

ITU-T

TELECOMMUNICATION
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SERIES F: NON-TELEPHONE TELECOMMUNICATION
SERVICES

Multimedia services

Functional requirements for virtual content delivery networks

Recommendation ITU-T F.743.4

ITU-T

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Recommendation ITU-T F.743.4

Functional requirements for virtual content delivery networks

Summary

Recommendation ITU-T F.743.4 gives an overview and the requirements for a virtual content delivery network (VCDN). Appendix I provides two use cases to show how to apply VCDN scenario.

Compared with the traditional content delivery network (CDN) service provisioning defined in Recommendations ITU-T Y.1901 and ITU-T Y.2019, VCDN is a new paradigm using cloud computing, network virtualization and software defined networking (SDN) technology for content delivery for various multimedia services, providing a CDN infrastructure according to vendors' needs. This Recommendation specifies the requirements for VCDN, including requirements on service provision, physical resource management, virtual resource management, VCDN logically isolated network partition (LINP) management, service management, backbone network and security consideration.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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Keywords

Cloud computing, content delivery network, SDN, streaming service, virtualisation.

* 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>.

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Recommendation ITU-T F.743.4

Functional requirements for virtual content delivery networks

1 Scope

This Recommendation describes the functional requirements for a virtual content delivery network (VCDN). The scope of this Recommendation covers:

- An overview of VCDN concept and the objectives of VCDN.
- The requirements for applying VCDN on service provision, all kinds of resources of VCDN, and security considerations.

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 Y.1901] Recommendation ITU-T Y.1901 (2009), *Requirements for the support of IPTV services*.
- [ITU-T Y.2019] Recommendation ITU-T Y.2019 (2010), *Content delivery functional architecture in NGN*.
- [ITU-T Y.3011] Recommendation ITU-T Y.3011 (2012), *Framework of network virtualization for future networks*.
- [ITU-T Y.3300] Recommendation ITU-T Y.3300 (2014), *Framework of software-defined networking*.
- [ITU-T Y.3500] Recommendation ITU-T Y.3500 (2014) *Information technology – Cloud computing – Overview and vocabulary*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 logically isolated network partition (LINP) [ITU-T Y.3011]: A network that is composed of multiple virtual resources which is isolated from other LINPs.

3.1.2 network virtualization [ITU-T Y.3011]: A technology that enables the creation of logically isolated network partitions over shared physical networks so that heterogeneous collection of multiple virtual networks can simultaneously coexist over the shared networks. This includes the aggregation of multiple resources in a provider and appearing as a single resource.

3.1.3 virtual resource [ITU-T Y.3011]: An abstraction of physical or logical resource, which may have different characteristics from the physical or logical resource and whose capability may be not bound to the capability of the physical or logical resource.