



# **Migrating Applications to Public Cloud Services: Roadmap for Success**

*January, 2014*

# 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

## 2011/2012 Deliverables

- Practical Guide to Cloud Computing
- Practical Guide to Cloud SLAs
- Security for Cloud Computing
- Impact of Cloud Computing on Healthcare

## 2013 Deliverables

- Convergence of Social, Mobile & Cloud
- Analysis of Public Cloud SLAs
- Cloud Security Standards Landscape
- *Migrating Applications to Public Cloud Services*

## 2014 Projects

- Social Business in the Cloud: Achieving Measureable Success
- Practical Guide for Big Data in the Cloud
- DevOps in the Cloud
- Updates to original Practical Guides

**450+** Organizations participating



<http://cloud-council.org>

# Migrating Applications to Public Cloud Services

## *Motivation and Considerations*

### Motivations

- *Business agility and flexibility*
- *Improved responsiveness*
- *Broader reach*
- *Easier mobile access*
- *Improved security*
- *Better analytics on application usage*
- *Improved availability*
- *Reduced and/or re-allocated costs*

### Considerations

- *Security*
- *Integration*
- *Availability and reliability of cloud applications*
- *Application re-designs*
- *Loss of control*
- *Cloud service provider lock-in*

# Migrating Applications to Public Cloud Services: Roadmap to Success



Prescriptive series of steps customers should take to ensure successful migration of existing applications to cloud computing:  
*(Published December, 2013)*

## ***6 Steps to Ensure Successful Migration***

1. Assess your applications and workloads
2. Build the business case
3. Develop the technical approach
4. Adopt a flexible integration model
5. Address security and privacy requirements
6. Manage the migration

Download the whitepaper: <http://www.cloud-council.org/Migrating-Apps-to-the-Cloud-Final.pdf>

# Step 1: Assess your Applications and Workloads

## *Readiness Assessment*

Considerations	What to Assess
<b><i>Business</i></b>	<ul style="list-style-type: none"><li>▪ Assess the impact on business transformation, service levels and IT costs</li></ul>
<b><i>Lifecycle</i></b>	<ul style="list-style-type: none"><li>▪ Determine if the application is up for refresh and how easily it can be redesigned for cloud computing</li></ul>
<b><i>Architecture</i></b>	<ul style="list-style-type: none"><li>▪ Consider scaling requirements, demand fluctuations, and effort to transition to SOA</li></ul>
<b><i>Data</i></b>	<ul style="list-style-type: none"><li>▪ Assess the integrity, privacy and compliance requirements of the application's data</li></ul>
<b><i>Technology</i></b>	<ul style="list-style-type: none"><li>▪ Account for performance, resiliency, high availability and disaster recovery</li></ul>
<b><i>Security</i></b>	<ul style="list-style-type: none"><li>▪ Identify significant risks, assure proper treatment, and clearly define responsibilities</li></ul>
<b><i>Integration</i></b>	<ul style="list-style-type: none"><li>▪ Understand control, data and presentation integration requirements</li></ul>

## Step 2: Build the Business Case

### Business Impact

- *Revenue impact*
- *Customer acquisition or engagement impact*
- *User satisfaction*
- *Time to market improvements*
- *Cost of handling peak loads*

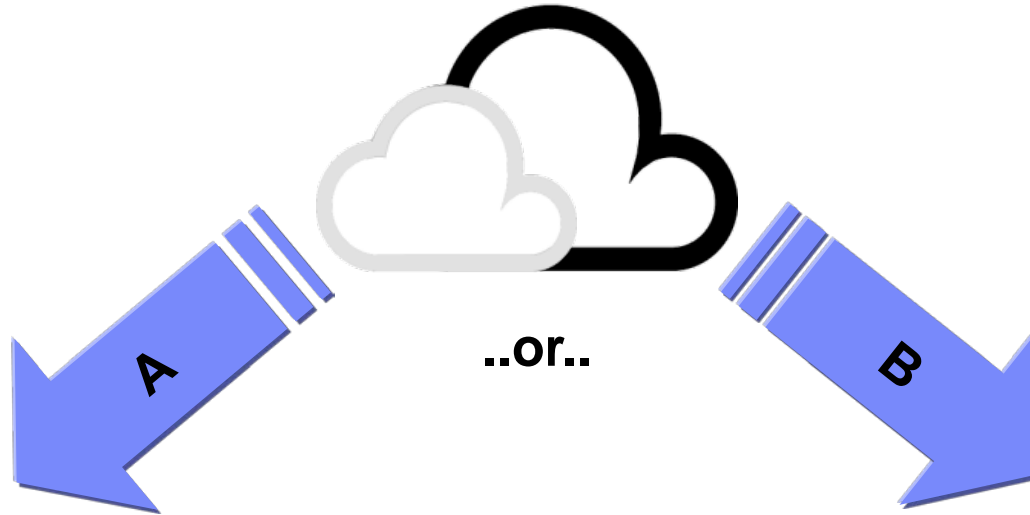
### Service Levels

- *Application availability*
- *Application performance*
- *Application security*
- *Privacy*
- *Regulatory compliance*

### Cost Analysis

- *On-going cloud service costs*
- *Service management*
- *License management*
- *Application re-designs*
- *Application deployment and testing*
- *Application maintenance and administration*
- *Application integration*
- *Cost of developing cloud skills*
- *Human resources and talent management implications*

## Step 3: Develop the Technical Approach



### **PaaS**

#### **Requirements:**

- App uses a common runtime platform
- App runtime available in cloud service
- App configuration supported on runtime
- Required support services available

### **IaaS**

#### **Requirements:**

- Able to deploy app plus complete software stack
- Stack runs in virtual environment
- Required dependencies must be deployed also

## Step 3: Develop the Technical Approach

### ■ Technical considerations for migration

#### – Skills:

- Do your employees have cloud services skills?

#### – Security:

- Ensure adequate security – with integration

#### – Integration:

- Data and applications, between cloud service & on-premises

#### – Monitoring & management:

- How will migrated app be handled?

#### – Scalability:

- Can migrated app take advantage of cloud service scalability?

#### – Availability and backup:

- How will these be achieved?

### ■ Consider the use of *Patterns*

– ‘Standard’ architectural organization for specific application requirements

– Ranges of patterns are documented and available



## Step 4: Adapt a Flexible Integration Model

### Scope

- Integration between the migrated application and...
  - Applications remaining on premises
  - IT services (directory, monitoring, etc.)
- Control, data, presentation integration
  - Mutual invocation
  - Access to same databases or files – especially Master Data system of record
  - Mashup on user interface

### Approach

- What are the “touch points” between the applications and systems?
- Will communication protocols still work (with suitable performance) over the connection to the cloud service?
- What to do if there are issues?
  - Migrate a group of interconnected applications together
  - Use SOA
  - Use an Enterprise Service Bus
  - Use special cloud integration solutions

## Step 5: Address Security and Privacy Requirements

- Clarify significant risks
- Be realistic: Security may be *better* in the cloud!
- 10 steps proposed for the specific case of application migration

Also see the CSCC's "Security for Cloud Computing: 10 Steps to Ensure Success"

[www.cloud-council.org/security.htm](http://www.cloud-council.org/security.htm)

1. Understand what data will migrate
2. Map it to security classification
3. Identify the privacy concerns
4. Examine applicable regulations
5. Apply a risk management method (probability, impact, mitigation)
6. Review cloud provider's measures
7. Go/No-Go decision based on the above
8. Protect data in transit and at rest
9. Design authentication and authorization method (SSO, etc.)
10. Put in place a rapid de-provisioning process

## Step 6: Manage the Migration

Migration Procedure	Migration Details
<b>1. Deploy the Cloud Environment</b>	<ul style="list-style-type: none"><li>▪ Storage, servers, network, security resources</li></ul>
<b>2. Install and Configure the Applications</b>	<ul style="list-style-type: none"><li>▪ Applications and supporting middleware</li><li>▪ Often done by providers through automated templates</li><li>▪ Perform integrations</li></ul>
<b>3. Harden the Production Environment</b>	<ul style="list-style-type: none"><li>▪ Additional utilities for business continuity and security</li><li>▪ If part of the cloud service offering, test them</li></ul>
<b>4. Execute a Mock Migration</b>	<ul style="list-style-type: none"><li>▪ Trial run of the migration project plan</li><li>▪ Purpose: uncover issues</li><li>▪ Allow time between the mock migration and the final cutover to fix problems</li></ul>
<b>5. Cutover to Production Cloud</b>	<ul style="list-style-type: none"><li>▪ Serious issues found? Go back to previous steps</li><li>▪ No serious issues: plan real migration, execute, follow up</li></ul>

# 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>

## ▪ **Get Involved!**

- Join one or more of the CSCC Working Groups
  - <http://www.cloud-council.org/workinggroups.htm>
- Participate in monthly web conferences for all members

## ▪ **Review and leverage CSCC resources**

- ***Migrating Applications to Public Cloud Services: Roadmap for Success***
  - <http://www.cloud-council.org/Migrating-Apps-to-the-Cloud-Final.pdf>
- ***Cloud Security Standards: What to Expect & What to Negotiate***
  - <http://www.cloud-council.org/security.htm>
- ***Security for Cloud Computing: 10 Steps to Ensure Success***
  - <http://www.cloud-council.org/security.htm>
- ***Convergence of Social, Mobile & Cloud: 7 Steps to Ensure Success***
  - [http://www.cloud-council.org/Convergence\\_of\\_Cloud\\_Social%20 Mobile\\_Final.pdf](http://www.cloud-council.org/Convergence_of_Cloud_Social%20Mobile_Final.pdf)
- ***Practical Guide to Cloud Computing V1***
  - <http://www.cloud-council.org/10052011.htm>
- ***Practical Guide to Cloud SLAs V1***
  - <http://www.cloud-council.org/04102012.htm>
- ***Public Cloud Service Agreements: What to Expect & What to Negotiate***
  - <http://www.cloud-council.org/publiccloudSLA.pdf>
- ***Impact of Cloud Computing on Healthcare***
  - <http://www.cloud-council.org/healthcare.htm>

The background is a solid blue color with a complex, repeating pattern of overlapping geometric shapes. These shapes include circles, squares, and semi-circles, some of which are filled with lighter shades of blue, creating a layered, mosaic-like effect. The overall aesthetic is modern and clean.

**Thank You**