DHCP Container Option

draft-droms-dhc-container-opt-00

Ralph Droms
dhc WG meeting
IETF-68, 2007/03/21
Problem Statement

• In some DHCP service deployments, it is desirable to pass configuration options from an SP DHCP server to a CPE

  Example: IPTV set-top box (STB) may need SP domain-specific information

• Problem: how to get that information through the subscriber’s gateway?

• Customers: CableLabs DOCSIS, ATIS, ITU
DOCSIS IPv6 Customer Network Model
Requirements

• The SP server must be able to transmit different configuration information to the consumer devices than the DHCP options provided to the RG

• The SP server MUST be able to control which DHCP options are transmitted to the consumer device

• There must be a way for the SP server to pass DHCP options to be defined in the future to consumer devices
Design Alternatives

• SP server passes container option to RG client, which forwards contents to RG server
• RG server does direct DHCP info request to SP server:
  requires that the RG server include a DHCP client
  requires that the SP server be able to differentiate between RG client and server requests
  does not scale well, as it at least doubles the load on the SP server
• RG server passes device requests to SP DHCP server:
  requires that the RG also function as a DHCP relay
  requires that the RG relay function be configured with the IP addresses of the SP DHCP server(s)
  requires that the RG relay function differentiate between DHCP messages that are processed by the RG server and DHCP messages that are processed by the SP server
Use of Container Option

• SP DHCP server includes DHCP Container option with DHCPACK to RG client

• RG client passes contents of the option to the RG server (method of passing option contents between the RG client and the RG server is out of the scope)

• DHCP options in the container option are carried in DHCP message format (option-code/length/value); options can be passed through a DHCP client to a co-located DHCP server without specific knowledge on the part of the client or the server of the semantics of the options
Control of Options Forwarded to CPEs

- RG server forwards only those options in CPE ORO
- RG server discards any address assignment, DHCP message type, etc. options

- Q&A...