



Reference Model of Cloud Computing Public Carrier's View

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SG-17 meeting



Sources

- Open Cloud Manifesto, Spring 2009
<http://www.opencloudmanifesto.org/>
- Cloud Computing definition
NIST, version 15
- Cloud Standards Summit, July 2009, OMG
<http://cloud-standards.org>



Document

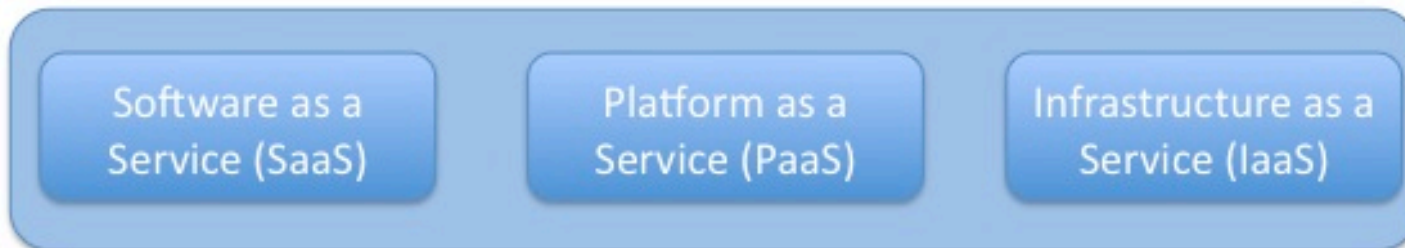


Security Guidance
for
Critical Areas of Focus
in
Cloud Computing V2.1

Prepared by the
Cloud Security Alliance
December 2009



Essential Characteristics

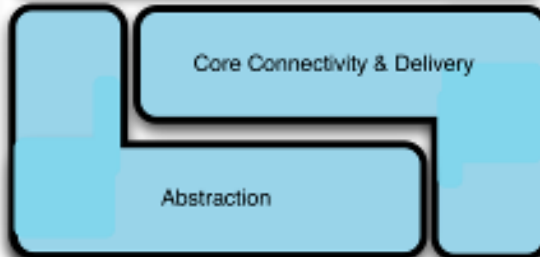
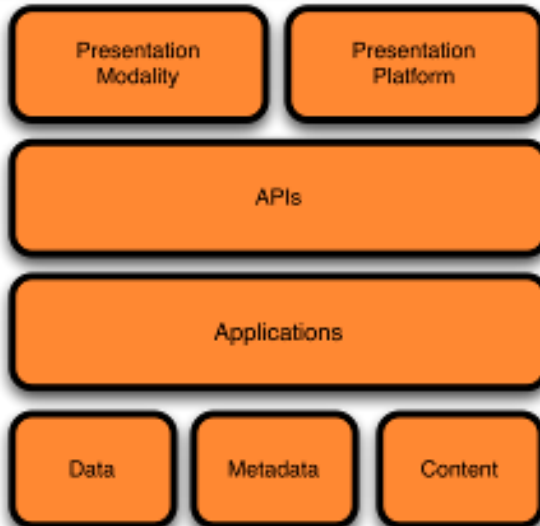


Service Models



Deployment Models

Cloud Model



Infrastructure as a Service (IaaS)
Platform as a Service (PaaS)
Software as a Service (SaaS)

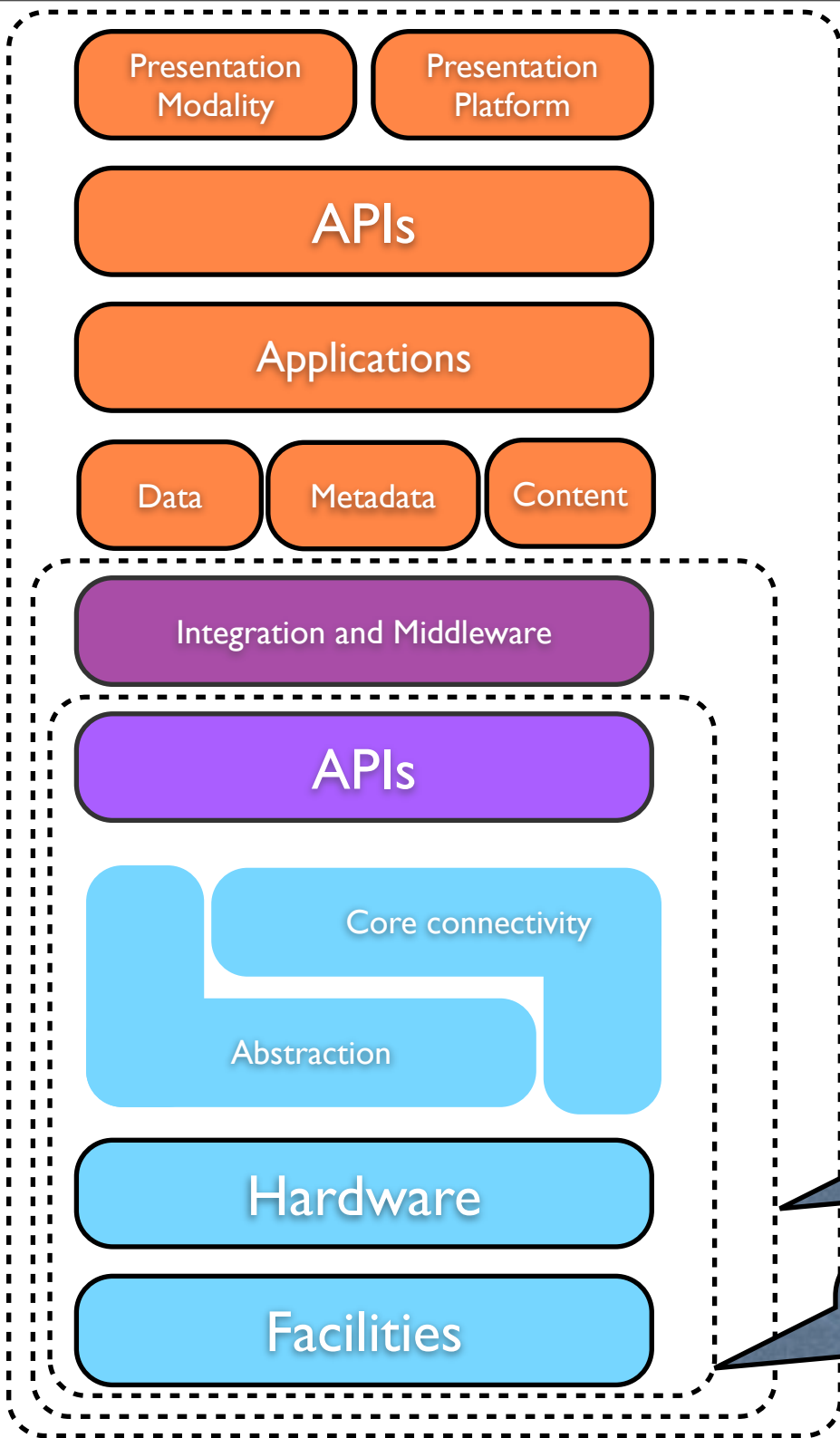
Cloud Architecture domain

Security Control Model

- Applications** SDLC, Binary Analysis, Scanners, WebApp Firewalls, Transactional Sec.
- Information** DLP, CMF, Database Activity Monitoring, Encryption
- Management** GRC, IAM, VA/VM, Patch Management, Configuration Management, Monitoring
- Network** NIDS/NIPS, Firewalls, DPI, Anti-DDoS, QoS, DNSSEC, OAuth
- Trusted Computing** Hardware & Software RoT & API's
- Compute & Storage** Host-based Firewalls, HIDS/HIPS, Integrity & File/log Management, Encryption, Masking
- Physical** Physical Plant Security, CCTV, Guards

Compliance Model

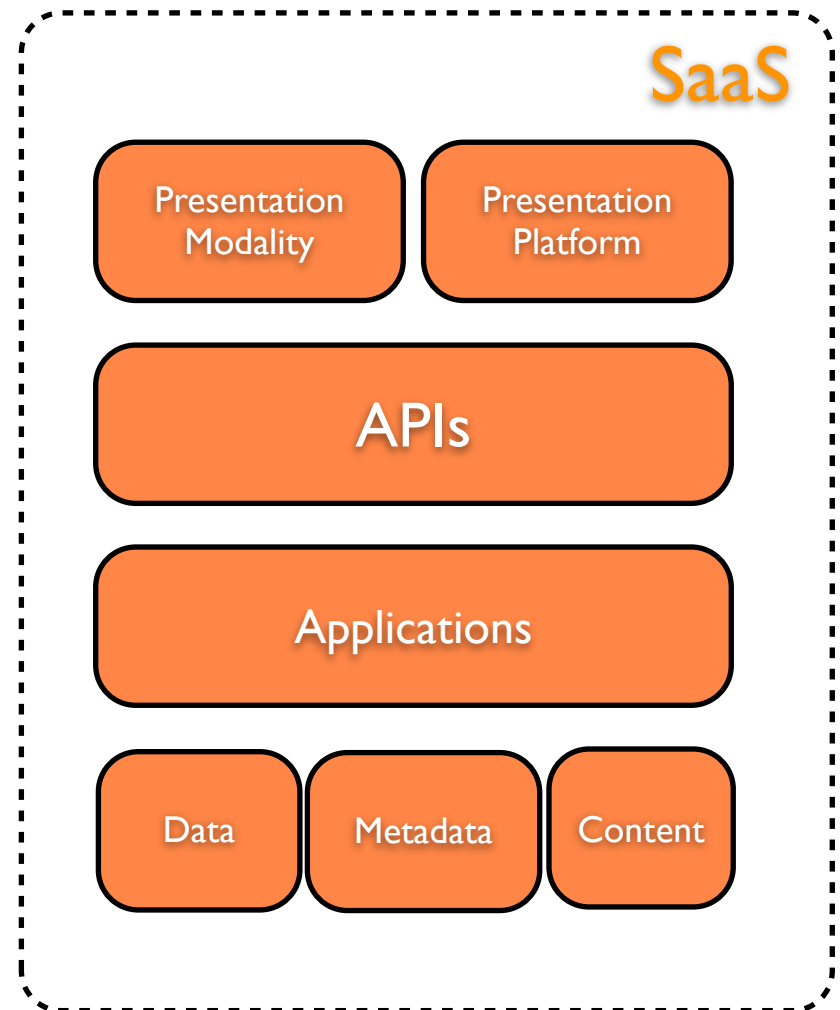
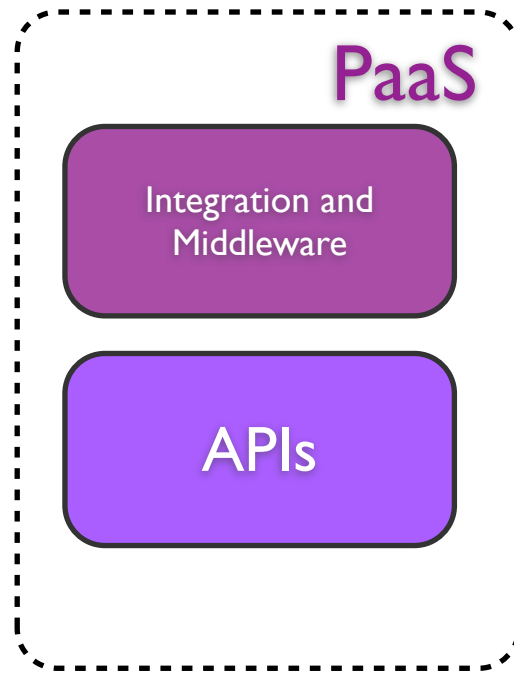
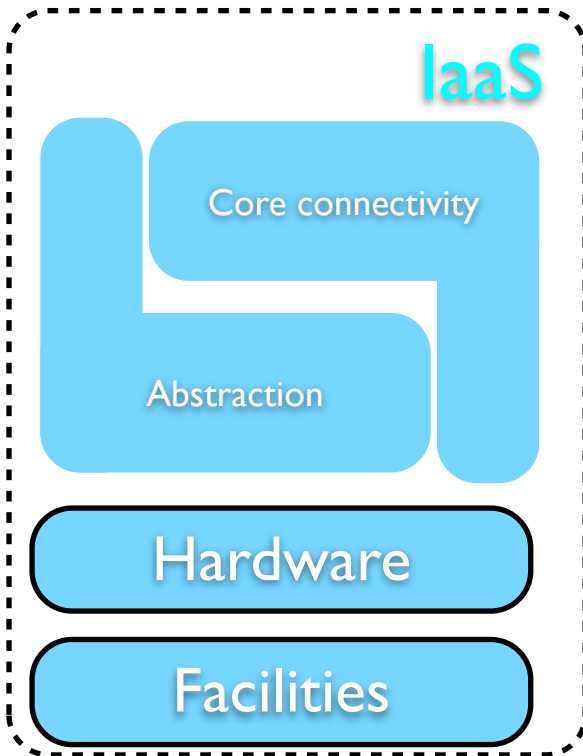
- PCI**
 - Firewalls
 - Code Review
 - WAF
 - Encryption
 - Unique User IDs
 - Anti-Virus
 - Monitoring/IDS/IPS
 - Patch/Vulnerability Management
 - Physical Access Control
 - Two-Factor Authentication...
- HIPAA**
- GLBA**
- SOX**



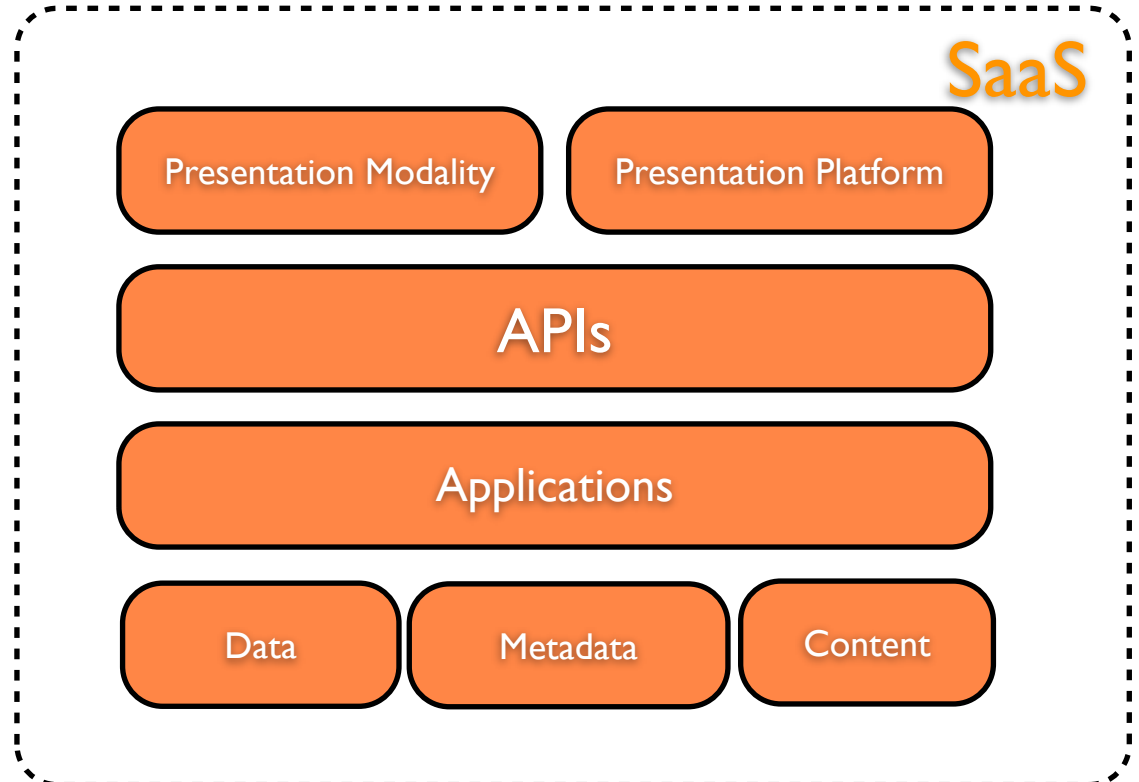
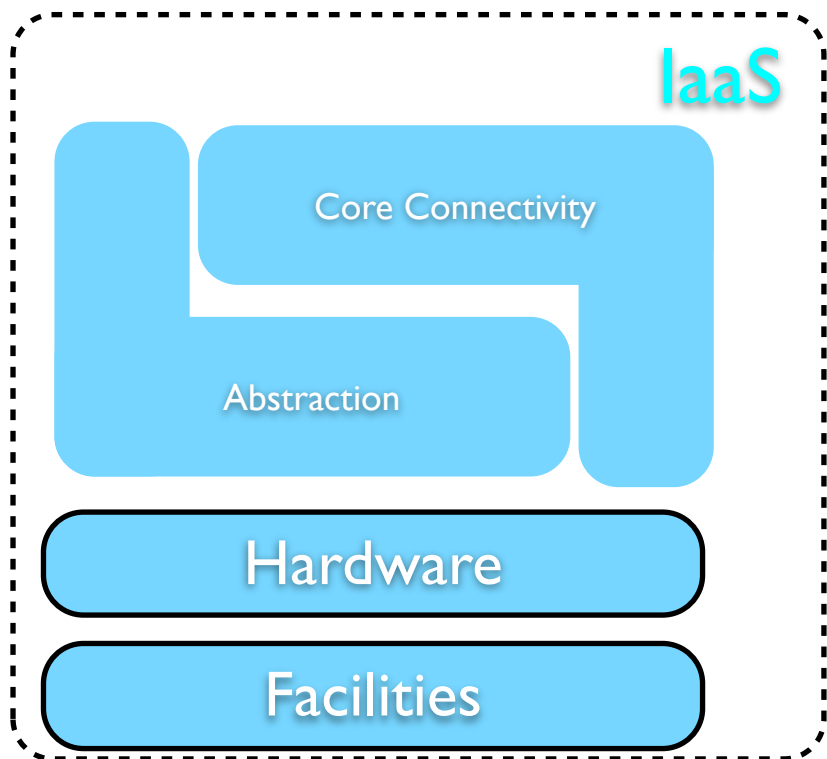
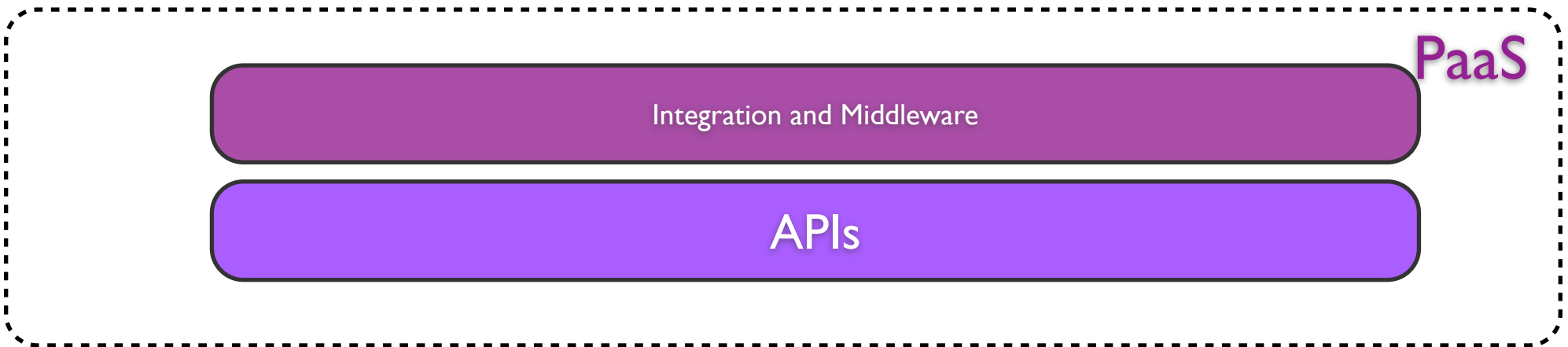
Cloud details



Let's get rid of hierarchy



Let's move it around



Let's remove some details

PaaS

Integration and Middleware

IaaS

Core Connectivity

Abstraction

Hardware

Facilities

SaaS

Applications

Data

Metadata

Content



Methodology needed

- Trusted service cloud
- Service methodology merged with security methodology
- Standards reuse



NGOSS Methodology

- M.3050.0-4 eTOM
- M.3190 Shared Information and Data (SID)
- Role models, stakeholders
- TNA - Technology Neutral Architecture
- Business view → System view →
Implementation view → Performance view



Simple rule of thumb

Standards reusability is the only way to cope with the complexity spell.



Thank you!
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