

```

# ----- #
# Basic
# Hostname
hostname [tag]

# Shutdown all unused interfaces
interface [int]
shutdown

# Set to Rapid PVST+
spanning-tree mode rapid-pvst

# AAA
# router
aaa new-model
radius server radius
address ipv4 140.113.2.138
key T@_1s-H4nds0m3
aaa authentication login vty_login group radius local

# switch
aaa new-model
radius-server host 140.113.2.138 key T@_1s-H4nds0m3
aaa authentication login vty_login group radius local

# Configure ssh
ip domain-name cs.nctu.edu.tw
crypto key generate rsa (modulus 2048)
ip ssh version 2

line vty 0 15
login authentication vty_login
transport input ssh

write memory
# ----- FINISHED ----- #

# ----- #
# VLANs
vlan 10
name VLAN10
exit

vlan 20
name VLAN20
exit

vlan 30
name VLAN30
exit

vlan 209
name VLAN209
exit

```

```
vlan 316
  name VLAN316
  exit
```

```
vlan 324
  name VLAN324
  exit
```

```
# Core-1
interface vlan 10
  ip address 140.113.10.21 255.255.255.0
  exit

interface vlan 20
  ip address 140.113.2.140 255.255.255.192
  exit

interface vlan 30
  ip address 140.113.2.201 255.255.255.192
  exit

interface vlan 316
  ip address 140.113.16.251 255.255.255.0
  exit

interface vlan 324
  ip address 140.113.24.251 255.255.255.0
  exit

ip routing
```

```
# Core-2
interface vlan 10
  ip address 140.113.10.22 255.255.255.0
  exit

interface vlan 20
  ip address 140.113.2.142 255.255.255.192
  exit

interface vlan 30
  ip address 140.113.2.196 255.255.255.192
  exit

interface vlan 316
  ip address 140.113.16.252 255.255.255.0
  exit

interface vlan 324
  ip address 140.113.24.252 255.255.255.0
  exit

ip routing
```

```
# CSCC-intranet1-Sw
interface vlan 10
  ip address 140.113.10.11 255.255.255.0
  exit

ip default-gateway 140.113.10.254

# CSCC-intranet2-Sw
interface vlan 10
  ip address 140.113.10.12 255.255.255.0
  exit

ip default-gateway 140.113.10.254

# PCRoom-Sw
interface vlan 10
  ip address 140.113.10.23 255.255.255.0
  exit

ip default-gateway 140.113.10.254

# Link Trunk settings
# Core-1 - Core-2
interface Fa0/1
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 20,30

# Core-1 - CSCC-intranet1-Sw
interface Fa0/21
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 10,316,324

# Core-1 - CSCC-intranet2-Sw
interface Fa0/16
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 20,30,209

# Core-2 - CSCC-intranet1-Sw
interface Fa0/16
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 20,30,209

# Core-2 - CSCC-intranet2-Sw
interface Fa0/21
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 10,316,324

# CSCC-intranet1-Sw - CSCC-intranet2-Sw
```

```
interface range Gig0/1-2
  switchport mode trunk
  switchport trunk allowed vlan 10,20,30,209,316,324
```

```
interface Po2
  switchport mode trunk
  switchport trunk allowed vlan 10,20,30,209,316,324
```

```
# Core-2 - PCRoom-Sw
int range Fa0/11-12
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 10,316,324
```

```
interface Po3
  switchport trunk encapsulation dot1q
  switchport mode trunk
  switchport trunk allowed vlan 10,316,324
```

```
# PCRoom-Sw
int range Fa0/1-3
  switchport mode access
  switchport access vlan 324
```

```
int range Fa0/4-6
  switchport mode access
  switchport access vlan 316
```

```
# CSCC-intranet1-Sw
int Fa0/1
  switchport mode access
  switchport access vlan 30
```

```
int Fa0/2
  switchport mode access
  switchport access vlan 20
```

```
int Fa0/24
  switchport mode access
  switchport access vlan 209
```

```
# CSCC-intranet2-Sw
int Fa0/1
  switchport mode access
  switchport access vlan 10
```

```
# ----- FINISHED ----- #
```

```
# ----- #
```

```
# Channel group
```

```
# Core-2 - PCRoom-Sw
```

```
interface range Fa0/11-12
```

```
# PCRoom-Sw
```

```
channel-group 3 mode passive
```

```
exit
```

```

# Core-2
channel-group 3 mode active
exit

# CSCC-intranet1-Sw - CSCC-intranet2-Sw
interface range Gig0/1-2
channel-group 2 mode on
exit

show etherchannel summary
# ----- FINISHED ----- #

# ----- #
# ACLs
ip access-list standard Outgoing
deny 140.113.10.0 0.0.0.255
permit any

ip access-list standard Incoming
deny 192.168.0.0 0.0.255.255
deny 10.0.0.0 0.255.255.255
permit any

access-list 10 permit 140.113.2.128 0.0.0.127
access-list 10 permit 140.113.10.0 0.0.0.255

access-list 20 permit 140.113.2.128 0.0.0.63
access-list 20 permit 140.113.10.0 0.0.0.255

access-list 30 permit host 140.113.10.1

access-list 100 permit tcp any any eq 80
access-list 100 permit tcp any any eq 443
access-list 100 permit ip 140.113.2.128 0.0.0.127 any

access-list 110 deny tcp any any eq 80
access-list 110 deny tcp any any eq 443
access-list 110 permit ip any any

# Core-1
interface Fa0/22
ip access-group Outgoing out
ip access-group Incoming in

interface vlan10
ip access-group 20 in

interface vlan20
ip access-group 10 in

interface vlan30
ip access-group 100 in

```

```

interface vlan316
  ip access-group 110 in

interface vlan324
  ip access-group 110 in

line vty 0 15
  access-class 30 in

# Core-2
interface Fa0/23
  ip access-group Outgoing out
  ip access-group Incoming in

interface vlan10
  ip access-group 20 in

interface vlan20
  ip access-group 10 in

interface vlan30
  ip access-group 100 in

interface vlan316
  ip access-group 110 in

interface vlan324
  ip access-group 110 in

line vty 0 15
  access-class 30 in
# ----- FINISHED ----- #

# ----- #
# OSPF
# Core-1
vlan 209
  name VLAN209
  exit

interface vlan 209
  ip address 140.113.69.11 255.255.255.248
  no shutdown
  exit

interface Fa0/22
  no switchport
  ip address 140.113.69.1 255.255.255.248
  exit

router ospf 10
  network 140.113.69.0 0.0.0.7 area 0
  network 140.113.69.8 0.0.0.7 area 0
  network 140.113.16.0 0.0.0.255 area 0

```

```

network 140.113.24.0 0.0.0.255 area 0
exit

# Core-2
vlan 209
name VLAN209
exit

interface vlan 209
ip address 140.113.69.12 255.255.255.248
no shutdown
exit

interface Fa0/23
no switchport
ip address 140.113.69.2 255.255.255.248
exit

router ospf 10
network 140.113.69.0 0.0.0.7 area 0
network 140.113.69.8 0.0.0.7 area 0
network 140.113.16.0 0.0.0.255 area 0
network 140.113.24.0 0.0.0.255 area 0
exit

# NYCU-IT
interface Gig0/0/0
ip address 140.113.69.3 255.255.255.248
ip ospf 10 area 0
no shutdown
exit

# CHT
interface Gig0/0/0
ip address 140.113.69.9 255.255.255.248
ip ospf 10 area 0
no shutdown
exit
# ----- FINISHED ----- #

# ----- #
# RIP
# CHT
router rip
version 2
network 1.0.0.0
exit

interface Gig0/0/1
ip address 1.1.1.0 255.0.0.0
no shutdown

router ospf 10
redistribute rip subnets

```

```
    redistribute rip metric-type 1
# ----- FINISHED ----- #
```

```
# ----- #
```

```
# FHRP
```

```
# Core-1
```

```
interface vlan 316
    standby version 2
    standby 0 ip 140.113.16.254
    standby 0 priority 200
    standby 0 preempt
exit
```

```
interface vlan 324
    standby version 2
    standby 0 ip 140.113.24.254
    standby 0 priority 200
    standby 0 preempt
exit
```

```
interface vlan 10
    standby version 2
    standby 10 ip 140.113.10.254
    standby 10 priority 200
    standby 10 preempt
exit
```

```
interface vlan 20
    standby version 2
    standby 20 ip 140.113.2.146
    standby 20 priority 200
    standby 20 preempt
exit
```

```
interface vlan 30
    standby version 2
    standby 30 ip 140.113.2.203
    standby 30 priority 200
    standby 30 preempt
exit
```

```
# Core-2
```

```
interface vlan 316
    standby version 2
    standby 0 ip 140.113.16.254
    standby 0 priority 100
    standby 0 preempt
exit
```

```
interface vlan 324
    standby version 2
    standby 0 ip 140.113.24.254
    standby 0 priority 100
    standby 0 preempt
```



```

exit

interface vlan 10
 standby version 2
 standby 10 ip 140.113.10.254
 standby 10 priority 100
 standby 10 preempt
 exit

interface vlan 20
 standby version 2
 standby 20 ip 140.113.2.146
 standby 20 priority 100
 standby 20 preempt
 exit

interface vlan 30
 standby version 2
 standby 30 ip 140.113.2.203
 standby 30 priority 100
 standby 30 preempt
 exit
# ----- FINISHED ----- #

# ----- #
# GRE tunnel
# CHT
interface Tunnel69
 ip address 192.168.88.69 255.255.255.252
 tunnel source GigabitEthernet0/0/0
 tunnel destination 140.113.69.3
 tunnel mode gre ip

# NYCU-IT
interface Tunnel69
 ip address 192.168.88.70 255.255.255.252
 tunnel source GigabitEthernet0/0/0
 tunnel destination 140.113.69.9
 tunnel mode gre ip

ip route 0.0.0.0 0.0.0.0 192.168.88.69

router ospf 10
 default-information originate
# ----- FINISHED ----- #

show run
show ip interface brief
show vlan brief
show etherchannel summary
show ip ospf neighbor
show access-lists

```