

Input to RAC requested from IEEE 802.1 Working Group: Updating Standardized Group MAC Address (SGMA) Registry

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Background: IEEE Std 802-2014

- **8.5 Standardized group MAC addresses¹⁵**

...There is also a need for standardized 48-bit and 64-bit group MAC addresses to be used with standard protocols. The administration of these standardized 48-bit and 64-bit group MAC addresses, including the procedure for application and a list of currently assigned values, is described on the web pages for the IEEE RA. These standardized group MAC addressees come from a block of universally administered addresses derived from a MA-L that has been assigned by the IEEE for this purpose.

¹⁵These were previously referred to as standard group MAC addresses.

- **Note: Nearly all these begin 01-80-C2**

From the OUI 00-80-C2, which is assigned to “IEEE 802.1 Chair”

00 => 01 when the U/L (multicast) bit is set

This contribution’s focus is on these SGMA values under 01-80-C2.

RA EUI Tutorial 2019

- Beginning in 2019, the RA formally and explicitly offered assignees of an OUI the right to create multicast addresses from it:

The assignee of an OUI or OUI-36 is exclusively authorized to assign group MAC addresses, with I/G=1, by extending a modified version of the assigned OUI or OUI-36 in which the M bit is set to 1.

IEEE Std 802-2024 (based on RAC comments)

8.5 Group MAC addresses

The IEEE RA's assignment of blocks of universal individual MAC addresses is described in 8.2. In some cases, the assignee of an address block may need to make use of group addresses as well as individual ones. Such addresses are included in the IEEE RA assignment. An IEEE RA tutorial [B2] states that "The assignee of an OUI or OUI-36 is exclusively authorized to assign group MAC addresses, with I/G=1, by extending a modified version of the assigned OUI or OUI-36 in which the M bit is set to 1. Such addresses are not EUIs and do not globally identify hardware instances, even though U/L=0."

In some cases, group MAC addresses are designated for use in standardized protocols; these are known as standardized group MAC addresses.²⁵ These may be created by the procedure described in the IEEE RA tutorial [B2], based on an OUI or OUI-36 assigned for use in a standard. For example, many standardized group MAC addresses are derived from an OUI that has been assigned to the IEEE 802.1 Working Group. In some cases, a group address has been assigned by the IEEE RA for use in a standard. The administration of such standardized group MAC addresses is described by the IEEE RA.²⁶ The IEEE RA also provides a list of currently assigned values; some of the items listed are simply informative, since the assignments are specified by the assignee of the OUI and not by the IEEE RA. The IEEE RA also lists some standardized group addresses that, because the U/L bit is set to 1, are not assigned uniquely to the standard.

- ²⁵These were previously referred to as standard group MAC addresses.
- ²⁶See "Standardized Group MAC addresses" at:

<https://standards.ieee.org/products-programs/regauth/grpmac/>.

Ongoing Ambiguity

Per IEEE Std 802-2024:

The IEEE RA also provides a list of currently assigned values; some of the items listed are simply informative, since the assignments are specified by the assignee of the OUI and not by the IEEE RA.

For standardized group MAC addresses beginning 01-80-C2, derived from the OUI 01-80-C2 that is been assigned to the IEEE 802.1 Working Group, is the IEEE RA assignment normative, as it was originally, or informative, since the 802.1 Working Group is responsible to manage its OUI?

In other words, who is the responsible registrar: IEEE RA or the 802.1 WG?

IEEE Std 802.1Q-2022

Page 257, footnote 26:

Administration of standard group MAC address assignments is the responsibility of the IEEE Registration Authority (IEEE RA). A full list of standard group MAC address assignments, and the criteria for assignment, can be found on the IEEE RA Website at <https://standards.ieee.org/regauth/index.html>.

See Annex (attached) for a comparison of assignments reported in 802.1 to those in the RA public listing.

Though 802.1Q takes the view that the RA is the registrar, not all assignments within IEEE Std 802.1Q are reflected in the current RA public listing. For example, the RA says that 01-80-C2-00-00-20 — 01-80-C2-00-00-2F are reserved for use by MRP, without detail. But 802.1Q has detail, so it's only 802.1Q that is specifying the usage:

00-00-20	Customer and Provider Bridge MMRP address
00-00-20	Customer Bridge MVRP address
00-00-22 – 2D	reserved
00-00-2E	All Provider Bridge Intermediate Systems (see also ISIS-SPB Tables 8-16&17)
00-00-2F	All Customer Bridge Intermediate Systems (see also ISIS-SPB Tables 8-16&17)

Proposal

- The non-802.1 assignments under 01-80-C2 need to be protected and included in the RA public listing.
- The RA should not assign additional non-802.1 addresses under 01-80-C2.
- All other 01-80-C2 addresses should be assigned per 802.1.
- The registry of 802.1 addresses should be provided either:
 1. By the IEEE 802.1 WG
 - RA could include a link to the 802.1 listing
 2. By the RA, with the 802.1 WG chair responsible for accurate and timely informative maintenance updates.
- In either case, all old, current, and new assignments need to be recorded and honored.
- [Contributor prefers 1 because “The assignee of an OUI is exclusively authorized to assign” the multicast MAC addresses.]

And the example of MRP shows that the RA may not always get timely updates.
- Does the 802.1 WG have a preference?

01-80-C2

01-80-C2				802.1Q	
00-00-00	IEEE 802	802.1Q 802.1X 802.1AE 802.1AX	Bridge Group address Nearest Customer Bridge group address	Bridge Group Address, Nearest Customer Bridge group address	
00-00-01	IEEE 802	802.1Q	IEEE MAC-specific Control Protocols group address	IEEE MAC-specific Control Protocols group address	
00-00-02	IEEE 802	802.1Q 802.1AX	IEEE 802.3 Slow_Protocols_Multicast address	IEEE 802.3 Slow_Protocols_Multicast address	
00-00-03	IEEE 802	802.1Q 802.1X 802.1AE 802.1AX 802.1BR	Nearest non-TPMR Bridge group address IEEE Std 802.1X PAE address	Nearest non-TPMR Bridge group address	
00-00-04	IEEE 802	802.1Q	IEEE MAC-specific Control Protocols group address	IEEE MAC-specific Control Protocols group address	
00-00-05	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-06	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-07	IEEE 802	802.1Q	MEF Forum ELMI protocol group addressa	MEF Forum ELMI protocol group address	
00-00-08	IEEE 802	802.1Q	Provider Bridge group address	Provider Bridge Group Address	
00-00-09	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-0A	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-0B	IEEE 802	802.1Q 802.1X 802.1AE	EDE-SS PEP Address	EDE-SS PEP Address (IEEE Std 802.1AE)	
00-00-0C	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-0D	IEEE 802	802.1Q	Provider Bridge MVRP address	Provider Bridge MVRP Address	
00-00-0E	IEEE 802	802.1Q 802.1X 802.1AE 802.1AS	Individual LAN Scope group addressb Nearest Bridge group address	Individual LAN Scope group address, Nearest Bridge group address	
00-00-0F	IEEE 802	802.1Q	Reserved for future standardization	Reserved for future standardization	
00-00-10	IEEE 802	802.1D	All LANs Bridge Management Group Address (deprecated)		
00-00-11	IEEE 802	802.1E	Load Server Generic Address		
00-00-12	IEEE 802	802.1E	Loadable Device Generic Address		
00-00-13	IEEE 1905	1905.1	Transmission of IEEE 1905.1 control packets		
00-00-14	ISO/IEC JTC1/SC6	ISO/IEC 10589	All Level 1 Intermediate Systems Address	ISIS-SPB: All Level 1 Intermediate Systems (see also Table 8-17)	
00-00-15	ISO/IEC JTC1/SC6	ISO/IEC 10589	All Level 2 Intermediate Systems Address	ISIS-SPB: All Level 2 Intermediate Systems (see also Table 8-17)	
00-00-16	ISO/IEC JTC1/SC6	ISO/IEC 10030	All CONS End Systems Address		
00-00-17	ISO/IEC JTC1/SC6	ISO/IEC 10030	All CONS SNARES Address		
00-00-18	IEEE 802	802.1B	Generic Address for All Manager Stations		
00-00-19	IEEE 802	802.11aa	Groupcast with retries (GCR) MAC Group Address		
00-00-1A	IEEE 802	802.1B	Generic Address for All Agent Stations		
00-00-1B	ISO/IEC JTC1/SC6	ISO/IEC 9542	All Multicast Capable End Systems Address		
00-00-1C	ISO/IEC JTC1/SC6	ISO/IEC 9542	All Multicast Announcements Address		
00-00-1D	ISO/IEC JTC1/SC6	ISO/IEC 9542	All Multicast Capable Intermediate Systems Address		
00-00-1E	ISO/IEC JTC1/SC6	ISO/IEC 8802-5	All DTR Concentrators MAC Group Address		
00-00-1F	IEEE 802	802.1X 802.1AE	EDE-CC PEP Address	Not in 802.1Q, but see 802.1X,802.1AE	
00-00-20	IEEE 802	802.1Q	Reserved for use by Multiple Registration Protocol (MRP) applications	Customer and Provider Bridge MMRP address	
00-00-21	IEEE 802	802.1Q	Reserved for use by Multiple Registration Protocol (MRP) applications	Customer Bridge MVRP address	
00-00-22 – 2D	IEEE 802	802.1Q	Reserved for use by Multiple Registration Protocol (MRP) applications		
00-00-2E	IEEE 802	802.1Q	Reserved for use by Multiple Registration Protocol (MRP) applications	All Provider Bridge Intermediate Systems (also ISIS-SPB Tables 8-16&17)	
00-00-2F	IEEE 802	802.1Q	Reserved for use by Multiple Registration Protocol (MRP) applications	All Customer Bridge Intermediate Systems (also ISIS-SPB Tables 8-16&17)	

01-80-C2				802.1Q	
00-00-30 – 37		802.1Q	Destination group MAC addresses for CCM and Linktrace messages	CFM: LTM group destination MAC addresses (see also YANG)	
00-00-38 – 3F	IEEE 802	802.1Q	Destination group MAC addresses for CCM and Linktrace messages	CFM: CCM group destination MAC addresses (see also YANG)	
00-00-40 – 4F	IETF	TRILL	Group MAC addresses used by the TRILL protocols		
00-00-50 – FF	IEEE 802	802.1Q	unassigned		
00-01-00	ISO/IEC JTC1/SC25	ISO/IEC 9314-6	Ring Management Directed Beacon Multicast Address		
00-01-01 - OF	ISO/IEC JTC1/SC25		Assigned to ISO/IEC JTC1/SC25 for future use		
00-01-10	ISO/IEC JTC1/SC25	ISO/IEC 9314-6	Status Report Frame Status Report Protocol Multicast Address		
00-01-11 - 1F	ISO/IEC JTC1/SC25		Assigned to ISO/IEC JTC1/SC25 for future use		
00-01-20	ISO/IEC JTC1/SC25	ISO/IEC 9314-2	All FDDI Concentrator MACs		
00-01-21 - 2F	ISO/IEC JTC1/SC25		Assigned to ISO/IEC JTC1/SC25 for future use		
00-01-30	ISO/IEC JTC1/SC25	ISO/IEC 9314-6	Synchronous Bandwidth Allocation Address		
00-01-31 - FF	ISO/IEC JTC1/SC25		Assigned to ISO/IEC JTC1/SC25 for future use		
00-02-00 - FF	ETSI		Assigned to ETSI for future use		
00-03-00 - FF-FF-FF	unassigned				