

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Y.3513

(08/2014)

SERIES Y: GLOBAL INFORMATION
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS
AND NEXT-GENERATION NETWORKS

Cloud Computing

Cloud computing – Functional requirements of Infrastructure as a Service

Recommendation ITU-T Y.3513

ITU-T

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For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T Y.3513

Cloud computing – Functional requirements of Infrastructure as a Service

Summary

Recommendation ITU-T Y.3513 introduces the concept of Infrastructure as a Service (IaaS) and describes its functional requirements. As one of the cloud computing service categories, Infrastructure as a Service provides cloud service customers with computing, storage and network services by cloud service providers. To derive those requirements, relevant use cases are also presented.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T Y.3513	2014-08-29	13	11.1002/1000/12286

Keywords

Cloud computing, Infrastructure as a Service, IaaS, virtual machine.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

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Recommendation ITU-T Y.3513

Cloud computing – Functional requirements of Infrastructure as a Service

1 Scope

This Recommendation provides functional requirements and use cases of Infrastructure as a Service (IaaS), one of the representative cloud service categories. This Recommendation covers the following:

- General description of IaaS;
- Functional requirements of IaaS;
- Typical IaaS use cases.

NOTE – The general requirements of IaaS can be found in [ITU-T Y.3501].

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T X.1601] Recommendation ITU-T X.1601 (2014), *Security framework for cloud computing*.
- [ITU-T Y.3500] Recommendation ITU-T Y.3500 (2014), *Information technology – Cloud computing – Overview and vocabulary*.
- [ITU-T Y.3501] Recommendation ITU-T Y.3501 (2013), *Cloud computing framework and high-level requirements*.
- [ITU-T Y.3502] Recommendation ITU-T Y.3502 (2014), *Information technology – Cloud computing – Reference architecture*.
- [ITU-T Y.3510] Recommendation ITU-T Y.3510 (2013), *Cloud computing infrastructure requirements*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 cloud capabilities type [ITU-T Y.3500]: Classification of the functionality provided by a cloud service to the cloud service customer, based on resource used.

NOTE – The cloud capabilities types are application capabilities type, infrastructure capabilities type and platform capabilities type.

3.1.2 cloud computing [ITU-T Y.3500]: 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 – Examples of resources include servers, operating systems, networks, software, applications, and storage equipment.

3.1.3 cloud service [ITU-T Y.3500]: One or more capabilities offered via cloud computing invoked using a defined interface.

3.1.4 cloud service category [ITU-T Y.3500]: Group of cloud services that possess some common set of qualities.

NOTE – A cloud service category can include capabilities from one or more cloud capabilities types.

3.1.5 cloud service customer [ITU-T Y.3500]: Party which is in a business relationship for the purpose of using cloud services.

3.1.6 cloud service customer data [ITU-T Y.3500]: Class of data objects under the control, by legal or other reasons, of the cloud service customer that were input to the cloud service, or resulted from exercising the capabilities of the cloud service by or on behalf of the cloud service customer via the published interface of the cloud service.

NOTE 1 – An example of legal controls is copyright.

NOTE 2 – It may be that the cloud service contains or operates on data that is not cloud service customer data; this might be data made available by the cloud service providers, or obtained from another source, or it might be publicly available data. However, any output data produced by the actions of the cloud service customer using the capabilities of the cloud service on this data is likely to be cloud service customer data, following the general principles of copyright, unless there are specific provisions in the cloud service agreement to the contrary.

3.1.7 cloud service provider [ITU-T Y.3500]: Party which makes cloud services available.

3.1.8 cloud service provider data [ITU-T Y.3500]: Class of data objects, specific to the operation of the cloud service, under the control of the cloud service provider.

NOTE – Cloud service provider data includes but is not limited to resource configuration and utilization information, cloud service specific virtual machine, storage and network resource allocations, overall data centre configuration and utilization, physical and virtual resource failure rates, operational costs and so on.

3.1.9 Infrastructure as a Service [ITU-T Y.3500]: Cloud service category in which the cloud capabilities type provided to the cloud service customer is an infrastructure capabilities type.

NOTE – The cloud service customer 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 may also have limited ability to control certain networking components (e.g., host firewalls).

3.1.10 infrastructure capabilities type [ITU-T Y.3500]: Cloud capabilities type in which the cloud service customer can provision and use processing, storage or networking resources.

3.1.11 open virtualization format [b-ISO/IEC OVF]: An open, secure, portable, efficient and extensible format for the packaging and distribution of software to be run in virtual machines.

3.1.12 party [ITU-T Y.3500]: Natural person or legal person, whether or not incorporated, or a group of either.

3.1.13 tenant [ITU-T Y.3500]: Group of cloud service users sharing access to a set of physical and virtual resources.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

CPU	Central Processing Unit
CSC	Cloud Service Customer