CHAPTER 18

Sample Configlets

This appendix provides sample configlets for L2VPN and Metro Ethernet service provisioning in Prime Fulfillment. It contains the following sections:

Overview

The configlets provided in this appendix show the CLIs generated by Prime Fulfillment for particular services and features. Each configlet example provides the following information:

- Service
- Feature
- Devices configuration (network role, hardware platform, relationship of the devices and other relevant information)
- Sample configlets for each device in the configuration
- Comments

Note The configlets generated by Prime Fulfillment are only the delta between what needs to be provisioned and what currently exists on the device. This means that if a relevant CLI is already on the device, it does not show up in the associated configlet.

Note The CLIs shown in bold are the most relevant commands.

Note All examples in this appendix assume an MPLS core.

ERS (EVPL) (Point-to-Point)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) (point-to-point).
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL.

    Interface(s): FA8/17.
  - The U-PE is a Cisco 3750ME with 12.2(25)EY1, no port security.

    Interface(s): FA1/0/4 – FA1/0/23.
  - L2VPN point-to-point.

Configlets

U-PE

```
vlan 772
exit
!
interface FastEthernet1/0/23
switchport trunk allowed vlan 500,772
!
interface FastEthernet1/0/4
no cdp enable
no keepalive
no ip address
switchport trunk allowed vlan 500,772
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet1/0/4 in
!
mac access-list extended
ISC-FastEthernet1/0/4
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
```

N-PE

```
vlan 772
exit
!
interface FastEthernet8/17
switchport trunk allowed vlan
1,451,653,659,766-768,772,878
!
interface Vlan772
no ip address
description L2VPN ERS
xconnect 99.99.8.99 89027 encapsulation
mpls
no shutdown
```

Comments

- The N-PE is a 7600 with an OSM or SIP-600 module.
- The U-PE is a generic Metro Ethernet (ME) switch. Customer BPDUs are blocked by the PACL.

ERS (EVPL) (Point-to-Point, UNI Port Security)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) (point-to-point) with UNI port security.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, OSM.

    Interface(s): FA2/18.
  - The U-PE is a Cisco 3550 with IOS 12.2(25)SEC2. Port security is enabled.

    Interface(s): FA3/31– FA3/23.
  - L2VPN point-to-point.

Configlets

U-PE

```
vlan 788
exit
!
interface FastEthernet3/23
no ip address
switchport trunk allowed vlan 783,787-788
!
interface FastEthernet3/31
no cdp enable
no keepalive
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 788
switchport port-security
switchport nonegotiate
switchport port-security maximum 45
switchport port-security aging time 34
switchport port-security violation shutdown
switchport port-security mac-address
3456.3456.5678
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet3/31 in
!
mac access-list extended
ISC-FastEthernet3/31
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
deny any host 1234.3234.3432
permit any any
```

N-PE

```
vlan 788
exit
!
interface FastEthernet2/18
switchport trunk allowed vlan
350,351,430,630,777,780,783,785-788
!
interface Vlan788
no ip address
description L2VPN ERS with UNI port
security
xconnect 99.99.5.99 89028 encapsulation
mpls
no shutdown
```

Comments

- The N-PE is a 7600 with an OSM or SIP-600 module.
- The U-PE is a generic Metro Ethernet (ME) switch. The customer BPDUs are blocked by the PACL.

- Various UNI port security commands are provisioned.
- A user-defined PACL entry is added to the default PACL.

ERS (EVPL) (1:1 VLAN Translation)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) with 1:1 VLAN translation.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL

    Interface(s): FA8/34.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. VLAN translation on the NNI port (uplink).

    Interface(s): FA1/0/8 – GI1/1/1.
  - L2VPN point-to-point.

Configlets

U-PE

```
!
vlan 123
exit
!
interface FastEthernet1/0/8
no cdp enable
no keepalive
no ip address
switchport trunk allowed vlan 123
switchport nonegotiate
switchport port-security maximum 34
switchport port-security aging time 23
switchport port-security violation protect
switchport port-security
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet1/0/8 in
!
interface GigabitEthernet1/1/1
no ip address
switchport mode trunk
switchport trunk allowed vlan 1,123
switchport vlan mapping 123 778
```

N-PE

```
vlan 778
exit
!
interface FastEthernet8/34
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 1,778
!
interface Vlan778
no ip address
description L2VPN ERS 1 to 1 vlan
translation
xconnect 99.99.8.99 89032 encapsulation
mpls
no shutdown
```

Comments

- VLAN translation is only for L2VPN (point-to-point) ERS (EVPL).
- In this case, the 1:1 VLAN translation occurs on the U-PE, a 3750. It is provisioned on the NNI (uplink) port.
- The customer VLAN 123 is translated to the provider VLAN 778.

ERS (EVPL) (2:1 VLAN Translation)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) with VLAN 2:1 translation.Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL

    Interface(s): FA8/34.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. VLAN translation on the NNI port (uplink).

    Interface(s): FA1/0/5 – GI1/1/1.
  - L2VPN point-to-point.

Configlets

U-PE	N-PE
vlan 567 exit ! interface FastEthernet1/0/5 no cdp enable no keepalive no ip address switchport **switchport access vlan 567** **switchport mode dot1q-tunnel** switchport trunk allowed vlan none switchport nonegotiate spanning-tree bpdufilter enable mac access-group ISC-FastEthernet1/0/5 in ! interface GigabitEthernet1/1/1 no ip address switchport trunk allowed vlan 1,123,567 **switchport vlan mapping dot1q-tunnel 567 234 779** ! mac access-list extended ISC-FastEthernet1/0/5 deny any host 0100.0ccc.cccc deny any host 0100.0ccc.cccd deny any host 0100.0ccd.cdd0 deny any host 0180.c200.0000 permit any any	vlan 779 exit ! interface FastEthernet8/34 switchport trunk allowed vlan 1,778-779 ! interface Vlan779 no ip address description L2VPN ERS 2 to 1 vlan translation xconnect 99.99.8.99 89033 encapsulation mpls no shutdown

Comments

- VLAN translation is only for L2VPN (point-to-point) ERS (EVPL).
- In this case, the 2:1 VLAN translation occurs on the U-PE, a 3750. It is provisioned on the NNI (uplink) port.
- The customer VLAN 123 and the provider VLAN 234 (as part of Q -in-Q) are translated to a new provider VLAN 779.

ERS (Pseudowire Class, E-Line, L2VPN Group Name, IOS XR Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL).
- Device configuration:
  - The N-PE is a CRS-1 with IOS XR 3.6.1 or later.
  - UNI on N-PE.
  - UNI on U-PE.

Configlets

U-PE

```
!
vlan 700
exit
!
interface FastEthernet1/0/2
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 700
 switchport mode trunk
 switchport nonegotiate
 no keepalive
 mac access-group ISC-FastEthernet1/0/2 in
 no cdp enable
 spanning-tree bpdufilter enable
!
!
interface GigabitEthernet1/0/1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 700
 switchport mode trunk
 keepalive 10
!
!
mac access-list extended
ISC-FastEthernet1/0/2
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
!
```

N-PE

```
!
interface GigabitEthernet0/3/1/1.700
l2transport
 dot1q vlan 700
!
l2vpn
 pw-class PW_AD3-AD7_Customer1
  encapsulation mpls
   transport-mode vlan
   preferred-path interface tunnel-te 1370
fallback disable
  !
 !
 xconnect group L2VPN_Customer1-Gold_class
  p2p GoldPkg_AD3-AD7_Customer1
   interface GigabitEthernet0/3/1/1.700
   neighbor 192.169.105.30 pw-id 1000
    pw-class PW_AD3-AD7_Customer1
   !
  !
```

Comments

- The N-PE is a CRS-1 with IOS XR 3.7.
- The pseudowire class feature is configured with various associated attributes like encapsulation, transport mode, preferred-path, and fallback option.
- The disable fallback option is required for IOS XR 3.6.1 and optional for IOS XR 3.7 and later.
- The E-Line name (**p2p** command) and L2VPN Group Name (**xconnect group** command) is user configured.

ERS (EVPL) (NBI Enhancements for L2VPN, IOS Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL).
- Device configuration:
  - The N-PE is a 12.2(18)SXF with IOS.
  - The U-PE is a 12.2(25)EY4with IOS.
  - UNI on N-PE.
  - UNI on U-PE.

Configlets

U-PE

```
!
vlan 3200
exit
!
interface FastEthernet1/0/2
no cdp enable
no ip address
duplex auto
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 3200
switchport nonegotiate
switchport port-security aging type
inactivity
switchport port-security maximum 100
switchport port-security aging time 1000
switchport port-security violation protect
switchport port-security
storm-control unicast level 1.0
storm-control broadcast level 50.0
storm-control multicast level 50.0
shutdown
keepalive
spanning-tree bpdufilter enable

!
interface GigabitEthernet1/0/1
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 3200
!
```

N-PE

```
!
vlan 3300
exit
!
interface FastEthernet1/0/24
no cdp enable
no ip address
duplex auto
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 3300
switchport nonegotiate
switchport port-security aging type
inactivity
switchport port-security maximum 100
switchport port-security aging time 1000
switchport port-security violation protect
switchport port-security
storm-control unicast level 1.0
storm-control broadcast level 50.0
storm-control multicast level 50.0
shutdown
keepalive
spanning-tree bpdufilter enable

!
interface Vlan3300
no ip address
xconnect 192.169.105.40 7502 encapsulation
mpls
no shutdown
!
```

Comments

None.

ERS (EVPL) or EWS (EPL) (IOS XR Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) or EWS (EPL).
- Device configuration(s):
  - The N-PE is a CRS-1 with IOS XR 3.4.2.
  - UNI on N-PE. ERS (EVPL) only.
  - U-PE. EWS (EPL) or ERS (EVPL).

Configlets

N-PE

```
<?xml version="1.0" encoding="UTF-8"?>
<Request MajorVersion="1" MinorVersion="0">
  <Set>
    <Configuration Source="CurrentConfig">
      <InterfaceConfigurationTable>
        <InterfaceConfiguration>
          <Naming>
            <Name>GigabitEthernet0/0/0/1.302</Name>
            <Active>act</Active>
          </Naming>
          <InterfaceModeNonPhysical>L2Transport</InterfaceModeNonPhysical>
        </InterfaceConfiguration>
      </InterfaceConfigurationTable>
      <L2VPN>
        <Enabled>true</Enabled>
        <XConnectGroupTable>
          <XConnectGroup>
            <Naming>
              <Name>VPNSC</Name>
            </Naming>
            <Enabled>true</Enabled>
            <P2PXConnectTable>
              <P2PXConnect>
                <Naming>
                  <Name>GigabitEthernet0_0_0_1.302</Name>
                </Naming>
                <Enabled>true</Enabled>
                <AttachmentCircuitTable>
                  <AttachmentCircuit>
                    <Naming>
                      <Name>GigabitEthernet0/0/0/1.302</Name>
                    </Naming>
                    <Enabled>true</Enabled>
                  </AttachmentCircuit>
                </AttachmentCircuitTable>
                <PseudoWireTable>
                  <PseudoWire>
                    <Naming>
                      <Neighbor>
                        <IPV4Address>10.11.13.15</IPV4Address>
                      </Neighbor>
                      <PseudowireID>1005</PseudowireID>
                    </Naming>
                    <PseudoWireParameters/>
                  </PseudoWire>
                </PseudoWireTable>
              </P2PXConnect>
            </P2PXConnectTable>
          </XConnectGroup>
        </XConnectGroupTable>
      </L2VPN>
    </Configuration>
  </Set>
  <Commit/>
</Request>
```

Comments

- In IOS XR, device configuration is specified in XML format.

- With respect to the XML schemas, different versions of IOS XR generate different XML configlets. However the configurations will be almost identical, except for changes in the XML schema.
- There are different cases to consider. For example, when a service request is decommissioned or modified, the XML configuration will slightly differ.

ERS (EVPL) and EWS (EPL) (Local Connect on E-Line)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL) and EWS (EPL).
- Device configuration:
  - The N-PE is a CRS-1 with IOS XR 3.6 or later.
  - The U-PE is a 12.2(18)SXF with IOS.

Configlets

U-PE	N-PE
	interface GigabitEthernet0/0/0/2.559 dot1q vlan 559 l2transport ! interface GigabitEthernet0/0/0/4.559 dot1q vlan 559 l2transport ! l2vpn xconnect group ISC p2p **cl-test-l2-crs1-1--0--559** interface GigabitEthernet0/0/0/2.559 interface GigabitEthernet0/0/0/4.559 ! ! !

Comments

- The default E-Line name has changed for local connect configlets.
- The format of the default E-line name is:
  device_name_with_underscores--VCID--VLANID

ERS (EVPL), EWS (EPL), ATM, or Frame Relay (Additional Template Variables for L2VPN, IOS and IOS XR Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ERS (EVPL), EWS (EPL), ATM and Frame Relay.
- Device configuration:
  - The N-PE is a 12.2(18)SXF with IOS for ERS (EVPL), EWS (EPL), Frame Relay service.
  - The N-PE is a CRS-1 with IOS XR 3.6 or later for ERS (EVPL), EWS (EPL) service; and IOS XR 3.7 or later for ATM service (ATM port mode).
  - The U-PE is a 12.2(25)EY4 with IOS for ERS (EVPL) or EWS (EPL) service.

Configlets

U-PE	N-PE

(None)	Template Content:
	`interface Loopback0`
	`description`
	`LocalLoopbackAddress=$L2VPNLocalLoopback`
	`LocalHostName=$L2VPNLocalHostName`
	`RemoteLoopbackAddress=$L2VPNRemoteLoopback`
	`RemoteHostName=$L2VPNRemoteHostName`
	
	Configlets:
	`interface Loopback0`
	`description LocalLoopbackAddress=`
	`192.169.105.40`
	`LocalHostName=cl-test-l2-7600-2`
	`RemoteLoopbackAddress=192.169.105.80`
	`RemoteHostName= cl-test-l2-7600-4`

Comments

- These four variables are supported only on the N-PE.
- The values will be empty for all other device roles (U-PE, PE-AGG, and CE).

EWS (EPL) (Point-to-Point)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: EWS (EPL) (point-to-point).
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL.

    Interface(s): FA8/17.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. No port security, no tunneling.

    Interface(s): FA1/0/20 – FA1/0/23.
  - L2VPN point-to-point.
  - Q-in-Q UNI.

Configlets

U-PE	N-PE
system mtu 1522 ! vlan 774 exit ! interface FastEthernet1/0/20 no cdp enable no keepalive switchport **switchport access vlan 774** **switchport mode dot1q-tunnel** **switchport nonegotiate** **spanning-tree portfast** **spanning-tree bpdufilter enable** ! interface FastEthernet1/0/23 no ip address switchport trunk allowed vlan 774,787-788	vlan 774 exit ! interface FastEthernet8/17 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-774,878 ! interface Vlan774 no ip address description L2VPN EWS xconnect 99.99.8.99 89029 encapsulation mpls no shutdown

Comments

- The N-PE is a 7600 with a OSM or SIP-600 module. Provisioning is the same as the ERS (EVPL) example.
- The U-PE is a generic Metro Ethernet (ME) switch.
- No PACL provisioned by default. BPDU can be tunneled if desired.
- The system MTU needs to set to 1522 to handle the extra 4 bytes of Q-in-Q frames.

EWS (EPL) (Point-to-Point, UNI Port Security, BPDU Tunneling)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: EWS (EPL) (point-to-point) with Port security, BPDU tunneling.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. No port security, with tunneling.
  - L2VPN point-to-point.
  - Q-in-Q UNI.

Configlets

U-PE	N-PE
system mtu 1522 ! vlan 775 exit ! system mtu 1522 ! vlan 775 exit ! interface FastEthernet1/0/19 no cdp enable no keepalive switchport switchport access vlan 775 switchport mode dot1q-tunnel switchport nonegotiate **switchport port-security maximum 34** **switchport port-security aging time 32** **switchport port-security violation shutdown** **switchport port-security** **l2protocol-tunnel cdp** **l2protocol-tunnel stp** **l2protocol-tunnel vtp** **l2protocol-tunnel shutdown-threshold cdp 88** **l2protocol-tunnel shutdown-threshold stp 99** **l2protocol-tunnel shutdown-threshold vtp 56** **l2protocol-tunnel drop-threshold cdp 56** **l2protocol-tunnel drop-threshold stp 64** **l2protocol-tunnel drop-threshold vtp 34** **storm-control unicast level 34.0** **storm-control broadcast level 23.0** **storm-control multicast level 12.0** spanning-tree portfast spanning-tree bpdufilter enable mac access-group ISC-FastEthernet1/0/19 in interface FastEthernet1/0/23 no ip address switchport trunk allowed vlan 774-775,787-788 ! mac access-list extended ISC-FastEthernet1/0/19 no permit any any **deny any host 3456.3456.1234** permit any any	vlan 775 exit ! interface FastEthernet8/17 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-775,878 ! interface Vlan775 no ip address description L2VPN EWS xconnect 99.99.8.99 89029 encapsulation mpls no shutdown

Comments

- The N-PE is a 7600 with an OSM or SIP-600 module. Provisioning is the same as the ERS (EVPL) example.
- The U-PE is a generic Metro Ethernet (ME) switch.
- PACL with one user-defined entry.
- BPDUs (CDP, STP and VTP) are tunneled through the MPLS core.
- Storm control is enabled for unicast, multicast, and broadcast.

EWS (EPL) (Hybrid)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: EWS (EPL) hybrid. One side is EWS (EPL) UNI; the other side is ERS (EVPL) NNI.
- Device configuration:
  - The N-PE is a Cisco 7600 with 12.2(18)SXF, Sup720-3BXL.

    Interface(s): FA8/17.
  - The U-PE is a Cisco 3750ME with 12.2(25)EY1. No port security, with tunneling.

    Interface(s): FA1/0/20 – FA1/0/23.
  - L2VPN point-to-point.
  - Q-in-Q UNI.

Note The first configlet example is the EWS (EPL) side (UNI). The second configlet is the ERS (EVPL) side (NNI).

Configlets (EWS)

U-PE	N-PE
system mtu 1522 ! vlan 775 exit ! system mtu 1522 ! vlan 775 exit ! interface FastEthernet1/0/19 no cdp enable no keepalive switchport switchport access vlan 775 switchport mode dot1q-tunnel switchport nonegotiate **switchport port-security maximum 34** **switchport port-security aging time 32** **switchport port-security violation shutdown** **switchport port-security** **l2protocol-tunnel cdp** **l2protocol-tunnel stp** **l2protocol-tunnel vtp** **l2protocol-tunnel shutdown-threshold cdp 88** **l2protocol-tunnel shutdown-threshold stp 99** **l2protocol-tunnel shutdown-threshold vtp 56** **l2protocol-tunnel drop-threshold cdp 56** **l2protocol-tunnel drop-threshold stp 64** **l2protocol-tunnel drop-threshold vtp 34** **storm-control unicast level 34.0** **storm-control broadcast level 23.0** **storm-control multicast level 12.0** spanning-tree portfast spanning-tree bpdufilter enable mac access-group ISC-FastEthernet1/0/19 in interface FastEthernet1/0/23 no ip address switchport trunk allowed vlan 774-775,787-788 ! mac access-list extended ISC-FastEthernet1/0/19 no permit any any **deny any host 3456.3456.1234** permit any any	vlan 775 exit ! interface FastEthernet8/17 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-775,878 ! interface Vlan775 no ip address description L2VPN EWS xconnect 99.99.8.99 89029 encapsulation mpls no shutdown

Comments

- This is the EWS (EPL) side (UNI).
- N-PE is 7600 with an OSM or a SIP-600 module. Provisioning is the same as the ERS (EVPL).
- The U-PE is a generic Metro Ethernet (ME) switch.
- PACL with one user-defined entry.
- BPDUs (cdp, stp and vtp) are tunneled through the MPLS core.
- Storm control is enabled for unicast, multicast, and broadcast.

Configlets (ERS)

U-PE	N-PE
system mtu 1522 vlan 775 exit interface FastEthernet1/17 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-775,878 interface FastEthernet1/10 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-775,878	vlan 775 exit ! interface FastEthernet8/17 switchport trunk allowed vlan 1,451,653,659,766-768,772,773-775,878 ! interface Vlan775 no ip address description L2VPN EWS xconnect 99.99.8.99 89029 encapsulation mpls no shutdown

Comments

- This is the ERS (EVPL) side (NNI).
- The N-PE is a 7600 with an OSM or a SIP-600 module. Provisioning is the same as the ERS (EVPL).
- The U-PE is really a PE-AGG. It connects to the wholesale customer as an NNI. Both ports are regular NNI ports.

EWS (EPL) (Pseudowire Class, E-Line, L2VPN Group Name, IOS XR Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: EWS (EPL).
- Device configuration:
  - The N-PE is a CRS-1 with IOS XR 3.6.1 or later.
  - UNI on U-PE.

Configlets

U-PE

```
!
system mtu 1522
!
vlan 700
exit
!
interface FastEthernet1/0/2
switchport
switchport access vlan 700
switchport mode dot1q-tunnel
switchport nonegotiate
no keepalive
no cdp enable
spanning-tree portfast
spanning-tree bpdufilter enable
!
interface GigabitEthernet1/0/1
no ip address
switchport
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 700
switchport mode trunk
!
```

N-PE

```
!
interface GigabitEthernet0/3/1/1.700
l2transport
 dot1q vlan 700
!
!
l2vpn
 pw-class PW_AD7-AD3_Cutsomer2
  encapsulation mpls
   transport-mode ethernet
   preferred-path interface tunnel-te 2730
  !
 !
 xconnect group ISC
  p2p cl-test-l2-12404-2--1000
   interface GigabitEthernet0/3/1/1.700
   neighbor 192.169.105.30 pw-id 1000
    pw-class PW_AD7-AD3_Cutsomer2
   !
```

Comments

- The N-PE is a CRS-1 router with IOS XR 3.7.
- The pseudowire class feature is configured with various associated attributes like encapsulation, transport mode, preferred-path, and fallback option
- The disable fallback option is required for IOS XR 3.6.1 and optional for IOS XR 3.7 and later.
- The E-Line name (**p2p** command) and L2VPN Group Name (**xconnect group** command) is an Prime Fulfillment-generated default value, if user input is not provided.

EWS (EPL) (NBI Enhancements for L2VPN, IOS Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: EWS (EPL).
- Device configuration:
  - The N-PE is a 12.2(18)SXF with IOS.
  - The U-PE is a 12.2(25)EY4with IOS.
  - UNI on N-PE.
  - UNI on U-PE.

Configlets

U-PE

```
!
vlan 3201
exit
!
interface FastEthernet1/0/2
no cdp enable
no ip address
duplex auto
switchport
switchport access vlan 3201
switchport mode dot1q-tunnel
switchport nonegotiate
switchport port-security aging type
inactivity
switchport port-security maximum 100
switchport port-security aging time 1000
switchport port-security violation protect
switchport port-security
storm-control unicast level 1.0
storm-control broadcast level 50.0
storm-control multicast level 50.0
shutdown
keepalive
spanning-tree bpdufilter enable

!
interface GigabitEthernet1/0/1
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 3201
!
```

N-PE

```
!
vlan 3301
exit
!
interface FastEthernet1/0/24
no cdp enable
no ip address
duplex auto
switchport
switchport access vlan 3301
switchport mode dot1q-tunnel
switchport nonegotiate
switchport port-security aging type
inactivity
switchport port-security maximum 100
switchport port-security aging time 1000
switchport port-security violation protect
switchport port-security
storm-control unicast level 1.0
storm-control broadcast level 50.0
storm-control multicast level 50.0
shutdown
keepalive
spanning-tree bpdufilter enable

!
interface Vlan3301
no ip address
xconnect 192.169.105.40 7502 encapsulation
mpls
no shutdown
!
```

Comments

None.

ATM over MPLS (VC Mode)

Configuration

- Service: L2VPN.
- Feature: ATM over MPLS (ATMoMPLS, a type of AToM) in VC mode.
- Device configuration:
  - The N-PE is a Cisco 7200 with IOS 12.0(28)S.
  - No CE.
  - No U-PE.
  - L2VPN point-to-point (ATMoMPLS).
  - C7200 (ATM2/0).

Configlets

U-PE	N-PE

(None)	`interface ATM2/0.34234 point-to-point`
	`pvc 213/423 l2transport`
	`encapsulation aal5`
	`xconnect 99.99.4.99 89025 encapsulation mpls`

Comments

- The N-PE is any MPLS-enabled router.
- L2VPN provisioning is on the ATM VC connection.

ATM over MPLS (VP Mode)

Configuration

- Service: L2VPN.
- Feature: ATM over MPLS (ATMoMPLS, a type of AToM) in VP mode.
- Device configuration:
  - The N-PE is a Cisco 7200 with IOS 12.0(28)S.

    Interface(s): ATM2/0.
  - No CE.
  - No U-PE.
  - L2VPN point-to-point (ATMoMPLS).

Configlets

U-PE	N-PE

(None)	`pseudowire-class ISC-pw-tunnel-123`
	`encapsulation mpls`
	`preferred-path interface tunnel123`
	`disable-fallback`
	`!`
	`interface ATM2/0`
	`atm pvp 131 l2transport`
	`xconnect 99.99.4.99 89024 pw-class`
	`ISC-pw-tunnel-123`

Comments

- The N-PE is any MPLS-enabled router.
- L2VPN provisioning is on the ATM VP connection.
- The L2VPN pseudowire is mapped to a TE tunnel.

ATM (Port Mode, Pseudowire Class, E-Line, L2VPN Group Name, IOS XR Device)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: ATM.
- Device configuration:
  - The N-PE is a CRS-1 with IOS XR 3.7 or later for ATM service (port mode only).
  - UNI on N-PE.

Configlets

U-PE	N-PE
(None)	interface ATM0/1/0/0 description UNIDesc_AC1 l2transport ! ! l2vpn pw-class PWClass-1 encapsulation mpls preferred-path interface tunnel-te 500 fallback disable ! ! xconnect group ISC p2p ELine_AC1 interface ATM0/1/0/0 neighbor 192.169.105.70 pw-id 100 pw-class PWClass-1 !

Comments

- The N-PE is a CRS-1 router.
- The pseudowire class feature is optional and not configured.
- The E-Line name (**p2p** command) and L2VPN Group Name (**xconnect group** command) are user configured.
- Only PORT mode is supported in IOS XR.
- This PORT mode will not generate any specific command, such as **pvp** or **pvc**, on IOS XR devices.
- The ATM interface is included under **xconnect**.

Frame Relay over MPLS

Configuration

- Service: L2VPN.
- Feature: Frame Relay over MPLS (FRoMPLS, a type of AToM).
- Device configuration:
  - The N-PE is a Cisco 7200 with IOS 12.0(28)S.

    Interface(s): ATM2/0.
  - No CE.
  - No U-PE.
  - L2VPN point-to-point (ATMoMPLS).

Configlets

U-PE	N-PE

(None)	`interface Serial1/1`
	`exit`
	`!`
	`connect C1_89001 Serial1/1 135 l2transport`
	`xconnect 99.99.4.99 89001 encapsulation mpls`

Comments

- The N-PE is any MPLS-enabled router.
- L2VPN provisioning is on the serial port for the Frame Relay connection.

Frame Relay (DLCI Mode)

Configuration

- Service: L2VPN over a L2TPv3 core.
- Feature: FR in DLCI mode.
- Device configuration:
  - The N-PE is a Cisco 7200 with IOS 12.0(28)S.

    Interface(s): ATM2/0.
  - No CE.
  - No U-PE.
  - L2VPN point-to-point (ATMoMPLS).

Configlets

U-PE	N-PE

(None)	`pseudowire-class ISC-pw-dynamic-default`
	`encapsulation l2tpv3`
	`ip local interface Loopback10`
	`ip dfbit set`
	`!`
	`interface Serial3/2`
	`encapsulation frame-relay`
	`exit`
	`!`
	`connect ISC_1054 Serial3/2 86 l2transport`
	`xconnect 10.9.1.1 1054 encapsulation l2tpv3`
	`pw-class ISC-pw-dynamic-default`

Comments

- The N-PE is any L2TPv3 enabled router.
- L2VPN provisioning is on the serial port for the Frame Relay connection.

VPLS (Multipoint, ERMS/EVP-LAN)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: VPLS (multipoint) ERMS (EVP-LAN).
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BX.L

    Interface(s): FA2/18.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. No port security, no tunneling.

    Interface(s): FA1/0/21 – FA1/0/23.
  - VPLS Multipoint VPN with VLAN 767.

Configlets

U-PE

```
vlan 767
exit
!
interface FastEthernet1/0/21
no cdp enable
no keepalive
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 767
switchport nonegotiate
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet1/0/21 in
!
interface FastEthernet1/0/23
no ip address

mac access-list extended
ISC-FastEthernet1/0/21
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
```

N-PE

```
l2 vfi vpls_ers_1-0 manual
vpn id 89017
neighbor 99.99.10.9 encapsulation mpls
neighbor 99.99.5.99 encapsulation mpls
!
vlan 767
exit
!
interface FastEthernet2/18
switchport trunk allowed vlan
350,351,430,630,767,780,783,785-791
!
interface Vlan767
no ip address
description VPLS ERS
xconnect vfi vpls_ers_1-0
no shutdown
```

Comments

- The N-PE is a 7600 with OSM or SIP-600 module.
- The VFI contains all the N-PEs (neighbors) that this N-PE talks to.
- The U-PE is a generic Metro Ethernet (ME) switch. The customer BPDUs are blocked by the PACL. The VPLS ERMS (EVP-LAN) UNI is the same as the L2VPN (point-to-point) ERS (EVPL) UNI.
- The SVI (interface 767) refers to the global VFI, which contains multiple peering N-PEs.

VPLS (Multipoint, EMS/EP-LAN), BPDU Tunneling)

Configuration

- Service: L2VPN/Metro Ethernet.
- Feature: VPLS (multipoint) EMS (EP-LAN) with BPDU tunneling.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(18)SXF, Sup720-3BXL.
    Interface(s): FA2/18.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY1. No port security, no tunneling.
    Interface(s): FA1/0/12 – FA1/0/23.
  - VPLS Multipoint VPN, with VLAN 767.
  - Q-in-Q UNI.

Configlets

U-PE	N-PE
system mtu 1522 ! errdisable recovery interval 33 ! vlan 776 exit ! interface FastEthernet1/0/12 no cdp enable no keepalive switchport **switchport access vlan 776** **switchport mode dot1q-tunnel** **switchport nonegotiate** **l2protocol-tunnel cdp** **l2protocol-tunnel stp** **l2protocol-tunnel vtp** **l2protocol-tunnel shutdown-threshold cdp 88** **l2protocol-tunnel shutdown-threshold stp 64** **l2protocol-tunnel shutdown-threshold vtp 77** **l2protocol-tunnel drop-threshold cdp 34** **l2protocol-tunnel drop-threshold stp 23** **l2protocol-tunnel drop-threshold vtp 45** no shutdown spanning-tree portfast spanning-tree bpdufilter enable	**l2 vfi vpls_ews-89019 manual** **vpn id 89019** **neighbor 99.99.8.99 encapsulation mpls** **!** **vlan 776** **exit** **!** **interface FastEthernet8/17** **switchport trunk allowed vlan** **1,451,653,659,766-768,772-776,878** **!** **interface Vlan776** **no ip address** **description VPLS EWS** **xconnect vfi vpls_ews-89019** **no shutdown**

Comments

- The N-PE is a 7600 with an OSM or SIP-600 module.
- The VFI contains all the N-PEs (neighbors) that this N-PE talks to.
- The VPLS EMS (EP-LAN) UNI is the same as L2VPN (point-to-point) EWS (EPL) UNI.
- The SVI is the same as VPLS ERS (EVP-LAN) SVI.

FlexUNI/EVC (Pseudowire Core Connectivity, UNI Port Security)

Configuration

- Service: FlexUNI (EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity, with UNI port security.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33)SRB3.

    Interface(s): GI2/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY2. Port security is enabled.

    Interface(s): FA1/14– FA3/23.

Configlets

U-PE	N-PE
vlan 788 exit ! interface FastEthernet3/23 no ip address switchport trunk allowed vlan 783,787-788 ! interface FastEthernet1/14 no cdp enable no keepalive no ip address switchport **switchport trunk encapsulation dot1q** **switchport mode trunk** switchport trunk allowed vlan none **switchport trunk allowed vlan 788** **switchport port-security** switchport nonegotiate switchport port-security maximum 45 switchport port-security aging time 34 switchport port-security violation shutdown switchport port-security mac-address 3456.3456.5678 spanning-tree bpdufilter enable mac access-group ISC-FastEthernet3/23 in ! **mac access-list extended** **ISC-FastEthernet3/31** **deny any host 0100.0ccc.cccc** **deny any host 0100.0ccc.cccd** **deny any host 0100.0ccd.cdd0** **deny any host 0180.c200.0000** **deny any host 1234.3234.3432** **permit any any**	**interface GigabitEtherne4/0/1** **no shut** **service instance 10 ethernet** **encapsulation dot1q 500** **rewrite ingress tag push dot1q 555** **symmetric** **xconnect 192.169.105.20 505 encapsulation** **mpls**

Comments

- UNI on U-PE.
- Single match tag is performed.
- The rewrite operation **push** pushes the outer VLAN tag of 555.

FlexUNI/EVC (Pseudowire Core Connectivity, UNI, without Port Security, with Bridge Domain)

Configuration

- Service: FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity, with UNI, without port security, and with bridge domain.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33)SRB3.

    Interface(s): GI2/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25)EY2. Port security is enabled.

    Interface(s): FA1/14– FA3/23.

Configlets

U-PE

```
vlan 772
exit
!
interface FastEthernet3/23
switchport trunk allowed vlan 500,772
!
interface FastEthernet1/14
no cdp enable
no keepalive
no ip address
switchport trunk allowed vlan 500,772
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet3/23 in
!
mac access-list extended
ISC-FastEthernet1/14
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
```

N-PE

```
vlan 100
interface GigabitEtherne2/0/0
no shut
 service instance 10 ethernet
  encapsulation dot1q 500
  rewrite ingress tag  push dot1q 23
second-dot1q 41 symmetric
  bridge-domain 100 split-horizon

Interface Vlan100
no shut
xconnect 192.169.105.20 101 encapsulation
mpls
```

Comments

- UNI on U-PE.
- Single match tag is performed.
- The rewrite operation **push** pushes two tags.

FlexUNI/EVC (Pseudowire Core Connectivity, UNI, and Pseudowire Tunneling)

Configuration

- Service: FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity, with UNI, with pseudowire tunneling.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GI4/0/0 <–> GI2/0/0.

Configlets

U-PE	N-PE

(None)	`pseudowire-class ISC-pw-tunnel-2147`
	`encapsulation mpls`
	`preferred-path interface Tunnel2147`
	`disable-fallback`
	
	`interface GigabitEtherne4/0/0`
	`service instance 1 ethernet`
	`encapsulation dot1q 11 second-dot1q 41`
	`rewrite ingress tag pop 2 symmetric`
	`xconnect pw-class ISC-pw-tunnel-2147`

Comments

- UNI on N-PE (the CE is directly connected).
- Match of both tags is performed.
- The rewrite operation pops both the inner and outer VLAN tags.

FlexUNI/EVC (VPLS Core Connectivity, UNI Port Security)

Configuration

- Service: FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with VPLS core connectivity, with UNI port security.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GI4/0/1.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2. Port security is enabled.

    Interface(s): FA1/14– FA3/23.

Configlets

U-PE

```
vlan 788
exit
!
interface FastEthernet3/23
no ip address
switchport trunk allowed vlan 783,787-788
!
interface FastEthernet1/14
no cdp enable
no keepalive
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 788
switchport port-security
switchport nonegotiate
switchport port-security maximum 58
switchport port-security aging time 85
switchport port-security violation shutdown
switchport port-security mac-address
1252.1254.2544
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet3/23 in
!
mac access-list extended
ISC-FastEthernet3/31
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
deny any host 1234.3234.3432
permit any any
```

N-PE

```
l2 vfi attest-226 manual
vpn id 226
neighbor 192.169.105.20 encapsulation mpls

vlan 200
bridge-domain 200 split-horizon

interface GigabitEtherne4/0/1
no shut
service instance 10 ethernet
encapsulation dot1q 500
rewrite ingress tag translate 1-to-1 dot1q
222 symmetric

Interface vlan 200
xconnect vfi attest-226
```

Comments

- UNI on U-PE.
- The rewrite operation translates the incoming VLAN tag 500 to 222.

FlexUNI/EVC (VPLS Core Connectivity, no UNI Port Security)

Configuration

- Service: FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with VPLS core connectivity, without UNI port security.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GI4/0/1.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FA1/14– FA3/23.

Configlets

U-PE	N-PE
vlan 772 exit ! interface FastEthernet3/23 switchport trunk allowed vlan 500,772 ! interface FastEthernet1/14 no cdp enable no keepalive no ip address switchport trunk allowed vlan 500,772 spanning-tree bpdufilter enable mac access-group ISC-FastEthernet3/23 in ! **mac access-list extended** **ISC-FastEthernet1/14** **deny any host 0100.0ccc.cccc** **deny any host 0100.0ccc.cccd** **deny any host 0100.0ccd.cdd0** **deny any host 0180.c200.0000** permit any any	**12 vfi attest1-458 manual** **vpn id 452** **neighbor 192.169.105.20 encapsulation mpls** **vlan 200** **bridge-domain 200 split-horizon** **interface GigabitEtherne4/0/1** **no shut** **service instance 10 ethernet** **encapsulation dot1q 500** **rewrite ingress tag translate 1-to-2 dot1q** **222 second-dot1q 41 symmetric** **Interface vlan 200** **xconnect vfi attest1-458**

Comments

- UNI on U-PE.
- The rewrite operation translates the incoming VLAN tag 500 to two tags, 222 and 41.

FlexUNI/EVC (Local Connect Core Connectivity, UNI Port Security)

Configuration

- Service: FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with local connect core connectivity, with UNI port security.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s):GI2/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2. Port security is enabled.

    Interface(s): FA1/14– FA3/23.

Configlets

U-PE

```
vlan 788
exit
!
interface FastEthernet3/23
no ip address
switchport trunk allowed vlan 783,787-788
!
interface FastEthernet1/14
no cdp enable
no keepalive
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan none
switchport trunk allowed vlan 788
switchport port-security
switchport nonegotiate
switchport port-security maximum 45
switchport port-security aging time 34
switchport port-security violation shutdown
switchport port-security mac-address
4111.4545.1211
spanning-tree bpdufilter enable
mac access-group ISC-FastEthernet3/23 in
!
mac access-list extended
ISC-FastEthernet3/31
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
deny any host 1234.3234.3432
permit any any
```

N-PE

```
Connect Customer_1 GigabitEthernet4/0/1 10
GigabitEthernet4/0/10 25

interface GigabitEtherne4/0/1
no shut
service instance 10 ethernet
encapsulation dot1q 500
rewrite ingress tag push dot1q 555
symmetric

interface GigabitEtherne4/0/10
no shut
service instance 25 ethernet
encapsulation dot1q 500 second-dot1q 501
rewrite ingress tag translate 2-to-1 dot1q
222 symmetric
```

Comments

- UNI on U-PE.
- Two tag matching operations are carried out.

- The rewrite operation translates two tags to a single tag.
- Two service instances are connected through the **connect** command.

FlexUNI/EVC (Local Connect Core Connectivity, UNI, no Port Security, Bridge Domain)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with local connect core connectivity, with UNI, without port security, and with bridge domain.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s):GI2/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s):FA1/14– FA3/23.

Configlets

U-PE	N-PE
vlan 772 exit ! interface FastEthernet3/23 switchport trunk allowed vlan 500,772 ! interface FastEthernet1/14 no cdp enable no keepalive no ip address switchport trunk allowed vlan 500,772 spanning-tree bpdufilter enable mac access-group ISC-FastEthernet3/23 in ! **mac access-list extended** **ISC-FastEthernet1/14** **deny any host 0100.0ccc.cccc** **deny any host 0100.0ccc.cccd** **deny any host 0100.0ccd.cdd0** **deny any host 0180.c200.0000** permit any any	**interface GigabitEtherne2/0/0** **no shut** **service instance 10 ethernet** **encapsulation dot1q 500 second-dot1q 501** **rewrite ingress tag translate 2-to-2 dot1q 222 second-dot1q 41 symmetric** **bridge-domain 200 split-horizon** **interface GigabitEtherne2/0/10** **no shut** **service instance 15 ethernet** **encapsulation dot1q 24** **rewrite ingress tag pop 1 symmetric** **bridge-domain 200 split-horizon**

Comments

- UNI on U-PE.
- The rewrite operation maps/translates the incoming two tags into two different tags.
- The service instances here are connected through bridge domain.

FlexUNI/EVC (Pseudowire Core Connectivity, Bridge Domain, Pseudowire on SVI)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity, with bridge domain, and with Pseudowire on SVI enabled on the N-PE.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/10.

Configlets

U-PE	N-PE
vlan 452 exit ! interface FastEthernet1/0/10 no ip address switchport trunk allowed vlan add 452 ! interface FastEthernet1/0/13 no spanning-tree bpdufilter enable switchport no keepalive no ip address switchport switchport trunk encapsulation dot1q switchport mode trunk switchport trunk allowed vlan 452 switchport nonegotiate	vlan 3524 exit ! ethernet evc Customer1_253 ! interface GigabitEthernet7/0/0 **service instance 3 ethernet Customer1_253** encapsulation dot1q 452 rewrite ingress tag pop 1 symmetric **bridge-domain 3524 split-horizon** ! **interface Vlan3524** no ip address description BD=T,SVI=T,Flex **xconnect 22.22.22.22 52500 encapsulation mpls** **backup peer 22.22.22.22 52501** no shutdown

Comments

- None.

FlexUNI/EVC (Pseudowire Core Connectivity, no Bridge Domain, no Pseudowire on SVI)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity, bridge domain disables, and with Pseudowire on SVI disabled on the N-PE.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/10.

Configlets

U-PE	N-PE
vlan 545 exit ! interface FastEthernet1/0/10 no ip address switchport trunk allowed vlan add 545 ! interface FastEthernet1/0/12 no spanning-tree bpdufilter enable switchport no keepalive no ip address switchport switchport trunk encapsulation dot1q switchport mode trunk switchport trunk allowed vlan 545 switchport nonegotiate mac access-group ISC-FastEthernet1/0/12 in	ethernet evc Customer1_248 ! interface GigabitEthernet7/0/0 **service instance 2 ethernet Customer1_248** encapsulation dot1q 545 rewrite ingress tag pop 1 symmetric **xconnect 22.22.22.22 52498 encapsulation mpls** **backup peer 22.22.22.22 52499**

Comments

- None.

FlexUNI/EVC (AutoPick Service Instance Name)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with AutoPick Service Instance Name enabled and the Service Instance Name input field left blank.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/2.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/14.

Configlets

U-PE	N-PE
!	!
vlan 452	vlan 3524
exit	exit
!	!
interface FastEthernet1/0/10	ethernet evc C1_1
no ip address	!
switchport trunk allowed vlan add 452	interface GigabitEthernet7/0/0
!	service instance 3 ethernet C1_1
interface FastEthernet1/0/13	encapsulation dot1q 452
no spanning-tree bpdufilter enable	rewrite ingress tag pop 1 symmetric
switchport	bridge-domain 3524 split-horizon
no keepalive	!
no ip address	interface Vlan3524
switchport	no ip address
switchport trunk encapsulation dot1q	description BD=T,SVI=T,Flex
switchport mode trunk	xconnect 22.22.22.22 52500 encapsulation
switchport trunk allowed vlan 452	mpls
switchport nonegotiate	backup peer 22.22.22.22 52501
mac access-group ISC-FastEthernet1/0/13 in	no shutdown

Comments

- The transport type is pseudowire.
- The autopick Service Instance Name will take the value *CustomerName_JobID*.

FlexUNI/EVC (No AutoPick Service Instance Name, No Service Instance Name)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with AutoPick Service Instance Name not enabled and the Service Instance Name input field left blank.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/2.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/14.

Configlets

U-PE

```
!
vlan 566
exit
!
interface FastEthernet1/0/14
no spanning-tree bpdufilter enable
switchport
no keepalive
no ip address
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 566
switchport nonegotiate
no shutdown
mac access-group ISC-FastEthernet1/0/14 in
!
interface FastEthernet1/0/18
no ip address
switchport trunk allowed vlan 566
!
mac access-list extended
ISC-FastEthernet1/0/14
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
```

N-PE

```
!
interface GigabitEthernet7/0/2
service instance 43 ethernet
encapsulation dot1q 566
xconnect 1.1.1.1 453366 encapsulation mpls
```

Comments

- In this example, the user does not enable AutoPick Service Instance Name and also leaves the Service Instance Name input field blank.
- The global command **ethernet evc** is not generated, while the command **service instance 43 ethernet** is generated.
- There is no Service Instance Name available and the Service Instance ID is 43.

FlexUNI/EVC (User-Provided Service Instance Name, Pseudowire Core Connectivity)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with pseudowire core connectivity and user-provided service instance name.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/10.

Configlets

U-PE	N-PE
!	!
vlan 452	vlan 3524
exit	exit
!	!
interface FastEthernet1/0/10	**ethernet evc ServiceInst**
no ip address	!
switchport trunk allowed vlan add 452	interface GigabitEthernet7/0/0
!	**service instance 3 ethernet ServiceInst**
interface FastEthernet1/0/13	encapsulation dot1q 452
no spanning-tree bpdufilter enable	rewrite ingress tag pop 1 symmetric
switchport	bridge-domain 3524 split-horizon
no keepalive	!
no ip address	interface Vlan3524
switchport	no ip address
switchport trunk encapsulation dot1q	description BD=T,SVI=T,Flex
switchport mode trunk	xconnect 22.22.22.22 52500 encapsulation
switchport trunk allowed vlan 452	mpls
switchport nonegotiate	backup peer 22.22.22.22 52501
mac access-group ISC-FastEthernet1/0/13 in	no shutdown

Comments

- The transport type is PSEUDOWIRE.
- The user manually provided **ServiceInst** as the Service Instance Name. This is pushed onto the device, where the Service Instance ID is 3.

FlexUNI/EVC (User-Provided Service Instance Name, Local Core Connectivity)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with local core connectivity and a user-provided service instance name.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet1/0/6, GigabitEthernet1/0/7.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/12, FastEthernet1/0/14.

Configlets

U-PE

```
vlan 45
exit
!
interface FastEthernet1/0/12
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 45
!
interface FastEthernet1/0/14
no spanning-tree bpdufilter enable
switchport
no keepalive
no ip address
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 45
switchport nonegotiate
no shutdown
mac access-group ISC-FastEthernet1/0/14 in
!
mac access-list extended
ISC-FastEthernet1/0/14
deny any host 0100.0ccc.cccc
deny any host 0100.0ccc.cccd
deny any host 0100.0ccd.cdd0
deny any host 0180.c200.0000
permit any any
```

N-PE

```
ethernet evc  service_int
!
interface GigabitEthernet1/0/6
no shutdown
service instance 5 ethernet service_int
encapsulation dot1q 56
!
interface GigabitEthernet1/0/7
no shutdown
service instance 33 ethernet service_int
 encapsulation dot1q 45
!
connect Customer2_195 GigabitEthernet1/0/7
33 GigabitEthernet1/0/6 5
```

Comments

- The transport type is LOCAL.
- The user manually provided **service_int** as the Service Instance Name. This is pushed onto the device, where the Service Instance IDs are 5 and 33, respectively.

FlexUNI/EVC (User-Provided Service Instance Name, VPLS Core Connectivity)

Configuration

- FlexUNI(EVC)/Metro Ethernet.
- Feature: FlexUNI/EVC with VPLS core connectivity and user-provided service instance name.
- Device configuration:
  - The N-PE is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/0.
  - The U-PE is a Cisco 3750ME with IOS 12.2(25) EY2.

    Interface(s): FastEthernet1/0/10.

Configlets

U-PE

```
!
vlan 452
exit
!
interface FastEthernet1/0/10
no ip address
switchport trunk allowed vlan add 452
!
interface FastEthernet1/0/13
no spanning-tree bpdufilter enable
switchport
no keepalive
no ip address
switchport
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 452
switchport nonegotiate
mac access-group ISC-FastEthernet1/0/13 in
```

N-PE

```
l2 vfi vpls-test manual
vpn id 300
neighbor 22.22.22.22 encapsulation mpls
!
vlan 500
!
ethernet evc ServiceInst
!
interface GigabitEtherne7/0/0
service instance 10 ethernet ServiceInst
encapsulation dot1q 400
rewrite ingress tag pop 1 symmetric
bridge-domain 500 split-horizon
!
interface vlan500
xconnect vfi vpls-test
```

Comments

- The transport type is VPLS.
- The user manually provided **ServiceInst** as the Service Instance Name. This is pushed onto the device, where the Service Instance ID is 10.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, Point-to-Point Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity with an end-to-end circuit with multiple links. One link terminates on an ATM interface on N-PE 1, and the other link terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.370.
  - N-PE 2 is a Cisco 7600 with IOS 12.2(33) SRE.

    Interface(s): GigabitEthernet4/0/2.

Configlets

N-PE 1 (ATM)

```
!
interface ATM1/0/0.370 point-to-point
 no atm enable-ilmi-trap
 pvc 0/370 l2transport
  encapsulation aal5snap
  xconnect 192.169.105.10 123 pw-class
inter-ether
 !
```

N-PE 2 (Ethernet)

```
!
ethernet evc 1-3_51
!
interface GigabitEthernet4/0/2
 no ip address
 no mls qos trust
 service instance 103 ethernet 1-3_51
  encapsulation dot1q 370
  rewrite ingress tag pop 1 symmetric
  xconnect 192.169.105.20 123 encapsulation
mpls
!
```

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, Multipoint Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity with a multipoint circuit. Link #1 terminates on an ATM interface on N-PE 1, link #2 terminates on an Ethernet interface on N-PE 1, and link #3 terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet7/0/4, ATM6/0/0.100.
  - The N-PE 2 is a Cisco 7600 with IOS 12.2(33) SRE.

    Interface(s): GigabitEthernet7/0/5.

Configlets

N-PE 1 (ATM + Ethernet)

```
!
vlan 500
exit
!
ethernet evc Customer1_166
!
interface GigabitEthernet7/0/4
no shutdown
service instance 1 ethernet Customer1_166
encapsulation dot1q 600
bridge-domain 500 split-horizon
!
interface ATM6/0/0.100 point-to-point
pvc 200/300
encapsulation aal5snap
bridge-domain 500 split-horizon
!
interface Vlan500
no ip address
description UT-9
xconnect 1.1.1.1 6 pw-class
ISC-pw-tunnel-400
no shutdown
```

N-PE 2 (Ethernet)

```
!
vlan 800
exit
!
ethernet evc Customer1_166
!
interface GigabitEthernet7/0/5
no shutdown
service instance 1 ethernet Customer1_166
encapsulation dot1q 623
bridge-domain 800 split-horizon
!
interface Vlan800
description UT-9
xconnect 192.169.105.20 6 pw-class
ISC-pw-tunnel-900
```

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Local Core Connectivity, Point-to-Point Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with local core connectivity with a point-to-point circuit. The circuit terminates on different ATM interfaces on the same local N-PE.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/1, ATM4/1/0, ATM1/0/1.99, ATM4/1/0.98.

Configlets

N-PE 1 (ATM)	N/A
! interface ATM1/0/1 no shutdown ! interface ATM4/1/0 no shutdown ! interface ATM1/0/1.99 point-to-point pvc 99/99 l2transport encapsulation aal0 ! interface ATM4/1/0.98 point-to-point pvc 98/98 l2transport encapsulation aal0 ! connect ATM-to-ATM ATM1/0/1 99/99 ATM4/1/0 98/98 !	

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Local Core Connectivity, Multipoint Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with local core connectivity for multiple links that terminate on the same local N-PE. Link #1 terminates on an ATM interface, and link #2 terminates on an Ethernet interface.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.99, TenGigabitEthernet6/0/0, TenGigabitEthernet6/0/1.

Configlets

N-PE 1 (ATM + Ethernet)	N/A

```
!
vlan 1001
exit
!
interface ATM1/0/0.99 point-to-point
 no atm enable-ilmi-trap
 pvc 99/99
  encapsulation aal5snap
 bridge-domain 1001
 !
!
interface TenGigabitEthernet6/0/0
 no ip address
 no mls qos trust
 service instance 104 ethernet 1-4_60
  encapsulation dot1q 11
  rewrite ingress tag pop 1 symmetric
  bridge-domain 1001
 !
!
interface TenGigabitEthernet6/0/1
 no ip address
 no mls qos trust
 service instance 105 ethernet 1-4_60
  encapsulation dot1q 12
  rewrite ingress tag pop 1 symmetric
  bridge-domain 1001
 !
```

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Local Core Connectivity, Multipoint Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with local core connectivity. Multiple links terminate on the same local N-PE. Link #1 terminates on an ATM interface, link #2 terminates on an ATM interface, and link #3 terminates on an ATM interface.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM6/0/0.100, ATM6/0/1.101, ATM6/0/2.102.

Configlets

N-PE 1 (ATM)	N/A

```
!
vlan 500
exit
!
interface ATM6/0/0.100 point-to-point
pvc 200/300
encapsulation aal5snap
bridge-domain 500
!
interface ATM6/0/1.101 point-to-point
pvc 201/301
encapsulation aal5snap
bridge-domain 500
!
interface ATM6/0/2.102 point-to-point
pvc 202/302
encapsulation aal5snap
bridge-domain 500
!
```

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Local Core Connectivity, Point-to-Point Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with local core connectivity. A point-to-point circuit terminates on different ATM interfaces on same local N-PE.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0, ATM1/0/1.

Configlets

N-PE 1 (ATM)	N/A
! interface ATM1/0/0 atm pvp 33 l2transport ! interface ATM1/0/1 atm pvp 222 l2transport ! connect Customer1_208 ATM1/0/0 33 ATM1/0/1 222	

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, End-to-End Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity for end-to-end circuit with multiple links. One link terminates on ATM interface on N-PE 1, and other link terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.370.
  - The N-PE 2 is a Cisco ASR 9000 with IOS XR 3.9.0.

    Interface(s): GigabitEthernet0/0/0/4.458.

Configlets

N-PE 1 (ATM)	N-PE 2 (Ethernet)

!
 interface ATM1/0/0.370 point-to-point
  no atm enable-ilmi-trap
  pvc 0/370 l2transport
  encapsulation aal5snap
  xconnect 192.169.105.10 123 pw-class inter-ether
  !
	interface GigabitEthernet0/0/0/4.458
	 l2transport
	  encapsulation dot1q 458
	 !
	 l2vpn
	  xconnect group VPNSC
	  p2p iscind-crs-1--48856
	  interface GigabitEthernet0/0/0/4.458
	  neighbor 192.168.118.167 pw-id 123
	  !
	  !
	 !

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, Multipoint Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity with an end-to-end circuit with multiple links. One link is terminating on an ATM interface on N-PE 1, and the other (non-flex) link terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM4/1/0.8790.
  - The N-PE 2 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): GigabitEthernet4/0/17.600.

Configlets

N-PE 1 (ATM)	N-PE 2 (Ethernet)

`interface ATM4/1/0.8790 point-to-point`
`pvc 150/3454 l2transport`
`encapsulation aal5snap`
`xconnect 192.169.105.10 760 pw-class ISC-pw-tunnel-1`
	`interface GigabitEthernet4/0/17.600`
	`encapsulation dot1Q 600`
	`xconnect 192.169.105.20 760 pw-class ISC-pw-tunnel-1`

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Local Core Connectivity, Point-to-Point Circuit)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with local core connectivity for point-to-point circuit. The circuit terminates on the same, local N-PE 1. One link terminates on an ATM interface, and the other (non-flex) link terminates on an Ethernet interface.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.444.
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): FastEthernet3/39.674.

Configlets

N-PE 1 (ATM + Ethernet)	N/A
! interface FastEthernet3/39.674 encapsulation dot1Q 674 ! interface ATM1/0/0.444 point-to-point pvc 44/4444 l2transport encapsulation aal5snap ! connect Customer1_204 ATM1/0/0 44/4444 FastEthernet3/39.674 interworking ethernet	

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, End-to-End Circuit, with Bridge Domain)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity for end-to-end circuit with multiple links with bridge domain enabled. One link terminates on an ATM interface on N-PE 1, and the other link terminates on a flex Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.370.
  - The N-PE 2 is a Cisco ASR 9000 with IOS XR 3.9.0.

    Interface(s): GigabitEthernet0/0/0/25.341.

Configlets

N-PE 1 (ATM)	N-PE 2 (Ethernet)
!	interface GigabitEthernet0/0/0/25.341
interface ATM1/0/0.370 point-to-point	l2transport
no atm enable-ilmi-trap	encapsulation dot1q 341
pvc 0/370 l2transport	rewrite ingress tag push dot1q 430
encapsulation aal5snap	second-dot1q 349 symmetric
xconnect 10.20.21.1 4531 pw-class	!
ISC-pw-tunnel-1	l2vpn
	bridge group tml
	bridge-domain CISCO
	interface GigabitEthernet0/0/0/25.341
	!
	neighbor 192.169.105.20 pw-id 32190
	!
	!
	!
	!

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, End-to-End Circuit, with Bridge Domain)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity for end-to-end circuit with multiple links. Bridge domain is enabled. One link terminates on an ATM interface on N-PE 1, and the other (non-flex) link terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.370.
  - The N-PE 2 is a Cisco ASR 9000 with IOS XR 3.9.0.

    Interface(s): GigabitEthernet0/0/0/20.712.

Configlets

N-PE 1 (ATM)

```
!
interface ATM1/0/0.370 point-to-point
 no atm enable-ilmi-trap
 pvc 0/370 l2transport
  encapsulation aal5snap
  xconnect 10.20.21.1 4531 pw-class
ISC-pw-tunnel-1
 !
```

N-PE 2 (Ethernet)

```
interface GigabitEthernet0/0/0/20.712
l2transport
 encapsulation dot1q 712
!
l2vpn
 bridge group tml
  bridge-domain CISCO
   interface GigabitEthernet0/0/0/20.712
   !
   neighbor 192.169.105.20 pw-id 1005
   !
  !
 !
!
```

Comments

- None.

FlexUNI/EVC (ATM-Ethernet Interworking, Pseudowire Core Connectivity, End-to-End Circuit, no Bridge Domain)

Configuration

- FlexUNI(EVC)/ATM-Ethernet Interworking.
- Feature: FlexUNI/EVC for ATM-Ethernet interworking with pseudowire core connectivity for end-to-end circuit with multiple links. Bridge domain is disabled. One link is terminates on an ATM interface on N-PE 1, and the other link terminates on an Ethernet interface on N-PE 2.
- Device configuration:
  - The N-PE 1 is a Cisco 7600 with IOS 12.2(33) SRB3.

    Interface(s): ATM1/0/0.370.
  - The N-PE 2 is a Cisco ASR 9000 with IOS XR 3.9.0.

    Interface(s): GigabitEthernet0/0/0/12.433.

Configlets

N-PE 1 (ATM)	N-PE 2 (Ethernet)
! interface ATM1/0/0.370 point-to-point no atm enable-ilmi-trap pvc 0/370 l2transport encapsulation aal5snap xconnect 10.20.21.1 4531 pw-class ISC-pw-tunnel-1 !	interface GigabitEthernet0/0/0/12.433 l2transport encapsulation dot1q 433 rewrite ingress tag push dot1q 43 second-dot1q 53 symmetric ! l2vpn xconnect group ISC p2p CISCO interface GigabitEthernet0/0/0/12.433 neighbor 192.169.105.20 pw-id 4531 ! ! ! !

Comments

- None.
-