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Telecommunications and exchange between information technology systems — Requirements for local and metropolitan area networks —

Part 1Q: Bridges and bridged networks

AMENDMENT 31: Stream Reservation Protocol (SRP) enhancements and performance improvements

Télécommunications et échange entre systèmes informatiques — Exigences pour les réseaux locaux et métropolitains —

Partie 1Q: Ponts et réseaux pontés

AMENDEMENT 31: Perfectionnement et améliorations des performances du protocole de réservation de flux (SRP)

Reference number
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IEEE Std 802.1Qcc™-2018
(Amendment to
IEEE Std 802.1Q™-2018
as amended by
IEEE Std 802.1Qcp™-2018)

IEEE Standard for
Local and Metropolitan Area Networks—

Bridges and Bridged Networks

Amendment 31: Stream Reservation Protocol (SRP) Enhancements and Performance Improvements

Sponsor

LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 14 June 2018

IEEE-SA Standards Board

Abstract: Enhancements to the configuration of time-sensitive streams are provided by this amendment to IEEE Std 802.1Q-2018.

Keywords: amendment, Bridged Local Area Networks, IEEE 802©, IEEE 802.1Q™, IEEE 802.1Qcc™, SRP, Stream Reservation Protocol, MSRP, Multiple Stream Registration Protocol, Time-Sensitive Networking, TSN

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Introduction

This introduction is not part of IEEE Std 802.1Qcc-2018, IEEE Standard for Local and Metropolitan Area Networks—Bridges and Bridged Networks—Amendment 31: Stream Reservation Protocol (SRP) Enhancements and Performance Improvements.

This amendment to IEEE Std 802.1Q-2018 provides enhancements to the configuration of time-sensitive streams.

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IEEE Standard for
Local and Metropolitan Area Networks—

Bridges and Bridged Networks

Amendment 31:
Stream Reservation Protocol (SRP)
Enhancements and Performance Improvements

(This amendment is based on IEEE Std 802.1Q™-2018, as amended by IEEE Std 802.1Qcp™-2018.)

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1. Overview

1.3 Introduction

Insert the following text at the end of 1.3:

This standard specifies enhancements to protocols, procedures, and managed objects for the configuration of network resources for time-sensitive (i.e., bounded latency) applications. The enhancements address Time-Sensitive Networking (TSN) application requirements beyond audio/video (AV) traffic. To this end, it

cl) Specifies a software interface between the user (i.e., time-sensitive application) and network components, such that the user provides Stream requirements (e.g., for bounded latency), and the network configures resources from Talker to Listeners to meet those requirements. This user/network interface (UNI) is specified as an information model that can be applied to any protocol.
cm) Specifies three models for the UNI: fully distributed, centralized network/distributed user, and fully centralized.
cn) Specifies enhancements to the Stream Reservation Protocol (SRP), using a new application version, MSRPv1. MSRPv1 integrates the UNI TLVs for the benefits of enhanced configuration. For compatibility, MSRPv1 translates to the previous version (MSRPv0).
co) Specifies enhancements to the managed objects for forwarding and queuing enhancements for time-sensitive streams (FQTSS).
cp) Specifies enhancements to the managed objects for SRP.
cq) Specifies managed objects for configuration of Bridges by a Centralized Network Configuration (CNC) component.

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2. Normative references

Insert the following reference into Clause 2 in alphanumeric order:

IETF RFC 7950, The YANG 1.1 Data Modeling Language, August 2016.[2]

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3. Definitions

Change the following definition as shown:

3.259 stream reservation (SR) class: A traffic class whose bandwidth can be reserved for ~~audio/video (AV) traffic~~ time-sensitive streams using the Stream Reservation Protocol (SRP). A priority value is associated with each SR class. SR classes are denoted by consecutive letters of the alphabet, starting with A and continuing for up to seven classes.

Insert the following terms into Clause 3 in alphabetic order, number them appropriately, and renumber the subsequent terms in the clause accordingly:

3.x Centralized Network Configuration (CNC): A centralized component that configures network resources on behalf of TSN applications (users).

3.x Centralized User Configuration (CUC): A centralized entity that discovers end stations, retrieves end station capabilities and user requirements, and configures TSN features in end stations. The protocols that the CUC uses for communication with end stations are specific to the user application, not specified in this standard. A CUC exchanges information with a CNC in order to configure TSN features on behalf of its end stations.

3.x time-aware: An adjective to describe use of time that is synchronized with other stations using a protocol (e.g., IEEE Std 802.1AS).

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