

思科三层交换配置清单与案例 PDF转换可能丢失图片或格式，建议阅读原文

https://www.100test.com/kao_ti2020/267/2021_2022__E6_80_9D_E7_A7_91_E4_B8_89_E5_c101_267029.htm 网络基本情况 网络拓扑结构为:中心交换机采用Cisco Catalyst 4006-S3，Supervisor Engine III G引擎位于第1插槽，用于实现三层交换.1块24口1000Base-T模块位于第2插槽，用于连接网络服务器.1块6端口1000Base-X模块位于第3插槽，用于连接6台骨干交换机。一台交换机采用Cisco Catalyst 3550-24-EMI，并安装1块1000Base-X GBIC千兆模块。一台交换机采用Cisco Catalyst 3550-24-SMI，也安装1块1000Base-X GBIC千兆模块。另外四台交换机采用Cisco Catalyst 2950G-24-SMI，安装1块1000Base-T GBIC千兆模块。所有服务器划分为一个VLAN，即VLAN 50。四台Catalyst 2950G-24-SMI交换机也只划分为一个VLAN，分别为VLAN 60、VLAN 70、VLAN 80和VLAN 90。Catalyst 3550-24-EMI划分为4个VLAN，分别为VLAN 10、VLAN 20、VLAN 30和VLAN 40。Catalyst 3550-24-SMI划分2个VLAN，分别为VLAN 60和VLAN 80，与另外两台Catalyst 2950G-24-SMI交换机分别位于同一VLAN。实例分析 由于所有Catalyst 2950G交换机都是一个独立的VLAN，因此，必须先在这些交换机上创建VLAN(VLAN 60~VLAN 90)，并将所有端口都指定至该VLAN。然后，再在Catalyst 4006交换机相应端口上分别创建VLAN。Catalyst 4006的1000Base-X端口分别与各Catalyst 2950G的1000Base-X端口连接。其中，GigabitEthernet3/2端口连接至1号Catalyst 2950交换机(VLAN 60)，GigabitEthernet3/3端口连接至2号Catalyst 2950交换机(VLAN

70) , GigabitEthernet3/4端口连接至3号Catalyst 2950交换机(VLAN 80) , GigabitEthernet3/5端口连接至4号Catalyst 2950交换机(VLAN 90) , GigabitEthernet3/6端口连接至6号楼交换机(VLAN 80)。由于在Catalyst 3550-24-EMI上划分有4个VLAN(VLAN 10 ~ VLAN 40) , 而4个VLAN都需借助于一条1000Base-X链路实现与Catalyst 4006的GigabitEthernet3/1端口连接 , 因此 , 必须在Catalyst 4006与Catalyst 3550-24- EMI之间创建一个Trunk。同样 , 在Catalyst 3550-24-SMI上划分有2个VLAN(VLAN 60和VLAN 80) , 而4个VLAN都需借助于一条1000Base-X链路实现与Catalyst 4006的GigabitEthernet3/6端口连接 , 因此 , 必须在Catalyst 4006与Catalyst 3550-24- EMI之间创建一个Trunk。另外 , 所有服务器均连接至Catalyst 4006的1000Base-T模块 , 并单独成为一个VLAN(VLAN 90) , 因此 , 也必须为这些交换机创建一个VLAN , 并将所有端口指定至该VLAN。需要注意的是 , 考虑到网络管理的需要 , 也可以剩余几个RJ-45端口 (如21至24端口)不指定至任何VLAN , 从而便于连接网络管理设备。默认状态下 , 所有端口都属于VLAN1 , 而且也只有VLAN1中才能实现对网络中所有设备的管理。配置清单 Cisco Catalyst 4006交换机配置清单

```
Current configuration : 5594 bytes!
version 12.1
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service compress-config
hostname hsncl
boot system bootflash:cat4000-is-mz.121-8a.EW1.bin
no logging
console enable
secret level 1 5
$1$rkQW$1HKyKdN5f.Ri5zxeoF8Yv/!
ip subnet-zero!!!
interface GigabitEthernet1/1
no snmp trap link-status!--不为Supervisor
```

Engine III G引擎中的1000Base-X插槽指定VLANinterface

```
GigabitEthernet1/2no snmp trap link-status!!interface
```

```
GigabitEthernet2/1switchport access vlan 50no snmp trap
```

```
link-status!--将端口GigabitEthernet2/1指定至VLAN 50!interface
```

```
GigabitEthernet2/2switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/3switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/4switchport access
```

```
vlan 50no snmp trap link-status!interface
```

```
GigabitEthernet2/5switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/6switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/7switchport access
```

```
vlan 50no snmp trap link-status!interface
```

```
GigabitEthernet2/8switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/9switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/10switchport access
```

```
vlan 50no snmp trap link-status!interface
```

```
GigabitEthernet2/11switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/12switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/13switchport access
```

```
vlan 50no snmp trap link-status!interface
```

```
GigabitEthernet2/14switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/15switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/16switchport access
```

```
vlan 50no snmp trap link-status!interface
```

```
GigabitEthernet2/17switchport access vlan 50no snmp trap
```

```
link-status!interface GigabitEthernet2/18switchport access vlan 50no
```

```
snmp trap link-status!interface GigabitEthernet2/19switchport access
vlan 50no snmp trap link-status!interface
GigabitEthernet2/20switchport access vlan 50no snmp trap
link-status!--不将GigabitEthernet2/20 ~ 24指定至任
何VLAN!interface GigabitEthernet3/1switchport trunk
encapsulation dot1q ! --启用802.1Q Trunk封装协议，即在该端
口创建Trunkswitchport trunk allowed vlan 1-80 ! --允许vlan 1-90
在该中继线通讯 ! --可以拒绝或允许某个VLAN访问该Trunk
! --确保未被授权的VLAN通过该Trunk，实现VLAN的访问安
全switchport mode trunk ! --将该端口设置为Trunk description
netcenterno snmp trap link-status!interface
GigabitEthernet3/2switchport access vlan 60no snmp trap
link-status!--将端口GigabitEthernet3/2指定至VLAN 60!interface
GigabitEthernet3/3switchport access vlan 70no snmp trap
link-status!--将端口GigabitEthernet3/3指定至VLAN 70!interface
GigabitEthernet3/4switchport access vlan 80no snmp trap
link-status!--将端口GigabitEthernet3/4指定至VLAN 80!interface
GigabitEthernet3/5switchport access vlan 90no snmp trap
link-status!--将端口GigabitEthernet3/5指定至VLAN 90!interface
GigabitEthernet3/6switchport trunk encapsulation dot1q ! --启
用802.1Q Trunk封装协议，即在该端口创建Trunkswitchport
trunk allowed vlan 1-80 ! --允许vlan 1-90在该中继线通讯 ! --可
以拒绝或允许某个VLAN访问该Trunk ! --从而确保未被授权的
VLAN通过该Trunk，实现VLAN访问安全switchport mode
trunk ! --将该端口设置为Trunk description netcenterno snmp
trap link-status!interface Vlan1description netmangerno ip
```

```
address!--对VLAN1进行描述interface Vlan10description network
centerno ip address!--对VLAN2进行描述!interface
Vlan20description computer centerno ip address!interface
Vlan30description network labno ip address!interface
Vlan40description huaxuelouno ip address!interface
Vlan50description wulilouno ip address!interface Vlan60description
shengwulouno ip address!interface Vlan70description
zhongwenxino ip address!interface Vlan80description tushuguanno
ip address!!line con 0stopbits 1line vty 0 4password aaalogin! end
```

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