

Contents

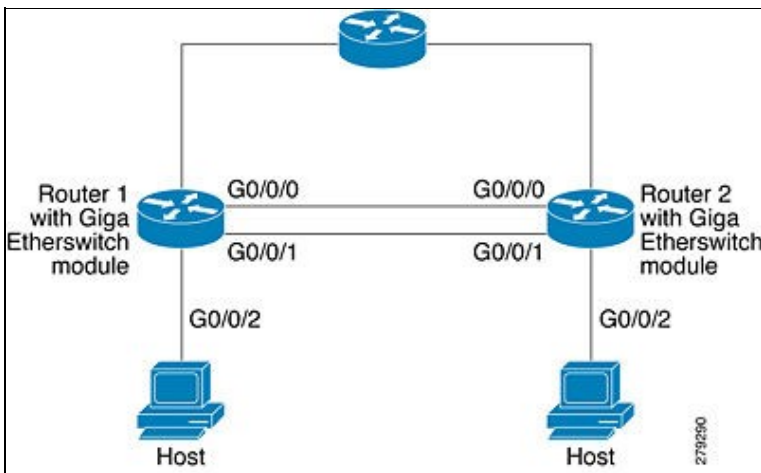
- [1 Introduction](#)
- [2 Design](#)
- [3 Configuration](#)
- [4 Show commands](#)
- [5 Show running-config](#)
- [6 Related Information](#)

Introduction

This is a basic customer configuration for the Cisco Gigabit EtherSwitch EHWIC. It includes the following elements:

1. Trunk configuration
2. Spanning tree priority & spanning tree port fast feature
3. VTP configuration (Server & Client)
4. Control Broadcast traffic - Shutdown port if broadcast traffic is more than 50% from Host
5. Port Security - to learn maximum one address on port connected to Host
6. Configure DHCP Server to get IP address to HOST

Design



Configuration

1. Trunk Configuration - dot1q

```
ROUTER1(config)#inte g0/0/0
ROUTER1(config-if)#switchport trunk encapsulation dot1q
ROUTER1(config-if)#switchport mode trunk
ROUTER1(config)#inte g0/0/1
ROUTER1(config-if)#switchport trunk encapsulation dot1q
ROUTER1(config-if)#switchport mode trunk
ROUTER2(config)#inte g0/0/0
```

Gigabit_EtherSwitch_EHWIC_Basic_Customer_Configuration_Example

```
ROUTER2(config-if)#switchport trunk encapsulation dot1q
ROUTER2(config-if)#switchport mode trunk
ROUTER2(config)#inte g0/0/1
ROUTER2(config-if)#switchport trunk encapsulation dot1q
ROUTER2(config-if)#switchport mode trunk
```

2.Spanning tree - Configuration

```
ROUTER1(config)#spanning-tree vlan 1 priority 0
```

Host-Enabled spanning tree port fast feature & bpduguard

```
ROUTER1(config)#interface g0/0/2
ROUTER1(config-if)#spanning-tree portfast
```

Warning: portfast should only be enabled on ports connected to a single host Connecting hubs, concentrators, switches, bridges, etc.to this interface when portfast is enabled, can cause temporary spanning tree loops. Use with CAUTION Portfast has been configured on GigabitEthernet0/0/2 but will have effect when the interface is in a non-trunking mode.

```
ROUTER1(config)#spanning-tree portfast bpduguard
```

3.VTP configurtaion

```
ROUTER1(config)#vtp mode server
Device mode already VTP SERVER.
```

```
ROUTER1(config)#vtp domain CISCO
Changing VTP domain name from CISCO to CISCO
```

```
ROUTER1(config)#vtp password test
Setting device VLAN database password to TEST
```

```
ROUTER2(config)#vtp mode client
ROUTER2(config)#vtp domain CISCO
Changing VTP domain name from CISCO to CISCO
```

```
ROUTER2(config)#vtp password test
Setting device VLAN database password to TEST
```

4.Shutdown port if Broadcast traffic is more than 50%

```
ROUTER1(config)#inte g0/0/2
ROUTER1(config-if)#storm-control broadcast level 50
ROUTER1(config-if)#storm-control action shutdown
```

</pre?

5.Port Security - allow to learn maximim one address on port g0/0/2

```
-----
<pre>
ROUTER1(config)#mac-address-table secure maximum 1 gigabitEtherne0/0/2
```

6.DHCP Server to get IP address to HOST

```
ROUTER2(config)#inte vlan 1
ROUTER2(config-if)#ip address 10.0.0.1 255.255.255.0
ROUTER2(config)#ip dhcp pool TEST
ROUTER2(dhcp-config)#network 10.0.0.0 255.255.255.0
ROUTER2(dhcp-config)#default-router 10.0.0.1
ROUTER2(config)#ip dhcp excluded-address 10.0.0.1
```

Show commands

1.Trunk Configuration - dot1q

```
ROUTER1#show interfaces trunk
Port      Mode          Encapsulation  Status        Native vlan
Gi0/0/0   on            802.1q         trunking     1
Port      Vlans allowed on trunk
Gi0/0/0   1-4094
Port      Vlans allowed and active in management domain
Gi0/0/0   1-10,12-33
Port      Vlans in spanning tree forwarding state and not pruned
Gi0/0/0   none

ROUTER1#
```

2.Spanning tree -

```
ROUTER1#show spanning-tree vlan 1 brie
VLAN1
Spanning tree enabled protocol ieee
Root ID    Priority    0
Address    000f.f70b.3ea5
This bridge is the root
Hello Time  2 sec    Max Age 20 sec    Forward Delay 15 sec
Bridge ID  Priority    0
Address    000f.f70b.3ea5
Hello Time  2 sec    Max Age 20 sec    Forward Delay 15 sec
Aging Time 300
```

Interface		Designated					
Name	Port ID	Prio	Cost	Sts	Cost	Bridge ID	Port ID
GigabitEthernet0/0/0	128.1	128	4	FWD	0	0 000f.f70b.3ea5	128.1
GigabitEthernet0/0/1	128.2	128	4	FWD	0	0 000f.f70b.3ea5	128.2

3.VTP

```
ROUTER1#show vtp status
VTP Version                : 2
```

Gigabit_EtherSwitch_EHWIC_Basic_Customer_Configuration_Example

```
Configuration Revision          : 0
Maximum VLANs supported locally : 36
Number of existing VLANs       : 36
VTP Operating Mode              : Server
VTP Domain Name                 : CISCO
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0xA1 0x13 0xD9 0x04 0x8D 0xD6 0xF8 0x9A
Configuration last modified by 40.0.0.2 at 4-12-10 09:06:10
Local updater ID is 192.168.1.1 on interface Vl1 (lowest numbered VLAN interface found)

ROUTER1#show vtp pas
ROUTER1#show vtp password
VTP Password: TEST

ROUTER1#

ROUTER2#show vtp status

VTP Version                    : 2
Configuration Revision          : 0
Maximum VLANs supported locally : 20
Number of existing VLANs       : 20
VTP Operating Mode              : Client
VTP Domain Name                 : CISCO
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0xFC 0x06 0x7A 0xAA 0xC7 0xDB 0xE6 0xCD
Configuration last modified by 0.0.0.0 at 6-1-10 05:04:50

ROUTER2#show vtp password

VTP Password: TEST

ROUTER2#
```

4.Shutdown port if Broadcast traffic is more than 50%

Gigabit_EtherSwitch_EHWIC_Basic_Customer_Configuration_Example

```
ROUTER1#show storm-control broadcast
Interface  Filter State    Upper    Lower    Current
Gi0/0/0    inactive  100.00%  100.00%  N/A
Gi0/0/1    inactive  100.00%  100.00%  N/A
Gi0/0/2    Forwarding  50.00%   50.00%   0.00%
Gi0/0/3    inactive  100.00%  100.00%  N/A

ROUTER1#
```

5.Port Security - allow to learn maximim one address on port g0/0/2

```
ROUTER1#sh runn | incl mac
mac-address-table secure maximum 1 GigabitEthernet0/0/2

ROUTER1#
```

6.DHCP Server

```
ROUTER1#sh runn | beg dhcp

ip dhcp excluded-address 192.168.4.1

ip dhcp excluded-address 10.0.0.1

ip dhcp pool TEST

network 10.0.0.0 255.255.255.0

default-router 10.0.0.1

ROUTER1#show ip dhcp pool
Pool TEST :

Utilization mark (high/low)      : 100 / 0
Subnet size (first/next)          : 0 / 0
Total addresses                    : 254
Leased addresses                  : 0
Pending event                      : none

1 subnet is currently in the pool :

Current index      IP address range      Leased addresses
10.0.0.1           10.0.0.1 - 10.0.0.254  0

ROUTER2#
```

Show running-config

```
ROUTER1#show running-config
Building configuration...

Current configuration : 2809 bytes

Last configuration change at 07:33:39 UTC Tue Jun 1 2010

version 15.1

service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption

hostname ROUTER1

boot-start-marker
boot system flash0:c2900-universalk9-mz.SSA.1_20100412
boot-end-marker

no aaa new-model

ip dhcp excluded-address 10.0.0.1

ip dhcp pool TEST
network 10.0.0.0 255.255.255.0
default-router 10.0.0.1

spanning-tree portfast bpduguard
spanning-tree vlan 1 priority 0
interface GigabitEthernet0/0
ip address 9.43.16.40 255.255.0.0
duplex auto
speed auto
interface GigabitEthernet0/1
duplex auto
speed auto
interface GigabitEthernet0/2
duplex auto
speed auto
```

Show running-config

Gigabit_EtherSwitch_EHWIC_Basic_Customer_Configuration_Example

```
interface GigabitEthernet0/0/0
switchport mode trunk
interface GigabitEthernet0/0/1
switchport mode trunk
interface GigabitEthernet0/0/2
switchport access vlan 2
storm-control broadcast level 50.00
storm-control action shutdown
spanning-tree portfast
interface Vlan1
ip address 10.0.0.1 255.255.255.0
ip forward-protocol nd
no ip http server
no ip http secure-server
mac-address-table secure maximum 1 GigabitEthernet0/0/2

line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
login
transport input all
exception data-corruption buffer truncate
scheduler allocate 20000 1000
end
ROUTER1#
```

Related Information

[Technical Support & Documentation - Cisco Systems](#)