

OSPF SNR

- 1 [OSPF](#)
- 2 [OSPF](#)
- 3 [OSPF](#)
 - 3.1 [OSPF SNR S2990G, S2995G, S3850G, S300G, S4550](#)
- 4 [OSPF SNR](#)

OSPF - . (AS). OSPF - .

, OSPF IP- -. OSPF LSA (Link State Advertisement). LSA, , (LSDB).

L2+ L3 SNR OSPF.

OSPF

AS OSPF CPU , LSDB LSA.

:

- **Backbone (Area 0)** - OSPF. , .
- **Normal** - 0. , .
- **Stub** - External-, . Stub- ASBR. AS, , ASR. area X stub.
- **Totally Stub** - Stub-, . area X stub no-summary.
- **NSSA** - Stub-, ASBR. External LSA Type 7, LSA Type 5 ASR. area X nssa.
- **Totally NSSA** - Totally stub , ASBR. . area X nssa no-summary.

OSPF

- **Internal router** - , . AS LSDB.
- **Area border router (ABR)** - , , , . ABR LSDB.
- **Backbone router** - . , , , . ABR, .
- **AS boundary router (ASBR)** - AS, , . ASBR AS , .

OSPF

OSPF SNR S2990G, S2995G, S3850G, S300G, S4550

(Router ID), L3-, OSPF , OSPF.

, SNR-S2995-24FX, OSPF 10.10.10.0/24 R1 R2:

R1

```
conf t
vlan 10;3000
!
interface vlan 10
 ip address 172.31.1.1 255.255.255.252
 ip ospf message-digest-key 100 md5 7 A/0ubDFuZR0=
 ip ospf cost 500
!
interface vlan 1000
 ip address 10.10.11.1 255.255.255.0
!
interface Loopback1
 ip address 10.10.10.11 255.255.255.255
!
interface E1/0/1
 switchport access vlan 10
!
router ospf 1
 ospf router-id 10.10.10.11
 area 0 authentication message-digest
 passive-interface Vlan1000
 log-adjacency-changes detail
 network 172.31.1.0/30 area 0
 redistribute connected
end
```

R2

```
conf t
vlan 10
interface vlan 10
 ip address 172.31.1.2 255.255.255.252
 ip ospf message-digest-key 100 md5 7 A/0ubDFuZR0=
 ip ospf cost 500
!
interface Loopback1
 ip address 10.10.10.12 255.255.255.255
!
interface E1/0/1
 switchport access vlan 10
!
router ospf 1
 ospf router-id 10.10.10.12
 area 0 authentication message-digest
 log-adjacency-changes detail
 network 172.31.1.0/30 area 0
 redistribute connected
end
```

redistribute connected - IP-, connected-;
area <area-ID> authentication message-digest - ;
ip ospf message-digest-key <key-id> md5 7 <hidden-key> - OSPF ;
log-adjacency-changes detail - OSPF. syslog ;
ip ospf cost <1 - 65535> - cost ;
passive-interface vlan <if-name> - LSA ., , , OSPF. ., , .
:

```
show ip ospf neighbor
```

, OSPF :

```
show ip route ospf
```

OSPF SNR

OSPF: (area 0), (area 1) NSSA (area 2).

R1

```
vlan 1;100;300;1000
Interface Ethernet1/0/1
  description R2
  switchport discard packet untag
  switchport mode trunk
  switchport trunk allowed vlan 100
!
Interface Ethernet1/0/3
  description R3
  switchport discard packet untag
  switchport mode trunk
  switchport trunk allowed vlan 300
!
interface Vlan100
  ip address 172.31.1.1 255.255.255.252
!
interface Vlan300
  ip address 172.31.3.2 255.255.255.252
!
interface Vlan1000
  ip address 10.10.100.1 255.255.255.0
!
interface Loopback1
  ip address 10.10.10.1 255.255.255.255
!
router ospf 1
  ospf router-id 10.10.10.1
  passive-interface Vlan1000
  network 172.31.1.0/30 area 0
  network 172.31.3.0/30 area 0
  redistribute connected
!
```

R2

```
vlan 1;100;200;400
!
Interface Ethernet1/0/1
  description R1
  switchport discard packet untag
  switchport mode trunk
  switchport trunk allowed vlan 100
!
Interface Ethernet1/0/2
  description R3
  switchport discard packet untag
  switchport mode trunk
  switchport trunk allowed vlan 200
!
Interface Ethernet1/0/4
  description R4
  switchport discard packet untag
  switchport mode trunk
  switchport trunk allowed vlan 400
!
interface Vlan100
  ip address 172.31.1.2 255.255.255.252
!
interface Vlan200
  ip address 172.31.2.1 255.255.255.252
!
interface Vlan400
  ip address 172.31.4.1 255.255.255.252
!
interface Loopback1
  ip address 10.10.10.2 255.255.255.255
!
router ospf 1
  ospf router-id 10.10.10.2
  area 1 stub no-summary
  network 172.31.1.0/30 area 0
  network 172.31.2.0/30 area 0
  network 172.31.4.0/30 area 1
  redistribute connected
!
```

R3

```
vlan 1;200;300;500
!
Interface Ethernet1/0/2
description R2
switchport discard packet untag
switchport mode trunk
switchport trunk allowed vlan 200
!
Interface Ethernet1/0/3
description R1
switchport discard packet untag
switchport mode trunk
switchport trunk allowed vlan 300
!
Interface Ethernet1/0/5
description R5
switchport discard packet untag
switchport mode trunk
switchport trunk allowed vlan 500
!
interface Vlan200
ip address 172.31.2.2 255.255.255.252
!
interface Vlan300
ip address 172.31.3.1 255.255.255.252
!
interface Vlan500
ip address 172.31.5.1 255.255.255.252
!
interface Loopback1
ip address 10.10.10.3 255.255.255.255
!
router ospf 1
ospf router-id 10.10.10.3
area 2 nssa default-information-originate
network 172.31.2.0/30 area 0
network 172.31.3.0/30 area 0
network 172.31.5.0/30 area 2
redistribute connected
!
```

R4

```
vlan 1;400;3000
!
interface Vlan400
 ip address 172.31.4.2 255.255.255.252
!
interface Vlan3000
 ip address 10.10.120.1 255.255.255.0
!
Interface Ethernet1/0/4
 description R2
 switchport discard packet untag
 switchport mode trunk
 switchport trunk allowed vlan 400
!
interface Loopback1
 ip address 10.10.10.4 255.255.255.255
!
router ospf 1
 ospf router-id 10.10.10.4
 passive-interface Vlan3000
 area 1 stub
 network 10.10.10.4/32 area 1
 network 10.10.120.0/24 area 1
 network 172.31.4.0/30 area 1
!
```

R5

```
vlan 1;500;2000
!
Interface Ethernet1/0/5
 description R3
 switchport discard packet untag
 switchport mode trunk
 switchport trunk allowed vlan 500;2000
!
interface Vlan500
 ip address 172.31.5.2 255.255.255.252
!
interface Vlan2000
 ip address 10.10.110.1 255.255.255.0
!
interface Loopback1
 ip address 10.10.10.5 255.255.255.255
!
router ospf 1
 ospf router-id 10.10.10.5
 passive-interface Vlan2000
 area 2 nssa
 network 172.31.5.0/30 area 2
 redistribute connected
!
```

(redistribute) **LSA type 5**, network - **LSA type 1**. **LSA type 1** . ABR **LSA type 1** **LSA type 3** . Inter-Area .

LSA type 5 stub- . totally stub **LSA type 3**. ABR .

, stub area . , , NSSA, redistribute- **LSA type 7**. ABR , **LSA type 7** **LSA type 5** .