

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Series Y
Supplement 16
(02/2012)

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

**ITU-T Y.1900-series – Supplement on guidelines
on deployment of IP multicast for IPTV content
delivery**

ITU-T Y-series Recommendations – Supplement 16



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Supplement 16 to ITU-T Y-series Recommendations

ITU-T Y.1900-series – Supplement on guidelines on deployment of IP multicast for IPTV content delivery

Summary

Supplement 16 to ITU-T Y-series Recommendations describes the technical guidelines for the deployment of IP multicast technologies for IPTV content delivery. The deployment guidelines identify the technical issues and considerations regarding the capabilities of IP multicast from the perspective of supporting the IPTV services.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T Y Suppl. 16	2012-02-17	13

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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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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Supplement 16 to ITU-T Y-series Recommendations

ITU-T Y.1900-series – Supplement on guidelines on deployment of IP multicast for IPTV content delivery

1 Scope

This supplement describes the technical guidelines for the deployment of IP multicast technologies for IPTV content delivery. The deployment guidelines identify the technical issues and considerations regarding the capabilities of IP multicast from the perspective of supporting the IPTV services.

This supplement can be used for IPTV content delivery using the network multicast-based content delivery model defined in [ITU-T Y.2019] and [ITU-T Y.1902].

Note that this supplement mainly focuses on the IP version 4 multicast support.

2 References

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- [IETF RFC 4604] IETF RFC 4604 (2006), *Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source Specific Multicast*.
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3 Definitions

3.1 Terms defined elsewhere

This supplement uses the following terms defined elsewhere:

- 3.1.1 broadcast** [ITU-T M.60]: One-way transmission from one point to two or more other points.
- 3.1.2 content provider** [ITU-T Y.1910]: The entity that owns or is licensed to sell content or content assets.
- 3.1.3 delivery** [ITU-T Y.1910]: In context of IPTV architecture, "delivery" is defined as sending contents to an end-user.
- 3.1.4 distribution** [ITU-T Y.1910]: In context of IPTV architecture, "distribution" is defined as sending the content to appropriate intermediate locations to enable subsequent delivery.
- 3.1.5 electronic program guide (EPG)** [ITU-T Y.1901]: A structured set of data, intended to provide information on available content that may be accessed by end users.
- 3.1.6 end user** [ITU-T Y.1901]: The actual user of the products or services.
- 3.1.7 linear television (linear TV)** [ITU-T Y.1910]: A television service in which a continuous stream flows in real time from the service provider to the terminal device and where the user cannot control the temporal order in which contents are viewed.
- 3.1.8 service provider** [ITU-T M.1400]: A general reference to an operator that provides telecommunication services to customers and other users either on a tariff or contract basis. A service provider can optionally operate a network. A service provider can optionally be a customer of another service provider.

3.2 Term defined in this supplement

This supplement defines the following term:

- 3.2.1 IPTV multicast interoperability:** The capability to provide stable multicast-based delivery of IPTV content amongst different IPTV service providers.

4 Abbreviations and acronyms

This Supplement uses the following abbreviations and acronyms.

AS	Autonomous System
ASM	Any Source Multicast
BGP	Border Gateway Protocol
BSR	Bootstrap Router
CBT	Core Based Trees
CIDR	Classless Inter Domain Routing
CPE	Customer Premises Equipment
DNS	Domain Name Service
DoS	Denial of Service
DVMRP	Distance Vector Multicast Routing Protocol
ECMP	Equal Cost Multiple Path
EPG	Electronic Program Guide
ICMP	Internet Control Message Protocol
IGMP	Internet Group Management Protocol
IGP	Interior Gateway Protocol
ISP	Internet Service Provider
ISSU	In-Service Software Upgrade
MAC	Media Access Control
MBGP	Multicast Border Gateway Protocol
MD5	Message Digest 5
MLD	Multicast Listener Discovery
MOSPF	Multicast Open Shortest Path First
MSDP	Multicast Source Discovery Protocol
NP	Network Provider
OSPF	Open Shortest Path First
PIM	Protocol Independent Multicast
PIM-DM	Protocol Independent Multicast – Dense Mode
PIM-SM	Protocol Independent Multicast – Sparse Mode
PoP	Points of Presence
QoE	Quality of Experience
QoS	Quality of Service
RP	Rendezvous Point
RPF	Reverse Path Forwarding
SP	Service Provider
SSM	Source-Specific Multicast

