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Information technology — Cloud computing —

Part 1:
Vocabulary

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Partie 1: Vocabulaire

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Foreword

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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*.

The main changes are as follows:

— the definition for hybrid cloud was changed;

— definitions for CSC role, CSP role, and CSN role were added;

— the definitions for CSC, CSP, and CSN were revised to leverage CSC role, CSP role, and CSN role, respectively;

— the ISO/IEC 27000 definitions for confidentiality, integrity, and information security were removed;

— the definition of inter-cloud computing was changed;

— terms relating to multi-cloud were added;

— peer cloud service and peer cloud service provider were replaced with secondary cloud service and secondary cloud service provider, respectively; and

— terms relating to multiplicity and organization of cloud services were added into a new subclause.

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

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 and www.iec.ch/national-committees.

Information technology — Cloud computing —

Part 1:
Vocabulary

1 Scope

This document defines terms used in the field of cloud computing.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Terms related to cloud computing foundation

3.1.1
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.

Note 2 to entry: Self-service provisioning refers to the provisioning of resources provided to *cloud services* (3.1.2) performed by *cloud service customers* (3.3.2) through automated means.

3.1.2
cloud service
one or more capabilities offered via *cloud computing* (3.1.1) invoked using a defined interface

3.1.3
cloud solution
cloud services (3.1.2) combined and controlled to meet *cloud service customer* (3.3.2) requirements

Note 1 to entry: A *cloud solution* can use any combination of *cloud deployment models* (3.2.1).

3.2   Terms related to cloud deployment models

3.2.1
cloud deployment model
way in which *cloud computing* (3.1.1) can be organized based on the control and sharing of physical or virtual resources

Note 1 to entry: Examples of *cloud deployment models* include *community cloud* (3.2.1), *hybrid cloud* (3.2.3), *private cloud* (3.2.4) and *public cloud* (3.2.5).

3.2.2
community cloud
cloud deployment model (3.2.1) where *cloud services* (3.1.2) exclusively support and are shared by a specific collection of *cloud service customers* (3.3.2) who have shared requirements and a relationship with one another, and where resources are controlled by at least one member of this collection

3.2.3
hybrid cloud
cloud deployment model (3.2.1) that uses a *private cloud* (3.2.4) and a *public cloud* (3.2.5)

3.2.4
private cloud
cloud deployment model (3.2.1) where *cloud services* (3.1.2) are used exclusively by a single *cloud service customer* (3.3.2) and resources are controlled by that *cloud service customer* (3.3.2)

3.2.5
public cloud
cloud deployment model (3.2.1) where *cloud services* (3.1.2) are potentially available to any *cloud service customer* (3.3.2) and resources are controlled by the *cloud service provider* (3.3.3)

3.2.6
multi-cloud
multicloud
cloud deployment model (3.2.1) in which a *cloud service customer* (3.3.2) uses public *cloud services* (3.1.2) provided by two or more *cloud service providers* (3.3.3)

Note 1 to entry: The *cloud service customer* (3.3.2) is responsible for integration and management of these *cloud services* (3.1.2) to form a *cloud solution* (3.1.3).

3.2.7
cloud service federation
two or more *cloud service providers* (3.3.3) bound together by an agreed set of policies, processes and trust in order to provide *cloud services* (3.1.2)

3.2.8
federated cloud
cloud deployment model (3.2.1) in which the *cloud services* (3.1.2) are provided by members of a *cloud service federation* (3.2.7)

3.2.9
hybrid multi-cloud
cloud deployment model (3.2.1) in which a *cloud service customer* (3.3.2) uses *cloud services* (3.1.2) from a *hybrid cloud* (3.2.3) and a *multi-cloud* (3.2.6)

3.2.10
inter-cloud
intercloud
cloud deployment model (3.2.1) in which a *cloud service provider* (3.3.3) offers a *cloud service* (3.1.2) by using one or more *cloud services* (3.1.2) provide by other *cloud service providers* (3.3.3)

3.3 Terms related to cloud computing roles and activities

3.3.1
party
natural person, legal person or a group of either, whether or not incorporated, that can assume one or more *roles* ([3.3.10](#))

3.3.2
cloud service customer
CSC
party ([3.3.1](#)) that is acting in a *cloud service customer role* ([3.3.14](#))

3.3.3
cloud service provider
CSP
party ([3.3.1](#)) that is acting in a *cloud service provider role* ([3.3.15](#))

3.3.4
cloud service user
CSU
natural person, or entity acting on their behalf, associated with a *cloud service customer* ([3.3.2](#)) that uses *cloud services* ([3.1.2](#))

Note 1 to entry: Examples of such entities include *devices* ([3.13.4](#)) and applications.

3.3.5
cloud service partner
CSN
party ([3.3.1](#)) that is acting in a *cloud service partner role* ([3.3.16](#))

3.3.6
cloud auditor
cloud service partner ([3.3.5](#)) with the responsibility to conduct an *audit* ([3.13.10](#)) of the provision and use of *cloud services* ([3.1.2](#))

3.3.7
cloud service broker
cloud service partner ([3.3.5](#)) that negotiates relationships between *cloud service customers* ([3.3.2](#)) and *cloud service providers* ([3.3.3](#))

3.3.8
activity
specified pursuit or set of tasks

3.3.9
functional component
functional building block needed to engage in an *activity* ([3.3.8](#)), backed by an implementation

3.3.10
role
set of *activities* ([3.3.8](#)) that serves a common purpose

3.3.11
sub-role
subset of the *activities* ([3.3.8](#)) of a given *role* ([3.3.10](#))

3.3.12
device platform cloud service
cloud service (3.1.2) offered by the *device platform provider* (3.13.13) to support the *device platform* (3.13.5)

Note 1 to entry: An *application marketplace* (3.13.6) can be an example of *device platform* (3.13.5) *cloud service* (3.1.2).

3.3.13
cloud service developer
cloud service partner (3.3.5) with the responsibility for designing, developing, testing and maintaining the implementation of a *cloud service* (3.1.2)

3.3.14
cloud service customer role
CSC role
set of *activities* (3.3.8) for the purpose of using *cloud services* (3.1.2)

3.3.15
cloud service provider role
CSP role
set of *activities* (3.3.8) that make *cloud services* (3.1.2) available

3.3.16
cloud service partner role
CSN role
set of *activities* (3.3.8) that support, or are auxiliary to, either the *cloud service provider role* (3.3.15) or the *cloud service customer role* (3.3.14), or both

3.4 Terms related to key cloud computing characteristics

3.4.1
measured service
metered delivery of *cloud services* (3.1.2) such that usage can be monitored, controlled, reported and billed

3.4.2
tenant
one or more *cloud service users* (3.3.4) sharing access to a set of physical and virtual resources

3.4.3
multi-tenancy
allocation of physical or virtual resources such that multiple *tenants* (3.4.2) and their computations and data are isolated from and inaccessible to one another

3.4.4
on-demand self-service
feature where a *cloud service customer* (3.3.2) can provision computing capabilities, as needed, automatically or with minimal interaction with the *cloud service provider* (3.3.3)

3.4.5
resource pooling
aggregation of a *cloud service provider's* (3.3.3) physical or virtual resources to serve one or more *cloud service customers* (3.3.2)

3.5 Terms related to cloud capabilities types and cloud service categories

3.5.1
cloud capabilities type
classification of the functionality provided by a *cloud service* (3.1.2) to the *cloud service customer* (3.3.2), based on resources used

Note 1 to entry: The *cloud capabilities types* are *application capabilities type* (3.5.2), *infrastructure capabilities type* (3.5.3) and *platform capabilities type* (3.5.4).

3.5.2
application capabilities type
cloud capabilities type (3.5.1) in which the *cloud service customer* (3.3.2) can use the *cloud service provider's* (3.3.3) applications

3.5.3
infrastructure capabilities type
cloud capabilities type (3.5.1) in which the *cloud service customer* (3.3.2) can provision and use processing, storage or networking resources

3.5.4
platform capabilities type
cloud capabilities type (3.5.1) in which the *cloud service customer* (3.3.2) 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* (3.3.3)

3.5.5
cloud service category
group of *cloud services* (3.1.2) 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* (3.5.1).

3.5.6
communications as a service
CaaS
cloud service category (3.5.5) in which the capability provided to the *cloud service customer* (3.3.2) is real time interaction and collaboration

Note 1 to entry: *CaaS* can provide both *application capabilities type* (3.5.2) and *platform capabilities type* (3.5.4).

3.5.7
compute as a service
CompaaS
cloud service category (3.5.5) in which the capabilities provided to the *cloud service customer* (3.3.2) 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 are potentially needed.

3.5.8
data storage as a service
DSaaS
cloud service category (3.5.5) in which the capability provided to the *cloud service customer* (3.3.2) 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* (3.5.1).

3.5.9
infrastructure as a service
IaaS
cloud service category (3.5.5) in which the *cloud capabilities type* (3.5.1) provided to the *cloud service customer* (3.3.2) is an *infrastructure capabilities type* (3.5.3)

Note 1 to entry: The *cloud service customer* (3.3.2) 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* (3.3.2) can also have limited ability to control certain networking components (e.g., host firewalls).

3.5.10
network as a service
NaaS
cloud service category (3.5.5) in which the capability provided to the *cloud service customer* (3.3.2) is transport connectivity and related network capabilities

Note 1 to entry: *Network as a service* can provide any of the three *cloud capabilities types* (3.5.1).

3.5.11
platform as a service
PaaS
cloud service category (3.5.5) in which the *cloud capabilities type* (3.5.1) provided to the *cloud service customer* (3.3.2) is a *platform capabilities type* (3.5.4)

3.5.12
software as a service
SaaS
cloud service category (3.5.5) in which the *cloud capabilities type* (3.5.1) provided to the *cloud service customer* (3.3.2) is an *application capabilities type* (3.5.2)

3.6   Terms related to interoperability

3.6.1
interoperability
ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged

3.6.2
cloud interoperability
ability of a *cloud service customer's* (3.3.2) system to interact with a *cloud service* (3.1.2), or the ability for one *cloud service* (3.1.2) to interact with other *cloud services* (3.1.2), by exchanging information according to a prescribed method to obtain predictable results

3.6.3
transport interoperability
interoperability (3.6.1) where information exchange uses an established communication infrastructure between the participating systems

3.6.4
syntactic interoperability
interoperability (3.6.1) such that the formats of the exchanged information can be understood by the participating systems

3.6.5
semantic data interoperability
interoperability (3.6.1) so that the meaning of the data model within the context of a subject area is understood by the participating systems

3.6.6
behavioural interoperability
interoperability ([3.6.1](#)) so that the actual result of the exchange achieves the expected outcome

3.6.7
policy interoperability
interoperability ([3.6.1](#)) while complying with the legal, organizational, and policy frameworks applicable to the participating systems

3.7 Terms related to cloud service agreements

3.7.1
service level agreement
SLA
documented agreement between the service provider and customer that identifies services and service targets

Note 1 to entry: A *service level agreement* can also be established between the service provider and a supplier, an internal group or a customer acting as a supplier.

Note 2 to entry: A *service level agreement* can be included in a contract or another type of documented agreement.

3.7.2
cloud service product
cloud service ([3.1.2](#)), allied to the set of business terms under which the *cloud service* ([3.1.2](#)) is offered

Note 1 to entry: Business terms can include pricing, rating, and service levels.

3.7.3
product catalogue
listing of all the *cloud service products* ([3.7.2](#)) which *cloud service providers* ([3.3.3](#)) make available to *cloud service customers* ([3.3.2](#))

3.7.4
service catalogue
listing of all the *cloud services* ([3.1.2](#)) of a particular *cloud service provider* ([3.3.3](#))

3.7.5
cloud service qualitative objective
cloud SQO
commitment a *cloud service provider* ([3.3.3](#)) makes for a specific, qualitative characteristic of a *cloud service* ([3.1.2](#)), where the value follows the nominal scale or ordinal scale

Note 1 to entry: A *cloud service qualitative objective* can be expressed as an enumerated list.

Note 2 to entry: Qualitative characteristics typically require human interpretation.

Note 3 to entry: The ordinal scale allows for existence/nonexistence.

3.7.6
cloud service level agreement
cloud SLA
part of the *cloud service agreement* ([3.7.8](#)) that includes *cloud service level objectives* ([3.7.7](#)) and *cloud service qualitative objectives* ([3.7.5](#)) for the covered *cloud service(s)* ([3.1.2](#))

Note 1 to entry: A *cloud service level agreement* is a *service level agreement* ([3.7.1](#)) used in the context of *cloud computing* ([3.1.1](#)).