APPENDIX **E**

Configuring DHCP and DNS Servers for VCDS

The VQE configuration delivery infrastructure (CDI) is used to deliver a channel configuration file and per-client network configuration file to the VQE Clients (VQE-Cs) in a VQE system. The VQE Client Configuration Delivery Server (VCDS) or a Real Time Streaming Protocol (RTSP) server sends the channel configuration file and network configuration file to the VQE-Cs on the set-top boxes (STBs).

This appendix provides information on configuring the Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) servers so that they work correctly with the VCDS or with an RTSP server compatible with the VQE CDI. This appendix assumes you have knowledge of DHCP and DNS configuration.

Note The VQE-C parameter cdi_enable must be set to TRUE to enable a VQE-C to use the configuration delivery infrastructure. For information on the VQE-C system configuration parameters, see the *Cisco CDA Visual Quality Experience Client System Configuration Guide* listed in the "Related Documentation" section on page XV.
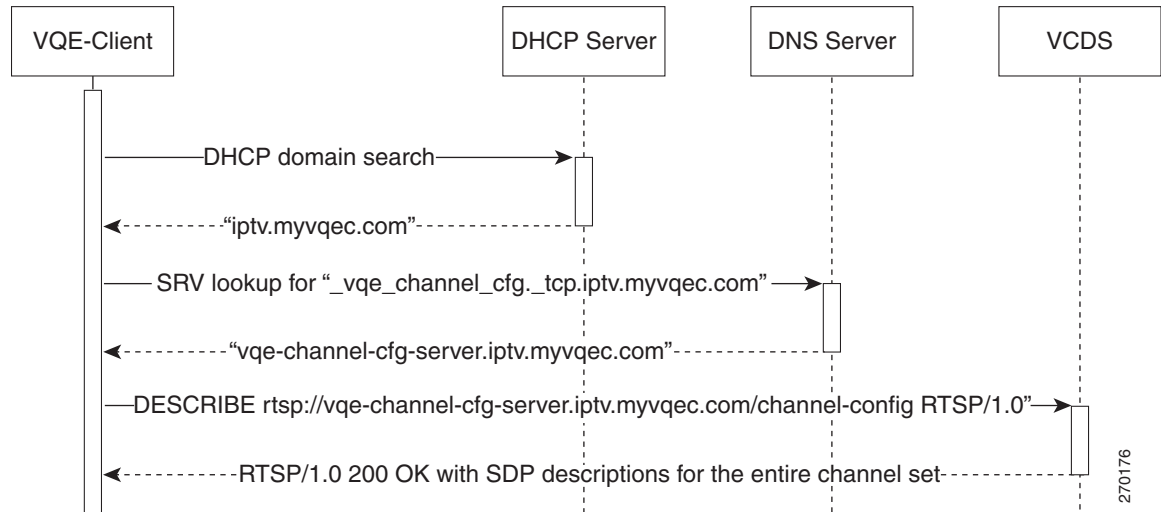
The components and interactions of the VQE CDI are shown in Figure E-1. In this example, the VCDS sends the channel configuration file to the VQE-C. The example provides guidance on the following VQE requirements for the DHCP and DNS server configuration.

- For a domain search request, the DHCP server must be configured to provide the domain of the VCDS to the VQE-C.

- For a DNS service request, the DNS server must be configured to return the hostname of one or more of the VCDS interfaces to VQE-C when the service lookup is for _vqe_channel_cfg._tcp (*exact string required*) with the VCDS domain name appended, as in _vqe_channel_cfg._tcp.<VCDS_domain_name>.

Caution The _vqe_channel_cfg._tcp part of the string is hardcoded in the VQE-C and is not configurable. The DNS server must be configured for this exact string (_vqe_channel_cfg._tcp) with the domain name appended.

Figure E-1   *VQE Configuration Delivery Infrastructure*

As shown in Figure E-1, the interactions between the VQE-C and the other components of the configuration delivery infrastructure are as follows:

1. The VQE-C on the STB sends out a DHCP domain search request.

2. The DHCP server returns the domain (in this example, iptv.myvqec.com) to which the VCDS belongs. The domain is user-defined and configured in the DHCP server.

3. After receiving the domain name from the DHCP server, the VQE-C makes a DNS service request for the following string:

   _vqe_channel_cfg._tcp.iptv.myvqec.com

4. The DNS server responds with the hostname of each of the VCDS server interfaces defined in the SRV records in the DNS. In addition, the response may include the IP address of each VCDS server interfaces. If the IP addresses are not returned, the VQE-C initiates a separate request for them.

5. If the DNS query is successful, the VQE-C parses out the VCDS IP addresses from the DNS server response. If multiple interfaces are returned in the DNS response, the VQE-C randomizes the list of VCDS IP addresses returned by the DNS. The VQE-C sends out an RTSP DESCRIBE request for channel configuration data to the first VCDS interface on the list. The VQE-C waits 5 seconds for a response before it tries to connect to the next VCDS interface in the list. If the VQE-C tries all listed interfaces and no response is received, the RTSP DESCRIBE operation has failed.

   ✐
   Note   The TCP implementation determines how many SYN packets are sent to the VCDS interface within the 5–second timeout interval.

6. If the RTSP DESCRIBE operation is successful, the VCDS sends back to the VQE-C the channel configuration data for the entire channel set in Session Description Protocol (SDP) format.

The VQE-C attempts to update the local channel_lineup file. During VQE-C initialization, if either the DNS query or the RTSP DESCRIBE operation fails, the VQE-C attempts to retrieve the channel configuration locally if a channel_lineup file is specified in the VQE-C system configuration file. If the appropriate channel configuration cannot be obtained, the VQE-C does not perform error repair. After the VQE-C has initialized, if either the DNS query or the RTSP DESCRIBE operation fails, the channel configuration is not updated.