

ZebOS-XP® Network Platform

Version 1.4
Extended Performance

Shortest Path Bridging Configuration Guide

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IP Infusion Inc. Proprietary

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Preface

This guide describes how to configure Shortest Path Bridging (SPB) in ZebOS-XP.

Audience

This guide is intended for network administrators and other engineering professionals who configure SPB.

Conventions

Table P-1 shows the conventions used in this guide.

Table P-1: Conventions

Convention	Description
Italics	Emphasized terms; titles of books
Note:	Special instructions, suggestions, or warnings
monospaced type	Code elements such as commands, functions, parameters, files, and directories

Contents

This guide contains these chapters:

- Chapter 1, Shortest Path Bridging MAC Configuration
- Chapter 2, SPB MST Configuration
- Chapter 3, SPBM Layer 2 VPN Configuration
- Chapter 4, Shortest Path Bridging VID Configuration
- Chapter 5, SPBV CFM Configuration

Related Documents

Use this guide with these command references for details about the commands used in the configurations.

- Shortest Path Bridging Command Reference
- Network Services Module Command Reference
- Carrier Ethernet Command Reference
- Carrier Ethernet Configuration Guide

Note: All ZebOS-XP technical manuals are available to licensed customers at http://www.ipinfusion.com/support/document_list.

Chapter Organization

The chapters in this guide are organized into these major sections:

- · An overview that explains a configuration in words
- Topology with a diagram that shows the devices and connections used in the configuration
- Configuration steps in a table for each device where the left-hand side shows the commands you enter and the right-hand side explains the actions that the commands perform
- Validation which shows commands and their output that verify the configuration

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CHAPTER 1 Shortest Path Bridging - MAC Configuration

This chapter shows how to configure backbone edge bridges (BEBs) and backbone core bridges (BCBs) for Shortest Path Bridging - MAC (SPBM).

The boundary between the core MAC-in-MAC SPBM domain and the edge customer 802.1Q domain is handled by BEBs. BEBs can contain an I-Component or B-Component or both an I-Component and B-Component:

- The I-Component maps Service VLAN identifiers (S-VIDs) to service instance identifiers (I-SIDs) and adds a PBB header without a B-Tag.
- The B-Component maps I-SIDs to backbone VIDs (B-VIDs) and adds a PBB header with a B-Tag.

In this document, "BEB" refers to a backbone edge bridge having both I and B components.

BCBs act as transit nodes, forwarding packets based on outer VLAN identifier (B-VID) and destination MAC address (B-DA).

Topology

The procedures in this chapter show how to set up the configuration shown in Figure 1-1.

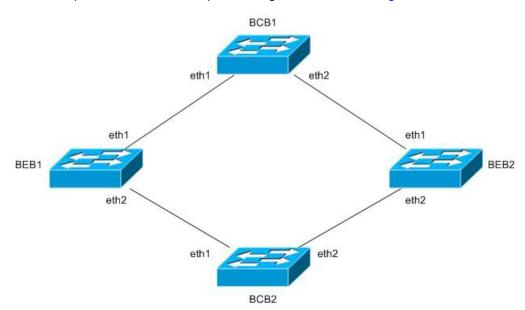


Figure 1-1: BEB and BCB Configuration

BEB Configuration

#configure terminal	Enter configure mode
(config) #bridge beb mac 1111.aaaa.1111 1 protocol provider-mstp	Configure bridge 1 as an I-component bridge
(config) #bridge beb mac aaaa.aaaa.aaaa backbone protocol spbm	Configure the backbone SPBM BEB bridge
(config) #vlan database	Enter VLAN database mode
<pre>(config-vlan) #vlan 10 type service point-point bridge 1 state enable</pre>	Configure VLAN 10 as a service VLAN associated with bridge 1
<pre>(config-vlan) #vlan 20 type service point-point bridge 1 state enable</pre>	Configure VLAN 20 as a service VLAN associated with bridge 1
<pre>(config-vlan) #vlan 30 type service point-point bridge 1 state enable</pre>	Configure VLAN 30 as a service VLAN associated with bridge 1
(config-vlan) #vlan 40 type service point-point bridge 1 state enable	Configure VLAN 40 as a service VLAN associated with bridge 1
(config-vlan) #vlan 100 type backbone point-point state enable	Configure VLAN 100 associated with the backbone bridge
(config-vlan) #vlan 200 type backbone point-point state enable	Configure VLAN 200 associated with the backbone bridge
(config-vlan) #vlan 300 type backbone point-point state enable	Configure VLAN 300 associated with the backbone bridge
(config-vlan) #vlan 400 type backbone point-point state enable	Configure VLAN 400 associated with the backbone bridge
(config-vlan) #exit	Exit VLAN database mode
(config) #pbb isid list	Enter PBB I-SID mode
(pbb-isid) #isid 10 name IPIQA1 i-component 1	Configure I-SID 10 with the name IPIQA1
(pbb-isid) #isid 20 name IPIQA2 i-component 1	Configure I-SID 20 with the name IPIQA2
(pbb-isid) #isid 30 name IPIQA3 i-component 1	Configure I-SID 30 with the name IPIQA3
(pbb-isid) #isid 40 name IPIQA4 i-component 1	Configure I-SID 40 with the name IPIQA4
(pbb-isid) #exit	Exit PBB I-SID mode
(config)#isis-spb configuration bridge backbone	Enter ISIS-SPB configure mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Configure the MTID
(isis-spb-config) #no isis-spb system id	Delete the ISIS-SPB system identifier
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Configure the system identifier for the SPB bridge
(isis-spb-config) #exit	Exit ISIS-SPB configure mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance spbm	Associate the port to the SPBM instance

Associate VLAN 100 to the SPBM instance		
Value Valu		Associate VLAN 100 to the SPBM instance
Config-mst) #bridge backbone instance spbm Associate VLAN 400 to the SPBM instance		Associate VLAN 200 to the SPBM instance
Configramst #exit Exit MST configure mode		Associate VLAN 300 to the SPBM instance
Enter SPB configure mode		Associate VLAN 400 to the SPBM instance
(spb-config) #bridge backbone spb vlan 100 ect 1	(config-mst) #exit	Exit MST configure mode
Sph-config) #bridge backbone spb vlan 100 ect Map BVLAN 100 to the default MTID and the the default	(config) #spb configuration	Enter SPB configure mode
ECT algorithm	(spb-config) #bridge backbone spsourceid 1111	- · · · · · · · · · · · · · · · · · · ·
(spb-config) #bridge backbone instance spbm vlan 300 ect 1 mtid 3996 (spb-config) #bridge backbone instance spbm vlan 400 ect 2 mtid 3996 (spb-config) #exit (spb-config) #exit (spb-config) #exit (config) #switchport (config) #switchport (config-if) #switchport beb provider-network vban all (config-if) #bridge-group backbone (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport beb provider-network (config-if) #switchport (config-if) #switch		
valan 300 ect 1 mtid 3996 (spb-config) #bridge backbone instance spbm vlan 400 ect 2 mtid 3996 (spb-config) #exit (config) #interface eth1 (config-if) #switchport (config-if) #switchport mode pnp (config-if) #switchport beb provider-network pbm (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #bridge-group backbone instance spbm (config-if) #switchport beb provider-network pbm (config-if) #switchport mode pnp (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb vlan 10 pip Associate the interface mode (config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa		Map BVLAN 200 to the default MTID and ECT algorithm 2
Sexist SPB configure mode		·
Enter interface mode		Map BVLAN 400 to MTID 3996 and ECT algorithm 2
(config-if) #switchport (config-if) #bridge-group backbone (config-if) #switchport mode pnp (config-if) #switchport mode pnp (config-if) #switchport beb provider-network bvlan all (config-if) #switchport mode pnp (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb provider-network bvlan all (config-if) #switchport beb vlan 10 pip (config-if) #switchport beb vlan 10 pip (config-if) #switchport beb pip backbone-source-mac aaaa.1lll.aaaa (config-if) #switchport beb pip backbone-source-mac aaaa.1lll.aaaa (config-if) #exit (config-if) #exit (config-if) #switchport beb pip backbone-source-mac aaaa.1lll.aaaa (config-if) #switchport beb pip backbone-source-mac aaaa.1lll.aaaa	(spb-config) #exit	Exit SPB configure mode
(config-if) #bridge-group backbone Configure the interface as part of the backbone bridge (config-if) #switchport mode pnp Configure the interface as a PNP (Provider Network Port) (config-if) #switchport beb provider-network bvlan all Associate the PNP with all BVLANs (config-if) #bridge-group backbone instance spbm Associate the interface to the SPBM instance (config-if) #exit Exit interface mode (config-if) #switchport Configure the interface as a layer 2 interface (config-if) #bridge-group backbone Configure the interface as a PNP (Provider Network Port) (config-if) #switchport mode pnp Configure the interface as a PNP (Provider Network Port) (config-if) #switchport beb provider-network bvlan all Associate the PNP with all BVLANs (config-if) #bridge-group backbone instance spbm Associate the interface to the SPBM instance (config-if) #switchport beb vlan 10 pip Associate the interface mode (config-if) #switchport beb vlan 10 pip Associate VLAN 10 to the PIP port (config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa Configure the PIP port with the assigned MAC identifier (config-if) #exit Exit PIP interface mode	(config) #interface eth1	Enter interface mode
(config-if) #switchport mode pnp Configure the interface as a PNP (Provider Network Port) (config-if) #switchport beb provider-network bvlan all Associate the PNP with all BVLANs (config-if) #bridge-group backbone instance spbm Associate the interface to the SPBM instance (config-if) #exit Exit interface mode (config) #interface eth2 Enter interface mode (config-if) #switchport Configure the interface as a layer 2 interface (config-if) #bridge-group backbone Configure the interface as a PNP (Provider Network Port) (config-if) #switchport mode pnp Configure the interface as a PNP (Provider Network Port) (config-if) #switchport beb provider-network bvlan all Associate the PNP with all BVLANs (config-if) #bridge-group backbone instance spbm Associate the interface to the SPBM instance (config-if) #exit Exit interface mode (config-if) #switchport beb vlan 10 pip Associate VLAN 10 to the PIP port (config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa Configure the PIP port with the assigned MAC identifier (config-if) #exit Exit PIP interface mode	(config-if) #switchport	Configure the interface as a layer 2 interface
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Spbm Config-if) #exit		Associate the PNP with all BVLANs
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(config-if) #switchport mode pnpConfigure the interface as a PNP (Provider Network Port)(config-if) #switchport beb provider-network bvlan allAssociate the PNP with all BVLANs(config-if) #bridge-group backbone instance spbmAssociate the interface to the SPBM instance(config-if) #exitExit interface mode(config) #interface pip.1Enter PIP interface mode(config-if) #switchport beb vlan 10 pipAssociate VLAN 10 to the PIP port(config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaaConfigure the PIP port with the assigned MAC identifier(config-if) #exitExit PIP interface mode	(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #switchport beb provider-network bvlan all (config-if) #bridge-group backbone instance spbm (config-if) #exit (config-if) #exit (config-if) #interface pip.1 (config-if) #switchport beb vlan 10 pip (config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa (config-if) #exit Exit interface mode Associate VLAN 10 to the PIP port Configure the PIP port with the assigned MAC identifier Exit PIP interface mode	(config-if) #bridge-group backbone	Configure the interface as part of the backbone bridge
Config-if) #bridge-group backbone instance Associate the interface to the SPBM instance Spbm	(config-if) #switchport mode pnp	Configure the interface as a PNP (Provider Network Port)
Config-if) #exit Exit interface mode		Associate the PNP with all BVLANs
(config) #interface pip.1Enter PIP interface mode(config-if) #switchport beb vlan 10 pipAssociate VLAN 10 to the PIP port(config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaaConfigure the PIP port with the assigned MAC identifier(config-if) #exitExit PIP interface mode		Associate the interface to the SPBM instance
(config-if) #switchport beb vlan 10 pip Associate VLAN 10 to the PIP port (config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa Configure the PIP port with the assigned MAC identifier (config-if) #exit Exit PIP interface mode	(config-if) #exit	Exit interface mode
(config-if) #switchport beb pip backbone- source-mac aaaa.1111.aaaa (config-if) #exit Configure the PIP port with the assigned MAC identifier Exit PIP interface mode	(config) #interface pip.1	Enter PIP interface mode
source-mac aaaa.1111.aaaa (config-if) #exit Exit PIP interface mode	(config-if) #switchport beb vlan 10 pip	Associate VLAN 10 to the PIP port
(3011-19 1-7 1011-10		Configure the PIP port with the assigned MAC identifier
(config) #interface cbp.1 Enter CBP interface mode	(config-if) #exit	Exit PIP interface mode
	(config) #interface cbp.1	Enter CBP interface mode

instance add 10 bylan 100 mode rxtx (config-if) #switchport beb customer-backbone instance add 20 bylan 200 mode rxtx Associate I-SID 20 to B	3VLAN 100 with the required mode 3VLAN 200 with the required mode 3VLAN 300 with the required mode
instance add 20 bylan 200 mode rxtx	
A	SVLAN 300 with the required mode
(config-if) #switchport beb customer-backbone Associate I-SID 30 to B instance add 30 bylan 300 mode rxtx	
(config-if) #switchport beb customer-backbone Associate I-SID 40 to Binstance add 40 bylan 400 mode rxtx	SVLAN 400 with the required mode
(config-if) #exit Exit CBP interface mod	le
(config) #interface eth3 Enter interface mode	
(config-if) #switchport Configure the interface	as a layer 2 interface
(config-if) #bridge-group 1 Associate the interface	to bridge 1
(config-if) #switchport mode cnp Configure the interface	as a CNP (Customer Network Port)
(config-if) #switchport beb vlan 10 cnp Associate the interface	with VLAN 10
(config-if) #switchport beb customer-network svlan add 10 instance 10 Map VLAN 10 to I-SID	10
(config-if) #exit Exit interface mode	
(config) #isis-spb configuration bridge Enter ISIS-SPB configuration backbone	ure mode
(isis-spb-config) #isis-spb lsp-refresh- Configure the LSP refreshinterval 100	esh interval
(isis-spb-config) #end Exit configure mode	

#configure terminal	Enter configure mode
(config) #bridge beb mac 3333.cccc.3333 1 protocol provider-mstp	Configure bridge 1 as an I-component bridge
(config) #bridge beb mac cccc.cccc backbone protocol spbm	Configure the backbone SPBM BEB bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 type service point-point bridge 1 state enable	Configure VLAN 10 as a service VLAN associated with bridge 1
(config-vlan) #vlan 20 type service point-point bridge 1 state enable	Configure VLAN 20 as a service VLAN associated with bridge 1
(config-vlan) #vlan 30 type service point-point bridge 1 state enable	Configure VLAN 30 as a service VLAN associated with bridge 1
(config-vlan) #vlan 40 type service point-point bridge 1 state enable	Configure VLAN 40 as a service VLAN associated with bridge 1
(config-vlan) #vlan 100 type backbone point-point state enable	Configure VLAN 100 associated with the backbone bridge
(config-vlan) #vlan 200 type backbone point-point state enable	Configure VLAN 200 associated with the backbone bridge
(config-vlan) #vlan 300 type backbone point-point state enable	Configure VLAN 300 associated with the backbone bridge
(config-vlan) #vlan 400 type backbone point-point state enable	Configure VLAN 400 associated with the backbone bridge

(config vlon) #ovit	Exit VLAN database mode
(config-vlan) #exit	Enter PBB I-SID mode
(config) #pbb isid list	Configure I-SID 10 with the name IPIQA1
(pbb-isid) #isid 10 name IPIQA1 i-component 1	Configure I-SID 20 with the name IPIQA2
(pbb-isid) #isid 20 name IPIQA2 i-component 1	
(pbb-isid) #isid 30 name IPIQA3 i-component 1	Configure I-SID 30 with the name IPIQA3
(pbb-isid) #isid 40 name IPIQA4 i-component 1	Configure I-SID 40 with the name IPIQA4
(pbb-isid) #exit	Exit PBB I-SID mode
<pre>(config)#isis-spb configuration bridge backbone</pre>	Enter ISIS-SPB configure mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Configure the MTID
(isis-spb-config) #no isis-spb system id	Delete the ISIS-SPB system identifier
(isis-spb-config) #isis-spb system-id 33.33.33.33.33	Configure the system identifier for the SPB bridge
(isis-spb-config) #exit	Exit ISIS-SPB configure mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance spbm	Associate the port to the SPBM instance
(config-mst) #bridge backbone instance spbm vlan 100	Associate VLAN 100 to the SPBM instance
(config-mst) #bridge backbone instance spbm vlan 200	Associate VLAN 200 to the SPBM instance
(config-mst) #bridge backbone instance spbm vlan 300	Associate VLAN 300 to the SPBM instance
(config-mst) #bridge backbone instance spbm vlan 400	Associate VLAN 400 to the SPBM instance
(config-mst) #exit	Exit MST configure mode
(config) #spb configuration	Enter SPB configure mode
(spb-config) #bridge backbone spsourceid 3333	Configure the shortest path source identifier for the SPB bridge
(spb-config) #bridge backbone spb vlan 100 ect 1	Map BVLAN 100 to the default MTID and the default ECT algorithm
(spb-config) #bridge backbone spb vlan 200 ect 2	Map BVLAN 200 to the default MTID and ECT algorithm 2
(spb-config) #bridge backbone instance spbm vlan 300 ect 1 mtid 3996	Map BVLAN 100 to MTID 3996 and the default ECT algorithm
(spb-config) #bridge backbone instance spbm vlan 400 ect 2 mtid 3996	Map BVLAN 400 to MTID 3996 and ECT algorithm 2
(spb-config) #exit	Exit SPB configure mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group backbone	Configure the interface as part of the backbone bridge
(config-if) #switchport mode pnp	Configure the interface as a PNP (Provider Network Port)
(config-if) #switchport beb provider-network bvlan all	Associate the PNP with all BVLANs
(config-if) #bridge-group backbone instance spbm	Associate the interface to the SPBM instance

(config-if) #exit	Exit interface mode
(config)#interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group backbone	Configure the interface as part of the backbone bridge
(config-if) #switchport mode pnp	Configure the interface as a PNP (Provider Network Port)
<pre>(config-if) #switchport beb provider-network bvlan all</pre>	Associate the PNP with all BVLANs
(config-if) #bridge-group backbone instance spbm	Associate the interface to the SPBM instance
(config-if) #exit	Exit interface mode
(config) #interface pip.1	Enter PIP interface mode
(config-if) #switchport beb vlan 10 pip	Associate VLAN 10 to the pip port
(config-if) #switchport beb pip backbone-source-mac cccc.1111.cccc	Configure the pip port with the assigned MAC identifier
(config-if) #exit	Exit PIP interface mode
(config) #interface cbp.1	Enter CBP interface mode
(config-if) #switchport beb customer-backbone instance add 10 bylan 100 mode rxtx	Associate I-SID 10 to BVLAN 100 with the required mode
(config-if) #switchport beb customer-backbone instance add 20 bylan 200 mode rxtx	Associate I-SID 20 to BVLAN 200 with the required mode
(config-if) #switchport beb customer-backbone instance add 30 bvlan 300 mode rxtx	Associate I-SID 30 to BVLAN 300 with the required mode
(config-if) #switchport beb customer-backbone instance add 40 bylan 400 mode rxtx	Associate I-SID 40 to BVLAN 400 with the required mode
(config-if) #exit	Exit CBP interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group 1	Associate the interface to bridge 1
(config-if) #switchport mode cnp	Configure the interface as a CNP (Customer Network Port)
(config-if) #switchport beb vlan 10 cnp	Associate the interface with VLAN 10
(config-if) #switchport beb customer-network svlan add 10 instance 10	Map VLAN 10 to I-SID 10
(config-if) #exit	Exit interface mode
(config) #isis-spb configuration bridge backbone	Enter ISIS-SPB configure mode
(isis-spb-config) #isis-spb lsp-refresh-interval 100	Configure the LSP refresh interval if required.
(isis-spb-config) #end	Exit configure mode

BCB Configuration

BCB1

(config) #bridge 1 protocol spbm Co	onfigure the SPBM core bridge 1
(config) #vlan database Ent	nter VLAN database mode
	onfigure VLAN 100 as a service VLAN associated with ridge 1
1 2 1	onfigure VLAN 200 as a service VLAN associated with ridge 1
	onfigure VLAN 300 as a service VLAN associated with ridge 1
1 21 1	onfigure VLAN 400 as a service VLAN associated with ridge 1
(config-vlan) #exit Exi	xit VLAN database mode
(config) #isis-spb configuration bridge 1	nter ISIS-SPB configure mode
(config) #isis-spb multi-topology-id 3996 Co	onfigure the MTID
(config) #no isis-spb system-id Re	emove the ISIS-SPB system identifier
(isis-spb-config) #isis-spb system-id Co 22.22.22.22.22	onfigure the system identifier for the SPB core bridge
(isis-spb-config) #exit Exi	xit ISIS-SPB configure mode
(config) #spanning-tree mst configuration En	nter MST configure mode
(config-mst) #bridge 1 instance spbm Cre	reate a SPBM instance for bridge1
(config-mst) #bridge 1 instance spbm vlan 100 Ass	ssociate VLAN 100 to the SPBM instance
(config-mst) #bridge 1 instance spbm vlan 200 Ass	ssociate VLAN 200 to the SPBM instance
(config-mst) #bridge 1 instance spbm vlan 300 Ass	ssociate VLAN 300 to the SPBM instance
(config-mst) #bridge 1 instance spbm vlan 400 Ass	ssociate VLAN 400 to the SPBM instance
(config-mst) #exit Exi	xit MST configure mode
(config) #spb configuration En	nter SPB configure mode
	onfigure the shortest path source identifier for the SPB ore bridge
	ap BVLAN 100 to the default MTID and the default ECT gorithm
(spb-config) #bridge 1 instance spbm vlan 200 Ma ect 2	ap BVLAN 200 to the default MTID and ECT algorithm 2
· 1	ap BVLAN 100 to MTID 3996 and the default ECT gorithm
(spb-config) #bridge 1 instance spbm vlan 400 Ma ect 2 mtid 3996	ap BVLAN 400 to MTID 3996 and ECT algorithm 2
(spb-config) #exit Exi	xit configure mode
(config) #interface eth1	nter interface mode
(config-if) #switchport Co	onfigure the interface as a layer 2 interface

(config-if) #bridge-group 1	Configure the interface as part of bridge 1
(config-if) #switchport mode provider-network	Configure the interface as a provider network
(config-if) #switchport provider-network allowed vlan all	Associate the interface with all VLANs
(config-if) #bridge-group 1 instance spbm	Associate the interface to the SPBM instance
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group 1	Configure the interface as part of bridge 1
(config-if) #switchport mode provider-network	Configure the interface as a provider network
(config-if) #switchport provider-network allowed vlan all	Associate the interface with all VLANs
(config-if) #bridge-group 1 instance spbm	Associate the interface to the SPBM instance
(config-if) #exit	Exit interface mode
(config) #isis-spb configuration bridge backbone	Enter ISIS-SPB configure mode
(isis-spb-config) #isis-spb lsp-refresh-interval 100	Configure the LSP refresh interval if required.
(isis-spb-config) #end	Exit configure mode

BCB2

#configure terminal	Enter configure mode
(config) #bridge 1 protocol spbm	Configure the SPBM core bridge with the bridge identifier
(config) #vlan database	Enter the VLAN database
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 100 as a service VLAN associated with bridge 1
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 200 as a service VLAN associated with bridge 1
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 300 as a service VLAN associated with bridge 1
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 400 as a service VLAN associated with bridge 1
(config-vlan) #exit	Exit the VLAN database
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB configure mode
(config) #isis-spb multi-topology-id 3996	Configure the MTID
(config) #no isis-spb system-id	Remove the ISIS-SPB system identifier
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Configure the system identifier for the SPB core bridge
(isis-spb-config) #exit	Exit ISIS-SPB configure mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge 1 instance spbm	Create a SPBM instance for bridge1
(config-mst) #bridge 1 instance spbm vlan 100	Associate VLAN 100 to the SPBM instance
(config-mst) #bridge 1 instance spbm vlan 200	Associate VLAN 200 to the SPBM instance

(config-mst) #bridge 1 instance spbm vlan 300	Associate VLAN 300 to the SPBM instance
(config-mst) #bridge 1 instance spbm vlan 400	Associate VLAN 400 to the SPBM instance
(config-mst) #exit	Exit MST configure mode
(config) #spb configuration	Enter SPB configure mode
(spb-config) #bridge 1 spsourceid 4444	Configure the shortest path source identifier for the SPB core bridge
<pre>(spb-config) #bridge 1 instance spbm vlan 100 ect 1</pre>	Map BVLAN 100 to the default MTID and the default ECT algorithm
<pre>(spb-config) #bridge 1 instance spbm vlan 200 ect 2</pre>	Map BVLAN 200 to the default MTID and ECT algorithm 2
(spb-config) #bridge 1 instance spbm vlan 300 ect 1 mtid 3996	Map BVLAN 100 to MTID 3996 and the default ECT algorithm
(spb-config) #bridge 1 instance spbm vlan 400 ect 2 mtid 3996	Map BVLAN 400 to MTID 3996 and ECT algorithm 2
(spb-config) #exit	Exit configure mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group 1	Configure the interface as part of bridge 1
<pre>(config-if) #switchport mode provider-network</pre>	Configure the interface as a provider network
<pre>(config-if)#switchport provider-network allowed vlan all</pre>	Associate the interface to all VLANs
<pre>(config-if) #bridge-group 1 instance spbm</pre>	Associate the interface to the SPBM instance
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as a layer 2 interface
(config-if) #bridge-group 1	Configure the interface as part of bridge 1
<pre>(config-if) #switchport mode provider-network</pre>	Configure the interface as a provider network
<pre>(config-if)#switchport provider-network allowed vlan all</pre>	Associate the interface to all VLANs
(config-if) #bridge-group 1 instance spbm	Associate the interface to the SPBM instance
(config-if) #exit	Exit interface mode
(config)#isis-spb configuration bridge backbone	Enter ISIS-SPB configure mode
(isis-spb-config)#isis-spb lsp-refresh-interval 100	Configure the LSP refresh interval
(isis-spb-config) #end	Exit configure mode

Validation

show spb adjacency interface

BEB1

#show spb adjacency interface eth1

Path cost - 200000 Admin state - UP Port ID - 32771 Port priority - 128 NEIGHBOUR DETAILS - 22.22.22.22.22 Sys id State - Up Agreement digest - 0000000c3bb3e50b841e54a2bba02b30d472f94f MCID Conf Digest - 53230e45d4dcaa828270a4162846b9c8 AUX MCID Conf Digest - 53230e45d4dcaa828270a4162846b9c8 BEB2 #show spb adjacency interface eth1 Path cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128 NEIGHBOUR DETAILS - 22.22.22.22.22 Sys id State - Up Agreement digest - 0000000c3bb3e50b841e54a2bba02b30d472f94f MCID Conf Digest - 53230e45d4dcaa828270a4162846b9c8 AUX MCID Conf Digest - 53230e45d4dcaa828270a4162846b9c8 BCB₁ #show spb adjacency interface eth1 Path cost - 200000 Admin state - UP Port ID - 32771 Port priority - 128 NEIGHBOUR DETAILS - 11.11.11.11.11 Sys id

- Up

State

Agreement digest - 0000000c6ff4a22f8b4749bf16f9b45edb90bd3f

MCID

Conf Digest - 53230e45d4dcaa828270a4162846b9c8

AUX MCID

Conf Digest - 53230e45d4dcaa828270a4162846b9c8

BCB2

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 11.11.11.11.11

State - Up

Agreement digest - 0000000c6ff4a22f8b4749bf16f9b45edb90bd3f

MCID

Conf Digest - 53230e45d4dcaa828270a4162846b9c8

AUX MCID

Conf Digest - 53230e45d4dcaa828270a4162846b9c8

show isis-spb neighbors

BEB1

#show isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime	Туре	Protocol
MTID: 0 2222.2222.222	eth1	5254.000c.3b03	Up	25	L1	IS-IS
MTID: 3996 2222.2222.222	eth1	5254.000c.3b03	Up	25	L1	IS-IS
MTID: 0 4444.4444.4444	eth2	5254.0043.021e	Up	24	L1	IS-IS
MTID: 3996 4444.4444.4444	eth2	5254.0043.021e	Up	24	L1	IS-IS

Total Number of Neighbor(s): 4

BEB2

#show isis-spb neighbors

System Id Interface SNPA State Holdtime Type Protocol

MTID: 0 2222.2222.222	eth1	5254.004b.e806	Up	22	L1	IS-IS
MTID: 3996 2222.2222.2222	eth1	5254.004b.e806	Up	22	L1	IS-IS
MTID : 0 4444.4444.4444	eth2	5254.00c5.66cd	Up	20	L1	IS-IS
MTID: 3996 4444.4444.4444	eth2	5254.00c5.66cd	Up	20	L1	IS-IS
Total Number of		4				

Total Number of Neighbor(s): 4

BCB1

#sh isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime		Protocol
MTID: 0 1111.1111.1111	eth1	5254.0000.8a36	Ир	24	L1	IS-IS
MTID: 3996 1111.1111.1111	eth1	5254.0000.8a36	Up	24	L1	IS-IS
MTID: 0 3333.3333.3333	eth2	5254.00fb.2afa	Up	21	L1	IS-IS
MTID: 3996 3333.3333.3333	eth2	5254.00fb.2afa	Up	21	L1	IS-IS

Total Number of Neighbor(s): 4

BCB2

BCB2#show isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime	Type	Protocol
MTID: 0 1111.1111.1111	eth1	5254.00be.ed60	Up	23	L1	IS-IS
MTID: 3996 1111.1111.1111	eth1	5254.00be.ed60	Up	23	L1	IS-IS
MTID: 0 3333.3333.3333	eth2	5254.008e.afb8	Up	20	L1	IS-IS
MTID: 3996 3333.3333.3333	eth2	5254.008e.afb8	Uр	20	L1	IS-IS

Total Number of Neighbor(s): 4

show isis-spb lsp

#show isis-spb lsp

Total numer of LSP(s): 4

ISIS Link State Database

BEB1

#show isis-spb lsp ISIS Link State Databa	se			
LSP ID Flag	LSP Seq Num	LSP Checksum	LSP Hold Time	OL
Bridge Instance: backbo	one			
1111.1111.1111.00-00*	0x000003A	0x526D	1116	0
2222.2222.200-00	0x00000044	0x73BB	1103	0
3333.3333.00-00	0x00000045	0xAD57	1103	0
4444.4444.00-00	0x00000043	0x20D5	1103	0
Total numer of LSP(s):	4			

BEB2

ISIS Link State Database					
LSP ID Flag	LSP Seq Num	LSP Checksum	LSP Hold Time	OL	
Bridge Instance: backb	one				
1111.1111.1111.00-00	0x000003C	0x4E6F	1192	0	
2222.2222.222.00-00	0x00000046	0x6FBD	1178	0	
3333.3333.333.00-00*	0x00000047	0xA959	1178	0	
4444.4444.00-00	0x00000045	0x1CD7	1178	0	

BCB1

#show isis-spb lsp

LSP ID Flag	LSP Seq Num	LSP Checksum	LSP Hold Time	OL
Bridge Instance: 1				
1111.1111.1111.00-00	0x000003C	0x4E6F	1140	0
2222.2222.222.00-00*	0x00000046	0x6FBD	1127	0
3333.3333.333.00-00	0x00000047	0xA959	1127	0
4444.4444.444.00-00	0x00000045	0x1CD7	1127	0
Total numer of LSP(s):	4			

BCB2

#show isis-spb lsp ISIS Link State Database					
LSP ID Flag	LSP Seq Num	LSP Checksum	LSP Hold Time	OL	
Bridge Instance: 1					
1111.1111.1111.00-00	0x000003C	0x4E6F	1115	0	
2222.2222.200-00	0x00000046	0x6FBD	1102	0	
3333.3333.00-00	0x0000047	0xA959	1102	0	

4444.4444.4444.00-00*	0x00000045	0x1CD7	1102	0
Total numer of LSP(s):	4			

show isis-spb topology

BEB1

#show isis-spb topology IS-IS paths to level-1 bridges						
System Id MT ID: 0, ECT ID: 1	Metric	Next-Hop	Interface SNPA			
1111.1111.1111						
2222.2222.222 5254.000c.3b03	200000	2222.2222.2222	eth1			
3333.3333.333 5254.000c.3b03	400000	2222.2222.2222	eth1			
4444.4444.4444 5254.0043.021e	200000	4444.4444.4444	eth2			
MT ID: 0, ECT ID: 2						
1111.1111.1111 2222.2222.222	200000	2222.2222.222	eth1			
5254.000c.3b03						
3333.3333.333 5254.0043.021e	400000	4444.4444.4444	eth2			
4444.4444.4444 5254.0043.021e	200000	4444.4444.4444	eth2			
	_					
MT ID: 3996, ECT ID: 1111.1111.1111	1					
2222.2222.222 5254.000c.3b03	200000	2222.2222.2222	eth1			
3333.3333.333 5254.000c.3b03	400000	2222.2222.2222	eth1			
4444.4444.4444 5254.0043.021e	200000	4444.4444.4444	eth2			
MT ID: 3996, ECT ID:	2					
1111.1111.1111 2222.2222.222	200000	2222.2222.222	eth1			
5254.000c.3b03			ecm			
3333.3333.3333 5254.0043.021e	400000	4444.4444.4444	eth2			
4444.4444.4444 5254.0043.021e	200000	4444.4444.4444	eth2			
20						

_				
#show isis-spb topol				
IS-IS paths to level	-i briages			
System Id	Metric	Next-Hop	Interface	SNPA
MT ID: 0, ECT ID: 1				
1111.1111.1111	400000	2222.2222.222	eth1	
5254.004b.e806				
2222.2222.222	200000	2222.2222.222	eth1	
5254.004b.e806				
3333.3333.333				
4444.4444.4444	200000	4444.4444.4444	eth2	
5254.00c5.66cd				
MT ID: 0, ECT ID: 2				
1111.1111.1111	400000	4444.4444.4444	eth2	
5254.00c5.66cd				

	2222.2222.222 5254.004b.e806	200000	2222.2222.2222	eth1
	3333.3333.3333 4444.4444.4444 5254.00c5.66cd	200000	4444.4444.4444	eth2
	MT ID: 3996, ECT ID: 1111.1111.1111 5254.004b.e806	1 400000	2222.2222.2222	eth1
	2222.2222.222 5254.004b.e806	200000	2222.2222.2222	eth1
	3333.3333.3333 4444.4444.4444 5254.00c5.66cd	200000	4444.4444.4444	eth2
	MT ID: 3996, ECT ID: 1111.1111.1111 5254.00c5.66cd	400000	4444.4444.4444	eth2
	2222.2222.222 5254.004b.e806 3333.3333.333	200000	2222.2222.2222	eth1
	4444.4444.4444 5254.00c5.66cd	200000	4444.4444.4444	eth2
BCB	31			
	#show isis-spb topolo IS-IS paths to level-	J -		
	System Id MT ID: 0, ECT ID: 1	Metric	Next-Hop	Interface SNPA
	1111.1111.1111 5254.0000.8a36 2222.2222.222	200000	1111.1111.1111	eth1
	3333.3333.333 5254.00fb.2afa	200000	3333.3333.3333	eth2
	4444.4444.4444 5254.0000.8a36	400000	1111.1111.1111	eth1
	MT ID: 0, ECT ID: 2 1111.1111.1111 5254.0000.8a36 2222.2222.2222	200000	1111.1111.1111	eth1
	3333.3333.3333 5254.00fb.2afa	200000	3333.3333.3333	eth2
	4444.4444.4444 5254.00fb.2afa	400000	3333.3333.3333	eth2
	MT ID: 3996, ECT ID: 1111.1111.1111 5254.0000.8a36	200000	1111.1111.1111	eth1
	2222.2222.2222 3333.3333.3333	200000	3333.3333.3333	eth2
	5254.00fb.2afa 4444.4444.4444 5254.0000.8a36	400000	1111.1111.1111	eth1
	MT ID: 3996, ECT ID: 1111.1111.1111 5254.0000.8a36	2 200000	1111.1111.1111	eth1
	2222.2222.222		2222 2222 2222	0+h2
	3333.3333.333 5254.00fb.2afa	200000	3333.3333.3333	eth2
	4444.4444.4444 5254.00fb.2afa	400000	3333.3333.3333	eth2

BCB2

#show isis-spb topol IS-IS paths to level				
System Id MT ID: 0, ECT ID: 1	Metric	Next-Hop	Interface SNPA	ł
1111.1111.1111 5254.00be.ed60	200000	1111.1111.1111	eth1	
2222.2222.222 5254.00be.ed60	400000	1111.1111.1111	eth1	
3333.3333.333 5254.008e.afb8	200000	3333.3333.3333	eth2	
4444.4444444				
MT ID: 0, ECT ID: 2 1111.1111.1111 5254.00be.ed60	200000	1111.1111.1111	eth1	
2222.2222.222 5254.008e.afb8	400000	3333.3333.3333	eth2	
3333.3333.333 5254.008e.afb8	200000	3333.3333.3333	eth2	
4444.4444.4444				
MT ID: 3996, ECT ID:				
1111.1111.1111 5254.00be.ed60	200000	1111.1111.1111	eth1	
2222.2222.222 5254.00be.ed60	400000	1111.1111.1111	eth1	
3333.3333.333 5254.008e.afb8	200000	3333.3333.3333	eth2	
4444.4444444				
MT ID: 3996, ECT ID: 1111.1111.1111 5254.00be.ed60	200000	1111.1111.1111	eth1	
2222.2222.222 5254.008e.afb8	400000	3333.3333.3333	eth2	
3333.3333.333 5254.008e.afb8	200000	3333.3333.3333	eth2	
4444.4444.4444				

show isis-spb fdb

BEB1

#show isis-spb fdb SPB Forwarding Database: [U - Unicast, M - Multicast] I/P INTERFACE DESTINATION-ADDRESS B-VID O/P INTERFACE MTID: 0, ECT ALGO: 1 U if/eth1 cc.cc.11.11.cc.cc 100 if/eth1 MTID : 0, ECT ALGO : 2 if/eth2 U if/eth2 cc.cc.11.11.cc.cc 200 MTID : 3996, ECT ALGO : 1 U if/eth1 cc.cc.11.11.cc.cc 300 if/eth1 MTID : 3996, ECT ALGO : 2 U if/eth2 cc.cc.11.11.cc.cc if/eth2 400 MTID : 0, ECT ALGO : 1 M if/00 03.20.ea.00.00.50 100 if/eth1

```
MTID : 0, ECT ALGO : 2
M if/00 03.20.ea.00.00.28 200 if/eth2
MTID : 3996, ECT ALGO : 1
M if/00 03.20.ea.00.00.78 300 if/eth1
MTID : 3996, ECT ALGO : 2
M if/00 03.20.ea.00.00.14 400 if/eth2
Number of Unicast Records: 4
Number of Multicast Records: 4
```

BEB2

#sh isis-spb fdb

SPB Forwarding Database: [U - Unicast, M - Multicast] I/P INTERFACE DESTINATION-ADDRESS B-VID O/P INTERFACE MTID : 0, ECT ALGO : 1 U if/eth1 aa.aa.11.11.aa.aa 100 if/eth1 MTID : 0, ECT ALGO : 2 U if/eth2 aa.aa.11.11.aa.aa 200 if/eth2 MTID : 3996, ECT ALGO : 1 U if/eth1 aa.aa.11.11.aa.aa 300 if/eth1 MTID: 3996, ECT ALGO: 2 U if/eth2 aa.aa.11.11.aa.aa 400 if/eth2 MTID : 0, ECT ALGO : 1 M if/00 03.b0.a0.00.00.50 100 if/eth1 MTID : 0, ECT ALGO : 2 M if/00 03.b0.a0.00.00.28 200 if/eth2 MTID : 3996, ECT ALGO : 1 M if/00 03.b0.a0.00.00.78 300 if/eth1 MTID : 3996, ECT ALGO : 2 03.b0.a0.00.00.14 400 if/eth2 Number of Unicast Records: 4 Number of Multicast Records: 4

BCB1

#show isis-spb fdb

SPB Forwarding Database: [U - Unicast, M - Multicast] I/P INTERFACE DESTINATION-ADDRESS B-VID O/P INTERFACE MTID : 0, ECT ALGO : 1 U if/eth1 aa.aa.11.11.aa.aa 100 if/eth1 U if/eth2 cc.cc.11.11.cc.cc 100 if/eth2 MTID : 0, ECT ALGO : 2 U if/eth1 aa.aa.11.11.aa.aa 200 if/eth1 cc.cc.11.11.cc.cc 200 U if/eth2 if/eth2 MTID : 3996, ECT ALGO : 1 U if/eth1 U if/eth2 aa.aa.11.11.aa.aa 300 if/eth1 cc.cc.11.11.cc.cc 300 if/eth2 MTID : 3996, ECT ALGO : 2 aa.aa.11.11.aa.aa 400 aa.aa.11.11.aa.aa 400 if/eth1 cc.cc.11.11.cc.cc 400 if/eth2 U if/eth1 U if/eth2 MTID : 0, ECT ALGO : 1 M if/eth1 03.20.ea.00.00.50 100 if/eth2

```
M if/eth2 03.b0.a0.00.00.50 100 if/eth1
MTID: 3996, ECT ALGO: 1
M if/eth1 03.20.ea.00.00.78 300 if/eth2
M if/eth2 03.b0.a0.00.078 300 if/eth1
Number of Unicast Records: 8
Number of Multicast Records: 4
```

BCB₂

```
BCB2#show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS B-VID O/P INTERFACE
 -----
MTID: 0, ECT ALGO: 1
U if/eth1 aa.aa.11.11.aa.aa 100
U if/eth2 cc.cc.11.11.cc.cc 100
                                           if/eth1
                                           if/eth2
MTID: 0, ECT ALGO: 2
U if/eth1 aa.aa.11.11.aa.aa 200 if/eth1 U if/eth2 cc.cc.11.11.cc.cc 200 if/eth2
MTID : 3996, ECT ALGO : 1
U if/eth1 aa.aa.11.11.aa.aa 300 if/eth1 U if/eth2 cc.cc.11.11.cc.cc 300 if/eth2
MTID : 3996, ECT ALGO : 2
U if/eth1 aa.aa.11.11.aa.aa 400 if/eth1
U if/eth2
              cc.cc.11.11.cc.cc
                                   400
                                          if/eth2
MTID : 0, ECT ALGO : 2
M if/eth1 03.20.ea.00.00.28
                                   200
                                          if/eth2
               03.b0.a0.00.00.28 200
M if/eth2
                                          if/eth1
MTID: 3996, ECT ALGO: 2
M if/eth1
              03.20.ea.00.00.14
                                   400 if/eth2
M if/eth2
              03.b0.a0.00.00.14 400
                                          if/eth1
Number of Unicast Records: 8
Number of Multicast Records: 4
```

show isis-spb configuration

```
#show isis-spb configuration
Bridge Name: backbone
lsp ignore errors:no
lsp general interval(sec): 30
lsp refresh interval(sec): 100
maximum lsp lifetime(sec): 1200
spf interval exp(Minimum Delay in Milli Seconds): 500
spf interval exp(Maximim Delay in Milli Seconds): 50000
overload bit set:no
System Id: 1111.1111.1111
interface: eth1
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
retransmit-interval(sec): 5
interface: eth2
hello-multiplier: 3
```

```
hello-interval(sec): 10
     lsp-interval(millisec): 33
     retransmit-interval(sec): 5
BEB2
    #show isis-spb configuration
    Bridge Name: backbone
    lsp ignore errors:no
    lsp general interval(sec): 30
    lsp refresh interval(sec): 100
    maximum lsp lifetime(sec): 1200
    spf interval exp(Minimum Delay in Milli Seconds): 500
    spf interval exp(Maximim Delay in Milli Seconds): 50000
    overload bit set:no
    System Id: 3333.3333.333
    interface: eth1
     hello-multiplier: 3
     hello-interval(sec): 10
     lsp-interval(millisec): 33
     retransmit-interval(sec): 5
    interface: eth2
     hello-multiplier: 3
     hello-interval(sec): 10
     lsp-interval(millisec): 33
     retransmit-interval(sec): 5
BCB<sub>1</sub>
    #show isis-spb configuration
    Bridge Name: 1
    lsp ignore errors:no
    lsp general interval(sec): 30
    lsp refresh interval(sec): 100
    maximum lsp lifetime(sec): 1200
    spf interval exp(Minimum Delay in Milli Seconds): 500
    spf interval exp(Maximim Delay in Milli Seconds): 50000
    overload bit set:no
    System Id: 2222.2222.222
    interface: eth1
     hello-multiplier: 3
     hello-interval(sec): 10
     lsp-interval(millisec): 33
     retransmit-interval(sec): 5
    interface: eth2
     hello-multiplier: 3
     hello-interval(sec): 10
     lsp-interval(millisec): 33
BCB<sub>2</sub>
    #show isis-spb configuration
    Bridge Name: 1
    lsp ignore errors:no
    lsp general interval(sec): 30
    lsp refresh interval(sec): 100
    maximum lsp lifetime(sec): 1200
    spf interval exp(Minimum Delay in Milli Seconds): 500
    spf interval exp(Maximim Delay in Milli Seconds): 50000
```

overload bit set:no
System Id: 4444.444.4444
interface: eth1
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
retransmit-interval(sec): 5
interface: eth2
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
retransmit-interval(sec): 5

CHAPTER 2 SPB MST Configuration

This chapter shows how to configure MSTP (Multiple Spanning Tree Protocol) to work with SPB.

MSTP and SPB connect all bridges with a single Common and Internal Spanning Tree (CIST) that supports the automatic determination of each region, choosing its maximum possible extent. The connectivity calculated for the CIST provides the CST (Common Spanning Tree) for interconnecting the regions, and an Internal Spanning Tree (IST) within each region. MSTP calculates a number of independent Multiple Spanning Tree Instances (MSTIs) within each region, and ensures that frames with a given VLAN identifier (VID) are assigned to one and only one of the MSTIs or the IST within the region. SPB calculates symmetric sets of Shortest Path Trees (SPTs), each rooted at a bridge within a region, and ensures that frames for any given VLAN are assigned to the same symmetric SPT set within the region.

Note: You must perform the procedures in this chapter *in addition to* those in Chapter 1, Shortest Path Bridging - MAC Configuration.

Topology

Refer to Figure 1-1 on page 9.

BEB Configuration

#configure terminal	Enter configure mode
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 50 type service point-point bridge 1 state enable	Configure VLAN 50 as a service VLAN associated with bridge 1
(config-vlan) #vlan 60 type service point-point bridge 1 state enable	Configure VLAN 60 as a service VLAN associated with bridge 1
(config-vlan) #vlan 500 type backbone point-point state enable	Configure VLAN 500 as a backbone VLAN
(config-vlan) #vlan 600 type backbone point-point state enable	Configure VLAN 600 as a backbone VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance 1	Create MST instance 1 for the bridge backbone
(config-mst) #bridge backbone instance 1 vlan 500	Associate VLAN 500 to MST instance 1
(config-mst) #bridge backbone instance 2	Create MST instance 2 for the bridge backbone
(config-mst) #bridge backbone instance 2 vlan 600	Associate VLAN 600 to MST instance 2
(config-mst) #exit	Exit MST configure mode

SPB MST Configuration

(config)#interface eth1	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode

#configure terminal	Enter configure mode
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 50 type service point-point bridge 1 state enable	Configure VLAN 50 as a service VLAN associated with bridge 1
<pre>(config-vlan) #vlan 60 type service point-point bridge 1 state enable</pre>	Configure VLAN 60 as a service VLAN associated with bridge 1
(config-vlan) #vlan 500 type backbone point-point state enable	Configure VLAN 500 as a backbone VLAN
(config-vlan) #vlan 600 type backbone point- point state enable	Configure VLAN 600 as a backbone VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance 1	Configure MST Instance 1
(config-mst) #bridge backbone instance 1 vlan 500	Associate VLAN 500 to MST instance 1
(config-mst) #bridge backbone instance 2	Configure MST Instance 2
(config-mst) #bridge backbone instance 2 vlan 600	Associate VLAN 600 to MST instance 2
(config-mst) #exit	Exit MST configure mode
(config) #interface eth1	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode

BCB Configuration

BCB1

#configure terminal	Enter configure mode
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 500 type service point-point bridge 1 state enable	Configure VLAN 500 as a service VLAN associated with bridge 1
(config-vlan) #vlan 600 type service point-point bridge 1 state enable	Configure VLAN 600 as a service VLAN associated with bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance 1	Configure MST Instance 1
(config-mst) #bridge backbone instance 1 vlan 500	Associate VLAN 500 to MST instance 1
(config-mst) #bridge backbone instance 2	Configure MST Instance 2
(config-mst) #bridge backbone instance 2 vlan 600	Associate VLAN 600 to MST instance 2
(config-mst) #exit	Exit MST configure mode
(config) #interface eth1	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode

BCB2

#configure terminal	Enter configure mode
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 500 type service point- point bridge 1 state enable	Configure VLAN 500 as a service VLAN associated with bridge 1
(config-vlan) #vlan 600 type service point- point bridge 1 state enable	Configure VLAN 600 as a service VLAN associated with bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #spanning-tree mst configuration	Enter MST configure mode
(config-mst) #bridge backbone instance 1	Configure MST Instance 1
(config-mst) #bridge backbone instance 1 vlan 500	Associate VLAN 500 to MST instance 1

	_
<pre>(config-mst) #bridge backbone instance 2</pre>	Configure MST Instance 2
(config-mst) #bridge backbone instance 2 vlan 600	Associate VLAN 600 to MST instance 2
(config-mst) #exit	Exit MST configure mode
(config) #interface eth1	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST Instance 2
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #bridge-group backbone instance 1	Associate the port to MST instance 1
(config-if) #bridge-group backbone instance 2	Associate the port to MST instance 2
(config-if) #exit	Exit interface mode

Validation

show spanning-tree mst detail

```
#show spanning-tree mst detail
% backbone: Bridge up - Spanning Tree Enabled - topology change detected
% backbone: Root Path Cost 0 - Root Port 0 - Bridge Priority 32768
% backbone: Forward Delay 15 - Hello Time 2 - Max Age 20 - Transmit Hold Count 6
% backbone: CIST Root Id 8000525400008a36
% backbone: CIST Reg Root Id 8000525400008a36
% backbone: CIST Bridge Id 8000525400008a36
% backbone: 10 topology change(s) - last topology change Wed Oct 17 11:48:43 2012
% backbone: portfast bpdu-filter disabled
% backbone: portfast bpdu-guard disabled
% backbone: portfast errdisable timeout disabled
% backbone: portfast errdisable timeout interval 300 sec
   eth2: Port Number 4 - Ifindex 4 - Port Id 8004 - Role Designated - State Forwarding
   eth2: Designated External Path Cost 0 -Internal Path Cost 0
  eth2: Configured Path Cost 200000 - Add type Explicit ref count 4
   eth2: Designated Port Id 8004 - Priority 128
  eth2: Root 8000525400008a36
   eth2: Designated Bridge 8000525400008a36
  eth2: Message Age 0 - Max Age 20
  eth2: Hello Time 2 - Forward Delay 15
  eth2: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1 - topo change timer 0
  eth2: forward-transitions 2
  eth2: Version Shortest Path Bridging - Received SPB - Send SPB
  eth2: No portfast configured - Current portfast off
  eth2: bpdu-guard default - Current bpdu-guard off
  eth2: bpdu-filter default - Current bpdu-filter off
```

```
eth2: no root guard configured
                                    - Current root guard off
   eth2: Configured Link Type point-to-point - Current point-to-point
   eth2: No auto-edge configured - Current port Auto Edge off
   eth1: Port Number 3 - Ifindex 3 - Port Id 8003 - Role Designated - State Forwarding
  eth1: Designated External Path Cost 0 -Internal Path Cost 0
  eth1: Configured Path Cost 200000 - Add type Explicit ref count 4
  eth1: Designated Port Id 8003 - Priority 128
   eth1: Root 8000525400008a36
  eth1: Designated Bridge 8000525400008a36
   eth1: Message Age 0 - Max Age 20
  eth1: Hello Time 2 - Forward Delay 15
   eth1: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1 - topo change timer 0
  eth1: forward-transitions 1
  eth1: Version Shortest Path Bridging - Received SPB - Send SPB
  ethl: No portfast configured - Current portfast off
 eth1: bpdu-guard default - Current bpdu-guard off
  eth1: bpdu-filter default - Current bpdu-filter off
  eth1: no root guard configured
                                    - Current root quard off
  ethl: Configured Link Type point-to-point - Current point-to-point
  eth1: No auto-edge configured - Current port Auto Edge off
% Instance 1: Vlans: 500
% backbone: MSTI Root Path Cost 0 -MSTI Root Port 0 - MSTI Bridge Priority 32768
% backbone: MSTI Root Id 8001525400008a36
% backbone: MSTI Bridge Id 8001525400008a36
  eth2: Port Number 4 - Ifindex 4 - Port Id 8004 - Role Designated - State Forwarding
  eth2: Designated Internal Path Cost 0 - Designated Port Id 8004
  eth2: Configured Internal Path Cost 200000
  eth2: Configured CST External Path cost 200000
  eth2: CST Priority 128 - MSTI Priority 128
  eth2: Designated Root 8001525400008a36
  eth2: Designated Bridge 8001525400008a36
  eth2: Message Age 0 - Max Age 0
  eth2: Hello Time 2 - Forward Delay 15
  eth2: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
   eth1: Port Number 3 - Ifindex 3 - Port Id 8003 - Role Designated - State Forwarding
  eth1: Designated Internal Path Cost 0 - Designated Port Id 8003
   eth1: Configured Internal Path Cost 200000
  eth1: Configured CST External Path cost 200000
  eth1: CST Priority 128 - MSTI Priority 128
  eth1: Designated Root 8001525400008a36
  eth1: Designated Bridge 8001525400008a36
  eth1: Message Age 0 - Max Age 0
  eth1: Hello Time 2 - Forward Delay 15
  eth1: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
% Instance 2: Vlans: 600
% backbone: MSTI Root Path Cost 0 -MSTI Root Port 0 - MSTI Bridge Priority 32768
% backbone: MSTI Root Id 8002525400008a36
```

```
% backbone: MSTI Bridge Id 8002525400008a36
   eth2: Port Number 4 - Ifindex 4 - Port Id 8004 - Role Designated - State Forwarding
   eth2: Designated Internal Path Cost 0 - Designated Port Id 8004
  eth2: Configured Internal Path Cost 200000
   eth2: Configured CST External Path cost 200000
   eth2: CST Priority 128 - MSTI Priority 128
응
   eth2: Designated Root 8002525400008a36
  eth2: Designated Bridge 8002525400008a36
응
   eth2: Message Age 0 - Max Age 0
  eth2: Hello Time 2 - Forward Delay 15
   eth2: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
   eth1: Port Number 3 - Ifindex 3 - Port Id 8003 - Role Designated - State Forwarding
   eth1: Designated Internal Path Cost 0 - Designated Port Id 8003
% eth1: Configured Internal Path Cost 200000
   eth1: Configured CST External Path cost 200000
  eth1: CST Priority 128 - MSTI Priority 128
  eth1: Designated Root 8002525400008a36
  eth1: Designated Bridge 8002525400008a36
% eth1: Message Age 0 - Max Age 0
  eth1: Hello Time 2 - Forward Delay 15
   eth1: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
% Instance 4092: Vlans: 100, 200, 300, 400
% backbone: MSTI Root Path Cost 0 -MSTI Root Port 0 - MSTI Bridge Priority 32768
% backbone: MSTI Root Id 8ffc525400008a36
% backbone: MSTI Bridge Id 8ffc525400008a36
   eth2: Port Number 4 - Ifindex 4 - Port Id 8004 - Role Designated - State Forwarding
   eth2: Designated Internal Path Cost 0 - Designated Port Id 8004
  eth2: Configured Internal Path Cost 200000
  eth2: Configured CST External Path cost 200000
  eth2: CST Priority 128 - MSTI Priority 128
  eth2: Designated Root 8ffc525400008a36
용
  eth2: Designated Bridge 8ffc525400008a36
  eth2: Message Age 0 - Max Age 0
   eth2: Hello Time 2 - Forward Delay 15
   eth2: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
   eth1: Port Number 3 - Ifindex 3 - Port Id 8003 - Role Designated - State Forwarding
   eth1: Designated Internal Path Cost 0 - Designated Port Id 8003
   eth1: Configured Internal Path Cost 200000
  eth1: Configured CST External Path cost 200000
   eth1: CST Priority 128 - MSTI Priority 128
   eth1: Designated Root 8ffc525400008a36
  eth1: Designated Bridge 8ffc525400008a36
  eth1: Message Age 0 - Max Age 0
  eth1: Hello Time 2 - Forward Delay 15
   eth1: Forward Timer 0 - Msg Age Timer 0 - Hello Timer 1
```

CHAPTER 3 SPBM Layer 2 VPN Configuration

This chapter shows how to configure Layer 2 VPN for Shortest Path Bridging - MAC (SPBM).

The Layer 2 VPN over SPB topology uses Backbone Edge Bridges (BEBs) to terminate Layer 2 VPNs. The control plane uses IS-IS for forwarding at a Layer 2 level. Only the BEB bridges are aware of any VPN and associated MAC addresses while the backbone bridges simply forward traffic at the backbone MAC (B-MAC) level.

The backbone switches know how to reach every B-MAC using the shortest path determined by IS-IS. All switches in the backbone know only B-MAC addresses to make forwarding decisions while the BEB knows both the B-MAC and Customer MAC (C-MAC) for each VPN. A backbone Service Instance Identifier (I-SID) is assigned on the BEB to each VLAN. All VLANs in the network that share the same I-SID can participate in the same VPN.

Note: You must perform the procedures in this chapter *in addition to* those in Chapter 1, Shortest Path Bridging - MAC Configuration.

Topology

Refer to Figure 1-1 on page 9.

#configure terminal	Enter configure mode
(config)#ip vrf vpn1 isid 10	Assign an I-SID to the VRF for advertising over the SPB network
(config) #interface eth4	Enter interface mode
(config-if)#ip vrf forwarding vpn1	Enable IP VRF forwarding on the interface for vpn1
(config-if) #ip address 1.1.1.1/24	Configure an IP address for the interface
(config-if) #no shutdown	Enable the interface
(config-if)#exit	Exit interface mode
(config) #spb configuration	Enter SPB configure mode
B2(spb-config)#ipvpn enable	Enable the IPVPN
B2(spb-config)#exit	Exit SPB configure mode
(config) #ip route vrf vpn1 3.3.3.0/24 eth4	Configure a static VRF route
(config) #ip route vrf vpn1 5.5.5.0/30 1.1.1.10 eth4	Configure a static VRF route
(config) #end	Exit configure mode
#configure terminal	Enter configure mode
(config)#ip vrf vpn2 isid 40	Assign an I-SID to the VRF for advertising over the SPB network
(config)#int eth5	Enter interface mode
(config-if)#ip vrf forwarding vpn2	Enable IP VRF forwarding on the interface for vpn2

SPBM Layer 2 VPN Configuration

(config-if) #ip address 11.11.11.11/24	Configure an IP address for the interface
(config-if) #no shutdown	Enable the interface
(config-if) #exit	Exit interface mode
(config)#ip route vrf vpn2 33.33.33.0/24 eth5	Configure a static VRF route
(config) #ip route vrf vpn2 55.55.55.0/30 11.11.11.110 eth5	Configure a static VRF route
(config) #end	Exit configure mode

#configure terminal	Enter configure mode
(config) #ip vrf vpn1 isid 10	Assign an I-SID to the VRF for advertising over SPB network
(config) #interface eth4	Enter interface mode
(config-if)#ip vrf forwarding vpn1	Enable IP VRF forwarding on the interface for vpn1
(config-if) #ip address 2.2.2.2/24	Configure an IP address for the interface
(config-if) #no shutdown	Enable the interface
(config-if) #exit	Exit interface mode
(config) #spb configuration	Enter SPB configure mode
(spb-config) #ipvpn enable	Enable IPVPN feature
(spb-config) #exit	Exit SPB configure mode
(config) #ip route vrf vpn1 4.4.4.0/24 eth4	Configure a static VRF route
(config) #ip route vrf vpn1 6.6.6.0/30 1.1.1.10 eth4	Configure a static VRF route
(config) #end	Exit configure mode
#configure terminal	Enter configure mode
(config) #ip vrf vpn2 isid 40	Assign an I-SID to the VRF for advertising over the SPB network
(config) #int eth5	Enter interface mode
(config-if) #ip vrf forwarding vpn2	Enable IP VRF forwarding on the interface for vpn2
(config-if) #ip address 22.22.22.22/24	Configure an IP address for the interface
(config-if) #no shutdown	Enable the interface
(config-if) #exit	Exit interface mode
(config) #ip route vrf vpn2 44.44.44.0/24 eth5	Configure a static VRF route
(config) #ip route vrf vpn2 66.66.66.0/30 22.22.22.220 eth5	Configure a static VRF route
(config) #end	Exit configure mode

Validation

show ip route vrf database

BEB1

```
#sh ip route vrf vpn1 database
Codes: K - kernel, C - connected, S - static, R - RIP, B - BGP
      O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       > - selected route, * - FIB route, p - stale info
    *> 1.1.1.0/24 is directly connected, eth4
       2.2.2.0/24 [0/0] is directly connected, eth1 inactive, 01:23:48
    *> 3.3.3.0/24 [1/0] is directly connected, eth4
      4.4.4.0/24 [0/0] is directly connected, eth1 inactive, 01:23:48
    *> 5.5.5.0/30 [1/0] via 1.1.1.10, eth4
       6.6.6.0/30 [0/0] is directly connected, eth1 inactive, 01:23:48
i L1
Gateway of last resort is not set
BEB2
#show ip route vrf vpn2 database
Codes: K - kernel, C - connected, S - static, R - RIP, B - BGP
      O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       > - selected route, * - FIB route, p - stale info
      11.11.11.0/24 [0/0] is directly connected, eth2 inactive, 01:25:12
    *> 22.22.22.0/24 is directly connected, eth5
      33.33.30.0/24 [0/0] is directly connected, eth2 inactive, 01:25:12
     *> 44.44.44.0/24 [1/0] is directly connected, eth5
      55.55.55.0/30 [0/0] is directly connected, eth2 inactive, 01:25:12
    *> 66.66.66.0/30 [1/0] via 22.22.22.220, eth5
```

Gateway of last resort is not set

CHAPTER 4 Shortest Path Bridging - VID Configuration

This chapter shows how to configure Shortest Path Bridging - VID (SBPV).

Topology

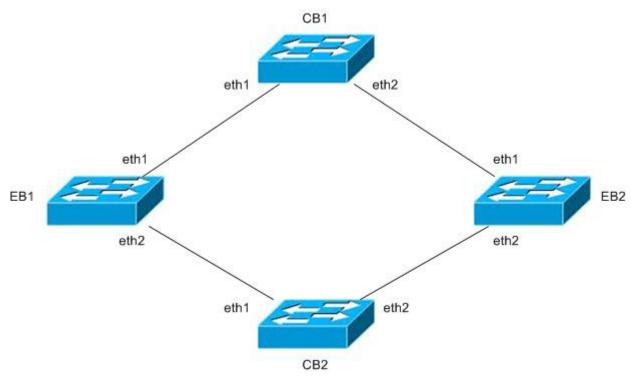


Figure 4-1: SPBV Topology

Figure 4-1 uses these generic terms to refer to network devices:

- · EB means Edge Bridge which can be a:
 - Customer Edge Bridge (CEB)
 - Provider Edge Bridge (PEB)
 - Backbone Edge Bridge (BEB)
- · CB means Core Bridge which can be a:
 - Customer Core Bridge (CCB)
 - Provider Core Bridge (PCB)
 - Backbone Core Bridge (BCB)

Customer Bridges (CEB and CCB)

This section shows how to configure Customer Edge Bridges (CEBs) and Customer Core Bridges (CCBs).

CEB1

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan edge	Configure bridge 1 as an SPBV customer edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	Set the SPVID allocation mode to manual
(spb-config)#bridge 1 spbv bvlan 100 spvid 3611	Associate base VLAN 100 to SPVID 3611
(spb-config)#bridge 1 spbv bvlan 200 spvid 3612	Associate base VLAN 200 to SPVID 3612
(spb-config) #bridge 1 spbv bvlan 300 spvid 3613	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge 1 spbv bvlan 400 spvid 3614	Associate base VLAN 400 to SPVID 3614
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode

(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth3	Enter the eth3 interface configuration mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #bridge 1 spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #exit	Exit interface mode
(config) #end	Exit configuration mode

CEB2

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan edge	Configure bridge 1 as an SPBV customer edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier

(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 100 spvid 3641	Associate base VLAN 100 to SPVID 3641
(spb-config) #bridge 1 spbv bvlan 200 spvid 3642	Associate base VLAN 200 to SPVID 3642
(spb-config) #bridge 1 spbv bvlan 300 spvid 3643	Associate base VLAN 300 to SPVID 3643
(spb-config) #bridge 1 spbv bvlan 400 spvid 3644	Associate base VLAN 400 to SPVID 3644
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth3	Enter the eth3 interface configuration mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface

(config-if) #bridge 1 spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #exit	Exit interface mode
(config) #end	Exit configuration mode

CCB1

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
<pre>(spb-config) #bridge 1 instance spbv vlan 100 ect 1</pre>	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996

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(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode

CCB2

	<u> </u>
#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 33.33.33.33.33	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1

<pre>(spb-config) #bridge 1 instance spbv vlan 200 ect 2</pre>	Associate VLAN 200 to ECT algorithm 2
<pre>(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996</pre>	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode

Provider Bridges (PEB and PCB)

This section shows how to configure Provider Edge Bridges (PEBs) and Provider Core Bridges (PCBs).

PEB1

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan edge	Configure bridge 1 as an SPBV provider edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 bridge 1 state enable	Configure VLAN 10 on bridge 1
(config-vlan) #vlan 20 bridge 1 state enable	Configure VLAN 20 on bridge 1
(config-vlan) #vlan 30 bridge 1 state enable	Configure VLAN 30 on bridge 1
(config-vlan) #vlan 40 bridge 1 state enable	Configure VLAN 40 on bridge 1
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode

(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #cvlan registration table map1 bridge 1	Enter CVLAN registration mode
(config-cvlan-registration) #cvlan 10 svlan 100	Map customer VLAN 10 to service VLAN 100
(config-cvlan-registration) #cvlan 20 svlan 200	Map customer VLAN 20 to service VLAN 200
(config-cvlan-registration) #cvlan 30 svlan 300	Map customer VLAN 30 to service VLAN 300
(config-cvlan-registration) #cvlan 40 svlan 400	Map customer VLAN 40 to service VLAN 400
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 100 spvid 3611	Associate base VLAN 100 to SPVID 3611
(spb-config) #bridge 1 spbv bvlan 200 spvid 3612	Associate base VLAN 200 to SPVID 3612
(spb-config) #bridge 1 spbv bvlan 300 spvid 3613	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge 1 spbv bvlan 400 spvid 3614	Associate base VLAN 400 to SPVID 3614
(spb-config) #exit	Exit SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network

(config-if) #switchport provider-network allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode customer-edge hybrid	Configure the port type as customer edge hybrid
(config-if) #switchport mode customer-edge hybrid acceptable-frame-type all	Configure the port to accept all frame types
<pre>(config-if) #switchport customer-edge hybrid allowed vlan all</pre>	Allow all VLANs created on the interface
<pre>(config-if) #switchport customer-edge vlan registration map1</pre>	Associate map1 with the interface
(config-if) #bridge 1 spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #end	Exit configuration mode

PEB2

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan edge	Configure bridge 1 as an SPBV provider edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 bridge 1 state enable	Configure VLAN 10 on bridge 1
(config-vlan) #vlan 20 bridge 1 state enable	Configure VLAN 20 on bridge 1
(config-vlan) #vlan 30 bridge 1 state enable	Configure VLAN 30 on bridge 1
(config-vlan) #vlan 40 bridge 1 state enable	Configure VLAN 40 on bridge 1
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN

<pre>(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable</pre>	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
<pre>(config)#cvlan registration table map1 bridge 1</pre>	Enter CVLAN registration mode
(config-cvlan-registration) #cvlan 10 svlan 100	Map customer VLAN 10 to service VLAN 100
(config-cvlan-registration) #cvlan 20 svlan 200	Map customer VLAN 20 to service VLAN 200
(config-cvlan-registration) #cvlan 30 svlan 300	Map customer VLAN 30 to service VLAN 300
(config-cvlan-registration) #cvlan 40 svlan 400	Map customer VLAN 40 to service VLAN 400
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 100 spvid 3641	Associate base VLAN 100 to SPVID 3641
(spb-config) #bridge 1 spbv bvlan 200 spvid 3642	Associate base VLAN 200 to SPVID 3642
(spb-config) #bridge 1 spbv bvlan 300 spvid 3643	Associate base VLAN 300 to SPVID 3643
(spb-config) #bridge 1 spbv bvlan 400 spvid 3644	Associate base VLAN 400 to SPVID 3644
(spb-config) #exit	Exit SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config)#bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996

(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
<pre>(config-if) #switchport mode customer-edge hybrid</pre>	Configure the port type as customer edge hybrid
(config-if) #switchport mode customer-edge hybrid acceptable-frame-type all	Configure the port to accept all frame types
(config-if) #switchport customer-edge hybrid allowed vlan all	Allow all VLANs created on the interface
<pre>(config-if) #switchport customer-edge vlan registration map1</pre>	Associate map1 with the interface
(config-if) #bridge 1 spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge 1 spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #end	Exit configuration mode

PCB1

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN

(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
<pre>(config-if) #switchport provider-network allowed vlan all</pre>	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
<pre>(config-if) #switchport provider-network allowed vlan all</pre>	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode

PCB2

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 33.33.33.33.33	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
<pre>(config-if) #switchport provider-network allowed vlan all</pre>	Allow all VLANs to transmit from the interface

(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode

Provider Backbone Bridges (BEB and BCB)

This section shows how to configure Backbone Edge Bridges (BEBs) and Backbone Core Bridges (BCBs).

BEB1

#configuration terminal	Enter configuration mode
(config) #bridge beb mac 1111.aaaa.1111 1 protocol provider-mstp	Configure bridge 1 as an I-component bridge
(config) #bridge beb mac aaaa.aaaa.aaaa backbone protocol spbm	Configure the backbone SPBM BEB bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 type service point-point bridge 1 state enable	Configure VLAN 10 as a service VLAN and associate it with bridge 1
<pre>(config-vlan) #vlan 20 type service point-point bridge 1 state enable</pre>	Configure VLAN 20 as a service VLAN and associate it with bridge 1
(config-vlan) #vlan 30 type service point-point bridge 1 state enable	Configure VLAN 30 as a service VLAN and associate it with bridge 1
(config-vlan) #vlan 40 type service point-point bridge 1 state enable	Configure VLAN 40 as a service VLAN and associate it with bridge 1
(config-vlan) #vlan 100 type backbone point-point state enable	Configure VLAN 100 and associate it with backbone bridge
(config-vlan) #vlan 200 type backbone point-point state enable	Configure VLAN 200 and associate it with backbone bridge
(config-vlan) #vlan 300 type backbone point-point state enable	Configure VLAN 300 and associate it with backbone bridge
(config-vlan) #vlan 400 type backbone point-point state enable	Configure VLAN 400 and associate it with backbone bridge
(config-vlan) #exit	Exit VLAN database mode
(config) #pbb isid list	Enter the PBB ISID configuration mode
(pbb-isid) #isid 10 name IPIQA1 i-component 1	Configure ISID 10 with the name as IPIQA1
(pbb-isid) #isid 20 name IPIQA2 i-component 1	Configure ISID 20 with the name as IPIQA2
(pbb-isid) #isid 30 name IPIQA3 i-component 1	Configure ISID 30 with the name as IPIQA3
(pbb-isid) #isid 40 name IPIQA4 i-component 1	Configure ISID 40 with the name as IPIQA4
(pbb-isid) #exit	Exit the PBB ISID configuration mode

	5.4. JOIO ODD I
<pre>(config) #isis-spb configuration bridge backbone</pre>	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge backbone spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge backbone spbv bvlan 100 spvid 3611	Associate base VLAN 100 to SPVID 3611
(spb-config) #bridge backbone spbv bvlan 200 spvid 3612	Associate base VLAN 200 to SPVID 3612
(spb-config) #bridge backbone spbv bvlan 300 spvid 3613	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge backbone spbv bvlan 400 spvid 3614	Associate base VLAN 400 to SPVID 3614
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge backbone instance spbv	Associate the bridge backbone to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge backbone instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge backbone instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge backbone instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge backbone instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group backbone	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if) #switchport beb provider-network bylan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth2	Enter interface mode

(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group backbone	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if) #switchport beb provider-network bvlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface pip1	Enter interface mode
(config-if) #switchport beb pip backbone-source-mac aaaa.1111.aaaa	Set the default backbone MAC address for the provider instance port
(config-if) #exit	Exit the interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Associate the port to bridge-group
(config-if) #switchport mode cnp	Configure the interface as a customer network port
(config-if) #Swtichport beb port vlan 10 cnp	Associate VLAN 10 with the interface
(config-if) #exit	Exit the interface mode
(config) #interface eth4	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group backbone	Associate the interface to the bridge
(config-if) #switchport mode cbp	Configure the interface as a customer backbone port
(config-if) #no shut	Enable the interface
(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge backbone spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge backbone spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge backbone spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #end	Exit configuration mode

BEB2

#configuration terminal	Enter configuration mode
(config) #bridge beb mac 1111.bbbb.1111 1 protocol provider-mstp	Configure bridge 1 as an I-component bridge
(config) #bridge beb mac bbbb.bbbb.bbbb backbone protocol spbm	Configure the backbone SPBM BEB bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 type service point-point bridge 1 state enable	Configure VLAN 10 as a service VLAN and associate it with bridge 1
(config-vlan) #vlan 20 type service point-point bridge 1 state enable	Configure VLAN 20 as a service VLAN and associate it with bridge 1

<pre>(config-vlan) #vlan 30 type service point-point bridge 1 state enable</pre>	Configure VLAN 30 as a service VLAN and associate it with bridge 1
<pre>(config-vlan) #vlan 40 type service point-point bridge 1 state enable</pre>	Configure VLAN 40 as a service VLAN and associate it with bridge 1
(config-vlan) #vlan 100 type backbone point- point state enable	Configure VLAN 100 and associate it with backbone bridge
(config-vlan) #vlan 200 type backbone point- point state enable	Configure VLAN 200 and associate it with backbone bridge
(config-vlan) #vlan 300 type backbone point- point state enable	Configure VLAN 300 and associate it with backbone bridge
(config-vlan) #vlan 400 type backbone point- point state enable	Configure VLAN 400 and associate it with backbone bridge
(config-vlan) #exit	Exit VLAN database mode
(config) #pbb isid list	Enter the PBB ISID configuration mode
(pbb-isid) #isid 10 name IPIQA1 i-component 1	Configure ISID 10 with the name as IPIQA1
(pbb-isid) #isid 20 name IPIQA2 i-component 1	Configure ISID 20 with the name as IPIQA2
(pbb-isid) #isid 30 name IPIQA3 i-component 1	Configure ISID 30 with the name as IPIQA3
(pbb-isid) #isid 40 name IPIQA4 i-component 1	Configure ISID 40 with the name as IPIQA4
(pbb-isid) #exit	Exit the PBB ISID configuration mode
(config)#isis-spb configuration bridge backbone	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge backbone spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge backbone spbv bvlan 100 spvid 3641	Associate base VLAN 100 to SPVID 3611
(spb-config) #bridge backbone spbv bvlan 200 spvid 3642	Associate base VLAN 200 to SPVID 3612
(spb-config) #bridge backbone spbv bvlan 300 spvid 3643	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge backbone spbv bvlan 400 spvid 3644	Associate base VLAN 400 to SPVID 3614
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge backbone instance spbv	Associate the bridge backbone to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge backbone instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge backbone instance spbv	Associate VLAN 300 to the SPBV instance
vlan 300	

Ext MST mode		
Associate VLAN 100 to ECT algorithm 1 ect 1	(config-mst) #exit	
Config. Particle	(config) #spb configuration	Enter SPB mode
Sept-config) #bridge 1 instance spbv vlan 300 Associate VLAN 300 to ECT algorithm 1 and MTID 3996 ect 1 mtid 3996		Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv v1an 400		Associate VLAN 200 to ECT algorithm 2
Exit SPB mode		Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode prp (config-if) #switchport beb provider-network bulan all (config-if) #switchport mode prp (config-if) #switchport beb provider-network bulan all (config-if) #switchport mode prop (config-if) #switchport beb provider-network bulan all (config-if) #switchport (co	(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(config-if) #switchport	(spb-config) #exit	Exit SPB mode
(config-if) #bridge-group backbone Configure the interface as part of the bridge (config-if) #switchport mode pnp Configure the interface as a provider network port (config-if) #switchport beb provider-network bvlan all Allow all VLANs to transmit from the interface bvlan all (config-if) #switchport Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group backbone Configure the interface as part of the bridge (config-if) #switchport mode pnp Configure the interface as a provider network port (config-if) #switchport beb provider-network bvlan all Allow all VLANs to transmit from the interface bvlan all (config-if) #switchport beb provider-network bvlan all Exit interface mode (config-if) #switchport beb provider-network bvlan all Exit interface mode (config-if) #switchport beb provider-network bvlan all Exit the default backbone MAC address for the provider instance port (config-if) #switchport beb provider-network Exit the interface mode (config-if) #switchport Exit the interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport mode cnp Configure the interface as a customer network port (config-if) #switchport	(config) #interface eth1	Enter interface mode
(config-if) #switchport mode pnp Configure the interface as a provider network port (config-if) #switchport beb provider-network bylan all (config-if) #switchport beb provider-network bylan all (config-if) #switchport mode pnp (config-if) #switchport beb provider-network bylan all (config-if) #switchport beb provider-network bylan all (config-if) #switchport beb pip backbone (config-if) #switchport beb pip backbone-source-mac aaaa.4444.aaaa (config-if) #switchport beb pip backbone-source-mac aaaa.4444.aaaa (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (con	(config-if) #switchport	Configure the interface as layer 2
(config-if) #switchport beb provider-network bylan all (config-if) #exit Exit interface mode (config) #interface eth2 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport mode pnp Configure the interface as a part of the bridge (config-if) #switchport beb provider-network bylan all (config-if) #switchport beb provider-network bylan all (config-if) #switchport beb pip backbone (config-if) #switchport beb pip backbone source-mac aaaa. 4444.aaaa (config-if) #switchport beb pip backbone-source-mac aaaa. 4444.aaaa (config-if) #switchport beb pip backbone-source-mac aaaa. 4444.aaaa (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport mode cbp (config-if) #switchport to the bridge-group (config-if) #switchport mode cbp	(config-if) #bridge-group backbone	Configure the interface as part of the bridge
Exit interface mode	(config-if) #switchport mode pnp	Configure the interface as a provider network port
Config #interface eth2		Allow all VLANs to transmit from the interface
Config-if) #switchport Configure the interface as layer 2	(config-if) #exit	Exit interface mode
Config-if)	(config) #interface eth2	Enter interface mode
Config-if) #switchport mode pnp Configure the interface as a provider network port	(config-if) #switchport	Configure the interface as layer 2
(config-if) #switchport beb provider-network bvlan all (config-if) #exit	(config-if) #bridge-group backbone	Configure the interface as part of the bridge
bvlan all (config-if) #exit (config) #interface pipl Enter interface mode (config-if) #switchport beb pip backbone- source-mac aaaa.4444.aaaa (config-if) #exit (config-if) #exit (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #switchport mode cbp (con	(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config) #interface pip1 (config) #interface pip1 (config) #switchport beb pip backbone—source—mac aaaa.4444.aaaa (config) #interface eth3 (config) #interface eth3 (config-if) #switchport (config-if) #switchport (config-if) #bridge-group 1 (config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #switchport (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #bridge-group backbone (config-if) #switchport mode cbp (config-if) #switchport mode cbp (config-if) #switchport mode cbp (config-if) #bridge backbone spbv bvlan 100 group—mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN		Allow all VLANs to transmit from the interface
(config-if) #switchport beb pip backbone- source-mac aaaa.4444.aaaa (config-if) #exit (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #switchport (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #switchport mode cbp (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #exit	Exit interface mode
source-mac aaaa.4444.aaaa instance port (config-if) #exit Exit the interface mode (config) #interface eth3 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group 1 Associate the port to the bridge-group (config-if) #switchport mode cnp Configure the interface as a customer network port (config-if) #switchport beb port vlan 10 cnp Associate VLAN 10 with the interface (config-if) #exit Exit the interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group backbone Associate the port to the bridge-group (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #no shut Enable the interface (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config) #interface pip1	Enter interface mode
(config) #interface eth3 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group 1 Associate the port to the bridge-group (config-if) #switchport mode cnp Configure the interface as a customer network port (config-if) #switchport beb port vlan 10 cnp Associate VLAN 10 with the interface (config-if) #exit Exit the interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN		
(config-if) #switchport (config-if) #bridge-group 1 (config-if) #switchport mode cnp (config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode cbp (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #exit	Exit the interface mode
(config-if) #bridge-group 1 (config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #switchport beb port vlan 10 cnp (config-if) #exit (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #bridge-group backbone (config-if) #switchport mode cbp (config-if) #switchport mode cbp (config-if) #switchport mode cbp (config-if) #switchport mode cbp (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config) #interface eth3	Enter interface mode
(config-if) #switchport mode cnp (config-if) #switchport beb port vlan 10 cnp Associate VLAN 10 with the interface (config-if) #exit (config-if) #exit Exit the interface mode (config) #interface eth4 (config-if) #switchport (config-if) #switchport (config-if) #bridge-group backbone (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #no shut Enable the interface (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #switchport	Configure the interface as layer 2
(config-if) #switchport beb port vlan 10 cnp Associate VLAN 10 with the interface (config-if) #exit Exit the interface mode (config) #interface eth4 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group backbone (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #no shut Enable the interface (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #bridge-group 1	Associate the port to the bridge-group
(config-if) #exit Exit the interface mode (config) #interface eth4 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group backbone (config-if) #switchport mode cbp Configure the interface as a customer backbone port (config-if) #no shut Enable the interface (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #switchport mode cnp	Configure the interface as a customer network port
(config) #interface eth4Enter interface mode(config-if) #switchportConfigure the interface as layer 2(config-if) #bridge-group backboneAssociate the port to the bridge-group(config-if) #switchport mode cbpConfigure the interface as a customer backbone port(config-if) #no shutEnable the interface(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0Assign a group-mac address to the base VLAN(config-if) #bridge backbone spbv bvlan 200Assign a group-mac address to the base VLAN	(config-if) #switchport beb port vlan 10 cnp	Associate VLAN 10 with the interface
(config-if) #switchportConfigure the interface as layer 2(config-if) #bridge-group backboneAssociate the port to the bridge-group(config-if) #switchport mode cbpConfigure the interface as a customer backbone port(config-if) #no shutEnable the interface(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0Assign a group-mac address to the base VLAN(config-if) #bridge backbone spbv bvlan 200Assign a group-mac address to the base VLAN	(config-if) #exit	Exit the interface mode
(config-if) #bridge-group backboneAssociate the port to the bridge-group(config-if) #switchport mode cbpConfigure the interface as a customer backbone port(config-if) #no shutEnable the interface(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0Assign a group-mac address to the base VLAN(config-if) #bridge backbone spbv bvlan 200Assign a group-mac address to the base VLAN	(config) #interface eth4	Enter interface mode
(config-if) #switchport mode cbpConfigure the interface as a customer backbone port(config-if) #no shutEnable the interface(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0Assign a group-mac address to the base VLAN(config-if) #bridge backbone spbv bvlan 200Assign a group-mac address to the base VLAN	(config-if) #switchport	Configure the interface as layer 2
(config-if) #no shut Enable the interface (config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN Assign a group-mac address to the base VLAN	(config-if) #bridge-group backbone	Associate the port to the bridge-group
(config-if) #bridge backbone spbv bvlan 100 group-mac 0100.5e00.0100 mode rxtx sr 0 Assign a group-mac address to the base VLAN (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #switchport mode cbp	Configure the interface as a customer backbone port
group-mac 0100.5e00.0100 mode rxtx sr 0 (config-if) #bridge backbone spbv bvlan 200 Assign a group-mac address to the base VLAN	(config-if) #no shut	Enable the interface
		Assign a group-mac address to the base VLAN
group-mae 0100.3e00.0200 mode rack Sr 0	(config-if) #bridge backbone spbv bvlan 200 group-mac 0100.5e00.0200 mode rxtx sr 0	Assign a group-mac address to the base VLAN

(config-if) #bridge backbone spbv bvlan 300 group-mac 0100.5e00.0300 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #bridge backbone spbv bvlan 400 group-mac 0100.5e00.0400 mode rxtx sr 0	Assign a group-mac address to the base VLAN
(config-if) #end	Exit configuration mode

BCB1

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config)#isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
<pre>(spb-config) #bridge 1 instance spbv vlan 100 ect 1</pre>	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #exit	Exit SPB mode
(config)#interface eth1	Enter interface mode

(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the interface as a provider network
(config-if)#switchport provider-network vlan all	Allow all VLANs to transmit from the interface
(config-if)#exit	Exit interface mode
(config)#interface eth2	Enter interface mode
(config-if)#switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-network	Configure the interface as a provider network
(config-if)#switchport provider-network vlan all	Allow all VLANs to transmit from the interface
(config-if) #exit	Exit interface mode

BCB2

#configuration terminal	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID.
(isis-spb-config) #no isis-spb system id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 33.33.33.33.33	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode

(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1		
<pre>(spb-config) #bridge 1 instance spbv vlan 200 ect 2</pre>	Associate VLAN 200 to ECT algorithm 2		
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996		
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996		
(spb-config) #exit	Exit SPB mode		
(config) #interface eth1	Enter interface mode		
(config-if) #switchport	Configure the interface as layer 2		
(config-if) #bridge-group 1	Configure the interface as part of the bridge		
(config-if) #switchport mode provider-network	Configure the interface as a provider network		
(config-if) #switchport provider-network vlan all	Allow all VLANs to transmit from the interface		
(config-if) #exit	Exit interface mode		
(config) #interface eth2	Enter interface mode		
(config-if) #switchport	Configure the interface as layer 2		
(config-if) #bridge-group 1	Configure the interface as part of the bridge		
(config-if) #switchport mode provider-network	Configure the interface as a provider network		
(config-if) #switchport provider-network vlan all	Allow all VLANs to transmit from the interface		
(config-if) #exit	Exit interface mode		

Validation

show spb adjacency interface

EB1

MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

AUX MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

EB2

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 22.22.22.22.22

State - Up

Agreement digest - 00000003d25d96f264aebea2af795568001a56b6

MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

AUX_MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

CB1

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys id - 11.11.11.11.11

State - Up

Agreement digest - 00000003b4391959dd755185f98dabca2b10ab36

MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

AUX MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

CB₂

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 11.11.11.11.11

State - Up

Agreement digest - 00000003b4391959dd755185f98dabca2b10ab36

 ${\tt MCID}$

Conf Digest - e90bbfac7bd7df62cea10769874a13af

AUX MCID

Conf Digest - e90bbfac7bd7df62cea10769874a13af

show isis-spb neighbors

EB₁

#show isis-spb neighbors

System Id	Interface	SNPA	State	Holdt	ime Type	Proto	col
MTID: 0 2222.2222.2222	eth1	5254.00bc.35f	2	Up	21	L1	IS-IS
MTID: 3996 2222.2222.222	eth1	5254.00bc.35f	2	Up	21	L1	IS-IS
MTID: 0 3333.3333.3333	eth2	5254.00c9.a4e	9	Up	27	L1	IS-IS
MTID: 3996 3333.3333.3333	eth2	5254.00c9.a4e	9	Up	27	L1	IS-IS

Total Number of Neighbor(s): 4

EB2

#show isis-spb neighbors

System Id Interface SNPA State Holdtime Type Protocol

MTID : 0

Shortest Path Bridging - VID Configuration

2222.2222.2222	eth1	5254.0059.3211	Up	27	L1	IS-IS
MTID: 3996 2222.2222.2222	eth1	5254.0059.3211	Up	27	L1	IS-IS
MTID: 0 3333.3333.3333	eth2	5254.006a.ed3f	Up	23	L1	IS-IS
MTID: 3996 3333.3333.3333	eth2	5254.006a.ed3f	Up	23	L1	IS-IS

Total Number of Neighbor(s): 4

CB1

#sh isis-spb neighbors

System Id	Interface	SNPA	State H	oldtime	Type	Prot	ocol
MTID: 0							
1111.1111.1111	ethl	5254.00aa.a026	Up	23		L1	IS-IS
MTID : 3996							
1111.1111.1111	eth1	5254.00aa.a026	Up	23		L1	IS-IS
METER							
MTID: 0 4444.4444.4444	e+h2	5254.00d5.382f	qU	20		L1	IS-IS
1111.111.111	C C112	3234.0003.3021	95	20		111	10 10
MTID : 3996							
4444.4444.4444	eth2	5254.00d5.382f	Up	20		L1	IS-IS

Total Number of Neighbor(s): 4

CB2

#show isis-spb neighbors

System Id	Interface	SNPA	State Hol	dtime T	ype Prot	ocol
MTID : 0 1111.1111.1111	o+h1	5254.007d.4792	qU	24	L1	IS-IS
1111.1111.1111	ecm	J2J4.007d.4792	оþ	24	11.1	15-15
MTID: 3996 1111.1111.1111	o+b1	5254.007d.4792	IIn	24	L1	IS-IS
1111.1111.111	ecmi	3234.0070.4792	Up	24	TIT	12-12
MTID : 0 4444.4444.4444	a + la O	5254.0030.4521	II.e	2.2	т 1	IS-IS
4444.4444.4444	ethz	3234.0030.4321	Up	22	L1	12-12
MTID: 3996	0+h2	E2E4 0020 4E21	IIn	2.2	т 1	TC TC
4444.4444.4444	etnz	5254.0030.4521	Чp	22	L1	IS-IS

Total Number of Neighbor(s): 4

show	isis-s	nh	Isi	n
311044	1313-3	PN	13	μ

EB1

#show isis-spb lsp
ISIS Link State Database

LSP ID	LSP Seq Num	LSP Checksum	LSP Hold Time	OL Flag
Bridge Instance: 1				
1111.1111.1111.00-00*	0x0000004	0xBD16	639	0
2222.2222.222.00-00	0x0000005	0x5D40	698	0
3333.3333.333.00-00	0x0000005	0xC77F	675	0
4444.4444.00-00	0x00000004	0x436C	685	0

EB2

#show isis-spb lsp
ISIS Link State Database

Total numer of LSP(s): 4

LSP ID	LSP Seq Num	LSP Checksum	LSP Hold Time	OL Flag
Bridge Instance: 1				
1111.1111.1111.00-00	0x0000004	0xBD16	612	0
2222.2222.222.00-00	0x0000005	0x5D40	671	0
3333.3333.300-00	0x0000005	0xC77F	648	0
4444.4444.00-00*	0x0000004	0x436C	659	0
Total numer of LSP(s):	4			

CB1

#show isis-spb lsp
ISIS Link State Database

LSP ID	LSP Seq Num	LSP Checksum	LSP Hold Time	OL Flag
Bridge Instance: 1				
1111.1111.1111.00-00	0x0000004	0xBD16	587	0
2222.2222.222.00-00*	0x0000005	0x5D40	645	0
3333.3333.333.00-00	0x0000005	0xC77F	622	0
4444.4444.444.00-00	0x0000004	0x436C	633	0
Total numer of LSP(s):	4			

CB2

#show isis-spb lsp
ISIS Link State Database

LSP ID	LSP Seq Num	LSP Checksum	LSP Hold Time	OL Flag
Bridge Instance: 1				
1111.1111.1111.00-00	0x0000004	0xBD16	539	0

2222.2222.222.00-00	0x0000005	0x5D40	597	0
3333.3333.333.00-00*	0x0000005	0xC77F	574	0
4444.4444.00-00	0x0000004	0x436C	585	0
Total numer of LSP(s):	4			

show isis-spb topology

EB1

EB1				
#show isis-spb topole	ogy			
IS-IS paths to level	-1 bridges			
System Id	Metric	Next-Hop	Interface	SNPA
MT ID: 0, ECT ID: 1				
1111.1111.1111				
2222.2222.222	200000	2222.2222.222	eth1	5254.00bc.35f2
3333.3333.3333	200000	3333.3333.3333	eth2	5254.00c9.a4e9
4444.4444.4444	400000	2222.2222.222	eth1	5254.00bc.35f2
MT ID: 0, ECT ID: 2				
1111.1111.1111				
2222.2222.222	200000	2222.2222.222	eth1	5254.00bc.35f2
3333.3333.3333	200000	3333.3333.3333	eth2	5254.00c9.a4e9
4444.4444.4444	400000	3333.3333.3333	eth2	5254.00c9.a4e9
MT ID: 3996, ECT ID:	1			
1111.1111.1111				
2222.2222.222	200000	2222.2222.222	eth1	5254.00bc.35f2
3333.3333.3333	200000	3333.3333.3333	eth2	5254.00c9.a4e9
4444.4444.4444	400000	2222.2222.222	eth1	5254.00bc.35f2
MT ID: 3996, ECT ID:	2			
1111.1111.1111				
2222.2222.222	200000	2222.2222.222	eth1	5254.00bc.35f2
3333.3333.3333	200000	3333.3333.3333	eth2	5254.00c9.a4e9
4444.4444.4444	400000	3333.3333.3333	eth2	5254.00c9.a4e9
FD 0				
EB2				
#show isis-spb topol				
IS-IS paths to level	-1 bridges			
System Id	Metric	Next-Hop	Interface	SNPA
MT ID: 0, ECT ID: 1				
1111.1111.1111	400000	2222.2222.222	eth1	5254.0059.3211
2222.2222.222	200000	2222.2222.222	eth1	5254.0059.3211
3333.3333.3333	200000	3333.3333.3333	eth2	5254.006a.ed3f
4444.4444.4444				
MT ID: 0, ECT ID: 2				
1111.1111.1111	400000	3333.3333.3333	eth2	5254.006a.ed3f
2222.2222.222	200000	2222.2222.222	eth1	5254.0059.3211
3333.3333.3333	200000	3333.3333.3333	eth2	5254.006a.ed3f
4444.4444.4444				
MT ID: 3996, ECT ID:	1			

1111.1111.1111	400000	2222.2222.222	eth1	5254.0059.3211
2222.2222.2222	200000	2222.2222.2222	eth1	5254.0059.3211
3333.3333.3333	200000	3333.3333.3333	eth2	5254.0059.3211 5254.006a.ed3f
4444.4444.4444	200000	3333.3333.3333	ethz	3234.006a.ed31
MT ID: 3996, ECT ID:				
1111.1111.1111	400000	3333.3333.3333	eth2	5254.006a.ed3f
2222.2222.2222	200000	2222.2222.222	eth1	5254.0059.3211
3333.3333.3333	200000	3333.3333.3333	eth2	5254.006a.ed3f
4444.4444.4444		3333.3333.3333	C C112	3234.000a.ed31
CB1				
#show isis-spb topole IS-IS paths to level				
System Id	Metric	Next-Hop	Interface	SNPA
MT ID: 0, ECT ID: 1	Meclic	Next Hop	incerrace	SNIA
1111.1111.1111	200000	1111.1111.1111	eth1	5254.00aa.a026
2222.2222.2222			00111	0201.0044.4020
3333.3333.3333	400000	1111.1111.1111	eth1	5254.00aa.a026
4444.4444.4444	200000	4444.4444.4444	eth2	5254.00d5.382f
MT ID: 0, ECT ID: 2				
1111.1111.1111	200000	1111.1111.1111	eth1	5254.00aa.a026
2222.2222.2222				
3333.3333.3333	400000	4444.4444.4444	eth2	5254.00d5.382f
4444.4444.4444	200000	4444.4444.4444	eth2	5254.00d5.382f
MT ID: 3996, ECT ID:	1			
1111.1111.1111	200000	1111.1111.1111	eth1	5254.00aa.a026
2222.2222.2222				
3333.3333.3333	400000	1111.1111.1111	eth1	5254.00aa.a026
4444.4444.4444	200000	4444.4444.4444	eth2	5254.00d5.382f
MT ID: 3996, ECT ID:				
1111.1111.1111	200000	1111.1111.1111	eth1	5254.00aa.a026
2222.2222.222			. 1. 0	5054 0015 2005
3333.3333.333 4444.4444.4444	400000 200000	4444.4444.4444	eth2	5254.00d5.382f
4444.4444.4444	200000	4444.4444.4444	eth2	5254.00d5.382f
CB2				
#show isis-spb topole				
IS-IS paths to level	-			
System Id	Metric	Next-Hop	Interface	SNPA
MT ID: 0, ECT ID: 1				
1111.1111.1111	200000	1111.1111.1111	eth1	5254.007d.4792
2222.2222.222	400000	1111.1111.1111	eth1	5254.007d.4792
3333.3333.3333			. 1.0	
4444.4444.4444	200000	4444.4444.4444	eth2	5254.0030.4521
MT ID: 0, ECT ID: 2	200000	1111 1111 1111	- + 1- 1	FOE 4 007 1 4700
1111.1111.1111	200000	1111.1111.1111	eth1	5254.007d.4792
2222.2222.2222	400000	4444.4444.4444	eth2	5254.0030.4521
3333.3333.333 4444.4444.4444	200000	4444.4444.4444	eth2	5254.0030.4521
7777.7777.7774	200000	7777.7777.7774	CCIIZ	J2J4.00J0.4J2I

MT ID: 3996, ECT ID:	1			
1111.1111.1111	200000	1111.1111.1111	eth1	5254.007d.4792
2222.2222.222	400000	1111.1111.1111	eth1	5254.007d.4792
3333.3333.3333				
4444.4444.4444	200000	4444.4444.4444	eth2	5254.0030.4521
MT ID: 3996, ECT ID:	2			
1111.1111.1111	200000	1111.1111.1111	eth1	5254.007d.4792
1111.1111.1111 2222.2222.222	200000 400000	1111.1111.1111 4444.4444.4444	eth1 eth2	5254.007d.4792 5254.0030.4521
2222.2222.2222				

show isis-spb fdb

#show isis-spb fdb

EB₁

SPB Forwarding Database: [U - Unicast, M - Multicast] I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE MTID : 0, ECT ALGO : 1 U if/** xx.xx.xx.xx.xx 3611 if/eth1 if/eth2 MTID : 0, ECT ALGO : 2 xx.xx.xx.xx.xx 3612 if/eth1 if/eth2 MTID : 3996, ECT ALGO : 1 xx.xx.xx.xx.xx 3613 if/eth1 if/eth2 MTID : 3996, ECT ALGO : 2 U if/** if/eth1 if/eth2 xx.xx.xx.xx.xx 3614

MTID: 0, ECT ALGO: 1
M if/** 01.00.5e.00.01.00 3611 if/eth1
MTID: 0, ECT ALGO: 2
M if/** 01.00.5e.00.02.00 3612 if/eth2
MTID: 3996, ECT ALGO: 1
M if/** 01.00.5e.00.03.00 3613 if/eth1

MTID: 3996, ECT ALGO: 2 M if/** 01.00.5e.00.04.00 3614 if/eth2

Number of Unicast Records: 4
Number of Multicast Records: 4

EB2

#sh isis-spb fdb

SPB Forwarding Database:

[U - Unicast, M - Multicast]

I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE

MTID : 0, ECT ALGO : 1

U if/** xx.xx.xx.xx.xx 3641 if/eth2 if/eth1

```
MTID: 0, ECT ALGO: 2
                                     if/eth2 if/eth1
U if/**
             xx.xx.xx.xx.xx 3642
MTID : 3996, ECT ALGO : 1
                                            if/eth2 if/eth1
                               3643
             XX.XX.XX.XX.XX
MTID : 3996, ECT ALGO : 2
U if/**
                               3644
                                            if/eth2 if/eth1
             XX.XX.XX.XX.XX
MTID : 0, ECT ALGO : 1
           01.00.5e.00.01.00
                                            if/eth1
                               3641
MTID : 0, ECT ALGO : 2
             01.00.5e.00.02.00
                               3642
                                            if/eth2
MTID: 3996, ECT ALGO: 1
             01.00.5e.00.03.00
                               3643
                                            if/eth1
MTID: 3996, ECT ALGO: 2
                                           if/eth2
M if/**
             01.00.5e.00.04.00
                               3644
Number of Unicast Records: 4
Number of Multicast Records: 4
CB<sub>1</sub>
#show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 MTID : 0, ECT ALGO : 1
U if/eth1 xx.xx.xx.xx.xx
                               3611
                                            if/eth2
U if/eth2
             xx.xx.xx.xx.xx 3641
                                            if/eth1
MTID : 3996, ECT ALGO : 1
U if/eth1
             xx.xx.xx.xx.xx 3613
                                            if/eth2
             XX.XX.XX.XX
                                            if/eth1
U if/eth2
                               3643
MTID : 0, ECT ALGO : 1
             01.00.5e.00.01.00
M if/eth1
                               3611
                                            if/eth2
M if/eth2
             01.00.5e.00.01.00
                               3641
                                            if/eth1
MTID : 3996, ECT ALGO : 1
M if/eth1
              01.00.5e.00.03.00
                               3613
                                            if/eth2
M if/eth2
             01.00.5e.00.03.00
                               3643
                                            if/eth1
Number of Unicast Records: 4
Number of Multicast Records: 4
CB<sub>2</sub>
#show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 ----- -----
MTID : 0, ECT ALGO : 2
        xx.xx.xx.xx.xx
U if/eth1
                               3612
                                            if/eth2
U if/eth2
             xx.xx.xx.xx.xx 3642
                                            if/eth1
MTID: 3996, ECT ALGO: 2
```

```
U if/eth1
                                     3614
                                                   if/eth2
                XX.XX.XX.XX.XX
U if/eth2
                                                   if/eth1
                XX.XX.XX.XX.XX
                                     3644
MTID : 0, ECT ALGO : 2
M if/eth1
             01.00.5e.00.02.00
                                                   if/eth2
                                     3612
                01.00.5e.00.02.00
                                     3642
                                                   if/eth1
M if/eth2
MTID: 3996, ECT ALGO: 2
M if/eth1
               01.00.5e.00.04.00
                                     3614
                                                   if/eth2
                01.00.5e.00.04.00
M if/eth2
                                     3644
                                                   if/eth1
Number of Unicast Records: 4
Number of Multicast Records: 4
```

show isis-spb configuration

#show isis-spb configuration

EB1

```
Bridge Name: 1
lsp ignore errors:no
lsp general interval(sec): 30
lsp refresh interval(sec): 900
maximum lsp lifetime(sec): 1200
spf interval exp(Minimum Delay in Milli Seconds): 500
spf interval exp(Maximim Delay in Milli Seconds): 50000
overload bit set:no
System Id: 1111.1111.1111
interface: eth1
 hello-multiplier: 3
 hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
interface: eth2
 hello-multiplier: 3
 hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
interface: eth3
 hello-multiplier: 3
 hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
EB<sub>2</sub>
#show isis-spb configuration
Bridge Name: 1
lsp ignore errors:no
lsp general interval(sec): 30
lsp refresh interval(sec): 900
maximum lsp lifetime(sec): 1200
spf interval exp(Minimum Delay in Milli Seconds): 500
spf interval exp(Maximim Delay in Milli Seconds): 50000
```

```
overload bit set:no
System Id: 4444.4444.4444
interface: eth1
hello-multiplier: 3
hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
interface: eth2
 hello-multiplier: 3
hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
interface: eth3
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
 retransmit-interval(sec): 5
CB<sub>1</sub>
#show isis-spb configuration
Bridge Name: 1
lsp ignore errors:no
lsp general interval(sec): 30
lsp refresh interval(sec): 900
maximum lsp lifetime(sec): 1200
spf interval exp(Minimum Delay in Milli Seconds): 500
spf interval exp(Maximim Delay in Milli Seconds): 50000
overload bit set:no
System Id: 2222.2222.2222
interface: eth1
hello-multiplier: 3
hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
interface: eth2
hello-multiplier: 3
hello-interval(sec): 10
 lsp-interval(millisec): 33
 retransmit-interval(sec): 5
CB2:
#show isis-spb configuration
Bridge Name: 1
lsp ignore errors:no
lsp general interval(sec): 30
lsp refresh interval(sec): 900
maximum lsp lifetime(sec): 1200
spf interval exp(Minimum Delay in Milli Seconds): 500
spf interval exp(Maximim Delay in Milli Seconds): 50000
overload bit set:no
```

System Id: 3333.3333.3333

interface: eth1
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
retransmit-interval(sec): 5

interface: eth2
hello-multiplier: 3
hello-interval(sec): 10
lsp-interval(millisec): 33
retransmit-interval(sec): 5

show spbv bridge vid-translation-table

EB1

#show spbv bridge 1 vid-translation-table

EGRESS TABLE INFORMATION

SPVID	BVID	SYSTEM_ID
3642	200	44.44.44.44.44.44
3641	100	44.44.44.44.44.44
3643	300	44.44.44.44.44.44
3644	400	44.44.44.44.44.44

INGRESS TABLE INFORMATION

BVID	SPVID	SYSTEM_ID
200	3612	11.11.11.11.11
100	3611	11.11.11.11.11
300	3613	11.11.11.11.11.11
400	3614	11.11.11.11.11

EB2

#show spbv bridge 1 vid-translation-table

EGRESS TABLE INFORMATION

SPVID	BVID	SYSTEM_ID
3612	200	11.11.11.11.11.11
3611	100	11.11.11.11.11
3613	300	11.11.11.11.11.11
3614	400	11.11.11.11.11

INGRESS TABLE INFORMATION

BVID	SPVID	SYSTEM_ID
200	3642	44.44.44.44.44.44
100	3641	44.44.44.44.44.44
300	3643	44.44.44.44.44.44
400	3644	44.44.44.44.44.44

show bridge spb

EB1

```
#show bridge spb 1
```

Bridge details

B-MAC - 00.00.00.00.00

System ID - 11.11.11.11.11

Bridge priority - 32768

MCID - e90bbfac7bd7df62cea10769874a13af

AUX_MCID - e90bbfac7bd7df62cea10769874a13af

CIST Root ID - 8000525400aaa026

SPSourceID - 0

BVID	SPVID
200	3612
100	3611
300	3613
400	3614

SPVID-POOL - 3600 to 3999

Agreement Digest - 00000003b4391959dd755185f98dabca2b10ab36

Agreement_digest_convention_capabilities - 0
Agreement digest convention id - 2

Agreement_digest_format_capabilities - 0
Agreement_digest_format_id - 0

EB2

#sh bridge spb 1

Bridge details

B-MAC - 00.00.00.00.00

System ID - 44.44.44.44.44

Shortest Path Bridging - VID Configuration

Bridge priority - 32768 - e90bbfac7bd7df62cea10769874a13af MCID - e90bbfac7bd7df62cea10769874a13af AUX MCID CIST Root ID - 8000525400aaa026 SPSourceID - 0 BVID SPVID 200 3642 100 3641 300 3643 400 3644 SPVID-POOL - 3600 to 3999 Agreement Digest - 0000000414bedf08fb342a65f5176aa74078331a Agreement digest convention capabilities - 0 Agreement_digest_convention_id - 2 Agreement digest format capabilities - 0 Agreement_digest_format_id - 0 CB₁ #sh bridge spb 1 Bridge details _____ - 00.00.00.00.00.00 B-MAC System ID - 22.22.22.22.22 Bridge priority - 32768 MCID - e90bbfac7bd7df62cea10769874a13af - e90bbfac7bd7df62cea10769874a13af AUX MCID CIST Root ID - 8000525400aaa026 SPSourceID - 0 BVID SPVID 200 0 100 0

```
300
                        0
  400
                        0
SPVID-POOL
                   - 3600 to 3999
Agreement Digest - 00000003d25d96f264aebea2af795568001a56b6
Agreement_digest_convention_capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
CB<sub>2</sub>
#sh bridge spb 1
Bridge details
B-MAC
                   - 00.00.00.00.00.00
                    - 33.33.33.33.33
System ID
Bridge priority
                     - 32768
MCID
                     - e90bbfac7bd7df62cea10769874a13af
AUX MCID
                    - e90bbfac7bd7df62cea10769874a13af
CIST Root ID
                    - 8000525400aaa026
SPSourceID
                     - 0
                     SPVID
BVID
  200
                       0
                        0
  100
  300
                        0
  400
                        0
SPVID-POOL - 3600 to 3999
Agreement Digest - 00000003f69a617073fabd493f2bc1096b6e879a
Agreement_digest_convention_capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
```

show spb bridge instance vlan

EB1

#sh	spb bri	dge 1	instance	spbv vlan		
VID 200	MODE SPBV		ECT 80c202	MAC	ISID	ISID-STAT
100	SPBV	0	80c201			
300	SPBV	3996	80c201			
400	SPBV	3996	80c202			
EB2						
#sh	spb bri	dge 1	instance	spbv vlan		
VID	MODE	MTID	ECT	MAC	ISID	ISID-STAT
200	SPBV	0	80c202			
100	SPBV	0	80c201			
300	SPBV	3996	80c201			
400	SPBV	3996	80c202			
CB1						
		dge 1	instance	spbv vlan		
	spb bri		instance ECT		ISID	ISID-STAT
#sh					ISID	ISID-STAT
#sh VID	spb bri	MTID 0	ECT		ISID	ISID-STAT
#sh VID 200	spb bri MODE SPBV SPBV	MTID 0	ECT 80c202		ISID	ISID-STAT
#sh VID 200	spb bri MODE SPBV SPBV SPBV	MTID 0	ECT 80c202 80c201 80c201		ISID	ISID-STAT
#sh VID 200 100	spb bri MODE SPBV SPBV SPBV SPBV	MTID 0 0 3996	ECT 80c202 80c201 80c201		ISID	ISID-STAT
#sh VID 200 100 300 400 CB2	spb bri MODE SPBV SPBV SPBV SPBV	MTID 0 0 3996 3996	ECT 80c202 80c201 80c201 80c202		ISID	ISID-STAT
#sh VID 200 100 300 400 CB2	spb bri MODE SPBV SPBV SPBV SPBV	MTID 0 0 3996 3996	ECT 80c202 80c201 80c201 80c202 instance	MAC	ISID	ISID-STAT
#sh VID 200 100 300 400 CB2 #sh	spb bri MODE SPBV SPBV SPBV SPBV	MTID 0 0 3996 3996 dge 1	ECT 80c202 80c201 80c201 80c202	MAC		
#sh VID 200 100 300 400 CB2 #sh VID	spb bri MODE SPBV SPBV SPBV spb bri MODE	MTID 0 0 3996 3996 dge 1 MTID	ECT 80c202 80c201 80c201 80c202 instance ECT	MAC		
#sh VID 200 100 300 400 CB2 #sh VID 200	spb bri MODE SPBV SPBV SPBV spb bri MODE SPBV SPBV	MTID 0 0 3996 3996 dge 1 MTID 0	ECT 80c202 80c201 80c201 80c202 instance ECT 80c202 80c201	MAC		

CHAPTER 5 SPBV CFM Configuration

This chapter shows how to configure CFM (Connectivity Fault Management) to work with Shortest Path Bridging - VID (SBPV).

Topology

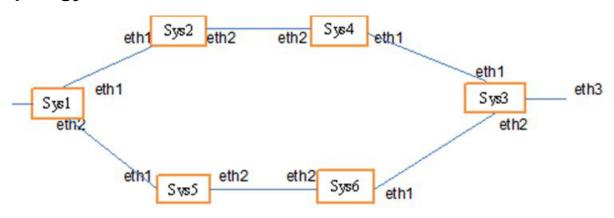


Figure 5-1: SPBV Topology

This chapter uses these generic terms to refer to network devices:

- EB means Edge Bridge which can be a:
 - Customer Edge Bridge (CEB)
 - Provider Edge Bridge (PEB)
 - Backbone Edge Bridge (BEB)
- CB means Core Bridge which can be a:
 - Customer Core Bridge (CCB)
 - Provider Core Bridge (PCB)
 - Backbone Core Bridge (BCB)

Provider Backbone Bridges (BEB and BCB)

BEB1 - SYS1

#conf t	Enter configure mode
(config)#bridge beb mac aaaa.aaaa.aaaa backbone protocol spbv	Configure backbone bridge with spbv protocol
(config) #vlan database	Enter vlan data base mode

(config-vlan) #vlan 100 type backbone point-point state enable	Configure vlan 100 and associate it with the backbone bridge
(config-vlan) #vlan 200 type backbone point-point state enable	Configure vlan 200 and associate it with the backbone bridge
(config-vlan) #vlan 300 type backbone point-point state enable	Configure vlan 300 and associate it with the backbone bridge
(config-vlan) #vlan 400 type backbone point-point state enable	Configure vlan 400 and associate it with the backbone bridge
(config-vlan) #exit	Exit vlan database mode
(config)#isis-spb configuration bridge backbone	Enter isis-spb mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset isis-spb system identifier to its default value 0
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Set isis-system identifier
(isis-spb-config) #exit	Exit from isis-spb mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge backbone instance spbv	Associate the bridge backbone to spbv instance
(config-mst) #bridge backbone instance spbv vlan 1	Associate vlan 1 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 100	Associate vlan 100 to spbv instance
(config-mst)#bridge backbone instance spbv vlan 200	Associate vlan 200 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 300	Associate vlan 300 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 400	Associate vlan 400 to spbv instance
(config-mst) #exit	Exit from mst mode
(config) #bridge backbone spb enable	Enable spb protocol on backbone
(config) #spb configuration	Enter spb mode
(spb-config) #bridge backbone spbv mode manual	Set the spvid allocation mode to manual
(spb-config) #bridge backbone spbv bvlan 1 spvid 3619	Associate vlan 100 to spvid 3619
(spb-config) #bridge backbone spbv bvlan 100 spvid 3611	Associate vlan 100 to spvid 3611
(spb-config)#bridge backbone spbv bvlan 200 spvid 3612	Associate vlan 200 to spvid 3612
(spb-config)#bridge backbone spbv bvlan 300 spvid 3613	Associate vlan 300 to spvid 3613
(spb-config)#bridge backbone spbv bvlan 400 spvid 3614	Associate vlan 400 to spvid 3614
(spb-config) #bridge backbone instance spbv vlan 100 ect 1	Associate vlan 100 to ect algo 1
(spb-config)#bridge backbone instance spbv vlan 200 ect 2	Associate vlan 200 to ect algo 2

(spb-config) #bridge backbone instance spbv vlan 300 ect 1 mtid 3996	Associate vlan 300 to ect1 and mtid 3996
(spb-config) #bridge backbone instance spbv vlan 400 ect 2 mtid 3996	Associate vlan 400 to ect2 and mtid 3996
(spb-config) #exit	Exit from spb mode
(config) #int eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group backbone	Configure interface as a part of bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if) #switchport beb provider- network bvlan add 100	Allow vlan 100 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 200	Allow vlan 200 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 300	Allow vlan 300 to transmit from this interface
(config-if)#switchport beb provider- network bvlan add 400	Allow vlan 400 to transmit from this interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface
(config) #int eth2	Enter interface mode
(config-if) #switchport	Configure interface as a part of bridge
(config-if)#bridge-group backbone	Configure interface as a part of bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if)#switchport beb provider- network bvlan add 100	Allow vlan 100 to transmit from this interface
(config-if)#switchport beb provider- network bvlan add 200	Allow vlan 200 to transmit from this interface
(config-if)#switchport beb provider- network bvlan add 300	Allow vlan 300 to transmit from this interface
(config-if) #switchport beb provider- network bylan add 400	Allow vlan 400 to transmit from this interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure interface as a part of bridge
(config-if)#bridge-group backbone	Configure interface as a part of bridge
(config-if) #switchport mode cbp	Configure the interface as a customer backbone bridge
(config-if)#switchport beb customer- backbone instance add 100 bvlan 100	Allow vlan 100 to transmit from this interface
(config-if)#switchport beb dispatch service 100	Enable interface to dispatch vlan 100
(config-if)#switchport beb customer- backbone instance add 200 bvlan 200	Allow vlan 200 to transmit from this interface

(config-if) #switchport beb dispatch service 200	Enable interface to dispatch vlan 200
(config-if) #switchport beb customer- backbone instance add 300 bvlan 300	Allow vlan 300 to transmit from this interface
(config-if)#switchport beb dispatch service 300	Enable interface to dispatch vlan 300
(config-if)#switchport beb customer- backbone instance add 400 bvlan 400	Allow vlan 400 to transmit from this interface
(config-if)#switchport beb dispatch service 400	Enable interface to dispatch vlan 400
(config-if) #end	Exit configuration mode
(config) #ethernet cfm pbb domain-name type character-string name MD1 pbb-domain-type bvlan level 5 mip-creation default backbone	Create MD level 5
(config-ether-cfm-pbb) #service pbb ma-type string ma-name MA1 vlan 100 mip-creation default	Creating maintenance association MA1 on vlan 100
(config-ether-cfm-pbb) #ex	Exit from pbb mode
(config) #interface eth3	Enter interface mode
(config-if)#ethernet cfm pbb mep up mpid 1 domain-name MD1 vlan 100 local-vid 100 backbone	Creating up mepid 1 on domain MD1 and vlan 100
(config-if-eth-cfm-pbb-mep) #cc multicast state enable	Enable multicast
(config-if-eth-cfm-pbb-mep) #exit	Exit from pbb mode
(config-if) #exit	Exit from interface mode
(config) #ethernet cfm pbb domain-name type character-string name MD1 pbb-domain-type bvlan level 5 mip-creation default backbone	Entering in pbb mode in MD1
(config-ether-cfm-pbb)#mep pbb crosscheck mpid 2 vlan 100	Crosscheck to beb2 mpid 2
(config-ether-cfm-pbb) #ex	Exit from pbb mode

BEB2 - SYS3

#conf t	Enter configure mode
(config) #bridge beb mac bbbb.bbbb.bbbb backbone protocol spbv	Configure backbone bridge with spbv protocol
(config) #vlan database	Enter vlan data base mode
(config-vlan) #vlan 100 type backbone point-point state enable	Configure vlan 100 and associate it with the backbone bridge
(config-vlan) #vlan 200 type backbone point-point state enable	Configure vlan 200 and associate it with the backbone bridge
(config-vlan) #vlan 300 type backbone point-point state enable	Configure vlan 300 and associate it with the backbone bridge
(config-vlan) #vlan 400 type backbone point-point state enable	Configure vlan 400 and associate it with the backbone bridge
(config-vlan) #exit	Exit vlan database mode

(config)#isis-spb configuration bridge backbone	Enter isis-spb mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset isis-spb system identifier to its default value 0
(isis-spb-config)#isis-spb system-id 33.33.33.33.33	Set isis-system identifier
(isis-spb-config) #exit	Exit from isis-spb mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge backbone instance spbv	Associate the bridge backbone to spbv instance
(config-mst) #bridge backbone instance spbv vlan 1	Associate vlan 1 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 100	Associate vlan 100 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 200	Associate vlan 200 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 300	Associate vlan 300 to spbv instance
(config-mst) #bridge backbone instance spbv vlan 400	Associate vlan 400 to spbv instance
(config-mst) #exit	Exit from mst mode
(config) #bridge backbone spb enable	Enable spb protocol on backbone
(config) #spb configuration	Enter spb mode
(spb-config) #bridge backbone spbv mode manual	Set the spvid allocation mode to manual
(spb-config) #bridge backbone spbv bvlan 1 spvid 3640	Associate vlan 100 to spvid 3640
(spb-config) #bridge backbone spbv bvlan 100 spvid 3641	Associate vlan 100 to spvid 3641
(spb-config) #bridge backbone spbv bvlan 200 spvid 3642	Associate vlan 200 to spvid 3642
(spb-config) #bridge backbone spbv bvlan 300 spvid 3643	Associate vlan 300 to spvid 3643
(spb-config) #bridge backbone spbv bvlan 400 spvid 3644	Associate vlan 400 to spvid 3644
(spb-config) #bridge backbone instance spbv vlan 100 ect 1	Associate vlan 100 to ect algo 1
(spb-config) #bridge backbone instance spbv vlan 200 ect 2	Associate vlan 200 to ect algo 2
(spb-config) #bridge backbone instance spbv vlan 300 ect 1 mtid 3996	Associate vlan 300 to ect1 and mtid 3996
(spb-config) #bridge backbone instance spbv vlan 400 ect 2 mtid 3996	Associate vlan 400 to ect2 and mtid 3996
(spb-config) #exit	Exit from spb mode
(config) #int oth1	Enter interface mode
(config) #int eth1	
(config-if) #switchport	Configure the interface as layer 2

(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if) #switchport beb provider- network bvlan add 100	Allow vlan 100 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 200	Allow vlan 200 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 300	Allow vlan 300 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 400	Allow vlan 400 to transmit from this interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface
(config) #int eth2	Enter interface mode
(config-if) #switchport	Configure interface as a part of bridge
(config-if) #bridge-group backbone	Configure interface as a part of bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network port
(config-if) #switchport beb provider- network bylan add 100	Allow vlan 100 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 200	Allow vlan 200 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 300	Allow vlan 300 to transmit from this interface
(config-if) #switchport beb provider- network bvlan add 400	Allow vlan 400 to transmit from this interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure interface as a part of bridge
(config-if) #bridge-group backbone	Configure interface as a part of bridge
(config-if) #switchport mode cbp	Configure the interface as a customer backbone bridge
(config-if) #switchport beb customer- backbone instance add 100 bvlan 100	Allow vlan 100 to transmit from this interface
(config-if) #switchport beb dispatch service 100	Enable interface to dispatch vlan 100
(config-if) #switchport beb customer- backbone instance add 200 bvlan 200	Allow vlan 200 to transmit from this interface
(config-if) #switchport beb dispatch service 200	Enable interface to dispatch vlan 200
(config-if) #switchport beb customer- backbone instance add 300 bvlan 300	Allow vlan 300 to transmit from this interface
(config-if) #switchport beb dispatch service 300	Enable interface to dispatch vlan 300
(config-if)#switchport beb customer- backbone instance add 400 bvlan 400	Allow vlan 400 to transmit from this interface
(config-if) #switchport beb dispatch service 400	Enable interface to dispatch vlan 400

(config-if) #end	Exit configuration mode
<pre>(config) #ethernet cfm pbb domain-name type character-string name MD1 pbb-domain-type bvlan level 5 mip-creation default backbone</pre>	Create MD level 5
(config-ether-cfm-pbb) #service pbb ma-type string ma-name MA1 vlan 100 mip-creation default	Creating maintenance association MA1 on vlan 100
(config-ether-cfm-pbb) #ex	Exit from pbb mode
(config) #interface eth3	Enter interface mode
(config-if)#ethernet cfm pbb mep up mpid 2 domain-name MD1 vlan 100 local-vid 100 backbone	Creating up mepid 2 on domain MD1 and vlan 100
(config-if-eth-cfm-pbb-mep) #cc multicast state enable	Enable multicast
(config-if-eth-cfm-pbb-mep) #exit	Exit from pbb mode
(config-if) #exit	Exit from interface mode
(config) #ethernet cfm pbb domain-name type character-string name MD1 pbb-domain-type bvlan level 5 mip-creation default backbone	Entering in pbb mode in MD1
(config-ether-cfm-pbb) #mep pbb crosscheck mpid 1 vlan 100	Crosscheck to beb1 mpid 1
(config-ether-cfm-pbb) #ex	Exit from pbb mode

BCB2 - SYS2

#conf t	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service point- point bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service point- point bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service point- point bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode

	T
<pre>localdomain(config) #spanning-tree mst configuration</pre>	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #bridge 1 spb enable	Enable spb at bridge
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if)#switchport beb provider- network bvlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if)#switchport beb provider- network bvlan add 100	Allow all VLAN 100 to transmit from the interface
	·

(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
<pre>(config) # ethernet cfm configure default- md-level level 5 mip-creation default bridge 1</pre>	Create MD level 5

BCB3 - SYS4

#conf t	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service point- point bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service point- point bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service point- point bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service point- point bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
localdomain(config)#spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance

(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config)#bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #bridge 1 spb enable	Enable spb at bridge
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if) #switchport beb provider- network bylan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bylan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport beb provider- network bylan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport beb provider- network bylan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if) #switchport beb provider- network bylan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
<pre>(config) # ethernet cfm configure default- md-level level 5 mip-creation default bridge 1</pre>	Create MD level 5

BCB4 - SYS5

#conf t	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan)#vlan 100 type service point- point bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan)#vlan 200 type service point- point bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan)#vlan 300 type service point- point bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service point- point bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology- id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 55.55.55.55.55	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
localdomain(config)#spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #bridge 1 spb enable	Enable spb at bridge
(config) #interface eth1	Enter interface mode

(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if) #switchport beb provider- network bvlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if)#spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if)#switchport beb provider- network bvlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if)#spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
<pre>(config) # ethernet cfm configure default- md-level level 5 mip-creation default bridge 1</pre>	Create MD level 5

BCB2 - SYS6

#conf t	Enter configuration mode
(config) #bridge 1 protocol spbv bcb	Configure bridge 1 as an SPBV backbone core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service point-point bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service point- point bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service point- point bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service point- point bridge 1 state enable	Configure VLAN 400 as a service VLAN

(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 66.66.66.66.66	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
localdomain(config)#spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #bridge 1 spb enable	Enable spb at bridge
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if) #switchport beb provider- network bylan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport beb provider- network bylan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface

(config-if) #exit	Exit from interface level
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode pnp	Configure the interface as a provider network
(config-if) #switchport beb provider- network bvlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport beb provider- network bvlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Configure Interface to up mode
(config-if) #exit	Exit from interface level
(config)# ethernet cfm configure default- md-level level 5 mip-creation default bridge 1	Create MD level 5

Provider Bridges (PEB and PCB)

PEB1 - EDGE - SYS1

#conf t	Enter configure mode
(config) #bridge 1 protocol spbv svlan edge	Configure bridge 1 as an SPBV provider edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 10 type customer bridge 1 state enable	Configure VLAN 10 on bridge 1
<pre>(config-vlan) #vlan 20 type customer bridge 1 state enable</pre>	Configure VLAN 20 on bridge 1
(config-vlan) #vlan 30 type customer bridge 1 state enable	Configure VLAN 30 on bridge 1
(config-vlan) #vlan 40 type customer bridge 1 state enable	Configure VLAN 40 on bridge 1
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan)#vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN

(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #ex	Exit VLAN database mode
(config)#isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config)#isis-spb system-id 11.11.11.11.11	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
<pre>(config)#cvlan registration table map1 bridge 1</pre>	Enter CVLAN registration mode
(config-cvlan-registration) #cvlan 10 svlan 100	Map customer VLAN 10 to service VLAN 100
(config-cvlan-registration) #cvlan 20 svlan 200	Map customer VLAN 20 to service VLAN 200
(config-cvlan-registration) #cvlan 30 svlan 300	Map customer VLAN 30 to service VLAN 300
(config-cvlan-registration) #cvlan 40 svlan 400	Map customer VLAN 40 to service VLAN 400
(config-cvlan-registration) #ex	Exit from vlan database mode
(config) #bridge 1 spb enable	Enable spb in bridge 1
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	spbv mode manual Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 1 spvid 3619	Associate base VLAN 1 to SPVID 3619
(spb-config) #bridge 1 spbv bvlan 100 spvid 3611	Associate base VLAN 100 to SPVID 3611
(spb-config) #bridge 1 spbv bvlan 200 spvid 3612	Associate base VLAN 200 to SPVID 3612
(spb-config) #bridge 1 spbv bvlan 300 spvid 3613	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge 1 spbv bvlan 400 spvid 3614	Associate base VLAN 400 to SPVID 3614
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1

(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider- network	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if)#spb enable	Enable spb at interface
(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if)#switchport mode provider- network	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode customer-edge hybrid	Configure the port type as customer edge hybrid
(config-if) #switchport mode customer-edge hybrid acceptable-frame-type all	Configure the port to accept all frame types

(config-if)#switchport customer-edge hybrid allowed vlan all	Allow all VLANs created on the interface
<pre>(config-if) #switchport customer-edge vlan registration map1</pre>	Associate map1 with the interface
(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm domain-name type character-string name MD1 level 5 mip-creation default bridge 1	Create domain level 5 at PEB1
(config-ether-cfm) #service ma-type string ma-name MA1 vlan 100 mip-creation default	Create maintenance association MA1 inside MD1
(config-ether-cfm) #mep crosscheck mpid 2 vlan 100	Crosscheck mep at PEB2 mpid 2
(config-ether-cfm) #ex	Exit Etherent CFM mode
(config) #interface eth1	Enter interface mode
(config-if) #ethernet cfm mep down mpid 1 active true domain MD1 vlan 100 local-vid 100 bridge 1	Create down MEP
(config-if-eth-cfm-mep) #cc multicast state enable	Enable cc multicast
(config-if-eth-cfm-mep) #ex	Exit CFM MEP mode

PEB2-EDGE-SYS3

#conf t	Enter configure mode
(config) #bridge 1 protocol spbv svlan edge	Configure bridge 1 as an SPBV provider edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan)#vlan 10 type customer bridge 1 state enable	Configure VLAN 10 on bridge 1
(config-vlan)#vlan 20 type customer bridge 1 state enable	Configure VLAN 20 on bridge 1
(config-vlan) #vlan 30 type customer bridge 1 state enable	Configure VLAN 30 on bridge 1
(config-vlan)#vlan 40 type customer bridge 1 state enable	Configure VLAN 40 on bridge 1
(config-vlan)#vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan)#vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan)#vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #ex	Exit VLAN database mode

Config) #isis-spb configuration bridge 1 Enter ISIS-SPB mode
id 3996 (isis-spb-config) #isis-spb system-id 33.33.33.33.33.33.33.33 (isis-spb-config) #exit Exit ISIS-SPB mode (config) #cvlan registration table map1 bridge 1 (config-cvlan-registration) #cvlan 10 svlan Map customer VLAN 10 to service VLAN 100 100 (config-cvlan-registration) #cvlan 20 svlan Map customer VLAN 20 to service VLAN 200 200 (config-cvlan-registration) #cvlan 30 svlan Map customer VLAN 30 to service VLAN 300 300 (config-cvlan-registration) #cvlan 40 svlan Map customer VLAN 40 to service VLAN 400 400 (config-cvlan-registration) #cvlan 40 svlan Map customer VLAN 40 to service VLAN 400 400 (config-cvlan-registration) #ex Exit from vlan database mode (config) #bridge 1 spb enable Enable spb in bridge 1 (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance
33.33.33.33.33.33.33 (isis-spb-config) #exit
(config) #cvlan registration table map1 bridge 1 (config-cvlan-registration) #cvlan 10 svlan 100 (config-cvlan-registration) #cvlan 20 svlan 200 (config-cvlan-registration) #cvlan 30 svlan 300 (config-cvlan-registration) #cvlan 30 svlan 300 (config-cvlan-registration) #cvlan 40 svlan 400 (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config-splan-registration) #ex (config) #bridge 1 spb enable (config) #spanning-tree mst configuration (config-mst) #bridge 1 instance spbv (config-mst) #bridge 1 instance spbv vlan 100 Associate VLAN 100 to the SPBV instance
config-cvlan-registration #cvlan 10 svlan Map customer VLAN 10 to service VLAN 100
(config-cvlan-registration) #cvlan 20 svlan (config-cvlan-registration) #cvlan 30 svlan 300 (config-cvlan-registration) #cvlan 40 svlan 400 (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config-cvlan-registration) #ex (config) #bridge 1 spb enable (config) #bridge 1 spb enable (config) #spanning-tree mst configuration (config-mst) #bridge 1 instance spbv (config-mst) #bridge 1 instance spbv vlan 1 (config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config-cvlan-registration) #cvlan 30 svlan Map customer VLAN 30 to service VLAN 300 (config-cvlan-registration) #cvlan 40 svlan Map customer VLAN 40 to service VLAN 400 (config-cvlan-registration) #ex Exit from vlan database mode (config) #bridge 1 spb enable Enable spb in bridge 1 (config) #spanning-tree mst configuration Enter MST mode (config-mst) #bridge 1 instance spbv Associate bridge 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config-cvlan-registration) #cvlan 40 svlan Map customer VLAN 40 to service VLAN 400 (config-cvlan-registration) #ex Exit from vlan database mode (config) #bridge 1 spb enable Enable spb in bridge 1 (config) #spanning-tree mst configuration Enter MST mode (config-mst) #bridge 1 instance spbv Associate bridge 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config-cvlan-registration) #ex (config) #bridge 1 spb enable (config) #spanning-tree mst configuration (config-mst) #bridge 1 instance spbv (config-mst) #bridge 1 instance spbv vlan 1 (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config) #bridge 1 spb enable (config) #spanning-tree mst configuration (config-mst) #bridge 1 instance spbv (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config) #spanning-tree mst configuration
(config-mst) #bridge 1 instance spbv Associate bridge 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance 100 Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1 Associate VLAN 1 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 100 to the SPBV instance (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance Associate VLAN 200 to the SPBV instance
100 (config-mst) #bridge 1 instance spbv vlan Associate VLAN 200 to the SPBV instance
(0011119 11100) 101111 111111 111111 111111 111111
(config-mst) #bridge 1 instance spbv vlan Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan Associate VLAN 400 to the SPBV instance
(config-mst) #ex Exit MST mode
(config) #spb configuration Enter SPB mode
(spb-config) #bridge 1 spbv mode manual spbv mode manual Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 1 spvid Associate base VLAN 1 to SPVID 3640
(spb-config) #bridge 1 spbv bvlan 100 spvid Associate base VLAN 100 to SPVID 3641
(spb-config) #bridge 1 spbv bvlan 200 spvid Associate base VLAN 200 to SPVID 3642
(spb-config) #bridge 1 spbv bvlan 300 spvid Associate base VLAN 300 to SPVID 3643
(spb-config) #bridge 1 spbv bvlan 400 spvid Associate base VLAN 400 to SPVID 3644
(spb-config) #bridge 1 instance spbv vlan Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan Associate VLAN 200 to ECT algorithm 2 200 ect 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996 Associate VLAN 300 to ECT algorithm 1 and MTID 3996

(spb-config) #bridge 1 instance spbv vlan	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider-	Configure the port type as provider network
network	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
<pre>(config-if) #switchport mode provider- network</pre>	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #spb enable	Enable spb at interface
(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode customer-edge hybrid	Configure the port type as customer edge hybrid
(config-if) #switchport mode customer-edge hybrid acceptable-frame-type all	Configure the port to accept all frame types
(config-if)#switchport customer-edge hybrid allowed vlan all	Allow all VLANs created on the interface
(config-if)#switchport customer-edge vlan registration map1	Associate map1 with the interface

(config-if) #no shutdown	Bring up interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm domain-name type character-string name MD1 level 5 mip-creation default bridge 1	Create domain level 5 at PEB1
(config-ether-cfm) #service ma-type string ma-name MA1 vlan 100 mip-creation default	Create maintenance association MA1 inside MD1
(config-ether-cfm) #mep crosscheck mpid 1 vlan 100	Crosscheck mep at PEB1 mpid 1
(config-ether-cfm) #ex	Exit Ethernet CFM mode
(config) #interface eth1	Enter interface mode
(config-if) #ethernet cfm mep down mpid 2 active true domain MD1 vlan 100 local-vid 100 bridge 1	Create down MEP1
(config-if-eth-cfm-mep) #cc multicast state enable	Enable cc multicast
(config-if-eth-cfm-mep) #ex	Exit CFM MEP mode

PCB1 - SYS2

(config) #con terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan) #vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config)#isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance

(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider- network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
<pre>(config-if) #switchport mode provider- network</pre>	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
<pre>(config)# ethernet cfm configure default- md-level level 5 mip-creation default bridge 1</pre>	Create MD level 5

PCB2-SYS4

(config) #con terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan)#vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config)#bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config)#bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode

(config-if) #switchport	Configure the interface as layer 2
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(config-if) #bridge-group 1	Configure the interface as part of the bridge
<pre>(config-if) #switchport mode provider- network</pre>	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider- network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config)# ethernet cfm configure default- md-level level 5 mip-creation default bridge 1	Create MD level 5

PCB3 - SYS5

(config) #con terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
<pre>(config-vlan) #vlan 100 type service multipoint-multipoint bridge 1 state enable</pre>	Configure VLAN 100 as a service VLAN
<pre>(config-vlan) #vlan 200 type service multipoint-multipoint bridge 1 state enable</pre>	Configure VLAN 200 as a service VLAN
(config-vlan)#vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN

(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config)#isis-spb system-id 55.55.55.55.55	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst)#bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
<pre>(config-if) #switchport mode provider- network</pre>	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge

<pre>(config-if) #switchport mode provider- network</pre>	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config)# ethernet cfm configure default- md-level level 5 mip-creation default bridge 1	Create MD level 5

PCB4 - SYS6

(config) #con terminal	Enter configuration mode
(config) #bridge 1 protocol spbv svlan	Configure bridge 1 as an SPBV provider core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan)#vlan 100 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 100 as a service VLAN
(config-vlan)#vlan 200 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 200 as a service VLAN
(config-vlan) #vlan 300 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 300 as a service VLAN
(config-vlan)#vlan 400 type service multipoint-multipoint bridge 1 state enable	Configure VLAN 400 as a service VLAN
(config-vlan) #exit	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #isis-spb system-id 66.66.66.66.66	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance

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(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #exit	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider- network	Configure the port type as provider network
(config-if) #switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if)#bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode provider- network	Configure the port type as provider network
(config-if)#switchport provider-network allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if)#switchport provider-network allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #exit	Exit interface mode
(config) # ethernet cfm configure default-md-level level 5 mip-creation default bridge 1	Create MD level 5
<u> </u>	

Customer Bridges (CEB and CCB)

CEB1 - SYS1

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan edge	Configure bridge 1 as an SPBV customer edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config)#isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 11.11.11.11.11	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 spbv mode manual	Set the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 1 spvid 3619	Associate base VLAN 1 to SPVID 3619
(spb-config) #bridge 1 spbv bvlan 100 spvid 3611	Associate base VLAN 100 to SPVID 3611
(spb-config) #bridge 1 spbv bvlan 200 spvid 3612	Associate base VLAN 200 to SPVID 3612

(app-config) #bridge 1 instance spbv vlan 200 ect 2 (app-config) #bridge 1 instance spbv vlan 200 ect 1 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 (app-config) #bridge 1 instance spbv vlan 200 ect 2 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 1 instance spbv vlan 200 ect 2 mtid 3996 (app-config) #bridge 2 instance spbv vlan 200 ect 2 extinctiface as layer 2 200 ect 2 extinctiface as a funk 200 ect 2 extinctiface mode 200 ect 2 extinctif	(spb-config) #bridge 1 spbv bvlan 300 spvid 3613	Associate base VLAN 300 to SPVID 3613
(spb-config) #bridge 1 instance spbv vlan Associate VLAN 200 to ECT algorithm 2 200 ect 2 (spb-config) #bridge 1 instance spbv vlan 300 ect 1 mid 3996 300 ect 1 mid 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 300 to ECT algorithm 1 and MTID 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #ex Ext SPB mode (config-if) #switchport Configure the interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport mode trunk Configure the interface as part of the bridge (config-if) #switchport mode trunk Configure the interface as a trunk (config-if) #switchport trunk allowed vlan Allow all VLAN 100 to transmit from the interface add 200 (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 300 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 100 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchp		Associate base VLAN 400 to SPVID 3614
Spb-config) #bridge 1 instance spbv vlan Associate VLAN 300 to ECT algorithm 1 and MTID 3996 300 ect 1 mixed 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #bridge 1 instance spbv vlan Associate VLAN 400 to ECT algorithm 2 and MTID 3996 (spb-config) #bridge 2 (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group 1 Configure the interface as part of the bridge (config-if) #bridge-group 1 Configure the interface as part of the bridge (config-if) #switchport trunk allowed vlan Allow all VLAN 100 to transmit from the interface and 200 (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface and 300 (config-if) #switchport trunk allowed vlan Allow all VLAN 300 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport Configure the interface as part of the bridge (config-if) #switchport trunk allowed vlan Allow all VLAN 100 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 300 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to transmit from the interface (config-if) #switchport trunk allowed vlan Allow all VLAN 400 to t		Associate VLAN 100 to ECT algorithm 1
Associate VLAN 400 to ECT algorithm 2 and MTID 3996		Associate VLAN 200 to ECT algorithm 2
400 ect 2 mid 3996 (spb-config) #ex (config) #interface eth1 Enter interface mode (config-if) #switchport (config-if) #bridge-group 1 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan Bring up interface (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport decture trunk allowed vlan add 400 (config-if) #switchport mode trunk (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add	(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
Config		Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(config-if) #switchport Configure the interface as layer 2 (config-if) #no shutdown Bring up interface (config-if) #bridge-group 1 Configure the interface as part of the bridge (config-if) #switchport mode trunk Configure the interface as a trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport Configure the interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #switchport Configure the interface as part of the bridge (config-if) #switchport mode trunk Configure the interface as a trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk a	(spb-config) #ex	Exit SPB mode
Config-if) #no shutdown Bring up interface	(config) #interface eth1	Enter interface mode
(config-if) #bridge-group 1 (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add	(config-if) #switchport	Configure the interface as layer 2
(config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport Configure the interface mode (config-if) #switchport Configure the interface as layer 2 Ering up interface (config-if) #switchport mode trunk Configure the interface as part of the bridge Config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if	(config-if) #no shutdown	Bring up interface
(config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vl	(config-if)#bridge-group 1	Configure the interface as part of the bridge
Allow all VLAN 200 to transmit from the interface and 200	(config-if) #switchport mode trunk	Configure the interface as a trunk
Config-if) #switchport trunk allowed vlan Allow all VLAN 300 to transmit from the interface add 300		Allow all VLAN 100 to transmit from the interface
Allow all VLAN 400 to transmit from the interface and 400		Allow all VLAN 200 to transmit from the interface
Sexit interface mode		Allow all VLAN 300 to transmit from the interface
(config) #interface eth2 (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport (config-if) #switchport mode trunk (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan allowed vlan add 400 (config-if) #switchport trunk allowed vlan allowed v		Allow all VLAN 400 to transmit from the interface
(config-if) #switchport (config-if) #switchport (config-if) #no shutdown (config-if) #bridge-group 1 (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport (c	(config-if) #ex	Exit interface mode
(config-if) #no shutdown (config-if) #bridge-group 1 (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport (config-if) #switchport (config-if) #switchport Configure the interface as layer 2 (config-if) #bridge-group 1 Configure the interface as part of the bridge	(config) #interface eth2	Enter interface mode
(config-if) #bridge-group 1 Configure the interface as part of the bridge (config-if) #switchport mode trunk Configure the interface as a trunk (config-if) #switchport trunk allowed vlan add 100 Allow all VLAN 100 to transmit from the interface (config-if) #switchport trunk allowed vlan add 200 Allow all VLAN 200 to transmit from the interface (config-if) #switchport trunk allowed vlan add 300 Allow all VLAN 300 to transmit from the interface (config-if) #switchport trunk allowed vlan add 400 Allow all VLAN 400 to transmit from the interface (config-if) #ex Exit interface mode (config) #interface eth3 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #no shutdown Bring up interface (config-if) #bridge-group 1 Configure the interface as part of the bridge	(config-if) #switchport	Configure the interface as layer 2
(config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan add 100 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #switchport trunk allowed vlan allowed vlan add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan allowed vlan allow all VLAN 400 to transmit from the interface add 400 (config-if) #switchport trunk allowed vlan all	(config-if) #no shutdown	Bring up interface
Config-if) #switchport trunk allowed vlan Allow all VLAN 100 to transmit from the interface	(config-if) #bridge-group 1	Configure the interface as part of the bridge
Config-if) #switchport trunk allowed vlan Allow all VLAN 200 to transmit from the interface add 200	(config-if) #switchport mode trunk	Configure the interface as a trunk
add 200 (config-if) #switchport trunk allowed vlan add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #ex (config-if) #ex Exit interface mode (config) #interface eth3 (config-if) #switchport Configure the interface as layer 2 (config-if) #no shutdown (config-if) #bridge-group 1 Configure the interface as part of the bridge		Allow all VLAN 100 to transmit from the interface
add 300 (config-if) #switchport trunk allowed vlan add 400 (config-if) #ex (config-if) #ex (config) #interface eth3 (config-if) #switchport (config-if) #switchport (config-if) #no shutdown (config-if) #bridge-group 1 Configure the interface as part of the bridge		Allow all VLAN 200 to transmit from the interface
add 400 (config-if) #ex Exit interface mode (config) #interface eth3 (config-if) #switchport (config-if) #no shutdown (config-if) #bridge-group 1 Enter interface mode Configure the interface as layer 2 Configure the interface as part of the bridge		Allow all VLAN 300 to transmit from the interface
(config) #interface eth3 Enter interface mode (config-if) #switchport Configure the interface as layer 2 (config-if) #no shutdown Bring up interface (config-if) #bridge-group 1 Configure the interface as part of the bridge		Allow all VLAN 400 to transmit from the interface
(config-if) #switchport Configure the interface as layer 2 (config-if) #no shutdown Bring up interface (config-if) #bridge-group 1 Configure the interface as part of the bridge	(config-if) #ex	Exit interface mode
(config-if) #no shutdown (config-if) #bridge-group 1 Configure the interface as part of the bridge	(config)#interface eth3	Enter interface mode
(config-if) #bridge-group 1 Configure the interface as part of the bridge	(config-if) #switchport	Configure the interface as layer 2
	(config-if) #no shutdown	Bring up interface
(config-if) #switchport mode trunk Configure the interface as a trunk	(config-if)#bridge-group 1	Configure the interface as part of the bridge
	(config-if) #switchport mode trunk	Configure the interface as a trunk

(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm domain-name type character-string name MD1 level 5 mip-creation default bridge 1	Create domain with name MD1 and level 5
(config-ether-cfm) #service ma-type string ma-name MA1 vlan 100 mip-creation default	Create maintenance association MA1
(config-ether-cfm) #mep crosscheck mpid 2 vlan 100	Crosscheck mpid 2 on ceb2
(config-ether-cfm) #exit	Exit Ethernet CFM mode
(config) #interface eth1	Enter interface mode
(config-if)#ethernet cfm mep down mpid 1 active true domain MD1 vlan 100 local-vid 100 bridge 1	Create dowm mpid 1
(config-if-eth-cfm-mep) #cc multicast state enable	Enable cc multicast
(config-if-eth-cfm-mep) #end	Exit CFM MEP mode
active true domain MD1 vlan 100 local-vid 100 bridge 1 (config-if-eth-cfm-mep) #cc multicast state enable	Enable cc multicast

CEB2 - SYS3

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan edge	Configure bridge 1 as an SPBV customer edge bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 33.33.33.33.33	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode

(coning mee, mentage i incomes spot time i	ssociate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan As	SSS.S.C VERT TO THE ST DV IIIOTATION
100	ssociate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan As 200	ssociate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan As 300	ssociate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan As	ssociate VLAN 400 to the SPBV instance
(config-mst) #ex Ex	xit MST mode
(config) #spb configuration En	nter SPB mode
(spb-config) #bridge 1 spbv mode manual	et the SPVID allocation mode to manual
(spb-config) #bridge 1 spbv bvlan 1 spvid As 3640	ssociate base VLAN 100 to SPVID 3640
(spb-config) #bridge 1 spbv bvlan 100 spvid As 3641	ssociate base VLAN 100 to SPVID 3641
(spb-config) #bridge 1 spbv bvlan 200 spvid As 3642	ssociate base VLAN 200 to SPVID 3642
(spb-config) #bridge 1 spbv bvlan 300 spvid As 3643	ssociate base VLAN 300 to SPVID 3643
(spb-config) #bridge 1 spbv bvlan 400 spvid As 3644	ssociate base VLAN 400 to SPVID 3644
(spb-config) #bridge 1 instance spbv vlan As 100 ect 1	ssociate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan As 200 ect 2	ssociate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan As 300 ect 1 mtid 3996	ssociate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	ssociate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex Ex	xit SPB mode
(config) #interface eth1 En	nter interface mode
(config-if) #switchport Co	onfigure the interface as layer 2
(config-if) #no shutdown Bri	ring up interface
(config-if) #bridge-group 1 Co	onfigure the interface as part of the bridge
(config-if) #switchport mode trunk	onfigure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	llow all VLAN 100 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	llow all VLAN 200 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	llow all VLAN 300 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	llow all VLAN 400 to transmit from the interface
(config-if) #ex Ex	xit interface mode
(config)#interface eth2	nter interface mode

(One firm the interference level O
(config-if) #switchport	Configure the interface as layer 2
(config-if) #no shutdown	Bring up interface
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #ex	Exit interface mode
(config) #interface eth3	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #no shutdown	Bring up interface
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 to transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 to transmit from the interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm domain-name type character-string name MD1 level 5 mip-creation default bridge 1	Create domain with name MD1 and level 5
(config-ether-cfm) #service ma-type string ma-name MA1 vlan 100 mip-creation default	Create maintenance association MA1
(config-ether-cfm) #mep crosscheck mpid 1 vlan 100	Crosscheck mpid 1 on ceb1
(config-ether-cfm) #exit	Exit Ethernet CFM mode
(config) #interface eth1	Enter interface mode
(config-if) #ethernet cfm mep down mpid 2 active true domain MD1 vlan 100 local-vid 100 bridge 1	Create down mpid 2
(config-if-eth-cfm-mep) #cc multicast state enable	Enable cc multicast
(config-if-eth-cfm-mep) #end	Exit CFM MEP mode

CCB1 - SYS2

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 22.22.22.22.22	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge

(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if)#ex	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
<pre>(config)# ethernet cfm configure default- md-level level 5 mip-creation default bridge 1</pre>	Create MD level 5

CCB2 - SYS4

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)

(isis-spb-config) #isis-spb system-id 44.44.44.44.44	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #no shutdown	
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface

(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm configure default-md-level level 5 mip-creation default bridge 1	Create MD level 5

CCB3 - SYS5

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1
(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config) #isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config)#isis-spb system-id 55.55.55.55	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode

(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #ex	Exit SPB mode
(config) #interface eth1	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm configure default-md-level level 5 mip-creation default bridge 1	Create MD level 5

CCB4 - SYS6

(config) #conf ter	Enter configuration mode
(config) #bridge 1 protocol spbv cvlan	Configure bridge 1 as an SPBV customer core bridge
(config) #vlan database	Enter VLAN database mode
(config-vlan) #vlan 100 bridge 1 state enable	Configure VLAN 100 on bridge 1

(config-vlan) #vlan 200 bridge 1 state enable	Configure VLAN 200 on bridge 1
(config-vlan) #vlan 300 bridge 1 state enable	Configure VLAN 300 on bridge 1
(config-vlan) #vlan 400 bridge 1 state enable	Configure VLAN 400 on bridge 1
(config-vlan) #ex	Exit VLAN database mode
(config)#isis-spb configuration bridge 1	Enter ISIS-SPB mode
(isis-spb-config) #isis-spb multi-topology-id 3996	Set an MTID
(isis-spb-config) #no isis-spb system-id	Reset the ISIS-SPB system identifier it its default value (0)
(isis-spb-config) #isis-spb system-id 66.66.66.66.66	Set the ISIS-SPB system identifier
(isis-spb-config) #exit	Exit ISIS-SPB mode
(config) #spanning-tree mst configuration	Enter MST mode
(config-mst) #bridge 1 instance spbv	Associate bridge 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 1	Associate VLAN 1 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 100	Associate VLAN 100 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 200	Associate VLAN 200 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 300	Associate VLAN 300 to the SPBV instance
(config-mst) #bridge 1 instance spbv vlan 400	Associate VLAN 400 to the SPBV instance
(config-mst) #ex	Exit MST mode
(config) #spb configuration	Enter SPB mode
(spb-config) #bridge 1 instance spbv vlan 100 ect 1	Associate VLAN 100 to ECT algorithm 1
(spb-config) #bridge 1 instance spbv vlan 200 ect 2	Associate VLAN 200 to ECT algorithm 2
(spb-config) #bridge 1 instance spbv vlan 300 ect 1 mtid 3996	Associate VLAN 300 to ECT algorithm 1 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	Associate VLAN 400 to ECT algorithm 2 and MTID 3996
(spb-config) #bridge 1 instance spbv vlan	Associate VLAN 400 to ECT algorithm 2 and MTID 3996 Exit SPB mode
(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996	-
<pre>(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996 (spb-config) #ex</pre>	Exit SPB mode
<pre>(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996 (spb-config) #ex (config) #interface eth1</pre>	Exit SPB mode Enter interface mode
<pre>(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996 (spb-config) #ex (config) #interface eth1 (config-if) #switchport</pre>	Exit SPB mode Enter interface mode Configure the interface as layer 2
<pre>(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996 (spb-config) #ex (config) #interface eth1 (config-if) #switchport (config-if) #bridge-group 1</pre>	Exit SPB mode Enter interface mode Configure the interface as layer 2 Configure the interface as part of the bridge
<pre>(spb-config) #bridge 1 instance spbv vlan 400 ect 2 mtid 3996 (spb-config) #ex (config) #interface eth1 (config-if) #switchport (config-if) #bridge-group 1 (config-if) #switchport mode trunk (config-if) #switchport trunk allowed vlan</pre>	Exit SPB mode Enter interface mode Configure the interface as layer 2 Configure the interface as part of the bridge Configure the interface as a trunk

(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #interface eth2	Enter interface mode
(config-if) #switchport	Configure the interface as layer 2
(config-if) #no shutdown	Bring up interface
(config-if) #bridge-group 1	Configure the interface as part of the bridge
(config-if) #switchport mode trunk	Configure the interface as a trunk
(config-if) #switchport trunk allowed vlan add 100	Allow all VLAN 100 transmit from the interface
(config-if) #switchport trunk allowed vlan add 200	Allow all VLAN 200 transmit from the interface
(config-if) #switchport trunk allowed vlan add 300	Allow all VLAN 300 transmit from the interface
(config-if) #switchport trunk allowed vlan add 400	Allow all VLAN 400 transmit from the interface
(config-if) #ex	Exit interface mode
(config) #ethernet cfm configure default-md-level level 5 mip-creation default bridge 1	Create MD level 5

Validation

show spb adjacency interface eth1

BEB1

```
#show spb adjacency interface eth1
Path cost - 200000
Admin state - UP
Port ID - 32771
Port priority - 128
NEIGHBOUR DETAILS
                  - 22.22.22.22.22
Sys_id
State
                   - Up
Agreement digest - 0000000413a5dcfd5f8eb5e83a20bd7e44d2833a
MCID
Conf Digest - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
Conf Digest
                 - 228e2fa8e9a3db74307fd564f43993d3
```

#show spb adjacency interface eth2

Path_cost - 200000 Admin_state - UP Port ID - 32772 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 55.55.55.55.55

State - Up

Agreement digest - 000000059a8a55a823ca0add34383b3e64404cda

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

BEB2

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 44.44.44.44.44

State - Up

Agreement digest - 0000000456072513f61421ab7fbed2bd85305f9e

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX_MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

#show spb adjacency interface eth2

Path_cost - 200000 Admin_state - UP Port ID - 32772 Port priority - 128

NEIGHBOUR DETAILS

Sys id - 66.66.66.66.66

State - Up

Agreement digest - 000000067826a975d4488ae95ddebaebe1ead860

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

#

BCB₁

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys id - 11.11.11.11.11

State - Up

Agreement digest - 00000003aca1ea104da8d58a40f96ec29997003e

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX_MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

#show spb adjacency interface eth2

Path_cost - 200000 Admin_state - UP Port ID - 32772 Port priority - 128

NEIGHBOUR DETAILS

Sys id - 44.44.44.44.44

State - Up

Agreement digest - 0000000456072513f61421ab7fbed2bd85305f9e

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

BCB2

#show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 33.33.33.33.33

State - Up

Agreement digest - 00000004cc9f85f494acc159b03e03af579f6828

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

#show spb adjacency interface eth2

Path_cost - 200000 Admin_state - UP Port ID - 32772 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 22.22.22.22.22

State - Up

Agreement digest - 0000000413a5dcfd5f8eb5e83a20bd7e44d2833a

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

```
AUX MCID
Conf Digest
            - 228e2fa8e9a3db74307fd564f43993d3
BCB3
#show spb adjacency interface eth1
Path cost - 200000
Admin state - UP
Port ID - 32771
Port priority - 128
NEIGHBOUR DETAILS
-----
                  - 11.11.11.11.11.11
Sys id
State
                 - Up
Agreement digest - 00000003acalea104da8d58a40f96ec29997003e
MCID
Conf Digest
               - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
Conf Digest
             - 228e2fa8e9a3db74307fd564f43993d3
#show spb adjacency interface eth2
Path cost - 200000
Admin state - UP
Port ID - 32772
Port priority - 128
NEIGHBOUR DETAILS
_____
Sys id
                  - 66.66.66.66.66
State
                 - Up
Agreement digest - 000000067826a975d4488ae95ddebaebe1ead860
MCID
Conf Digest
            - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
               - 228e2fa8e9a3db74307fd564f43993d3
Conf Digest
```

BCB4

(config) #show spb adjacency interface eth1

Path_cost - 200000 Admin_state - UP Port ID - 32771 Port priority - 128

NEIGHBOUR DETAILS

Sys_id - 33.33.33.33.33

State - Up

Agreement digest - 00000004cc9f85f494acc159b03e03af579f6828

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

(config) #show spb adjacency interface eth2

Path_cost - 200000 Admin_state - UP Port ID - 32772 Port priority - 128

NEIGHBOUR DETAILS

Sys id - 55.55.55.55.55

State - Up

Agreement digest - 000000059a8a55a823ca0add34383b3e64404cda

MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

AUX_MCID

Conf Digest - 228e2fa8e9a3db74307fd564f43993d3

(config) #

show isis-spb neighbors

BEB1

#show isis-spb neighbors

System Id Interface SNPA State Holdtime Type Protocol

MTID: 0						
2222.2222.2222	eth1	5254.00cf.ae36	Up	29	L1	IS-IS
MET D 2006						
MTID: 3996 2222.2222.222	et.h1	5254.00cf.ae36	Up	29	L1	IS-IS
	00111	0201.0001.0000	op	23		
MTID : 0						
5555.5555.5555	eth2	5254.0050.ed46	Up	27	L1	IS-IS
MTID : 3996						
5555.5555.5555	eth2	5254.0050.ed46	Uр	27	L1	IS-IS
m + 1 27 1	5 N ' 11 '					
Total Number o	ı weignbor(s): 4				
BEB2	n a d arb !					
#show isis-spb	neignbors					
System Id	Interface	SNPA	State	Holdtime	Туре	Protocol
MTID: 0	eth1	5254.0008.9001	Up	25	L1	IS-IS
	CCIII	0201.0000.0001	~P	20		10 10
MTID : 3996						
4444.4444.4444	eth1	5254.0008.9001	Up	25	L1	IS-IS
MTID : 0						
6666.6666.6666	eth2	5254.0082.6d85	Up	21	L1	IS-IS
MMID . 2006						
MTID: 3996 6666.6666.6666	eth2	5254.0082.6d85	Uр	21	L1	IS-IS
	<i>-</i>		- 1-			
Total Number of	f Neighbor(s): 4				
BCB1 #show isis-spb	neighbors					
"2110" TOTO SPD						
System Id		SNPA		Holdtime	Type	Protocol
MTID: 0						
	eth1	5254.00c1.99a1	Up	25	L1	IS-IS
MTID: 3996	a+h1	5254.00c1.99a1	Uр	25	L1	IS-IS
	CCIIT	J2J4.UUCI.99dI	υp	۷ ک	тт	TO-TO
MTID : 0						
4444.4444.4444	eth2	5254.001e.5b61	Up	27	L1	IS-IS
MTID : 3996						
	eth2	5254.001e.5b61	Up	27	L1	IS-IS

Total Number of Neighbor(s): 4

BCB2

#show isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime	Туре	Protocol
MTID: 0 3333.3333.3333	eth1	5254.00fc.eb11	Up	22	L1	IS-IS
MTID: 3996 3333.3333.3333	eth1	5254.00fc.eb11	Up	22	L1	IS-IS
MTID : 0 2222.2222.2222	eth2	5254.0004.43e4	Up	26	L1	IS-IS
MTID: 3996 2222.2222.2222	eth2	5254.0004.43e4	Up	26	L1	IS-IS
Total Number of	F Neighbor(s)	· 1				

Total Number of Neighbor(s): 4

#

BCB3

#show isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime	Type	Protocol
MTID : 0 1111.1111.1111	eth1	5254.0026.26f8	Up	22	L1	IS-IS
MTID: 3996 1111.1111.1111	eth1	5254.0026.26f8	Up	22	L1	IS-IS
MTID : 0 6666.6666.6666	eth2	5254.0052.ab54	Up	29	L1	IS-IS
MTID: 3996 6666.6666.6666	eth2	5254.0052.ab54	Up	29	L1	IS-IS

Total Number of Neighbor(s): 4

BCB4

(config) #show isis-spb neighbors

System Id	Interface	SNPA	State	Holdtime	Type	Protocol
MTID : 0						
3333.3333.3333	eth1	5254.007e.8af2	Up	25	L1	IS-IS

MTID : 3996

SPBV CFM Configuration

3333.3333.3333 eth1	5254.007e.8af2	Up	25	L1	IS-IS
MTID: 0 5555.5555.555 eth2	5254.00fd.caa0	Up	28	L1	IS-IS
MTID: 3996 5555.5555.555 eth2	5254.00fd.caa0	Up	28	L1	IS-IS

Total Number of Neighbor(s): 4

show isis-spb fdb

BEB1

#show isis-spb fdb

SPB Forwarding Database:

[U - Unicast, M - Multicast]

DESTINATION-ADDRESS	SPVID/B-VID	O/P INTERFACE
GO : 1		
xx.xx.xx.xx	3611	if/eth1 if/eth2
xx.xx.xx.xx	3619	if/eth1 if/eth2
GO : 2		
xx.xx.xx.xx	3612	if/eth1 if/eth2
ALGO: 1		
xx.xx.xx.xx	3613	if/eth1 if/eth2
ALGO: 2		
xx.xx.xx.xx	3614	if/eth1 if/eth2
	GO: 1 xx.xx.xx.xx.xx.xx xx.xx.xx.xx.xx GO: 2 xx.xx.xx.xx.xx.xx ALGO: 1 xx.xx.xx.xx.xx.xx ALGO: 2	GO: 1 xx.xx.xx.xx.xx.xx 3611 xx.xx.xx.xx.xx.xx 3619 GO: 2 xx.xx.xx.xx.xx.xx 3612 ALGO: 1 xx.xx.xx.xx.xx.xx 3613 ALGO: 2

Number of Unicast Records: 5
Number of Multicast Records: 0

BEB2

#show isis-spb fdb

SPB Forwarding Database:

[U - Unicast, M - Multicast]

I/P INTERFACE	DESTINATION-ADDRESS	SPVID/B-VID	O/P INTERFACE
MTID : 0, ECT AL	GO : 1		
U if/**	xx.xx.xx.xx	3640	if/eth1 if/eth2
U if/**	xx.xx.xx.xx	3641	if/eth1 if/eth2
MTID: 0, ECT ALGO: 2			
U if/**	xx.xx.xx.xx	3642	if/eth1 if/eth2
MTID: 3996, ECT	ALGO : 1		
U if/**	xx.xx.xx.xx	3643	if/eth1 if/eth2
MTID: 3996, ECT	ALGO : 2		
U if/**	XX.XX.XX.XX.XX	3644	if/eth1 if/eth2

Number of Unicast Records: 5

```
Number of Multicast Records: 0
BCB<sub>1</sub>
(config) #show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 MTID : 0, ECT ALGO : 1
U if/eth1
                                             if/eth2
             XX.XX.XX.XX.XX
                                3611
U if/eth1
                                             if/eth2
             XX.XX.XX.XX.XX
                                3619
U if/eth2
             XX.XX.XX.XX.XX
                                3640
                                             if/eth1
U if/eth2
             xx.xx.xx.xx.xx 3641
                                             if/eth1
MTID: 0, ECT ALGO: 2
U if/eth1
                                 3612
                                             if/eth2
              XX.XX.XX.XX.XX
MTID : 3996, ECT ALGO : 1
U if/eth1
             XX.XX.XX.XX.XX
                                 3613
                                             if/eth2
U if/eth2
             xx.xx.xx.xx.xx 3643
                                             if/eth1
MTID: 3996, ECT ALGO: 2
U if/eth1
                                            if/eth2
             xx.xx.xx.xx.xx 3614
Number of Unicast Records: 8
Number of Multicast Records: 0
BCB<sub>2</sub>
#show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 ______ ______
MTID : 0, ECT ALGO : 1
U if/eth1
             xx.xx.xx.xx.xx 3640
                                            if/eth2
U if/eth1
             XX.XX.XX.XX.XX
                                3641
                                            if/eth2
U if/eth2
             xx.xx.xx.xx.xx 3611
                                             if/eth1
              xx.xx.xx.xx.xx 3619
U if/eth2
                                             if/eth1
MTID : 0, ECT ALGO : 2
                                             if/eth2
U if/eth1
              XX.XX.XX.XX.XX
                                3642
MTID: 3996, ECT ALGO: 1
U if/eth1
                                3643
                                             if/eth2
             XX.XX.XX.XX.XX
U if/eth2
              XX.XX.XX.XX.XX
                                3613
                                             if/eth1
MTID : 3996, ECT ALGO : 2
U if/eth1
              XX.XX.XX.XX.XX
                                3644
                                            if/eth2
```

BCB3

#show isis-spb fdb

Number of Unicast Records: 8
Number of Multicast Records: 0

```
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 ______
MTID : 0, ECT ALGO : 1
U if/eth1
            xx.xx.xx.xx.xx 3611
                                         if/eth2
U if/eth1
            xx.xx.xx.xx.xx 3619
                                         if/eth2
MTID : 0, ECT ALGO : 2
U if/eth1
            xx.xx.xx.xx.xx 3612
                                         if/eth2
U if/eth2
            xx.xx.xx.xx.xx 3642
                                         if/eth1
MTID : 3996, ECT ALGO : 1
U if/eth1
            xx.xx.xx.xx.xx 3613
                                         if/eth2
MTID : 3996, ECT ALGO : 2
U if/eth1
            xx.xx.xx.xx.xx 3614
                                         if/eth2
U if/eth2
                                         if/eth1
           xx.xx.xx.xx.xx 3644
Number of Unicast Records: 7
Number of Multicast Records: 0
BCB4
#show isis-spb fdb
SPB Forwarding Database:
[U - Unicast, M - Multicast]
 I/P INTERFACE DESTINATION-ADDRESS SPVID/B-VID O/P INTERFACE
 MTID : 0, ECT ALGO : 1
U if/eth1
          xx.xx.xx.xx.xx 3640
                                         if/eth2
U if/eth1
             xx.xx.xx.xx.xx 3641
                                         if/eth2
MTID: 0, ECT ALGO: 2
U if/eth1
          xx.xx.xx.xx.xx 3642
                                         if/eth2
U if/eth2
                                         if/eth1
            xx.xx.xx.xx.xx 3612
MTID: 3996, ECT ALGO: 1
U if/eth1
            xx.xx.xx.xx.xx 3643
                                         if/eth2
MTID : 3996, ECT ALGO : 2
                                         if/eth2
U if/eth1
            xx.xx.xx.xx.xx 3644
U if/eth2
            xx.xx.xx.xx.xx 3614
                                         if/eth1
Number of Unicast Records: 7
Number of Multicast Records: 0
```

show spbv bridge backbone vid-translation-table

BEB1

#show spbv bridge backbone vid-translation-table
EGRESS TABLE INFORMATION

SPVID	BVID	SYSTEM ID
3641	100	33.33.33.33.33.33
3640	1	33.33.33.33.33.33
3643	300	33.33.33.33.33.33
3013	300	00.00.00.00.00.00

3642	200	33.33.33.33.33
3644	400	33.33.33.33.33

INGRESS TABLE INFORMATION

BVID	SPVID	SYSTEM_ID
100	3611	11.11.11.11.11.11
1	3619	11.11.11.11.11.11
300	3613	11.11.11.11.11.11
200	3612	11.11.11.11.11.11
400	3614	11.11.11.11.11

#

BEB2

show spbv bridge backbone vid-translation-table
EGRESS TABLE INFORMATION

SPVID	BVID	SYSTEM_ID
3612	200	11.11.11.11.11
3611	100	11.11.11.11.11
3614	400	11.11.11.11.11
3613	300	11.11.11.11.11
3619	1	11.11.11.11.11

INGRESS TABLE INFORMATION

BVID	SPVID	SYSTEM_ID
300	3643	33.33.33.33.33
100	3641	33.33.33.33.33
1	3640	33.33.33.33.33
200	3642	33.33.33.33.33
400	3644	33.33.33.33.33

show bridge spb

BEB1

#show bridge spb backbone

Bridge details

B-MAC - aa.aa.aa.aa.aa

System ID - 11.11.11.11.11

Bridge_priority - 32768

MCID - 228e2fa8e9a3db74307fd564f43993d3

```
- 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
CIST Root ID
                  - 8000525400c199a1
                 - 0
SPSourceID
BVID
                   SPVID
 100
                     3611
 1
                   3619
 300
                     3613
 200
                     3612
                     3614
 400
SPVID-POOL - 3600 to 3999
Global SPVID Table: 3611, 3612, 3613, 3614, 3619, 3640, 3641, 3642, 3643,
Local SPVID Table: 3611, 3612, 3613, 3614, 3619,
Agreement Digest - 00000003aca1ea104da8d58a40f96ec29997003e
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
BEB2
#show bridge spb backbone
Bridge details
B-MAC
                  - bb.bb.bb.bb.bb
System ID
                  - 33.33.33.33.33
Bridge priority - 32768
                  - 228e2fa8e9a3db74307fd564f43993d3
MCID
AUX MCID
           - 228e2fa8e9a3db74307fd564f43993d3
CIST Root ID
                 - 8000525400fceb11
SPSourceID
                 - 0
```

```
BVID
                    SPVID
 100
                     3641
 1
                    3640
 300
                     3643
 200
                     3642
 400
                     3644
SPVID-POOL - 3600 to 3999
Global SPVID Table: 3611, 3612, 3613, 3614, 3619, 3640, 3641
   3642 , 3643 ,
                     3644 ,
Local SPVID Table :
                    3640 ,
                             3641 , 3642 ,
                                                3643 ,
                                                         3644 ,
Agreement Digest - 00000004cc9f85f494acc159b03e03af579f6828
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
BCB<sub>1</sub>
(config) #show bridge spb 1
Bridge details
-----
                   - 00.00.00.00.00.00
B-MAC
System ID
                  - 22.22.22.22.22
Bridge priority - 32768
                  - 228e2fa8e9a3db74307fd564f43993d3
MCID
                  - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
CIST Root ID
                 - 8000525400cfae36
SPSourceID
                  - 0
BVID
                   SPVID
 100
                     0
 1
                    0
 300
                     0
 200
                      0
 400
                      0
```

```
SPVID-POOL
            - 3600 to 3999
Global SPVID Table : 3611 , 3612 , 3613 , 3614 , 3619 , 3640 , 3641
, 3642 , 3643 , 3644 ,
Local SPVID Table :
Agreement Digest - 0000000413a5dcfd5f8eb5e83a20bd7e44d2833a
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
BCB<sub>2</sub>
#show bridge spb 1
Bridge details
_____
                 - 00.00.00.00.00.00
B-MAC
                 - 44.44.44.44.44.44
System ID
Bridge priority - 32768
MCID
                 - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
                 - 228e2fa8e9a3db74307fd564f43993d3
CIST Root ID - 8000525400089001
SPSourceID
                 - 0
BVID
                  SPVID
 100
                     0
 1
 300
                     0
 200
                     0
 400
SPVID-POOL - 3600 to 3999
Global SPVID Table: 3611, 3612, 3613, 3614, 3619, 3640, 3641
, 3642 , 3643 ,
                     3644 ,
Local SPVID Table :
Agreement Digest - 0000000456072513f61421ab7fbed2bd85305f9e
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
```

```
Agreement digest format capabilities - 0
Agreement digest format id - 0
BCB3
#show bridge spb 1
Bridge details
_____
B-MAC
                  - 00.00.00.00.00.00
System ID
                  - 55.55.55.55.55
Bridge priority - 32768
MCID
                  - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
                  - 228e2fa8e9a3db74307fd564f43993d3
CIST Root ID
                  - 800052540050ed46
SPSourceID
                 - 0
                   SPVID
BVID
 100
                     0
 1
 300
                     0
 200
                     0
 400
           - 3600 to 3999
SPVID-POOL
Global SPVID Table: 3611, 3612, 3613, 3614, 3619, 3640, 3641
, 3642 , 3643 ,
                     3644 ,
Local SPVID Table :
Agreement Digest - 000000059a8a55a823ca0add34383b3e64404cda
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
BCB4
#show bridge spb 1
```

Bridge details

```
______
               - 00.00.00.00.00.00
B-MAC
System ID
               - 66.66.66.66.66
Bridge priority
            - 32768
MCID
               - 228e2fa8e9a3db74307fd564f43993d3
AUX MCID
               - 228e2fa8e9a3db74307fd564f43993d3
CIST Root ID
               - 8000525400826d85
              - 0
SPSourceID
BVTD
               SPVID
 100
                 Ω
 1
 300
                  0
 200
 400
SPVID-POOL - 3600 to 3999
Global SPVID Table: 3611, 3612, 3613, 3614, 3619, 3640, 3641
 3642 , 3643 , 3644 ,
Local SPVID Table :
Agreement Digest - 000000067826a975d4488ae95ddebaebe1ead860
Agreement digest convention capabilities - 0
Agreement digest convention id - 2
Agreement digest format capabilities - 0
Agreement digest format id - 0
Show Local and Remote Maintenance Points
#show ethernet cfm pbb maintenance-points local mep domain-name MD1 backbone
MPID DOMAIN NAME LEVEL TYPE Doamin-Type VLAN ISID Topology-type PORT
CC-Status Mac-address RDI
______
_____
1 MD1 5 MEP bylan 100 0 default eth3
enabled 5254.00b1.8422 False
#show ethernet cfm pbb maintenance-points remote domain-name MD1 vlan 100 backbone
MPID LEVEL VLAN MEP-UP Remote Mac RDI
```

2 5 100 Yes 5254.0002.3023 False

Show that LBM and LBR is Working

#ping ethernet pbb mac 5254.0002.3023 unicast source 1 domain-name MD1 vlan 100 backbone

success rate is 100 (5/5)

Show that LTM and LTR is Working

#traceroute pbb ethernet 5254.0002.3023 domain-name MD1 vlan 100 backbone

source mac	Hops	Relay-action
5254.00cf.ae36	1	RlyFDB
5254.001e.5b61	3	RlyFDB
5254.0002.3023	5	RlyHit
5254.0004.43e4	2	RlyFDB
5254.0008.9001	4	RlyFDB

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I

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М

MAC addresses 9, 35 MSTIs 29 MSTP 29

Ρ

PBB 9 PCB 39 PCBs 45 PEBs 39, 45

S

SBPV 39 SPBM 9, 35 SPTs 29 S-VIDs 9

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VID 29 VPNs 35

