
Cloud computing and distributed platforms — Data flow, data categories and data use —

Part 1: Fundamentals

*Informatique en nuage et plates-formes distribuées — Flux de
données, catégories de données et utilisation des données —*

Partie 1: Principes de base





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Contents

	Page
Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Terms related to data categories	2
3.2 Terms related to cloud services and devices ecosystem	2
3.3 Terms related to privacy	3
3.4 Terms related to organizational data	3
3.5 Terms related to artificial intelligence	4
3.6 General terms	6
4 Abbreviated terms	6
5 Structure of this document	7
5.1 Document organization	7
5.2 Overview and reference architecture	7
5.3 Data taxonomies, data categories and data use statement structure	7
6 Overview of devices and cloud services ecosystems	7
6.1 Background and context — Impact of devices and personalized cloud services	7
6.2 Ecosystem of devices and cloud services	8
6.3 Devices and multiple user sub-roles	9
6.3.1 General	9
6.3.2 Bring your own device	10
7 Extending the CCRA to the devices and cloud services ecosystem	12
7.1 Overview	12
7.2 Personal and organizational environments	12
7.3 Device impact on the CCRA: User view	12
7.3.1 Cloud service provider	12
7.3.2 Cloud service customer	13
7.4 Device impact on the CCRA: functional view	14
7.4.1 General	14
7.4.2 Functional components in the functional view	15
7.4.3 Functional view: data flows	16
8 Data taxonomy	18
8.1 Overview	18
8.2 Data categories	19
8.2.1 General	19
8.2.2 Customer content data	20
8.2.3 Derived data	21
8.2.4 Cloud service provider data	23
8.2.5 Account data	24
8.3 Data identification qualifiers	24
8.3.1 General	24
8.3.2 Identified data	25
8.3.3 Pseudonymized data	25
8.3.4 Unlinked pseudonymized data	25
8.3.5 Anonymized data	25
8.3.6 Aggregated data	25
8.4 Orthogonal facets of data	26
8.4.1 General	26
8.4.2 Perspective used in the definition of data facets	28
8.4.3 Common orthogonal data facets	28

	8.4.4	Use of data facets to describe data taxonomy	34
9		Data processing and use categories	34
	9.1	Overview	34
	9.2	Data processing categories	34
	9.2.1	General	34
	9.2.2	Data partitioning	35
	9.2.3	Data integration	35
	9.2.4	Data fusion	36
	9.2.5	Data improvement	36
	9.2.6	Encryption	36
	9.2.7	Replication	36
	9.2.8	Data Deletion	36
	9.2.9	Re-identification	37
	9.3	Data use categories	37
	9.3.1	General	37
	9.3.2	Provide	38
	9.3.3	Improve	38
	9.3.4	Personalize	39
	9.3.5	Offer upgrades or upsell	39
	9.3.6	Market/advertize/promote	39
	9.3.7	Share	40
	9.3.8	Collect	41
	9.3.9	Train (AI system)	41
	9.4	Scopes: Boundaries of collection and use of data	41
	9.4.1	Scope concepts	41
	9.4.2	Scope types	41
	9.4.3	Scope characteristics	43
	9.4.4	Network connection between scopes	43
	9.4.5	Control of source scope over result scope	44
10		Data use statements	44
	10.1	Overview	44
	10.2	Data use statement structure	45
	10.2.1	Structure definition	45
	10.2.2	Describing the scope of applications and cloud services that apply to use statements	47
	10.2.3	Assumptions about when data are collected and used	47
	10.2.4	Defining promotion targets	48
	10.2.5	Data types	48
	10.2.6	Data qualifiers for data types	49
	10.2.7	Examples of statements about data flow in the devices and cloud services ecosystem	49
	10.2.8	Exceptional use statements	50
	10.2.9	Data sharing	53
	10.3	Use of orthogonal data facets in data use statement	54
	10.3.1	General	54
	10.3.2	Use of elements in the data facets as attributes	54
	10.3.3	Hierarchy of elements/attributes of data based on facets	55
	10.3.4	Use of attributes to describe PII	55
	10.3.5	Use of attributes to tag IP data	56
	10.3.6	Use of attributes to tag IP data from shared pools, while respecting partner IP ..	57
11		Data lineage and data provenance	59
	11.1	General	59
	11.2	Tracing data lineage	59
12		Use of taxonomy and data use statement in other computing environments	60
13		Use of data taxonomy and use statements in Artificial Intelligence scenarios	60

Annex A (informative) Diagrams of data categories and data identification qualifiers	63
Bibliography	64

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).

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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.

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 19944-1, along with ISO/IEC 19944-2¹⁾ cancels and replaces ISO/IEC 19944:2017, which has been technically revised.

The main changes compared to the previous edition are as follows:

- provides additional material which principally deals with organizational data and the need to treat some organizational data in particular ways in order to ensure confidentiality, integrity and so on,
- the new concept of data facets is introduced and data facets are used to extend the expressiveness of data use statements, including adding the concept of which individuals or organizations have control over data,
- the new data use categories are introduced, including some that address the newer uses of data associated with artificial intelligence systems.

A list of all parts in the ISO/IEC 19944 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.

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Introduction

This document provides a description of the ecosystem of devices and cloud services and the related flows of data between cloud services, cloud service customers, cloud service users and their devices. These are necessary to provide guidance about how data are used on the devices in the context of the cloud computing ecosystem and the associated location and identity issues that emerge from such use.

This document proposes a scheme for the structure of data use statements that can be used by cloud service providers to help cloud service customers understand and protect the privacy and confidentiality of their data and their users' data through increased transparency of policies and practices.

This document may be used in several ways including, but not limited to:

- a) by cloud service providers and application developers to guide them in describing what they intend to do with data in their designs, so as to simplify privacy and data use reviews and to communicate this information to non-technical departments such as internal compliance, marketing and legal teams;
- b) by organisations drawing up data use statements as part of drafting cloud service agreements and application contracts, privacy statements, etc., which could apply to documents internal to an organisation, in addition to public or legal documents;
- c) by government regulators and agencies to advise on suitable ways of describing data flow and use;
- d) by those preparing information on data flow and data use for communication to the press and the public.

This document cannot be used for compliance directly. Instead, it provides a set of concepts and definitions, including a data taxonomy and data use statement structure, that can be used for transparency about how data are used in an ecosystem of devices and cloud services.

This document also aims to improve the understanding of the data flows that take place in an ecosystem consisting of devices accessing cloud services. It does this through an extended cloud computing reference architecture (CCRA) (based on the architecture described in ISO/IEC 17789) that describes the impact of devices on cloud service ecosystems and the impact of cloud services on devices. It also describes the data flows that take place within the extended reference architecture.

To maintain a relationship of trust between the stakeholders of the ecosystem of devices and cloud services and also to meet the demands of laws and regulations, it is necessary for the device platform providers and the cloud service providers to be transparent about how they make use of the various data types that flow within the ecosystem.

There is a particular need to provide simple and clear statements to end users about what is done with data that relates to them. The data may be personally identifiable information (PII) and may be sensitive, in other words, this can be a privacy issue. Cloud service customers are likely to be concerned about how their data are used, even when the customer is an organization rather than an individual. The cloud service customer may be a data controller, holding personal data about their employees or their customers; in such a role, the cloud service customer has obligations relating to the processing of that data.

To assist cloud service providers and device platform providers in being transparent about their use of data, this document defines a simple language for making statements about data use, which can be used to create clear notification to end users and other interested parties.

This version of ISO/IEC 19944 contains additional material which principally deals with organizational data and the need to treat some organizational data in particular ways in order to ensure confidentiality, integrity and so on.

To assist with this, the new concept of data facets is introduced and data facets are used to extend the expressiveness of data use statements, including adding the concept of which individuals or organizations have control over data.