



Registering DOCSIS 4.0 Modems as DOCSIS 3.1 Modems

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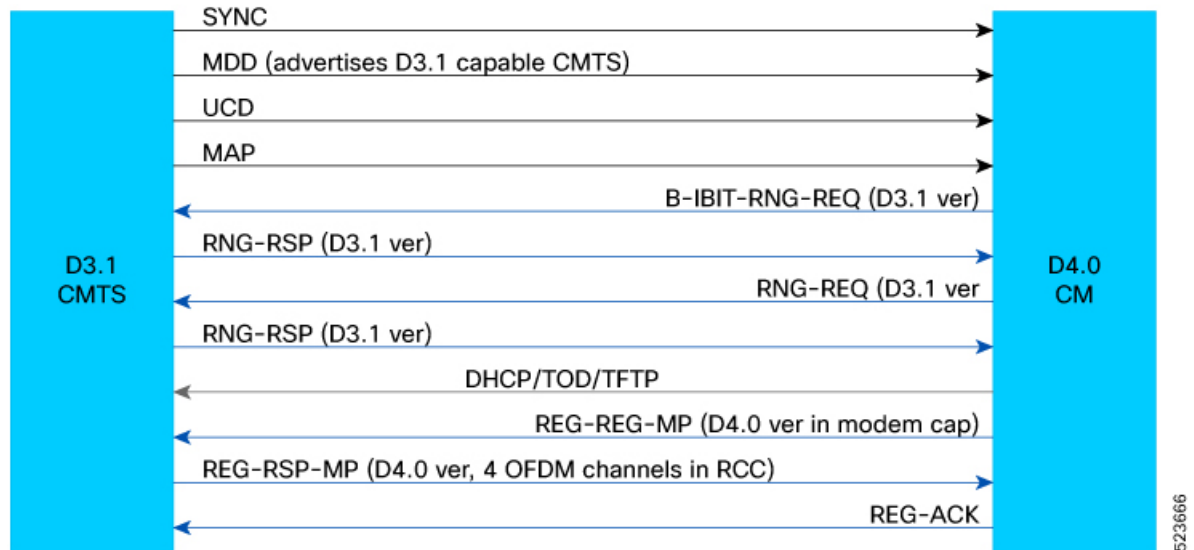
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Table 1: Feature History

Feature Name	Release Information	Feature Description
Registering DOCSIS 4.0 Modems as DOCSIS 3.1 Modems	Cisco IOS XE Dublin 17.12.1x	<p>In this release, you can register DOCSIS 4.0 Modems as DOCSIS 3.1 Modems. On cBR-8 routers, you can register DOCSIS 4.0 Modems in D3.1 modes.</p> <p>DOCSIS 4.0 modems advertising as DOCSIS 3.1 capable during registration are included in the show cable modem docsis version d31-capable [operational not-operational] command. Such modems display more than 2 OFDM channels available in the MRC column of the command output.</p> <p>DOCSIS 4.0 modems advertising as DOCSIS 4.0 capable during registration are included in the show cable modem docsis version d40-capable [operational not-operational] command. Such modems register as DOCSIS 3.1 operational.</p>

A D4.0 modem can register in D3.1 or D4.0 DOCSIS mode. It includes the DOCSIS version in the modem capabilities TLV in the Registration Request message that it sends to the CMTS. A CMTS can operate in D3.1 or D4.0 mode in a MAC Domain and advertises the mode in the DOCSIS version TLV in the MDD messages it sends.

Figure 1: Basic Registration and Management Support for DOCSIS 4.0 Modems



At the end of the call-flow shown in the above figure, a D4.0 modem is registered in D4.0 mode on the cBR-8 router and operates in D3.1 mode. The MAC Domain which the modem is registering on is in D3.1 mode, as advertised in the MDD messages for that MAC Domain.

Use the `show cable modem docsis version d40-capable [not-operational | operational]` command to view these modems on cBR-8 routers. Only modems that have registered in D4.0 mode are displayed in this command. This includes modems that are both D4.0 operational or D4.0 registered/D3.1 operational.

- Modems that are both registered and operational in D4.0 mode are displayed in the **operational** CLI option of the `d40-capable` command. In Cisco IOS XE Dublin 17.12.1x, the cBR-8 does not support D4.0 mode in the MAC Domain and so no modems that are D4.0 registered are D4.0 operational. Therefore, the output of the **operational** CLI option is empty.
- Modems that are D4.0 registered and D3.1 operational are considered **not-operational** from the D4.0 standpoint and are displayed as part of the **not-operational** CLI option for the `show cable modem docsis version d40-capable [not-operational | operational]` command.

Starting with Cisco IOS XE Dublin 17.12.1x,

- An MRC/MTC column is added to the command output of the existing `show cable modem docsis version d31-capable` command. MRC/MTC information can help the operator distinguish these D4.0 modems from traditional D3.1 modems. MRC/MTC is greater than 2/2 for D4.0 modems.
- The output of the `show cable modem verbose` command is updated to display D40 cable modem Capabilities.