The Cloud Standards Customer Council
THE Customer’s Voice for Cloud Standards!

- Provide customer-lead guidance to multiple cloud standards-defining bodies
- Establishing criteria for open standards based cloud computing

550+ Organizations participating

2011/2012 Deliverables
- Practical Guide to Cloud Computing
- Practical Guide to Cloud SLAs
- Security for Cloud Computing
- Impact of Cloud Computing on Healthcare

2013/2014 Deliverables
- Convergence of SoMoClo
- Analysis of Public Cloud SLAs
- Cloud Security Standards
- Migrating Apps to Public Cloud
- Social Business in the Cloud
- Big Data in the Cloud
- PGCC Version 2
- Migrating Apps: Performance Rqmnts
- Cloud Interoperability/Portability

2015 Projects
- Web App Hosting Architecture
- Mobile Cloud Architecture
- Big Data Cloud Architecture
- Hybrid Cloud Architecture
- Security for Cloud Computing V2
- Practical Guide to Cloud SLAs V2
- Practical Guide to PaaS
- Practical Guide to Hybrid Cloud Computing
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PaaS: In Cloud Computing Context

Traditional on premises:
- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Infrastructure as a Service:
- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Platform as a Service:
- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Software as a Service:
- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Standardization; lower costs; faster time to value
PaaS & Deployment Models

PaaS deployed:
- public cloud
- private cloud

+ connect with existing on-premises systems

= Hybrid cloud
Characteristics of PaaS

- Provide runtime environments
- Support custom applications
- Systems of Engagement
- Porting applications
- Operations capabilities
- Developer tools
- Security capabilities
- Rapid deployment mechanisms
- Middleware capabilities
- Provide services
- Preconfigured
- API management
PaaS: Governance & Business Considerations

**Business Considerations**
- Create a cross-functional team
- Evaluate the Cloud Service Agreement
- Plan for information security and risk mitigation
- Examine costs and charges
- Assess software licensing of the CSP
- Consider compliance requirements
- Assure the use of PaaS will not result in lock-in to a single CSP

**Governance Considerations**
- Establish clear communication with CSP for change management
- Provide appropriate security controls
- Understand processing and data locations
- Ensure accuracy of system billing
- Control the capabilities of PaaS developers and operators
- Ensure an appropriate exit process
CSCC Guide to Acquiring & Using PaaS Offerings

A reference to help enterprise IT & business decision makers understand the technical and organizational changes required to fully embrace PaaS offerings.

Guide to Acquiring & Using PaaS Offerings

- Understand PaaS end-to-end application architecture
- Understand how containers enable applications
- Understand how services and microservices are used
- Address integration between PaaS applications and existing systems
- Ensure appropriate security components
- Consider development tools and PaaS
- Expect support for agile development and DevOps
- Consider the deployment aspects of PaaS

“You must make application developers more productive in order for businesses to be in business. So for me that’s where PaaS fits. It’s supporting this tremendous economic pressure of the need for more software to be developed because business is implemented through software these days.” Sam Ramji, CEO, Cloud Foundry Foundation
Understand PaaS end-to-end application architecture

1. Codebase

2. Dependencies

3. Configuration

4. Backing services

5. Separate build, release, run

6. App = stateless processes

7. Port binding

8. Concurrency

9. Disposability

10. Dev/production parity

11. Logs as event streams

12. Admin processes

http://12factor.net
Understand how containers enable applications

**Cloud computing**

=  
**Sharing resources**

Containers  
=  
**Efficient sharing**
Understand how services and microservices are used

Application

Microservice1

Microservice2

Backing Services

Database

Email service

Twitter feed

Analytics service

Video service
Address integration between PaaS applications and existing systems
Ensure appropriate security components

Security & data protection is critical. Consider two types of capabilities:

1. Tools & facilities that help developers build secure application and services
2. Services & capabilities provided by the PaaS systems to secure and protect applications and services

10 Steps to Manage Cloud Security

1. Ensure effective governance, risk & compliance
2. Audit operational & business processes
3. Manage people, roles & identities
4. Ensure proper protection of data & information
5. Enforce privacy policies
6. Assess the security provisions for cloud applications
7. Ensure cloud networks & connections are secure
8. Evaluate security controls on physical infrastructure
9. Manage security terms in the cloud service agreement
10. Understand the security requirements of the exit process

CSCC Security for Cloud Computing:

http://bit.ly/1aDu1P9
Consider development tools and PaaS

- Code editors
- Debug facilities
- Code repository
- Build tools
- Test environment
- Test tools
- Load testers
- Security analyzers
- Development APIs
- External tools
Expect support for agile development and DevOps

**PaaS Features**

- Test driven development
- Rapid allocation / deallocation of resources
- Automation of build, test, QA & deployment processes
- “Blue/green deployment”
- Provision of ready-to-use services
- Operations capabilities that address:
  - Deployment/scalability of services,
  - Placement of runtime instances
  - Management of logs
- Visibility to service behavior – alerts, monitoring, APIs
Consider the deployment aspects of PaaS

- Deployment: Public; Private; Hybrid
  - on-premises / provider premises
  - concerns over reliability & skill requirements
  - applications, services, datasets
    - separate considerations
- Questions of security risks & data protection requirements
  - regulation
- Integration of applications in PaaS with other systems
Keys to Success

- Perform cost/benefit analysis
- Assess your security risk versus your innovation imperative
- Assess value provided by a given PaaS provider versus alternatives
- Consider the long term viability of the PaaS provider ecosystem
- Consider portability both in terms of lock in and deployment model as needs evolve
- Ensure integration between PaaS environment and on-premises systems is straightforward and secure
- Consider transforming to Agile methods and DevOps processes
# Example of PaaS Offerings

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## PaaS Software

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Call to Action

- **Join the CSCC Now!**
  - To have an impact on customer use case based standards requirements
  - To learn about all Cloud Standards within one organization
  - To help define the CSCC’s future roadmap
  - Membership is free & easy: [http://www.cloud-council.org/application](http://www.cloud-council.org/application)

- **Get Involved!**
  - Join one or more of the CSCC Working Groups
    - [http://www.cloud-council.org/workinggroups.htm](http://www.cloud-council.org/workinggroups.htm)

- **Leverage CSCC Collateral**
  - Visit [http://www.cloud-council.org/resource-hub.htm](http://www.cloud-council.org/resource-hub.htm)
Thank You