Achieving production readiness for cloud services

UNIT-VII

Industry Standard Organizations

National Institute of Standards and Technology (NIST)

NIST is a federal agency within the US Department of Commerce that promotes standards and technology in order to improve the general public's security and quality of life.

- Data portability,
- Cloud interoperability, and
- Cloud security.

Cloud Security Alliance (CSA)

- This alliance considers itself to be a standards incubator rather than a standards developing organization, having published the following cloud security-related best practice guides and checklists:-

Security Guidance for Critical Areas of Focus in Cloud Computing (Version 3): This document describes security concerns and foundational best practices that are organized into ***14 domains (Cloud Architecture, Governance and Enterprise Risk, Legal: Contracts and Electronic Discovery, Compliance and Audit, Information Lifecycle Management and Data Security, Portability and Interoperability, Traditional Security, Business Continuity and Disaster Recovery, Data Center Operations, Incident Response, Application Security, Encryption and Key Management, Identity and Access Management, Virtualization, and Security-as-a-Service).***

Cloud Controls Matrix (CCM) (Version 2.1): Provides a security controls list and framework that enables detailed understanding of security concepts and principles.

Distributed Management Task Force (DMTF)

- The DMTF focuses on developing standards to enable *interoperable IT management and promote worldwide multi-vendor interoperability*. DMTF's board of members are representatives from companies such as Advanced Micro Devices (AMD), Broadcom Corporation, CA, Inc., Cisco, Citrix Systems, Inc., EMC, Fujitsu, HP, Huawei, IBM, Intel Corporation, Microsoft Corporation, NetApp, Oracle, RedHat, SunGard, and VMware, Inc.
- The cloud computing standards that were developed by the DMTF include the Open Virtualization Format (OVF) (DMTF Standard Version 1.1), an industry standard that aims at enabling interoperability between virtualized environments.

www.dmtf.org

Self study:

Storage Networking Industry Association (SNIA)
Organization for the Advancement of Structured Information Standards (OASIS)
The Open Group
Open Cloud Consortium (OCC)
European Telecommunications Standards Institute (ETSI)
Telecommunications Industry Association (TIA)
Liberty Alliance
Open Grid Forum (OGF)

Mapping Mechanisms to Characteristics

Cloud Characteristics	Cloud Mechanisms
On-Demand Usage	Hypervisor
	Virtual Server
	Ready-Made Environment
	Resource Replication
	Remote Administration Environment
	Resource Management System
	SLA Management System
	Billing Management System
Ubiquitous Access	Logical Network Perimeter
	Multi-Device Broker

Cloud Characteristics	Cloud Mechanisms
Multitenancy/Resource Pooling	Logical Network Perimeter
	Hypervisor
	Resource Replication
	Resource Cluster
	Resource Management System
Elasticity	Hypervisor
	Cloud Usage Monitor
	Automated Scaling Listener
	Resource Replication
	Load Balancer
	Resource Management System

Cloud Characteristics	Cloud Mechanisms
Measured Usage	Hypervisor
	Cloud Usage Monitor
	SLA Monitor
	Pay-Per-Use Monitor
	Audit Monitor
	SLA Management System
	Billing Management System

Cloud Characteristics	Cloud Mechanisms
Resiliency	Hypervisor
	Resource Replication
	Failover System
	Resource Cluster
	Resource Management System

Cloud Business Case Template

Business Case Identification

This section provides information that specifies the details of the business case, such as the following:

- Business Case Name
- ***Description*** – A brief summary of the business case's purpose and goals.
- ***Sponsor*** – Identification of business case stakeholders.
- ***List of Revisions (optional)*** – Revisions by date, author, and approval if
- ***control or historical logging is required***.

Business Needs

The expected benefits and requirements that are to be addressed and fulfilled by cloud adoption are detailed in this part of the template:

- ***Background*** – A description of relevant historical information that spurred on the motivation for the business case.
- ***Business Goals*** – A list of the tactical and strategic business objectives that are associated with the business case.
- ***Business Requirements*** – A list of the business requirements that are expected to be fulfilled by the achievement of the business goals.
- ***Performance Objectives*** – A list of any relevant performance objectives related to the business goals and business requirements.

→***Priorities*** – Business goals, business requirements, and performance objectives listed in order of priority.

→***Affected On-Premise*** Solutions (optional) – A detailed description of current and planned on-premise solutions that are to be migrated, or that will otherwise be affected by the adoption effort.

→***Target Environment*** – A description of the anticipated outcome of the adoption of the project, including a high-level overview of cloud-based solutions that are to be built in support of the business case.

Target Cloud Environment

The cloud deployment and delivery models expected to be utilized as part of the cloud adoption effort are listed and briefly described, along with other available information regarding planned cloud services and cloud-based solutions:

- ***Cloud Deployment Model*** – Reasons for the choice of models, advantages, and disadvantages are provided to help communicate the rationale.
- ***Cloud Characteristics*** – A description of how the planned target state relates to and supports cloud characteristics.

→***Cloud Service Candidates (optional)*** – A list of candidate cloud servicesand corresponding usage estimates.

→***Cloud Provider Candidates (optional) – A*** list of potential cloud providers and a comparison of costs and features.

→***Cloud Delivery Model*** – The cloud delivery model that is presumably required to meet the business goals of the business case is documented.

Technical Issues

This section highlights requirements and limitations related to common technical concerns:

- Solution Architecture
- SLA
- Security Requirements
- Governance Requirements
- Interoperability Requirements
- Portability Requirements
- Regulatory Compliance Requirements
- Migration Approach (optional)

Economic Factors

This section comprises considerations related to the economics of the business case, involving the pricing, costs, and formulaic tools that are used for calculation and analysis.

Keyword is “cost metric”