
**Information technology —
Telecommunications and information
exchange between systems — Local and
metropolitan area networks — Specific
requirements —**

**Part 1Q:
Bridges and bridged networks**

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseaux locaux et métropolitains —
Exigences spécifiques*

Partie 1Q: Ponts et réseaux pontés



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IEC Central Office
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CH-1211 Geneva 20
Switzerland
E-mail inmail@iec.ch
Web www.iec.ch

Institute of Electrical and
Electronics Engineers, Inc.
3 Park Avenue, New York
NY 10016-5997, USA
E-mail stds.ipr@ieee.org
Web www.ieee.org

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- *Part 1: Overview of Local Area Network Standards*
- *Part 2: Logical link control*
- *Part 5: Token ring access method and physical layer specifications*
- *Part 11: Wireless LAN medium access control (MAC) and physical layer (PHY) specifications*
- *Part 1X: Port-based network access control*
- *Part 1AB: Station and media access control connectivity discovery*

- *Part 1AE: Media access control (MAC) security*
- *Part 1AR: Secure device identity*
- *Part 1AS: Timing and synchronization for time-sensitive applications in bridged local area networks*
- *Part 15-4: Wireless medium access control (MAC) and physical layer (PHY) specifications for low-rate wireless personal area networks (WPANs)*

IEEE Standard for Local and metropolitan area networks— Bridges and Bridged Networks

IEEE Computer Society

Sponsored by the
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IEEE
3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std 802.1Q™-2014
(Revision of
IEEE Std 802.1Q-2011)

IEEE Std 802.1Q™-2014

(Revision of
IEEE Std 802.1Q-2011)

**IEEE Standard for
Local and metropolitan area networks—**

Bridges and Bridged Networks

Sponsor

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Approved 3 November 2014

IEEE-SA Standards Board

Abstract: This standard specifies how the Media Access Control (MAC) Service is supported by Bridged Networks, the principles of operation of those networks, and the operation of MAC Bridges and VLAN Bridges, including management, protocols, and algorithms

Keywords: Bridged Network, IEEE 802.1Q™, LAN, local area network, MAC Bridge, metropolitan area networks, MSTP, Multiple Spanning Tree Protocol, Rapid Spanning Tree Protocol, RSTP, PBN, Provider Bridged Network, Shortest Path Bridging Protocol, SPB Protocol, Virtual Bridged Network, virtual LAN, VLAN Bridge

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Paul Lachapelle
Kari Laihonon
Ashvin Lakshmikantha
Bill Lane
Paul Langille
Roger Lapuh
H. Eugene Latham
Loren Larsen
Yannick Le Goff
Marcus Leech
John Lemon
Michael Lerer
Lin Li
Bing Liao
George Lin
William P Lidinsky
Johann Lindmeyer
Marina Lipshteyn
Gary Littleton
Robert D. Love
Yuanqui Luo
Andy Luque
Jeff Lynch
Gael Mace
Thomas Mack-Crane
Phillip Magnuson
Mahalingam Mani
David Martin
Peter Martini
Riccardo Martinotti
Marco Mascitto
Keith McCloghrie
Bruce McClure

Tom McGowan
Alan McGuire
James McIntosh
Martin McNealis
Menucher Menuchery
Milan Merhar
Margaret A. Merrick
John Messenger
Colin Mick
Amol Mitra
Dinesh Mohan
Gabriel Montenegro
Jim Montrose
Matthew Mora
John Morris
Bob Moskowitz
Eric Multanen
Yaron Nachman
Yukihiro Nakagawa
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Eugene O'Neil
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Yonadav Perry
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Gideon Prat
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Rene Raeber
Ananda Rajagopal

Steve Ramberg
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Karen Randall
Shlomo Reches
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Andrew Smith

Michel Soerensen
M. Soha
Stuart Soloway
Nurit Sprecher
Kevin B. Stanton
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Sundar Subramaniam
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Muneyoshi Suzuki
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Lennart Swartz
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Kenta Takumi
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Geoff Thompson
Oliver Thorp
Michel Thorsen

Fouad Tobagi
Nathan Tobol
Jeremy Touve
Naoki Tsukutari
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Chait Tumuluri
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Dhadesugoor Vaman
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Paul Wainwright
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Y. C. Wang
Yan Wang
Trevor Warwick

Bob Watson
Karl Weber
Brian Weis
Alan Weissberger
Glenn Wenig
Martin White
Bert Wijnen
Deborah Wilbert
Keith Willette
Robert Williams
Val Wilson
Ludwig Winkel
Robert Winter
Michael Witkowski
Edward Wong
Michael D. Wright
Michele Wright
Chien-Hsien Wu
Min Xiao
Ken Young
Allen Yu
Wayne Zakowski
Igor Zhovnirovsky
Carolyn Zimmer
Glen Zorn
Nick Zuchero

Introduction

This introduction is not part of IEEE Std 802.1Q-2014, IEEE Standard for Local and metropolitan area networks—Bridges and Bridged Networks.

IEEE Std 802.1Q-2014 incorporates the text of the following amendments into IEEE Std 802.1Q-2011.

IEEE Std 802.1Qbe™-2011	Multiple I-SID Registration Protocol
IEEE Std 802.1Qbc™-2011	Provider Bridging—Remote Customer Service Interfaces
IEEE Std 802.1Qbb™-2011	Priority-based Flow Control
IEEE Std 802.1Qaz™-2011	Enhanced Transmission Selection for Bandwidth Sharing Between Traffic Classes
IEEE Std 802.1Qbf™-2011	PBB-TE Infrastructure Segment Protection
IEEE Std 802.1Qbg™-2012	Edge Virtual Bridging
IEEE Std 802.1aq™-2012	Shortest Path Bridging
IEEE Std 802.1Q-2011/Cor 2-2012	Technical and editorial corrections
IEEE Std 802.1Qbp™-2014	Equal Cost Multiple Paths (ECMP)

The 2011 revision of this standard incorporated the text of the following amendments into IEEE Std 802.1Q-2005.

IEEE Std 802.1ad™-2005	Provider Bridges
IEEE Std 802.1ak™-2007	Multiple Registration Protocol
IEEE Std 802.1ag™-2007	Connectivity Fault Management
IEEE Std 802.1ah™-2008	Provider Backbone Bridges
IEEE Std 802-1Q-2005/Cor-1-2008	Corrections to the Multiple Registration Protocol
IEEE Std 802.1ap™-2008	Management Information Base (MIB) Definitions for VLAN Bridges
IEEE Std 802.1Qaw™-2009	Management of Data Driven and Data Dependent Connectivity Faults
IEEE Std 802.1Qay™-2009	Provider Backbone Bridge Traffic Engineering
IEEE Std 802.1aj™-2009	Two-Port Media Access Control (MAC) Relay
IEEE Std 802.1Qav™-2009	Forwarding and Queuing Enhancements for Time-Sensitive Streams
IEEE Std 802.1Qau™-2010	Congestion Notification
IEEE Std 802.1Qaf™-2010	Stream Reservation Protocol

Clause 13 of IEEE Std 802.1Q-2011 was also revised to include an updated specification of the Rapid Spanning Tree Algorithm and Protocol (RSTP), superseding references to IEEE Std 802.1D™-2004 [B10].^a

The 2005 revision of this standard incorporated the text of the following amendments into IEEE Std 802.1Q-1998.

IEEE Std 802.1u™-2001	Technical and Editorial Corrections
IEEE Std 802.1v™-2001	VLAN Classification by Protocol and Port
IEEE Std 802.1s™-2002	Multiple Spanning Trees

This standard was first published as IEEE Std 802.1Q-1998, making use of the concepts and mechanisms of LAN Bridging that were introduced by IEEE Std 802.1D and defining additional mechanisms to allow the implementation of Virtual Bridged Networks.

^aNumbers in brackets correspond to the numbers in the bibliography in Annex Q.

For an introduction to this standard that details each of the provisions introduced by amendments and revisions throughout its development, refer to 1.3.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802 standards may be obtained from

Secretary, IEEE-SA Standards Board
445 Hoes Lane
Piscataway, NJ 08854-4141
USA

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