



# Configuring Service Profiles

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## About Service Profiles

A Gigabit passive optical network (GPON) topology consists of an optical line termination (OLT) device that is connected to multiple optical network terminals (ONTs) through an optical splitter.

Downstream traffic is the traffic flowing from an OLT to a specific ONT. The OLT receives and transmits the Ethernet services to the GPON Encapsulation Method (GEM) ports. Each GEM port is identified by a unique ID called port ID. The GEM ports encapsulate the Ethernet services into GEM frames, add the port ID, and broadcast the GEM frames to all the connected ONTs. The ONT then filters the GEM frames based on the port ID, decapsulates the GEM frames to Ethernet services, and transmits the services to end users.

Upstream traffic is the traffic flowing from all the ONTs to the OLT. Because all the ONTs share the same transmission channel, only one ONT is allocated the bandwidth to transmit data at a given point in time. Bandwidth allocation is based on the type of transmission container (T-CONT). A T-CONT is a buffer for transmitting the upstream service flow in the GPON system, and is identified by an allocation ID. The ONT encapsulates the Ethernet services to the GEM frames, and buffers the GEM frames into the T-CONT that is waiting for the uplink data forwarding time. Multiple GEM ports are multiplexed into a T-CONT. The OLT receives the GEM frames through the GEM ports, decapsulates the GEM frames to Ethernet services, and transmits the services to the access layer device.

Service profile deployment allows you to configure various profile templates. The following table lists the various profile templates that you can configure.

**Table 1: Service Profile Operation**

Configuration Task	Type of Traffic	Required or Optional
VLAN profiles	Upstream and downstream traffic	Required
DBA profiles	Upstream traffic only	Required
Uplink traffic profiles	Upstream traffic only	Optional
Downlink traffic profile	Downstream traffic only	Optional
Line profiles	Upstream traffic only	Required

Configuration Task	Type of Traffic	Required or Optional
Rule profiles	Upstream traffic only	Required
Unique profiles	Upstream traffic only	Optional

You can specify a default service profile and bind multiple service profiles to a rule. The device type configuration in multiple service profiles vary. After an ONT is registered, the OLT checks the service profiles based on the device type reported by the ONT. If the device type in the service profile matches the device type reported by the ONT, the OLT sends the service profile to the ONT. If the device type does not match, the OLT checks whether the default service profile exists and sends the default service profile to the ONT.

## About VLAN Profiles

You can configure VLAN application modes to the traffic flow between the OLT and the ONT. The OLT supports both the N:1 and 1:1 VLAN application modes for flexible and variable VLAN service applications.

The OLT implements GEM port-based VLAN transformation rules through the VLAN profile template configuration. A VLAN profile template can be configured with the following transformation rules:

- **Add rule:** This rule is used to configure VLAN stacking rules. After a rule is configured and applied, in the upstream direction, the OLT adds an outer-VLAN tag to the inner-VLAN tag of the service flow originating from the ONT and carried by the corresponding GEM port. In the downstream direction, the OLT strips the ingress traffic outer-VLAN tag from the uplink device and forwards it to the ONT through the corresponding GEM port. Each VLAN profile template can be configured with 32 VLAN stacking rules, but the inner-VLAN tag (a combination of VLAN ID and priority) should be unique in each rule. After the template is configured, it is referenced by the GEM port configured in the line profile template or unique profile template.
- **Add default rule:** This rule is used to configure VLAN tagging rules. After a rule is configured and applied, in the upstream direction, the OLT adds a default VLAN tag to the untagged service flow originating from the ONT and carried by the corresponding GEM port. In the downstream direction, the OLT strips the default VLAN of the service flow from the uplink port and forwards it to the ONT through the corresponding GEM port. Only one default VLAN tag rule can be configured for each VLAN profile template. After the template is configured, it is referenced by the GEM port configured in the line profile template or unique profile template.
- **Translate rule:** This rule is used to configure VLAN translation rules. After a rule is configured and applied, in the upstream direction, the OLT converts the old-VLAN tag to the new-VLAN tag of the service flow originating from the ONT and carried by the corresponding GEM port. In the downstream direction, the OLT converts the new-VLAN tag of the service flow to the old-VLAN tag and forwards it to the ONT through the corresponding GEM port. Each VLAN template can be configured with 32 VLAN conversion rules, but the old-VLAN tag (a combination of VLAN ID and priority) should be unique in each rule. After the template is configured, it is referenced by the GEM port configured in the line profile template or unique profile template.

After the VLAN template is referenced, the VLAN translation and the stacking rules are compared for an upstream packet with a VLAN tag. The VLAN tag rule is compared for an upstream packet without a VLAN tag from an ONT GEM port. The packet is discarded if there is no corresponding matching rule.

## About DBA Profiles

For upstream traffic, only one ONT is allowed to transmit data at a given point in time because all the ONTs share the same transmission channel. The upstream traffic is handled by scheduling a dynamic bandwidth assignment (DBA) profile.

Bandwidth allocation is based on the configured T-CONT for transmitting upstream traffic. Each T-CONT type provides a certain Quality of Service (QoS).

The following table lists the different types of T-CONT, the relationship between each type of T-CONT, and bandwidth allocation and service application for each T-CONT type

**Table 2: T-CONT Type Summary**

T-CONT Type	Traffic Descriptor Component	Description
Type 1	Fixed bandwidth	Provides only fixed bandwidth. Configured for carrying traffic that is sensitive to delay or jitter, for example, VoIP services.
Type 2	Assured bandwidth	Provides only assured bandwidth. Configured for carrying on or off type traffic without strict delay and jitter requirements, for example, IPTV multicast services.
Type 3	Assured bandwidth Maximum bandwidth	Provides both assured bandwidth as well as nonassured bandwidth. Configured for carrying variable-rate burst traffic.
Type 4	Maximum bandwidth	Provides best-effort bandwidth. Configured for carrying variable-rate burst traffic that does not exhibit delay sensitivity, for example, internet data services.
Type 5	Fixed bandwidth Assured bandwidth Maximum bandwidth	Provides a combination of fixed, assured, and best-effort bandwidth. Configured for carrying general traffic.

The following are the characteristics of aDBA profile:

- In all types of T-CONT, bandwidth allocation is prioritized in the following order:
  1. Fixed bandwidth
  2. Assured bandwidth
  3. Nonassured bandwidth
  4. Best-effort bandwidth

- Fixed bandwidth assured bandwidth together comprise the basic bandwidth. The sum of the fixed bandwidth and the assured bandwidth of all T-CONT configurations under the same PON port cannot exceed the total uplink bandwidth of the corresponding PON port.
- Nonassured and best-effort bandwidth together comprise the additional bandwidth.

## About Uplink Traffic Profiles

Uplink traffic flow is scheduled based on the GEM port. The following are the two types of scheduling modes:

- Flow control mode: The flow is controlled by the GEM port rate limitation configured on the GEM port.
- Priority queue scheduling mode: The flow is controlled by the GEM port priority.

The uplink traffic profile configuration is applied only if the ONT supports it. After the uplink traffic profile template is applied, it is referenced based on the GEM port in the line profile template or unique profile template. The GEM port traffic is scheduled by the ONT based on the uplink traffic profile configuration.

## About Downlink Traffic Profiles

Downlink traffic flow is scheduled using the flow control mode.

Only one downstream traffic flow schedule can be configured in a GEM port. After the downlink traffic profile template is applied, it is referenced based on the GEM port in the line profile template or unique profile template.

## About Line Profiles

A line profile allows you to map the ONT service flow to the OLT. The following are the parameters required to create a line profile:

### 1. Device type

Define a device type. Each connected ONT must have its own specific device type name. When the ONT is registered to go online, the OLT delivers a specific line profile template configuration according to the device type reported. In the line profile configuration, the device type must be configured first. The device type cannot be modified after the line profile is configured. The entire line profile configuration must be removed when the device type is deleted or modified.

### 2. T-CONT

Create a T-CONT and configure the binding relationship between the T-CONT and the DBA profile template.

### 3. GEM port

Create a GEM port and configure the GEM port parameters, as detailed below:

- a. Configure a GEM port and map it to the T-CONT.
- b. Map the GEM port to the VLAN profile configuration. The OLT must support the GEM port-based VLAN translate rule.
- c. Map the GEM port to the uplink traffic profile. The upstream traffic scheduling parameters are configured in the upstream traffic profile.

- d. Map the GEM port to the downlink traffic profile. The downlink bandwidth rate limit configured in the downlink traffic profile is implemented by the OLT ACL resources.

#### 4. Mapping rule

Configure mapping rules between the GEM port and user interface data flows, as detailed below:

- a. A mapping mode is required to configure mapping between the GEM port and the data flowing from the user interface. The following are the various mapping modes available:
  - Port
  - VLAN ID
  - 802.1P priority
  - Port + VLAN ID
  - Port + 802.1P priority
  - VLAN ID+802.1P priority
  - Port+VLAN ID+802.1P priority



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**Note** Only one mapping mode can be configured for the same service profile. The default mapping mode is based on VLAN ID mapping.

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- b. A mapping table establishes the mapping relationship between the GEM port and the upstream data flowing into the ONT user interface. After the mapping relationship is established, the corresponding GEM port can be used to carry the service.



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**Note** The parameters of the mapping mode must be the same as those configured in the mapping table configuration.

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#### 5. Flow rule

Configure flow rules, as detailed below:

- a. Service flows are distinguished by the ONT based on the packet Ethernet type and the port the packets are received into.

Packets that receive ports are classified into the following types:

- Ethernet interface (Eth): The Ethernet interface refers to the LAN port of the ONT.
  - Virtual Ethernet interface (VEIP): The virtual Ethernet interface refers to the WAN interface of the ONT.
  - Voice IP interface (IPhost): The voice IP interface is applicable to ONTs that supports voice service.
- b. The VLAN tag processing policy of the ONT flow. Based on the flow rules configured, the ONT applies the VLAN processing rule on the service flow. The following are the VLAN tag processes:

- Transparent
- Default
- Keep
- Translate
- Add

## 6. Rule profile

Configure a rule profile. Configure a rule profile, as detailed below:

- Configure the ONT authentication rule and bind the line profile to the related ONTs. An OLT supports the following authentication modes:
  - Serial number authentication
  - Password authentication
  - Combination of serial number and password authentication
  - Logical ONT ID (LOID) authentication
  - LOID password authentication
  - Combination of LOID and LOID password authentication.

Serial number authentication, password authentication, and a combination of serial number and password authentication are ITU-defined ONT authentication methods.

- Configure the ONT discovery mode. This can be configured with password authentication mode, a combination of serial number and password authentication mode, and all LOID related authentication modes. There are two types of ONT discovery modes:
  - Always-on mode: This mode indicates that even after the ONT passes the authentication, if the serial number changes, the ONT goes online. By default, the ONT discovery mode is in always-on mode.
  - Once-on mode: This mode indicates that the ONT must be authenticated and registered within the specified time after the configuration of the profile is completed. If ONT authentication succeeds, the serial number cannot be modified. The specified time can be set either by no aging time and aging time. A no-aging time means that the timeout period is not set and the ONT can always be authenticated.

After the ONT authentication rule is configured, the service profile is applied to the ONT.

## About Unique Profiles

Each ONT is configured differently based on the service flow attribute and each of its service flow application. For example, for voice service flow, the flow attribute is a telephone number. You can configure a line profile and a unique profile on an OLT, based on the ONT service application. The following are the conditions for configuring line profile and unique profile as well as the advantages and disadvantages of each method.

- If the ONT service flow attributes are not distinguished, different line profiles are directly configured for each ONT. Although this method allows for clear configurations, a large number of line profiles can occupy space in the configuration file.
- If the ONT service flow attributes are distinguished, the common service flow attributes are configured as a line profile, and the different service flow attributes are configured as a unique profile. Although this method allows for simpler configuration, it is difficult to modify the ONT configurations because they are unclear.

Perform the following configuration steps to create a unique profile:

1. Configure the ONT description. This description can be used to describe the geographic location of the terminal according to the user. If a terminal fails, its location can be located quickly for troubleshooting based on its description.
2. Bind the traffic profile and VLAN profile to the ONT GEM port using the GEM port profile. The ONT GEM port can only be created in the line profile. The ONT GEM port binding relationship to the traffic profile and VLAN profile can be configured either in the line profile or the unique profile.



**Note** If there is a GEM port profile binding configuration in both the line profile and the unique profile, the unique profile configuration takes precedence.

3. Configure the ONT SIP service, including the SIP proxy attributes, SIP interface attributes, SIP number attributes, and digitmap attributes.

## How to Configure Service Profiles

The following sections provide information on how to configure various service profiles.

### Configure a VLAN Profile

To configure a VLAN profile, perform the following procedures.

#### Configure an Add Rule

Modifying and activating the VLAN template causes the ONT that references the template to go online again.

To configure add rule, perform this procedure.

##### Procedure

	Command or Action	Purpose
Step 1	<p><b>enable</b></p> <p><b>Example:</b></p> <pre>Device&gt; enable</pre>	<p>Enables privileged EXEC mode.</p> <p>Enter your password, if prompted.</p>

	Command or Action	Purpose
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile vlan</b> <b>Example:</b> Device(config)# <b>deploy profile vlan</b>	Enters VLAN profile configuration mode.
<b>Step 4</b>	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>aim 5</b>	Creates VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 5</b>	[no] <b>add inner-vlan</b> <i>vid</i> { <i>priority</i> } { <b>outer-vlan</b> { <i>vid</i> [ <i>priority</i> ]}}} <b>Example:</b> Device(deploy-profile-vlan-5)#	Configures the VLAN stacking rule. <ul style="list-style-type: none"> <li>• <i>vid</i>: The VLAN ID. The range is from 0 to 4094.</li> <li>• <i>priority</i>: The 802.1 priority. The range is from 0 to 7.</li> </ul> Use the <b>no add inner-vlan</b> <i>vid</i> [ <i>priority</i> ] command to delete the VLAN stacking rule.
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-vlan-5)# <b>active</b>	Activates the VLAN rule.
<b>Step 7</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan-5)# <b>exit</b>	Exits to VLAN profile configuration mode.
<b>Step 8</b>	<b>delete aim</b> { <i>index_list</i>   <i>name name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>delete aim 5</b>	(Optional) Deletes the VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_list</i>: The index number combination.</li> <li>• <i>name</i>: The name of the template in string.</li> </ul>
<b>Step 9</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan)# <b>exit</b>	Exits to global configuration mode.

## Configure a Default Rule

Modifying and activating the VLAN template causes the ONT that references the template to go online again.

To configure a default rule, perform this procedure.



## Procedure

	Command or Action	Purpose
Step 1	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>deploy profile vlan</b> <b>Example:</b> Device(config)# <b>deploy profile vlan</b>	Enters VLAN profile configuration mode.
Step 4	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <i>name name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>aim 5</b>	Creates VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length is from 1 to 128.</li> </ul>
Step 5	<b>[no] default vlan</b> <i>vid</i> [ <i>priority</i> ] <b>Example:</b> Device(deploy-profile-vlan-5)# <b>default vlan 5 5</b>	Configures a VLAN tagging rule. <ul style="list-style-type: none"> <li>• <i>vid</i>: The VLAN ID. The range is from 0 to 4094.</li> <li>• <i>priority</i>: The 802.1 priority. The range is from 0 to 7.</li> </ul> Use the <b>no default vlan</b> command to delete the VLAN tagging rule.
Step 6	<b>active</b> <b>Example:</b> Device(deploy-profile-vlan-5)# <b>active</b>	Activates the VLAN rule.
Step 7	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan-5)# <b>exit</b>	Exits to VLAN profile configuration mode.
Step 8	<b>delete aim</b> { <i>index_list</i>   <i>name name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>delete aim 5</b>	(Optional) Deletes the VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_list</i>: The index number combination.</li> <li>• <i>name</i>: The name of the template in string.</li> </ul>
Step 9	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan)# <b>exit</b>	Exits to global configuration mode.

## Configure a Translate Rule

Modifying and activating the VLAN template causes the ONT that references the template to go online again. To configure a translate rule, perform this procedure.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile vlan</b> <b>Example:</b> Device(config)# <b>deploy profile vlan</b>	Enters VLAN profile configuration mode.
<b>Step 4</b>	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <i>name name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>aim 5</b>	Creates VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 5</b>	[ <b>no</b> ] <b>translate old-vlan</b> <i>vid</i> { <i>priority</i>   <b>new-vlan</b> { <i>vid</i> [ <i>priority</i> ] } } <b>Example:</b> Device(config)#	Configures the VLAN translate rule. <ul style="list-style-type: none"> <li>• <i>vid</i>: The VLAN ID. The range is from 0 to 4094.</li> <li>• <i>priority</i>: The 802.1 priority. The range is from 0 to 7.</li> </ul> Use the <b>no translate old-vlan</b> <i>vid</i> [ <i>priority</i> ] to delete the VLAN translate rule.
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(config)#	Activates the VLAN rule.
<b>Step 7</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan-5)# <b>exit</b>	Exits to VLAN profile configuration mode.
<b>Step 8</b>	<b>delete aim</b> { <i>index_list</i>   <i>name name</i> } <b>Example:</b> Device(deploy-profile-vlan)# <b>delete aim 5</b>	(Optional) Deletes the VLAN aim. <ul style="list-style-type: none"> <li>• <i>index_list</i>: The index number combination.</li> <li>• <i>name</i>: The name of the template in string.</li> </ul>

	Command or Action	Purpose
Step 9	<b>exit</b> <b>Example:</b> Device(deploy-profile-vlan) # <b>exit</b>	Exits to global configuration mode.

## Configure a DBA Profile

Modifying and activating the DBA profile causes the ONT that references the template to go online again.

To configure a DBA profile, perform this procedure.

### Procedure

	Command or Action	Purpose
Step 1	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>deploy profile dba</b> <b>Example:</b> Device(config)# <b>deploy profile dba</b>	Enters DBA profile configuration mode.
Step 4	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <i>name name</i> } <b>Example:</b> Device(deploy-profile-dba) #	Creates the DBA aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length is from 1 to 128.</li> </ul>
Step 5	<b>type 1 fix</b> <i>fixed_bandwidth</i> <b>Example:</b> Device(deploy-profile-dba-5) # <b>type 1 fix 1024</b>	Configures Type 1 DBA. <i>fixed_bandwidth</i> : The fixed bandwidth, in kbps. The range is from 256 to 800000.
Step 6	<b>type 2 assured</b> <i>assured_bandwidth</i> <b>Example:</b> Device(deploy-profile-dba-5) # <b>type 2 assured 1024</b>	Configures Type 2 DBA. <i>assured_bandwidth</i> : The assured bandwidth, in kbps. The range is from 0 to 800000.
Step 7	<b>type 3 assured</b> <i>assured_bandwidth</i> <b>max</b> <i>max_bandwidth</i> <b>Example:</b>	Configures Type 3 DBA. <ul style="list-style-type: none"> <li>• <i>assured_bandwidth</i>: The assured bandwidth, in kbps. The range is from 0 to 800000.</li> </ul>

	Command or Action	Purpose
	Device (deploy-profile-dba-5) # <b>type 3 assured 256 max 1024</b>	<ul style="list-style-type: none"> <li><i>max_bandwidth</i>: The maximum bandwidth, in kbps. The range is from 256 to 1200000.</li> </ul>
<b>Step 8</b>	<b>type 4 max max_bandwidth</b> <b>Example:</b> Device (deploy-profile-dba-5) # <b>type 4 max 256</b>	Configures Type 4 DBA. <ul style="list-style-type: none"> <li><i>max_bandwidth</i>: The maximum bandwidth, in kbps. The range is from 256 to 1200000.</li> </ul>
<b>Step 9</b>	<b>type 5 fix fixed_bandwidth assured assured_bandwidth max max_bandwidth</b> <b>Example:</b> Device (deploy-profile-dba-5) # <b>type 5 fix 1024 assured 256 max 256</b>	Configures Type 5 DBA. <ul style="list-style-type: none"> <li><i>fixed_bandwidth</i>: The fixed bandwidth, in kbps. The range is from 256 to 800000.</li> <li><i>assured_bandwidth</i>: The assured bandwidth, in kbps. The range is from 0 to 800000.</li> <li><i>max_bandwidth</i>: The maximum bandwidth, in kbps. The range is from 256 to 1200000.</li> </ul>
<b>Step 10</b>	<b>active</b> <b>Example:</b> Device (deploy-profile-dba-5) # <b>active</b>	Activates the DBA aim.
<b>Step 11</b>	<b>exit</b> <b>Example:</b> Device (deploy-profile-dba-5) # <b>exit</b>	Exits to VLAN profile configuration mode.
<b>Step 12</b>	<b>delete aim { index_list   name name }</b> <b>Example:</b> Device (deploy-profile-dba) #	(Optional) Deletes the DBA aim. <ul style="list-style-type: none"> <li><i>index_list</i>: The index number combination.</li> <li><i>name</i>: The name of the template in string.</li> </ul>
<b>Step 13</b>	<b>exit</b> <b>Example:</b> Device (deploy-profile-dba) # <b>exit</b>	Exits to global configuration mode.

## Configure an Uplink Traffic Profile

Modifying and activating the uplink traffic profile causes the ONT that references the template to go online.

To configure an uplink traffic profile, perform this procedure.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b>	Enables privileged EXEC mode. Enter your password, if prompted.

	Command or Action	Purpose
	Device> <b>enable</b>	
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile us-traffic</b> <b>Example:</b> Device(config)# <b>deploy profile us-traffic</b>	Enter uplink traffic profile configuration mode.
<b>Step 4</b>	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <i>name name</i> } <b>Example:</b> Device(deploy-profile-us-traffic)# <b>aim 5</b>	Creates uplink traffic profile aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 5</b>	<b>us queue</b> <i>queue_id</i> <b>Example:</b> Device(deploy-profile-us-traffic-5)# <b>us queue 5</b>	(Optional) Configures GEM port queue priority. <i>queue_id</i> : GEM port priority queue in T-CONT. The range is from 0 to 7, where, 0 is the lowest priority and 7 is the highest priority.
<b>Step 6</b>	<b>us car</b> <i>cir cir cbs cbs pir pir pbs pbs</i> <b>Example:</b> Device(deploy-profile-us-traffic-5)# <b>us car cir 256 cbs 23 pir 1024 pbs 5</b>	(Optional) Configures GEM port traffic control. <ul style="list-style-type: none"> <li>• <i>cir</i>: The committed information rate, in kbps. The range is from 64 to 800000.</li> <li>• <i>cbs</i>: The committed burst size, in KB. The range is from 2 to 25000.</li> <li>• <i>pir</i>: The peak information rate, in kbps. The range is from 64 to 1024000. The peak information rate requirement is greater than or equal to committed information rate.</li> <li>• <i>pbs</i>: The peak burst size, in KB. The range is from 2 to 25000.</li> </ul>
<b>Step 7</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-us-traffic-5)# <b>active</b>	Activates the uplink traffic profile aim.
<b>Step 8</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-us-traffic-5)# <b>exit</b>	Exits to VLAN profile configuration mode.
<b>Step 9</b>	<b>delete aim</b> { <i>index_list</i>   <i>name name</i> }	(Optional) Deletes the uplink traffic profile aim.

	Command or Action	Purpose
	<b>Example:</b> Device(deploy-profile-us-traffic)# <b>delete aim 5</b>	<ul style="list-style-type: none"> <li>• <i>index_list</i>: The index number combination.</li> <li>• <i>name</i>: The name of the template in string.</li> </ul>
<b>Step 10</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-us-traffic)# <b>exit</b>	Exits to global configuration mode.

## Configure a Downlink Traffic Profile

Modifying and activating the downlink traffic profile causes the ONT that references the template to go online.

To configure a downlink traffic profile, perform this procedure.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile ds-traffic</b> <b>Example:</b> Device(deploy-profile-ds-traffic)#	Enters downlink traffic profile configuration mode.
<b>Step 4</b>	<b>aim {index_num [name name]   name name}</b> <b>Example:</b> Device(deploy-profile-ds-traffic)# <b>aim 5</b>	Creates downlink traffic profile aim. <ul style="list-style-type: none"> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 5</b>	<b>ds car bandwidth bandwidth</b> <b>Example:</b> Device(deploy-profile-ds-traffic-5)#	(Optional) Configures GEM port committed access rate (CAR). <i>bandwidth</i> : The downstream bandwidth, in kbps. The value range is from 64 to 2608832.
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-ds-traffic-5)#	Activates the downlink traffic profile aim.

	Command or Action	Purpose
Step 7	<b>exit</b> <b>Example:</b> Device(deploy-profile-ds-traffic-5)# <b>exit</b>	Exits to VLAN profile configuration mode.
Step 8	<b>delete aim</b> { <i>index_list</i>   <b>name name</b> } <b>Example:</b> Device(deploy-profile-ds-traffic)# <b>delete aim 5</b>	(Optional) Deletes the downlink traffic profile aim. <ul style="list-style-type: none"> <li>• <i>index_list</i>: The index number combination.</li> <li>• <i>name</i>: The name of the template, in string format.</li> </ul>
Step 9	<b>exit</b> <b>Example:</b> Device(deploy-profile-ds-traffic)# <b>exit</b>	Exits to global configuration mode.

## Configure a Line Profile

To configure a line profile, perform the following procedures.

### Configure a Device Type

Modifying and activating the line profile causes the ONT that references the template to go online.

To configure a device type, perform this procedure.

#### Procedure

	Command or Action	Purpose
Step 1	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>deploy profile line</b> <b>Example:</b> Device(config)# <b>deploy profile line</b>	Enter line profile configuration mode.
Step 4	<b>aim</b> { <i>index_number</i> [ <b>name name</b> ]   <b>name name</b> } <b>Example:</b> Device(deploy-profile-line)# <b>aim 5</b>	Creates line profile aim. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string format.</li> </ul>

	Command or Action	Purpose
<b>Step 5</b>	<b>device type</b> <i>type</i> <b>Example:</b> Device(deploy-profile-line-5) # <b>device type c40-100</b>	Configures the device type.  <i>type</i> : The ONT device type name. The name of the ONT device type should conform to the GPON Terminal Naming Specification.
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-line-5) # <b>active</b>	Activates the line profile.
<b>Step 7</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-line-5) # <b>exit</b>	Exits to line profile configuration mode.
<b>Step 8</b>	<b>delete aim</b> { <i>index_list</i>   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-line) # <b>delete aim 5</b>	(Optional) Deletes the aim.  <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>w</li> <li>• <i>name</i>: The profile name in string</li> </ul>
<b>Step 9</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-line) # <b>exit</b>	Exits to global configuration mode.

## Configure a T-CONT

Modifying and activating the line profile causes the ONT that references the template to go online. To configure a T-CONT, perform this procedure.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode.  Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile line</b> <b>Example:</b> Device(config) # <b>deploy profile line</b>	Enters line profile configuration mode.



	Command or Action	Purpose
Step 4	<b>aim</b> { <i>index_number</i> [ <b>name</b> <i>name</i> ]   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-line) # <b>aim 5</b>	Creates line profile aim. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 5	<b>[no ] tcont</b> <i>tcont_id</i> <b>profile dba</b> { <i>index_num</i>   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-line-5) # <b>tcont 2 profile dba 5</b>	Creates T-CONT. <ul style="list-style-type: none"> <li>• <i>tcont_id</i>: The T-CONT ID. The value range is from 1 to 8.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 6	<b>active</b> <b>Example:</b> Device(deploy-profile-line-5) # <b>active</b>	Activates the line profile.
Step 7	<b>exit</b> <b>Example:</b> Device(deploy-profile-line-5) # <b>exit</b>	Exits to line profile configuration mode.
Step 8	<b>delete aim</b> { <i>index_list</i>   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-line) # <b>delete aim 5</b>	(Optional) Deletes the line profile. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 9	<b>exit</b> <b>Example:</b> Device(deploy-profile-line) # <b>exit</b>	(Optional) Exits to global configuration mode.

## Configure a GEM Port

Modifying and activating the line profile causes the ONT that references the template to go online.

To configure GEM port, perform this procedure.

### Before you begin

T-CONT must be configured before configuring a GEM port. The GEM port must also be bound to the VLAN profile. The upstream and downstream traffic profiles are optional.

## Procedure

	Command or Action	Purpose
Step 1	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>deploy profile line</b> <b>Example:</b> Device(config)# <b>deploy profile line</b>	Enters line profile configuration mode.
Step 4	<b>aim</b> { <i>index_number</i> [ <b>name name</b> ]   <b>name name</b> } <b>Example:</b> Device(deploy-profile-line)# <b>aim 5</b>	Creates line profile aim. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 5	<b>gemport traffic-mode</b> { <b>car</b>   <b>queue</b> } <b>Example:</b> Device(deploy-profile-line-5)# <b>gemport traffic-mode car</b>	Configures the GEM port traffic mode.
Step 6	<b>[no] gemport</b> <i>gem_index</i> <b>tcont</b> <i>tcont_id</i> [ <b>encrypt</b>   <b>vlan-profile</b>   <b>us-traffic-profile</b>   <b>ds-traffic-profile</b> ] { <i>index_number</i>   <b>name name</b> } <b>Example:</b> Device(deploy-profile-line-5)# <b>gemport 2 tcont 2 vlan-profile 2</b>	Creates GEM port and configure the parameters. <ul style="list-style-type: none"> <li>• <i>gem_index</i>: The GEM port index number. The ranges is from 1 to 1024. Currently, at most 24 GEM Ports can be created in each line profile.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The name of the template, in string format. The string length range is from 1 to 128.</li> </ul> Use the <b>no gemport</b> <i>gem_index</i> to delete the GEM port.
Step 7	<b>active</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>active</b>	Activates the line profile.
Step 8	<b>exit</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>exit</b>	Exits to line profile configuration mode.

	Command or Action	Purpose
Step 9	<b>delete aim</b> <i>{index_number   name name}</i> <b>Example:</b> Device(deploy-profile-line) # <b>delete aim 5</b>	(Optional) Deletes the line profile. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 10	<b>exit</b> <b>Example:</b> Device(deploy-profile-line) # <b>exit</b>	Exits to global configuration mode.

## Configure a Mapping Rule

Modifying and activating the line profile causes the ONT that references the template to go online.

To configure a mapping rule, perform this procedure.

### Procedure

	Command or Action	Purpose
Step 1	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>deploy profile line</b> <b>Example:</b> Device(config) # <b>deploy profile line</b>	Enters line profile configuration mode.
Step 4	<b>aim</b> <i>{index_number [name name]   name name}</i> <b>Example:</b> Device(deploy-profile-line) # <b>aim 5</b>	Creates line profile aim. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
Step 5	<b>mapping mode</b> <i>{port   port-priority   port-vlan   port-vlan-priority   priority   vlan   vlan-priority}</i> <b>Example:</b> Device(deploy-profile-line-5) # <b>mapping mode port</b>	Configures the GEM port mapping mode configuration.

	Command or Action	Purpose
<b>Step 6</b>	<p><b>[no] mapping</b> <i>index_number</i> { <b>vlan</b> <i>vlan_id</i>   <b>priority</b> <i>priority</i>   <b>port</b> {<b>eth</b> <i>port_id</i>   <b>veip</b>   <b>iphost</b> } } <b>gemport</b> <i>gem_index</i></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# mapping 2 port eth 2 gemport 2</pre>	<p>Creates GEM port mapping.</p> <ul style="list-style-type: none"> <li>• <i>index_number</i>: Mapping index number. The value range is from 0 to 47.</li> <li>• <i>vlan_id</i>: The VLAN ID. The value range is from 1 to 4094.</li> <li>• <i>priority</i>: The 802.1P. The value range is from 0 to 7.</li> <li>• <b>eth</b>: The ONT Ethernet interface. Optional for SFU.</li> <li>• <b>veip</b>: The ONT WAN interface. Optional for HGU.</li> <li>• <b>iphost</b>: The ONT voice IP interface.</li> <li>• <i>port_id</i>: The ONT Ethernet interface. The value range is from 1 to 24 depending on the number of ONTs.</li> <li>• <i>gem_index</i>: The GEM port index number. The range is from 1 to 1024. Currently, a maximum of 24 GEM ports can be created in each line profile.</li> </ul> <p>Use the <b>no mapping</b> <i>index_num</i> to delete GEM port mapping.</p>
<b>Step 7</b>	<p><b>active</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# active</pre>	Activates the line profile.
<b>Step 8</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# exit</pre>	Exits to line profile configuration mode.
<b>Step 9</b>	<p><b>delete aim</b> {<i>index_number</i>   <b>name</b> <i>name</i>}</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line)# delete aim 5</pre>	<p>(Optional) Deletes the line profile.</p> <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>
<b>Step 10</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line)# exit</pre>	Exits to global configuration mode.

## Configure a Flow Rule

Modifying and activating the line profile causes the ONT that references the template to go online.

To configure a flow rule, perform this procedure.

**Before you begin**

The ONT should support flow rules. This is applicable for SFU type ONT.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile line</b> <b>Example:</b> Device(config)# <b>deploy profile line</b>	Enters line profile configuration mode.
<b>Step 4</b>	<b>aim {index_num [name name]   name name}</b> <b>Example:</b> Device(deploy-profile-line)# <b>aim 5</b>	Creates line profile aim. <ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string</li> </ul>
<b>Step 5</b>	<b>flow flow_id port {eth port_id   veip   iphost } {etype { ipoe   pppoe   arp}} transparent</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>flow 2 port iphost etype arp transparent</b>	Creates the transparent flow rule. <ul style="list-style-type: none"> <li>• <i>flow_id</i>: The flow ID. The value range is from 0 to 63.</li> <li>• <i>port_id</i>: The ONT Ethernet interface ID. The value range is from 1 to 24.</li> <li>• <b>ipoe</b>: Ethernet Type 0x0800 packet</li> <li>• <b>pppoe</b>: Ethernet Type 0x8863 or 0x8864 packet</li> <li>• <b>arp</b>: Ethernet Type 0x0806 packet</li> </ul>
<b>Step 6</b>	<b>flow flow_id port {eth port_id   veip   iphost } {etype { ipoe   pppoe   arp} } default vlan vid [priority]</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>flow 2 port iphost etype arp default vlan 3</b>	Creates the default VLAN flow rule. <ul style="list-style-type: none"> <li>• <i>flow_id</i>: The flow ID. The value range is from 0 to 63.</li> <li>• <i>port_id</i>: The ONT Ethernet interface ID. The value range is from 1 to 24.</li> <li>• <b>ipoe</b>: Ethernet Type 0x0800 packet</li> <li>• <b>pppoe</b>: Ethernet Type 0x8863 or 0x8864 packet</li> <li>• <b>arp</b>: Ethernet Type 0x0806 packet</li> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <i>vlan_id</i>: The VLAN ID. The value range is from 1 to 4094.</li> <li>• <i>priority</i>: The 802.1P. The value range is from 0 to 7.</li> </ul>
<b>Step 7</b>	<p><b>flow</b> <i>flow_id</i> <b>port</b> {<i>eth port_id</i>   <i>veip</i>   <i>iphost</i> } [<i>etype</i> {<i>ipoe</i>   <i>pppoe</i>   <i>arp</i> } ] <b>vlan</b> <i>vlan_id</i> [<i>priority</i>] <b>keep</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# flow 2 port iphost etype arp vlan 3 keep</pre>	<p>Creates the keep flow rule.</p> <ul style="list-style-type: none"> <li>• <i>flow_id</i>: The flow ID. The value range is from 0 to 63.</li> <li>• <i>port_id</i>: The ONT Ethernet interface ID. The value range is from 1 to 24.</li> <li>• <i>ipoe</i>: Ethernet Type 0x0800 packet</li> <li>• <i>pppoe</i>: Ethernet Type 0x8863 or 0x8864 packet</li> <li>• <i>arp</i>: Ethernet Type 0x0806 packet</li> <li>• <i>vlan_id</i>: The VLAN ID. The value range is from 1 to 4094.</li> <li>• <i>priority</i>: The 802.1P. The value range is from 0 to 7.</li> </ul>
<b>Step 8</b>	<p>[<i>no</i>] <b>flow</b> <i>flow_id</i> <b>port</b> {<i>eth port_id</i>   <i>veip</i>   <i>iphost</i> } [<i>etype</i> {<i>ipoe</i>   <i>pppoe</i>   <i>arp</i> } ] <b>vlan</b> <i>vid</i> [<i>priority</i>] <b>translate</b> <b>vlan</b> <i>vid</i> [<i>priority</i>]</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# flow 2 port iphost etype arp vlan 3 translate vlan 3</pre>	<p>Creates the translate flow rule.</p> <ul style="list-style-type: none"> <li>• <i>flow_id</i>: The flow ID. The value range is from 0 to 63.</li> <li>• <i>port_id</i>: The ONT Ethernet interface ID. The value range is from 1 to 24.</li> <li>• <i>ipoe</i>: Ethernet Type 0x0800 packet</li> <li>• <i>pppoe</i>: Ethernet Type 0x8863 or 0x8864 packet</li> <li>• <i>arp</i>: Ethernet Type 0x0806 packet</li> <li>• <i>vlan_id</i>: The VLAN ID. The value range is from 1 to 4094.</li> <li>• <i>priority</i>: The 802.1P. The value range is from 0 to 7.</li> </ul>
<b>Step 9</b>	<p><b>active</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# active</pre>	<p>Activates the line profile.</p>
<b>Step 10</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-line-5)# exit</pre>	<p>Exits to line profile configuration mode.</p>
<b>Step 11</b>	<p><b>delete aim</b> {<i>index_number</i>   <i>name name</i>}</p> <p><b>Example:</b></p>	<p>(Optional) Deletes the line profile.</p>

	Command or Action	Purpose
	Device(deploy-profile-line) # <b>delete aim 5</b>	<ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name in string.</li> </ul>

## Configure a Rule Profile

To configure a rule profile, perform this procedure.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile rule</b> <b>Example:</b> Device(config)# <b>deploy profile rule</b>	Enters rule profile configuration mode.
<b>Step 4</b>	<b>aim slot-num/pon-num/ont-num [name name]</b> <b>Example:</b> Device(deploy-profile-rule) # <b>aim 0/1/1</b>	Creates rule profile aim. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i> : The ONT ID.               <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>
<b>Step 5</b>	<b>permit sn {string-hex string_serial_number   hex hex_serial_number } line {profile_line_list   name name} default line {index_number   name name}</b> <b>Example:</b> Device(deploy-profile-rule-0/1/1) # <b>permit sn string-hex GPON-1790032e line 1 default line 1</b>	Creates the serial number permit profile. <ul style="list-style-type: none"> <li>• <i>hex_serial_number</i>: The ONT serial number, in hex format.</li> <li>• <i>string_serial_number</i>: The ONT serial number, in string format.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <i>profile_line_list</i> : The profile line list number.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 6</b>	<p><b>permit pw</b> {string <i>string_password</i>   hex <i>hex_password</i>}  <b>line</b> {<i>profile_line_list</i>   <b>name</b> <i>name</i>} {<b>default line</b>  {<i>index_num</i>   <b>name</b> <i>name</i>}   <b>once-on</b> {<b>no-aging</b>    <b>aging-time</b> <i>time</i>} }</p> <p><b>Example:</b>  Device(deploy-profile-rule-0/1/1)# <b>permit pw</b>  <b>string-hex</b> GPON-1790032e <b>line</b> 1 <b>default line</b> 1</p>	<p>(Optional) Creates the password permit profile.</p> <ul style="list-style-type: none"> <li>• <i>string_password</i>: The ONT password, in string format.</li> <li>• <i>hex_password</i>: The ONT password, in hex format.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>profile_line_list</i> : The profile line list number.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 7</b>	<p><b>permit sn-pw</b> {string-hex <i>string_serial_number</i>   hex  <i>hex_serial_number</i>} {string <i>string_password</i>   hex  <i>hex_password</i>} <b>line</b> {<i>profile_line_list</i>   <b>name</b> <i>name</i>}  <b>default line</b> {<i>index_num</i>   <b>name</b> <i>name</i>}</p> <p><b>Example:</b>  Device(deploy-profile-rule-0/1/1)# <b>permit sn-pw</b>  <b>string-hex</b> GPON-1790032e <b>line</b> 1 <b>default line</b> 1</p>	<p>(Optional) Creates the serial number and password permit profile.</p> <ul style="list-style-type: none"> <li>• <i>hex_serial_number</i>: The ONT serial number, in hex format.</li> <li>• <i>string_serial_number</i>: The ONT serial number, in string format.</li> <li>• <i>string_password</i>: The ONT password in string format.</li> <li>• <i>hex_password</i>: The ONT password in hex format.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>profile_line_list</i> : The profile line list number.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> </ul>
<b>Step 8</b>	<p><b>permit loid</b> <i>loid</i> <b>line</b> {<i>profile_line_list</i>   <b>name</b> <i>name</i>}  <b>default line</b> {<i>index_num</i>   <b>name</b> <i>name</i>}   <b>once-on</b>  {<b>no-aging</b>   <b>aging-time</b> <i>time</i>} }</p> <p><b>Example:</b>  Device(deploy-profile-rule-0/1/1)# <b>permit loid</b> 2  <b>line</b> 4 <b>default line</b> 3 <b>once-on</b> <b>aging</b> 3</p>	<p>(Optional) Creates the LOID permit profile.</p> <ul style="list-style-type: none"> <li>• <i>loid</i>: The ONT logical ID, in string format. The string length is from 1 to 24.</li> <li>• <i>profile_line_list</i> : The profile line list number.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> </ul>



	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <b>no-aging</b>: Configures no timeout for discovery mode.</li> <li>• <b>aging-time</b> <i>time</i>: Configures timeout for discovery mode, in hours. The range is from 1 to 168.</li> </ul>
<b>Step 9</b>	<p><b>permit lopw</b> <i>logical_password</i> <b>line</b> {<i>profile_line_list</i>   <b>name</b> <i>name</i>} [<b>default line</b> {<i>index_number</i>   <b>name</b> <i>name</i>}  <b>once-on</b> {<b>no-aging</b>   <b>aging-time</b> <i>time</i>} ]</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-rule-0/1/1)# permit lopw password line 4 default line 3 once-on aging 3</pre>	<p>(Optional) Creates the LOID password permit profile.</p> <ul style="list-style-type: none"> <li>• <i>logical_password</i>: The ONT password.</li> <li>• <i>profile_line_list</i>: The profile line list number.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <b>no-aging</b>: Configures no timeout for discovery mode.</li> <li>• <b>aging-time</b> <i>time</i>: Configures timeout for discovery mode, in hours. The range is from 1 to 168.</li> </ul>
<b>Step 10</b>	<p><b>permit loid-lopw</b> <i>loid</i> <i>logical_password</i> <b>line</b> {<i>profile_line_list</i>   <b>name</b> <i>name</i>} [<b>default line</b> {<i>index_number</i>   <b>name</b> <i>name</i>}  <b>once-on</b> {<b>no-aging</b>   <b>aging-time</b> <i>time</i>} ]</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-rule-0/1/1)# permit loid-lopw 2 password line 4 default line 3 once-on aging 3</pre>	<p>(Optional) Creates the LOID and LOID Password permit profile.</p> <ul style="list-style-type: none"> <li>• <i>loid</i>: The ONT logical ID, in string format. The string length is from 1 to 24.</li> <li>• <i>logical_password</i>: The ONT logical password, in string format. The string length is from 1 to 12.</li> <li>• <i>profile_line_list</i>: The profile line list number.</li> <li>• <i>index_number</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name, in string format. The string length is 1 to 128.</li> <li>• <i>time</i>: The discovery mode timeout time, in hours. The value range is from 1 to 168.</li> </ul>
<b>Step 11</b>	<p><b>active</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-rule-0/1/1)# active</pre>	Activates the rule profile.

	Command or Action	Purpose
<b>Step 12</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-rule-0/1/1)# <b>exit</b>	Exits to rule profile configuration mode.
<b>Step 13</b>	<b>delete aim { ont_id_list   name name }</b> <b>Example:</b> Device(deploy-profile-rule)# <b>delete aim 0/1/1</b>	(Optional) Deletes the rule profile aim. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID.</li> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>

## Configure a Unique Profile

To configure a unique profile, perform the following procedures.

### Configure an ONT Description

Modifying and activating the unique profile causes the ONT that references the profile to go offline and then online.

To configure an ONT description, perform this procedure.

#### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile unique</b> <b>Example:</b> Device(config)# <b>deploy profile unique</b>	Enters unique profile configuration mode.
<b>Step 4</b>	<b>aim slot-num/pon-num/ont-num [name name]</b> <b>Example:</b> Device(deploy-profile-unique)# <b>aim 0/1/1</b>	Creates unique profile aim. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID.</li> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>
Step 5	<p>[no] <b>description</b> <i>description</i></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# <b>description</b> cisco</pre>	<p>Configures the ONT description</p> <p><i>description</i>: ONT description. The length of the description is from 1 to 128.</p> <p>Use the <b>no description</b> command to delete the ONT description.</p>
Step 6	<p><b>ip-config mode</b>{<b>dhcp vlan</b> <i>vlan_id</i> {<i>vlan_priority</i>   <b>host</b> }   <b>static ip_address</b>}</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# <b>ip-config mode</b> <b>dhcp vlan 4093 host 2</b></pre>	<p>Configures the IP configuration as static or DHCP.</p> <p><b>Note</b> This command is applicable to an ONT device that operates in the Single Family Unit (SFU) mode.</p>
Step 7	<p><b>active</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# <b>active</b></pre>	<p>Activates the unique profile</p>
Step 8	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# <b>exit</b></pre>	<p>Exits to line profile configuration mode.</p>
Step 9	<p><b>delete aim</b> { <i>ont_id_list</i>   <b>name name</b> }</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique)# <b>delete aim 0/1/1</b></pre>	<p>(Optional) Deletes the unique profile.</p> <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID. <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>

## Configure a GEM Port Profile

Modifying and activating the unique profile causes the ONT that references the profile to go offline and then online.

To configure a GEM port profile, perform this procedure.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile unique</b> <b>Example:</b> Device(config)# <b>deploy profile unique</b>	Enters unique profile configuration mode.
<b>Step 4</b>	<b>aim slot-num/pon-num/ont-num [name name]</b> <b>Example:</b> Device(deploy-profile-unique)# <b>aim 0/1/1</b>	Creates unique profile aim. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID. <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>
<b>Step 5</b>	<b>[no] gemport gem_index {vlan-profile  us-traffic-profile   ds-traffic-profile } { index_num   name name }</b> <b>Example:</b> Device(deploy-profile-unique-0/1/1)# <b>gemport 2 vlan-profile 2</b>	Configures the GEM port profile. <ul style="list-style-type: none"> <li>• <i>gem_index</i>: The GEM port index. The range is from 1 to 1024.</li> <li>• <i>index_num</i>: The index of the template. The range is from 0 to <i>m</i>, where <i>m</i> is the maximum number of ONTs supported.</li> <li>• <i>name</i>: The profile name, in string format. The string length is from 1 to 128.</li> </ul> <p>Use the <b>no gemport gem_index</b> to delete the GEM port profile.</p>
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-unique-0/1/1)# <b>active</b>	Activates the unique profile.
<b>Step 7</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-unique-0/1/1)# <b>exit</b>	Exits to line profile configuration mode.

	Command or Action	Purpose
<b>Step 8</b>	<b>delete aim</b> {slot-num/pon-num/ont-num   name name} <b>Example:</b> Device(deploy-profile-unique)# <b>delete aim</b> 0/1/1	(Optional) Deletes the unique profile. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID.               <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>

## Configure a SIP

Modifying and activating the unique profile causes the ONT that references the profile to go offline and then online.

To configure a SIP, perform this procedure.

### Before you begin

The ONT should support SIP settings. This is applicable for SFU type ONT.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password, if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile unique</b> <b>Example:</b> Device(config)# <b>deploy profile unique</b>	Enters unique profile configuration mode.
<b>Step 4</b>	<b>aim</b> slot-num/pon-num/ont-num [name name] <b>Example:</b> Device(deploy-profile-unique)# <b>aim</b> 0/1/1	Creates unique profile aim. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID.               <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <i>name</i>: The profile name, in string format.</li> </ul>
<b>Step 5</b>	<p><b>[no] sip agent proxy-server</b> <i>uri</i> {<b>outbound-proxy</b>  <b>registrar-server</b>  <b>signal-port</b> }<i>proxy_server_uri</i></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# sip agent proxy-server 2</pre>	<p>Configures the SIP proxy server.</p> <p><b>proxy-server</b> <i>uri</i>: The proxy server universal resource identifier (UNI). The length is from 1 to 64.</p> <p>Use the <b>no sip agent</b> command to delete the SIP agent.</p>
<b>Step 6</b>	<p><b>[no] sip user mode</b> {<b>static ip-address</b> <i>ip mask ip_mask gateway ip primary-dns ip secondary-dns ip dhcp vlan vlan_id</i><b>priority host host_id</b>}</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# sip user mode dhcp vlan 2 4 host 1</pre>	<p>Configures the SIP interface.</p> <ul style="list-style-type: none"> <li>• <i>ip</i>: The IP address</li> <li>• <i>ip_mask</i>: The IP network mask</li> <li>• <i>vlan_id</i>: The VLAN ID. The value range is from 1 to 4094.</li> <li>• <i>priority</i>: The value range is from 0 to 7.</li> <li>• <i>host_id</i>: The IP host ID. The value is 1.</li> </ul> <p>Use the <b>no sip user mode</b> command to delete the SIP interface.</p>
<b>Step 7</b>	<p><b>[no] sip user</b> <i>pots_number</i>{<b>name</b> <i>username password password</i>  <b>telno</b> <i>phone_num</i>}</p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# sip user 2 name user 1 password 123</pre>	<p>Configures the SIP user.</p> <ul style="list-style-type: none"> <li>• <i>pots_number</i>: The ONT POTS port number. The value range is from 1 to 2</li> <li>• <i>username</i>: The SIP username., The username length is from 1 to 25.</li> <li>• <i>password</i>: The SIP password. The password length is from 1 to 25</li> <li>• <i>phone_num</i>: The ONT local phone number. The digit length is from 1 to 25.</li> </ul> <p>Use the <b>no sip user user_id</b> command to delete the SIP user.</p>
<b>Step 8</b>	<p><b>sip digitmap dial-plan-id</b> <i>dial_plan_id dial-plan-token token</i></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# sip digitmap dial-plan-id 2 dial-plan-token 3</pre>	<p>Configures the SIP digit map.</p> <ul style="list-style-type: none"> <li>• <i>dial_plan_id</i>: The digit map index. The range is from 1 to 10.</li> <li>• <i>token</i>: The digit map content.</li> </ul> <p>Use the <b>no sip digitmap dial-plan-id id</b> command to delete the SIP digit map.</p>
<b>Step 9</b>	<p><b>active</b></p> <p><b>Example:</b></p> <pre>Device(deploy-profile-unique-0/1/1)# active</pre>	<p>Activates the unique profile.</p>

	Command or Action	Purpose
<b>Step 10</b>	<b>exit</b> <b>Example:</b> Device(deploy-profile-unique-0/1/1) # <b>exit</b>	Exits to line profile configuration mode.
<b>Step 11</b>	<b>delete aim</b> { <i>slot-num/pon-num/ont-num</i>   <b>name</b> <i>name</i> } <b>Example:</b> Device(deploy-profile-unique) # <b>delete aim</b> 0/1/1	(Optional) Deletes the unique profile. <ul style="list-style-type: none"> <li>• <i>slot-num/pon-num/ont-num</i>: The ONT ID.               <ul style="list-style-type: none"> <li>• <i>slot-num</i>: The slot number. The value is 0.</li> <li>• <i>pon-num</i>: The PON number. The range is from 1 to 8.</li> <li>• <i>ont-num</i>: The ONT number. The range is from 1 to 128.</li> </ul> </li> <li>• <i>name</i>: The profile name, in string format.</li> </ul>

