

2 Draft Standard for 3 4 Local and metropolitan area networks— 5 6 Bridges and Bridged Networks

7 Amendment nn: 8 9 YANG for Multiple Spanning Trees 10

11 Prepared by the
12 Time-Sensitive Networking (TSN) Task Group of IEEE 802.1

13 Sponsor
14 LAN/MAN Standards Committee
15 of the
16 IEEE Computer Society

17 This and the following cover pages are not part of the draft. They provide revision and other information
18 for IEEE 802.1 Working Group members and will be updated as convenient. **New participants: Please read**
19 **these cover pages**, they contain information that should help you contribute effectively to this standards
20 development project. The [Introduction to the current draft](#) should be useful to all readers.

21 The text proper of this draft begins with the [Title page](#).

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When and if the PAR is Approved, the FrameMaker Master Page for this first cover page should be updated to use the Master Page 'Cover Page', which will replace this Notice with the usual Important Notice on the front page of drafts. PAR and CSD text and references in these Cover Pages will also need to be updated.

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3 their obligations under the IEEE Patent Policy, the IEEE Standards Association (SA) Copyright Policy, and the
4 IEEE SA Participation Policy. For information on these policies see 1.ieee802.org/rules/ and the slides
5 presented at the beginning of each of our Working Group and Task Group meeting.

6 The IEEE SA [PAR \(Project Authorization Request\)](#) and [CSD](#) (Criteria for Standards Development established
7 by IEEE 802) are summarized in these cover pages and links are provided to the full text of both PAR and
8 CSD. As part of the IEEE 802® process, the text of the PAR and CSD of each project is reviewed regularly to
9 ensure their continued validity. A vote of "Approve" on this draft is also an affirmation that the PAR and CSD
10 for this project are still valid.

11 Comments on this draft are encouraged. NOTE: All issues related to IEEE standards presentation style,
12 formatting, spelling, etc. are routinely handled between the 802.1 Editor and the IEEE Staff Editors prior to
13 publication, after balloting and the process of achieving agreement on the technical content of the standard is
14 complete. Readers are urged to devote their valuable time and energy only to comments that materially affect
15 either the technical content of the document or the clarity of that technical content. Comments should not
16 simply state what is wrong, but also what might be done to fix the problem.

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18 activities, working papers, and email distribution lists etc. can be found on the 802.1 Website:

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21 policy of considering comments from all who are interested and willing to contribute to the development of the
22 draft. Individuals not attending meetings have helped to identify sources of misunderstanding and ambiguity
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24 standards, and are not a general forum. All contributors to the work of 802.1 should familiarize themselves
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28 Working Group and Time-Sensitive Networking (TSN) Task Group.

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42 referred to as the 5 Criteria or 5C's) is reviewed on a regular basis in order to ensure their continued validity.
43 A vote of "Approve" on this draft is also an affirmation by the balloter that the PAR is still valid.

1 **PAR (Project Authorization Request) and CSD**

2 This page is a draft, based on the proposed PAR and CSD as of the close of the May 2023 802.1 Interim
3 Meeting.

4 Extracts from the PAR, as approved by IEEE NesCom <date>:

5 <https://www.ieee802.org/1/files/public/docs2023/dy-draft-PAR-0523-v01.pdf>

6 and the CSD (Criteria for Standards Development):

7 <https://www.ieee802.org/1/files/public/docs2023/dy-draft-CSD-0523-v01.pdf>

8 follow.

9 **Scope of the project:**

10 This amendment specifies YANG that allows configuration and status reporting for bridges and bridge
11 components for the Multiple Spanning Tree Protocol (MSTP). This amendment addresses MSTP
12 requirements arising from industrial automation networks, updating existing managed objects and updating
13 the existing Management Information Base (MIB) to match the YANG capabilities. Additionally, this
14 amendment addresses errors or omissions in existing functionality.

15 **PAR Need for the Project:**

16 YANG (RFC 7950) is a formalized data modeling language that is widely accepted and can be used to
17 simplify network configuration. The ability to manage the Multiple Spanning Tree Protocol via YANG
18 modules is needed for compatibility with modern network management systems. Industrial automation
19 networks require parameter value ranges that can differ from those currently supported.

20 **CSD broad market potential [extract]:**

21 The proposed amendment will support the use of YANG, which has broad industry support in networks that
22 use IEEE Std 802.1Q. Both IEEE Std 802.1Q and YANG are already supported and used by multiple
23 vendors, network providers, and network users. There is a wide interest in the industry to manage MSTP via
24 YANG. Furthermore, industrial automation networks require parameter value ranges that can differ from
25 those currently supported.

26 **Economic feasibility [extract]:**

- 27 a) Management using YANG utilizes a balance between end station and infrastructure capabilities; the
28 balance will be similar to that for existing management methods.
- 29 b) The cost factors will be similar to those of existing management methods.
- 30 c) This project extends the YANG capabilities of IEEE Std 802.1Q to MSTP as a step towards a
31 complete YANG management solution. This helps to eliminate multiple management platforms,
32 thus reduces installation cost.
- 33 d) This project extends the YANG capabilities of IEEE Std 802.1Q to manage MSTP as a step towards
34 a complete YANG management solution. This helps to eliminate multiple management platforms,
35 thus reduces operational cost.

1 Draft development

2 During the early stages of draft development, 802.1 editors have a responsibility to attempt to craft technically
3 coherent drafts from the resolutions of ballot comments and from the other discussions that take place in the
4 working group meetings. Preparation of drafts often exposes inconsistencies in editor's instructions or
5 exposes the need to make choices between approaches that were not fully apparent in the meeting. Choices
6 and requests by the editors' for contributions on specific issues will be found in the editors' [Introduction to the](#)
7 [current draft](#) and at appropriate points in the draft.

8 Any text with a Cyan background (as in this sentence) is temporary, with conditional tag 'Editor comment',
9 inserted by the Editors to solicit comment, suggest a future change, or act simply as an aide memoire. Text
10 can also **highlighted** to be draw it to the readers' attention, using conditional tag 'Editor highlight'. In both
11 these case conditional tagging helps location, and eventual removal, of text or highlighting and can control
12 whether or not it is displayed.

13 The ballot comments received on each draft, and the editors' proposed and final disposition of comments on
14 working group drafts, are part of the audit trail of the development of the standard and are available, along
15 with all the revisions of the draft on the 802.1 website (for address see above).

16 During the early stages of draft development the proposed text can be moved around a great deal, and even
17 minor rearrangement can lead to a lot of 'change', not all of which is noteworthy from the point of the reviewer,
18 so the use of automatic change bars is not very effective. In early drafts change bars may be omitted or
19 applied manually, with a view to drawing the readers attention to the most significant areas of change.
20 Readers interested in viewing every change are encouraged to use Adobe Acrobat to compare the document
21 with their selected prior draft. Note that the FrameMaker change bar feature is useless when it comes to
22 indicating changes to Figures.

23 This draft has been prepared from a set of Framemaker files with conditional text that supports the production
24 of the present amendment draft and a preliminary roll up of that amendment draft into the text of the base
25 standard, i.e. IEEE Std 802.1Q as of the last Revision as amended by prior amendments (usually as of the
26 close of their successful SA ballots) as noted on the Title Page and the first Cover Page. The editor may
27 make preliminary roll ups available to check consistency with the base standard and cross-references to text
28 that does not appear in this amendment. Roll ups may also be recorded as part of the approved P802.1Q
29 Revision project.

30 For a description of the use of conditional text and other FrameMaker and IEEE Std 802.1Q Style
31 considerations applicable to this draft see the EDITOR-PLEASE-READ-ME file in the FrameMaker books
32 used to generate these drafts.

33 There are generally multiple amendments under development at any time, and while they will add or amend
34 different clauses in the base standard, there are some clauses (notably Clauses 12, 48, and the PICS
35 Annexes that all are likely to change). They will need to be fully integrated before or during SA Ballot, and
36 complete that ballot in serial order to avoid future problems.

37 Records of participants in the development of the standard are added after SA Ballot, as part of
38 pre-publication editing by IEEE Staff.

39 MIB and YANG modules

40 The MIB and YANG modules that are modified or added by this amendment are attached to the draft pdf as
41 plain text (UTF-8) .mib and .yang files. When a roll up of the current base standard plus this amendment is
42 made available, all the MIB and YANG modules for the roll up are attached.

43 —

1 Introduction to the current draft¹

2 This introduction is not part of the draft, and should not be the subject of ballot comments.

3 D0.1

4 This is an initial draft and comments are requested on all aspects of the draft. It includes a number of notes
5 that may be of help to the Editors as well as informing the initial review process.

6 Mick Seaman, 802.1Q Editor

7 The 802-1Qdy.book, i.e. the FrameMaker set of individual .fm documents that are included in this
8 amendment draft, includes all the .fm documents that appear to be required (an initial assessment). Clauses
9 not required are not in the book. Even if marked as Excluded in the book, they would be updated by applying
10 Show/Hide Conditional Text to the book, which can take time and result in more unresolved cross-reference
11 reports on book update than necessary. These other files are in the same 802-1Qdy directory so can be added
12 to the book if necessary, however before adding check with the 802.1Q Editor to make sure that the latest
13 version is being added, to reduce the work that will be needed when merging the amendment changes into
14 the most recent set of sources for final SA Ballot.

15 The following files are included:

- 16 — Q01 (Clause 1. Overview). This is currently included just to provide the amendment editorial
17 instructions, and the copy of title page information that always precedes these. It would be a waste
18 of time to transfer this material to the first clause file with text to be amended, and that file could
19 change through the course of the project in any case.
- 20 — Q13 (Clause 13). Change the upper bound of the Max Hops range, and added draft text to the
21 following Note, following the style of prior amendments in explaining when and why a detailed
22 item has been changed. Note also that the remaining text of this clause has been checked for out of
23 date references to 802.1D and STP. These have been removed where they might appear to be
24 normative language, but retained where they explain backwards compatibility aspects of the current
25 standard (which might still be relevant to some users, even this long after RSTP standardization).
26 These changes are changed barred so that they can be reviewed as part of the now approved
27 P802.1Q-2022 Revision Project. Change bars for this Clause's .fm file should not be removed en
28 masse.
- 29 — Q17-7-6-MSTP-MIB (17.7.6 Definitions for the IEEE8021-MSTP-MIB module). This has been
30 included with a preliminary update, changing the upper bound of the range for
31 ieee8021MstpCistMaxHops from 40 to 100 (which may not be the eventual value determined by this
32 project). References to IEEE Std 802.1D (2004) have been removed, as that standard was obsoleted
33 a long while ago.

34 Other files in the 802-1Q.book that is used to generate the entire 802.1Q roll up (the last Revision, plus
35 recent amendments, plus this amendment) are not part of the 802-1Qdy book. The present omission of the
36 following may be noteworthy:

- 37 — Q02 (Clause 2. Normative references). No additional references are envisaged at present.
- 38 — Q03 (Clause 3. Definitions). No additional definitions are expected.
- 39 — Q04 (Clause 4. Abbreviations). No additional definitions are expected.
- 40 — Q05 (Clause 5. Conformance). There is no absolute need for additions to the Conformance clause,
41 even with the addition of the new YANG module. This would appear to be covered by the existing
42 5.4.1 VLAN Bridge component options item w) (as of P802.1Qcj/D2.5):

¹ The whole or parts of the introduction, possibly updated, to past drafts may be retained at the Editor's discretion, with the most recent introduction first. The introduction to each draft may solicit input on specific subjects.

- 1 “w) Support YANG modules for the management of VLAN Bridge capabilities (Clause 48).”
2
3 Note that P802.1Qcw, which added several YANG modules, did not make any additions for these to
4 the conformance clause. It did add PICS entries for the new YANG modules (to A.47 and to Tables
5 in Annex B, numbering since corrected).
6
7 On the other hand, 802.1Qcz Congestion Isolation did add a specific YANG line item (5.32 item g),
8 as did P802.1Qcj (5.9.2 item h, 5.12.3 item j), and 802.1Q-2022 5.4.1.1 Multiple Spanning Tree
9 (MST) operation (optional) does call out MIB support in item p), though it does not specify which
10 MIB(s).
11
12 — Q12 (Clause 12. Bridge management). This clause defers to 13.25 and Table 13-5 for the limit on
13 Max Hops, so does not need to be changed to increase that limit. It is to be hoped that development
14 of the YANG model does not introduce changes that need to be reflected into this clause, or Clause
15 13.
16 — Q17 (Clause 17. Management Information Base (MIB) — 17.1 Internet Standard Management
17 Framework & 17.2 Structure of the MIB. No changes should be necessary, unless the work on the
18 YANG adds objects that are to be reflected into the MIB.
19 — Q17-3 (17.3 MIB module relationships, 17.4 Security considerations, 17.5 Dynamic component and
20 Port creation, 17.6 MIB operations for service interface configuration). No changes to any of these
21 should be necessary.
22 — Q17-7-3-SPANNING-TREE-MIB. Not currently included, but may be required if the YANG work
23 identifies improvements that need to be made to the MIB(s). I believe such changes are within the
24 scope of the project.
25 — Q48 (Clause 48. YANG Data Models — Introductory text & 48.1 YANG Framework. This includes
26 Figure 48-2—YANG root hierarchy with IEEE 802.1Q YANG models, but has not been updated by
27 any of the recent amendments.
28 — Q-X (Annex X Bibliography). No additional references are expected at present. If any are suggested,
29 take care that they are not items already in the 2. Normative References. Both these Clause 2 and the
30 Bibliography will be updated by Annexes in publication, and the Bibliography is more of a nuisance
because of the IEEE Style Guide rule placing it as the last Annexes, which means that it can move
around. That movement is hard to handle as successive amendments shift its position.

Draft Standard for Local and metropolitan area networks—

Bridges and Bridged Networks

Amendment nn:

YANG for Multiple Spanning Trees

Prepared by the

Time-Sensitive Networking (TSN) Task Group of IEEE 802.1

Sponsor

LAN/MAN Standards Committee

of the

IEEE Computer Society

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1

2 **Abstract:** This amendment to IEEE Std 802.1Q-2022 as amended by IEEE Std 802.1Qcz-2023,
3 IEEE Std 802.1Qcw-2023, and IEEE Std 802.1Qcj-2023 addresses Multiple Spanning Tree
4 Protocol (MSTP) requirements arising from industrial automation networks. It specifies YANG and
5 updates managed objects and the Management Information Base (MIB) module for bridge and
6 bridge component MSTP configuration and status reporting.

7 **Keywords:** Bridged Network, IEEE 802.1Q™, LAN, local area network, MAC Bridge, metropolitan
8 area network, MSTP, Multiple Spanning Tree Protocol, MIB, Rapid Spanning Tree Protocol, RSTP,
9 YANG.

10

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1 Participants

2 <<The following lists will be updated in the usual way prior to publication>>

3 At the time this standard was submitted to the IEEE-SA Standards Board for approval, the IEEE 802.1
4 Working Group had the following membership:

5 **Glenn Parsons, *Chair***
6 **Jessy V. Rouyer, *Vice Chair***
7 **János Farkas, *Chair, Time-Sensitive Networking Task Group***
8 **Craig Gunther, *Vice Chair, Time-Sensitive Networking Task Group***
9 **Paul Bottorff, *Editor***
10

<<TBA>>

¹ The following members of the individual balloting committee voted on this standard. Balloters may have
² voted for approval, disapproval, or abstention.

<<TBA>>

³ When the IEEE-SA Standards Board approved this standard on XX Month 20xx, it had the following
⁴ membership:

⁵ <<TBA>>

<<TBA>>

⁶
⁷ *Member Emeritus
⁸
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¹⁰

1 Introduction

This introduction is not part of IEEE Std 802.1Qdy™-20XX, IEEE Standard for Local and metropolitan area networks— Bridges and Bridged Networks—Amendment 39: YANG for Multiple Spanning Trees.

2 IEEE Std 802.1Qdy™-2023: YANG for Multiple Spanning Trees addressed requirements arising from
3 industrial automation networks, specifying YANG and updating managed objects and the Management
4 Information Base (MIB) module for bridge and bridge component MSTP configuration and status reporting

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

9 Secretary, IEEE-SA Standards Board
10 445 Hoes Lane
11 Piscataway, NJ 08854-4141
12 USA

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1

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

4 **Bridges and Bridged Networks**

5 **Amendment nn:**
6 **YANG for Multiple Spanning Trees**

7 [This amendment is based on IEEE Std 802.1Q™-2022 as amended by IEEE Std 802.1Qcz™-2023 and
8 IEEE Std 802.1Qew™-2023.]

9 NOTE—The editing instructions contained in this amendment define how to merge the material contained therein into
10 the existing base standard and its amendments to form the comprehensive standard.

11 The editing instructions are shown in ***bold italics***. Four editing instructions are used: change, delete, insert, and replace.
12 ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change
13 and describes what is being changed by using ~~strikethrough~~ (to remove old material) and underscore (to add new
14 material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Deletions
15 and insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is
16 used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new
17 one. Editing instructions, change markings, and this note will not be carried over into future editions because the
18 changes will be incorporated into the base standard.

19

13. Spanning tree protocols

13.25 State machine timers

Change Table 13-5 and the following NOTE as follows:

Table 13-5—Timer and related parameter values

Parameter	Default	Permitted range	Interoperability recommendations
Migrate Time	3.0	— ^a	— ^a
(Bridge) Hello Time	2.0	— ^a	— ^a
Bridge Max Age	20.0	6.0–40.0	20.0
Bridge Forward Delay	15.0	4.0–30.0	15.0
Transmit Hold Count	6	1–10	6
Max Hops	20	6– 40 100	—

All times are in seconds. —^a Not applicable, value is fixed.

NOTE—Changes to Bridge Forward Delay do not affect reconfiguration times, unless the network includes Bridges that do not conform to this revision of this standard. Changes to Bridge Max Age can have an effect, as it is possible for old information to persist in loops in the physical topology for a number of “hops” equal to the value of Max Age in seconds, and thus exhaust the Transmit Hold Count in small loops. [The IEEE Std 802.1Dy amendment to this standard increased the permitted range of Max Hops to allow a spanning tree to provide initial and remedial connectivity in extended ring topologies whenever physical connectivity is possible. Once configured such networks are not expected to depend on spanning tree for failure protection.](#)

1 17.7 MIB modules^{2 3}

2 17.7.6 Definitions for the IEEE8021-MSTP-MIB module

3 *Change the text of 17.7.6 as follows:*

```
4 IEEE8021-MSTP-MIB DEFINITIONS ::= BEGIN
5
6 -- =====
7 -- MIB for IEEE 802.1Q Multiple Spanning Tree Bridge Devices
8 -- =====
9
10 IMPORTS
11     MODULE-IDENTITY, OBJECT-TYPE, Integer32, Counter64,
12     Unsigned32, TimeTicks
13     FROM SNMPv2-SMI
14     TruthValue, RowStatus
15     FROM SNMPv2-TC
16     ieee802dot1mibs, IEEE8021PbbComponentIdentifier,
17     IEEE8021BridgePortNumber, IEEE8021VlanIndex,
18     IEEE8021MstIdentifier
19     FROM IEEE8021-TC-MIB
20     BridgeId
21     FROM BRIDGE-MIB
22     SnmpAdminString
23     FROM SNMP-FRAMEWORK-MIB
24     MODULE-COMPLIANCE, OBJECT-GROUP
25     FROM SNMPv2-CONF;
26
27 ieee8021MstpMib MODULE-IDENTITY
28     LAST-UPDATED "202306270000Z" -- June 27, 2023 "202211080000Z" -- November 8, 2022
29     ORGANIZATION "IEEE 802.1 Working Group"
30     CONTACT-INFO
31         " WG-URL: http://www.ieee802.org/1/
32         WG-E-Mail: stds-802-1-l@ieee.org
33         Contact: IEEE 802.1 Working Group Chair
34         Postal: C/O IEEE 802.1 Working Group
35             IEEE Standards Association
36             445 Hoes Lane
37             Piscataway, NJ 08854
38             USA
39         E-mail: stds-802-1-chairs@ieee.org"
40     DESCRIPTION
41         "The Bridge MIB modules for managing devices that support
42         IEEE Std 802.1Q multiple spanning treess-groups.
43
44         Unless otherwise indicated, the references in this MIB
45         module are to IEEE Std 802.1Q-2022 as amended by
46         IEEE Std 802.1Qdy.
47
48         Copyright (C) IEEE (2023).
49         This version of this MIB module is part of IEEE Std 802.1Q;
50         see that standard for full legal notices."
51
52     REVISION "202306270000Z" -- June 27, 2023
53     DESCRIPTION
54         "Published as part of IEEE Std 802.1Qdy.
55         Cross references and contact information updated."
56     REVISION "202211080000Z" -- November 8, 2022
57     DESCRIPTION
58         "Published as part of IEEE Std 802.1Q-2022.
59         Cross references and contact information updated."
60     REVISION "201807010000Z" -- July 1, 2018
61     DESCRIPTION
62         "Published as part of IEEE Std 802.1Q 2018 revision.
```

² Copyright release for MIBs: Users of this standard may freely reproduce the MIB modules in this standard so that they can be used for their intended purpose.

³ An ASCII version of this MIB module is attached to the PDF version of this standard, and can be obtained by Web browser from the IEEE 802.1 Website at <https://1.ieee802.org/mib-modules/>.

```
1      Cross references updated and corrected."
2
3  REVISION "201412150000Z" -- December 15, 2014
4  DESCRIPTION
5      "Published as part of IEEE Std 802.1Q 2014 revision.
6      Cross references updated and corrected.
7      Instances of ...value of mstp(2)... changed to
8      ...value of mstp(3).
9      Defval for ieee8021MstpCistPortAdminEdgePort
10     changed to false.
11     ieee8021MstpVlanV2Table DESCRIPTION updated
12     (4094 not 4096).
13     Bug fixes to conformance section."
14
15  REVISION      "201208100000Z" -- August 10, 2012
16  DESCRIPTION
17      "Updated cross references to other clauses, particularly
18      Clause 13, as part of IEEE 802.1Q Cor-2."
19
20  REVISION      "201112120000Z" -- December 12, 2011
21  DESCRIPTION
22      "Deprecated ieee8021MstpFidToMstiTable for an identical
23      ieee8021MstpFidToMstiV2Table to add 4095 to the range
24      of ieee8021MstpFidToMstiV2Fid and to add 0 and 4095 to
25      the range of ieee8021MstpFidToMstiV2MstId for IEEE Std 802.1aq.
26      Deprecated ieee8021MstpVlanTable for an identical
27      ieee8021MstpVlanV2Table to add 0 & 4095 to the range
28      of ieee8021MstpVlanV2MstId for IEEE Std 802.1aq"
29
30  REVISION      "201103230000Z" -- March 23, 2011
31  DESCRIPTION
32      "Minor edits to contact information, correction to range of
33      ieee8021MstpCistMaxHops and addition of fragile Bridge
34      as part of 2011 revision of IEEE Std 802.1Q."
35
36  REVISION      "200810150000Z" -- October 15, 2008
37  DESCRIPTION
38      "Initial version."
39      ::= { ieee802dot1mibs 6 }
40
41  ieee8021MstpNotifications OBJECT IDENTIFIER ::= { ieee8021MstpMib 0 }
42  ieee8021MstpObjects       OBJECT IDENTIFIER ::= { ieee8021MstpMib 1 }
43  ieee8021MstpConformance  OBJECT IDENTIFIER ::= { ieee8021MstpMib 2 }
44
45  -- =====
46  -- MSTP CIST Table
47  -- =====
48
49  ieee8021MstpCistTable OBJECT-TYPE
50      SYNTAX      SEQUENCE OF Ieee8021MstpCistEntry
51      MAX-ACCESS  not-accessible
52      STATUS      current
53      DESCRIPTION
54          "The Common and Internal Spanning Tree (CIST) Table. Each row in
55          the table represents information regarding a Bridge's Bridge
56          Protocol Entity for the CIST.
57
58          Note that entries will exist in this table only for Bridge
59          components for which the corresponding instance of
60          ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
61          has a value of mstp(3).
62
63          This table contains objects corresponding to the following items
64          from 12.8.1.1 and 12.8.1.3. Some of those items are provided
65          in the IEEE8021-SPANNING-TREE-MIB as noted below.
66
67          From 12.8.1.1:
68              Items a), c), o), p), and q) are defined in this table
69              The remaining items are covered in the
70              IEEE8021-SPANNING-TREE-MIB:
71                  b) ieee8021SpanningTreeTimeSinceTopologyChange
72                  c) ieee8021SpanningTreeTopChanges
```

```
1         e) ieee8021SpanningTreeDesignatedRoot
2         f) ieee8021SpanningTreeRootCost
3         g) ieee8021SpanningTreeRootPort
4         h) ieee8021SpanningTreeMaxAge
5         i) ieee8021SpanningTreeForwardDelay
6         j) ieee8021SpanningTreeBridgeMaxAge
7         k) ieee8021SpanningTreeBridgeHelloTime
8         l) ieee8021SpanningTreeBridgeForwardDelay
9         m) ieee8021SpanningTreeHoldTime
10        n) ieee8021SpanningTreeVersion
11    From 12.8.1.3:
12        Item g) is defined in this table
13        The remaining items are covered in the
14        IEEE8021-SPANNING-TREE-MIB:
15            a) ieee8021SpanningTreeBridgeMaxAge
16            b) ieee8021SpanningTreeBridgeHelloTime
17            c) ieee8021SpanningTreeBridgeForwardDelay
18            d) ieee8021SpanningTreePriority
19            e) ieee8021SpanningTreeVersion
20            f) ieee8021RstpStpExtTxHoldCount"
21    REFERENCE    "12.8.1.1, 12.8.1.3"
22    ::= { ieee8021MstpObjects 1 }
23
24 ieee8021MstpCistEntry OBJECT-TYPE
25     SYNTAX      Ieee8021MstpCistEntry
26     MAX-ACCESS  not-accessible
27     STATUS      current
28     DESCRIPTION
29         "A CIST Table entry."
30     INDEX { ieee8021MstpCistComponentId }
31     ::= { ieee8021MstpCistTable 1 }
32
33 Ieee8021MstpCistEntry ::= SEQUENCE {
34     ieee8021MstpCistComponentId      IEEE8021PbbComponentIdentifier,
35     ieee8021MstpCistBridgeIdentifier  BridgeId,
36     ieee8021MstpCistTopologyChange    TruthValue,
37     ieee8021MstpCistRegionalRootIdentifier  BridgeId,
38     ieee8021MstpCistPathCost          Unsigned32,
39     ieee8021MstpCistMaxHops           Integer32
40 }
41
42 ieee8021MstpCistComponentId OBJECT-TYPE
43     SYNTAX      IEEE8021PbbComponentIdentifier
44     MAX-ACCESS  not-accessible
45     STATUS      current
46     DESCRIPTION
47         "The component identifier is used to distinguish between the
48         multiple virtual Bridge instances within a PBB. In simple
49         situations where there is only a single component the default
50         value is 1."
51     ::= { ieee8021MstpCistEntry 1 }
52
53 ieee8021MstpCistBridgeIdentifier OBJECT-TYPE
54     SYNTAX      BridgeId
55     MAX-ACCESS  read-only
56     STATUS      current
57     DESCRIPTION
58         "The Bridge Identifier for the CIST."
59     REFERENCE    "12.8.1.1"
60     ::= { ieee8021MstpCistEntry 2 }
61
62 ieee8021MstpCistTopologyChange OBJECT-TYPE
63     SYNTAX      TruthValue
64     MAX-ACCESS  read-only
65     STATUS      current
66     DESCRIPTION
67         "In an STP Bridge, the value of the Topology Change parameter
68         (14.8.1.1.3, item d of IEEE Std 802.1D, 2004 Edition), or in
69         an RSTP or MSTP Bridge, asserted if the tcWhile timer for any
70         Port for the CIST is non-zero."
71     REFERENCE    "13.25.9, 14.8.1.1.3:d of IEEE Std 802.1D-2004"
72     ::= { ieee8021MstpCistEntry 3 }
```

```
1
2 ieee8021MstpCistRegionalRootIdentifier OBJECT-TYPE
3   SYNTAX      BridgeId
4   MAX-ACCESS  read-only
5   STATUS      current
6   DESCRIPTION
7       "In an MSTP Bridge, the CIST Regional Root Identifier parameter,
8       i.e., the Bridge Identifier of the current CIST Regional Root."
9   REFERENCE   "13.16.4, 13.26.3"
10  ::= { ieee8021MstpCistEntry 4 }
11
12 ieee8021MstpCistPathCost OBJECT-TYPE
13   SYNTAX      Unsigned32 (0..2147483647)
14   MAX-ACCESS  read-only
15   STATUS      current
16   DESCRIPTION
17       "In an MSTP Bridge, the CIST Path Cost parameter, i.e., the CIST
18       path cost from the transmitting Bridge to the CIST Regional Root.
19       The sum (about 20 possible out of the given range) of multiple
20       port path costs. Also, if the 'transmitting Bridge' is
21       the 'CIST Regional Root', then this value could be zero."
22   REFERENCE   "13.9:d, 13.10"
23   ::= { ieee8021MstpCistEntry 5 }
24
25 ieee8021MstpCistMaxHops OBJECT-TYPE
26   SYNTAX      Integer32 (6..40100)
27   MAX-ACCESS  read-write
28   STATUS      current
29   DESCRIPTION
30       "In an MSTP Bridge, the MaxHops parameter.
31
32       The value of this object MUST be retained across
33       reinitializations of the management system."
34   REFERENCE   "13.26.4"
35   ::= { ieee8021MstpCistEntry 6 }
36
37 -- =====
38 -- ieee8021MstpTable:
39 -- =====
40
41 ieee8021MstpTable OBJECT-TYPE
42   SYNTAX      SEQUENCE OF Ieee8021MstpEntry
43   MAX-ACCESS  not-accessible
44   STATUS      current
45   DESCRIPTION
46       "In an MSTP Bridge, the MSTP Table. Each row in the Table
47       represents information regarding a Bridge's Bridge Protocol
48       Entity for the specified Spanning Tree instance.
49
50       Entries in this table MUST be retained across
51       reinitializations of the management system.
52
53       Note that entries can be created in this table only for Bridge
54       components for which the corresponding instance of
55       ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
56       has a value of mstp(3)."
57   REFERENCE   "12.8.1.2, 12.8.1.4, 12.12.3.2, 12.12.1"
58   ::= { ieee8021MstpObjects 2 }
59
60 ieee8021MstpEntry OBJECT-TYPE
61   SYNTAX      Ieee8021MstpEntry
62   MAX-ACCESS  not-accessible
63   STATUS      current
64   DESCRIPTION
65       "A MSTP Table entry."
66   INDEX { ieee8021MstpComponentId, ieee8021MstpId }
67   ::= { ieee8021MstpTable 1 }
68
69 Ieee8021MstpEntry ::= SEQUENCE {
70     ieee8021MstpComponentId      IEEE8021PbbComponentIdentifier,
71     ieee8021MstpId               IEEE8021MstIdentifier,
72     ieee8021MstpBridgeId         BridgeId,
```



```
1      ieee8021MstpTimeSinceTopologyChange  TimeTicks,
2      ieee8021MstpTopologyChanges          Counter64,
3      ieee8021MstpTopologyChange          TruthValue,
4      ieee8021MstpDesignatedRoot          BridgeId,
5      ieee8021MstpRootPathCost             Integer32,
6      ieee8021MstpRootPort                IEEE8021BridgePortNumber,
7      ieee8021MstpBridgePriority            Integer32,
8      ieee8021MstpVids0                    OCTET STRING,
9      ieee8021MstpVids1                    OCTET STRING,
10     ieee8021MstpVids2                    OCTET STRING,
11     ieee8021MstpVids3                    OCTET STRING,
12     ieee8021MstpRowStatus                RowStatus
13 }
14
15 ieee8021MstpComponentId OBJECT-TYPE
16     SYNTAX      IEEE8021PbbComponentIdentifier
17     MAX-ACCESS  not-accessible
18     STATUS      current
19     DESCRIPTION
20         "The component identifier is used to distinguish between the
21         multiple virtual Bridge instances within a PBB. In simple
22         situations where there is only a single component the default
23         value is 1."
24     ::= { ieee8021MstpEntry 1 }
25
26 ieee8021MstpId OBJECT-TYPE
27     SYNTAX      IEEE8021MstIdentifier
28     MAX-ACCESS  not-accessible
29     STATUS      current
30     DESCRIPTION
31         "In an MSTP Bridge, this parameter is the MSTID, i.e., the
32         identifier of a Spanning Tree (or MST) Instance."
33     ::= { ieee8021MstpEntry 2 }
34
35 ieee8021MstpBridgeId OBJECT-TYPE
36     SYNTAX      BridgeId
37     MAX-ACCESS  read-only
38     STATUS      current
39     DESCRIPTION
40         "In an MSTP Bridge, the Bridge Identifier for the MSTI."
41     REFERENCE   "13.26.2"
42     ::= { ieee8021MstpEntry 3 }
43
44 ieee8021MstpTimeSinceTopologyChange OBJECT-TYPE
45     SYNTAX      TimeTicks
46     UNITS       "centi-seconds"
47     MAX-ACCESS  read-only
48     STATUS      current
49     DESCRIPTION
50         "In an MSTP Bridge, count in seconds of the time elapsed since
51         tcWhile was last non-zero for any Port for the MSTI."
52     REFERENCE   "13.25.9"
53     ::= { ieee8021MstpEntry 4 }
54
55 ieee8021MstpTopologyChanges OBJECT-TYPE
56     SYNTAX      Counter64
57     UNITS       "topology changes"
58     MAX-ACCESS  read-only
59     STATUS      current
60     DESCRIPTION
61         "In an MSTP Bridge, count of the times tcWhile has been
62         non-zero for any Port for the MSTI since the Bridge was powered
63         on or initialized."
64     REFERENCE   "13.25.9"
65     ::= { ieee8021MstpEntry 5 }
66
67 ieee8021MstpTopologyChange OBJECT-TYPE
68     SYNTAX      TruthValue
69     MAX-ACCESS  read-only
70     STATUS      current
71     DESCRIPTION
72         "In an MSTP Bridge, the Topology Change parameter value: true(1)
```

```
1         if tcWhile is non-zero for any Port for the MSTI."
2     REFERENCE    "13.25.9"
3     ::= { ieee8021MstpEntry 6 }
4
5 ieee8021MstpDesignatedRoot OBJECT-TYPE
6     SYNTAX      BridgeId
7     MAX-ACCESS  read-only
8     STATUS      current
9     DESCRIPTION
10        "In an MSTP Bridge, the Designated Root parameter value, i.e., the
11        Bridge Identifier of the Root Bridge for the MSTI."
12     REFERENCE    "13.27.20"
13     ::= { ieee8021MstpEntry 7 }
14
15 ieee8021MstpRootPathCost OBJECT-TYPE
16     SYNTAX      Integer32
17     MAX-ACCESS  read-only
18     STATUS      current
19     DESCRIPTION
20        "In an MSTP Bridge, the Root Path Cost parameter value, i.e., the
21        path cost from the transmitting Bridge to the Root Bridge for
22        the MSTI."
23     REFERENCE    "13.27.20"
24     ::= { ieee8021MstpEntry 8 }
25
26 ieee8021MstpRootPort OBJECT-TYPE
27     SYNTAX      IEEE8021BridgePortNumber
28     MAX-ACCESS  read-only
29     STATUS      current
30     DESCRIPTION
31        "In an MSTP Bridge, the Root Port parameter value, i.e., the Root
32        Port for the MSTI."
33     REFERENCE    "13.26.9"
34     ::= { ieee8021MstpEntry 9 }
35
36 ieee8021MstpBridgePriority OBJECT-TYPE
37     SYNTAX      Integer32 (0..61440)
38     MAX-ACCESS  read-create
39     STATUS      current
40     DESCRIPTION
41        "In an MSTP Bridge, the Bridge Priority parameter value for the
42        MSTI, i.e., the most significant 4 bits of the Bridge Identifier
43        for the MSTI."
44     REFERENCE    "13.26.3"
45     ::= { ieee8021MstpEntry 10 }
46
47 ieee8021MstpVids0 OBJECT-TYPE
48     SYNTAX      OCTET STRING (SIZE(128))
49     MAX-ACCESS  read-only
50     STATUS      current
51     DESCRIPTION
52        "This object contains the first 1024 bits of the 4096 bit vector
53        indicating which VIDs are assigned to this MSTID. The high order
54        bit of the first octet corresponds to the first bit of the vector,
55        while the low order bit of the last octet corresponds to the last
56        bit of this portion of the vector. A bit that is on (equal to 1)
57        indicates that the corresponding VID is assigned to this MSTID."
58     ::= { ieee8021MstpEntry 11 }
59
60 ieee8021MstpVids1 OBJECT-TYPE
61     SYNTAX      OCTET STRING (SIZE(128))
62     MAX-ACCESS  read-only
63     STATUS      current
64     DESCRIPTION
65        "This object contains the second 1024 bits of the 4096 bit vector
66        indicating which VIDs are assigned to this MSTID. The high order
67        bit of the first octet corresponds to the first bit of this
68        portion of the vector, while the low order bit of the last octet
69        corresponds to the last bit of this portion of the vector. A bit
70        that is on (equal to 1) indicates that the corresponding VID is
71        assigned to this MSTID."
72     ::= { ieee8021MstpEntry 12 }
```

```
1
2 ieee8021MstpVids2 OBJECT-TYPE
3     SYNTAX      OCTET STRING (SIZE(128))
4     MAX-ACCESS  read-only
5     STATUS      current
6     DESCRIPTION
7         "This object contains the third 1024 bits of the 4096 bit vector
8         indicating which VIDs are assigned to this MSTID. The high order
9         bit of the first octet corresponds to the first bit of this
10        portion of the vector, while the low order bit of the last octet
11        corresponds to the last bit of this portion of the vector. A bit
12        that is on (equal to 1) indicates that the corresponding VID is
13        assigned to this MSTID."
14    ::= { ieee8021MstpEntry 13 }
15
16 ieee8021MstpVids3 OBJECT-TYPE
17     SYNTAX      OCTET STRING (SIZE(128))
18     MAX-ACCESS  read-only
19     STATUS      current
20     DESCRIPTION
21         "This object contains the fourth 1024 bits of the 4096 bit vector
22         indicating which VIDs are assigned to this MSTID. The high order
23         bit of the first octet corresponds to the first bit of this
24         portion of the vector, while the low order bit of the last octet
25         corresponds to the last bit of this portion of the vector. A bit
26         that is on (equal to 1) indicates that the corresponding VID is
27         assigned to this MSTID."
28    ::= { ieee8021MstpEntry 14 }
29
30 ieee8021MstpRowStatus OBJECT-TYPE
31     SYNTAX      RowStatus
32     MAX-ACCESS  read-create
33     STATUS      current
34     DESCRIPTION
35         "The status of the row.
36
37         Read SNMPv2-TC (RFC2579) for an
38         explanation of the possible values this object can take.
39
40         The writable columns in a row cannot be changed if the row
41         is active. All columns must have a valid value before a row
42         can be activated."
43    ::= { ieee8021MstpEntry 15 }
44
45 -- =====
46 -- ieee8021MstpCistPortTable:
47 -- =====
48
49 ieee8021MstpCistPortTable OBJECT-TYPE
50     SYNTAX      SEQUENCE OF Ieee8021MstpCistPortEntry
51     MAX-ACCESS  not-accessible
52     STATUS      current
53     DESCRIPTION
54         "The CIST Port Table. Each row in the Table represents information
55         regarding a specific Port within the Bridge's Bridge Protocol
56         Entity, for the CIST.
57
58         The values of all writable objects in this table MUST be
59         retained across reinitializations of the management system.
60
61         Note that entries will exist in this table only for Bridge
62         components for which the corresponding instance of
63         ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
64         has a value of mstp(3).
65
66         This table contains objects corresponding to the following items
67         from 12.8.2.1, 12.8.2.3, and 12.8.2.5. Some of those items are
68         provided in the IEEE8021-SPANNING-TREE-MIB as noted below.
69
70         From 12.8.2.1:
71             Items a), d), e), and i) through w) are defined in this table
72             The remaining items are covered in the
```

```
1         IEEE8021-SPANNING-TREE-MIB:
2             b) ieee8021SpanningTreePortState
3             c) ieee8021SpanningTreePortPriority
4             d) ieee8021SpanningTreePortPathCost
5             f) ieee8021SpanningTreePortDesignatedCost
6             g) ieee8021SpanningTreePortDesignatedBridge
7             h) ieee8021SpanningTreePortDesignatedPort
8     From 12.8.2.3:
9         Items a), b), and d) through h) are defined in this table
10        (item a is the index)
11        The remaining items are covered in the
12        IEEE8021-SPANNING-TREE-MIB:
13            b) ieee8021SpanningTreePortPathCost,
14            c) ieee8021SpanningTreePortPriority
15    From 12.8.2.5:
16        All items are defined in this table
17    Also from 12.8.2.1:
18        Items u), v), w), and x) are defined in this table
19    Also from 12.8.2.3:
20        Items i), j), k), and l) are defined in this table"
21    REFERENCE    "12.8.2.1, 12.8.2.3, 12.8.2.5"
22    ::= { ieee8021MstpObjects 3 }
23
24 ieee8021MstpCistPortEntry OBJECT-TYPE
25     SYNTAX      Ieee8021MstpCistPortEntry
26     MAX-ACCESS  not-accessible
27     STATUS      current
28     DESCRIPTION
29         "A CIST Port Table entry."
30     INDEX { ieee8021MstpCistPortComponentId, ieee8021MstpCistPortNum }
31     ::= { ieee8021MstpCistPortTable 1 }
32
33 Ieee8021MstpCistPortEntry ::= SEQUENCE {
34     ieee8021MstpCistPortComponentId      IEEE8021PbbComponentIdentifier,
35     ieee8021MstpCistPortNum              IEEE8021BridgePortNumber,
36     ieee8021MstpCistPortUptime           TimeTicks,
37     ieee8021MstpCistPortAdminPathCost    Integer32,
38     ieee8021MstpCistPortDesignatedRoot   BridgeId,
39     ieee8021MstpCistPortTopologyChangeAck TruthValue,
40     ieee8021MstpCistPortHelloTime        Integer32,
41     ieee8021MstpCistPortAdminEdgePort    TruthValue,
42     ieee8021MstpCistPortOperEdgePort     TruthValue,
43     ieee8021MstpCistPortMacEnabled       TruthValue,
44     ieee8021MstpCistPortMacOperational   TruthValue,
45     ieee8021MstpCistPortRestrictedRole    TruthValue,
46     ieee8021MstpCistPortRestrictedTcn    TruthValue,
47     ieee8021MstpCistPortRole             INTEGER,
48     ieee8021MstpCistPortDisputed         TruthValue,
49     ieee8021MstpCistPortCistRegionalRootId BridgeId,
50     ieee8021MstpCistPortCistPathCost     Unsigned32,
51     ieee8021MstpCistPortProtocolMigration TruthValue,
52     ieee8021MstpCistPortEnableBPDURx     TruthValue,
53     ieee8021MstpCistPortEnableBPDUTx     TruthValue,
54     ieee8021MstpCistPortPseudoRootId     BridgeId,
55     ieee8021MstpCistPortIsL2Gp           TruthValue
56 }
57
58 ieee8021MstpCistPortComponentId OBJECT-TYPE
59     SYNTAX      IEEE8021PbbComponentIdentifier
60     MAX-ACCESS  not-accessible
61     STATUS      current
62     DESCRIPTION
63         "The component identifier is used to distinguish between the
64         multiple virtual Bridge instances within a PBB. In simple
65         situations where there is only a single component the default
66         value is 1."
67     ::= { ieee8021MstpCistPortEntry 1 }
68
69 ieee8021MstpCistPortNum OBJECT-TYPE
70     SYNTAX      IEEE8021BridgePortNumber
71     MAX-ACCESS  not-accessible
72     STATUS      current
```

```
1  DESCRIPTION
2      "The Port's Port Number parameter value for the CIST, i.e., the
3      number of the Bridge Port for the CIST."
4      ::= { ieee8021MstpCistPortEntry 2 }
5
6  ieee8021MstpCistPortUptime OBJECT-TYPE
7      SYNTAX      TimeTicks
8      UNITS        "centi-seconds"
9      MAX-ACCESS   read-only
10     STATUS       current
11     DESCRIPTION
12         "The Port's Uptime parameter value for the CIST, i.e., the count
13         in seconds of the time elapsed since the Port was last reset or
14         initialized (BEGIN, Annex E)."
15     ::= { ieee8021MstpCistPortEntry 3 }
16
17  ieee8021MstpCistPortAdminPathCost OBJECT-TYPE
18     SYNTAX      Integer32 (0..200000000)
19     MAX-ACCESS   read-write
20     STATUS       current
21     DESCRIPTION
22         "The administratively assigned value for the contribution
23         of this port to the path cost of paths toward the spanning
24         tree root.
25
26         Writing a value of '0' assigns the automatically calculated
27         default Path Cost value to the port.  If the default Path
28         Cost is being used, this object returns '0' when read.
29
30         This complements the object ieee8021MstpCistPortCistPathCost,
31         which returns the operational value of the port path cost.
32
33         The value of this object MUST be retained across
34         reinitializations of the management system."
35     REFERENCE    "13.27.25, 17.13.11 of IEEE Std 802.1D"
36     ::= { ieee8021MstpCistPortEntry 4 }
37
38  ieee8021MstpCistPortDesignatedRoot OBJECT-TYPE
39     SYNTAX      BridgeId
40     MAX-ACCESS   read-only
41     STATUS       current
42     DESCRIPTION
43         "The CIST Regional Root Identifier component of the Port's port
44         priority vector, as defined in 13.10, for the CIST."
45     REFERENCE    "13.27.47"
46     ::= { ieee8021MstpCistPortEntry 5 }
47
48  ieee8021MstpCistPortTopologyChangeAck OBJECT-TYPE
49     SYNTAX      TruthValue
50     MAX-ACCESS   read-only
51     STATUS       current
52     DESCRIPTION
53         "The Port's Topology Change Acknowledge parameter value.
54         True(1) if a Configuration Message with a topology change
55         acknowledge flag set is to be transmitted. "
56     REFERENCE    "13.27.72, 17.19.41 of IEEE Std 802.1D"
57     ::= { ieee8021MstpCistPortEntry 6 }
58
59  ieee8021MstpCistPortHelloTime OBJECT-TYPE
60     SYNTAX      Integer32 (100..1000)
61     UNITS        "centi-seconds"
62     MAX-ACCESS   read-only
63     STATUS       current
64     DESCRIPTION
65         "The Port's Hello Time timer parameter value, for the CIST.
66         In centi-seconds"
67     REFERENCE    "13.27.48"
68     ::= { ieee8021MstpCistPortEntry 7 }
69
70  ieee8021MstpCistPortAdminEdgePort OBJECT-TYPE
71     SYNTAX      TruthValue
72     MAX-ACCESS   read-write
```

```
1  STATUS      current
2  DESCRIPTION
3      "In a Bridge that supports the identification of edge ports, the
4      Port's Admin Edge Port parameter value, for the CIST."
5  REFERENCE   "13.27.1"
6  DEFVAL      { false }
7  ::= { ieee8021MstpCistPortEntry 8 }
8
9  ieee8021MstpCistPortOperEdgePort OBJECT-TYPE
10  SYNTAX      TruthValue
11  MAX-ACCESS  read-only
12  STATUS      current
13  DESCRIPTION
14      "In a Bridge that supports the identification of edge ports, the
15      Port's operational Edge Port parameter value, for the CIST.
16      True(1) if it is an operEdge Port."
17  REFERENCE   "13.27.44"
18  ::= { ieee8021MstpCistPortEntry 9 }
19
20  ieee8021MstpCistPortMacEnabled OBJECT-TYPE
21  SYNTAX      TruthValue
22  MAX-ACCESS  read-write
23  STATUS      current
24  DESCRIPTION
25      "In a Bridge that supports the MAC Enabled parameter, the current
26      state of the MAC Enabled parameter.
27      True(1) indicates that administratively the MAC is set as if it
28      was connected to a point-to-point LAN."
29  REFERENCE   "12.8.2.1.3 p)"
30  ::= { ieee8021MstpCistPortEntry 10 }
31
32  ieee8021MstpCistPortMacOperational OBJECT-TYPE
33  SYNTAX      TruthValue
34  MAX-ACCESS  read-only
35  STATUS      current
36  DESCRIPTION
37      "In a Bridge that supports the MAC Operational parameter, the
38      current state of the MAC Operational parameter.
39      True(1) indicates the MAC is operational."
40  REFERENCE   "12.8.2.1.3 q)"
41  ::= { ieee8021MstpCistPortEntry 11 }
42
43  ieee8021MstpCistPortRestrictedRole OBJECT-TYPE
44  SYNTAX      TruthValue
45  MAX-ACCESS  read-write
46  STATUS      current
47  DESCRIPTION
48      "The current state of the restrictedRole parameter for the Port.
49      True(1) causes the Port not to be selected as Root Port for the
50      CIST or any MSTI. "
51  REFERENCE   "13.27.64"
52  ::= { ieee8021MstpCistPortEntry 12 }
53
54  ieee8021MstpCistPortRestrictedTcn OBJECT-TYPE
55  SYNTAX      TruthValue
56  MAX-ACCESS  read-write
57  STATUS      current
58  DESCRIPTION
59      "The current state of the restrictedTcn parameter for the Port.
60      True(1) causes the Port not to propagate topology changes to
61      other Ports."
62  REFERENCE   "13.27.65"
63  ::= { ieee8021MstpCistPortEntry 13 }
64
65  ieee8021MstpCistPortRole OBJECT-TYPE
66  SYNTAX      INTEGER {
67              root(1),
68              alternate(2),
69              designated(3),
70              backup(4)
71          }
72  MAX-ACCESS  read-only
```

```
1  STATUS      current
2  DESCRIPTION
3      "The current Port Role for the Port (i.e., Root, Alternate,
4      Designated, or Backup), for the CIST."
5  REFERENCE   "12.8.2.1.3 v)"
6  ::= { ieee8021MstpCistPortEntry 14 }
7
8  ieee8021MstpCistPortDisputed OBJECT-TYPE
9      SYNTAX      TruthValue
10     MAX-ACCESS   read-only
11     STATUS      current
12     DESCRIPTION
13         "The current value of the disputed variable for the CIST for
14         the Port. A value of true(1) indicates that the disputed
15         variable is set. A value of false(2) indicates that the
16         agreed variable is cleared."
17     REFERENCE   "13.27.22"
18     ::= { ieee8021MstpCistPortEntry 15 }
19
20  ieee8021MstpCistPortCistRegionalRootId OBJECT-TYPE
21     SYNTAX      BridgeId
22     MAX-ACCESS   read-only
23     STATUS      current
24     DESCRIPTION
25         "In an MSTP Bridge, the CIST Regional Root Identifier, i.e., the
26         Bridge Identifier of the current CIST Regional Root, for the CIST."
27     REFERENCE   "13.9:c, 13.10, 13.27.47"
28     ::= { ieee8021MstpCistPortEntry 16 }
29
30  ieee8021MstpCistPortCistPathCost OBJECT-TYPE
31     SYNTAX      Unsigned32 (0..2147483647)
32     MAX-ACCESS   read-only
33     STATUS      current
34     DESCRIPTION
35         "In an MSTP Bridge, the Port's Port Path Cost
36         parameter value for the CIST."
37     REFERENCE   "13.27.25, 17.13.11 of IEEE Std 802.1D"
38     ::= { ieee8021MstpCistPortEntry 17 }
39
40  ieee8021MstpCistPortProtocolMigration OBJECT-TYPE
41     SYNTAX      TruthValue
42     MAX-ACCESS   read-write
43     STATUS      current
44     DESCRIPTION
45         "In an MSTP Bridge, the current value of the mcheck variable for
46         the Port. A value of true(1) forces the state machine to
47         perform functions as per 13.27.38."
48     REFERENCE   "13.27.38"
49     ::= { ieee8021MstpCistPortEntry 18 }
50
51  ieee8021MstpCistPortEnableBPDURx OBJECT-TYPE
52     SYNTAX      TruthValue
53     MAX-ACCESS   read-write
54     STATUS      current
55     DESCRIPTION
56         "In an MSTP Bridge, the enableBPDURx parameter value. A value
57         of false(2) indicates that BPDUs are ignored."
58     REFERENCE   "13.27.38"
59     DEFVAL { true }
60     ::= { ieee8021MstpCistPortEntry 19 }
61
62  ieee8021MstpCistPortEnableBPDUTx OBJECT-TYPE
63     SYNTAX      TruthValue
64     MAX-ACCESS   read-write
65     STATUS      current
66     DESCRIPTION
67         "In an MSTP Bridge, the enableBPDUTx parameter value. A value
68         of false(2) indicates that BPDUs are not transmitted."
69     REFERENCE   "13.27.24"
70     DEFVAL { true }
71     ::= { ieee8021MstpCistPortEntry 20 }
72
```

```
1 ieee8021MstpCistPortPseudoRootId OBJECT-TYPE
2   SYNTAX      BridgeId
3   MAX-ACCESS  read-write
4   STATUS      current
5   DESCRIPTION
6       "In an MSTP Bridge, the pseudoRootId parameter value."
7   REFERENCE   "13.27.51"
8   ::= { ieee8021MstpCistPortEntry 21 }
9
10 ieee8021MstpCistPortIsL2Gp OBJECT-TYPE
11   SYNTAX      TruthValue
12   MAX-ACCESS  read-write
13   STATUS      current
14   DESCRIPTION
15       "In an MSTP Bridge, the isL2gp parameter value. A value of
16       true(1) indicates this is an L2GP port."
17   REFERENCE   "13.27.26"
18   DEFVAL { false }
19   ::= { ieee8021MstpCistPortEntry 22 }
20
21 -- =====
22 -- ieee8021MstpPortTable:
23 -- =====
24
25 ieee8021MstpPortTable OBJECT-TYPE
26   SYNTAX      SEQUENCE OF Ieee8021MstpPortEntry
27   MAX-ACCESS  not-accessible
28   STATUS      current
29   DESCRIPTION
30       "The MSTP Port Table. Each row in the Table represents information
31       regarding a specific Port within the Bridge's Bridge Protocol
32       Entity, for a given MSTI.
33
34       The values of all writable objects in this table MUST be
35       retained across reinitializations of the management system.
36
37       Note that entries will exist in this table only for Bridge
38       components for which the corresponding instance of
39       ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
40       has a value of mstp(3)."
41   REFERENCE   "12.8.2.2, 12.8.2.4"
42   ::= { ieee8021MstpObjects 4 }
43
44 ieee8021MstpPortEntry OBJECT-TYPE
45   SYNTAX      Ieee8021MstpPortEntry
46   MAX-ACCESS  not-accessible
47   STATUS      current
48   DESCRIPTION
49       "A MSTP Port Table entry."
50   INDEX { ieee8021MstpPortComponentId,
51           ieee8021MstpPortMstId,
52           ieee8021MstpPortNum }
53   ::= { ieee8021MstpPortTable 1 }
54
55 Ieee8021MstpPortEntry ::= SEQUENCE {
56     ieee8021MstpPortComponentId  IEEE8021PbbComponentIdentifier,
57     ieee8021MstpPortMstId        IEEE8021MstIdentifier,
58     ieee8021MstpPortNum          IEEE8021BridgePortNumber,
59     ieee8021MstpPortUptime       TimeTicks,
60     ieee8021MstpPortState        INTEGER,
61     ieee8021MstpPortPriority      Integer32,
62     ieee8021MstpPortPathCost     Integer32,
63     ieee8021MstpPortDesignatedRoot BridgeId,
64     ieee8021MstpPortDesignatedCost Integer32,
65     ieee8021MstpPortDesignatedBridge BridgeId,
66     ieee8021MstpPortDesignatedPort IEEE8021BridgePortNumber,
67     ieee8021MstpPortRole         INTEGER,
68     ieee8021MstpPortDisputed     TruthValue,
69     ieee8021MstpPortAdminPathCost Integer32
70 }
71
72 ieee8021MstpPortComponentId OBJECT-TYPE
```



```
1 SYNTAX IEEE8021PbbComponentIdentifier
2 MAX-ACCESS not-accessible
3 STATUS current
4 DESCRIPTION
5     "The component identifier is used to distinguish between the
6     multiple virtual Bridge instances within a PBB. In simple
7     situations where there is only a single component the default
8     value is 1."
9     ::= { ieee8021MstpPortEntry 1 }
10
11 ieee8021MstpPortMstId OBJECT-TYPE
12 SYNTAX IEEE8021MstIdentifier
13 MAX-ACCESS not-accessible
14 STATUS current
15 DESCRIPTION
16     "In an MSTP Bridge, this parameter is the MSTID, i.e., the
17     identifier of a Spanning Tree (or MST) Instance."
18     ::= { ieee8021MstpPortEntry 2 }
19
20 ieee8021MstpPortNum OBJECT-TYPE
21 SYNTAX IEEE8021BridgePortNumber
22 MAX-ACCESS not-accessible
23 STATUS current
24 DESCRIPTION
25     "In an MSTP Bridge, the Port's Port Number parameter value for
26     the MSTI, i.e., the number of the Bridge Port for the MSTI."
27     ::= { ieee8021MstpPortEntry 3 }
28
29 ieee8021MstpPortUptime OBJECT-TYPE
30 SYNTAX TimeTicks
31 UNITS "centi-seconds"
32 MAX-ACCESS read-only
33 STATUS current
34 DESCRIPTION
35     "In an MSTP Bridge, the Port's Uptime parameter value for the
36     MSTI, i.e., the count in seconds of the time elapsed since the
37     Port was last reset or initialized (BEGIN, Annex E)."
38     ::= { ieee8021MstpPortEntry 4 }
39
40 ieee8021MstpPortState OBJECT-TYPE
41 SYNTAX INTEGER {
42     disabled(1),
43     listening(2),
44     learning(3),
45     forwarding(4),
46     blocking(5)
47 }
48 MAX-ACCESS read-only
49 STATUS current
50 DESCRIPTION
51     "In an MSTP Bridge, the current state of the Port (i.e., Disabled,
52     Listening, Learning, Forwarding, or Blocking), for the MSTI."
53 REFERENCE "13.38"
54     ::= { ieee8021MstpPortEntry 5 }
55
56 ieee8021MstpPortPriority OBJECT-TYPE
57 SYNTAX Integer32 (0..240)
58 MAX-ACCESS read-write
59 STATUS current
60 DESCRIPTION
61     "In an MSTP Bridge, the Port's Port Priority parameter value for
62     the MSTI, i.e., the priority field for the Port Identifier for the
63     Port for the MSTI."
64 REFERENCE "13.27.47"
65     ::= { ieee8021MstpPortEntry 6 }
66
67 ieee8021MstpPortPathCost OBJECT-TYPE
68 SYNTAX Integer32 (1..200000000)
69 MAX-ACCESS read-write
70 STATUS current
71 DESCRIPTION
72     "In an MSTP Bridge, the Port's Port Path Cost parameter value for
```

```
1         the MSTI."
2     REFERENCE    "13.27.33"
3     ::= { ieee8021MstpPortEntry 7 }
4
5 ieee8021MstpPortDesignatedRoot OBJECT-TYPE
6     SYNTAX      BridgeId
7     MAX-ACCESS  read-only
8     STATUS      current
9     DESCRIPTION
10        "In an MSTP Bridge, the Regional Root Identifier component of the
11        Port's MSTI port priority vector, as defined in 13.11, for the MSTI."
12     REFERENCE    "13.27.47"
13     ::= { ieee8021MstpPortEntry 8 }
14
15 ieee8021MstpPortDesignatedCost OBJECT-TYPE
16     SYNTAX      Integer32
17     MAX-ACCESS  read-only
18     STATUS      current
19     DESCRIPTION
20        "In an MSTP Bridge, the Internal Root Path Cost component of the
21        Port's MSTI port priority vector, as defined in 13.11, for the MSTI."
22     REFERENCE    "13.27.47"
23     ::= { ieee8021MstpPortEntry 9 }
24
25 ieee8021MstpPortDesignatedBridge OBJECT-TYPE
26     SYNTAX      BridgeId
27     MAX-ACCESS  read-only
28     STATUS      current
29     DESCRIPTION
30        "In an MSTP Bridge, the Designated Bridge Identifier component of
31        the Port's MSTI port priority vector, as defined in 13.11, for
32        the MSTI."
33     REFERENCE    "13.27.47"
34     ::= { ieee8021MstpPortEntry 10 }
35
36 ieee8021MstpPortDesignatedPort OBJECT-TYPE
37     SYNTAX      IEEE8021BridgePortNumber
38     MAX-ACCESS  read-only
39     STATUS      current
40     DESCRIPTION
41        "In an MSTP Bridge, the Designated Port Identifier component of the
42        Port's MSTI port priority vector, as defined in 13.11, for the MSTI."
43     REFERENCE    "13.27.47"
44     ::= { ieee8021MstpPortEntry 11 }
45
46 ieee8021MstpPortRole OBJECT-TYPE
47     SYNTAX      INTEGER {
48         root(1),
49         alternate(2),
50         designated(3),
51         backup(4)
52     }
53     MAX-ACCESS  read-only
54     STATUS      current
55     DESCRIPTION
56        "In an MSTP Bridge, the current Port Role for the Port (i.e., Root,
57        Alternate, Designated, or Backup), for the MSTI."
58     ::= { ieee8021MstpPortEntry 12 }
59
60 ieee8021MstpPortDisputed OBJECT-TYPE
61     SYNTAX      TruthValue
62     MAX-ACCESS  read-only
63     STATUS      current
64     DESCRIPTION
65        "In an MSTP Bridge, the current value of the disputed variable for
66        the MSTI for the Port."
67     REFERENCE    "13.27.22"
68     ::= { ieee8021MstpPortEntry 13 }
69
70
71 ieee8021MstpPortAdminPathCost OBJECT-TYPE
72     SYNTAX      Integer32 (1..200000000)
```

```
1  MAX-ACCESS  read-write
2  STATUS      current
3  DESCRIPTION
4      "In an MSTP Bridge, the administrative value of the Port's
5      Port Path Cost parameter value for the MSTI.
6
7      Writing a value of '0' assigns the automatically calculated
8      default Path Cost value to the Port.  If the default Path
9      Cost is being used, this object returns '0' when read.
10
11     This complements the object ieee8021MstpPortPathCost,
12     which returns the operational value of the path cost.
13
14     The value of this object MUST be retained across
15     reinitializations of the management system."
16  REFERENCE   "13.27.33"
17  ::= { ieee8021MstpPortEntry 14 }
18
19 -- =====
20 -- ieee8021MstpFidToMstiTable deprecated
21 -- see ieee8021MstpFidToMstiV2Table below
22 -- =====
23
24 ieee8021MstpFidToMstiTable OBJECT-TYPE
25     SYNTAX      SEQUENCE OF Ieee8021MstpFidToMstiEntry
26     MAX-ACCESS  not-accessible
27     STATUS      deprecated
28     DESCRIPTION
29         "In an MSTP Bridge, the fixed-length FID to MSTID Allocation Table
30         entry. Each entry in the Table corresponds to a FID, and the value
31         of the entry specifies the MSTID of the spanning tree to which the
32         set of VLANs supported by that FID are assigned. A value of zero
33         in an entry specifies that the set of VLANs supported by that FID
34         are assigned to the CST.
35
36         The values of all writable objects in this table MUST be
37         retained across reinitializations of the management system.
38
39         Note that entries will exist in this table only for Bridge
40         components for which the corresponding instance of
41         ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
42         has a value of mstp(3)."
```

```
43  REFERENCE   "12.12.2"
44  ::= { ieee8021MstpObjects 5 }
45
46 ieee8021MstpFidToMstiEntry OBJECT-TYPE
47     SYNTAX      Ieee8021MstpFidToMstiEntry
48     MAX-ACCESS  not-accessible
49     STATUS      deprecated
50     DESCRIPTION
51         "In an MSTP Bridge, a FID to MSTID Allocation Table entry."
52     INDEX { ieee8021MstpFidToMstiComponentId, ieee8021MstpFidToMstiFid }
53     ::= { ieee8021MstpFidToMstiTable 1 }
54
55 Ieee8021MstpFidToMstiEntry ::= SEQUENCE {
56     ieee8021MstpFidToMstiComponentId  IEEE8021PbbComponentIdentifier,
57     ieee8021MstpFidToMstiFid          Unsigned32,
58     ieee8021MstpFidToMstiMstId        IEEE8021MstIdentifier
59 }
60
61 ieee8021MstpFidToMstiComponentId OBJECT-TYPE
62     SYNTAX      IEEE8021PbbComponentIdentifier
63     MAX-ACCESS  not-accessible
64     STATUS      deprecated
65     DESCRIPTION
66         "The component identifier is used to distinguish between the
67         multiple virtual Bridge instances within a PBB.  In simple
68         situations where there is only a single component the default
69         value is 1."
70     ::= { ieee8021MstpFidToMstiEntry 1 }
71
72 ieee8021MstpFidToMstiFid OBJECT-TYPE
```

```
1 SYNTAX      Unsigned32 (1..4094)
2 MAX-ACCESS  not-accessible
3 STATUS      deprecated
4 DESCRIPTION
5     "In an MSTP Bridge, the FID of the entry in the FID to MSTID
6     Allocation Table."
7     ::= { ieee8021MstpFidToMstiEntry 2 }
8
9 ieee8021MstpFidToMstiMstId OBJECT-TYPE
10 SYNTAX      IEEE8021MstIdentifier
11 MAX-ACCESS  read-write
12 STATUS      deprecated
13 DESCRIPTION
14     "In an MSTP Bridge, the MSTID to which the FID (of the entry in
15     the FID to MSTID Allocation Table) is to be allocated."
16     ::= { ieee8021MstpFidToMstiEntry 3 }
17
18 -- =====
19 -- ieee8021MstpFidToMstiV2Table
20 -- =====
21
22 ieee8021MstpFidToMstiV2Table OBJECT-TYPE
23 SYNTAX      SEQUENCE OF Ieee8021MstpFidToMstiV2Entry
24 MAX-ACCESS  not-accessible
25 STATUS      current
26 DESCRIPTION
27     "In an MSTP Bridge, the fixed-length FID to MSTID Allocation Table
28     entry. Each entry in the Table corresponds to a FID, and the value
29     of the entry specifies the MSTID of the spanning tree to which the
30     set of VLANs supported by that FID are assigned. A value of zero
31     in an entry specifies that the set of VLANs supported by that FID
32     are assigned to the CST.
33
34     The values of all writable objects in this table MUST be
35     retained across reinitializations of the management system.
36
37     Note that entries will exist in this table only for Bridge
38     components for which the corresponding instance of
39     ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
40     has a value of mstp(3)."
```

```
41 REFERENCE  "12.12.2"
42 ::= { ieee8021MstpObjects 9 }
43
44 ieee8021MstpFidToMstiV2Entry OBJECT-TYPE
45 SYNTAX      Ieee8021MstpFidToMstiV2Entry
46 MAX-ACCESS  not-accessible
47 STATUS      current
48 DESCRIPTION
49     "In an MSTP Bridge, a FID to MSTID Allocation Table entry."
50 INDEX { ieee8021MstpFidToMstiV2ComponentId, ieee8021MstpFidToMstiV2Fid }
51 ::= { ieee8021MstpFidToMstiV2Table 1 }
52
53 Ieee8021MstpFidToMstiV2Entry ::= SEQUENCE {
54     ieee8021MstpFidToMstiV2ComponentId  IEEE8021PbbComponentIdentifier,
55     ieee8021MstpFidToMstiV2Fid          Unsigned32,
56     ieee8021MstpFidToMstiV2MstId        Unsigned32
57 }
58
59 ieee8021MstpFidToMstiV2ComponentId OBJECT-TYPE
60 SYNTAX      IEEE8021PbbComponentIdentifier
61 MAX-ACCESS  not-accessible
62 STATUS      current
63 DESCRIPTION
64     "The component identifier is used to distinguish between the
65     multiple virtual Bridge instances within a PBB. In simple
66     situations where there is only a single component the default
67     value is 1."
68     ::= { ieee8021MstpFidToMstiV2Entry 1 }
69
70 ieee8021MstpFidToMstiV2Fid OBJECT-TYPE
71 SYNTAX      Unsigned32 (1..4095)
72 MAX-ACCESS  not-accessible
```

```
1  STATUS      current
2  DESCRIPTION
3      "In an MSTP Bridge, the FID of the entry in the FID to MSTID
4      Allocation Table."
5      ::= { ieee8021MstpFidToMstiV2Entry 2 }
6
7  ieee8021MstpFidToMstiV2MstId OBJECT-TYPE
8      SYNTAX      Unsigned32 (0..4095)
9      MAX-ACCESS  read-write
10     STATUS      current
11     DESCRIPTION
12         "In an MSTP Bridge, the MSTID to which the FID (of the entry in
13         the FID to MSTID Allocation Table) is to be allocated.
14         In an SPT Bridge, the value 4095 is used to indicate unused
15         (non-filtering) FIDs."
16     ::= { ieee8021MstpFidToMstiV2Entry 3 }
17
18 -- =====
19 -- ieee8021MstpVlanTable deprecated
20 -- see ieee8021MstpVlanV2Table below
21 -- =====
22
23 ieee8021MstpVlanTable OBJECT-TYPE
24     SYNTAX      SEQUENCE OF Ieee8021MstpVlanEntry
25     MAX-ACCESS  not-accessible
26     STATUS      deprecated
27     DESCRIPTION
28         "In an MSTP Bridge, the fixed-length (4094 elements), read-only,
29         MST Configuration Table. Its elements are derived from other
30         configuration information held by the Bridge; specifically, the
31         current state of the VID to FID Allocation Table (8.8.8,
32         12.10.1), and the FID to MSTID Allocation Table (8.9.3, 12.12.2).
33         Hence, changes made to either of these Tables can in turn affect
34         the contents of the MST Configuration Table, and also affect the
35         value of the digest element of the MST Configuration Identifier.
36
37         The values of all writable objects in this table MUST be
38         retained across reinitializations of the management system.
39
40         Note that entries will exist in this table only for Bridge
41         components for which the corresponding instance of
42         ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
43         has a value of mstp(3)."
```

```
44     REFERENCE  "12.12.3.1"
45     ::= { ieee8021MstpObjects 6 }
46
47 ieee8021MstpVlanEntry OBJECT-TYPE
48     SYNTAX      Ieee8021MstpVlanEntry
49     MAX-ACCESS  not-accessible
50     STATUS      deprecated
51     DESCRIPTION
52         "In an MSTP Bridge, a MST Configuration Table entry."
53     INDEX { ieee8021MstpVlanComponentId, ieee8021MstpVlanId }
54     ::= { ieee8021MstpVlanTable 1 }
55
56 Ieee8021MstpVlanEntry ::= SEQUENCE {
57     ieee8021MstpVlanComponentId  IEEE8021PbbComponentIdentifier,
58     ieee8021MstpVlanId           IEEE8021VlanIndex,
59     ieee8021MstpVlanMstId        IEEE8021MstIdentifier
60 }
61
62 ieee8021MstpVlanComponentId OBJECT-TYPE
63     SYNTAX      IEEE8021PbbComponentIdentifier
64     MAX-ACCESS  not-accessible
65     STATUS      deprecated
66     DESCRIPTION
67         "The component identifier is used to distinguish between the
68         multiple virtual Bridge instances within a PBB. In simple
69         situations where there is only a single component the default
70         value is 1."
71     ::= { ieee8021MstpVlanEntry 1 }
72
```

```
1 ieee8021MstpVlanId OBJECT-TYPE
2   SYNTAX      IEEE8021VlanIndex
3   MAX-ACCESS  not-accessible
4   STATUS      deprecated
5   DESCRIPTION
6       "In an MSTP Bridge, the VID of the entry in the MST
7       Configuration Table."
8   ::= { ieee8021MstpVlanEntry 2 }
9
10 ieee8021MstpVlanMstId OBJECT-TYPE
11   SYNTAX      IEEE8021MstIdentifier
12   MAX-ACCESS  read-only
13   STATUS      deprecated
14   DESCRIPTION
15       "In an MSTP Bridge, the MSTID value corresponding to the VID
16       of the entry in the MST Configuration Table."
17   ::= { ieee8021MstpVlanEntry 3 }
18
19 -- =====
20 -- ieee8021MstpVlanV2Table
21 -- =====
22
23 ieee8021MstpVlanV2Table OBJECT-TYPE
24   SYNTAX      SEQUENCE OF Ieee8021MstpVlanV2Entry
25   MAX-ACCESS  not-accessible
26   STATUS      current
27   DESCRIPTION
28       "In an MSTP Bridge, the fixed-length (4094 elements), read-only,
29       MST Configuration Table. Its elements are derived from other
30       configuration information held by the Bridge; specifically, the
31       current state of the VID to FID Allocation Table (8.8.8,
32       12.10.1), and the FID to MSTID Allocation Table (8.9.3, 12.12.2).
33       Hence, changes made to either of these Tables can in turn affect
34       the contents of the MST Configuration Table, and also affect the
35       value of the digest element of the MST Configuration Identifier.
36
37       The values of all writable objects in this table MUST be
38       retained across reinitializations of the management system.
39
40       Note that entries will exist in this table only for Bridge
41       components for which the corresponding instance of
42       ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
43       has a value of mstp(3)."
```

```
44   REFERENCE  "12.12.3.1"
45   ::= { ieee8021MstpObjects 10 }
46
47 ieee8021MstpVlanV2Entry OBJECT-TYPE
48   SYNTAX      Ieee8021MstpVlanV2Entry
49   MAX-ACCESS  not-accessible
50   STATUS      current
51   DESCRIPTION
52       "In an MSTP Bridge, a MST Configuration Table entry."
53   INDEX { ieee8021MstpVlanV2ComponentId, ieee8021MstpVlanV2Id }
54   ::= { ieee8021MstpVlanV2Table 1 }
55
56 Ieee8021MstpVlanV2Entry ::= SEQUENCE {
57     ieee8021MstpVlanV2ComponentId  IEEE8021PbbComponentIdentifier,
58     ieee8021MstpVlanV2Id           IEEE8021VlanIndex,
59     ieee8021MstpVlanV2MstId        Unsigned32
60 }
61
62 ieee8021MstpVlanV2ComponentId OBJECT-TYPE
63   SYNTAX      IEEE8021PbbComponentIdentifier
64   MAX-ACCESS  not-accessible
65   STATUS      current
66   DESCRIPTION
67       "The component identifier is used to distinguish between the
68       multiple virtual Bridge instances within a PBB. In simple
69       situations where there is only a single component the default
70       value is 1."
71   ::= { ieee8021MstpVlanV2Entry 1 }
72
```

```

1 ieee8021MstpVlanV2Id OBJECT-TYPE
2   SYNTAX      IEEE8021VlanIndex
3   MAX-ACCESS  not-accessible
4   STATUS      current
5   DESCRIPTION
6       "In an MSTP Bridge, the VID of the entry in the MST
7       Configuration Table."
8   ::= { ieee8021MstpVlanV2Entry 2 }
9
10 ieee8021MstpVlanV2MstId OBJECT-TYPE
11   SYNTAX      Unsigned32 (0..4095)
12   MAX-ACCESS  read-only
13   STATUS      current
14   DESCRIPTION
15       "In an MSTP Bridge, the MSTID value corresponding to the VID
16       of the entry in the MST Configuration Table.
17       In an SPT Bridge, a value of 4095 is used to indicate
18       SPVIDs."
19   ::= { ieee8021MstpVlanV2Entry 3 }
20
21 -- =====
22 -- MST Configuration Identifier Table
23 -- =====
24
25 ieee8021MstpConfigIdTable OBJECT-TYPE
26   SYNTAX      SEQUENCE OF Ieee8021MstpConfigIdEntry
27   MAX-ACCESS  not-accessible
28   STATUS      current
29   DESCRIPTION
30       "A table containing the MST Configuration Identifier for each
31       virtual Bridge. In simple situations where there is only
32       a single component, there will only be a single entry in
33       this table (i.e., only a single MST Configuration Identifier).
34
35       The values of all writable objects in this table MUST be
36       retained across reinitializations of the management system.
37
38       Note that entries will exist in this table only for Bridge
39       components for which the corresponding instance of
40       ieee8021SpanningTreeVersion (from the IEEE8021-SPANNING-TREE-MIB)
41       has a value of mstp(3)."
42   REFERENCE   "12.12.3.3, 12.12.3.4"
43   ::= { ieee8021MstpObjects 7 }
44
45 ieee8021MstpConfigIdEntry OBJECT-TYPE
46   SYNTAX      Ieee8021MstpConfigIdEntry
47   MAX-ACCESS  not-accessible
48   STATUS      current
49   DESCRIPTION
50       "An entry containing the MST Configuration Identifier of a Bridge."
51   INDEX { ieee8021MstpConfigIdComponentId }
52   ::= { ieee8021MstpConfigIdTable 1 }
53
54 Ieee8021MstpConfigIdEntry ::= SEQUENCE {
55     ieee8021MstpConfigIdComponentId  IEEE8021PbbComponentIdentifier,
56     ieee8021MstpConfigIdFormatSelector  Integer32,
57     ieee8021MstpConfigurationName      SnmpAdminString,
58     ieee8021MstpRevisionLevel          Unsigned32,
59     ieee8021MstpConfigurationDigest    OCTET STRING
60 }
61
62 ieee8021MstpConfigIdComponentId OBJECT-TYPE
63   SYNTAX      IEEE8021PbbComponentIdentifier
64   MAX-ACCESS  not-accessible
65   STATUS      current
66   DESCRIPTION
67       "The component identifier is used to distinguish between the
68       multiple virtual Bridge instances within a PBB. In simple
69       situations where there is only a single component the default
70       value is 1."
71   ::= { ieee8021MstpConfigIdEntry 1 }
72

```

```
1 ieee8021MstpConfigIdFormatSelector OBJECT-TYPE
2   SYNTAX      Integer32 (0..0)
3   MAX-ACCESS  read-write
4   STATUS      current
5   DESCRIPTION
6       "In an MSTP Bridge, the Configuration Identifier Format Selector
7       in use by the Bridge, in the MST Configuration Identifier. This
8       has a value of 0 to indicate the format specified in IEEE Std 802.1Q."
9   REFERENCE   "13.8:1"
10  ::= { ieee8021MstpConfigIdEntry 2 }
11
12 ieee8021MstpConfigurationName OBJECT-TYPE
13   SYNTAX      SnmpAdminString (SIZE(32))
14   MAX-ACCESS  read-write
15   STATUS      current
16   DESCRIPTION
17       "In an MSTP Bridge, the Configuration Name in the MST
18       Configuration Identifier."
19   REFERENCE   "13.8:2"
20  ::= { ieee8021MstpConfigIdEntry 3 }
21
22 ieee8021MstpRevisionLevel OBJECT-TYPE
23   SYNTAX      Unsigned32 (0..65535)
24   MAX-ACCESS  read-write
25   STATUS      current
26   DESCRIPTION
27       "In an MSTP Bridge, the Revision Level in the MST
28       Configuration Identifier."
29   REFERENCE   "13.8:3"
30  ::= { ieee8021MstpConfigIdEntry 4 }
31
32 ieee8021MstpConfigurationDigest OBJECT-TYPE
33   SYNTAX      OCTET STRING (SIZE(16))
34   MAX-ACCESS  read-only
35   STATUS      current
36   DESCRIPTION
37       "In an MSTP Bridge, the Configuration Digest in the MST
38       Configuration Identifier."
39   REFERENCE   "13.8:4"
40  ::= { ieee8021MstpConfigIdEntry 5 }
41
42
43 -- =====
44 -- Ieee8021MstpCistPortExtensionTable:
45 -- =====
46
47 ieee8021MstpCistPortExtensionTable OBJECT-TYPE
48   SYNTAX      SEQUENCE OF Ieee8021MstpCistPortExtensionEntry
49   MAX-ACCESS  not-accessible
50   STATUS      current
51   DESCRIPTION
52       "The CIST Port Extensions Table. Each row in the Table represents information
53       regarding a specific Port within the Bridge's Bridge Protocol
54       Entity, for the CIST."
55   REFERENCE   "12.8.2"
56  ::= { ieee8021MstpObjects 8 }
57
58 ieee8021MstpCistPortExtensionEntry OBJECT-TYPE
59   SYNTAX      Ieee8021MstpCistPortExtensionEntry
60   MAX-ACCESS  not-accessible
61   STATUS      current
62   DESCRIPTION
63       "A list of additional objects containing information
64       maintained by every port about the CIST
65       state for that port."
66   AUGMENTS { ieee8021MstpCistPortEntry }
67  ::= { ieee8021MstpCistPortExtensionTable 1 }
68
69 Ieee8021MstpCistPortExtensionEntry ::=
70     SEQUENCE {
71         ieee8021MstpCistPortAutoEdgePort
72         TruthValue,
```



```
1         ieee8021MstpCistPortAutoIsolatePort
2             TruthValue
3     }
4
5 ieee8021MstpCistPortAutoEdgePort OBJECT-TYPE
6     SYNTAX      TruthValue
7     MAX-ACCESS  read-write
8     STATUS      current
9     DESCRIPTION
10        "The administrative value of the Auto Edge Port parameter.
11        A value of true(1) indicates if the Bridge detection state
12        machine (BDM, 13.33) is to detect other Bridges
13        attached to the LAN, and set
14        ieee8021SpanningTreeRstpPortOperEdgePort automatically.
15        The default value is true(1)
16
17        This is optional and provided only by implementations
18        that support the automatic identification of edge ports.
19
20        The value of this object MUST be retained across
21        reinitializations of the management system."
22     REFERENCE   "12.8.2.1.3 )"
23     ::= { ieee8021MstpCistPortExtensionEntry 1 }
24
25 ieee8021MstpCistPortAutoIsolatePort OBJECT-TYPE
26     SYNTAX      TruthValue
27     MAX-ACCESS  read-only
28     STATUS      current
29     DESCRIPTION
30        "The operational value of the Isolate Port parameter.
31
32        A value of true(1) indicates a Designated Port will
33        transition to discarding if both
34        ieee8021SpanningTreeRstpPortAdminEdgePort and
35        ieee8021SpanningTreeRstpPortAutoEdgePort are FALSE and
36        the other Bridge presumed to be attached to the same
37        point-to-point LAN does not transmit periodic BPDUs.
38
39        This is optional and provided only by implementations
40        that support the automatic identification of fragile
41        Bridges."
42     REFERENCE   "12.8.2.1.3"
43     ::= { ieee8021MstpCistPortExtensionEntry 2 }
44
45
46 -- =====
47 -- Conformance Information
48 -- =====
49
50 ieee8021MstpGroups
51     OBJECT IDENTIFIER ::= { ieee8021MstpConformance 1 }
52 ieee8021MstpCompliances
53     OBJECT IDENTIFIER ::= { ieee8021MstpConformance 2 }
54
55 -- =====
56 -- Units of conformance
57 -- =====
58
59 ieee8021MstpCistGroup OBJECT-GROUP
60     OBJECTS {
61         ieee8021MstpCistBridgeIdentifier,
62         ieee8021MstpCistTopologyChange,
63         ieee8021MstpCistRegionalRootIdentifier,
64         ieee8021MstpCistPathCost,
65         ieee8021MstpCistMaxHops
66     }
67     STATUS      current
68     DESCRIPTION
69        "Objects for the CIST group"
70     ::= { ieee8021MstpGroups 1 }
71
72 ieee8021MstpGroup OBJECT-GROUP
```

```
1  OBJECTS {
2      ieee8021MstpBridgeId,
3      ieee8021MstpTimeSinceTopologyChange,
4      ieee8021MstpTopologyChanges,
5      ieee8021MstpTopologyChange,
6      ieee8021MstpDesignatedRoot,
7      ieee8021MstpRootPathCost,
8      ieee8021MstpRootPort,
9      ieee8021MstpBridgePriority,
10     ieee8021MstpVids0,
11     ieee8021MstpVids1,
12     ieee8021MstpVids2,
13     ieee8021MstpVids3,
14     ieee8021MstpRowStatus
15 }
16 STATUS      current
17 DESCRIPTION
18     "Objects for the MST group"
19 ::= { ieee8021MstpGroups 2 }
20
21 ieee8021MstpCistPortGroup OBJECT-GROUP
22     OBJECTS {
23         ieee8021MstpCistPortUptime,
24         ieee8021MstpCistPortAdminPathCost,
25         ieee8021MstpCistPortDesignatedRoot,
26         ieee8021MstpCistPortTopologyChangeAck,
27         ieee8021MstpCistPortHelloTime,
28         ieee8021MstpCistPortAdminEdgePort,
29         ieee8021MstpCistPortOperEdgePort,
30         ieee8021MstpCistPortMacEnabled,
31         ieee8021MstpCistPortMacOperational,
32         ieee8021MstpCistPortRestrictedRole,
33         ieee8021MstpCistPortRestrictedTcn,
34         ieee8021MstpCistPortRole,
35         ieee8021MstpCistPortDisputed,
36         ieee8021MstpCistPortCistRegionalRootId,
37         ieee8021MstpCistPortCistPathCost,
38         ieee8021MstpCistPortProtocolMigration,
39         ieee8021MstpCistPortEnableBPDURx,
40         ieee8021MstpCistPortEnableBPDUTx,
41         ieee8021MstpCistPortPseudoRootId,
42         ieee8021MstpCistPortIsL2Gp
43     }
44 STATUS      current
45 DESCRIPTION
46     "Objects for the CIST Port group"
47 ::= { ieee8021MstpGroups 3 }
48
49 ieee8021MstpPortGroup OBJECT-GROUP
50     OBJECTS {
51         ieee8021MstpPortUptime,
52         ieee8021MstpPortState,
53         ieee8021MstpPortPriority,
54         ieee8021MstpPortPathCost,
55         ieee8021MstpPortDesignatedRoot,
56         ieee8021MstpPortDesignatedCost,
57         ieee8021MstpPortDesignatedBridge,
58         ieee8021MstpPortDesignatedPort,
59         ieee8021MstpPortRole,
60         ieee8021MstpPortDisputed,
61         ieee8021MstpPortAdminPathCost
62     }
63 STATUS      current
64 DESCRIPTION
65     "Objects for the MST Port group"
66 ::= { ieee8021MstpGroups 4 }
67
68 ieee8021MstpFidToMstiGroup OBJECT-GROUP
69     OBJECTS {
70         ieee8021MstpFidToMstiMstId
71     }
72 STATUS      deprecated
```

```
1  DESCRIPTION
2      "Objects for the MST FID to MSTID Allocation Table group"
3  ::= { ieee8021MstpGroups 5 }
4
5  ieee8021MstpVlanGroup OBJECT-GROUP
6      OBJECTS {
7          ieee8021MstpVlanMstId
8      }
9      STATUS      deprecated
10     DESCRIPTION
11         "Objects for the MST Configuration Table group"
12     ::= { ieee8021MstpGroups 6 }
13
14
15  ieee8021MstpConfigIdGroup OBJECT-GROUP
16      OBJECTS {
17          ieee8021MstpConfigIdFormatSelector,
18          ieee8021MstpConfigurationName,
19          ieee8021MstpRevisionLevel,
20          ieee8021MstpConfigurationDigest
21      }
22      STATUS      current
23      DESCRIPTION
24          "Objects for the MST Configuration Identifier group"
25      ::= { ieee8021MstpGroups 7 }
26
27
28  ieee8021MstpCistPortExtensionGroup OBJECT-GROUP
29      OBJECTS {
30          ieee8021MstpCistPortAutoEdgePort,
31          ieee8021MstpCistPortAutoIsolatePort
32      }
33      STATUS      current
34      DESCRIPTION
35          "Objects for the CIST Port Extension group
36          for fragile Bridges"
37      ::= { ieee8021MstpGroups 8 }
38
39  ieee8021MstpFidToMstiV2Group OBJECT-GROUP
40      OBJECTS {
41          ieee8021MstpFidToMstiV2MstId
42      }
43      STATUS      current
44      DESCRIPTION
45          "Objects for the MST FID to MSTID Allocation Table group
46          for SPB"
47      ::= { ieee8021MstpGroups 9 }
48
49  ieee8021MstpVlanV2Group OBJECT-GROUP
50      OBJECTS {
51          ieee8021MstpVlanV2MstId
52      }
53      STATUS      current
54      DESCRIPTION
55          "Objects for the MST Configuration Table group for SPB"
56      ::= { ieee8021MstpGroups 10 }
57
58  -- =====
59  -- Compliance statements
60  -- =====
61
62  ieee8021MstpCompliance MODULE-COMPLIANCE
63      STATUS      deprecated
64      DESCRIPTION
65          "The compliance statement for devices supporting Multiple
66          Spanning Tree as defined in 13 of IEEE Std 802.1Q."
67
68      MODULE
69          MANDATORY-GROUPS {
70              ieee8021MstpCistGroup,
71              ieee8021MstpGroup,
72              ieee8021MstpCistPortGroup,
```

```
1         ieee8021MstpPortGroup,
2         ieee8021MstpFidToMstiGroup,
3         ieee8021MstpVlanGroup,
4         ieee8021MstpConfigIdGroup
5     }
6
7     GROUP ieee8021MstpCistPortExtensionGroup
8     DESCRIPTION
9         "Implementation of this group is optional."
10
11     ::= { ieee8021MstpCompliances 1 }
12
13 ieee8021MstpComplianceV2 MODULE-COMPLIANCE
14     STATUS          current
15     DESCRIPTION
16         "The compliance statement for devices supporting Multiple
17         Spanning Tree as defined in 13 of IEEE Std 802.1Q."
18
19     MODULE
20         MANDATORY-GROUPS {
21             ieee8021MstpCistGroup,
22             ieee8021MstpGroup,
23             ieee8021MstpCistPortGroup,
24             ieee8021MstpPortGroup,
25             ieee8021MstpFidToMstiV2Group,
26             ieee8021MstpVlanV2Group,
27             ieee8021MstpConfigIdGroup
28         }
29
30     GROUP ieee8021MstpCistPortExtensionGroup
31     DESCRIPTION
32         "Implementation of this group is optional."
33
34     ::= { ieee8021MstpCompliances 2 }
35
36 END
```

48. YANG Data Models

48.2 IEEE 802.1Q YANG models

Insert 48.2.12 and 48.2.13 as follows:

48.2.12 Rapid Spanning Tree (RSTP) model

The RSTP model augments the VLAN Bridge component model (48.2.1, Figure 48-4) and the Interface management model for Bridge Ports (48.2.1, Figure 48-5) with nodes common to both RSTP and MSTP. These nodes control the configuration of the CST (and the CIST, when augmented by the Multiple Spanning Trees model, 48.2.13) and report on protocol operation. The RSTP model is illustrated in Figure 48-21.

This is clearly not the RSTP YANG model at present, but just a place holder borrowed from a prior Figure. It may be a convenient starting point , as it shows augments to the bridge component and a bridge port on the same page. The Visio is in 802-1Q-Figures-21-22.vsd in the Figures subdirectory, and the .svg in Fig-48-21.svg. The .svg is imported automatically, so saving a new .svg should be sufficient to update the figures, but do check this has happened as expected. See the EDITOR-PLEASE-READ file in the FrameMaker books for instructions.

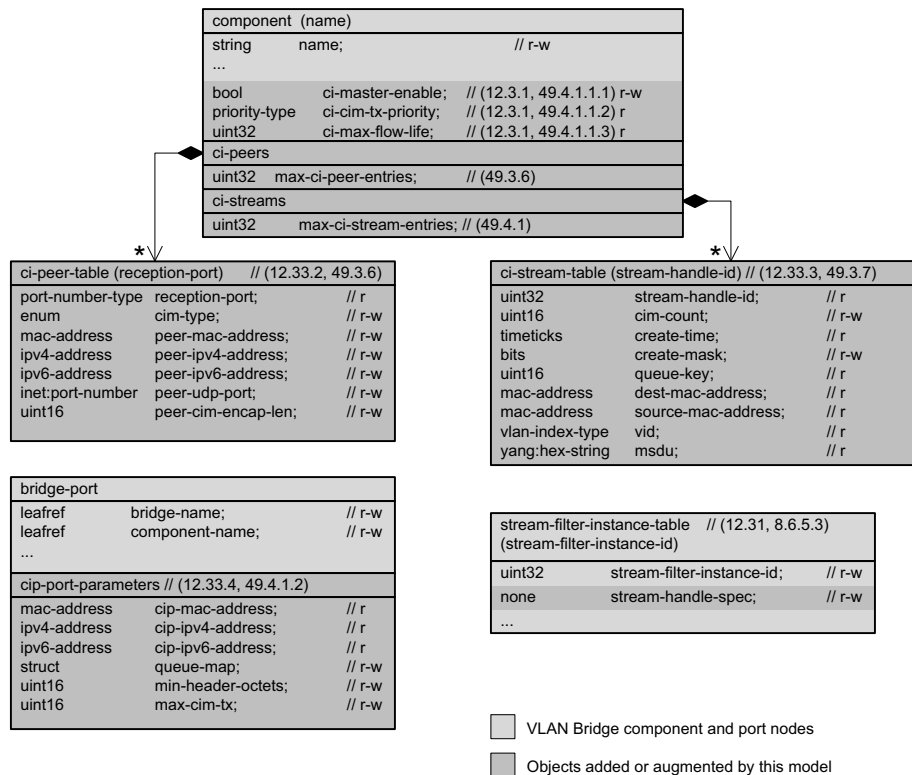


Figure 48-21—RSTP model

1 48.2.13 Multiple Spanning Trees model

2 The Multiple Spanning Trees model augments the RSTP (48.2.12) model with nodes that common to both
3 RSTP and MSTP. These nodes control the configuration of the CIST and MSTIs and the assignment of
4 VLANs and VIDs to MSTIs (8.9) within MST Regions. They also report on MSTP protocol operation. The
5 Multiple Spanning Trees model is illustrated in Figure 48-21.

This is clearly not the Multiple Spanning Trees model at present, but just a place holder borrowed from a prior Figure. It may be a convenient starting point , as it shows augments to the Bridge component and a Bridge Port in the same figure. The Visio is in 802-1Q-Figures-21-22.vsd in the Figures subdirectory, and the .svg in Fig-48-22.svg. The .svg is imported automatically, so saving a new .svg (with the same filename) should be sufficient to update the figures, but do check this has happened as expected. See the EDITOR-PLEASE-READ file in the FrameMaker books for instructions.

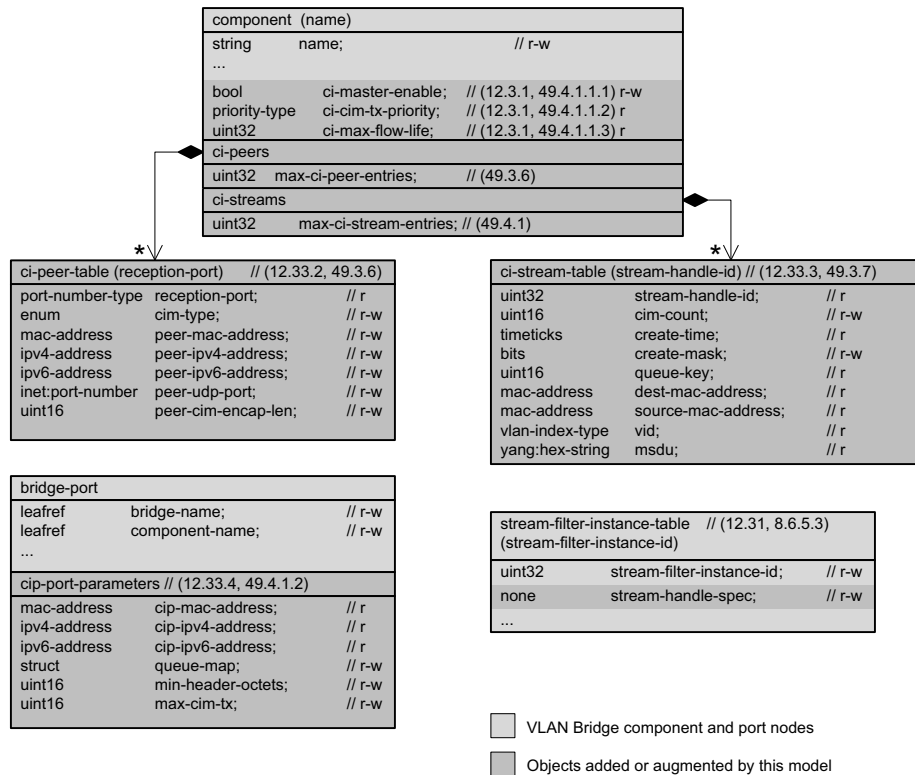


Figure 48-22—Multiple Spanning Trees model

1 48.3 Structure of the YANG models

2

Table 48-1—Summary of the YANG modules

Insert the following rows at the end of Table 48-1 as shown:

Module	References	Managed functionality	Initial YANG specification Notes
ieee802-dot1q-rstp	48.5.23, 48.6.23	8.4, 8.7, 8.8, 8.10 Clause 13	IEEE Std 802.1Qcy Augments Bridge components and Bridge Ports with RSTP parameters.
ieee802-dot1q-mstp	48.5.24, 48.6.24	8.4, 8.7, 8.8, 8.8, 8.9, 8.10 Clause 13	IEEE Std 802.1Qcy Augments Bridge components, Bridge Ports, and the ieee802-dot1q-rstp module with Multiple Spanning Tree parameters.

3 *Insert 48.3.12 and 48.3.13 at the end of clause 48.3 as follows:*

4 48.3.12 RSTP model

5 A bridge implementing the RSTP model (48.2.11) implements the YANG modules in Table 48-13.

Table 48-13—RSTP model YANG modules

YANG module
ieee802-types
ieee802-dot1q-types
ieee802-dot1q-bridge
ieee802-dot1q-rstp

6 48.3.13 MSTP model

7 A bridge implementing the MSTP model (48.2.11) implements the YANG modules in Table 48-13.

Table 48-14—MSTP model YANG modules

YANG module
ieee802-types
ieee802-dot1q-types
ieee802-dot1q-bridge
ieee802-dot1q-rstp
ieee802-dot1q-mstp

1 48.4 Security considerations

2 Insert 48.4.12 and 48.4.13 at the end of clause 48.4, as follows:

3 48.4.12 Security considerations of the RSTP model

4 As a first cut, all objects objects in the ieee802-dot1q-rstp YANG module could be manipulated to interfere
5 with basic network connectivity.

6 See 48.4.1 for related ieee802-dot1q-bridge YANG model security considerations.

7 48.4.13 Security considerations of the Multiple Spanning Trees model

8 As a first cut, all objects objects in the ieee802-dot1q-rstp YANG module could be manipulated to interfere
9 with basic network connectivity.

10 See 48.4.1 for related ieee802-dot1q-bridge YANG model security considerations.

11

1 48.5 YANG schema tree definitions

2 A simplified graphical representation of the data model is used in this document. The meaning of the
3 symbols in these diagrams is as follows:

- 4 — Brackets “[“ and “]” enclose list keys.
- 5 — Abbreviations before data node names: “rw” means configuration (read-write), and “ro” means state
6 data (read-only).
- 7 — Symbols after data node names: “?” means an optional node, “!” means a presence container, and
8 “*” denotes a list and leaf-list.
- 9 — Parentheses enclose choice and case nodes, and case nodes are also marked with a colon (“:”).
- 10 — Ellipsis (“...”) stands for contents of subtrees that are not shown.

11 *Insert new 48.5.23 and 48.5.24 at the end of 48.5, as follows:*

12 48.5.23 Schema for the ieee802-dot1q-rstp YANG module

13 module: ieee802-dot1q-rstp

14

15 This is a text inset that references the file ieee802-dot1q-rstp.tree in the YANG Trees
16 subdirectory. Updating that file with the schema for this YANG module should automatically
17 update this text inset with the file contents (please check).

18 48.5.24 Schema for the ieee802-dot1q-mstp YANG module

19 module: ieee802-dot1q-mstp

20

21 This is a text inset that references the file ieee802-dot1q-mstp.tree in the YANG Trees
22 subdirectory. Updating that file with the schema for this YANG module should automatically
23 update this text inset with the file contents (please check).
24

1 48.6 YANG modules

2 *Insert 48.6.23 as follows:*

3 48.6.23 The ieee802-dot1q-rstp YANG module

4 The text inset below references the file ieee802-dot1q-rstp in the '802-1Q YANG' subdirectory. The
5 contents of that file should be replaced by the ieee802-dot1q-rstp module (the copy of the psfp file is a
6 temporary place holder). The text inset should auto update when that is done. A copy of the file should also
7 being placed in the '802-1Qdy YANG' subdirectory, which includes just those YANG files which and this
8 temporary 'Editor Comment' deleted. Note:

- 9 a) Every revision, however temporary needs to have a unique date, and these dates need to be in
10 ascending time order. Since this is a new module there will be only one revision statement at any
11 time.
- 12 b) The copyright year shown should be the year of the last revision.
- 13 c) The first line of the revision description should be "Published as part of IEEE Std 802.1Qdy.
14 It is not necessary to supply the year for "802.1Qdy" as amendment identifiers are never
15 reused. Omitting the year will avoid any issue associated with preparing text for final approval
16 near the year end.
- 17 d) The revision reference lines that read, in the example module temporarily included:
18 "IEEE Std 802.1Q Bridges and Bridged Networks:
19 IEEE Stds 802.1Q-2022, 802.1Qcw-2023.";
20 should be replaced with:
21 "IEEE Std 802.1Q Bridges and Bridged Networks:
22 IEEE Stds 802.1Q-2022, 802.1Qcy.";
- 23 unless there are references to text added by other amendments, in which case they should also be
24 listed.
- 25 e) References in the reference statement of each object description should follow the form:
26 "13.26.4 of IEEE Std 802.1Q"
27 and should not be to 802.1Qdy.

```
28 module ieee802-dot1q-psfp-bridge {
29   yang-version "1.1";
30   namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-psfp-bridge;
31   prefix psfp-bridge;
32   import ieee802-dot1q-bridge {
33     prefix dot1q;
34   }
35   import ieee802-dot1q-psfp {
36     prefix psfp;
37   }
38   organization
39     "IEEE 802.1 Working Group";
40   contact
41     "WG-URL: http://www.ieee802.org/1/
42     WG-EMail: stds-802-1-1@ieee.org
43
44     Contact: IEEE 802.1 Working Group Chair
45     Postal: C/O IEEE 802.1 Working Group
46     IEEE Standards Association
47     445 Hoes Lane
48     Piscataway, NJ 08854
49     USA
50
51     E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
52   description
53     "This module provides management of 802.1Q bridge components that
54     support Per Stream Filtering and Policing (PSFP).
55
56     Copyright (C) IEEE (2023).
57
```

```
1   This version of this YANG module is part of IEEE Std 802.1Q; see the
2   standard itself for full legal notices.";
3   revision 2023-03-08 {
4     description
5       "Published as part of IEEE Std 802.1Qcw-2023.
6
7       The following reference statement identifies each referenced IEEE
8       Standard as updated by applicable amendments.";
9     reference
10      "IEEE Std 802.1Q Bridges and Bridged Networks:
11      IEEE Stds 802.1Q-2022, 802.1Qcw-2023.";
12  }
13  feature psfp {
14    description
15      "Per Stream Filtering and Policing supported.";
16    reference
17      "IEEE Std 802.1Q";
18  }
19  augment "/dot1q:bridges/dot1q:bridge/dot1q:component" {
20    description
21      "Augment bridge wiht Per-Stream Filtering and Policing configuration";
22    uses psfp:psfp-parameters;
23  }
24 }
25
26
```

1 *Insert 48.6.24 as follows:*

2 **48.6.24 The ieee802-dot1q-mstp YANG module**

3 The text inset below references the file ieee802-dot1q-mstp in the '802-1Q YANG' subdirectory. The
4 contents of that file should be replaced by the ieee802-dot1q-mstp module (the copy of the psfp file is a
5 temporary place holder). The text inset should auto update when that is done. A copy of the file should also
6 being placed in the '802-1Qdy YANG' subdirectory, which includes just those YANG files which and this
7 temporary 'Editor Comment' deleted. Note:

- 8 a) Every revision, however temporary needs to have a unique date, and these dates need to be in
9 ascending time order. Since this is a new module there will be only one revision statement at any
10 time.
- 11 b) The copyright year shown should be the year of the last revision.
- 12 c) The first line of the revision description should be "Published as part of IEEE Std 802.1Qdy.
13 It is not necessary to supply the year for "802.1Qdy" as amendment identifiers are never
14 reused. Omitting the year will avoid any issue associated with preparing text for final approval
15 near the year end.
- 16 d) The revision reference lines that read, in the example module temporarily included:
17 "IEEE Std 802.1Q Bridges and Bridged Networks:
18 IEEE Stds 802.1Q-2022, 802.1Qcw-2023.";
19 should be replaced with:
20 "IEEE Std 802.1Q Bridges and Bridged Networks:
21 IEEE Stds 802.1Q-2022, 802.1Qcy.";
22 unless there are references to text added by other amendments, in which case they should also be
23 listed.
- 24 e) References in the reference statement of each object description should follow the form:
25 "13.26.4 of IEEE Std 802.1Q"
26 and should not be to 802.1Qdy.

```
27 module ieee802-dot1q-psfp-bridge {
28   yang-version "1.1";
29   namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-psfp-bridge;
30   prefix psfp-bridge;
31   import ieee802-dot1q-bridge {
32     prefix dot1q;
33   }
34   import ieee802-dot1q-psfp {
35     prefix psfp;
36   }
37   organization
38     "IEEE 802.1 Working Group";
39   contact
40     "WG-URL: http://www.ieee802.org/1/
41     WG-EMail: stds-802-1-1@ieee.org
42
43     Contact: IEEE 802.1 Working Group Chair
44     Postal: C/O IEEE 802.1 Working Group
45     IEEE Standards Association
46     445 Hoes Lane
47     Piscataway, NJ 08854
48     USA
49
50     E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
51   description
52     "This module provides management of 802.1Q bridge components that
53     support Per Stream Filtering and Policing (PSFP).
54
55     Copyright (C) IEEE (2023).
56
57     This version of this YANG module is part of IEEE Std 802.1Q; see the
```

```
1     standard itself for full legal notices.";
2     revision 2023-03-08 {
3         description
4             "Published as part of IEEE Std 802.1Qcw-2023.
5
6             The following reference statement identifies each referenced IEEE
7             Standard as updated by applicable amendments.";
8         reference
9             "IEEE Std 802.1Q Bridges and Bridged Networks:
10             IEEE Stds 802.1Q-2022, 802.1Qcw-2023.";
11     }
12     feature psfp {
13         description
14             "Per Stream Filtering and Policing supported.";
15         reference
16             "IEEE Std 802.1Q";
17     }
18     augment "/dot1q:bridges/dot1q:bridge/dot1q:component" {
19         description
20             "Augment bridge wiht Per-Stream Filtering and Policing configuration";
21         uses psfp:psfp-parameters;
22     }
23 }
24
25
```

¹ **Annex A**

² (normative)

³ **PICS proforma—Bridge implementations⁴**

⁴

⁴ *Copyright release for PICS proformas*: Users of this standard may freely reproduce the PICS proforma in this annex so that it can be used for its intended purpose and may further publish the completed PICS.

¹

A.47 YANG

Insert the following rows at the end of Table A.47:

Item	Feature	Status	References	Support
YANG-LLDP-PBBN-AA	Is the <i>ieee802-dot1q-lldp-pbbn-aa-tlv</i> module supported?	YANG AND (AAB OR AAD): O	D.6.6.7	Yes [] No [] N/A []