The Evolving IBM Cloud Customer Reference Architecture

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Abstract and Agenda

In this session I will give an introduction to how IBM is evolving the cloud reference architecture based on it's experiences in the field helping customers with adoption. You don't just wake up one day and decide to 'go on the cloud'. Although cloud is a commodity, each business still needs to consider their objectives and business benefits together with the right workloads to 'move to' the cloud.

- A bit of history
- Standards
- Where are we now
- What next

A bit of history

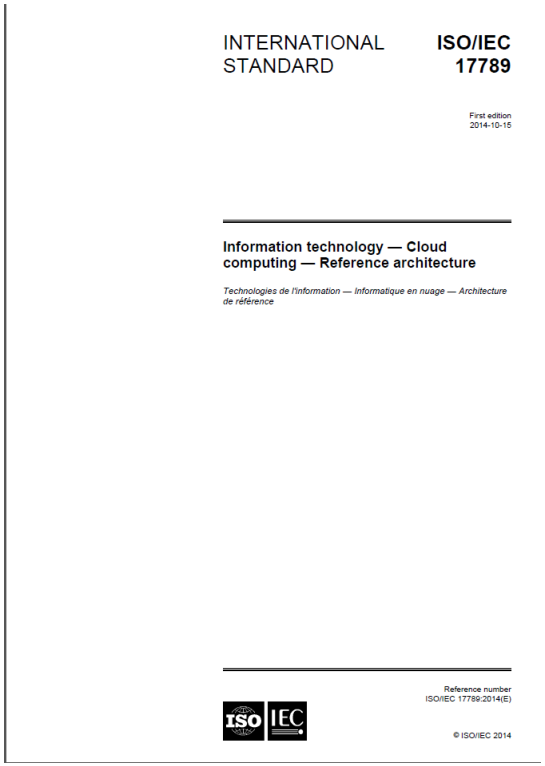
IBM CCRA V2 submitted to Open Group, used by NIST, submitted to ISO/IEC JTC1 SC38 as input to joint work with ITUT

Published in 2014:
Cloud Computing Reference Architecture (ISO/IEC 17789)
Cloud Computing Vocabulary (ISO/IEC 17788)
(you can download it from their website)

We are now at V5 (more later) and the IBM Architecture Center is the place to go.

Standards

ISO/IEC 17789: Cloud Computing - Reference Architecture



INTERNATIONAL STANDARD **ISO/IEC 17789**

First edition
2014-10-15

Information technology — Cloud computing — Reference architecture

Technologies de l'information — Informatique en nuage — Architecture de référence

Reference number
ISO/IEC 17789:2014(E)

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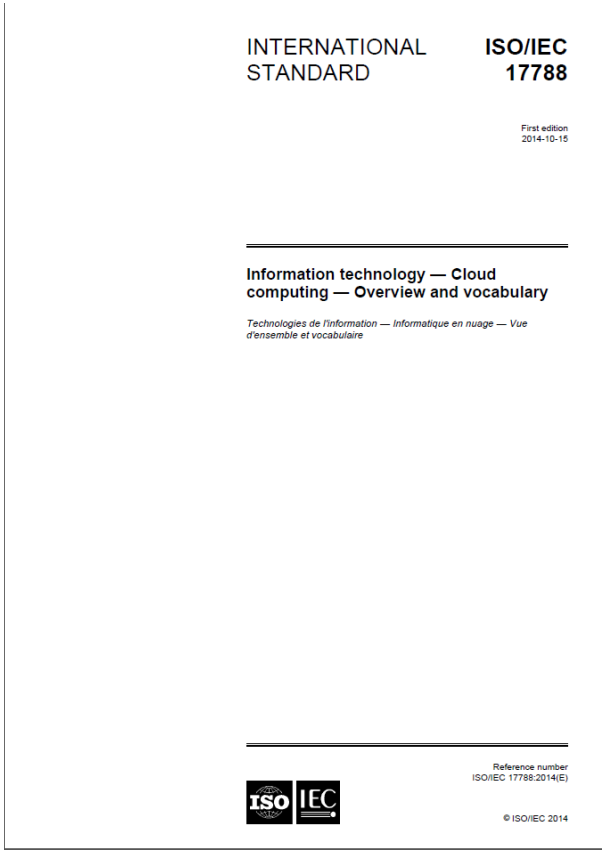
ISO/IEC 17789: Cloud Computing – Overview and Vocabulary



INTERNATIONAL STANDARD **ISO/IEC 17788**

First edition
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Information technology — Cloud computing — Overview and vocabulary

Technologies de l'information — Informatique en nuage — Vue d'ensemble et vocabulaire

Reference number
ISO/IEC 17788:2014(E)

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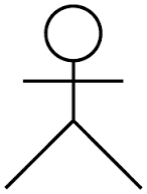
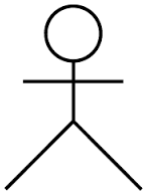
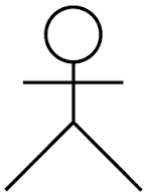
ISO/IEC 17789:2014 defines



cloud service customer (CSC): A **party** which is in a business relationship for the purpose of using **cloud services**.

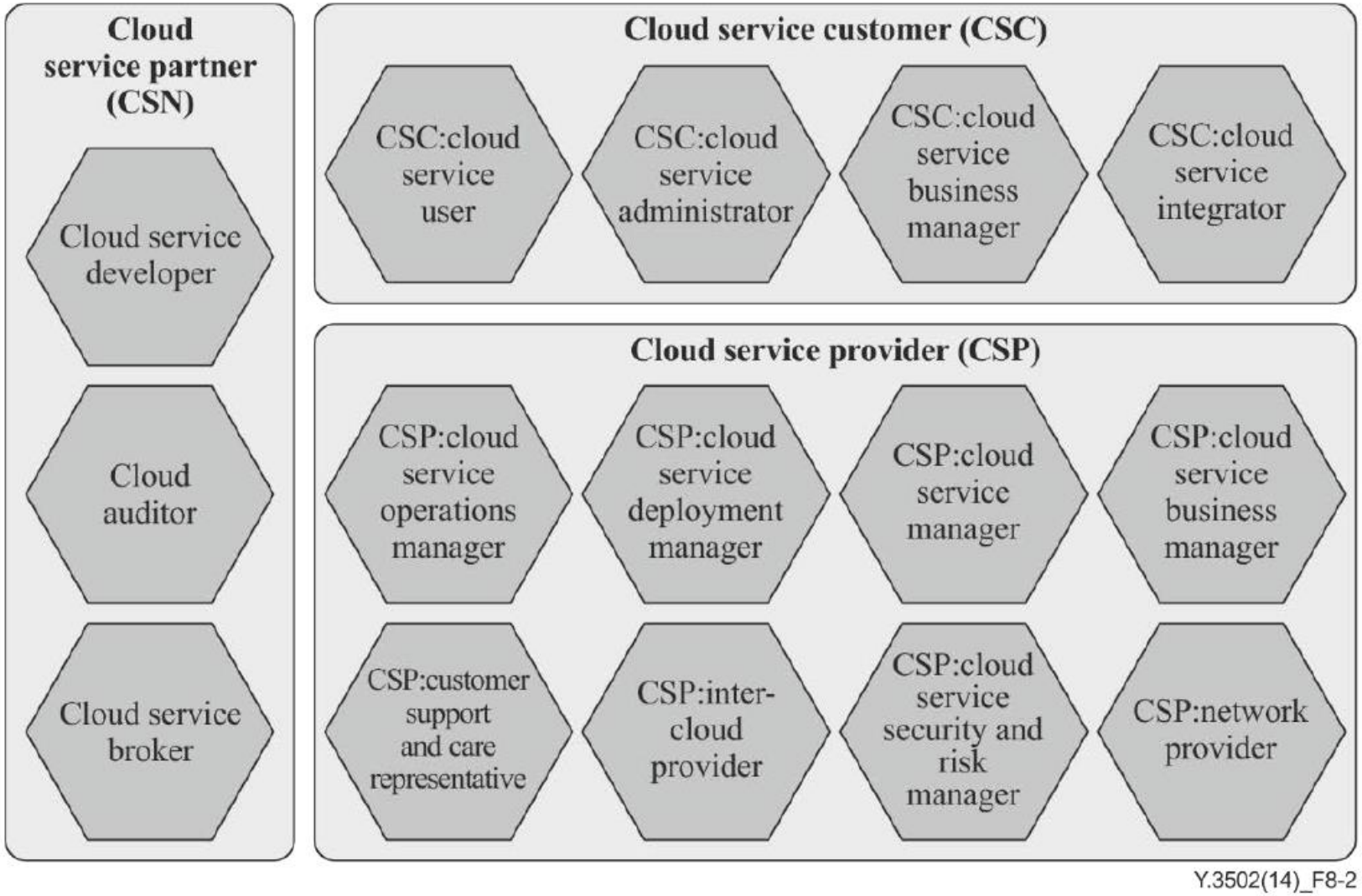


cloud service provider (CSP): A **party** which makes **cloud services** available.

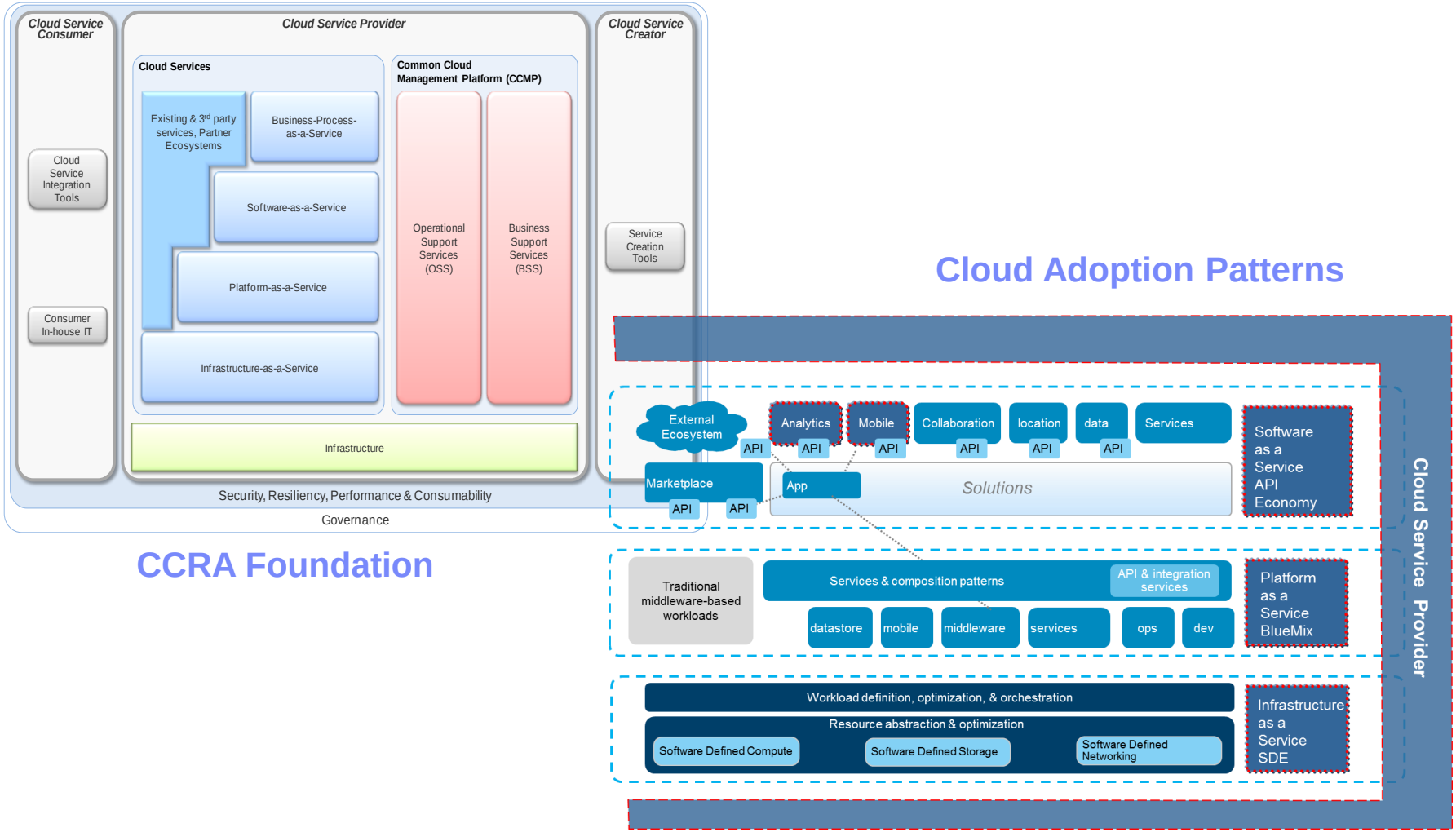


cloud service partner (CSN): A **party** which is engaged in support of, or auxiliary to, **activities** of either the **cloud service provider** or the **cloud service customer**, or both.

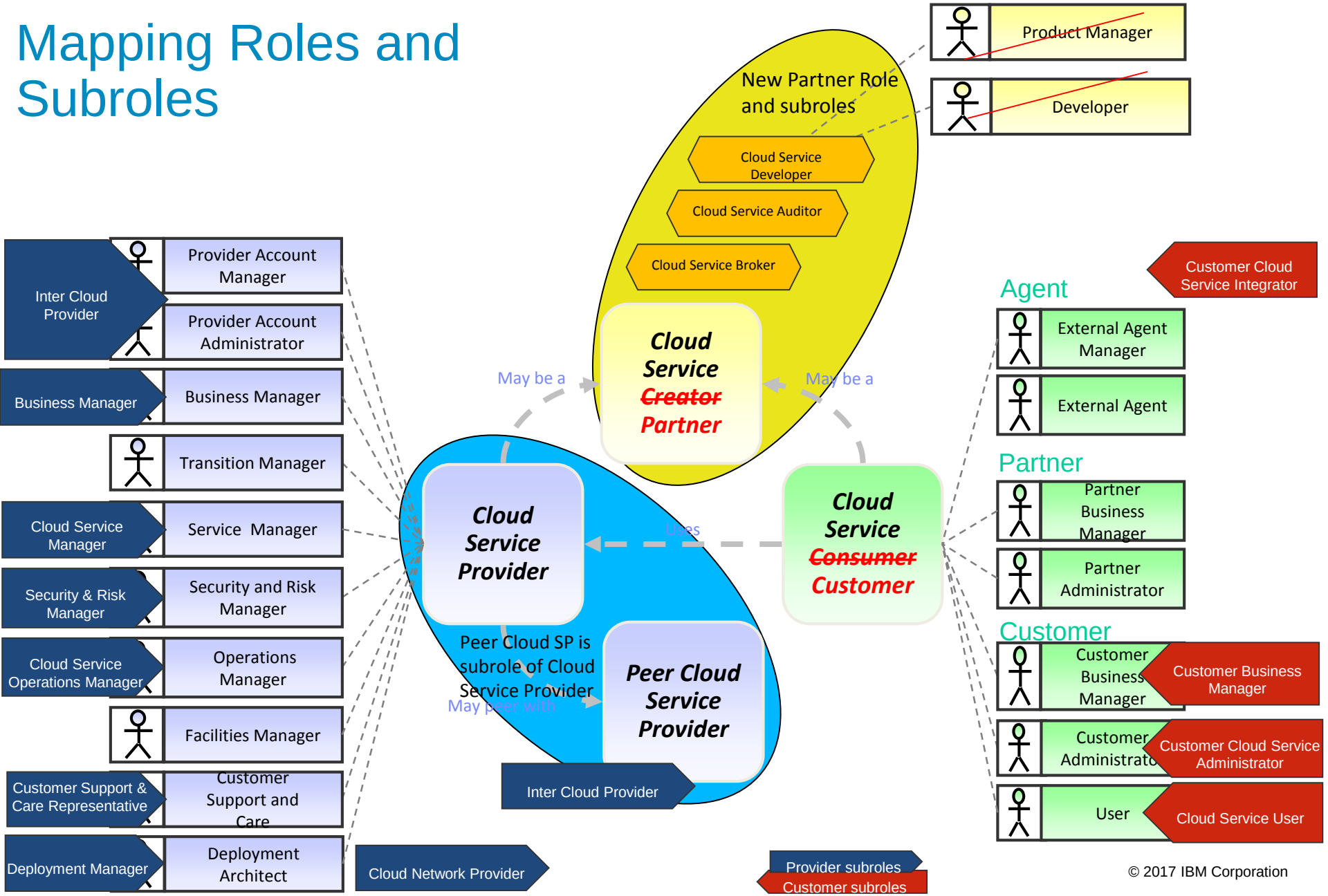
ISO/IEC 17789 defines



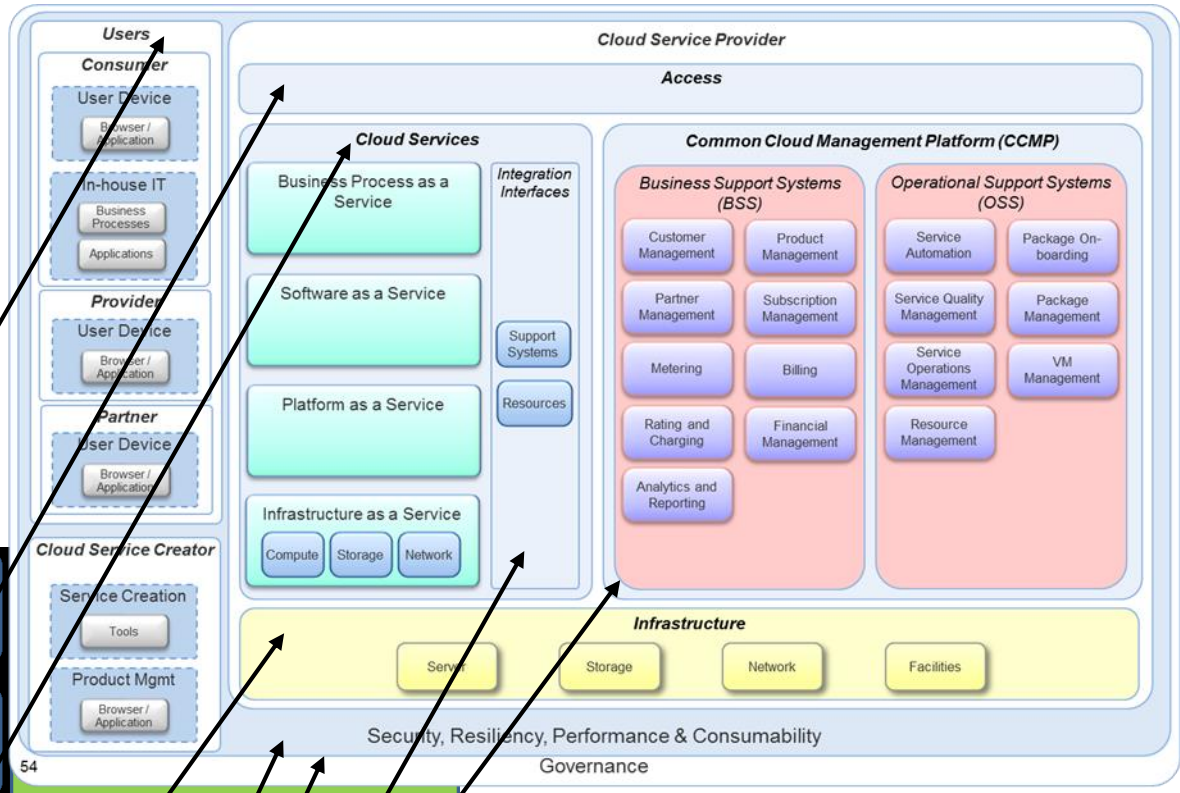
The IBM CCRA v4

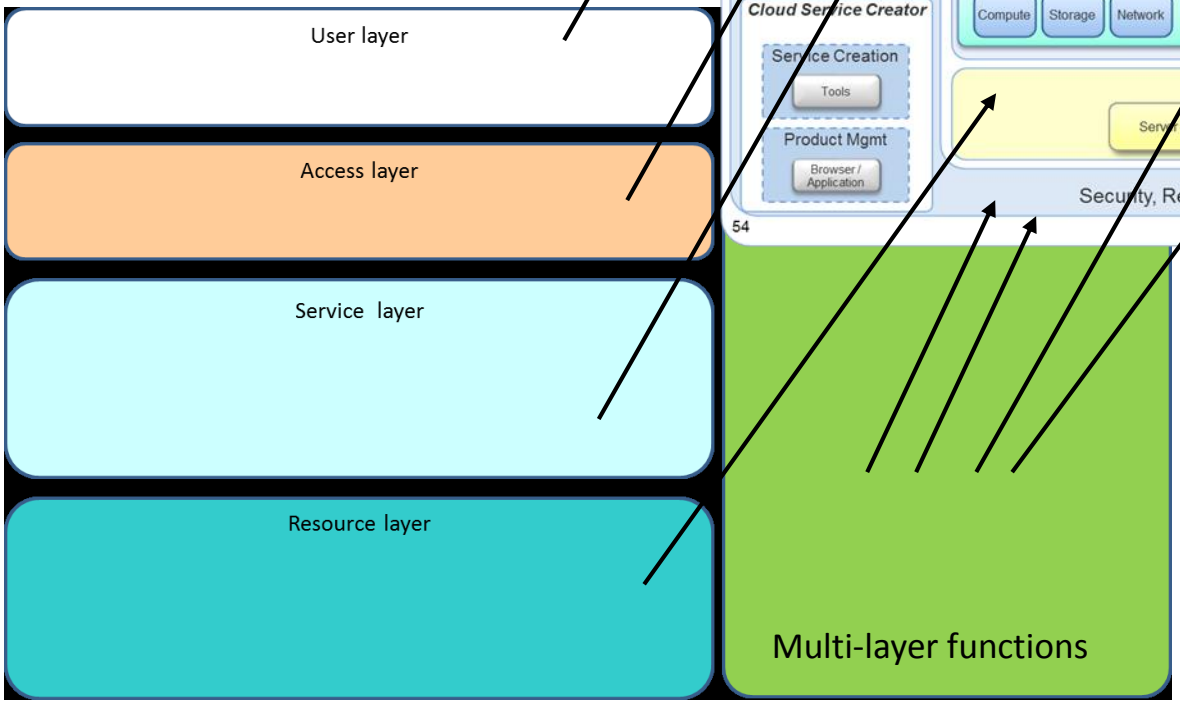


Mapping Roles and Subroles



Mapping Functional Layers





Standards

The [Cloud Standards Customer Council]

Is chartered to:

- Deliver customer-focused content in the form of best practices, patterns, case studies, use cases, and standards roadmaps
- Influence the standards development process for new cloud standards
- Facilitate the exchange of real-world stories, practices, lessons and insights

Mission, strategies, and tactics center on the following premises:

- Cloud computing adoption is a key enabler for the 21st century enterprise
- Achieving the benefits of cloud computing requires significant changes for both IT and business executives
- Cloud computing is perceived by business executives as an IT integration and productivity story, rather than a business agility story
- Cloud computing practitioners would greatly benefit from a vibrant practitioner community to drive local, business-driven, cloud success, and to spur broader enterprise, and industry-wide, cloud adoption

Where are we now

The Focus since 2015 has been on providing reference architectures for creating cloud applications and cross-app capabilities.

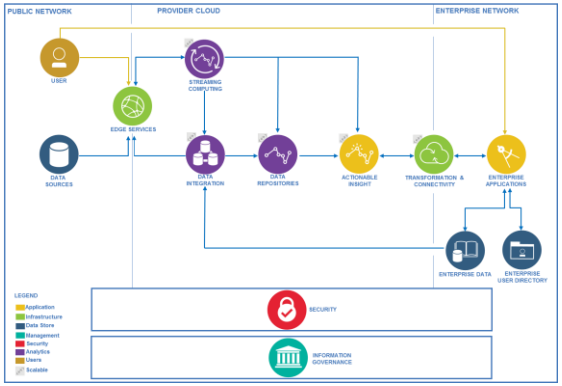
➢Which are…
- straightforward description of elements needed to implement particular application solutions using cloud infrastructure, cloud platforms, cloud software, and cloud services
- vendor neutral & open

➢ To …
- Enable customers to understand unique features & advantages of using cloud computing
- Provide practical guidance on how common business applications can be realized
- Are stable anchors in a rapidly innovating cloud landscape

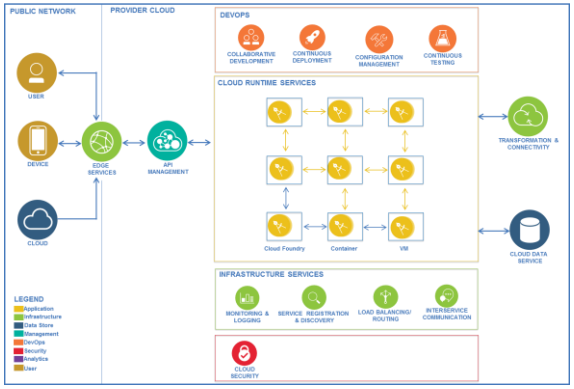
➢Useful when…
- Planning to build cloud based applications
- Talking with cloud providers about their offerings
- Understanding of the common elements and relationships in relevant solutions

➢ Consistent with ISO/IEC 17789 International Standard Cloud Computing Reference Architecture

BIG DATA ANALYTICS



MICROSERVICES



An architecture would contain some of the following

Business Challenge
Functional Requirements
Reference Architecture showing

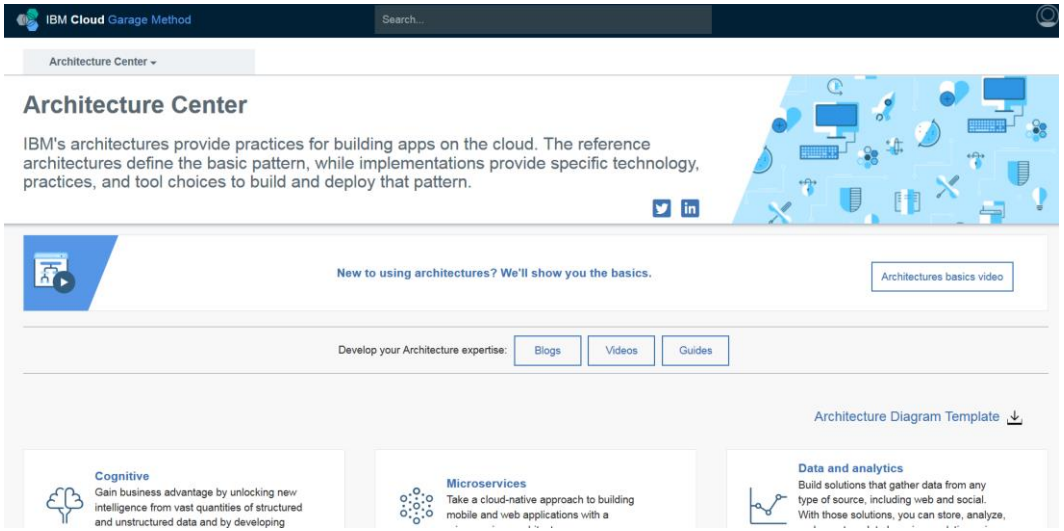
- Components
- Flows
- Mapping to IBM capabilities

Example Architectures

- Code on Github

Best practices
Resources

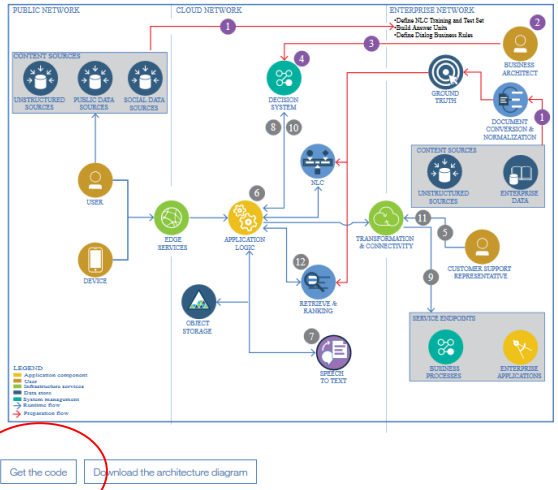
The Architecture Center



The Architecture Center

A Tour

The Cognitive context Driven example



Get the code

The Architecture Center

Cognitive
Gain business advantage by unlocking new intelligence from vast quantities of structured and unstructured data and by developing deep, predictive insights.

Microservices
Take a cloud-native approach to building mobile and web applications with a microservices architecture.

Data and analytics
Build solutions that gather data from any type of source, including web and social. With those solutions, you can store, analyze, and report on data by using analytic engines to drive actionable insights and visualization.

DevOps
Rapidly execute and scale the IBM Bluemix Garage method. The DevOps architecture includes the best of Design Thinking, Lean Startup, Agile Development, DevOps, and Cloud to help enterprise organizations

Hybrid
Create applications whose components are split across cloud and on-premises environments, or across different clouds.

Internet of Things
Connect to IoT devices and quickly build scalable apps and visualization dashboards to gain insights from IoT data, using Bluemix IoT, data, and cognitive services.

Mobile
With IBM® Cloud, develop, deploy, and manage scalable native and hybrid apps for mobile devices while you are securely connected to back-end infrastructure on the cloud or in an enterprise.

Security
Understand the security components that are needed for secure cloud deployment, development, and operations.

Service management
Cloud service management and operations refers to all of the activities that are performed by an organization to plan, design, deliver, operate, and control IT and cloud services that are offered to customers.

Blockchain (Experimental)
Record a history of transactions in a shared immutable ledger for transactional applications. Transactions are trusted, accountable, and transparent.

Social
A social platform provides a collaborative information exchange with intelligent and secure applications. Deliver an integrated, single-source ecosystem of collaboration and communication applications and services.

Virtualization
Extend your data center to the cloud simply and quickly. IBM Cloud for VMware Solutions let you deploy a software defined datacenter to the cloud while reusing your existing skill set, tooling, and processes.

e-commerce
Leverage IBM Cloud to develop, deploy, and manage scalable e-commerce solutions while connecting securely to backend infrastructure on the cloud or in the enterprise.

Web application
With IBM® Cloud, access the open runtimes, tools, and integrated services that you need to simplify the development, testing, and deployment of web applications.

Global Business Services Garage
Design, build, and maintain enterprise applications for the cloud, with the innovation of a startup.

DevOps transformation
The DevOps transformation track provides internal IBM teams with a customized set of practices that can guide them through the transition to use modern development

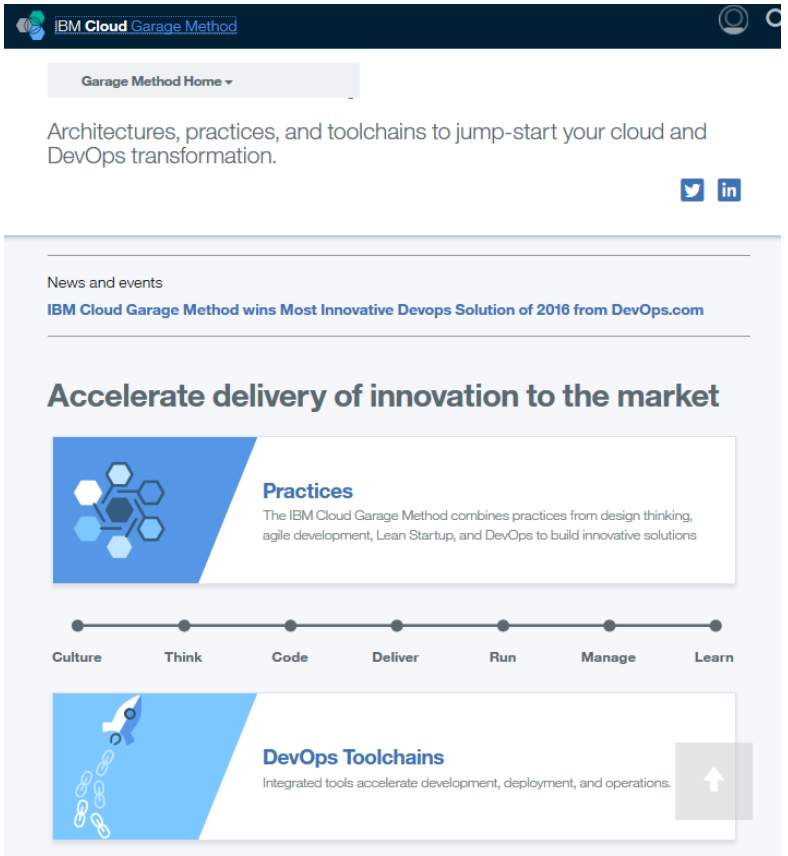
Use the icons. Download them from
https://www.ibm.com/devops/method/files/DiagramTemplate.pptx

The Architecture Center

The Architecture Center
Part of the IBM Bluemix Garage Method Site
https://www.ibm.com/devops/method

Demo

- A Tour of the Architecture center
- An example of deploying code to IBM Bluemix Platform-as-a-Service



What next

Continue to add to the Architecture Center
- New reference architectures
- Example implementations with code
- Education material (blogs, videos, guides)

Continue support of CSCC

Continue support of open projects

Continue supporting our customers

What next