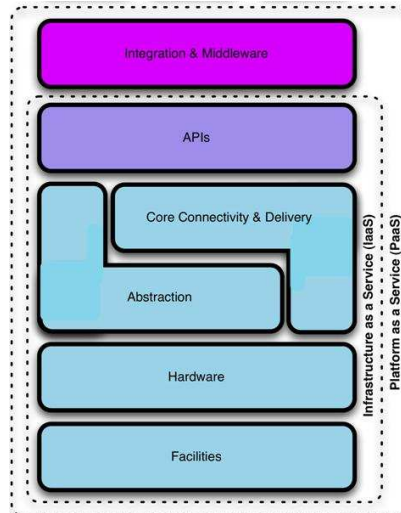
You build security in

IaaS

Infrastructure as a Service



PaaS
Platform as a Service



Old SaaS vs New SaaS

- SaaS emerged from Application Service Providers (ASP)
- Traditional “Old SaaS” characteristic of outsourcing
 - Proprietary architectures
 - Dedicated systems
 - Non-cloud
- “New SaaS” focus on business application delivery
 - SaaS providers attracted to cloud economics
 - Follow framework model
 - Leverage scalable IaaS/PaaS providers

Private vs Public Clouds

- Migrating 100 servers to 30 machine VM cluster might not be a private cloud
- Lots of debate and movement in both directions
- Vendors mostly offer one or the other
- No “Unified Theory”
 - (Private vs Public) * Goldrush = Challenge
 - Can you cloud burst from private to public?
 - Can you easily port applications?
- Long run economics of Public clouds compelling
- Long tail of Hybrid clouds to contend with
- Virtual Private Clouds likely big trend

Top Threats to Cloud Computing

Cloud Security Risks / Threats

- Shared Technology Vulnerabilities
- Data Loss/Data Leakage
- Malicious Insiders
- Account Service or Hijacking of Traffic
- Insecure APIs
- Nefarious Use of Service
- Unknown Risk Profile

CSA Guidance Domains

1. Understand Cloud Architecture

Governing in the Cloud

2. Governance & Risk Mgt
3. Legal & Electronic Discovery
4. Compliance & Audit
5. Information Lifecycle Mgt
6. Portability & Interoperability

Operating in the Cloud

7. Traditional, BCM, DR
8. Data Center Operations
9. Incident Response
10. Application Security
11. Encryption & Key Mgt
12. Identity & Access Mgt
13. Virtualization

Summary

- Cloud computing a broad transformation
- Must understand cloud to secure it
- Help us secure cloud computing
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Thank you!