



## CHAPTER 4

# Managing a FlexUNI/EVC Service Request

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This chapter provides information on how to provision a FlexUNI/EVC service request. It contains the following sections:

- [Introducing FlexUNI/EVC Service Requests, page 4-1](#)
- [Creating a FlexUNI/EVC Service Request, page 4-2](#)
- [Setting the Service Request Details, page 4-2](#)
- [Modifying the FlexUNI/EVC Service Request, page 4-16](#)
- [Using Templates and Data Files with a FlexUNI/EVC Service Request, page 4-17](#)
- [Saving the FlexUNI/EVC Service Request, page 4-17](#)

## Introducing FlexUNI/EVC Service Requests

A FlexUNI/EVC service request allows you to configure interfaces on an N-PE to support the FlexUNI/EVC features described in [Chapter 3, “Creating a FlexUNI/EVC Policy.”](#) To create a FlexUNI/EVC service request, a FlexUNI/EVC service policy must already be defined, as described in [Chapter 3, “Creating a FlexUNI/EVC Policy.”](#) Based on the predefined FlexUNI/EVC policy, an operator creates a FlexUNI/EVC service request, with or without modifications to the policy, and deploys the service. One or more templates can also be associated to the N-PE as part of the service request.

The following steps are involved in creating a FlexUNI/EVC service request:

- Choose an existing FlexUNI/EVC policy.
- Choose a VPN.



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**Note** When working with VPN objects in the context of FlexUNI/EVC policies and service requests, only the VPN name and customer attributes are relevant. Other VPN attributes related to MPLS and VPLS are ignored.

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- Specify a bridge domain configuration (if applicable).
- Specify a service request description.
- Specify automatic or manual allocation of the VC ID or VPLS VPN ID.
- Add direct connect links (if applicable).
- Add links with L2 access nodes (if applicable).

- Choose the N-PE and UNI interface for links.
- For links with L2 access nodes, choose a Named Physical Circuit (NPC) if more than one NPC exists from the N-PE or the UNI interface.
- Edit the link attributes.
- Modify the service request.
- Save the service request.

## Creating a FlexUNI/EVC Service Request

To create a FlexUNI/EVC service request, perform the following steps.

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- Step 1** Choose **Service Inventory > Inventory and Connection Manager > Service Requests**.  
The Service Requests window appears.
- Step 2** Click **Create**.
- Step 3** Choose **FlexUNI (EVC)** from the drop-down list.  
The Select EVC Policy window appears. If more than one FlexUNI/EVC policy exists, a list of FlexUNI/EVC policies appears. FlexUNI/EVC service requests must be associated with a FlexUNI/EVC policy. You choose a FlexUNI/EVC policy from the policies previously created (see [Chapter 3, “Creating a FlexUNI/EVC Policy”](#)).
- Step 4** Choose a FlexUNI/EVC policy from the list.
- Step 5** Click **OK**.  
The EVC Service Request Editor window appears. The new service request inherits all the properties of the chosen FlexUNI/EVC policy, such as all the editable and non-editable features and pre-set parameters.
- Step 6** Continue with the steps contained in the next section, [Setting the Service Request Details, page 4-2](#).
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## Setting the Service Request Details

After you have selected the FlexUNI/EVC policy to be used as the basis of the service request, the EVC Service Request Editor window appears. It is divided into three main sections:

- Service Request Details
- Direct Connect Links (no NPCs)
- Links with L2 Access Nodes (involves NPCs)

This window enables you to specify options for the service request, as well as configure directly connected links and links with L2 access nodes. The options displayed in first section of the window change, depending on the MPLS Core Connectivity Type that was specified in the policy (pseudowire, VPLS, or local). For clarity, each of these scenarios is presented in a separate section below, to highlight the different window configurations and behavior of the displayed options.

Proceed to the appropriate section, as determined by the MPLS Core Connectivity Type for the policy:

- [Pseudowire Core Connectivity, page 4-3](#)
- [VPLS Core Connectivity, page 4-5](#)
- [Local Core Connectivity, page 4-6](#)

Instructions for setting up direct connect links and links with L2 access nodes are presented in later sections.

## Pseudowire Core Connectivity

If the MPLS Core Connectivity Type for the FlexUNI/EVC policy is PSEUDOWIRE, the EVC Service Request Editor window shown [Figure 4-1](#) appears.

**Figure 4-1** EVC Service Request Details Window for Pseudowire Core Connectivity

FlexUNI(EVC) Service Request Editor

**Service Request Details**

Job ID:	New	SR ID:	New	
Policy:	FlexUNI_pseudo	VPN:		Select VPN
AutoPick VC ID:	<input type="checkbox"/>	VC ID:		
Pseudowire Redundancy:	<input type="checkbox"/>	Backup PW VC ID:		
Configure Bridge Domain:	<input type="checkbox"/>	Description:	Click here	

**Direct Connect Links (0 Links)**

#	<input type="checkbox"/>	N-PE	UNI	Link Attributes	FlexUNI(EVC)
Add Delete					
Rows per page: 10					
Go to page: 1 of 1 Go					

**Links with L2 Access Nodes (0 Links)**

#	<input type="checkbox"/>	U-PE/PE-AGG	UNI	Circuit Details	Link Attributes	FlexUNI(EVC)
Add Delete						
Rows per page: 10						
Go to page: 1 of 1 Go						

Template Save Cancel

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Perform the following steps to set the attributes in the first section of the Service Request Details window:




**Note**

The **Job ID** and **SR ID** fields are read-only. When the service request is being created for the first time, the fields display a value of NEW. When an existing service request is being modified, the values of the fields indicate the respective IDs that the ISC database holds within the editing flow of the service request.



**Note**

The **Policy** field is read-only. It displays the name of the policy on which the service request is based. Clicking on the read-only policy name displays a list of all the attribute values set within the policy.

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- Step 1** Click **Select VPN** to choose a VPN for use with this service request.  
The Select VPN window appears with the VPNs defined in the system.
- Step 2** Choose a **VPN Name** in the Select column.
- Step 3** Click **Select**.  
The EVC Service Request Editor window appears with the VPN name displayed.
- Step 4** Check the **AutoPick VC ID** check box if you want ISC to choose a VC ID.  
If you do not check this check box, you will be prompted to provide the ID in the VC ID field, as covered in the next step.  
When AutoPick VC ID is checked, ISC allocates a VC ID for pseudowires from the ISC-managed VC ID resource pool. In this case, the text field for the VC ID option is non-editable.
- Step 5** If AutoPick VC ID was unchecked, enter a VC ID in the **VC ID** field.  
Usage notes:
- The VC ID value must be an integer value corresponding to a VC ID.
  - When a VC ID is manually allocated, ISC verifies the VC ID to see if it lies within ISC's VC ID pool. If the VC ID is in the pool but not allocated, the VC ID is allocated to the service request. If the VC ID is in the pool and is already in use, ISC prompts you to allocate a different VC ID. If the VC ID lies outside of the ISC VC ID pool, ISC does not perform any verification about whether or not the VC ID allocated. The operator must ensure the VC ID is available.
  - The VC ID can be entered only while creating a service. If you are editing the service request, the VC ID field is not editable.
- Step 6** **PseudoWire Redundancy** is unsupported in this release of ISC.
- Step 7** If the AutoPick VC ID attribute was unchecked, enter a VC ID for the backup pseudowire in the **Backup PW VC ID** field.
-  **Note** Pseudowire redundancy is not supported in ISC 5.1.
- 
- See the usage notes for the AutoPick VC ID attribute in Step 7, above. The backup VC ID behaves the same as the VC ID of the primary pseudowire.
- Step 8** Check the **Configure Bridge Domain** check box to determine bridge domain characteristics.  
The behavior of the Configure Bridge Domain option works in tandem with the choice you selected in the MPLS Core Connectivity Type option in the FlexUNI/EVC policy, which in this case is pseudowire core connectivity. There are two cases:
- With FlexUNI:
    - If **Configure With Bridge Domain** is checked, the policy will configure pseudowires under SVIs associated to the bridge domain.
    - If **Configure With Bridge Domain** is unchecked, the policy will configure pseudowires directly under the service instance. This will conserve the global VLAN.
  - Without FlexUNI:
    - If **Configure With Bridge Domain** is checked, the policy will configure pseudowires under SVIs.
    - If **Configure With Bridge Domain** is unchecked, the policy will configure pseudowires directly under subinterfaces.

Pseudowires can be configured either directly under service instance of the corresponding FlexUNI-capable interface or under SVIs associated to the bridge domain.

- Step 9** Click the “Click here” link of the **Description** attribute to enter a description label for the service request.
- This is useful for searching the ISC database for the particular service request.
- A dialogue appears in which you can enter a description.
- Step 10** To set up direct connect links, see the section [Setting Direct Connect Links](#), page 4-8.
- Step 11** To set up links with L2 access nodes, see the section [Setting Links with L2 Access Nodes](#), page 4-15.

## VPLS Core Connectivity

If the MPLS Core Connectivity Type for the FlexUNI/EVC policy is VPLS, the EVC Service Request Editor window shown [Figure 4-2](#) appears.

**Figure 4-2** EVC Service Request Details Window for VPLS Core Connectivity

The screenshot displays the 'EVC Service Request Editor' window. At the top, it has a title bar and a 'Service Request Details' section. This section contains several fields: 'Job ID' (value: New), 'SR ID' (value: New), 'Policy' (value: FlexUNI\_vpls), 'VPN' (with a 'Select VPN' button), 'AutoPick VPLS VPN Id' (checkbox: unchecked), 'VPLS VPN Id' (text input field), 'Configure Bridge Domain' (checkbox: checked), and 'Description' (with a 'Click here' link). Below this are two expandable sections: 'Direct Connect Links (0 Links)' and 'Links with L2 Access Nodes (0 Links)'. Each section contains a table with columns for '#', a checkbox, 'N-PE' or 'U-PE/PE-AGG', 'UNI', 'Link Attributes', and 'FlexUNI'. Below each table are 'Add' and 'Delete' buttons, a 'Rows per page' dropdown (set to 10), and a 'Go to page' field (set to 1 of 1) with 'Go' and navigation arrows. At the bottom right, there are 'Template', 'Save', and 'Cancel' buttons. A vertical ID '211673' is visible on the right edge.

Perform the following steps to set the attributes in the first section of the Service Request Details window:

- Step 1** The **Job ID** and **SR ID** fields are read-only.
- When the service request is being created for the first time, the fields display a value of NEW. When an existing service request is being modified, the values of the fields indicate the respective IDs that the ISC database holds within the editing flow of the service request.
- Step 2** The **Policy** field is read-only. It displays the name of the policy on which the service request is based.

- Step 3** Click **Select VPN** to choose a VPN for use with this service request.  
The Select VPN window appears with the VPNs defined in the system.
- Step 4** Choose a **VPN Name** in the Select column.
- Step 5** Click **Select**.  
The EVC Service Request Editor window appears with the VPN name displayed.
- Step 6** Check the **AutoPick VPLS VPN ID** check box if you want ISC to choose a VPLS VPN ID.  
If you do not check this check box, you will be prompted to provide the VPN ID in the VPLS VPN ID field, as covered in the next step.
- When AutoPick VPLS VPN ID is checked, ISC allocates a VPLS VPN ID from the ISC-managed VC ID resource pool. In this case, the text field for the VPLS VPN ID option is non-editable.
  - If AutoPick VPLS VPN ID is checked and a service request already exists that refers to same VPN object, the VPLS VPN ID of the existing service request is allocated to the new service request.
- Step 7** If AutoPick VPLS VPN ID was unchecked, enter a VPLS VPN ID in the **VPLS VPN ID** field.  
Usage notes:
- The VPLS VPN ID value must be an integer value corresponding to a VPN ID.
  - When a VPLS VPN ID is manually allocated, ISC verifies the VPLS VPN ID to see if it lies within ISC's VC ID pool. If the VPLS VPN ID is in the pool but not allocated, the VPLS VPN ID is allocated to the service request. If the VPLS VPN ID is in the pool and is already in use, ISC prompts you to allocate a different VPLS VPN ID. If the VPLS VPN ID lies outside of the VC ID pool, ISC does not perform any verification about whether the VPLS VPN ID allocated. The operator must ensure the VPLS VPN ID is available.
  - The VPLS VPN ID can be entered only while creating a service. If you are editing the service request, the VPLS VPN ID field is not editable.
- Step 8** The **Configure Bridge Domain** check box is checked by default and cannot be changed.  
Usage notes:
- For VPLS, all configurations are under the SVI.
  - When the FlexUNI feature is used, all configurations are under the SVI and also associated to a bridge domain.
- Step 9** Click the “Click here” link of the **Description** attribute to enter a description label for the service request.  
A dialogue appears in which you can enter a description.
- Step 10** To set up direct connect links, see the section [Setting Direct Connect Links, page 4-8](#).
- Step 11** To set up links with L2 access nodes, see the section [Setting Links with L2 Access Nodes, page 4-15](#).

## Local Core Connectivity

If the MPLS Core Connectivity Type for the FlexUNI/EVC policy is LOCAL, the EVC Service Request Editor window shown [Figure 4-3](#) appears.

Figure 4-3 EVC Service Request Details Window for Local Core Connectivity

The screenshot shows the 'EVC Service Request Editor' window. At the top, there's a 'Service Request Details' section with fields for Job ID (New), SR ID (New), Policy (FlexUNI\_local), and VPN (with a 'Select VPN' button). There's also a 'Configure Bridge Domain' checkbox and a 'Description' link. Below this are two table sections: 'Direct Connect Links (0 Links)' and 'Links with L2 Access Nodes (0 Links)'. Each table has columns for '#', a checkbox, 'N-PE' or 'U-PE/PE-AGG', 'UNI', 'Link Attributes', and 'FlexUNI'. Both tables have 'Add' and 'Delete' buttons and pagination controls. At the bottom right, there are 'Template', 'Save', and 'Cancel' buttons.

Perform the following steps to set the attributes in the first section of the Service Request Details window:

- Step 1** The **Job ID** and **SR ID** fields are read-only.
- When the service request is being created for the first time, the fields display a value of NEW. When an existing service request is being modified, the values of the fields indicate the respective IDs that the ISC database holds within the editing flow of the service request.
- Step 2** The **Policy** field is read-only.
- It displays the name of the policy on which the service request is based.
- Step 3** Click **Select VPN** to choose a VPN for use with this service request.
- The Select VPN window appears with the VPNs defined in the system.
- Step 4** Choose a **VPN Name** in the Select column.
- Step 5** Click **Select**.
- The EVC Service Request Editor window appears with the VPN name displayed.
- Step 6** Check the **Configure Bridge Domain** check box to determine bridge domain characteristics.

Usage notes:

- If Configure Bridge Domain is checked, all links will have the same bridge domain ID allocated from the VLAN pool on the N-PE. All non-FlexUNI links will have the Service Provider VLAN as the bridge domain ID. On the other hand, if no FlexUNI links are added, the Service Provider VLAN will be allocated first and this will be used as the bridge domain ID when FlexUNI links are added.
- If Configure Bridge Domain is unchecked, a maximum of two links that terminate on the same N-PE can be added. (This uses the **connect** command available in the EVC infrastructure.)
- If the policy setting for Configure Bridge Domain is non-editable, the option in the service request will be read-only.

- Step 7** Click the “Click here” link of the **Description** attribute to enter a description label for the service request.  
A dialogue appears in which you can enter a description.
- Step 8** To set up direct connect links, see the section [Setting Direct Connect Links, page 4-8](#).
- Step 9** To set up links with L2 access nodes, see the section [Setting Links with L2 Access Nodes, page 4-15](#).
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## Setting up Links to the N-PE

The lower two sections of the EVC Service Request Editor window allow you to set up links to the N-PE. For direct connect links, the CE is directly connected to the N-PE, with no intermediate L2 access nodes. For links with L2 access nodes, there are intermediate devices present between the CE and NPE requiring NPCs to be created in ISC.

The Direct Connect Link section of the window is where you set up links that directly connect to the N-PE. No NPC are involved. The Links with L2 Access Nodes section is where you set up links with L2 (Ethernet) access nodes. NPCs are involved.

See the appropriate section, depending on which type of link you are setting up:

- [Setting Direct Connect Links, page 4-8](#)
- [Setting Links with L2 Access Nodes, page 4-15](#)



### Note

Many of steps for setting up the two link types are the same. The basic workflow for setting up links, as well as the attributes to be set, are presented in the section [Setting Direct Connect Links, page 4-8](#). Even if you are setting up links with L2 access nodes, it will be helpful to refer to the information presented in that section, as the section on L2 access nodes only covers the unique steps for such links.

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## Setting Direct Connect Links

Perform the following steps to set up the direct connect links. Most of these steps apply to links with L2 access nodes also.

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- Step 1** Click **Add** to add a link.  
A new numbered row for the link attributes appears.
- Step 2** Click **Select NPE** in N-PE column.  
The Select PE Device window appears. This window displays the list of currently defined PEs.
- The **Show PEs with** drop-down list shows PEs by Provider, PE Region Name, or by Device Name.
  - The **Find** button allows a search for a specific PE or a refresh of the window.
  - The **Rows per page** drop-down list allows the user to configure the number of entries displayed on the screen at one time.
- Step 3** In the **Select** column, choose the PE device name for the link.
- Step 4** Click **Select**.  
The EVC Service Request Editor window reappears displaying the name of the selected PE in the NPE column.

**Step 5** Choose the UNI interface from the drop-down list in the UNI column.

**Note**

ISC only displays the available interfaces for the service, based on the configuration of the underlying interfaces, existing service requests that might be using the interface, and the customer associated with the service request. You can click the **Details** button to display a pop-up window with information on the available interfaces, such as interface name, customer name, VPN name, job ID, service request ID, service request type, translation type, and VLAN ID information.

**Step 6** Check the **FlexUNI** check box to mark the link for configuring service instance for the links.

**Note**

The FlexUNI check box is mentioned at this stage because the setting of the check box alters the behavior of the link editing function available in the Link Attributes column. This is covered in the next steps.

**Editing the Link Attributes**

The next steps document the use of the **Edit** link in the Link Attributes column. (In the case where the link attributes have already been set, this link changes from **Edit** to **Change**.) The link editing workflow changes depending on the status of the FlexUNI check box for the link. If the FlexUNI check box is checked, the editing workflow involves setting attributes in two windows, for two sets of link attributes:

- The FlexUNI Details
- Standard UNI Details

If the FlexUNI check box for the link is not checked, only the Standard UNI Details window is presented.

In the steps that follow, both scenarios covered.

**Step 7** Click **Edit** in the Link Attributes column to specify the UNI attributes.

**FlexUNI Details Window**

If the FlexUNI check box is checked, the FlexUNI Details window appears, as shown in [Figure 4-4](#).

Figure 4-4 FlexUNI Details Window

**FlexUNI(EVC) Details**

FlexUNI(EVC) Attributes			
AutoPick Service Instance ID:	<input type="checkbox"/>	Service Instance ID:	<input type="text"/> (1 - 8000)
AutoPick Bridge Domain/VLAN ID:	<input type="checkbox"/>	Bridge Domain/VLAN ID:	<input type="text"/> (1 - 4096)
VLAN Match Criteria			
Match Inner and Outer Tags:	<input type="checkbox"/>	Outer VLAN ID:	<input type="text"/> (1 - 4096)
VLAN Rewrites			
Rewrite Type:	<input type="text" value="Pop"/>		
Pop Outer Tag:	<input type="checkbox"/>		

Note: \*- Required Field

- Step 1 of 2 -

< Back Next > Finish Cancel

All of the fields in the FlexUNI Details screen are enabled based on the policy settings. For example, if Both Tags is selected in the policy and is editable, then the Match Inner and Outer Tags check box will be selected and editable in this window. The behavior is similar for the other attributes in the FlexUNI Details window

- Step 8** Check the **AutoPick Service Instance ID** check box to specify that the service instance ID will be autogenerated and allocated to the link during service request creation.

If the check box is unchecked, you must specify the service instance ID (see the next step).

Usage notes:

- The service instance ID represents an Ethernet Flow Point (EFP) on an interface in the EVC infrastructure. The service instance ID is locally significant to the interface. This ID has to be unique only at the interface level. The ID must be a value from 1 to 8000.
- There are no resource pools available in ISC from which to allocate the service instance IDs.
- In the case of a manually provided service instance ID, it is the responsibility of the operator to maintain the uniqueness of the ID at the interface level.

- Step 9** If the AutoPick Service Instance ID check box is not checked, enter an appropriate value for the service instance ID in the **Service Instance ID** field.

- Step 10** Check the **AutoPick Bridge Domain/VLAN ID** check box to have ISC autopick the VLAN ID for the service request during service request creation.

If this check box is unchecked, the you must specify a bridge domain VLAN ID (see the next step).

Usage notes:

- AutoPick Bridge Domain/VLAN ID consumes a global VLAN ID on the device.
- The bridge domain VLAN ID is picked from the existing ISC VLAN pool.

- Step 11** If the AutoPick Bridge Domain/VLAN ID check box is unchecked, enter an appropriate value in the **Bridge Domain/VLAN ID** field.



**Note** This configuration applies in conjunction with the Configure Bridge Domain option in the EVC Service Request Editor window. If the option is not enabled in that window, then AutoPick Bridge Domain/VLAN ID check box is redundant and not required.

When a VLAN ID is manually allocated, ISC verifies the VLAN ID to see if it lies within ISC's VLAN ID pool. If the VLAN ID is in the pool but not allocated, the VLAN ID is allocated to the service request. If the VLAN ID is in the pool and is already in use, ISC prompts you to allocate a different VLAN ID. If the VLAN ID lies outside of the ISC VLAN ID pool, ISC does not perform any verification about whether the VLAN ID allocated. The operator must ensure the VLAN ID is available.

**Step 12** Check the **Match Inner and Outer Tags** check box to enable service requests created with the policy to match both the inner and outer VLAN tags of the incoming frames.

If you do not check this check box, service requests created with the policy will match only the outer VLAN tag of the incoming frames.

Checking the Match Inner and Outer Tags attribute causes the Inner VLAN ID and Outer VLAN ID fields (covered in the next steps) to appear.

**Step 13** If the Match Inner and Outer Tags check box is checked, enter the inner and outer VLAN tags in the **Inner VLAN ID** and **Outer VLAN ID** fields.

Usage notes:

- You can specify single values, single ranges, multiples values, multiple ranges, or combinations of these. Examples:
  - 10
  - 10, 15,17
  - 10-15
  - 10-15,17-20
  - 10,20-25
- If the Inner VLAN Ranges attribute is set to true in the policy, the Inner VLAN ID field can take a range of inner VLAN tags.

**Step 14** If the Match Inner and Outer Tags check box is unchecked, enter the outer VLAN tag in the **Outer VLAN ID** field.



**Note** The VLAN specified in Outer VLAN ID will be provisioned on the rest of the L2 access nodes (if the link has any), including the customer-facing UNI.

**Step 15** In the VLAN Rewrite section of the window, choose a **Rewrite Type** from the drop-down list.

The choices are:

- **Pop**
- **Push**
- **Translate**

The subsequent attributes in the GUI change depending on the choice of Rewrite Type, as covered in the next steps.

**Step 16** If Pop is the Rewrite Type, two check boxes appear:

- a. Check the **Pop Outer Tag** check box to pop the outer VLAN ID tag of the incoming frames that fulfill the match criteria. If this check box is unchecked, the outer tag of the incoming traffic will not be popped.
- b. Check the **Pop Inner Tag** check box to pop the inner VLAN ID tag of the incoming frames that fulfill the match-criteria. If this check box is unchecked, the inner tag will not be changed.

Note that if Pop Inner Tag is checked, Pop Outer Tag is automatically checked.

**Step 17** If Push is the Rewrite Type, two text boxes appear:

- a. In the text box **Outer VLAN ID**, enter an outer VLAN ID tag that will be imposed on the incoming frames that fulfill the match criteria. All service requests created with this setting push a dot1q outer tag on the incoming frames matching the match criteria. If a value is not provided, the push operation is ignored and not configured on the device.
- b. In the text box **Inner VLAN ID**, enter an inner VLAN ID tag that will be imposed on the incoming frames that fulfill the match criteria. All service requests created with this setting push a dot1q inner tag on the incoming frames matching the match criteria. The Inner VLAN tag cannot be pushed without an Outer VLAN tag. That is, when pushing an Inner VLAN tag, the Outer VLAN tag also must be defined.

**Step 18** If Translate is the Rewrite Type, a **Translation Type** drop-down list appears.

The choices available in this list vary depending on the setting of the Match Inner and Outer Tags attribute (set in a previous step).

- a. If the Match Inner and Outer Tags check box is checked (true), choose a translation type of **1:1**, **1:2**, **2:1**, or **2:2** from the Translation Type drop-down list.
  - If you choose 1:1 or 2:1, enter a value in the **Outer VLAN ID** text box that appears. The outer tag of all the incoming frames that fulfill the match criteria will be translated to this ID.
  - If you choose 1:2 or 2:2, enter values in the **Outer VLAN ID** and **Inner VLAN ID** text boxes that appear. The outer and inner tags of all the incoming frames that fulfill the match criteria will be translated to these IDs.
- b. If the Match Inner and Outer Tags check box is unchecked (false), choose a translation type of **1:1** or **1:2** from the Translation Type drop-down list.
  - If you choose 1:1, enter a value in the **Outer VLAN ID** text box that appears. The outer tag of all the incoming frames that fulfill the match criteria will be translated to this ID.
  - If you choose 1:2, enter values in the **Outer VLAN ID** and **Inner VLAN ID** text boxes that appear. The outer and inner tags of all the incoming frames that fulfill the match criteria will be translated to these IDs.

**Step 19** Clicked **Next** to save the settings in the FlexUNI Details window.

The Standard UNI Details window appears, as shown in [Figure 4-5](#).

**Step 20** Continue with setting the standard UNI link attributes in the next steps.

#### Editing the Standard UNI Attributes

The following steps cover setting the attributes in the Standard UNI Details window, as shown in [Figure 4-5](#). In the case of a link which is not set as a FlexUNI link (by not checking the FlexUNI check box in the Service Request Details window), editing the link attributes begins with this window.

**Note**

The attributes that appear in the Standard UNI Details window are dynamically configured by ISC. Some of the attributes covered in the steps below might not appear in the window, depending on the policy and service request settings or the link type. For example, if the MPLS core connectivity type of the FlexUNI/EVC policy is VPLS or local, the pseudowire-related attributes will not appear. Also, setting the link as FlexUNI or non-FlexUNI will change the attributes that appear in the window. These cases are noted in the steps, for reference.

The example of the Standard UNI Details window shown in [Figure 4-5](#) is for a direct connect link with the FlexUNI check box unchecked.

**Figure 4-5 Standard UNI Details Window**

The screenshot shows the 'Standard UNI Details' window with the following fields and values:

Attribute	Value
<b>N-PE/U-PE Information:</b>	pe3
<b>Interface Name:</b>	FastEthernet0/0
Encapsulation:	DOT1QTUNNEL
PE/UNI Interface Description:	
UNI Shutdown:	<input type="checkbox"/>
<b>VLAN Translation:</b>	<input checked="" type="radio"/> No <input type="radio"/> 1:1 <input type="radio"/> 2:1
<b>PW Tunnel Selection:</b>	<input type="checkbox"/>
<b>Interface Tunnel:</b>	(0-2147483647)
<b>AutoPick Bridge Domain/VLAN ID:</b>	<input type="checkbox"/>
<b>Bridge Domain/VLAN ID:</b>	(1-4096)

Note: \*- Required Field

**Step 21** The **N-PE/U-PE Information** and **Interface Name** fields display the PE device and interface name selected in previous steps.

These fields are read-only.

**Step 22** Choose an **Encapsulation** type from the drop-down list.

The choices are:

- **DOT1QTRUNK**—Configures the UNI as a trunk with 802.1q encapsulation. If the UNI belongs to a directly connected and FlexUNI link, this setting signifies that the incoming frames are 802.1q encapsulated and that they match the VLAN ID configured for the link. This specific topology does not involve a trunk UNI as such.
- **DOT1QTUNNEL**—Configures the UNI as an 802.1q tunnel (also known as a dot1q tunnel or Q-in-Q) port.
- **ACCESS**—Configures the UNI as an access port.

This attribute allows you to deploy different types of UNI encapsulation on different links of a service.

**Step 23** In the **PE/UNI Interface Description** field, enter a description for the interface, if desired.

**Step 24** Check the **UNI Shutdown** check box if you want to leave the UNI port shut during service activation (for example, when the service provider wants to deploy a service in the network but wants to activate it at a later time).

**Step 25** Specify the type of **VLAN Translation** for the service request by clicking the appropriate radio button.

The choices are:

- **No**—No VLAN translation is performed. (This is the default.)
- **1:1**—1:1 VLAN translation.
- **2:1**—2:1 VLAN translation.



**Note** For detailed coverage of setting up VLAN translation, see [Appendix C, “Setting Up VLAN Translation.”](#)

**Step 26** Check the **PW Tunnel Selection** check box if you want to be able to manually select the Traffic Engineering (TE) tunnel for the pseudowire connecting point-to-point N-PEs.

Usage notes:

- Checking the PW Tunnel Selection check box activates the Interface Tunnel attribute field (see the next step).
- This attribute only appears if the MPLS core connectivity type is set as pseudowire in the FlexUNI/EVC policy.

**Step 27** If you checked the PW Tunnel Selection check box, enter the TE tunnel ID in the **Tunnel Interface** text field.

ISC uses the tunnel information to create and provision a pseudowire class that describes the pseudowire connection between two N-PEs. This pseudowire class can be shared by more than one pseudowire, as long as the pseudowires share the same tunnel ID and remote loopback address. During service request creation, ISC does not check the validity of the tunnel ID number. That is, ISC does not verify the existence of the tunnel.

**Step 28** Check the **AutoPick Bridge Domain/VLAN ID** check box to have ISC autopick the VLAN ID during service request creation.

If this check box is unchecked, you are prompted to specify a VLAN ID during service request creation (see the next step).

Usage notes:

- AutoPick Bridge Domain/VLAN ID consumes a global VLAN ID on the device.
- The bridge domain VLAN ID is picked from the existing ISC VLAN pool.

**Step 29** If the AutoPick Bridge Domain/VLAN ID check box is unchecked, enter an ID number in the **Bridge Domain/VLAN ID** text field.

Usage notes:

- If AutoPick Bridge Domain/VLAN ID is checked, this field is non-editable.
- When a VLAN ID is manually allocated, ISC verifies the VLAN ID to see if it lies within ISC’s VLAN ID pool. If the VLAN ID is in the pool but not allocated, the VLAN ID is allocated to the service request. If the VLAN ID is in the pool and is already in use, ISC prompts you to allocate a different VLAN ID. If the VLAN ID lies outside of the ISC VLAN ID pool, ISC does not perform any verification about whether the VLAN ID allocated. The operator must ensure the VLAN ID is available.

**Step 30** Click **OK** to save the Standard UNI settings and return to the EVC Service Request window.

The value in the Link Attributes column now displays as “Changed,” signifying that the link settings have been updated. You can edit the link attributes now or at a future time by clicking on the Changed link and modifying the settings in the Standard UNI Details window.

See [Modifying the FlexUNI/EVC Service Request, page 4-16](#) for details on editing the link attributes.

- Step 31** To add another link click the **Add** button and set the attributes for the new link as in the previous steps in this section.
- Step 32** To delete a link, check the check box in the first column of the row for that link and click the **Delete** button.
- Step 33** If you want to set up links with L2 access nodes for this service request, see [Setting Links with L2 Access Nodes, page 4-15](#).
- Step 34** When you have completed setting the attributes in the EVC Service Request Editor window, click the **Save** button at the bottom of the window to save the settings and create the FlexUNI/EVC service request.

If any attributes are missing or incorrectly set, ISC displays a warning in the lower left of the window. Make any corrections or updates needed (based on the information provided by ISC), and click the **Save** button.

For information on modifying a FlexUNI/EVC service request see the section [Modifying the FlexUNI/EVC Service Request, page 4-16](#). For additional information about saving a FlexUNI/EVC service request, see [Saving the FlexUNI/EVC Service Request, page 4-17](#).

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## Setting Links with L2 Access Nodes

The Links with L2 Access Nodes section of the EVC Service Request Editor window allows you to set up links with L2 (Ethernet) access nodes. These are similar to direct connect links, except that they have L2/Ethernet access nodes beyond the N-PE (towards the CE). Therefore, NPCs are involved. The steps for setting up links with L2 access nodes are similar to those covered in the section [Setting Direct Connect Links, page 4-8](#). See that section for detailed steps on the following common operations:

- Adding and deleting links.
- Selecting the N-PE.
- Choosing the UNI interface.
- Setting the link as a FlexUNI link.
- Editing the standard and FlexUNI link attributes.

The main difference in setting up links with L2 access does is specifying the NPC details.

Perform the following steps to set the NPC details for links with L2 access nodes:

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- Step 1** The first step in the process of adding a link using NPCs is selecting the U-PE/PE-AGG device, rather than the N-PE.
- If only one NPC exists for the chosen interface, that NPC is autopopulated in the Circuit Details column, and you need not choose it explicitly.
- If more than one NPC is available, click **Select one circuit** in the Circuit Selection column. The NPC window appears, enabling you to choose the appropriate NPC.
- Step 2** Click **OK**.
- Each time you choose a PE and its interface, the NPC that was set up from this PE and interface is automatically displayed under **Circuit Selection**. This means that you do not have to further specify the PE to complete the link.

If you want to review the details of this NPC, click **Circuit Details** in the Circuit Details column. The NPC Details window appears and lists the circuit details for this NPC.

**Step 3** For details about editing link attributes, adding or deleting links, or using the FlexUNI check box, see the corresponding steps in the section [Setting Direct Connect Links, page 4-8](#).

**Step 4** When you have completed setting the attributes in the EVC Service Request Editor window, click the **Save** button at the bottom of the window to save the settings and create the FlexUNI/EVC service request.

If any attributes are missing or incorrectly set, ISC displays a warning in the lower left of the window. Make any corrections or updates needed (based on the information provided by ISC), and click the **Save** button.

For information on modifying a FlexUNI/EVC service request see the section [Modifying the FlexUNI/EVC Service Request, page 4-16](#). For additional information about saving a FlexUNI/EVC service request, see [Saving the FlexUNI/EVC Service Request, page 4-17](#).

## Modifying the FlexUNI/EVC Service Request

You can modify a FlexUNI/EVC service request if you must change or modify the links or other settings of the service request.

To modify a FlexUNI/EVC service request, perform the following steps.

**Step 1** Choose **Service Inventory > Inventory and Connection Manager > Service Requests**.

The Service Requests window appears, showing service request available in ISC.

**Step 2** Check a check box for a service request.

**Step 3** Click **Edit**.

EVC Service Editor window appears.

**Step 4** Modify any of the attributes, as desired.

See the sections start with [“Setting the Service Request Details” section on page 4-2](#) for detailed coverage of setting attributes in this window.



**Note** Once the VC ID, VPLS VPN ID, and VLAN ID have been set in a service request they cannot be modified.

**Step 5** To add a template/data file to an attachment circuit, see the section [Using Templates and Data Files with a FlexUNI/EVC Service Request, page 4-17](#).

**Step 6** When you are finished editing the FlexUNI/EVC service request, click **Save**.

For additional information about saving a FlexUNI/EVC service request, see [Saving the FlexUNI/EVC Service Request, page 4-17](#).

# Using Templates and Data Files with a FlexUNI/EVC Service Request

ISC does not support configuration of all the available CLI commands on a device being managed by the application. In order to configure such commands on the devices, you can use ISC Template Manager functionality. Templates can be associated at the policy level on a per-device role basis. Templates can be overridden at service request level, if the policy-level setting permits the operator to do so.

To associate templates and data files in a service request select any link in the Service Request Editor window and click the **Template** button at the bottom of the window.



## Note

If the template feature has not been enabled in the associated policy then the Template button will not be available for selection.

The SR Template Association window appears, as shown in [Figure 4-6](#). In this window, you can associate templates at a per-device level.

**Figure 4-6** Sample Templates Association Window

Showing 1 - 2 of 2 records			
#	Device Name	Role Type	Template/Data File
1.	pe1	N-PE	<a href="#">Add</a>
2.	sw2	U-PE	<a href="#">Add</a>

**OK**

Rows per page: 10  Go to page: 1 of 1

Note: \* - Required Field

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As shown in [Figure 4-6](#), the Template Association window lists the devices comprising the link, the device roles, and the template(s)/data file(s) associated with the devices. In this case, the template(s)/data file(s) have not yet been set up.

For further instructions on how to associate templates and data files with a service request, see [Appendix B, “Working with Templates and Data Files,”](#) especially the section [Using Templates with Service Requests, page B-8](#).

## Saving the FlexUNI/EVC Service Request

To save a FlexUNI/EVC service request, perform the following steps.

- Step 1** When you have finished setting the attributes for the FlexUNI/EVC service request, click **Save** to create the service request.

If the FlexUNI/EVC service request is successfully created, you will see the service request list window, similar to what appears in [Figure 4-7](#).

**Figure 4-7 FlexUNI/EVC Service Request Created**

Service Requests

Show Services with Job ID matching \* of Type All Find

Showing 1 - 2 of 2 records

#	Job ID	Data Files	State	Type	Operation Type	Creator	Customer Name	Policy Name	Last Modified	Description
1.	2		REQUESTED	EVC	ADD	admin	Customer2	58	7/5/08 1:40 PM	
2.	3		REQUESTED	EVC	ADD	admin	Customer2	FlexUNI_pseudo	7/25/08 4:38 PM	

Rows per page: 10 Go to page: 1 of 1 Go

Auto Refresh:  Create Details Status Edit Deploy Decommission Purge

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The newly created FlexUNI/EVC service request is added with the state of REQUESTED, as shown in the figure.

**Step 2** If, however, the FlexUNI service request creation failed for some reason (for example, a value chosen is out of bounds), you are warned with an error message.

In such a case, you should correct the error and save the service request again.

**Step 3** If you are ready to deploy the FlexUNI/EVC service request, see [Deploying Service Requests, page 9-1](#).