CHAPTER 8

CableHome Configuration

This chapter describes the activities that must be performed to ensure a satisfactory CableHome deployment. There are two versions of the CableHome technology: secure (SNMP) and non-secure (DHCP). This chapter deals exclusively with the non-secure version.

This chapter assumes that you are familiar with the contents of the CableHome Specification CH-SP-CH1.0-I05-030801.

Non-Secure CableHome Provisioning Flow

It is extremely useful to identify which step in the non-secure CableHome provisioning flow is failing before attempting to diagnose other details. Figure 8-1 provides a summary of the key provisioning flows.

Figure 8-1 Non-Secure CableHome Flow

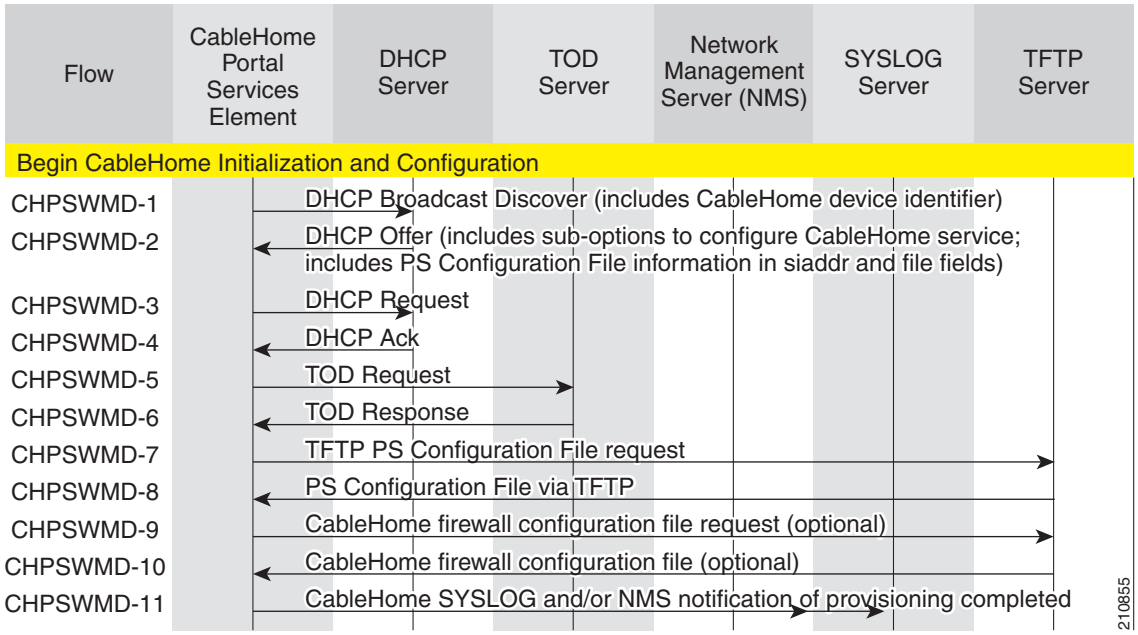

Table 8-1 describes the provisioning flow in a non-secure CableHome deployment.

Table 8-1 CableHome Provisioning Workflow

Step	Workflow	Description
CHPSWMD-1	DHCP Discover	The WAN-MAN obtains its IP lease.
CHPSWMD-2	DHCP Offer	The provisioning system returns a DHCP Offer with CableHome Option 177 suboptions: • 3—Specifies the SNMP Entity Address of the service provider. • 6—Specifies the Kerberos realm name of the provisioning realm. The realm name is required by portal services to permit a DNS lookup for the address of the Key Distribution Center. • 51—Specifies the Kerberos Server IP address, which informs the portal service of the network address of one or more Key Distribution Center servers. This Offer also contains the file information, in the file and siaddr fields, that is required to configure the portal service.
CHPSWMD-3	DHCP Request	The portal service sends the appropriate DHCP server a DHCP Request message to accept the DHCP Offer.
CHPSWMD-4	DHCP Ack	The DHCP server returns a DHCP Ack, which contains the IPv4 address of the portal service. Based on the information received in the DHCP Ack, the portal service modifies the `cabhPsDevProvMode` parameter, which specifies provisioning in the DHCP (non-secure) mode. Also, the Time of Day server address is stored in the `cabhPsDevTimeServerAddr` parameter.
CHPSWMD-5	ToD Request	The portal service initiates Time of Day synchronization with the time servers identified in Option 4 of the DHCP Ack message.
CHPSWMD-6	ToD Response	The Time of Day servers respond with the current time in UTC format.
CHPSWMD-7	PS Configuration File Via TFTP	The portal service sends a TFTP Get Request to obtain a configuration file.
CHPSWMD-8	CableHome Firewall Configuration File Request	The configuration file is downloaded via TFTP. Optionally, if there is a firewall configuration to be loaded and this is the method selected to specify it, the IP address of the name and the hash of the firewall configuration file are included in the configuration file.

Table 8-1 CableHome Provisioning Workflow (continued)

Step	Workflow	Description
CHPSWMD-9	CableHome Firewall Configuration File Request	If the configuration file acquired in step CHPSWMD-8 contains firewall information, portal services may also acquire a firewall configuration file via a TFTP Get Request to the Firewall Configuration TFTP Server. If there is no firewall configuration information in the configuration file, the provisioning process skips steps CHPSWMD-9 and CHPSMWD-10.
CHPSWMD-10	CableHome Firewall Configuration File	The Firewall Configuration TFTP Server sends a TFTP Response containing the firewall configuration file.
CHPSWMD-11	CableHome SYSLOG and/or NMS notification of provisioning completed	Once successfully configured, the portal service sends a syslog message, an SNMP trap, or both, to inform Cisco BAC that it has been successfully configured.

Configuring CableHome

This section describes how to configure Cisco Network Registrar, the cable modem configuration system (CMTS).

Configuring Network Registrar

Step 1 Create selection tags for provisioned and unprovisioned WAN-MAN and also for provisioned WAN-Data.

Configure unprovisioned and provisioned client classes and scopes for cable modems, as specified in *User Guide for Cisco Network Registrar 7.1*.

Step 2 Configure unprovisioned and provisioned client classes and scopes for WAN-MAN.

Step 3 Configure provisioned client classes and scopes for WAN-Data.

Step 4 Add routes to all the subnets.

Configuring the RDU

To configure CableHome support on the RDU, perform these configurations:

- Configuring CableHome WAN-MAN, page 8-4
- Configuring CableHome WAN-Data, page 8-4

Configuring CableHome WAN-MAN

1. Create a DHCP Criteria for the provisioned WAN-MAN. To do this, set the client class to a client-class name that is configured in the Network Registrar CableHome WAN-MAN.
2. Create a Class of Service for the provisioned WAN-MAN.
   - Set the */cos/chWanMan/file* to a CableHome configuration file appropriate for the Class of Service.
   - Set the */chWanMan/firewall/file* to the desired firewall configuration file.

Configuring CableHome WAN-Data

Configure these WAN-Data parameters whenever you want portal services to obtain the WAN-Data IP addresses:

1. Create DHCP Criteria for WAN-Data.
2. Create Class of Service for WAN-Data.

Configuring the DPE

To configure the DPE to support the CableHome technology:

Step 1 Open the CableHome device provisioning WAN-MAN config file and verify that DHCP Option 60 is set to either CableHome1.0 or CableHome1.1. Some manufacturers use a proprietary MIB object to instruct a device to behave as a pure cable modem, a non-CableHome router, or a CableHome router. The device appears as a Computer whenever the device DHCP packet does not contain CableHome1.0 or CableHome1.1 in the DHCP Option 60.

Step 2 If you want the portal services to obtain IP addresses for WAN-Data:

- Ensure that the WAN-MAN configuration file contains TLV 28 that sets cabhCdpWanDataIpAddrCount to a value that is greater than 0.
- In the cable modem configuration file, set the maximum number of devices to include the number of WAN-Data IP addresses.

Step 3 To enable self-provisioning when the CableHome device boots:

- In the *unprov-wan-man.cfg* portal services configuration file, set the portal services in the passthrough mode.
- In the cable modem configuration file, set the maximum number of devices to at least 2 to allow provisioning of the WAN-MAN and a computer. The computer can directly access sign-up web pages to be self-provisioned.