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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication
procedures

Gateway control protocol: Guidelines for packet-based streams

Recommendation ITU-T H.248.79

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Recommendation ITU-T H.248.79

Gateway control protocol: Guidelines for packet-based streams

Summary

Recommendation ITU-T H.248.79 defines guidelines for handling ITU-T H.248 Streams that use a packet-based network as their underlying bearer technology. It describes how incoming packets to the media gateway (MG) are assigned to a specific combination of Stream, Termination and Context. Furthermore, it describes the order of the different operations that are applied to incoming and outgoing packets.

This Recommendation does not define any new protocol syntax for ITU-T H.248.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T H.248.79	2012-02-13	16

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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.

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.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T H.248.79

Gateway control protocol: Guidelines for packet-based streams

1 Scope

This Recommendation defines guidelines for handling ITU-T H.248 Streams that use a packet-based network as their underlying bearer technology. Two significant points are covered by the guidelines:

- 1) How packets incoming into the MG are classified to a specific combination of Stream, Termination and Context.
- 2) In what order different operations (usually controlled by different packages) are applied to incoming and outgoing packets.

Furthermore, this Recommendation:

- 3) Provides qualitative statements concerning generic processing costs on packet handling.
- 4) Discusses in more detail the classification and filtering of Transmission Control Protocol (TCP)/Internet Protocol (IP) traffic.

ITU-T H.248.79 relates to other ITU-T H.248.x-series Recommendations on packet processing as follows. Packet classification rules (clause 6), packet filtering rules (e.g., clause 9 and [ITU-T H.248.43]), packet address adaptation rules [ITU-T H.248.37], packet marking rules [ITU-T H.248.52], packet/traffic policing rules ([ITU-T H.248.53], [ITU-T H.248.76]) and packet measurement rules (e.g., clause 8 and [ITU-T H.248.61]) are related to this Recommendation. Other packet processing rules may also be applicable.

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.

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|------------------|---|
| [ITU-T H.248.1] | Recommendation ITU-T H.248.1 (2005) <i>Gateway control protocol: Version 3</i> , and its amendments. |
| [ITU-T H.248.37] | Recommendation ITU-T H.248.37 (2008), <i>Gateway control protocol: IP NAPT traversal package</i> . |
| [ITU-T H.248.39] | Recommendation ITU-T H.248.39 (2006), <i>Gateway control protocol: H.248 SDP parameter identification and wildcarding</i> . |
| [ITU-T H.248.43] | Recommendation ITU-T H.248.43 (2008), <i>Gateway control protocol: Packages for gate management and gate control</i> . |
| [ITU-T H.248.52] | Recommendation ITU-T H.248.52 (2008), <i>Gateway control protocol: QoS support packages</i> . |
| [ITU-T H.248.53] | Recommendation ITU-T H.248.53 (2009), <i>Gateway control protocol: Traffic management packages</i> . |
| [ITU-T H.248.58] | Recommendation ITU-T H.248.58 (2008), <i>Gateway control protocol: Packages for application level H.248 statistics</i> . |



[ITU-T H.248.61]	Recommendation ITU-T H.248.61 (2009), <i>Gateway control protocol: Packages for network level H.248 statistics.</i>
[ITU-T H.248.64]	Recommendation ITU-T H.248.64 (2009), <i>Gateway control protocol: IP router packages.</i>
[ITU-T H.248.76]	Recommendation ITU-T H.248.76 (2010), <i>Gateway control protocol: Filter group package and guidelines.</i>
[ITU-T X.200]	Recommendation ITU-T X.200 (1994), <i>Information technology – Open Systems Interconnection – Basic Reference Model: The basic model.</i>
[ITU-T Y.2011]	Recommendation ITU-T Y.2011 (2004), <i>General principles and general reference model for Next Generation Networks.</i>
[IETF RFC 791]	IETF RFC 791 (1981), <i>Internet Protocol.</i>
[IETF RFC 792]	IETF RFC 792 (1981), <i>Internet Control Message Protocol.</i>
[IETF RFC 1122]	IETF RFC 1122 (1989), <i>Requirements for Internet Hosts – Communication Layers.</i>
[IETF RFC 1123]	IETF RFC 1123 (1989), <i>Requirements for Internet Hosts - Application and Support.</i>
[IETF RFC 1812]	IETF RFC 1812 (1995), <i>Requirements for IP Version 4 Routers.</i>
[IETF RFC 4443]	IETF RFC 4443 (2006), <i>Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification.</i>
[IETF RFC 4566]	IETF RFC 4566 (2006), <i>SDP: Session Description Protocol.</i>
[IETF RFC 4884]	IETF RFC 4884 (2007), <i>Extended ICMP to Support Multi-Part Messages.</i>

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 filter [ITU-T H.248.43]: A set of terms and/or criteria used for the purpose of separating or categorizing. This is accomplished via single- or multi-field matching of traffic header and/or payload data. "Filters" are often manipulated and used in network operation and policy. A filter rule is a specific policy rule.

In the ITU-T H.248 context, packet filters specify the criteria for matching a pattern to distinguish separable classes of traffic. Filters are only related to ephemeral terminations. Filter rules are defined on the basis of ITU-T H.248 properties.

NOTE 1 – This filter definition implies the concept of filter actions, besides filter conditions.

3.1.2 lookup key [ITU-T H.248.61]: Flow identifier elements that can be used for packet classification with regard to ITU-T H.248 Context delivery.

NOTE 2 – The embedded terms, flow identifier and flow are defined by clauses 3.1.2 and 3.1.1 in [ITU-T H.248.61].

3.2 Term defined in this Recommendation

This Recommendation defines the following term:

3.2.1 classification rule: The rule used to match packets with a specific Stream. The protocol elements used in rule conditions are called "lookup keys".