
**Information technology — Cloud
computing —**

**Part 1:
Vocabulary**

Technologies de l'information — Informatique en nuage —

Partie 1: Vocabulaire

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 22123-1:2023

<https://standards.iteh.ai/catalog/standards/sist/83fb23a3-9c08-4835-999e-40d2338c60b5/iso-iec-22123-1-2023>



Reference number
ISO/IEC 22123-1:2023(E)

© ISO/IEC 2023

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/IEC 22123-1:2023
<https://standards.iteh.ai/catalog/standards/sist/83fb23a3-9c08-4835-999e-40d2338c60b5/iso-iec-22123-1-2023>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Terms related to cloud computing foundation.....	1
3.2 Terms related to cloud deployment models.....	2
3.3 Terms related to cloud computing roles and activities.....	3
3.4 Terms related to key cloud computing characteristics.....	4
3.5 Terms related to cloud capabilities types and cloud service categories.....	5
3.6 Terms related to interoperability.....	6
3.7 Terms related to cloud service agreements.....	7
3.8 Terms related to cloud portability.....	8
3.9 Terms related to cloud data.....	9
3.10 Terms related to security and privacy.....	12
3.11 Terms related to inter-cloud.....	12
3.12 Terms related to virtualization.....	12
3.13 Miscellaneous terms.....	13
3.14 Terms relating to multiplicity and organization of cloud services.....	15
Bibliography	16
Index	17

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 22123-1:2023

<https://standards.iteh.ai/catalog/standards/sist/83fb23a3-9c08-4835-999e-40d2338c60b5/iso-iec-22123-1-2023>

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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 or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 38, *Cloud Computing and Distributed Platforms*.

This second edition of ISO/IEC 22123-1 cancels and replaces ISO/IEC 17788:2014 and ISO/IEC 22123-1:2021, which have been technically revised.

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) provided by other *cloud service providers* (3.3.3)

Note 1 to entry: The *primary cloud service provider* (3.11.2) provides the cloud service typically via intermediation, aggregation, or arbitrage of the cloud services provided by *secondary cloud service providers* (3.11.4).

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).