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

Internet protocol aspects – Quality of service and network
performance

Quality of service mapping and interconnection between Ethernet, Internet protocol and multiprotocol label switching networks

Recommendation ITU-T Y.1566

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Recommendation ITU-T Y.1566

Quality of service mapping and interconnection between Ethernet, Internet protocol and multiprotocol label switching networks

Summary

Existing quality of service (QoS) class standardization for packet-based layer 2 and layer 3 services is largely non binding or missing. Recommendation ITU-T Y.1566 intends to simplify technical Ethernet, multiprotocol label switching (MPLS) and internet protocol (IP) QoS interconnection negotiations. Four ordinary classes and four auxiliary classes have been defined. This set of classes covers a wide range of transport service offerings.

The Recommendation gives guidance on how to deal with issues resulting from differences in QoS deployments of interconnecting service providers, aiming at the preservation of the original intent of the service.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T Y.1566	2012-07-14	12

Keywords

Interconnection, interworking, mapping, matching, QoS.

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.

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Recommendation ITU-T Y.1566

Quality of service mapping and interconnection between Ethernet, Internet protocol and multiprotocol label switching networks

1 Scope

This Recommendation defines a limited set of classes that provide a basis for interworking between the different traffic class aggregates of different service providers, while preserving the original intent of the service (although packet markings might change).

The scope includes interworking between layers and between networks using similar technologies.

Each QoS class is defined by its qualitative performance characteristics and the suggested groups of applications whose performance requirements match the characteristics of one or more classes.

The limit on the number of classes is imposed by the space available in the widely-used three-bit codepoint space.

End-to-end QoS requires a common understanding of the QoS class properties in all involved domains. While many similarities are expected between the deployed or planned QoS architectures of different providers, these are often not obvious when starting interconnection negotiations. This specification aims on enabling end-to-end QoS (by preserving the intended service properties) across different packet networks and on simplification of the technical QoS interconnection negotiations between providers.

Informational examples in the appendices provide:

- Codepoint to class association, with an interworking example
- ITU-T Y.1541 QoS class mapping to interworking classes

The allocation of numerical performance budgets among interworking networks in the user network interface to user network interface (UNI-UNI) path is out of the scope of this Recommendation.

The issue of matching [b-3GPP TS 23.203] standardized QoS class identifier (QCI) characteristics to interworking classes is for further study.

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 I.371] Recommendation ITU-T I.371 (2000), *Traffic control and congestion control in B-ISDN*.

[ITU-T Y.1541] Recommendation ITU-T Y.1541 (2006), *Network performance objectives for IP-based services*.

3 Definitions

3.1 Terms defined elsewhere

None.