show running-config

```
Current configuration : 2737 bytes

version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption

hostname R2-4_ISPC-B3

boot-start-marker
boot-end-marker

enable secret 5 $1$n8M1$UQ7NyyCy4vtqfzzseFwtK1

no aaa new-model
no network-clock-participate slot 1
no network-clock-participate wic 0
ip cef

no ip domain lookup
ip auth-proxy max-nodata-conns 3
ip admission max-nodata-conns 3

ipv6 unicast-routing

username cisco privilege 15 secret 5 $1$NyFD$ypHLwGgQAuHcVDqvLitbR/

!

interface Loopback0
ip address 28.1.1.1 255.255.255.0
ipv6 address 2001:28::1/64
ipv6 enable
ipv6 ospf 10 area 1

interface FastEthernet0/0
ip address 190.20.0.254 255.255.255.0
duplex auto
speed auto

interface Serial0/0
no ip address
shutdown
no fair-queue

interface BRI0/0
no ip address
encapsulation hdlc
shutdown

interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto

interface Serial0/1
description to_R2-3_ISPC
no ip address
encapsulation frame-relay
no keepalive

interface Serial0/1.301 point-to-point
description to_R2_9_ISPC-B2
ip address 10.30.0.10 255.255.255.252
ipv6 address 2001:3::2/64
ipv6 enable
ipv6 ospf 10 area 1
frame-relay interface-dlci 301

router ospf 1
log-adjacency-changes
network 10.30.0.8 0.0.0.3 area
```

show ip route

```
network 28.1.1.0 0.0.0.255 area 1

router bgp 300
bgp router-id 28.1.1.1
no bgp default ipv4-unicast
bgp log-neighbor-changes
neighbor 2.2.2.2 remote-as 2
neighbor 2.2.2.2 local-as 301 no-prepend replace-as dual-as
neighbor 2.2.2.2 ebgp-multihop 255
neighbor 2.2.2.2 update-source Loopback0
neighbor 9.1.1.1 remote-as 301
neighbor 9.1.1.1 local-as 301 no-prepend replace-as dual-as
neighbor 9.1.1.1 ebgp-multihop 255
neighbor 9.1.1.1 update-source Loopback0
neighbor 2001:9::1 remote-as 300
neighbor 2001:9::1 update-source Loopback0
!
address-family ipv4
neighbor 2.2.2.2 activate
neighbor 2.2.2.2 next-hop-self
neighbor 9.1.1.1 activate
neighbor 9.1.1.1 next-hop-self
no auto-summary
no synchronization
network 190.20.0.0 mask 255.255.255.0
exit-address-family
!
address-family ipv6
neighbor 2001:9::1 activate
neighbor 2001:9::1 next-hop-self
no synchronization
exit-address-family

ip forward-protocol nd
ip route 2.2.2.0 255.255.255.0 190.20.0.1

ip http server
no ip http secure-server

ipv6 router ospf 10
router-id 28.1.1.1
log-adjacency-changes

control-plane

banner motd ^CNot Authorized!^C

line con 0
exec-timeout 0 0
logging synchronous
login local
line aux 0
line vty 0 4
exec-timeout 0 0
logging synchronous
login local
line vty 5 15
exec-timeout 0 0
logging synchronous
login local

end
```

show ipv6 route

```
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

B 200.4.21.0/24 [20/0] via 2.2.2.2, 00:04:46
B 200.4.20.0/24 [20/0] via 2.2.2.2, 00:04:46
2.0.0.0/24 is subnetted, 1 subnets
S 2.2.2.0 [1/0] via 190.20.0.1
O E2 200.1.0.0/24 [110/20] via 10.30.0.9, 01:06:11, Serial0/1.301
O E2 200.2.0.0/24 [110/20] via 10.30.0.9, 01:06:11, Serial0/1.301
O E2 200.3.0.0/24 [110/20] via 10.30.0.9, 01:06:11, Serial0/1.301
190.20.0.0/24 is subnetted, 1 subnets
C 190.20.0.0 is directly connected, FastEthernet0/0
23.0.0.0/32 is subnetted, 1 subnets
O 23.1.1.1 [110/129] via 10.30.0.9, 01:06:11, Serial0/1.301
22.0.0.0/32 is subnetted, 1 subnets
O 22.1.1.1 [110/129] via 10.30.0.9, 01:06:12, Serial0/1.301
8.0.0.0/32 is subnetted, 1 subnets
O 8.1.1.1 [110/129] via 10.30.0.9, 01:06:12, Serial0/1.301
9.0.0.0/32 is subnetted, 1 subnets
O 9.1.1.1 [110/65] via 10.30.0.9, 01:06:12, Serial0/1.301
10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
B 10.4.0.0/24 [20/0] via 2.2.2.2, 00:04:47
O 10.30.0.4/30 [110/128] via 10.30.0.9, 01:06:12, Serial0/1.301
O 10.30.0.0/30 [110/128] via 10.30.0.9, 01:06:12, Serial0/1.301
O 10.30.0.12/30 [110/128] via 10.30.0.9, 01:06:12, Serial0/1.301
C 10.30.0.8/30 is directly connected, Serial0/1.301
28.0.0.0/24 is subnetted, 1 subnets
C 28.1.1.0 is directly connected, Loopback0
B 210.1.0.0/24 [20/0] via 2.2.2.2, 00:04:47
B 210.3.0.0/24 [20/0] via 2.2.2.2, 00:04:47
```

show ip int brief

```
IPv6 Routing Table - 13 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
U - Per-user Static route
I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
O 2001:1::/64 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
O 2001:2::/64 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
C 2001:3::/64 [0/0]
via ::, Serial0/1.301
L 2001:3::2/128 [0/0]
via ::, Serial0/1.301
O 2001:4::/64 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
O 2001:8::1/128 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
O 2001:9::1/128 [110/64]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
O 2001:22::1/128 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
O 2001:23::1/128 [110/128]
via FE80::21A:E2FF:FEAB:49DE, Serial0/1.301
C 2001:28::/64 [0/0]
via ::, Loopback0
L 2001:28::1/128 [0/0]
via ::, Loopback0
L FE80::/10 [0/0]
via ::, Null0
L FF00::/8 [0/0]
via ::, Null0
```

show ipv6 int brief

```
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 190.20.0.254 YES manual up up
Serial0/0 unassigned YES unset administratively down down
BRI0/0 unassigned YES unset administratively down down
BRI0/0:1 unassigned YES unset administratively down down
BRI0/0:2 unassigned YES unset administratively down down
FastEthernet0/1 unassigned YES unset administratively down down
Serial0/1 unassigned YES unset up up
Serial0/1.301 10.30.0.10 YES manual up up
Loopback0 28.1.1.1 YES manual up up
```

show cdp neighbors

```
FastEthernet0/0 [up/up]
Serial0/0 [administratively down/down]
BRI0/0 [administratively down/down]
BRI0/0:1 [administratively down/down]
BRI0/0:2 [administratively down/down]
FastEthernet0/1 [administratively down/down]
Serial0/1 [up/up]
Serial0/1.301 [up/up]
FE80::20A:F4FF:FE34:DCC0
2001:3::2
Loopback0 [up/up]
FE80::20A:F4FF:FE34:DCC0
2001:28::1
```

show ipv6 ospf 10

```
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
S - Switch, H - Host, I - IGMP, r - Repeater

Device ID Local Intrfce Holdtme Capability Platform Port ID
R2-15_ISPB-B5 Fas 0/0 129 R S I 2811 Fas 0/1
R2-9_ISPC-B2 Ser 0/1.301 122 R S I 2801 Ser 0/1/0.300
```

show ipv6 ospf 10 neighbor

```
Routing Process "ospfv3 10" with ID 28.1.1.1
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msecs
Retransmission pacing timer 66 msecs
Number of external LSA 0. Checksum Sum 0x000000
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Reference bandwidth unit is 100 mbps
Area 1
Number of interfaces in this area is 2
SPF algorithm executed 10 times
Number of LSA 12. Checksum Sum 0x0629F8
Number of DCbitless LSA 0
Number of indication LSA 0
Number of DoNotAge LSA 0
Flood list length 0
```

show ip bgp ipv6 unicast summary

```
Neighbor ID Pri State Dead Time Interface ID Interface
1.1.1.1 1 FULL/ - 00:00:38 17 Serial0/1.301
```

show ip bgp summary

```
BGP router identifier 28.1.1.1, local AS number 300
BGP table version is 1, main routing table version 1

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
2001:9::1 4 300 97 97 1 0 0 00:05:19 0
```

show version

```
BGP router identifier 28.1.1.1, local AS number 300
BGP table version is 7, main routing table version 7
6 network entries using 702 bytes of memory
7 path entries using 364 bytes of memory
5/3 BGP path/bestpath attribute entries using 620 bytes of memory
1 BGP AS-PATH entries using 24 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 1710 total bytes of memory
BGP activity 15/9 prefixes, 17/10 paths, scan interval 60 secs

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
2.2.2.2 4 2 25 25 7 0 0 00:04:53 6
9.1.1.1 4 301 9 12 7 0 0 00:04:42 0
```