



# CPE as a Subscriber in a Cable Environment

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## Introduction

This appendix describes the special case in which the Customer Premise Equipment (CPE) is the subscriber in the Cisco Service Control Solution for a cable environment. It contains the following sections:

- [Cable Support Module, page C-1](#)
- [Cable Modem and CPE in the Subscriber Manager, page C-2](#)
- [Static and Dynamic Cable Modems, page C-2](#)

A cable environment presents different issues for subscribers, in addition to the normal subscriber management issues that exist in other networks, such as DSL and Wireless.



### Note

This appendix does *not* apply to the more common case in which a cable modem and all CPEs associated with it is considered the subscriber.

## Cable Support Module

The Subscriber Manager includes a special cable support module (**p3cable**) for dealing with the special case in which the CPE is considered a subscriber in a cable environment. The cable support module functions as a translator between the cable context (DHCP events) and the Cisco Subscriber Manager. It provides an API in addition to the basic Subscriber Manager API functionality. You can access this API by using the Java/C/C++ APIs to call the **cableLogin** and **cableLogout** methods.

To ensure the correct behavior of the cable support module, you are required to complete a number of configuration steps. You must correctly configure domains and the static/dynamic cable modem.

The cable support module, which translates between the Subscriber Manager and the DHCP events in the cable context, performs the following functions:

- Associates between CPEs and cable modems
- Makes CPEs inherit application policy from their cable modem
- Allows/denies the introduction of CPEs whose cable modem is unfamiliar to the Subscriber Manager

For additional information regarding the functions of the cable support module, see the “[The p3cable Utility](#)” section on page B-5.

The cable support module uses the hardware (MAC) addresses of the cable modem as its subscriber name. The subscriber name of the CPE is the hardware address of its cable modem followed by the hardware address of the CPE.

## Cable Modem and CPE in the Subscriber Manager

For the special case in which CPEs are considered subscribers, cable modems are not associated with the SCE in any way, and are not considered subscribers in the Cisco Service Control Solution. However, for ease of integration and simplicity, cable modems are saved as subscribers in the Subscriber Manager only (but are *never* introduced to the SCE).

Cable modem Subscriber Manager subscribers are saved in special hidden subscriber domains called cable modem domains. These cable modem domains do not contain any SCE and are created automatically upon an insertion of a cable modem. For a CPE in a given subscriber domain, its cable modem will reside in a cable modem domain that has the same name as the CPE domain but with the prefix **CM\_**.

Because cable modem domains are hidden, they cannot be configured in the configuration file. However, it is possible to run subscriber-related commands (**p3subs** and **p3subsdb**) on these domains.

A cable modem subscriber name has the following form: <cable modem MAC> (the MAC of the cable modem as sent in the DHCP protocol).

A CPE subscriber name (for such a cable modem) has the following form: <cable modem MAC>\_\_<CPE MAC> (the MAC of the cable modem, followed by **two** underscore characters, followed by the MAC of the CPE).

The **p3cable** command imports and exports cable modems, similar to importing and exporting subscribers, except that it is unnecessary to import the cable modem with an IP address.

When importing cable modems, you *must* provide the **complete** cable modem domain name (**CM\_** plus the domain name of its CPEs).

### Example

In this configuration example, the Subscriber Manager has a domain called DomainA. To enable CPEs arriving from CMTS with IP 1.2.3.4 to reach this domain, the value 1.2.3.4 is configured as an alias of DomainA.

During operation, because of a DHCP request-response, the DHCP LEG event sends a login event of a cable modem with MAC 0X0Y0Z from CMTS 1.2.3.4.

In the login event, the alias sent is 1.2.3.4 (the alias of domain DomainA), so the cable modem subscriber is entered into domain CM\_DomainA with the name 0X0Y0Z.

When a login event of its CPE with MAC 0A0B0C is sent with the same alias (as the CPE that arrived from the same CMTS), the CPE subscriber is entered into domain DomainA with the name 0X0Y0Z\_\_0A0B0C.

## Static and Dynamic Cable Modems

Login and logout events of CPEs whose cable modem does not exist in the subscriber database are ignored, because no subscriber is created in the Subscriber Manager and aggregated to the SCE. This CPE traffic is treated as a default subscriber.

The Subscriber Manager supports two modes of integrating with cable modems. Editing and loading the p3sm.cfg configuration file controls these modes. (Configuring dynamic cable modem support is described in [Appendix A, “Configuration File Options.”](#) Use the CLU **p3cable** to view the current status.

- **Deny dynamic CM**—In this mode, login/logout events of cable modems that were **not** imported using the **p3cable** command are ignored. Consequently, the CPE traffic of these cable modems is treated as default subscriber.
- **Allow Dynamic CM**—In this mode, login/logout events of cable modems that were **not** imported using the **p3cable** command result in automatic addition of the cable modem to the subscriber database. These cable modems receive the application tuneables that are defined in the domain tunable template section of the configuration file. For a description of application tuneables, see the *Cisco Service Control Application for Broadband User Guide*.

