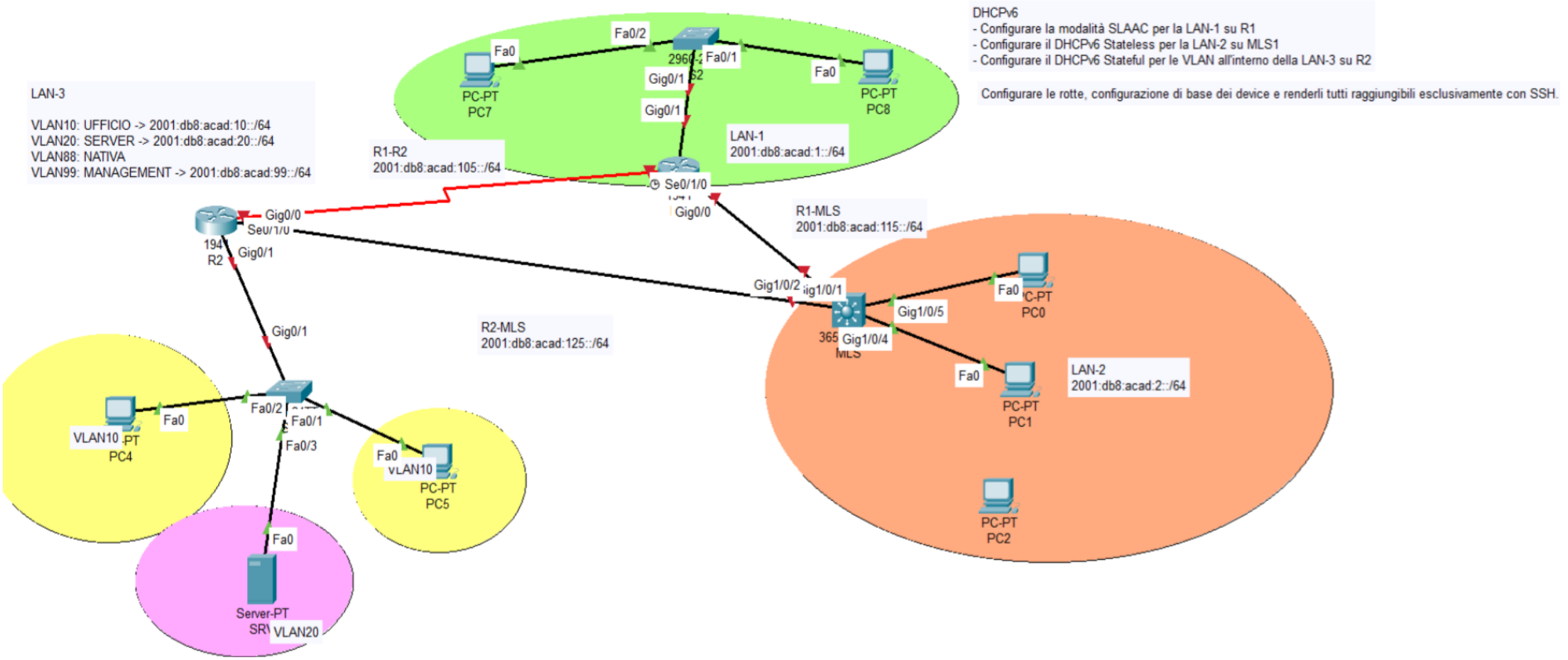
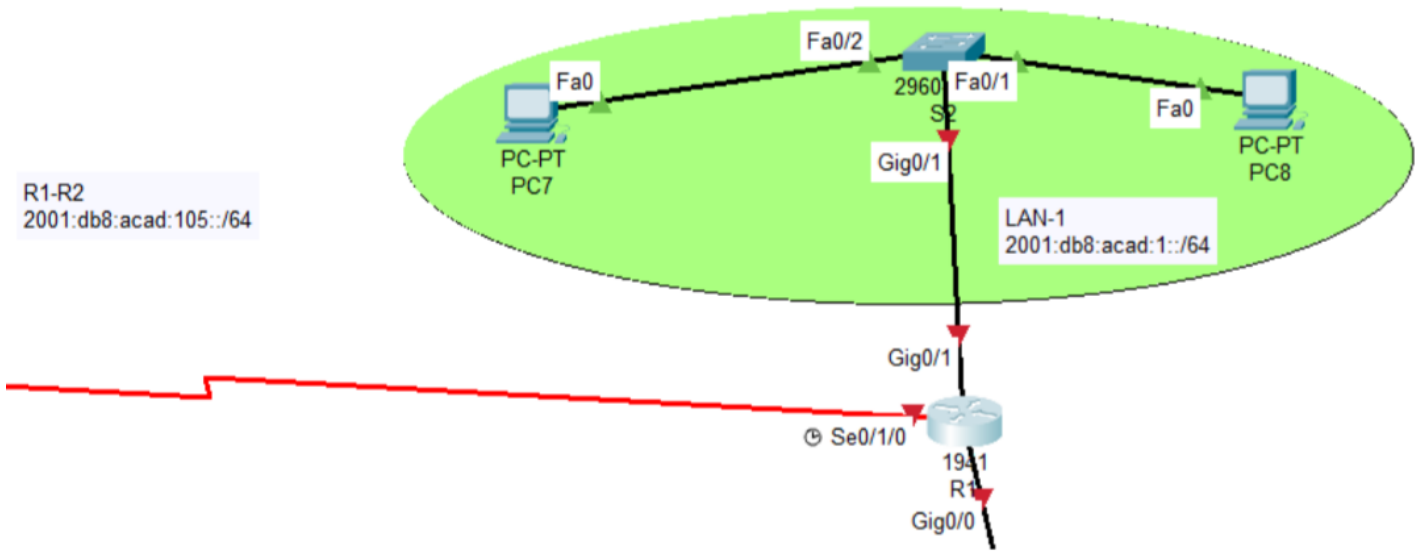

DHCPv6
- Configurare la modalità SLAAC per la LAN-1 su R1
- Configurare il DHCPv6 Stateless per la LAN-2 su MLS1
- Configurare il DHCPv6 Stateful per le VLAN all'interno della LAN-3 su R2
Configurare le rotte, configurazione di base dei device e renderli tutti raggiungibili esclusivamente con SSH.
LAN-3
VLAN10: UFFICIO -> 2001:db8:acad:10::/64
VLAN20: SERVER -> 2001:db8:acad:20::/64
VLAN88: NATIVA
VLAN99: MANAGEMENT -> 2001:db8:acad:99::/64
Fa0/2
Fa0
Fa0/1
Gig0/1
Gig0/1
Fa0
PC-PT
PC7
PC-PT
PC8
LAN-1
2001:db8:acad:1::/64
R1-R2
2001:db8:acad:105::/64
Se0/1/0
Gig0/0
Gig0/0
R1-MLS
2001:db8:acad:115::/64
R2
Gig0/1
Gig1/0/2
Gig1/0/1
Fa0
PC-PT
PC0
Gig1/0/5
Gig1/0/4
Gig0/1
R2-MLS
2001:db8:acad:125::/64
Fa0
PC-PT
PC1
LAN-2
2001:db8:acad:2::/64
Fa0/2
Fa0/1
Fa0/3
Fa0
VLAN10
PC-PT
PC4
Fa0
VLAN10
PC-PT
PC5
PC-PT
PC2
Fa0
Server-PT
VLAN20



R1-R2
2001:db8:acad:105::/64

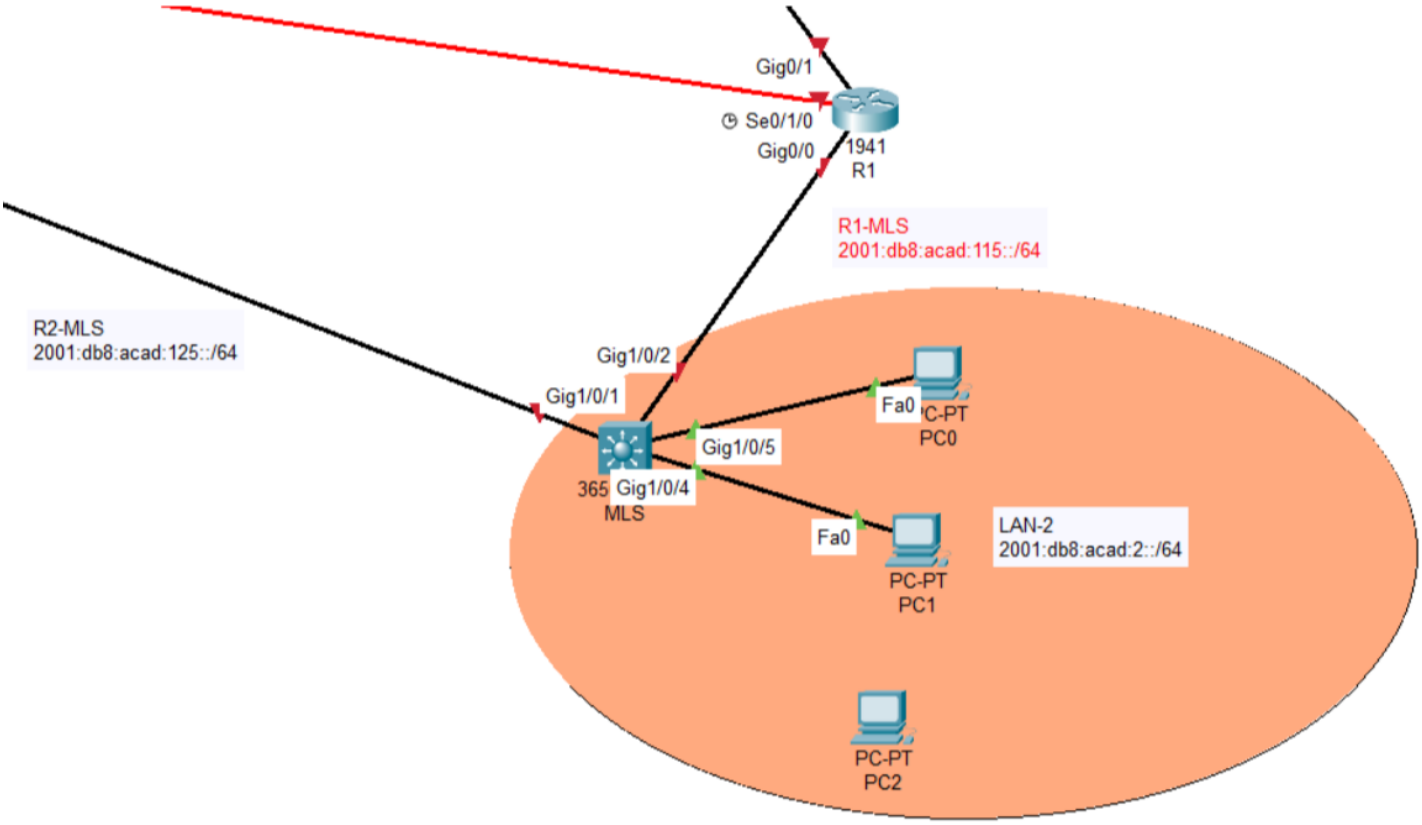
DHCPv6
- Configurare la modalità SLAAC per la LAN-1 su R1
- Configurare il DHCPv6 Stateless per la LAN-2 su MLS1
- Configurare il DHCPv6 Stateful per le VLAN all'interno della LAN-3 su R2

Configurare le rotte, configurazione di base dei device e renderli tutti raggiu

CONFIGURAZIONE ROUTER SLAAC per LAN 1

```
Router> enable
Router# configure terminal
R1(config)# hostname "R1"
R1(config)# enable secret "cisco"
R1(config)# service password-encryption
R1(config)# console line 0
R1(config-line)# logging synchronous
R1(config-line)# password "cisco"
R1(config-line)# login local
R1(config-line)# exit
R1(config)# banner motd \WARNING!\
R1(config)# ip domain-name "example.com"
R1(config)# ipv6 unicast-routing
R1(config)# crypto key generate rsa generate-keys modulus "1024"
R1(config)# username "admin" secret "cisco"
R1(config)# ip ssh version 2
R1(config)# line vty 0 15
R1(config-line)# transport input ssh
R1(config-line)# login local
R1(config-line)# exit
// CONFIGURAZIONE IPV6 INTERFACCE
R1(config)# interface gigabitethernet 0/1
R1(config)# description "DEFAULT GATEWAY of LAN-1"
R1(config-if)# ipv6 address 2001:db8:acad:1::1/64
R1(config-if)# ipv6 address fe80::1:1 link-local
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface gigabitethernet 0/0
R1(config)# description "LINK to MLS"
R1(config-if)# ipv6 address 2001:db8:acad:115::1/64
R1(config-if)# ipv6 address fe80::115:1 link-local
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface serial 0/1/0
R1(config)# description "LINK to R2"
R1(config-if)# ipv6 address 2001:db8:acad:105::1/64
R1(config-if)# ipv6 address fe80::105:1 link-local
R1(config-if)# no shutdown
R1(config-if)# exit
}
```

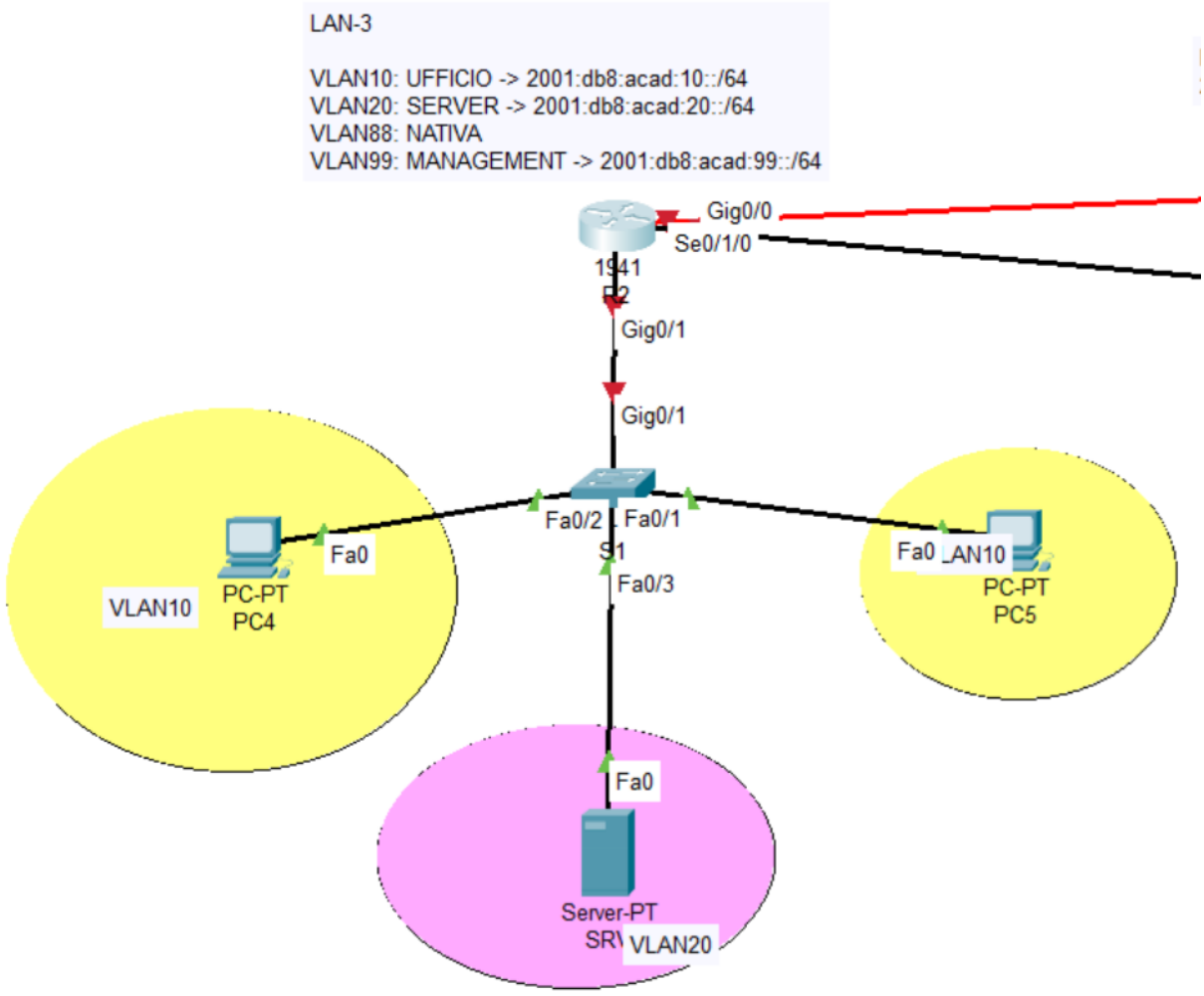
CONFIGURAZIONE MLS DHCPv6 STATELESS per LAN 2



CONFIGURAZIONE MLS DHCPv6 STATELESS per LAN 2

```
Switch> enable
Switch# configure terminal
Switch(config)# hostname "MLS"
MLS(config)# enable secret "cisco"
MLS(config)# service password-encryption
MLS(config)# banner motd \WARNING!\
MLS(config)# service password-encryption
MLS(config)# console line 0
MLS(config-line)# logging synchronous
MLS(config-line)# password "cisco"
MLS(config-line)# login local
MLS(config-line)# exit
MLS(config)# ipv6 unicast-routing
MLS(config)# interface gigabitethenet 1/0/1
MLS(config-if)# description "LINK to R2"
MLS(config-if)# no switchport
MLS(config-if)# ipv6 address 2001:db8:acad:125::1/64
MLS(config-if)# ipv6 address fe80::125:1 link-local
MLS(config-if)# no shutdown
MLS(config-if)# exit
MLS(config)# interface gigabitethenet 1/0/2
MLS(config-if)# description "LINK to R1"
MLS(config-if)# no switchport
MLS(config-if)# ipv6 address 2001:db8:acad:115::2/64
MLS(config-if)# ipv6 address fe80::115:2 link-local
MLS(config-if)# no shutdown
MLS(config-if)# exit
MLS(config)# interface gigabitethernet 1/0/4
MLS(config-if)# switchport mode access
MLS(config-if)# exit
MLS(config)# interface gigabitethernet 1/0/5
MLS(config-if)# switchport mode access
MLS(config-if)# exit
MLS(config)# interface vlan 1
MLS(config-if)# ipv6 address 2001:db8:acad:2::1/64
MLS(config-if)# ipv6 address fe80::2:1 link-local
MLS(config-if)# no shutdown
MLS(config-if)# ipv6 nd other-config-flag
MLS(config-if)# ipv6 dhcp server "STATELESS"
MLS(config-if)# exit
MLS(config)# ipv6 dhcp pool "STATELESS"
MLS(config-dhcpv6)# dns-server 2001:db8:acad:2::1
MLS(config-dhcpv6)# domain-name "example.com"
MLS(config-dhcpv6)# exit
}
```

CONFIGURAZIONE ROUTER DHCPv6 STATEFUL per LAN 3



CONFIGURAZIONE ROUTER DHCPv6 STATEFUL per LAN 3

```
Router> enable
Router# configure terminal
Router(config)# hostname "R2"
R2(config)# enable secret "cisco"
R2(config)# service password-encryption
R1(config)# banner motd \WARNING!\
R2(config)# console line 0
R2(config-line)# logging synchronous
R2(config-line)# password "cisco"
R2(config-line)# login local
R2(config-line)# exit
R2(config)# ipv6 unicast-routing
// CREAZIONE POOL INDIRIZZI IPv6 DHCP
R2(config)# ipv6 dhcp pool "STATEFUL-10"
R2(config-dhcpv6)# address prefix 2001:db8:acad:10::/64
R2(config-dhcpv6)# domain-name "example.com"
R2(config-dhcpv6)# dns-server 2001:db8:acad:10::1
R2(config-dhcpv6)# exit
R2(config)# ipv6 dhcp pool "STATEFUL-20"
R2(config-dhcpv6)# address prefix 2001:db8:acad:20::/64
R2(config-dhcpv6)# domain-name "example.com"
R2(config-dhcpv6)# dns-server 2001:db8:acad:20::1
R2(config-dhcpv6)# exit
R2(config)# interface gigabitethernet 0/0
R2(config)# description "Link to MLS"
R2(config)# ip address 2001:db8:acad:125::2/64
R2(config)# ip address fe80:125:2 link-local
R2(config)# no shutdown
R2(config)# interface serial 0/0
R2(config)# description "Link to R1"
R2(config)# ip address 2001:db8:acad:115::2/64
R2(config)# ip address fe80:115:2 link-local
R2(config)# no shutdown
// CONFIGURAZIONE SUB-INTERFACES per VLAN
R2(config)# interface gigabitethernet 0/1
R2(config-if)# no shutdown
R2(config-if)# description "LINK to S1"
R2(config-if)# exit
R2(config)# interface gigabitethernet 0/1.10
R2(config-if)# description "DEFAULT GATEWAY to UFFICIO"
R2(config-if)# encapsulation dot1q 10
R2(config-if)# ipv6 address 2001:db8:acad:10::1/64
R2(config-if)# ipv6 address fe80::10:1 link-local
```

```
R2(config-if)# ipv6 nd managed-config-flag
R2(config-if)# ipv6 dhcp server "STATEFULL-10"
R2(config-if)# exit
R2(config)# interface gigabitethernet 0/1.20
R2(config-if)# description "DEFAULT GATEWAY to SERVER"
R2(config-if)# encapsulation dot1q 20
R2(config-if)# ipv6 address 2001:db8:acad:20::1/64
R2(config-if)# ipv6 address fe80::20:1 link-local
R2(config-if)# ipv6 nd managed-config-flag
R2(config-if)# ipv6 dhcp server "STATEFULL-20"
R2(config-if)# exit
R2(config)# interface gigabitethernet 0/1.88
R2(config-if)# description "DEFAULT GATEWAY to NATIVE"
R2(config-if)# encapsulation dot1q 88 native
R2(config-if)# ipv6 address 2001:db8:acad:88::1/64
R2(config-if)# ipv6 address fe80::88:1 link-local
R2(config-if)# exit
R2(config)# interface gigabitethernet 0/1.99
R2(config-if)# description "DEFAULT GATEWAY to MANAGEMENT"
R2(config-if)# encapsulation dot1q 99
R2(config-if)# ipv6 address 2001:db8:acad:99::1/64
R2(config-if)# ipv6 address fe80::99:1 link-local
R2(config-if)# exit
**************************************************************************
Switch> enable
Switch> configure terminal
Switch(config)# sdm prefer dual-ipv4-and-ipv6
Switch(config)# do reload
********************************** [RELOAD] **********************************
Switch> enable
Switch> configure terminal
S1(config)# hostname "S1"
S1(config)# enable secret "cisco"
S1(config)# banner motd \WARNING!\
S1(config)# console line 0
S1(config-line)# logging synchronous
S1(config-line)# password "cisco"
S1(config-line)# login local
S1(config-line)# exit
S1(config)# vlan 10
S1(config-vlan)# name "UFFICIO"
S1(config-vlan)# exit
S1(config)# vlan 20
S1(config-vlan)# name "SERVER"
```

```
S1(config-vlan)# exit
S1(config)# vlan 88
S1(config-vlan)# name "NATIVA"
S1(config-vlan)# exit
S1(config)# vlan 99
S1(config-vlan)# name "MANAGEMENT"
S1(config-vlan)# exit
S1(config)# interface vlan 99
S1(config-if)# ipv6 address 2001:db8:acad:99::5/64
S1(config-if)# ipv6 address fe80::99::2 link-local
S1(config-if)# ipv6 address dhcp
S1(config-if)# ipv6 address autoconfig
S1(config-if)# exit
S1(config)# interface fastethernet 0/2
S1(config-if)# switchport mode access
S1(config-if)# switchport access vlan 10
S1(config-if)# exit
S1(config)# interface fastethernet 0/3
S1(config-if)# switchport mode access
S1(config-if)# switchport access vlan 20
S1(config-if)# exit
S1(config)# interface fastethernet 0/1
S1(config-if)# switchport mode access
S1(config-if)# switchport access vlan 10
S1(config-if)# exit
S1(config)# interface gigabitethernet 0/1
S1(config-if)# switchport mode trunk
S1(config-if)# switchport trunk allowed vlan 10,20,88,99
S1(config-if)# switchport trunk native vlan 88
S1(config-if)# switchport nonegotiate
S1(config-if)# exit
// CONFIGURAZIONE SSH
S1(config)# ip domain-name "example.com"
S1(config)# crypto key generate rsa generate-keys modulus "1024"
S1(config)# username "admin" secret "cisco"
S1(config)# ip ssh version 2
S1(config)# line vty 0 15
S1(config-line)# login local
S1(config-line)# logging synchronous
S1(config-line)# password "cisco"
S1(config-line)# trasport input ssh
S1(config-line)# exec-timeout 6 0
S1(config-line)# exit
}
```