PPPoE Service Selection

The PPPoE Service Selection feature uses service tags to enable a PPP over Ethernet (PPPoE) server to offer PPPoE clients a selection of services during call setup. The customer chooses one of the services offered, and the service is provided when the PPPoE session becomes active. This feature enables service providers to offer a variety of services and to charge customers according to the service chosen.

Feature History for the PPPoE Service Selection Feature

Release	Modification
12.3(4)T	This feature was introduced.
12.2(27)SBA	This feature was integrated into Cisco IOS Release 12.2(27)SBA.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at http://www.cisco.com/go/fn. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Contents

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Prerequisites for PPPoE Service Selection

The PPPoE Service Selection feature requires that PPPoE be configured using PPPoE profile configuration rather than virtual private dial-up network (VPDN) group configuration.

The PPPoE client must support service tags in the PPPoE discovery phase.

The procedures in this document assume that RADIUS accounting and authentication and PPPoE are configured and working.

If you are going to use PPPoE service selection to offer tunneling services, the procedures in this document assume that you already have tunneling configured and working.

Information About PPPoE Service Selection

Before you configure PPPoE service selection, you should understand the following concepts:

PPPoE Service Selection Through Service Tags

PPPoE service selection enables a PPPoE server to offer clients a selection of services during call setup. The PPPoE client chooses one of the services offered, and that service is provided when the PPPoE session becomes active.

PPPoE service selection works through the exchange of service tags during the PPPoE discovery phase. When a client initiates a call with a PPPoE Active Discovery Initiation (PADI) packet, the PPPoE server responds with a PPPoE Active Discovery Offer (PADO) packet that advertises a list of available services. The client selects a service and sends a PPPoE Active Discovery Request (PADR) packet that indicates the service name that was selected.

When the PPPoE server receives the PADR packet that indicates the chosen service, the PPPoE server handles the service name as it would a domain name. The service profile for the service name is retrieved from a RADIUS server, and the attributes within that service profile are applied to the call.

PPPoE Service Names

Each PPPoE service has a service name, which can be defined as a set of characteristics that are applied to a PPPoE connection when that service name is selected during call setup.

When you configure PPPoE service selection, you will define a RADIUS service profile for each service name, list in a subscriber profile the service names that you want to advertise, and then assign the subscriber profile to a PPPoE profile. The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile.

If a subscriber profile is not assigned to a PPPoE profile, the PPPoE connections that use that PPPoE profile will be established without the additional service tags in the discovery packets. If a port is configured with a static service name (using the **vpn service** command), the static service name takes precedence, and no services will be advertised to the client.

The Cisco RADIUS vendor-specific attribute (VSA) “service-name” will be used in RADIUS accounting records to log the service name that was selected by the client. This attribute is also used to download the service names from the subscriber profile when the subscriber profile is defined on the RADIUS server.

RADIUS Service Profiles for PPPoE Service Selection

A service profile must be created on the RADIUS server for each service name. The service profile contains attributes that define how the call will be handled. Currently, two sets of attributes are available for defining service profiles: attributes that define tunneling and attributes that define the quality of service (QoS) that will be applied to the permanent virtual circuit (PVC) on which the PPPoE call is coming in.

The “Configuring the Service Profile on the AAA Server for PPPoE Service Selection” section on page 3 lists some of the attributes that are supported in RADIUS service profiles for PPPoE service selection.

Benefits of PPPoE Service Selection

The PPPoE Service Selection feature enables a service provider to use PPPoE to offer a selection of services to customers and to charge customers according to the service selected. For example, a wholesaler could offer different levels of service by defining multiple service profiles for the same tunnel but with different levels of QoS for the ATM PVC. The wholesaler would be able to charge customers according to the level of service provided.

PPPoE service selection could also be used by access providers to avoid link control protocol (LCP) negotiation at the Layer 2 Tunnel Protocol (L2TP) access concentrator (LAC) for sessions that are to be forwarded to tunnels. Avoiding LCP negotiation at the LAC can improve scalability of the LAC during call setup and help alleviate the load on the LAC while all the sessions on a LAC are reconnecting after an outage.

How to Configure PPPoE Service Selection

This section contains the following procedures:

- Configuring the Service Profile on the AAA Server for PPPoE Service Selection, page 3 (required)
- Configuring the Subscriber Profile for PPPoE Service Selection, page 4 (required)
- Configuring the PPPoE Profile for PPPoE Service Selection, page 6 (required)
- Verifying PPPoE Service Selection, page 7 (optional)
- Monitoring and Maintaining PPPoE Service Selection, page 8 (optional)

Configuring the Service Profile on the AAA Server for PPPoE Service Selection

Table 1 lists some of the attributes that can be used to define a RADIUS service profile for PPPoE service selection.

Table 1 Attributes for the RADIUS Service Profile for PPPoE Service Selection

RADIUS Entry	Purpose
`User-Service-Type = Outbound-User`	Configures the service type as outbound.
`Cisco-AVpair = "vpdn:tunnel-id=`*`name`*`"`	Specifies the name of the tunnel that must match the LNS's VPDN terminate-from hostname.
`Cisco-AVpair = "vpdn:tunnel-type=l2tp"`	Specifies Layer 2 Tunnel Protocol (L2TP).
`Cisco-AVpair = "vpdn:ip-addresses=`*`ip-address`*`"`	Specifies the IP address of L2TP network server (LNS).
`Cisco-AVpair = "atm:peak-cell-rate=`*`Kbps`*`"`	Specifies the peak cell rate, in kbps, that will be applied to the ATM PVC on which a PPPoE session is being established.
`Cisco-AVpair = "atm:sustainable-cell-rate=`*`Kbps`*`"`	Specifies the sustainable cell rate, in kbps, that will be applied to the ATM PVC on which a PPPoE session is being established.

Configuring the Subscriber Profile for PPPoE Service Selection

The subscriber profile contains the list of services that will be advertised to PPPoE clients. You can configure the subscriber profile locally on the router or on the RADIUS server. Perform one of the following tasks to configure the subscriber profile:

- Configuring a Local Subscriber Profile for PPPoE Service Selection, page 4
- Configuring a Subscriber Profile on the RADIUS Server for PPPoE Service Selection, page 5

Configuring a Local Subscriber Profile for PPPoE Service Selection

Perform this task to configure a local subscriber profile for PPPoE service selection.

Prerequisites

The default AAA authorization method list determines where the policy manager looks for the subscriber profile. When the subscriber profile is configured locally, the **aaa authorization network default local** command must be included in the AAA configuration so the policy manager knows to look for the subscriber policy locally.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **subscriber profile** *profile-name*
4. **pppoe service** *service-name*
5. Repeat Step 4 for each service name that you want to add to the subscriber profile.
6. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**subscriber profile** *profile-name* **Example:** `Router(config)# subscriber profile profile-name`	Defines Subscriber Service Switch policy for searches of a subscriber profile database.
Step 4	**pppoe service** *service-name* **Example:** `Router(config-sss-profile)# pppoe service gold_isp_A`	Adds a PPPoE service name to a subscriber profile.
Step 5	Repeat Step 4 for each service name that you want to add to the subscriber profile.	
Step 6	**exit** **Example:** `Router(config-sss-profile)# exit`	Returns to global configuration mode.

Configuring a Subscriber Profile on the RADIUS Server for PPPoE Service Selection

Table 2 lists the attributes that can be used to configure a RADIUS subscriber profile to support PPPoE service selection.

Prerequisites

The default AAA authorization method list determines where the policy manager looks for the subscriber profile. When the subscriber profile is configured remotely, the **aaa authorization network default group radius** command must be included in the AAA configuration so the policy manager knows to look for the subscriber policy on a AAA server.

Table 2 Attributes for the RADIUS Subscriber Profile for PPPoE Service Selection

RADIUS Entry	Purpose
User-Service-Type = Outbound-User	Configures the service type as outbound.
Cisco-AVpair = "pppoe:service-name=*service-name***"**	Specifies a PPPoE service name that will be listed in this subscriber profile.

Configuring the PPPoE Profile for PPPoE Service Selection

Perform this task to associate a subscriber profile with a PPPoE profile.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **bba-group pppoe** {*group-name* | **global**}
4. **virtual-template** *template-number*
5. **service profile** *subscriber-profile-name* [**refresh** *minutes*]
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**bba-group pppoe** {*group-name* | **global**} **Example:** `Router(config)# bba-group pppoe group1`	Defines a PPPoE profile and enters BBA group configuration mode. • The **global** keyword creates a profile that will serve as the default profile for any PPPoE port that is not assigned a specific profile.
Step 4	**virtual-template** *template-number* **Example:** `Router(config-bba-group)# virtual-template 1`	Specifies which virtual template will be used to clone virtual access interfaces for all PPPoE ports that use this PPPoE profile.

	Command or Action	Purpose
Step 5	**service profile** *subscriber-profile-name* [**refresh** *minutes*] **Example:** `Router(config-bba-group)# service profile subscriber-group1`	Assigns a subscriber profile to a PPPoE profile. • The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile. • The PPPoE configuration that is derived from the subscriber gold_isp_A under the PPPoE profile. Use the **service profile** command with the **refresh** keyword and the *minutes* argument to cause the cached PPPoE configuration to be timed out after a specified number of minutes.
Step 6	**end** **Example:** `Router(config-bba-group)# end`	(Optional) Returns to privileged EXEC mode.

Troubleshooting Tips

Use the **show pppoe session** and **debug pppoe** commands to troubleshoot PPPoE sessions.

What to Do Next

Once a PPPoE profile has been defined, it must be assigned to a PPPoE port (Ethernet interface, virtual LAN [VLAN], or PVC), a virtual circuit (VC) class, or an ATM PVC range. For more information about how to configure PPPoE profiles, refer to the Cisco IOS Release 12.2(15)T new-feature document *PPPoE Profiles*.

Verifying PPPoE Service Selection

Perform this task to verify PPPoE service selection configuration and performance. Steps 2 through 4 are optional and do not have to be performed in a particular order.

SUMMARY STEPS

1. **enable**
2. **show pppoe derived group** *group-name*
3. **show vpdn** [**session** [**all** | **packets** | **sequence** | **state**] | **tunnel** [**all** | **packets** | **summary** | **state** | **transport**]]
4. **show atm pvc** [*vpi*/*vci* | *name* | **interface atm** *interface-number*[**.***subinterface-number* **multipoint**]] [**ppp**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show pppoe derived group** *group-name* **Example:** `Router# show pppoe derived group group1`	(Optional) Displays the cached PPPoE configuration that is derived from the subscriber profile for a specified PPPoE profile. • This command is useful for viewing the subscriber profile configuration when the subscriber profile is configured on a remote AAA server.
Step 3	**show vpdn** [**session** [**all** | **packets** | **sequence** | **state**] | **tunnel** [**all** | **packets** | **summary** | **state** | **transport**]] **Example:** `Router# show vpdn`	(Optional) Displays information about active L2TP or Layer 2 Forwarding (L2F) Protocol tunnel and message identifiers in a VPDN. • Use this command to display tunneling parameters for the services configured for tunneling.
Step 4	**show atm pvc** [*vpi*/*vci* | *name* | **interface atm** *interface-number*[.*subinterface-number* **multipoint**]] [**ppp**] **Example:** `Router# show atm pvc`	(Optional) Displays all ATM PVCs and traffic information. • Use this command to display ATM QoS parameters for the services configured for ATM QoS.

Monitoring and Maintaining PPPoE Service Selection

Perform this task to monitor and maintain PPPoE service selection performance. Steps 2 through 4 are optional and do not have to be performed in a particular order.

SUMMARY STEPS

1. **enable**
2. **clear pppoe derived group** *group-name*
3. **debug pppoe events** [**rmac** *remote-mac-address* | **interface** *type number* [**vc** {[*vpi*/]*vci* | *vc-name*}] [**vlan** *vlan-id*]]
4. **debug radius** [**brief** | **hex**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**clear pppoe derived group** *group-name* **Example:** `Router# clear pppoe derived group group1`	Clears the cached PPPoE configuration of a PPPoE profile and forces the PPPoE profile to reread the configuration from the assigned subscriber profile.
Step 3	**debug pppoe events** [**rmac** *remote-mac-address* | **interface** *type number* [**vc** {[*vpi*/]*vci* | *vc-name*}] [**vlan** *vlan-id*]] **Example:** `Router# debug pppoe events interface atm1/0.10 vc 101`	(Optional) Displays PPPoE protocol messages about events that are part of normal session establishment or shutdown. • Use this command to monitor the exchange of PPPoE service names during call set up.
Step 4	**debug radius** [**brief** | **hex**] **Example:** `Router# debug radius`	(Optional) Displays information associated with RADIUS. • Use this command to monitor the transactions between the router and the RADIUS server.

Configuration Examples for PPPoE Service Selection

This section provides the following configuration examples:

- PPPoE Service Selection with ATM QoS and Tunneling Services: Example, page 9
- PPPoE Service Selection with Tunneling Services: Example, page 10

PPPoE Service Selection with ATM QoS and Tunneling Services: Example

In the following example, three services are configured: gold_isp_A, silver_isp_A, and isp_xyz. The gold and silver services are forwarded onto the same tunnel, but the ATM PVCs between the LAC and DSLAM will be set up with different QoS parameters depending on the level of service chosen. The isp_xyz service offers users access to the services of the xyz Internet service provider.

In this example, the subscriber profile is configured locally on the PPPoE server.

RADIUS Service Profile Configuration

```
gold_isp_A  Password = "cisco", User-Service-type = Outbound-User
        Tunnel-Assignment-Id = nrp1-3,
        Cisco-Avpair = "vpdn:tunnel-id=nrp1-3",
        Cisco-Avpair = "vpdn:tunnel-type=l2tp",
        Cisco-Avpair = "vpdn:ip-addresses=11.1.1.4",
        Cisco-Avpair = "atm:peak-cell-rate =2500",
        Cisco:Cisco-Avpair = "atm:sustainable-cell-rate =400"

silver_isp_A  Password = "cisco",  User-Service-type = Outbound-User
```

```
        Cisco-Avpair = "vpdn:tunnel-id=nrp1-3",
        Cisco-Avpair = "vpdn:tunnel-type=l2tp",
        Cisco-Avpair = "vpdn:ip-addresses=11.1.1.4",
        Cisco:Cisco-Avpair = "atm:peak-cell-rate =1500",
        Cisco:Cisco-Avpair = "atm:sustainable-cell-rate =200"

isp_xyz  Password = "cisco", User-Service-type = Outbound-User
        Cisco-Avpair = "vpdn:tunnel-id=aol",
        Cisco-Avpair = "vpdn:tunnel-type=l2tp",
        Cisco-Avpair = "vpdn:ip-addresses=11.1.1.5",
        Cisco:Cisco-Avpair = "atm:peak-cell-rate =1000",
        Cisco:Cisco-Avpair = "atm:sustainable-cell-rate =150"
```

PPPoE Server Configuration

```
!
! Configure the AAA default authorization method
aaa new-model
aaa authorization network default local
!
! Configure the subscriber profile
subscriber profile  listA
 pppoe service gold_isp_A
 pppoe service silver_isp_A
 pppoe service isp_xyz
!
! Configure the PPPoE profile
bba-group pppoe group_A
 virtual-template 1
 sessions per-vc  5
 service profile listA
!
! Attach the PPPoE profile to a PVC
interface atm1/0.1
 pvc 2/200
  protocol PPPoE group group_A
!
```

PPPoE Service Selection with Tunneling Services: Example

In the following example, PPPoE service selection is used to provide tunneling services only. In this example, the subscriber profile is configured on the RADIUS server.

RADIUS Service Profile Configuration

```
tunnel_to_cust1 Password = "cisco", User-Service-type = Outbound-User
   Tunnel-Assignment-Id = nrp1-3,
   Cisco-Avpair = "vpdn:tunnel-id=nrp1-3",
   Cisco-Avpair = "vpdn:tunnel-type=l2tp",
   Cisco-Avpair = "vpdn:ip-addresses=11.1.1.4",

tunnel_to_cust2 Password = "cisco", User-Service-type = Outbound-User
   Cisco-Avpair = "vpdn:tunnel-id=xyz",
   Cisco-Avpair = "vpdn:tunnel-type=l2tp",
   Cisco-Avpair = "vpdn:ip-addresses=11.1.1.5",

tunnel_to_cust3 Password = "cisco", User-Service-type = Outbound-User
   Cisco-Avpair = "vpdn:tunnel-id=aol",
   Cisco-Avpair = "vpdn:tunnel-type=l2tp",
   Cisco-Avpair = "vpdn:ip-addresses=11.1.1.6",
```

RADIUS Subscriber Profile Configuration

```
customer_tunnels Password = "cisco", User-Service-type = Outbound-User
   Cisco:Cisco-Avpair = "pppoe:service-name=tunnel_to_cust1",
   Cisco:Cisco-Avpair = "pppoe:service-name=tunnel_to_cust2",
   Cisco:Cisco-Avpair = "pppoe:service-name=tunnel_to_cust3"
```

PPPoE Server Configuration

```
!
! Configure the AAA default authorization method
aaa new-model
aaa authorization network default group radius
!
! Configure the PPPoE profile
bba-group pppoe group_A
 virtual-template 1
 sessions per-vc  5
 service profile customer_tunnels
!
! Attach the PPPoE profile to PVCs
interface atm1/0.1
 pvc 2/200
  protocol PPPoE group pppoe_group_A
!
interface atm1/0.2
 pvc 3/300
  protocol PPPoE group pppoe_group_A
```

Additional References

The following sections provide references related to PPPoE service selection.

Related Documents

Related Topic	Document Title
PPPoE profile configuration and commands	"PPPoE Profiles" new-feature document for Cisco IOS Release 12.2(15)T
RADIUS configuration	"Configuring RADIUS" chapter of the *Cisco IOS Security Configuration Guide*
RADIUS attributes	"RADIUS Attributes" appendix to the *Cisco IOS Security Configuration Guide*
Tunneling configuration	"Configuring Virtual Private Networks" chapter of the *Cisco IOS Dial Technologies Configuration Guide*

Standards

Standards	Title
No new or modified standards are supported by this feature. Support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature. Support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
RFC 2516	"A Method for Transmitting PPP over Ethernet (PPPoE)", February 1999

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents new and modified commands.

- **clear pppoe derived**
- **pppoe service**
- **service profile**
- **show pppoe derived**

clear pppoe derived

To clear the cached PPP over Ethernet (PPPoE) configuration of a PPPoE profile and force the PPPoE profile to reread the configuration from the assigned subscriber profile, use the **clear pppoe derived** command in privileged EXEC mode.

clear pppoe derived group *group-name*

Syntax Description

group *group-name*	PPPoE profile for which the cached PPPoE configuration will be cleared.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines

A subscriber profile can be configured locally on the router or remotely on a authentication, authorization, and accounting (AAA) server. The PPPoE configuration that is derived from a subscriber profile is cached locally under the PPPoE profile. Use the **clear pppoe derived** command to clear the cached PPPoE configuration of a specified PPPoE profile and force the PPPoE profile to reread the configuration from the assigned subscriber profile.

A subscriber profile contains a list of PPPoE service names. The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile. A subscriber profile is assigned to a PPPoE profile by using the **service profile** command in BBA group configuration mode.

Examples

The following example clears the cached PPPoE configuration for PPPoE profile “sp_group_a”. The PPPoE profile will reread the configuration from the subscriber profile that is assigned to that PPPoE profile.

```
clear pppoe derived group sp_group_a
```

Related Commands

Command	Description
service profile	Assigns a subscriber profile to a PPPoE profile.
show pppoe derived	Displays the cached PPPoE configuration that is derived from the subscriber profile for a specified PPPoE profile.
subscriber profile	Defines Subscriber Service Switch policy for searches of a subscriber profile database.

pppoe service

To add a PPP over Ethernet (PPPoE) service name to a local subscriber profile, use the **pppoe service** command in subscriber profile configuration mode. To remove a PPPoE service name from a subscriber profile, use the **no** form of this command.

pppoe service *service-name*

no pppoe service *service-name*

Syntax Description

service-name	Name of the PPPoE service to be added to the subscriber profile.

Defaults

A PPPoE service name is not part of a subscriber profile.

Command Modes

Subscriber profile configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines

A subscriber profile contains a list of PPPoE service names. Use the **pppoe service** command to add PPPoE service names to a local subscriber profile.

When you configure PPPoE service selection, you define a RADIUS service profile for each service name, list the service names that you want to advertise in a subscriber profile, and then assign the subscriber profile to a PPPoE profile. The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile.

Examples

The following example shows PPPoE service names being added to the subscriber profile called “listA”:

```
!
! Configure the AAA default authorization method
aaa new-model
aaa authorization network default local
!
! Configure the subscriber profile
subscriber profile  listA
 pppoe service gold_isp_A
 pppoe service silver_isp_A
 pppoe service isp_xyz
!
! Configure the PPPoE profile
bba-group pppoe group_A
 virtual-template 1
 sessions per-vc  5
 service profile listA
!
```

```
! Attach the PPPoE profile to a PVC
interface atm1/0.1
 pvc 2/200
  protocol PPPoE group group_A
!
```

Related Commands

Command	Description
clear pppoe derived	Clears the cached PPPoE configuration of a PPPoE profile and forces the PPPoE profile to reread the configuration from the assigned subscriber profile.
service profile	Assigns a subscriber profile to a PPPoE profile.
show pppoe derived	Displays the cached PPPoE configuration that is derived from the subscriber profile for a specified PPPoE profile.
subscriber profile	Defines Subscriber Service Switch policy for searches of a subscriber profile database.

service profile

To assign a subscriber profile to a PPP over Ethernet (PPPoE) profile, use the service profile command in BBA group configuration mode. To remove a subscriber profile assignment from a PPPoE profile, use the **no** form of this command.

service profile *subscriber-profile-name* [**refresh** *minutes*]

no service profile *subscriber-profile-name* [**refresh** *minutes*]

Syntax Description

subscriber-profile-name	Name of the subscriber profile to be assigned to a PPPoE profile.
refresh	(Optional) Causes the cached PPPoE configuration to be timed out and reread from the subscriber profile.
minutes	(Optional) Number of minutes after which the cached PPPoE configuration will be timed out. The range is from 2 to 44640 minutes. There is no default.

Defaults

A subscriber profile is not assigned to a PPPoE profile.

Command Modes

BBA group configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines

A subscriber profile contains a list of PPPoE service names. Use the **service profile** command to assign a subscriber profile to a PPPoE profile. The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile.

A subscriber profile can be configured locally on the router or remotely on a AAA server. The PPPoE configuration that is derived from a subscriber profile is cached locally under the PPPoE profile. Use the **service profile** command with the **refresh** keyword and the *minutes* argument to cause the cached PPPoE configuration to be timed out after a specified number of minutes. When the cached PPPoE configuration is timed out, the PPPoE profile rereads the configuration in the subscriber profile.

Examples

The following example shows how to assign a subscriber profile called “customer_tunnels” to a PPPoE profile called “group_A”:

```
!
! Configure the AAA default authorization method
aaa new-model
aaa authorization network default group radius
!
! Configure the PPPoE profile
bba-group pppoe group_A
 virtual-template 1
```

```
 sessions per-vc  5
 service profile customer_tunnels
!
! Attach the PPPoE profile to PVCs
interface atm1/0.1
 pvc 2/200
  protocol PPPoE group pppoe_group_A
!
interface atm1/0.2
 pvc 3/300
  protocol PPPoE group pppoe_group_A
```

Related Commands

Command	Description
bba-group pppoe	Creates a PPPoE profile.
clear pppoe derived	Clears the cached PPPoE configuration of a PPPoE profile and forces the PPPoE profile to reread the configuration from the assigned subscriber profile.
service profile	Assigns a subscriber profile to a PPPoE profile.
show pppoe derived	Displays the cached PPPoE configuration that is derived from the subscriber profile for a specified PPPoE profile.
subscriber profile	Defines Subscriber Service Switch policy for searches of a subscriber profile database.

show pppoe derived

To display the cached PPP over Ethernet (PPPoE) configuration that is derived from the subscriber profile for a specified PPPoE profile, use the **show pppoe derived** command in privileged EXEC mode.

show pppoe derived group *group-name*

Syntax Description

group *group-name*	PPPoE profile for which the cached PPPoE configuration will be displayed.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(4)T	This command was introduced.
12.2(27)SBA	This command was integrated into Cisco IOS Release 12.2(27)SBA.

Usage Guidelines

A subscriber profile can be configured locally on the router or remotely on a AAA server. The PPPoE configuration that is derived from a subscriber profile is cached locally under the PPPoE profile. Use the **show pppoe derived** command to display the cached PPPoE configuration that is derived from the subscriber profile for a specified PPPoE profile.

A subscriber profile contains a list of PPPoE service names. The PPPoE server will advertise the service names that are listed in the subscriber profile to each PPPoE client connection that uses the configured PPPoE profile. A subscriber profile is assigned to a PPPoE profile by using the **service profile** command in BBA group configuration mode.

Examples

The following example shows the PPPoE configuration for PPPoE profile “sp_group_a” that is derived from subscriber profile “abc”. The services “isp_xyz”, “gold_isp_A”, and “silver_isp_A” will be advertised to each PPPoE client connection that uses PPPoE profile “sp_group_a”.

```
Router# show pppoe derived group sp_group_a

Derived configuration from subscriber profile 'abc':
Service names:
   isp_xyz, gold_isp_A, silver_isp_A
```

Related Commands

Command	Description
clear pppoe derived	Clears the cached PPPoE configuration of a PPPoE profile and forces the PPPoE profile to reread the configuration from the assigned subscriber profile.
pppoe service	Adds a PPPoE service name to a local subscriber profile.
service profile	Assigns a subscriber profile to a PPPoE profile.
subscriber profile	Defines Subscriber Service Switch policy for searches of a subscriber profile database.