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Evaluation of Signalling Protocols to Support Y.2171 Admission Control Priority Levels

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Supplement 61 to ITU T Q Series Recommendations

Evaluation of Signalling Protocols to Support Y.2171 Admission Control Priority Levels

Summary

This Supplement provides guidance on how existing signaling protocol extensions can be used to designate the admission control priority classifications for incoming calls/sessions into Next Generation Network. Specifically, this Supplement defines the relationship between the designated values of these protocol extensions and the admission control priority levels/categories defined in ITU-T Recommendation Y.2171.

Keywords

Admission Control Priority, Signaling extensions, SIP, H.248, Diameter, and Y.2171.

Introduction

The development of admission control priority levels was driven by potential emergency conditions under which critical emergency supporting telecommunications service need priority treatment for admission into networks that may have depleted resources as a result of the emergency. This led to the development of ITU-T Recommendation Y.2171 [Y.2171] which proposed three broad admission control priority levels/categories as follows:

Priority Level 1: Traffic with this priority level/category receives the highest assurance for admission to the network. This level/category is reserved for emergency telecommunications over NGN.

Priority Level 2: Traffic with this priority level/category will not receive the same assurance for admission as that given to priority level 1 traffic, but will receive higher assurance for admission than that given to priority level 3 traffic. Examples include real-time services such as Voice over IP (VoIP) and video as well as Virtual Private Networks (VPN) and data services. The selection of this priority level/category is expected to be determined by appropriate service level agreements (SLA) between network operators and customers for the desired service.

Priority Level 3: Traffic with this priority level/category receives the least assurance for admission to the network. Examples include “traditional” Internet service provider (ISP) services (e-mail, web surfing). The selection of this priority level/category is expected to be determined by appropriate SLA agreements between network operators and customers for the desired service.

These priority levels/categories are needed at the transport layer in each individual domain over which a call/session traverses such that appropriate resources can be reserved for enabling call/session setup and completion. For example, in an MPLS-TE core backbone network, the call/session admission control priority level could be mapped into an appropriate signalling protocol extension or attribute value which in turn can be utilized to assign the desired DiffServ Code Point (DSCP) in the MPLS-TE core. DSCP values drive proper packet markings and can be used to direct calls/sessions into appropriate TE-tunnels.