Day1

Day1
CCNA Public Course 3 Days Period October 18-20 ,2021

Landing page this course: s.id/tLcap1

Access right to: any

Additional notes
Some responses from live chat room

DO
Perintah kembali ke privilege menggunakan ‘do’ command diijinkan dan tidak berdampak secara teknis dan administratif. Sifatnya memudahkan dan efektif dalam kecepatan penggunaan CLI

—
!misal:
Enable
Conf t
Interface fa0/0
do show running ← coba yang ini

CDP = Cisco Discovery Protocols
Purpose: pemetaan perangkat, visualisasi topologi
Cisco to non-cisco bisa pakai LLDP

Hati2 pakai CDP dan LLDP
Karena jika tidak bijak, dapat menjadi Security Hole.

—---- starting configuration—-
!Change password is simple
!
Enable
Conf t
Enable password cisco

Enable secret sanfran
End
Exit
!
Password: ____
!
Enable
Conf t
Enable password sanfran
Enable secret cisco
End
Exit
!
Password: _____
!
Enable
Conf t
Enable password cisco
Enable secret sanfran
End
Exit
!
Password: ____
!
!
!pengamanan port kosong
Enable
Conf t
Interface fa0/4
Shutdown
End
!
Conf t
!scenario: fa0/4 s/d fa0/24 - kosong
!
Interface range fa0/4 - 24
Shutdown
End
Conf t
Interface fa0/4
Description *Link to anakbaru*
No shutdown
End

!
—-------
Class IPv4
Dot decimal
Binary digit = 1 or 0
32 bits → X . X . X . X
X = 8 bits = octet = byte
X = xxxxxxxx

NET BIT = 1
HOST BIT = 0

xxxxxxxx

Reserve address
0.0.0.0 = default address
127.0.0.0 = local host = loopback
Ping 127.0.0.1 reply!

CLASSFUL NETWORK

Class A> **0**xxxxxxx . xxxxxxxx . xxxxxxxx . xxxxxxxx
00000001 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 1.0.0.0
…..
01111110 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 126.0.0.0
Netmask 11111111 . 0000000 . 0000000 . 0000000
Net bits = 8, host bits = 24

Class B> **10**xxxxxx . xxxxxxxx . xxxxxxxx . xxxxxxxx
10000000 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 128
…..
10111111 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 191
Netmask 11111111 . 11111111 . 0000000 . 0000000
Net bits = 16, host bits = 16

Class C> **110**xxxxx . xxxxxxxx . xxxxxxxx . xxxxxxxx
11000000 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 192
…..
11011111 . xxxxxxxx . xxxxxxxx . xxxxxxxx = 223
Netmask 11111111 . 11111111 . 11111111 . 0000000
Net bits = 24, host bits = 8

AND LOGIC
Filtering using netmask

Alamat jaringan berapa ?
192.168.1.1 255.255.255.0

BLOCK NETWORK?

192.168.1.1
11000000.10101000.00000001.00000001 = 192.168.1.1
11111111.11111111.11111111.00000000 = 255.255.255.0
—----------AND
11000000.10101000.00000001.00000000 = 192.168.1.0 → Net Address
11000000.10101000.00000001.00000001 = 192.168.1.0 → First Unicast Address
.
.
.
11000000.10101000.00000001.11111110 = 192.168.1.254 → Last unicast add
11000000.10101000.00000001.11111111 = 192.168.1.255 → Broadcast Add

FLSM EXERCISE
—----------

Classful to Classless

192.168.1.0 / 24 → classful
Subnetting
Pinjam bit host alamat classful
Mengubah bit host menjadi net bit yang baru

192.168.1.0 → host address
11000000.10101000.00000001.00000000 /24
11111111.11111111.11111111.00000000 /24

11111111.11111111.11111111.11000000 /26
11111111.11111111.11111111.XX000000
11000000.10101000.00000001.00000000 = 192.168.1.0
11000000.10101000.00000001.01000000 = 192.168.1.64
11000000.10101000.00000001.10000000 = 192.168.1.128
11000000.10101000.00000001.11000000 = 192.168.1.192

192.168.1.0 192.168.1.64 192.168.1.128 192.168.1.192 = net add

192.168.1.1 192.168.1.65 192.168.1.129 192.168.1.193 = 1st unicast add
.
192.168.1.62 192.168.1.126 192.168.1.190 192.168.1.254 = last unicast add
192.168.1.63 192.168.1.127 192.168.1.191 192.168.1.255 = broad add

11111111.11111111.11111111.11000000 /26
255.255.255.192

Conf t
No ip subnet-zero

Ip subnet-zero

CIDR
Mencari kesamaan bit yang paling tinggi

Day2

Day2
CCNA Public Course 3 Days Period October 18-20 ,2021

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Access right to: any

—---- starting configuration—-
!TASK 0: IP Address Management
!Access to R1
Enable
Conf t
Interface fa0/0
shut
Description *Link to DSW1*
!
Ip address 10.1.1.1 255.255.255.0
No shut
End
!
!
!
!Access to DSW1
Enable
Conf t
Interface vlan 1
shut
Ip address 10.1.1.2 255.255.255.0
No shut
End
!
!
!Access to ASW1
Enable
Conf t
Interface vlan 1

shut
Ip address 10.1.1.3 255.255.255.0
No shut
End
!
!
!
!
!--
!TASK1: **VLAN**
!Step
!Access to SWITCH
!DSW1 and ASW1
!
!1 VTP domain = VLAN Trunking Protocols (optional)
!2 VTP mode
!3 Trunk link
!4 Create VLANs
!5 Assign port VLANs
!
!----------------------------------
!1 VTP domain
!Access to DSW1
Enable
Conf t
Hostname DSW1
!
no ip domain-lookup
!
vtp domain ccnaent
!
!
!Access to ASW1
Enable
Conf t
Hostname DSW1
!
no ip domain-lookup
!
vtp domain ccnaent
!

!-------------------------------
!2 VTP mode

!Access to DSW1
!server, client, transparent
!
vtp mode transparent
!
!
end
!
!Verification
show vtp status
!
!--------
!Access to ASW1
!server, client, transparent
!
vtp mode transparent
!
!
end
!
!Verification
show vtp status
!
!----------
!3 Trunk link
!Access to DSW1
!check link
show cdp neighbor
!
!interface yang terhubung antara masing2 switch adalah fa0/11 dan fa0/12 + router
!DSW1 fa0/24, fa0/11, fa0/12
!
conf t
Interface fa0//24
description *Link to R1*
Duplex full
Speed 100
Switchport mode trunk
Shutdown
No shutdown
Exit
!
Interface range fa0/11 - 12
Duplex full

Speed 100
Switchport mode trunk
Shutdown
No shutdown
Exit
!
!verification
show ip interface brief
show interface fa0/24 switchport
show interface fa0/11 switchport
show interface fa0/12 switchport
!
!
!
!Access to ASW1
!check link
show cdp neighbor
!
!interface yang terhubung antara masing2 switch adalah fa0/11 dan fa0/12
!ASW1 fa0/11, fa0/12
!
Interface range fa0/11 - 12
Duplex full
Speed 100
Switchport mode trunk
Shutdown
No shutdown
end
!
!verification
!
!------------------------------
!4 Create VLANs
!Access to DSW1
!
Conf t
Vlan 2
Vlan 3
!
!verification
Show vlan brief
!
!
!

!Access to ASW1
!
Conf t
Vlan 2
Vlan 3
!
!verification
Show vlan brief
!
!----------
!5 Assign port VLANs
!Access to ASW1
!
Conf t
Interface fa0/2
Description *Link to PC1*
!
Switchport mode access
Switchport access vlan 2
Shut
No shutdown
Exit
!
!
!
Interface fa0/3
Description *Link to LP1*
!
Switchport mode access
Switchport access vlan 3
Shutdown
No shutdown
End
!
!
!verification
Show startup-config
!
!saving configuration
copy running-config startup-config
Destination filename [startup-config]? ← langsung enter saja
!
!Access to DSW
!saving configuration

copy running-config startup-config
Destination filename [startup-config]? ← langsung enter saja
!
!
!—----------
!ROUTER
!router on a stick
!inter-VLAN routing
!sub-interface
!
Enable
Conf t
Interface fa0/0
Duplex full
Speed 100
!
Interface fa0/0.2
Description *Link to VLAN2*
Encapsulation dot1q 2
Ip address 10.1.2.1 255.255.255.0
No shut
Exit
!
Interface fa0/0.3
Description *Link to VLAN3*
Encapsulation dot1q 3
Ip address 10.1.3.1 255.255.255.0
No shut
end
!
!verification
Show ip interface brief
!
!
!
!saving configuration
Copy run start
!
!
!
!
!==================================
!ROUTING INFORMATION PROTOCOL (RIP)
!access to R1

```
Enable
Conf t
Interface s0/0/0
Description *Link to R2*
Ip address 12.12.12.1 255.255.255.0
Shut
No shutdown
End
!verification
Show interface s0/0/0
Ping 12.12.12.2
Ping 23.23.23.2
!
!
!access to R2
Enable
Conf t
Hostname R2
No ip domain-lookup
!
Interface s0/0/0
Description *Link to R1*
Ip address 12.12.12.2 255.255.255.0
Shut
No shutdown
End
!verification
Show interface s0/0/0
!
!
Conf t
Interface s0/0/1
Description *Link to R3*
Ip address 23.23.23.2 255.255.255.0
Shut
No shutdown
End
!verification
Show interface s0/0/1
Ping 12.12.12.1
Ping 23.23.23.3
!
!
!
```

!access to R3
Enable
Conf t
Interface s0/0/0
Description *Link to R2*
Ip address 23.23.23.3 255.255.255.0
Shut
No shutdown
End
!verification
Show interface s0/0/0
Ping 23.23.23.2
Ping 12.12.12.2
!
!----------
!RIP
!X = Pod number
!
!Access to RX
Conf t
Interface loopback 0
Description *Link to LAN 0*
Ip address 10.X.0.1 255.255.255.0
No shut
End
!
!
!Access to R1 and R2
Conf t
Router rip
Ver 2
Network 10.0.0.0
Network 12.0.0.0
No auto-summary
End
!
!verification
Show ip protocols
Show ip route
!
!
!Access to R2 and R3
Conf t
Router rip

Ver 2
Network 10.0.0.0
Network 23.0.0.0
No auto-summary
End
!
!verification
Show ip protocols
Show ip route
!
!
!
!
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 8 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
Interface Send Recv Triggered RIP Key-chain
FastEthernet0/0 22
Serial0/0/0 22
FastEthernet0/0.2 22
FastEthernet0/0.3 22
Loopback0 22
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
    10.0.0.0
    12.0.0.0
Passive Interface(s):
Routing Information Sources:
    Gateway Distance Last Update
    12.12.12.2 120 00:00:02
Distance: (default is 120)
R1#

R1#sh ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
i - IS-IS, 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

10.0.0.0/8 is variably subnetted, 7 subnets, 2 masks
R 10.0.0.0/8 [120/2] via 12.12.12.2, 00:00:24, Serial0/0/0
C 10.1.0.0/24 is directly connected, Loopback0
C 10.1.1.0/24 is directly connected, FastEthernet0/0
C 10.1.2.0/24 is directly connected, FastEthernet0/0.2
C 10.1.3.0/24 is directly connected, FastEthernet0/0.3
R 10.2.0.0/24 [120/1] via 12.12.12.2, 00:00:24, Serial0/0/0
R 10.3.0.0/24 [120/2] via 12.12.12.2, 00:00:24, Serial0/0/0
12.0.0.0/24 is subnetted, 1 subnets
C 12.12.12.0 is directly connected, Serial0/0/0
23.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
R 23.0.0.0/8 [120/1] via 12.12.12.2, 00:01:51, Serial0/0/0
R 23.23.23.0/24 [120/1] via 12.12.12.2, 00:00:24, Serial0/0/0

R1#

!access to R3
Enable
Conf t
Hostname R2
No ip domain-lookup
!
!

—------ end of configuration —-
QnA
Redundant = Reliability = Availability

1 Switch VLANs = virtually : beberapa switch
Beberapa switch VLANs = virtually : sebuah switch

Interface Serial
Provider vs Subscriber
DCE vs DTE

Day3

Day3
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Access right to: any

>>>>>>> Today's Knowledge <<<<<<<

Administrative Distance
RIP 120
EIGRP 90
OSPF 110
IS-IS 115
BGP 200

—---- starting configuration—-

!==================================
!EIGRP PREPARATION
!access to R1
Enable
!verification
Show ip interface brief
Show interface s0/0/0
!
R1#show ip interface brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 10.1.1.1 YES manual up up
FastEthernet0/0.2 10.1.2.1 YES manual up up
FastEthernet0/0.3 10.1.3.1 YES manual up up
FastEthernet0/1 unassigned YES NVRAM administratively down down
Serial0/0/0 12.12.12.1 YES manual up up

Serial0/0/1 unassigned YES NVRAM administratively down down
Loopback0 10.1.0.1 YES manual up up
Vlan1 unassigned YES unset administratively down down
R1#
!
!
!
Ping 12.12.12.2
Ping 23.23.23.2
!
!
!access to R2
Enable
!verification
Show ip interface brief
!
R2#sho ip inter brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 unassigned YES unset administratively down down
FastEthernet0/1 unassigned YES unset administratively down down
Serial0/0/0 12.12.12.2 YES manual up up
Serial0/0/1 23.23.23.2 YES manual up up
Loopback0 10.2.0.1 YES manual up up
Vlan1 unassigned YES unset administratively down down
R2#

!
Show interface s0/0/0
!
!
Ping 23.23.23.3
!
R2#sh ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
i - IS-IS, 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

10.0.0.0/24 is subnetted, 6 subnets

R 10.1.0.0 [120/1] via 12.12.12.1, 00:00:18, Serial0/0/0
R 10.1.1.0 [120/1] via 12.12.12.1, 00:00:18, Serial0/0/0
R 10.1.2.0 [120/1] via 12.12.12.1, 00:00:18, Serial0/0/0
R 10.1.3.0 [120/1] via 12.12.12.1, 00:00:18, Serial0/0/0
C 10.2.0.0 is directly connected, Loopback0
R 10.3.0.0 [120/1] via 23.23.23.3, 00:00:08, Serial0/0/1
12.0.0.0/24 is subnetted, 1 subnets
C 12.12.12.0 is directly connected, Serial0/0/0
23.0.0.0/24 is subnetted, 1 subnets
C 23.23.23.0 is directly connected, Serial0/0/1
!
R2#
!
!
!
!access to R3
Enable
!verification
Show ip interface brief
!
R3#sh ip int brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 unassigned YES unset administratively down down
FastEthernet0/1 unassigned YES unset administratively down down
Serial0/0/0 23.23.23.3 YES manual up up
Serial0/0/1 unassigned YES unset administratively down down
Loopback0 10.3.0.1 YES manual up up
Vlan1 unassigned YES unset administratively down down
R3#

!
Show interface s0/0/0
!
R3#sh int s0/0/0
Serial0/0/0 is up, line protocol is up (connected)
Hardware is HD64570
Description: *Link to R2*
Internet address is 23.23.23.3/24
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0

Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/0/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 44 bits/sec, 0 packets/sec
5 minute output rate 13 bits/sec, 0 packets/sec
18 packets input, 2616 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
16 packets output, 832 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up
!
R3#
!
!
Ping 23.23.23.2
!
!----------
!EIGRP CONFIGURATION
!X = Pod number
!
!Access to R1
!Change 1
Conf t
Router eigrp 100
Eigrp router-id 1.1.1.1
Network 10.0.0.0
Network 12.0.0.0
No auto-summary
End
!
!verification
Show ip protocols → display all routing protocols information
Show ip eigrp neighbor
Show ip route
!
!
!Access to R2
!Change 2
Conf t

Router eigrp 100
Eigrp router-id 2.2.2.2
Network 10.0.0.0
Network 12.0.0.0
Network 23.0.0.0
No auto-summary
End
!
!display packet tracer
!R2(config-router)#network 12.0.0.0
!R2(config-router)#
!%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 12.12.12.1 (Serial0/0/0) is up: new adjacency
!
!
!verification
Show ip protocols
  Routing Information Sources:
Gateway Distance Last Update
12.12.12.1 90 1069392
Distance: internal 90 external 170
!
!
Show ip eigrp neighbor
R2#sh ip eigrp neighbors
IP-EIGRP neighbors for process 100
H Address Interface Hold Uptime SRTT RTO Q Seq
(sec) (ms) Cnt Num
0 12.12.12.1 Se0/0/0 12 00:02:01 40 1000 0 14
!
R2#
!
!
!Access to R3
!
enable
Conf t
Router eigrp 100
Eigrp router-id 3.3.3.3
Network 10.0.0.0
Network 23.0.0.0
No auto-summary
End
!

!verification
Sh ip int brief
Sh ip protocols
Sh ip route
!
R3#sh ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
i - IS-IS, 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

10.0.0.0/24 is subnetted, 6 subnets
D 10.1.0.0 [90/2809856] via 23.23.23.2, 00:00:11, Serial0/0/0
D 10.1.1.0 [90/2684416] via 23.23.23.2, 00:00:11, Serial0/0/0
D 10.1.2.0 [90/2684416] via 23.23.23.2, 00:00:11, Serial0/0/0
D 10.1.3.0 [90/2684416] via 23.23.23.2, 00:00:11, Serial0/0/0
D 10.2.0.0 [90/2297856] via 23.23.23.2, 00:00:11, Serial0/0/0
C 10.3.0.0 is directly connected, Loopback0
12.0.0.0/24 is subnetted, 1 subnets
D 12.12.12.0 [90/2681856] via 23.23.23.2, 00:00:11, Serial0/0/0
23.0.0.0/24 is subnetted, 1 subnets
C 23.23.23.0 is directly connected, Serial0/0/0

R3#

!
!
!
!
!
!
!----------
!OSPF CONFIGURATION
!X = Pod number
!
!Access to R1 and R2
!Change X → pod number
Conf t
Router ospf 100 ←- Process-ID

router-id X.X.X.X
Network 10.X.1.0 0.0.0.255 area 0
Network 12.12.12.0 0.0.0.255 area 0
End
!
!verification
Show ip protocols
Show ip ospf neighbor
Show ip route
!
R2(config-router)#
00:36:13: %OSPF-5-ADJCHG: Process 100, Nbr 1.1.1.1 on Serial0/0/0 from LOADING to FULL, Loading Done
!
!
!
!Access to R2 and R3
!Change X → pod number
Conf t
Router ospf 100
router-id X.X.X.X
Network 10.X.1.0 0.0.0.255 area 0
Network 23.23.23.0 0.0.0.255 area 0
End
!
!verification
Show ip protocols
Routing Protocol is "ospf 100"
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Router ID 10.3.0.1
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Maximum path: 4
Routing for Networks:
10.3.1.0 0.0.0.255 area 0
23.23.23.0 0.0.0.255 area 0
Routing Information Sources:
Gateway Distance Last Update
1.1.1.1 110 00:01:58
2.2.2.2 110 00:00:11
10.3.0.1 110 00:00:11
Distance: (default is 110)
!
Show ip ospf neighbor

Show ip route
!
!
!---
!Access R2
R2#sh ip ospf neighbor

Neighbor ID Pri State Dead Time Address Interface
1.1.1.1 0 FULL/ - 00:00:36 12.12.12.1 Serial0/0/0
10.3.0.1 0 FULL/ - 00:00:36 23.23.23.3 Serial0/0/1
R2#
!
!
Routing Protocol is "ospf 100"
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Router ID 10.3.0.1
!
!
!
!Access R3
!Change Router-ID on R3
Conf t
Router ospf 100
Router-id 3.3.3.3
End
!
R3(config-router)#Reload or use "clear ip ospf process" command, for this to take effect
!
!restart OSPF process
!
clear ip ospf process
R3#clear ip ospf process
Reset ALL OSPF processes? [no]: yes
!
00:42:36: %OSPF-5-ADJCHG: Process 100, Nbr 2.2.2.2 on Serial0/0/0 from LOADING to FULL, Loading Done
!
!
!
!Access R2
Sh ip route
Gateway of last resort is not set

10.0.0.0/24 is subnetted, 6 subnets
D 10.1.0.0 [90/2297856] via 12.12.12.1, 00:24:28, Serial0/0/0
D 10.1.1.0 [90/2172416] via 12.12.12.1, 00:24:28, Serial0/0/0
D 10.1.2.0 [90/2172416] via 12.12.12.1, 00:24:28, Serial0/0/0
D 10.1.3.0 [90/2172416] via 12.12.12.1, 00:24:28, Serial0/0/0
C 10.2.0.0 is directly connected, Loopback0
D 10.3.0.0 [90/2297856] via 23.23.23.3, 00:21:20, Serial0/0/1
12.0.0.0/24 is subnetted, 1 subnets
C 12.12.12.0 is directly connected, Serial0/0/0
23.0.0.0/24 is subnetted, 1 subnets
C 23.23.23.0 is directly connected, Serial0/0/1

R2#
!
!
!Access to All Routers
!delete EIGRP 100
!
Conf t
No router eigrp 100
End
!
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 23.23.23.2 (Serial0/0/0) is down: holding time expired
!
show ip protocols
show ip ospf neighbor
show ip route
!
!
R2#sh ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
i - IS-IS, 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

10.0.0.0/24 is subnetted, 6 subnets
R 10.1.0.0 [120/1] via 12.12.12.1, 00:00:16, Serial0/0/0

O 10.1.1.0 [110/65] via 12.12.12.1, 01:54:38, Serial0/0/0
O 10.1.2.0 [110/65] via 12.12.12.1, 01:54:38, Serial0/0/0
O 10.1.3.0 [110/65] via 12.12.12.1, 01:54:38, Serial0/0/0
C 10.2.0.0 is directly connected, Loopback0
R 10.3.0.0 [120/1] via 23.23.23.3, 00:00:06, Serial0/0/1
12.0.0.0/24 is subnetted, 1 subnets
C 12.12.12.0 is directly connected, Serial0/0/0
23.0.0.0/24 is subnetted, 1 subnets
C 23.23.23.0 is directly connected, Serial0/0/1

R2#sh ip route ospf
R2#sh ip route ospf
10.0.0.0/24 is subnetted, 6 subnets
O 10.1.1.0 [110/65] via 12.12.12.1, 01:54:45, Serial0/0/0
O 10.1.2.0 [110/65] via 12.12.12.1, 01:54:45, Serial0/0/0
O 10.1.3.0 [110/65] via 12.12.12.1, 01:54:45, Serial0/0/0

R2#

!
!
!
!==================
!INTERNET CONNECTIVITY SCENE PREPARATION
!R1 and R2 will be use static routing
!
!Access to R1
Conf t
No router rip
No router ospf 100
End
!
Show ip protocols
Show ip route
!
!
!
!Access to R1
Conf t
!
Ip route 0.0.0.0 0.0.0.0 12.12.12.2
End
!
!

!Access to R2
Conf t
!
Ip route 0.0.0.0 0.0.0.0 12.12.12.1
End
!
!
R1#sh ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
i - IS-IS, 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 12.12.12.2 to network 0.0.0.0

10.0.0.0/24 is subnetted, 4 subnets
C 10.1.0.0 is directly connected, Loopback0
C 10.1.1.0 is directly connected, FastEthernet0/0
C 10.1.2.0 is directly connected, FastEthernet0/0.2
C 10.1.3.0 is directly connected, FastEthernet0/0.3
12.0.0.0/24 is subnetted, 1 subnets
C 12.12.12.0 is directly connected, Serial0/0/0
S* 0.0.0.0/0 [1/0] via 12.12.12.2
!
!
!
Show ip route
!
!
!Access DSW1
Ping 12.12.12.1
Ping 12.12.12.2
Ping 10.2.1.1
!
!
!
!GATEWAY for DSW1, ASW1
!Access to DSW1
Conf t
Ip default-gateway 10.1.1.1
End

```
!
!Access to ASW1
Conf t
Ip default-gateway 10.1.1.1
End
!
!
!
ASW1#ping 10.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.1, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms

ASW1#ping 12.12.12.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 12.12.12.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

ASW1#
ASW1#ping 12.12.12.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 12.12.12.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/9 ms
!
ASW1#
!
!
!==========================
!NAT PREPARATION
!Access ASW1
ping 10.1.1.1
ping 12.12.12.1
ping 12.12.12.2
ping 10.2.1.0
!
!
!CREATE ACL STD
!
```

Conf t
access-list 1 permit 10.1.1.0 0.0.0.255
!
Show access-list
R1#sh access-lists
Standard IP access list 1
10 permit 10.1.1.0 0.0.0.255
!
!PAT configuration
Conf t
!
Interface fa0/0
shut
Ip nat inside
No shut
Exit
!
!
Interface s0/0/0
Shut
Ip nat outside
No shut
Exit
!
!
ip nat inside source list 1 interface s0/0/0 overload
End
!
!
R1#sh ip int brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 10.1.1.1 YES manual up up
FastEthernet0/0.2 10.1.2.1 YES manual up up
FastEthernet0/0.3 10.1.3.1 YES manual up up
FastEthernet0/1 unassigned YES NVRAM administratively down down
Serial0/0/0 12.12.12.1 YES manual up up
Serial0/0/1 unassigned YES NVRAM administratively down down
Loopback0 10.1.0.1 YES manual up up
Vlan1 unassigned YES unset administratively down down
R1#
!
!Access ASW1
Ping 12.12.12.2

!
!
R1#sh ip nat translations
Pro Inside global Inside local Outside local Outside global
icmp 12.12.12.1:16 10.1.1.3:16 12.12.12.2:16 12.12.12.2:16
icmp 12.12.12.1:17 10.1.1.3:17 12.12.12.2:17 12.12.12.2:17
icmp 12.12.12.1:18 10.1.1.3:18 12.12.12.2:18 12.12.12.2:18
icmp 12.12.12.1:19 10.1.1.3:19 12.12.12.2:19 12.12.12.2:19
icmp 12.12.12.1:20 10.1.1.3:20 12.12.12.2:20 12.12.12.2:20

Insider HOST — Router —- Outsider Host
IL = IP source
OL = IP destination

IG = IP source
OG = IP destination

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QnA