



## Switch 1:

### 1- Make it mode server using VTP protocol

```
>> vtp mode server
>> vtp domain world
>> vtp password 1234
>> do show vtp st
```

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#do show vtp st
VTP Version capable      : 1 to 2
VTP version running      : 2
VTP Domain Name          : world
VTP Pruning Mode         : Disabled
VTP Traps Generation     : Disabled
Device ID                : 00E0.F703.A900
Configuration last modified by 0.0.0.0 at 3-1-93 00:41:17
Local updater ID is 0.0.0.0 (no valid interface found)
```

Feature VLAN :

```
-----
VTP Operating Mode       : Server
Maximum VLANs supported locally : 255
Number of existing VLANs : 9
Configuration Revision    : 8
MD5 digest               : 0xAD 0x7B 0xE2 0x66 0x23 0x96 0x2A 0x94
                        : 0x7D 0x52 0x81 0xDC 0x3D 0xA6 0x6D 0x05
```

We should make f0/22-23 trunk so switch 2,3 can copy or pass vlans.

```
>> int f0/23
>> switchport mode trunk
```

```
>> int f0/22
>> switchport mode trunk
```

## 2- Create vlans

```
>>vlan 2
>> name HR
>>vlan 3
>> name SALES
>>vlan 4
>> name BR
>>vlan 5
>> name SERVERS
```

## 3- Assign ports to vlans

```
>> int range f0/1-3
>> switchport access vlan 2
>> int range f0/4-6
>> switchport access vlan 3
>> int range f0/7-9
>> switchport access vlan 4
>> int range f0/10-11
>> switchport access vlan 5
>> do show vlan
```

```
Switch(config)#do show vlan
```

VLAN	Name	Status	Ports
1	default	active	Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Gig0/1, Gig0/2
2	HR	active	Fa0/1, Fa0/2, Fa0/3
3	SALES	active	Fa0/4, Fa0/5, Fa0/6
4	BR	active	Fa0/7, Fa0/8, Fa0/9
5	SERVERS	active	Fa0/10, Fa0/11
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Now pc in vlan can only reach pc in the same vlan.

## 4- For inter vlan

```
>> int f0/24
```

## >> switchport mode trunk

### Configuration for pc in each vlan:

Let the following :

Vlan name	Network address	Getway (interface address)
Vlan 2	192.168.1.0/24	192.168.1.1
Vlan 3	192.168.2.0/24	192.168.2.1
Vlan 4	192.168.3.0/24	192.168.3.1
Vlan 5	192.168.4.0/24	192.168.4.1

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.2 Pc address in network 192.168.1.0

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1 Getaway address for vlan 2

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::260:5CFF:FEAC:B683

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

### Switch 3:

```
>> int f0/23
>> switchport mode trunk
>> vtp mode client
>> vtp domain world
>> vtp password 1234
>> do show vtp st
```

```
Switch(config)#do show vtp st
VTP Version capable      : 1 to 2
VTP version running      : 2
VTP Domain Name          : world
VTP Pruning Mode         : Disabled
VTP Traps Generation     : Disabled
Device ID                 : 00D0.FF56.E000
Configuration last modified by 0.0.0.0 at 3-1-93 00:41:17
```

Feature VLAN :

```
-----
VTP Operating Mode       : Client
Maximum VLANs supported locally : 255
Number of existing VLANs : 9
Configuration Revision    : 8
MD5 digest                : 0xAD 0x7B 0xE2 0x66 0x23 0x96 0x2A 0x94
                          : 0x7D 0x52 0x81 0xDC 0x3D 0xA6 0x6D 0x05
```

**Now switch 3 copy vlans from switch 1**

```
>> int range f0/1
>> switchport access vlan 2
>> do show vlan
```

VLAN	Name	Status	Ports
1	default	active	Fa0/2, Fa0/3, Fa0/4, Fa0/5 Fa0/6, Fa0/7, Fa0/8, Fa0/9 Fa0/10, Fa0/11, Fa0/12, Fa0/13 Fa0/14, Fa0/15, Fa0/16, Fa0/17 Fa0/18, Fa0/19, Fa0/20, Fa0/21 Fa0/22, Fa0/24, Gig0/1, Gig0/2
2	HR	active	Fa0/1
3	SALES	active	
4	BR	active	
5	SERVERS	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

### Switch 2:

**Switch 2 work in transparent mode in vtp only pass vlans for switch 0**

```
>> int f0/22
```

>> switchport mode trunk

>> vtp mode transparent

>> do show vtp st

```
Switch(config)#do show vtp st
VTP Version capable      : 1 to 2
VTP version running      : 2
VTP Domain Name          : world
VTP Pruning Mode         : Disabled
VTP Traps Generation     : Disabled
Device ID                : 00D0.BA68.BE00
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00

Feature VLAN :
-----
VTP Operating Mode       : Transparent
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
Configuration Revision   : 0
MD5 digest               : 0xFA 0xDD 0x48 0xD7 0x3E 0xA5 0x06 0xA9
                        : 0x9D 0x0E 0x38 0x6F 0x1C 0xEE 0x89 0x39
```

>>do show vlan

```
Switch(config)#do show vlan

VLAN Name                Status    Ports
-----
1    default              active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/23, Gig0/1, Gig0/2

1002 fddi-default        active
1003 token-ring-default  active
1004 fddinet-default     active
1005 trnet-default       active
```

### Switch 0:

>> int f0/24

>> switchport mode trunk

>> vtp mode client

>> vtp domain world

>> vtp password 1234

### Router 1:

>> int g0/0/0

>> no shutdown

>> int g0/0/0.1

```

>> encapsulation dot1Q 2
>> ip address 192.168.1.1 255.255.255.0
>> int g0/0/0.2
>> encapsulation dot1Q 3
>> ip address 192.168.2.1 255.255.255.0
>> int g0/0/0.3
>> encapsulation dot1Q 4
>> ip address 192.168.3.1 255.255.255.0
>> int g0/0/0.4
>> encapsulation dot1Q 5
>> ip address 192.168.4.1 255.255.255.0
>> do show ip interface br

```

```

Router(config-subif)#do show ip interface br
Interface                IP-Address      OK? Method Status        Protocol
GigabitEthernet0/0/0     unassigned      YES unset  up            up
GigabitEthernet0/0/0.1   192.168.1.1     YES manual  up            up
GigabitEthernet0/0/0.2   192.168.2.1     YES manual  up            up
GigabitEthernet0/0/0.3   192.168.3.1     YES manual  up            up
GigabitEthernet0/0/0.4   192.168.4.1     YES manual  up            up
GigabitEthernet0/0/1     unassigned      YES unset  administratively down down
GigabitEthernet0/0/2     unassigned      YES unset  administratively down down
Vlan1                    unassigned      YES unset  administratively down down

```