

<b>STN</b>	<b>Informačné technológie Cloud computing Časť 2: Koncepty</b>	<b>STN ISO/IEC 22123-2 97 4176</b>
------------	--	--

Information technology  
Cloud computing  
Part 2: Concepts

Technologies de l'information  
Informatique en nuage  
Partie 2: Concepts

Informationstechnik  
Cloud Computing  
Teil 2: Konzepte

Táto slovenská technická norma obsahuje anglickú verziu medzinárodnej normy ISO/IEC 22123-2: 2023 a má postavenie oficiálnej verzie.

This Slovak standard includes the English version of the International standard ISO/IEC 22123-2: 2023 and has the status of the official version.

### **Nahradenie predchádzajúcich dokumentov**

Táto slovenská technická norma spolu s STN ISO/IEC 22123-1 z apríla 2024 nahrádza STN ISO/IEC 17788 z júla 2019 v celom rozsahu.

**138356**

---

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

## Anotácia

Tento dokument špecifikuje pojmy používané v oblasti cloud computingu. Tieto koncepty rozširujú slovník cloud computingu definovaný v ISO/IEC 22123-1 a poskytujú základ pre ďalšie dokumenty, ktoré súvisia s cloud computingom.

Tento dokument tiež poskytuje podrobné popisy aplikácie týchto konceptov v cloud computingu.

Toto prvé vydanie ISO/IEC 22123-2 spolu s ISO/IEC 22123-1 ruší a nahrádza ISO/IEC 17788: 2014, ktorá bola technicky revidovaná.

Hlavné zmeny sú nasledovné:

- terminológia cloud computingu bola presunutá do ISO/IEC 22123-1;
- boli rozšírené opisy kľúčových charakteristík;
- počet a popisy kategórií cloudových služieb sa rozšírili;
- popisy modelov nasadenia cloudu boli rozšírené a opravené;
- pridané rozlíšenie medzi stranami a úlohami cloud computingu;
- boli rozšírené opisy prierezových aspektov;
- bola pridaná nová kapitola 8, ktorá rieši koncepcie údajov a cloudových služieb;
- bola pridaná nová kapitola 9 na riešenie konceptov virtualizácie;
- bola pridaná nová kapitola 10 na riešenie úvah pri používaní viacerých poskytovateľov cloudu;
- bola pridaná nová kapitola 11 na riešenie logickej a fyzickej organizácie cloud computingu;
- Príloha A bola rozšírená s cieľom identifikovať ďalšie kategórie cloudových služieb, ktoré nie sú opísané v tomto dokumente.

## Národný predhovor

Obrázky v tejto norme sú prevzaté z elektronických podkladov dodaných z ISO, © 2023 ISO, ref. č. ISO/IEC 22123-2: 2023 E.

## Normatívne referenčné dokumenty

Na nasledujúce dokumenty sa odkazuje v texte takým spôsobom, že časť ich obsahu alebo celý obsah predstavuje požiadavky tohto dokumentu. Pri datovaných odkazoch sa používa len citované vydanie. Pri nedatovaných odkazoch sa používa najnovšie vydanie citovaného dokumentu (vrátane akýchkoľvek zmien).

POZNÁMKA 1. – Ak bola medzinárodná publikácia zmenená spoločnými modifikáciami, čo je indikované označením (mod), použije sa príslušná EN/HD.

POZNÁMKA 2. – Aktuálne informácie o platných a zrušených STN možno získať na webovej stránke [www.unms.sk](http://www.unms.sk).

ISO/IEC 22123-1 prijatá ako STN ISO/IEC 22123-1 Informačné technológie. Cloud computing. Časť 1: Slovník (97 4176)

## Vypracovanie slovenskej technickej normy

**Spracovateľ:** Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, Bratislava

**Technická komisia:** TK 37 Informačné technológie

# Contents

Page

<b>Foreword</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Symbols and abbreviated terms</b> .....	<b>2</b>
<b>5 Cloud computing foundational concepts</b> .....	<b>3</b>
5.1 General.....	3
5.2 Key characteristics of cloud computing.....	3
5.2.1 General.....	3
5.2.2 Broad network access.....	3
5.2.3 Measured service.....	4
5.2.4 Multi-tenancy.....	4
5.2.5 On-demand self-service.....	4
5.2.6 Rapid elasticity and scalability.....	4
5.2.7 Resource pooling.....	5
5.3 Cloud capabilities types.....	5
5.4 Cloud service categories.....	6
5.4.1 General.....	6
5.4.2 Software as a service (SaaS).....	6
5.4.3 Platform as a service (PaaS).....	6
5.4.4 Infrastructure as a service (IaaS).....	7
5.4.5 Network as a service (Naas).....	7
5.4.6 Communications as a service (CaaS).....	8
5.4.7 Compute as a service (CompaaS).....	9
5.4.8 Data storage as a service (DSaaS).....	9
5.5 Cloud deployment models.....	9
5.5.1 General.....	9
5.5.2 Private cloud deployment model.....	10
5.5.3 Public cloud deployment model.....	11
5.5.4 Community cloud deployment model.....	12
5.5.5 Hybrid cloud deployment model.....	14
<b>6 Cloud computing parties and roles</b> .....	<b>15</b>
6.1 Cloud computing parties.....	15
6.2 Cloud computing roles.....	15
6.2.1 General.....	15
6.2.2 Cloud service customer role.....	16
6.2.3 Cloud service provider role.....	16
6.2.4 Cloud service partner role.....	16
<b>7 Cloud computing cross-cutting aspects</b> .....	<b>16</b>
7.1 General.....	16
7.2 Auditability.....	17
7.3 Availability.....	17
7.4 Governance.....	17
7.5 Interoperability.....	18
7.6 Maintenance and versioning.....	18
7.7 Performance.....	19
7.8 Portability.....	19
7.9 Protection of PII.....	19
7.10 Regulatory.....	20
7.11 Resiliency.....	21
7.12 Reversibility.....	21
7.13 Security.....	22

7.14	Service levels and service level agreement.....	22
<b>8</b>	<b>Data and cloud services.....</b>	<b>22</b>
8.1	General.....	22
8.2	Data processing within cloud services.....	23
8.3	Data flow.....	23
8.4	Processing of data from multiple sources.....	23
8.5	Data sharing.....	24
<b>9</b>	<b>Virtualization concepts.....</b>	<b>24</b>
9.1	General.....	24
9.2	System hardware virtualization.....	24
9.2.1	General.....	24
9.2.2	Virtual machines.....	24
9.2.3	Hypervisors.....	25
9.3	Containers.....	25
9.4	Serverless computing.....	25
9.5	Virtualized networking.....	25
9.6	Virtualized DSaaS.....	25
<b>10</b>	<b>Concepts of cloud computing involving multiple CSPs.....</b>	<b>26</b>
10.1	General.....	26
10.2	Types of cloud computing involving multiple CSPs.....	26
10.2.1	General.....	26
10.2.2	Multi-cloud computing.....	26
10.2.3	Inter-cloud computing.....	26
10.2.4	Other types of cloud computing involving multiple CSPs.....	26
10.3	Considerations when using multiple CSPs.....	27
10.3.1	Identity and access management.....	27
10.3.2	Policy considerations.....	27
10.3.3	Management.....	27
10.3.4	Operations.....	27
<b>11</b>	<b>Organization of cloud computing.....</b>	<b>27</b>
11.1	Logical organization of cloud computing.....	27
11.1.1	Cloud service instance.....	27
11.1.2	Multiple cloud services.....	28
11.2	Physical organization of cloud computing.....	29
11.2.1	General.....	29
11.2.2	Cloud service provider.....	30
11.2.3	Cloud service resources.....	30
11.2.4	Cloud region.....	30
11.2.5	Availability domain or zone.....	30
11.2.6	Edge computing.....	31
11.2.7	Affinity.....	31
11.2.8	Geo-dispersion of cloud service instances.....	31
<b>Annex A (informative) Cloud service categories.....</b>		<b>32</b>
<b>Bibliography.....</b>		<b>34</b>

## 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](http://www.iso.org/directives) or [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs)).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents) and <https://patents.iec.ch>. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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](http://www.iso.org/iso/foreword.html). In the IEC, see [www.iec.ch/understanding-standards](http://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 first edition of ISO/IEC 22123-2, together with ISO/IEC 22123-1 cancels and replaces ISO/IEC 17788:2014, which has been technically revised.

The main changes are as follows:

- cloud computing terminology has been moved to ISO/IEC 22123-1;
- the descriptions of the key characteristics have been expanded;
- the number and descriptions of the cloud service categories have been expanded;
- the cloud deployment model descriptions have been expanded and corrected;
- added differentiation between cloud computing parties and role;
- the descriptions of the cross-cutting aspects have been expanded;
- a new [Clause 8](#) was added to address data and cloud services concepts;
- a new [Clause 9](#) was added to address virtualization concepts;
- a new [Clause 10](#) was added to address considerations when using multiple CSPs;
- a new [Clause 11](#) was added to address logical and physical organization of cloud computing;
- [Annex A](#) was expanded to identify additional cloud service categories, not described in this document.

**ISO/IEC 22123-2:2023(E)**

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](http://www.iso.org/members.html) and [www.iec.ch/national-committees](http://www.iec.ch/national-committees).

# Information technology — Cloud computing —

## Part 2: Concepts

### 1 Scope

This document specifies concepts used in the field of cloud computing. These concepts expand upon the cloud computing vocabulary defined in ISO/IEC 22123-1 and provide a foundation for other documents that are associated with cloud computing.

This document also provides detailed descriptions on the application of these concepts in cloud computing.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 22123-1, *Information technology — Cloud computing — Part 1: Vocabulary*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**