InscapeData

LinkPower™ LPS3000/6000/7000 Series

CLI Configuration Examples

September, 2018

Corporate Headquarters

Inscape Data Corporation

1620 Oakland Road D101

San Jose, CA 95131

U.S.A.

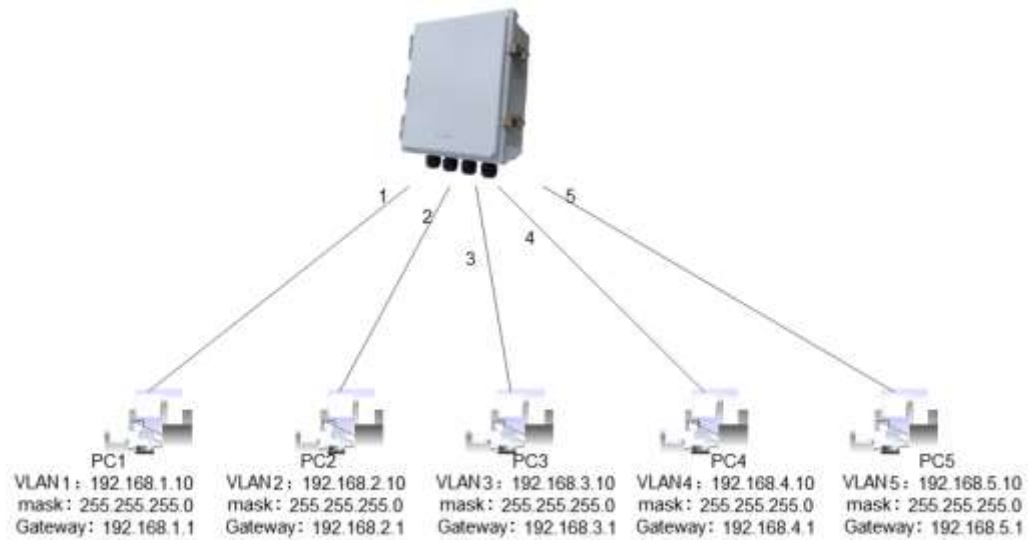Website: http://www.inscapedata.com

Main: 408 392-9800

Fax: 408 392-9812

Version 1.1

1. Creating 5 VLANs on an Outdoor PoE Switch

Network Topology

Step 1 – Creation of 5 VLANs

Create VLAN1 to 5 and assign vlan # 1 to 5:

\#   con t

(config)# hostname switch

switch(config)# vlan 1-5

switch(config-vlan)# exit

switch(config)# int GigabitEthernet 1/2

switch(config-if)# switchport access vlan 2

switch(config-if)# int GigabitEthernet 1/3

switch(config-if)# switchport access vlan 3

switch(config-if)# int GigabitEthernet 1/4

switch(config-if)# switchport access vlan 4

switch(config-if)# int GigabitEthernet 1/5

switch(config-if)# switchport access vlan 5

STEP 2 – Set the Switch to "router" Mode, and Assign the IP Address to Each VLAN

switch(config)# ip routing

switch(config)# int vlan 1

switch(config-if-vlan)# ip address 192.168.1.1 255.255.255.0

switch(config-if-vlan)# int vlan 2

switch(config-if-vlan)# ip address 192.168.2.1 255.255.255.0

switch(config-if-vlan)# int vlan 3

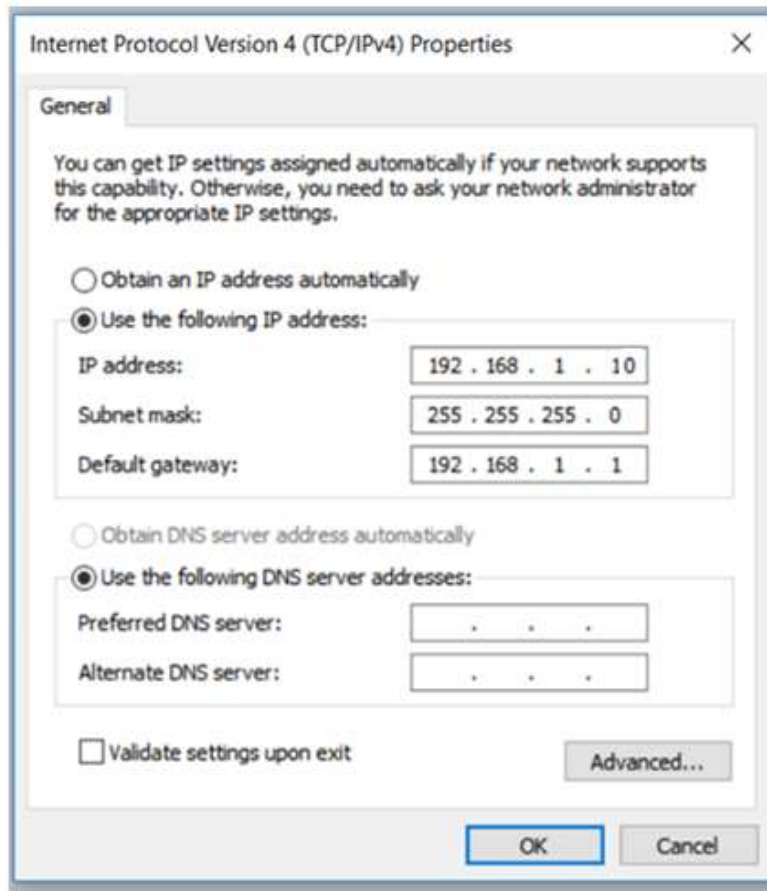switch(config-if-vlan)# ip address 192.168.3.1 255.255.255.0

switch(config-if-vlan)# int vlan 4

switch(config-if-vlan)# ip address 192.168.4.1 255.255.255.0

switch(config-if-vlan)# int vlan 5

switch(config-if-vlan)# ip address 192.168.5.1 255.255.255.0

Configure IP Property, i.e., mask and gateway, for PC1 to PC5.

Go to each PC and click " local connection - properties - TCO/IPV4 - properties - confirm"
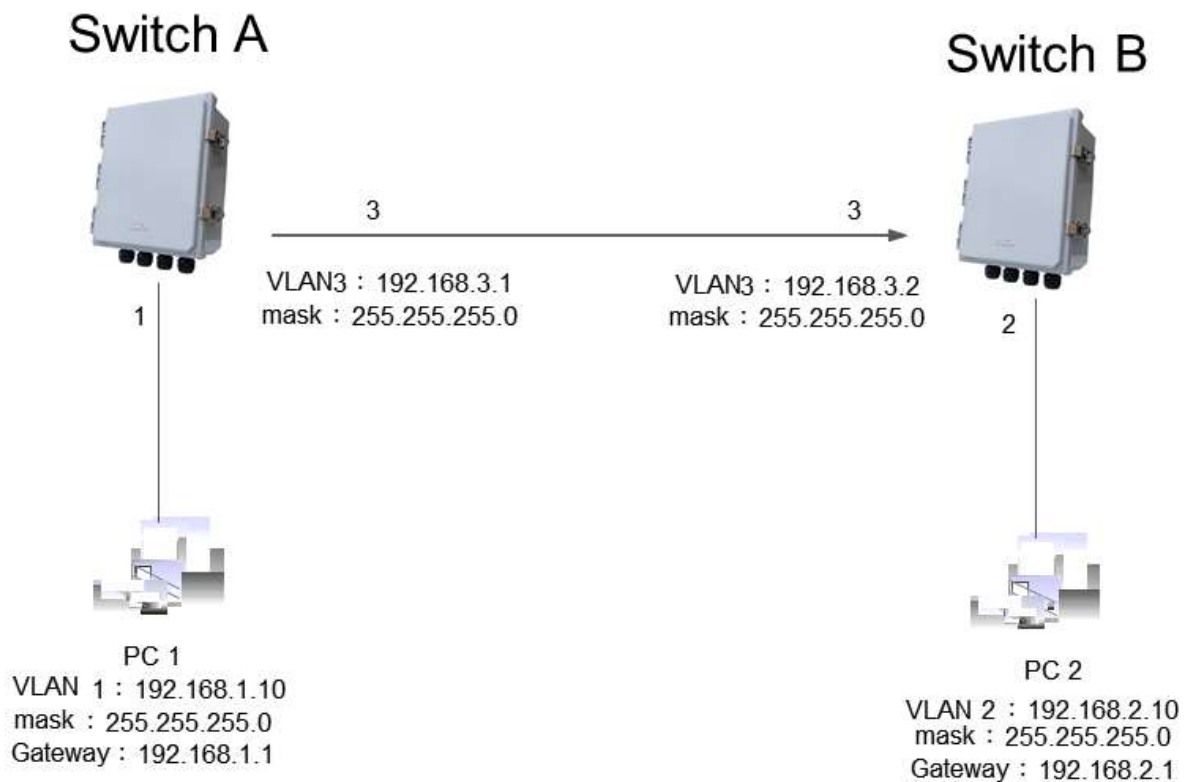

Final Verification – Performing Ping Test between PC1 to PC5.

2. Static Router Configuration

This example shows how to configure static router or default router function of the switch to achieve communication between different network segments.

Network Topology

Switch Configuration

2.2.1   Create VLAN1 to VLAN3 and PORT 1, PORT 3 on switch A and set them to VLAN 1 LAN 3 respectively.

switch# con t

switch(config)# hostname switchA

switchA(config)# vlan 1-3

switchA(config-vlan)#

2.2.2   Create VLAN2, VLAN3, PORT 2, PORT 3 on switch B and set them to VLAN 2 VLAN 3 respectively.

switch# con t

switch(config)# hostname switchB

switchB(config)# vlan 1-3

switchB(config-vlan)#

2.2.3   Configure Switch A to router mode, set IP, VLAN1:192.168.1.1 , VLAN3 : 192.168.3.1, And Configure static router IP

switch(config)# ip routing

switch(config)# int vlan 1

switch(config-if-vlan)# ip address 192.168.1.1 255.255.255.0

switch(config-if-vlan)# int vlan 3

switch(config-if-vlan)# ip address 192.168.3.1 255.255.255.0

switch(config)#ip route 0.0.0.0 0.0.0.0 192.168.3.2

2.2.4   Configure Switch B to router mode, set IP, VLAN1:192.168.2.1 , VLAN3 : 192.168.3.2, And Configure static router IP

switch(config)# ip routing

switch(config)# int vlan 2

switch(config-if-vlan)# ip address 192.168.2.1 255.255.255.0
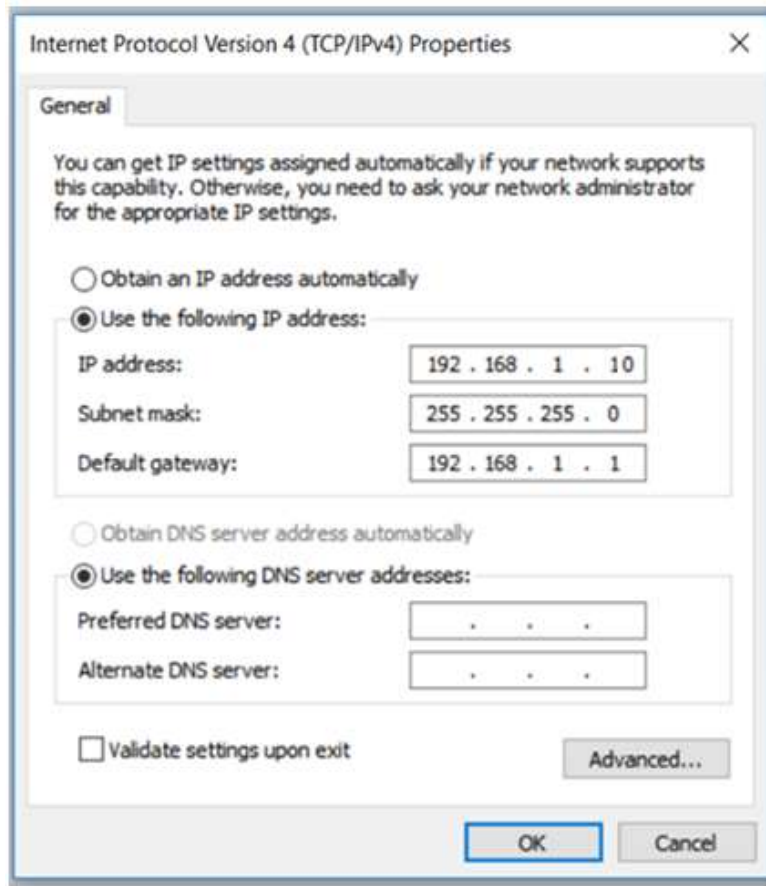
switch(config-if-vlan)# int vlan 3

switch(config-if-vlan)# ip address 192.168.3.2 255.255.255.0

switch(config)#ip route 0.0.0.0 0.0.0.0 192.168.3.1

Configure IP, mask and gateway of PC1, same setting way for PC2

Go to each PC and click " local connection - properties - TCO/IPV4 - properties - confirm"

Final Verification – Performing Ping Test between PC1 to PC2

3.   Configuring VLAN Groups on Two Switches

To enable the link between Switch A and Switch B and to support user communications under VLAN2 and user communications under VLAN3 within each of the two switches, see the following network topology diagram, you are to configure the connection interface to add two VLANs at the same time. Namely, the Ethernet interface ge1/3 of switch A and the Ethernet interface ge1/3 of switch B, they should be added in VLAN2 and VLAN3 at the same time.

Network Topology
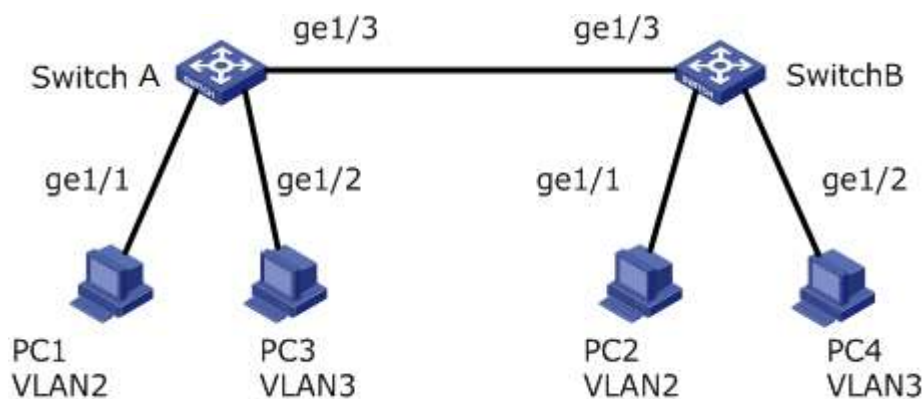
Configuring Two Switches

Create VLAN2 and VLAN3 in Switch A and add the user's connection interface into VLAN respectively, and set ge1/3 to the trunk mode. Click the "Advanced Configure > VLANs", enter the "VLANs" interface, fill in the corresponding configuration items, click "SAVE" to complete the configuration.

Next, please repeat and do the same configuration for Switch B. switch# con t

switch(config)# hostname switchA

switchA(config)# vlan 1-3

switchA(config-vlan)#

switch(config-vlan)# exit

switch(config)# int GigabitEthernet 1/1

switch(config-if)# switchport access vlan 2

switch(config-if)# int GigabitEthernet 1/2

switch(config-if)# switchport access vlan 3

switch(config-if)# int GigabitEthernet 1/3

switch(config-if)# switchport mode trunk

Configuration Verification

After configuring PC1 and PC2 into a same network segment, such as 192.168.100.0/24 and configuring PC3 and PC4 into a same network segment, such as 192.168.200.0/24, PC1 and PC2 can ping each other, but they cannot ping PC3 and PC4. PC3 and PC4 can ping each other, but they can't ping PC1 and PC2.

4 Q-in-Q VLAN Tunnel Configuration

In this example, it shows Q-inQ VLAN tunnel configuration for two enterprise networks in a corporate network, i.e., Enterprise 1 with two branches and Enterprise 2 also with two branches, refer to the network diagram below. In the corporate network, each of the two enterprise networks is connected to the Switch A and Switch B respectively, and there are other manufacturers in the public network, and the TPID value of the outer VLAN Tag is 0x9100.

Considering the following requirements:

● Setup independent division of VLAN for Enterprise 1 and 2, both will not interfere each other.

● Data transparent transmission between two branch offices of each enterprise. Intercommunication for same business, isolation for different business.

The requirements can be achieved through configuring Q-in-Q VLAN tunnel configuration. Using the VLAN100 provided by the public network to enable Enterprise1 to intercommunicate with each other. Using the VLAN200 provided by the public network to enable Enterprise 2 to intercommunicate with each other. And separate different enterprise networks from each other. By configuring the TPID value of Q-in-Q outer VLAN Tag on the interface, it connects with the device by another manufacturer to achieve the intercommunication with other manufacturer's equipment.
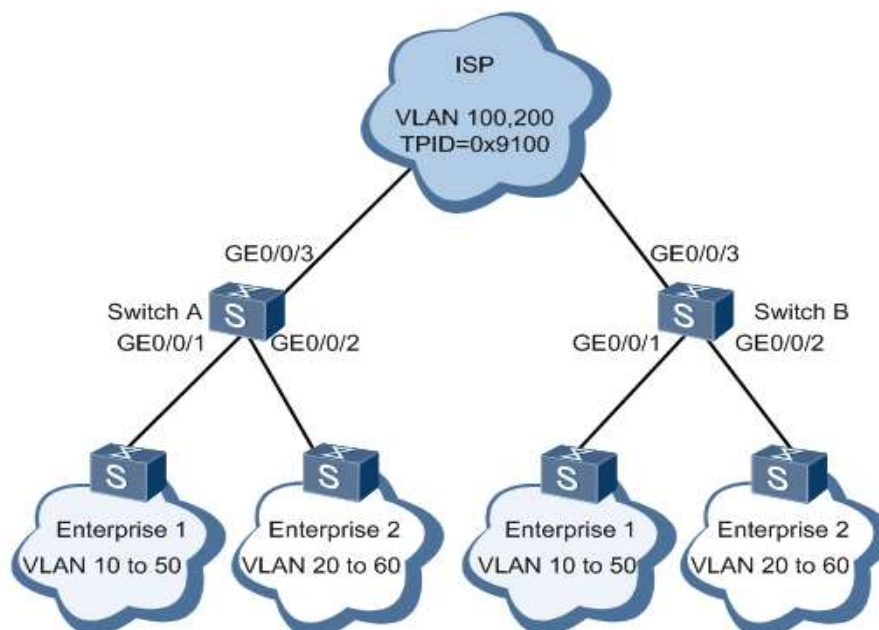
4.1   Configuration

1. VLAN 100 and VLAN 200 both in switch A and switch B, configure the interfaces connected network services to Q-in-Q type, and add into VLAN respectively. It enables different services add different outer layer VLAN Tag.

2. Configure interface connected with public network added into corresponding VLAN in switch A and switch B. And enable traffic communication between VLAN 100 and 200.

3. Configure TPID value of outer layer VLAN tag of interfaces connected with public network in switch A and switch B, enable communication with other brand equipment.

4.2 Configuration Steps

1. Create VLAN

#Create VLAN 100 and VLAN 200 in switch A

switch(config)# vlan 100,200

#Create VLAN 100 and VLAN 200 in switch B，same as above

2. Configure the interface type to QionQ

#Configure interface GE0/0/1 and GE0/0/2 to Q-in-Q type in switch A. And outer layer tag of GE0/0/1 is VLAN 100, outer layer tag of G0/0/2 is VLAN 200

 switch(config)# interface GigabitEthernet 1/1

 switch(config-if)#switchport hybrid native vlan 100

 switch(config-if)#switchport hybrid port-type unaware

 switch(config-if)#switchport mode hybrid

 switch(config)# interface GigabitEthernet 1/2

 switch(config-if)#switchport hybrid native vlan 200

 switch(config-if)#switchport hybrid port-type unaware

 switch(config-if)#switchport mode hybrid

#Configure interface GE0/0/1 and GE0/0/2 to Q-in-Q type in switch B. And outer layer tag of GE0/0/1 is VLAN 100, outer layer tag of G0/0/2 is VLAN 200

3. Configure switch interface connected with public network

#Configure switch A's interface GE0/0/3 added into VLAN 100 and VLAN 200. Same configuration step for switch B.

switch(config)# interface GigabitEthernet 1/3

switch(config-if)# switchport hybrid allowed vlan 1,100,200

switch(config-if)#switchport hybrid port-type s-custom-port

switch(config-if)#switchport mode hybrid

4. Configure TPID value of outer VLAN tag, same configuration for switch B.

switch(config)#vlan ethertype s-custom-port 0x9100

5. Testing configuration result

Test if A PC in any VLAN of any branch in Enterprise 1 can ping the PC in the same VLAN of any branch in Enterprise 1. It indicates that it can intercommunicate in Enterprise 1.

Test if A PC in any VLAN of any branch in Enterprise 2 can ping the PC in the same VLAN of any branch in Enterprise 2. It indicates that it can intercommunicate in Enterprise 2.

Test if A PC in any VLAN of any branch in Enterprise 1 can ping the PC in the same VLAN of any branch in Enterprise 2. If it cant, the communication isolated between Enterprise 1 and Enterprise 2