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Information technology — Cloud computing —

Part 1: Vocabulary

Technologies de l'information — Informatique en nuage —

Partie 1: Vocabulaire
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 38, *Cloud computing and distributed platforms*.

A list of all parts in the ISO/IEC 22123 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is the definitive reference for cloud computing providing a consolidated cloud computing vocabulary consisting of terms, terminology and definitions.

This document also addresses discrepancies and inconsistencies that have been identified in the consolidated terms and definitions to further enhance the usability of the ISO cloud computing terminology.

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Information technology — Cloud computing —

Part 1: Vocabulary

1 Scope

This document provides terms and definitions for vocabulary used in the field of cloud computing.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

3.1 General

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia, available at <http://www.electropedia.org/>

3.2 Terms related to cloud computing foundation

3.2.1

cloud computing

paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on-demand

Note 1 to entry: Examples of resources include servers, operating systems, networks, software, applications, and storage equipment.

3.2.2

cloud service

one or more capabilities offered via *cloud computing* (3.2.1) invoked using a defined interface

3.3 Terms related to cloud deployment models

3.3.1

cloud deployment model

way in which *cloud computing* (3.2.1) can be organized based on the control and sharing of physical or virtual resources

Note 1 to entry: The *cloud deployment models* include *community cloud* (3.3.2), *hybrid cloud* (3.3.3), *private cloud* (3.3.4) and *public cloud* (3.3.5).

3.3.2

community cloud

cloud deployment model (3.3.1) where cloud services (3.2.2) exclusively support and are shared by a specific collection of cloud service customers (3.4.2) who have shared requirements and a relationship with one another, and where resources are controlled by at least one member of this collection

3.3.3

hybrid cloud

cloud deployment model (3.3.1) using at least two different cloud deployment models (3.3.1)

3.3.4

private cloud

cloud deployment model (3.3.1) where cloud services (3.2.2) are used exclusively by a single cloud service customer (3.4.2) and resources are controlled by that cloud service customer (3.4.2)

3.3.5

public cloud

cloud deployment model (3.3.1) where cloud services (3.2.2) are potentially available to any cloud service customer (3.4.2) and resources are controlled by the cloud service provider (3.4.3)

3.4 Terms related to cloud computing roles and activities

3.4.1

party

natural person or legal person, whether or not incorporated, or a group of either that can assume one or more roles (3.4.11)

3.4.2

cloud service customer

CSC

party (3.4.1) which is in a business relationship for the purpose of using cloud services (3.2.2)

Note 1 to entry: A business relationship does not necessarily imply financial agreements.

3.4.3

cloud service provider

CSP

party (3.4.1) which makes cloud services (3.2.2) available

3.4.4

cloud service user

CSU

natural person, or entity acting on their behalf, associated with a cloud service customer (3.4.2) that uses cloud services (3.2.2)

Note 1 to entry: Examples of such entities include devices (3.14.4) and applications.

3.4.5

cloud service partner

CSN

party (3.4.1) which is engaged in support of, or auxiliary to, activities (3.4.8) of either the cloud service provider (3.4.3) or the cloud service customer (3.4.2), or both

3.4.6

cloud auditor

cloud service partner (3.4.5) with the responsibility to conduct an audit (3.14.10) of the provision and use of cloud services (3.2.2)

3.4.7**cloud service broker**

cloud service partner (3.4.5) that negotiates relationships between *cloud service customers* (3.4.2) and *cloud service providers* (3.4.3)

3.4.8**activity**

specified pursuit or set of tasks

3.4.9**peer cloud service provider****secondary cloud service provider**

cloud service provider (3.4.3) who provides one or more *cloud services* (3.2.2) for use by one or more other *cloud service providers* (3.4.3) as part of their *cloud services* (3.2.2)

3.4.10**functional component**

functional building block needed to engage in an *activity* (3.4.8), backed by an implementation

3.4.11**role**

set of *activities* (3.4.8) that serves a common purpose

3.4.12**sub-role**

subset of the *activities* (3.4.8) of a given *role* (3.4.11)

3.4.13**device platform cloud service**

cloud service (3.2.2) offered by the *device platform provider* (3.14.13) to support the *device platform* (3.14.5)

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Note 1 to entry: An *application marketplace* (3.14.6) can be an example of *device platform* (3.14.5) *cloud service* (3.2.2).

3.4.14**cloud service developer**

cloud service partner (3.4.5) with the responsibility for designing, developing, testing and maintaining the implementation of a *cloud service* (3.2.2)

3.5 Terms related to key cloud computing characteristics**3.5.1****measured service**

metered delivery of *cloud services* (3.2.2) such that usage can be monitored, controlled, reported and billed

3.5.2**tenant**

one or more *cloud service users* (3.4.4) sharing access to a set of physical and virtual resources

3.5.3**multi-tenancy**

allocation of physical or virtual resources such that multiple *tenants* (3.5.2) and their computations and data are isolated from and inaccessible to one another

3.5.4**on-demand self-service**

feature where a *cloud service customer* (3.4.2) can provision computing capabilities, as needed, automatically or with minimal interaction with the *cloud service provider* (3.4.3)

3.5.5

resource pooling

aggregation of a *cloud service provider's* (3.4.3) physical or virtual resources to serve one or more *cloud service customers* (3.4.2)

3.6 Terms related to cloud capabilities types and cloud service categories

3.6.1

cloud capabilities type

classification of the functionality provided by a *cloud service* (3.2.2) to the *cloud service customer* (3.4.2), based on resources used

Note 1 to entry: The *cloud capabilities types* are *application capabilities type* (3.6.2), *infrastructure capabilities type* (3.6.3) and *platform capabilities type* (3.6.4).

3.6.2

application capabilities type

cloud capabilities type (3.6.1) in which the *cloud service customer* (3.4.2) can use the *cloud service provider's* (3.4.3) applications

3.6.3

infrastructure capabilities type

cloud capabilities type (3.6.1) in which the *cloud service customer* (3.4.2) can provision and use processing, storage or networking resources

3.6.4

platform capabilities type

cloud capabilities type (3.6.1) in which the *cloud service customer* (3.4.2) can deploy, manage and run customer-created or customer-acquired applications using one or more programming languages and one or more execution environments supported by the *cloud service provider* (3.4.3)

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3.6.5

cloud service category

group of *cloud services* (3.2.2) that possess some common set of qualities

Note 1 to entry: A *cloud service category* can include capabilities from one or more *cloud capabilities types* (3.6.1).

3.6.6

communications as a service

CaaS

cloud service category (3.6.5) in which the capability provided to the *cloud service customer* (3.4.2) is real time interaction and collaboration

Note 1 to entry: *CaaS* can provide both *application capabilities type* (3.6.2) and *platform capabilities type* (3.6.4).

3.6.7

compute as a service

CompaaS

cloud service category (3.6.5) in which the capabilities provided to the *cloud service customer* (3.4.2) are the provision and use of processing resources needed to deploy and run software

Note 1 to entry: To run some software, capabilities other than processing resources may be needed.

3.6.8

data storage as a service

DSaaS

cloud service category (3.6.5) in which the capability provided to the *cloud service customer* (3.4.2) is the provision and use of data storage and related capabilities

Note 1 to entry: *DSaaS* can provide any of the three *cloud capabilities types* (3.6.1).

3.6.9 infrastructure as a service IaaS

cloud service category (3.6.5) in which the *cloud capabilities type* (3.6.1) provided to the *cloud service customer* (3.4.2) is an *infrastructure capabilities type* (3.6.3)

Note 1 to entry: The *cloud service customer* (3.4.2) does not manage or control the underlying physical and virtual resources, but does have control over operating systems, storage, and deployed applications that use the physical and virtual resources. The *cloud service customer* (3.4.2) may also have limited ability to control certain networking components (e.g., host firewalls).

3.6.10 network as a service NaaS

cloud service category (3.6.5) in which the capability provided to the *cloud service customer* (3.4.2) is transport connectivity and related network capabilities

Note 1 to entry: NaaS can provide any of the three *cloud capabilities types* (3.6.1).

3.6.11 platform as a service PaaS

cloud service category (3.6.5) in which the *cloud capabilities type* (3.6.1) provided to the *cloud service customer* (3.4.2) is a *platform capabilities type* (3.6.4)

3.6.12 software as a service SaaS

cloud service category (3.6.5) in which the *cloud capabilities type* (3.6.1) provided to the *cloud service customer* (3.4.2) is an *application capabilities type* (3.6.2)

3.7 Terms related to interoperability

3.7.1 interoperability

ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged

3.7.2 cloud interoperability

ability of a CSC's (3.4.2) system to interact with a *cloud service* (3.2.2), or the ability for one *cloud service* (3.2.2) to interact with other *cloud services* (3.2.2), by exchanging information according to a prescribed method to obtain predictable results

Note 1 to entry: *cloud service* (3.2.2) to *cloud service* (3.2.2) interactions occur through a *CSP* (3.4.3): inter-cloud provider relationship

3.7.3 transport interoperability

interoperability (3.7.1) where information exchange uses an established communication infrastructure between the participating systems

3.7.4 syntactic interoperability

interoperability (3.7.1) such that the formats of the exchanged information can be understood by the participating systems

3.7.5 semantic data interoperability

interoperability (3.7.1) so that the meaning of the data model within the context of a subject area is understood by the participating systems