

Dynamic Profile Attachment to DHCP Subscriber Interfaces Overview

The router's DHCP support enables you to attach a dynamic profile to a DHCP subscriber interface. When a DHCP subscriber logs in, the router instantiates the specified dynamic profile and then applies the services defined in the profile to the interface.

You can attach dynamic profiles to all interfaces or you can specify a particular group of interfaces to which the profile is attached. Both the DHCP local server and the DHCP relay agent support the attachment of dynamic profiles to interfaces.

You can enable the following optional features when the dynamic profile is attached. The two options cannot be used together.

- Enable multiple DHCP subscribers to share the same VLAN logical interface. The firewall filters, CoS schedulers, and IGMP configuration of the clients are merged.
- Specify the primary dynamic profile that is instantiated when the first subscriber logs in.

Multiple DHCP Subscribers Sharing the Same VLAN Logical Interface

The **aggregate-clients** statement specifies that the router merge the firewall filters, CoS schedulers, and IGMP configuration of multiple DHCP clients that are on the same VLAN logical interface (for example, multiple clients belonging to the same household). You can configure the aggregate-clients support for all interfaces or for a group of interfaces. The **aggregate-clients** statement provides the option of either merging (chaining) or replacing software components for each client.

By default, the feature is disabled and a single DHCP client is allowed per VLAN when a dynamic profile is associated with the VLAN logical interface.

When you specify the **merge** option, the router aggregates the software components for multiple subscribers as follows:

- Firewall filters—The filters are chained together using the precedence as the order of execution. If the same firewall filter is attached multiple times, the filter is executed only once.
- CoS schedulers—The different CoS schedulers are merged as if the scheduler map has multiple schedulers. The merge operation for the individual traffic-control-profiles parameters (shaping-rate, delay-buffer-rate, guaranteed-rate) preserves the maximum value for each parameter.
- IGMP configuration—The current IGMP configuration is replaced with the configuration of the newest DHCP client.

When you specify the **replace** option, the entire logical interface is replaced whenever a new client logs into the network using the same VLAN logical interface. For example, if a customer subscribes to voice, video, and data services on the network, when a voice client logs in, instead of applying a specific voice filter for only that service, the entire voice, video, and data filter chain is applied.



NOTE: You cannot use a dynamic demux interface to represent multiple subscribers in a dynamic profile attached to an interface. One dynamic demux interface represents one subscriber. Do not configure the **aggregate-clients** option when attaching a dynamic profile to a demux interface for DHCP.

Primary Dynamic Profile

The **use-primary** option enables you to specify the primary dynamic profile that is instantiated when the first subscriber logs in. Subsequent subscribers are not assigned the primary dynamic profile; instead, they are assigned the dynamic profile specified for the interface. When the first subscriber logs out, the next subscriber that logs in is assigned the primary dynamic profile.

This feature can conserve logical interfaces in a network where dynamic demux interfaces are used to represent subscribers. To conserve interfaces, the primary profile that you specify should not be a profile that creates a demux interface but one that provides the initial policies for the primary interface subscriber.

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