

CHAPTER 1

Automatically Stitching EVCs to PseudoWires

The content of this document describes the automatic stitching of ethernet virtual circuits and pseudowires.

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Overview

In an Ethernet-MPLS-Ethernet network, an Ethernet Virtual Circuit (EVC) and pseudowire is stitched together to create a relationship that enables the topology server to pinpoint an impacted EVC due to fault or failure in the network.

Terminologies

[Table 1 on page 2](#) describes the terminologies used in this document.

Table 1 Description of terminologies

Term	Description
CE device	Customer Edge device is a device at the customer premises, that directly interacts with the service provider network and provides access to the customer's core network such as MPLS or IP. For example, routers, routing devices, multiplexers are used as a customer edge device.
U-PE device	User-Facing Provider Edge device is a device at the edge of the provider network, that presents the provider's view of the customer site. It connects the CE devices to the service provider network.
NPE device	Network Provider Edge device is a device that operates at the provider's core network such as MPLS or IP. It resides at the edge of a point-to-point or a multi-point network of the core domain.
EVC	Ethernet Virtual Circuit is a logical point-to-point connection between two user-facing provider edge devices that are present at the access layer of the network.
EVCEndPoint	The logical points on the U-PE device where an EVC starts or ends is called an EVCEndPoint.
EVC Objects	They represent the EVCs discovered in the network, on the topology.
EVCEndPoint Objects	They represent the EVCEndPoints discovered in the network, on the topology.
Pseudowire	Pseudowire is a logical point-to-point connection between two Network Provider Edge devices that are present in the core network.
ForwarderEndPoint	The logical start and end points on the NPE device that a pseudowire uses for packet forwarding is called a ForwarderEndPoint.
Service VLAN	Service VLAN is a VLAN model in which there is a dedicated VLAN for each service and the services are shared by subscribers.

Table 1 Description of terminologies

Term	Description
ServiceVLANTag	ServiceVLANTag is an ID provided to a service such as a customer service instance, or Ethernet Virtual Connection (EVC) when sold to a customer.
NnInterface	Network-to-network interface is an interface that connects and translates certain types of data between two different types of network. For example, translating data between IP and MPLS networks. An NnInterface table contains a list of provider edge interfaces in the service VLAN object.
Interface	Interface is a network adaptor to host a Pseudowire's ForwarderEndPoints. An interface of a ForwarderEndPoint is listed in the NnInterface table.

Automatic stitching

Automatic stitching is an automatic link created between the Ethernet Virtual Circuit (EVC) and pseudowire using a Service VLAN. On discovering the devices on the network, the services configured on the physical devices are also discovered. The Service VLANs, EVC services, EVCEndPoint services, Pseudowire services, and ForwarderEndPoint services are displayed in the Topology browser. Discovering an EVCEndPoint obtains information on ServiceVLANTag and NnInterface. The Pseudowire's ForwarderEndPoint contains Service VLAN and interface information.

The Service VLANTag and NnInterface information of the EVCEndPoint is compared with the Service VLAN and interface information of the ForwarderEndPoint. A relationship between the corresponding EVC and PseudoWire object is created during discovery when the following conditions are satisfied:

- ◆ The interface information of the ForwarderEndpoint is present in the NnInterfaces table.
- ◆ The Service VLANTag information in the EVCEndPoint is the same as the Service VLAN information in the ForwarderEndPoint.

The relationship between an EVC and pseudowire can be viewed in the Topology browser after discovery. [Figure 1 on page 4](#) shows the stitching points where the Service VLANs start and end at the user provider edge and the network provider edge devices.

EVC to PseudoWire Stitching Overview

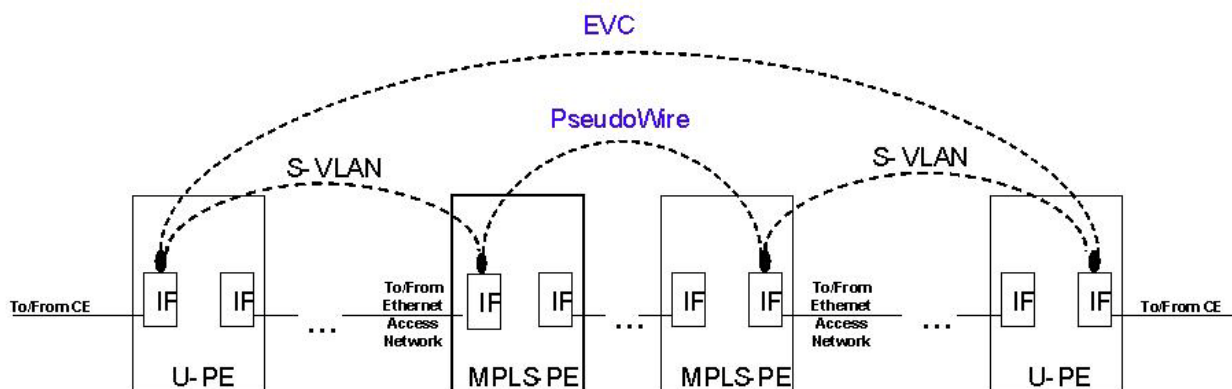


Figure 1 EVC to Pseudowire stitching

EVCEndPoint Attributes

Table 2 on page 5 provides the list of attributes and classes of ServiceVLANTag and NniInterface that are discovered when an EVCEndPoint is discovered.

Table 2 List of attributes of ServiceVLANTag and NniInterface

	Attributes and classes
ServiceVLANTag	ForwardBridgeDomain
	OuterSVlanTag
	InnerSVlanTag
	RewriteAction
NniInterface	class EVCEndPoint
	attr EVCIId
	attr EVCType
	attr DisplayName
	attr SystemName
	attr ServiceVLANTag
	attr NniInterface
	rel LayeredOver

