

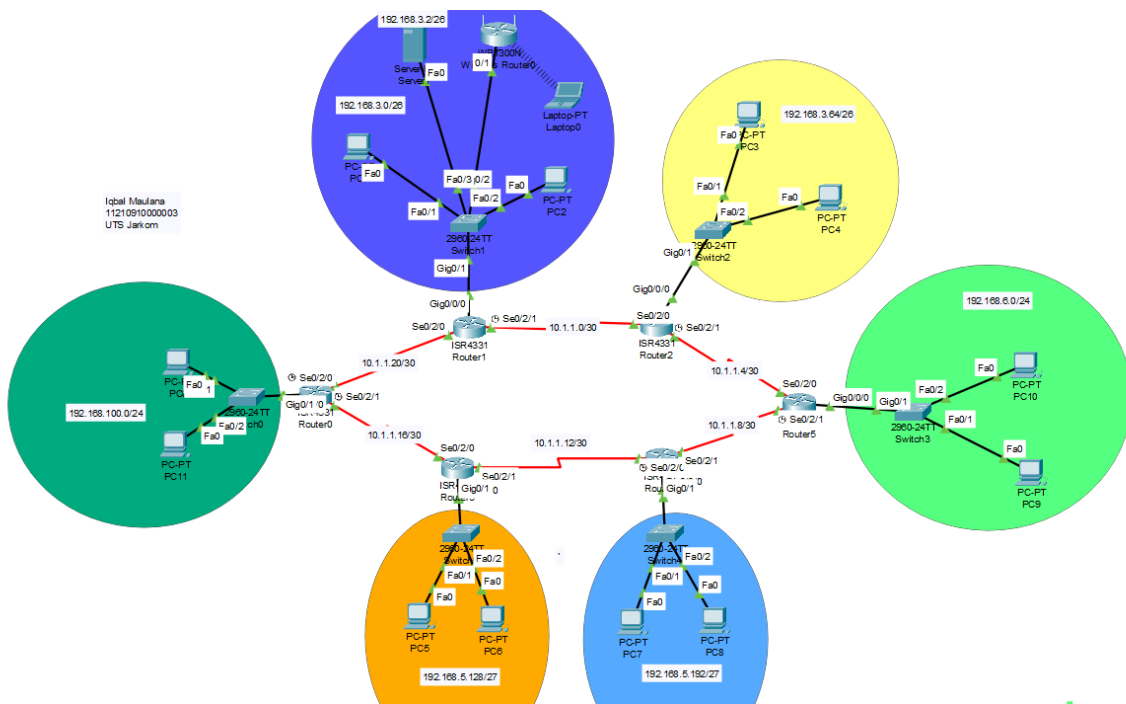
UTS Jaringan Komputer

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Topologi



Configurations IP

Konfigurasi ip di masing masing interface pada masing masing router

Router 0

Se 0/2/1

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int se 0/2/1
Router(config-if)#ip add 10.1.1.18 255.255.255.252
Router(config-if)#clock rate 56000
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/1, changed state to up

Router(config-if)#S
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/2/1,
changed state to up
Router(config-if)#ex
Router(config)#hostname R0
R0(config)#
```

Se 0/2/0

```
R0(config)#int se 0/2/0
R0(config-if)#ip add 10.1.1.21 255.255.255.252
R0(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/0, changed state to down
R0(config-if)#cloc
R0(config-if)#clock r
R0(config-if)#clock rate 56000
R0(config-if)#no shut
R0(config-if)#
```

Gi 0/0/0

```
R0>en
R0#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R0(config)#int gi
R0(config)#int gigabitEthernet 0/0/0
R0(config-if)#ip add 192.168.100.1 255.255.255.0
R0(config-if)#no sh
```

Router 1 (R1)

Gi 0/0/0

```
Router>
Router>ena
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#int gi0/0/0
R1(config-if)#ip add 192.168.3.1 255.255.255.192
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

R1(config-if)#
```

Se 0/2/1

```
R1>
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int se 0/2/1
R1(config-if)#ip add 10.1.1.1 255.255.255.252
R1(config-if)#clock
R1(config-if)#clock r
R1(config-if)#clock rate 56000
R1(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/1, changed state to down
R1(config-if)#
```

Se 0/2/0

```
R1>
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int se0/2/0
R1(config-if)#ip add 10.1.1.22 255.255.255.252
R1(config-if)#no sh

R1(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up
R1(config-if)#
```

Router 2 (R2)

Gi 0/0/0

```
Router>
Router>ena
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#int g
R2(config)#int gigabitEthernet 0/0/0
R2(config-if)#ip add 192.168.3.65 255.255.255.192
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up
R2(config-if)#
```

Se 0/2/0

```
R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int se0/2/0
R2(config-if)#ip add 10.1.1.2 255.255.255.252
R2(config-if)#clock
R2(config-if)#clock r
R2(config-if)#clock rate 56000
This command applies only to DCE interfaces
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up
R2(config-if)#
```

Se 0/2/1

```

R2(config-if)#
R2(config-if)#ex
R2(config)#int se 0/2/1
R2(config-if)#ip add 10.1.1.5 255.255.255.252
R2(config-if)#cl
R2(config-if)#clock ra
R2(config-if)#clock rate 5600
Unknown clock rate
R2(config-if)#clock rate 56000
R2(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/1, changed state to down
R2(config-if)#

```

Router 3 (R3)

Gi 0/0/0

```

Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3
R3(config)#int gig0/0/0
R3(config-if)#ip add 192.168.5.129 255.255.255.224
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

R3(config-if)#

```

Se 0/2/1

```

R3>
R3>
R3>en
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#int se 0/2/1
R3(config-if)#ip add 10.1.1.14 255.255.255.252
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/1, changed state to up

R3(config-if)#

```

Se 0/2/0

```
R3(config-if)#
R3(config-if)#int se 0/2/0
R3(config-if)#ip add 10.1.1.17 255.255.255.252
R3(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/0, changed state to down
R3(config-if)#
```

Router 4 (R4)

Gi 0/0/0

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gi0/0/0
Router(config-if)#ip add 192.168.5.193 255.255.255.224
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

Router(config-if)#ex
Router(config)#hostname R4
R4(config)#
```

Se 0/2/1

```
R4>
R4>ena
R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#int se 0/2/1
R4(config-if)#ip add 10.1.1.10 255.255.255.252
R4(config-if)#no shut

R4(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/1, changed state to up

R4(config-if)#
```

Se 0/2/0

```
R4(config-if)#int se 0/2/0
R4(config-if)#ip add 10.1.1.13 255.255.255.252
R4(config-if)#clco
R4(config-if)#cloc
R4(config-if)#clock ra
R4(config-if)#clock rate 56000
R4(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/0, changed state to down
R4(config-if)#
```

Router 5 (R5)

Gi 0/0/0

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R5
R5(config)#int gig00
R5(config)#int gig0
R5(config)#int gig0/
R5(config)#int gi 0/0/0
R5(config-if)#ip add 192.168.6.1 255.255.255.0
R5(config-if)#no shut

R5(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0/0, changed state to up

R5(config-if)#
R5(config-if)#
```

Se 0/2/0

```
R5>
R5>en
R5#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#int
% Incomplete command.
R5(config)#int se 0/2/0
R5(config-if)#ip add 10.1.1.6 255.255.255.252
R5(config-if)#no shut
```

Se 0/2/1

```

R5(config-if)#
R5(config-if)#
R5(config-if)#int se 0/2/1
R5(config-if)#ip add 10.1.1.9 255.255.255.252
R5(config-if)#clc
R5(config-if)#clo
R5(config-if)#clock r
R5(config-if)#clock rate 56000
This command applies only to DCE interfaces
R5(config-if)#clock rate 56000
R5(config-if)#
R5(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/2/1, changed state to down
R5(config-if)#

```

Show IP Interface Table

Router 0 (R0)

```

R0>
R0>en
R0#sh ip int br

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	unassigned	YES	unset	administratively down	down
GigabitEthernet0/0/1	unassigned	YES	unset	administratively down	down
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Serial0/2/0	10.1.1.21	YES	manual	up	up
Serial0/2/1	10.1.1.18	YES	manual	up	up
Vlan1	unassigned	YES	unset	administratively down	down

```

R0#

```

Router 1 (R1)

```

R1>
R1>en
R1#sh ip int br

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	192.168.3.1	YES	manual	up	up
GigabitEthernet0/0/1	unassigned	YES	unset	administratively down	down
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Serial0/2/0	10.1.1.22	YES	manual	up	up
Serial0/2/1	10.1.1.1	YES	manual	up	up
Vlan1	unassigned	YES	unset	administratively down	down

```

R1#

```

Router 2 (R2)

```

R2#sh ip int br

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	192.168.3.65	YES	manual	up	up
GigabitEthernet0/0/1	unassigned	YES	unset	administratively down	down
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Serial0/2/0	10.1.1.2	YES	manual	up	up
Serial0/2/1	10.1.1.5	YES	manual	up	up
Vlan1	unassigned	YES	unset	administratively down	down

```

R2#

```

Router 3 (R3)


```
R3>en
R3#sh ip int br
Interface                IP-Address      OK? Method Status          Protocol
GigabitEthernet0/0/0    192.168.5.129  YES manual  up              up
GigabitEthernet0/0/1    unassigned      YES unset   administratively down down
GigabitEthernet0/0/2    unassigned      YES unset   administratively down down
Serial0/2/0             10.1.1.17      YES manual  up              up
Serial0/2/1             10.1.1.14      YES manual  up              up
Vlan1                   unassigned      YES unset   administratively down down
R3#
```

Router 4 (R4)

```
R4>
R4>en
R4#sh ip int br
R4#sh ip int brief
Interface                IP-Address      OK? Method Status          Protocol
GigabitEthernet0/0/0    192.168.5.193  YES manual  up              up
GigabitEthernet0/0/1    unassigned      YES unset   administratively down down
GigabitEthernet0/0/2    unassigned      YES unset   administratively down down
Serial0/2/0             10.1.1.13      YES manual  up              up
Serial0/2/1             10.1.1.10      YES manual  up              up
Vlan1                   unassigned      YES unset   administratively down down
R4#
```

Router 5 (R5)

```
R5>en
R5#sh ip int br
Interface                IP-Address      OK? Method Status          Protocol
GigabitEthernet0/0/0    192.168.6.1     YES manual  up              up
GigabitEthernet0/0/1    unassigned      YES unset   administratively down down
GigabitEthernet0/0/2    unassigned      YES unset   administratively down down
Serial0/2/0             10.1.1.6        YES manual  up              up
Serial0/2/1             10.1.1.9        YES manual  up              up
Vlan1                   unassigned      YES unset   administratively down down
R5#
```

Routing Configuration

Routing R0

```
R0>en
R0#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R0(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.22
R0(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.22
R0(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.22
R0(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.17
R0(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.17
R0(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.17
```

```
R0>en
R0#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R0(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.22
R0(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.22
R0(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.22
R0(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.17
R0(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.17
R0(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.17
```

Routing R1

```
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.2
R1(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.21
R1(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.21
R1(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.2
R1(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.2
R1(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.21
```

```
R1>
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.2
R1(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.21
R1(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.21
R1(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.2
R1(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.2
```

```
R1>
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.21
R1(config)#
```

Routing R2

```
R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.6
R2(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.1
R2(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.6
R2(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.6
R2(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.1
```

R2(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.1

```
R2>
R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.6
R2(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.1
R2(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.6
R2(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.6
R2(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.1
R2(config)#
```

```
R2>en
R2#conf t|
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.1
R2(config)#
```

Routing R3

```
R3>en
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.18
R3(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.18
R3(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.13
R3(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.13
R3(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.13
R3(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.18
```

```
R3>
R3>en
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.18
R3(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.18
R3(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.13
R3(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.13
R3(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.13
R3(config)#
```

```
R3(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.18
R3(config)#
```

Routing R4

R4>en

R4#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R4(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.9

R4(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.14

R4(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.14

R4(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.9

R4(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.9

R4(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.14

```
R4>
```

```
R4>en
```

```
R4#conf t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
R4(config)#
```

```
R4(config)#
```

```
R4(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.9
```

```
R4(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.14
```

```
R4(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.14
```

```
R4(config)#ip route 192.168.6.0 255.255.255.0 10.1.1.9
```

```
R4(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.9
```

```
R4(config)#
```

```
R4(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.14
```

Routing R5

R5>en

R5#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R5(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.5

R5(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.5

R5(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.10

R5(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.10

R5(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.10

R5(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.5

```
R5>en
```

```
R5#conf t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
R5(config)#ip route 192.168.3.0 255.255.255.192 10.1.1.5
```

```
R5(config)#ip route 192.168.3.64 255.255.255.192 10.1.1.5
```

```
R5(config)#ip route 192.168.5.192 255.255.255.224 10.1.1.10
```

```
R5(config)#ip route 192.168.5.128 255.255.255.224 10.1.1.10
```

```
R5(config)#
```

```
R5(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.10
```

```
R5(config)#ip route 192.168.100.0 255.255.255.0 10.1.1.5
```

Tabel Routing

Melihat tabel routing pada masing masing router :

Tabel R0

R0#sh ip route

Codes: L - local, 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, 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, 4 subnets, 2 masks

C 10.1.1.16/30 is directly connected, Serial0/2/1

L 10.1.1.18/32 is directly connected, Serial0/2/1

C 10.1.1.20/30 is directly connected, Serial0/2/0

L 10.1.1.21/32 is directly connected, Serial0/2/0

192.168.3.0/26 is subnetted, 2 subnets

S 192.168.3.0/26 [1/0] via 10.1.1.22

S 192.168.3.64/26 [1/0] via 10.1.1.22

192.168.5.0/27 is subnetted, 2 subnets

S 192.168.5.128/27 [1/0] via 10.1.1.17

S 192.168.5.192/27 [1/0] via 10.1.1.17

S 192.168.6.0/24 [1/0] via 10.1.1.22

[1/0] via 10.1.1.17

192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks

C 192.168.100.0/24 is directly connected, GigabitEthernet0/0/0

L 192.168.100.1/32 is directly connected, GigabitEthernet0/0/0

```

R0#sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C       10.1.1.16/30 is directly connected, Serial0/2/1
L       10.1.1.18/32 is directly connected, Serial0/2/1
C       10.1.1.20/30 is directly connected, Serial0/2/0
L       10.1.1.21/32 is directly connected, Serial0/2/0
    192.168.3.0/26 is subnetted, 2 subnets
S       192.168.3.0/26 [1/0] via 10.1.1.22
S       192.168.3.64/26 [1/0] via 10.1.1.22
    192.168.5.0/27 is subnetted, 2 subnets
S       192.168.5.128/27 [1/0] via 10.1.1.17
S       192.168.5.192/27 [1/0] via 10.1.1.17
S       192.168.6.0/24 [1/0] via 10.1.1.22
        [1/0] via 10.1.1.17
    192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.100.0/24 is directly connected, GigabitEthernet0/0/0
L       192.168.100.1/32 is directly connected, GigabitEthernet0/0/0

R0#

```

Tabel R1

R1#sh ip route

Codes: L - local, 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, 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, 4 subnets, 2 masks
C 10.1.1.0/30 is directly connected, Serial0/2/1
L 10.1.1.1/32 is directly connected, Serial0/2/1
C 10.1.1.20/30 is directly connected, Serial0/2/0
L 10.1.1.22/32 is directly connected, Serial0/2/0
192.168.3.0/24 is variably subnetted, 3 subnets, 2 masks
C 192.168.3.0/26 is directly connected, GigabitEthernet0/0/0
L 192.168.3.1/32 is directly connected, GigabitEthernet0/0/0
S 192.168.3.64/26 [1/0] via 10.1.1.2
192.168.5.0/27 is subnetted, 2 subnets
S 192.168.5.128/27 [1/0] via 10.1.1.21
S 192.168.5.192/27 [1/0] via 10.1.1.2

```

[1/0] via 10.1.1.21

S 192.168.6.0/24 [1/0] via 10.1.1.2

S 192.168.100.0/24 [1/0] via 10.1.1.21

```
R1>en
R1#sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/2/1
L       10.1.1.1/32 is directly connected, Serial0/2/1
C       10.1.1.20/30 is directly connected, Serial0/2/0
L       10.1.1.22/32 is directly connected, Serial0/2/0
    192.168.3.0/24 is variably subnetted, 3 subnets, 2 masks
C       192.168.3.0/26 is directly connected, GigabitEthernet0/0/0
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0/0
S       192.168.3.64/26 [1/0] via 10.1.1.2
    192.168.5.0/27 is subnetted, 2 subnets
S       192.168.5.128/27 [1/0] via 10.1.1.21
S       192.168.5.192/27 [1/0] via 10.1.1.2
                        [1/0] via 10.1.1.21
S       192.168.6.0/24 [1/0] via 10.1.1.2
S       192.168.100.0/24 [1/0] via 10.1.1.21

R1#
```

Tabel R2

R2#sh ip route

Codes: L - local, 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, 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, 4 subnets, 2 masks

C 10.1.1.0/30 is directly connected, Serial0/2/0

L 10.1.1.2/32 is directly connected, Serial0/2/0

C 10.1.1.4/30 is directly connected, Serial0/2/1

L 10.1.1.5/32 is directly connected, Serial0/2/1

192.168.3.0/24 is variably subnetted, 3 subnets, 2 masks

S 192.168.3.0/26 [1/0] via 10.1.1.1

C 192.168.3.64/26 is directly connected, GigabitEthernet0/0/0

L 192.168.3.65/32 is directly connected, GigabitEthernet0/0/0

192.168.5.0/27 is subnetted, 2 subnets

```
S 192.168.5.128/27 [1/0] via 10.1.1.6
[1/0] via 10.1.1.1
S 192.168.5.192/27 [1/0] via 10.1.1.6
S 192.168.6.0/24 [1/0] via 10.1.1.6
S 192.168.100.0/24 [1/0] via 10.1.1.1
```

R2#

```
R2>en
R2#sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/2/0
L       10.1.1.2/32 is directly connected, Serial0/2/0
C       10.1.1.4/30 is directly connected, Serial0/2/1
L       10.1.1.5/32 is directly connected, Serial0/2/1
    192.168.3.0/24 is variably subnetted, 3 subnets, 2 masks
S       192.168.3.0/26 [1/0] via 10.1.1.1
C       192.168.3.64/26 is directly connected, GigabitEthernet0/0/0
L       192.168.3.65/32 is directly connected, GigabitEthernet0/0/0
    192.168.5.0/27 is subnetted, 2 subnets
S       192.168.5.128/27 [1/0] via 10.1.1.6
        [1/0] via 10.1.1.1
S       192.168.5.192/27 [1/0] via 10.1.1.6
S       192.168.6.0/24 [1/0] via 10.1.1.6
S       192.168.100.0/24 [1/0] via 10.1.1.1

R2#
```

Tabel R3

R3>en

R3#sh ip route

```
Codes: L - local, 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, 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, 4 subnets, 2 masks
 C 10.1.1.12/30 is directly connected, Serial0/2/1
 L 10.1.1.14/32 is directly connected, Serial0/2/1
 C 10.1.1.16/30 is directly connected, Serial0/2/0
 L 10.1.1.17/32 is directly connected, Serial0/2/0
 192.168.3.0/26 is subnetted, 2 subnets
 S 192.168.3.0/26 [1/0] via 10.1.1.18
 S 192.168.3.64/26 [1/0] via 10.1.1.18
 [1/0] via 10.1.1.13
 192.168.5.0/24 is variably subnetted, 3 subnets, 2 masks
 C 192.168.5.128/27 is directly connected, GigabitEthernet0/0/0
 L 192.168.5.129/32 is directly connected, GigabitEthernet0/0/0
 S 192.168.5.192/27 [1/0] via 10.1.1.13
 S 192.168.6.0/24 [1/0] via 10.1.1.13
 S 192.168.100.0/24 [1/0] via 10.1.1.18

R3#

```

R3#sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C       10.1.1.12/30 is directly connected, Serial0/2/1
L       10.1.1.14/32 is directly connected, Serial0/2/1
C       10.1.1.16/30 is directly connected, Serial0/2/0
L       10.1.1.17/32 is directly connected, Serial0/2/0
    192.168.3.0/26 is subnetted, 2 subnets
S       192.168.3.0/26 [1/0] via 10.1.1.18
S       192.168.3.64/26 [1/0] via 10.1.1.18
        [1/0] via 10.1.1.13
    192.168.5.0/24 is variably subnetted, 3 subnets, 2 masks
C       192.168.5.128/27 is directly connected, GigabitEthernet0/0/0
L       192.168.5.129/32 is directly connected, GigabitEthernet0/0/0
S       192.168.5.192/27 [1/0] via 10.1.1.13
S       192.168.6.0/24 [1/0] via 10.1.1.13
S       192.168.100.0/24 [1/0] via 10.1.1.18
R3#
  
```

Tabel R4

R4#sh ip route

Codes: L - local, 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, 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, 4 subnets, 2 masks
C 10.1.1.8/30 is directly connected, Serial0/2/1
L 10.1.1.10/32 is directly connected, Serial0/2/1
C 10.1.1.12/30 is directly connected, Serial0/2/0
L 10.1.1.13/32 is directly connected, Serial0/2/0
192.168.3.0/26 is subnetted, 2 subnets
S 192.168.3.0/26 [1/0] via 10.1.1.14
[1/0] via 10.1.1.9
S 192.168.3.64/26 [1/0] via 10.1.1.9
192.168.5.0/24 is variably subnetted, 3 subnets, 2 masks
S 192.168.5.128/27 [1/0] via 10.1.1.14
C 192.168.5.192/27 is directly connected, GigabitEthernet0/0/0
L 192.168.5.193/32 is directly connected, GigabitEthernet0/0/0
S 192.168.6.0/24 [1/0] via 10.1.1.9
S 192.168.100.0/24 [1/0] via 10.1.1.14

R4#

```
R4#sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C      10.1.1.8/30 is directly connected, Serial0/2/1
L      10.1.1.10/32 is directly connected, Serial0/2/1
C      10.1.1.12/30 is directly connected, Serial0/2/0
L      10.1.1.13/32 is directly connected, Serial0/2/0
      192.168.3.0/26 is subnetted, 2 subnets
S      192.168.3.0/26 [1/0] via 10.1.1.14
          [1/0] via 10.1.1.9
S      192.168.3.64/26 [1/0] via 10.1.1.9
      192.168.5.0/24 is variably subnetted, 3 subnets, 2 masks
S      192.168.5.128/27 [1/0] via 10.1.1.14
C      192.168.5.192/27 is directly connected, GigabitEthernet0/0/0
L      192.168.5.193/32 is directly connected, GigabitEthernet0/0/0
S      192.168.6.0/24 [1/0] via 10.1.1.9
S      192.168.100.0/24 [1/0] via 10.1.1.14
```

R4#

Tabel R5

R5(config)#do sh ip route

Codes: L - local, 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, 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, 4 subnets, 2 masks
C 10.1.1.4/30 is directly connected, Serial0/2/0
L 10.1.1.6/32 is directly connected, Serial0/2/0
C 10.1.1.8/30 is directly connected, Serial0/2/1
L 10.1.1.9/32 is directly connected, Serial0/2/1
192.168.3.0/26 is subnetted, 2 subnets
S 192.168.3.0/26 [1/0] via 10.1.1.5
S 192.168.3.64/26 [1/0] via 10.1.1.5
192.168.5.0/27 is subnetted, 2 subnets
S 192.168.5.128/27 [1/0] via 10.1.1.10
S 192.168.5.192/27 [1/0] via 10.1.1.10
192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.6.0/24 is directly connected, GigabitEthernet0/0/0
L 192.168.6.1/32 is directly connected, GigabitEthernet0/0/0
S 192.168.100.0/24 [1/0] via 10.1.1.10
[1/0] via 10.1.1.5

R5(config)#

```
R5(config)#do sh ip route
Codes: L - local, 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, 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, 4 subnets, 2 masks
C       10.1.1.4/30 is directly connected, Serial0/2/0
L       10.1.1.6/32 is directly connected, Serial0/2/0
C       10.1.1.8/30 is directly connected, Serial0/2/1
L       10.1.1.9/32 is directly connected, Serial0/2/1
    192.168.3.0/26 is subnetted, 2 subnets
S       192.168.3.0/26 [1/0] via 10.1.1.5
S       192.168.3.64/26 [1/0] via 10.1.1.5
    192.168.5.0/27 is subnetted, 2 subnets
S       192.168.5.128/27 [1/0] via 10.1.1.10
S       192.168.5.192/27 [1/0] via 10.1.1.10
    192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.6.0/24 is directly connected, GigabitEthernet0/0/0
L       192.168.6.1/32 is directly connected, GigabitEthernet0/0/0
S       192.168.100.0/24 [1/0] via 10.1.1.10
                        [1/0] via 10.1.1.5
```

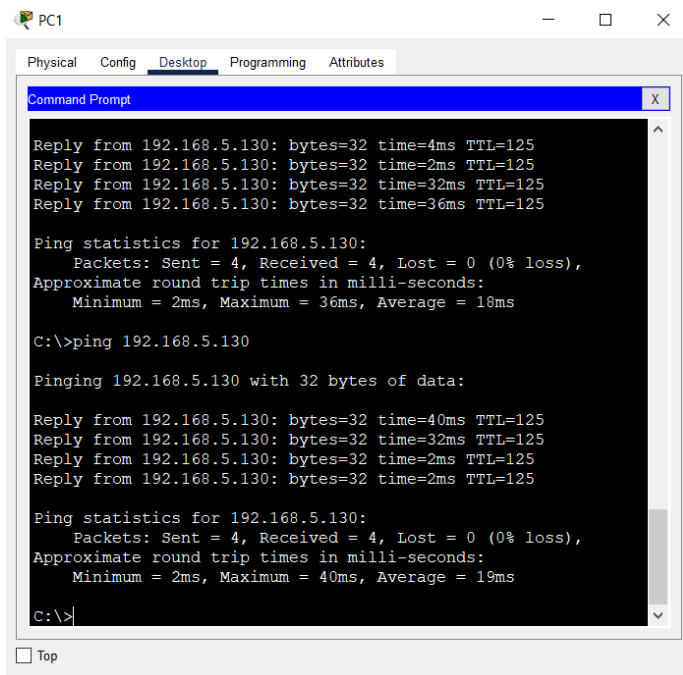
R5(config)#

Test Ping antar PC

Pc1 : 192.168.3.3

Pc5 : 192.168.5.130

Pc1 ke Pc5



The screenshot shows a Windows Command Prompt window titled "PC1" with tabs for Physical, Config, Desktop, Programming, and Attributes. The Command Prompt displays the output of a ping command from PC1 to PC5 (192.168.5.130). The output shows four successful replies with varying round-trip times (4ms, 2ms, 32ms, 36ms) and a ping statistics summary: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Minimum = 2ms, Maximum = 36ms, Average = 18ms. Below this, the user enters the command "C:\>ping 192.168.5.130", and the output shows another four successful replies with round-trip times (40ms, 32ms, 2ms, 2ms) and a ping statistics summary: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Minimum = 2ms, Maximum = 40ms, Average = 19ms.

```
Reply from 192.168.5.130: bytes=32 time=4ms TTL=125
Reply from 192.168.5.130: bytes=32 time=2ms TTL=125
Reply from 192.168.5.130: bytes=32 time=32ms TTL=125
Reply from 192.168.5.130: bytes=32 time=36ms TTL=125

Ping statistics for 192.168.5.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 36ms, Average = 18ms

C:\>ping 192.168.5.130

Pinging 192.168.5.130 with 32 bytes of data:

Reply from 192.168.5.130: bytes=32 time=40ms TTL=125
Reply from 192.168.5.130: bytes=32 time=32ms TTL=125
Reply from 192.168.5.130: bytes=32 time=2ms TTL=125
Reply from 192.168.5.130: bytes=32 time=2ms TTL=125

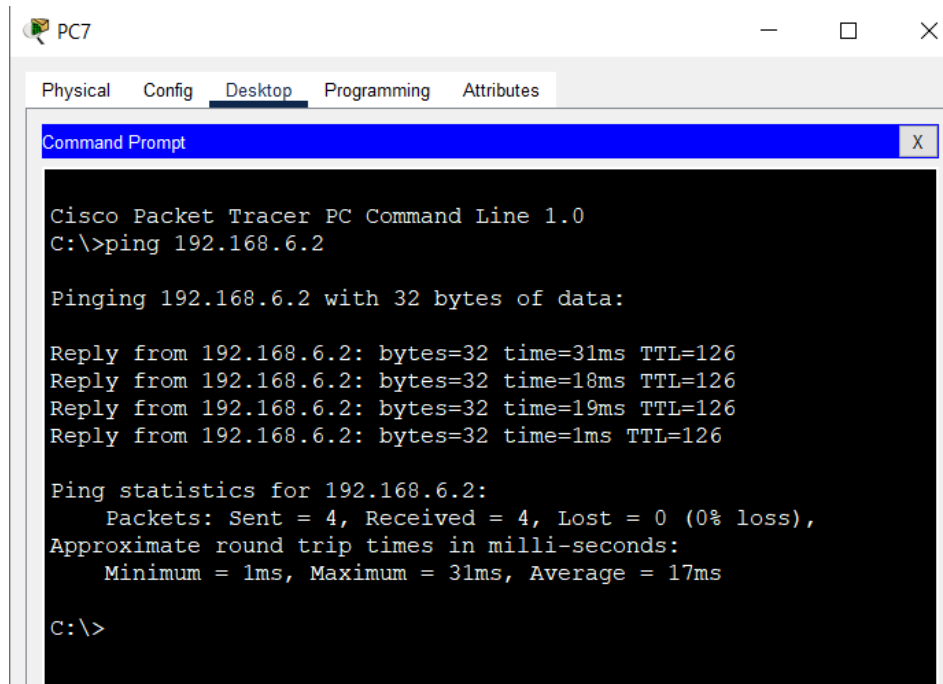
Ping statistics for 192.168.5.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 40ms, Average = 19ms

C:\>
```

Pc7 : 192.168.5.195

Pc10 : 192.168.6.2

Pc7 ke Pc10



DNS, FTP, Email Configurations

HTTPS

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

HTTP

HTTP ☒ On ☐ Off

HTTPS ☒ On ☐ Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)

New File Import

☐ Top

DNS : iqbal.com

ip : 192.168.3.2

Server1

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DNS

DNS Service

☒ On
☐ Off

Resource Records

Name

Type

A Record

Address

Add

Save

Remove

No.	Name	Type	Detail
0	iqbal.com	A Record	192.168.3.2

DNS Cache

☐ Top

FTP:

Server1

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

FTP

Service

☒ On
☐ Off

User Setup

Username

Password

☐ Write
☐ Read
☐ Delete
☐ Rename
☐ List

	Username	Password	Permission
1	cisco	cisco	RWDNL
2	iqbal	iqbal	RWDNL

Add

Save

Remove

File

1	asa842-k8.bin
2	asa923-k8.bin
3	c1841-advipservicesk9-mz.124-15.T1.bin
4	c1841-inbase-mz.123-14.T7.bin

Remove

☐ Top

Email:

Server1

PhysicalConfigServicesDesktopProgrammingAttributes

SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP

EMAIL

SMTP Service
☒ ON ☐ OFF

POP3 Service
☒ ON ☐ OFF

Domain Name:

User Setup
User Password

user1
user2

☐ Top

Pengujian DNS

DNS : iqbal.com

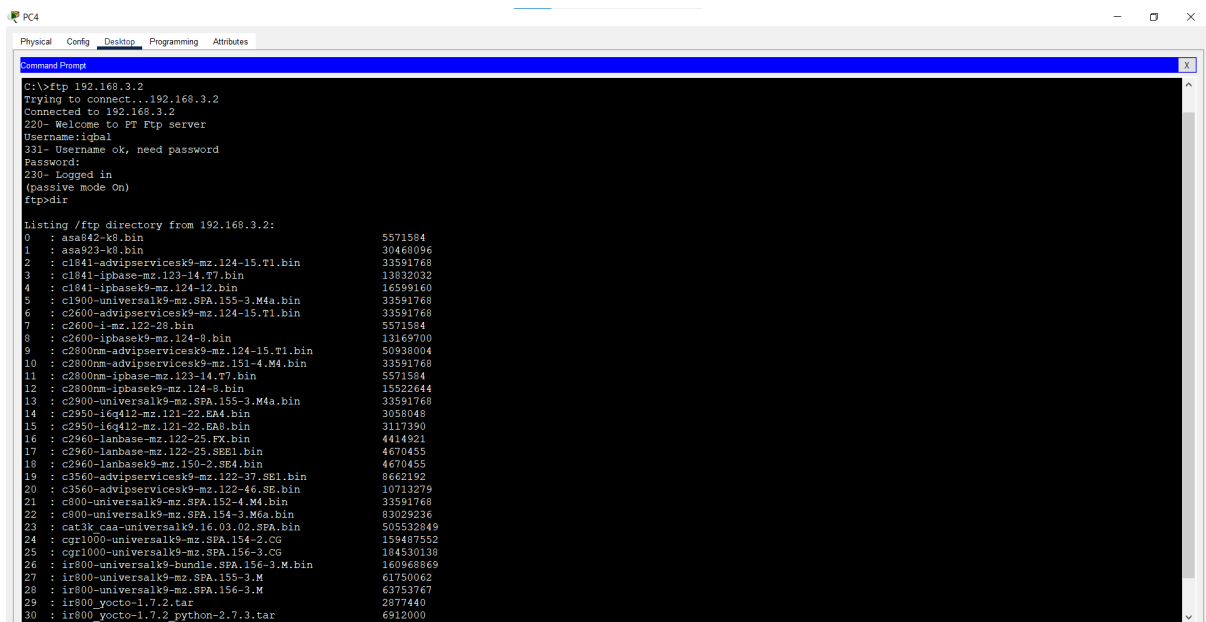
ip : 192.168.3.2



Pengujian FTP

Ip: 192.168.3.2
user: iqbal
password: iqbal

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.3.2
Trying to connect...192.168.3.2
Connected to 192.168.3.2
220- Welcome to PT Ftp server
Username:iqbal
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir
```



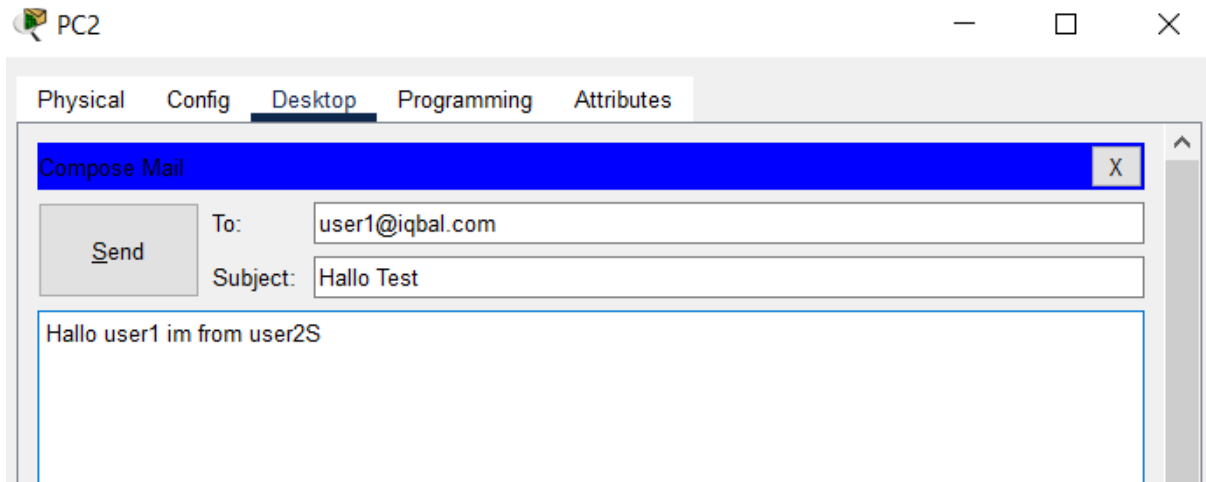
The screenshot shows a PC window titled 'PC4' with tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The terminal session shows the user connecting to an FTP server at 192.168.3.2, logging in with the username 'iqbal' and password 'iqbal', and then running the 'dir' command to list the directory contents. The output shows a list of files and their sizes.

```
Listing /ftp directory from 192.168.3.2:
0 : asa842-k8.bin 5571584
1 : asa923-k8.bin 30468096
2 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
3 : c1841-ibase-mz.123-14.T7.bin 13832032
4 : c1841-ibasek9-mz.124-12.bin 16599160
5 : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
7 : c2600-i-mz.122-28.bin 5571584
8 : c2600-ibasek9-mz.124-8.bin 13169700
9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
11 : c2800nm-ibase-mz.123-14.T7.bin 5571584
12 : c2800nm-ibasek9-mz.124-8.bin 15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-1eq412-mz.121-22.EA8.bin 3058048
15 : c2950-1eq412-mz.121-22.EA8.bin 3117390
16 : c2960-lanbase-mz.122-25.FX.bin 4414921
17 : c2960-lanbase-mz.122-25.SE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SPA.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE1.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k_caa-universalk9.16.03.02.SPA.bin 505532849
24 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
29 : ir800_yocto-1.7.2.tar 2877440
30 : ir800_yocto-1.7.2_python-2.7.3.tar 6912000
```

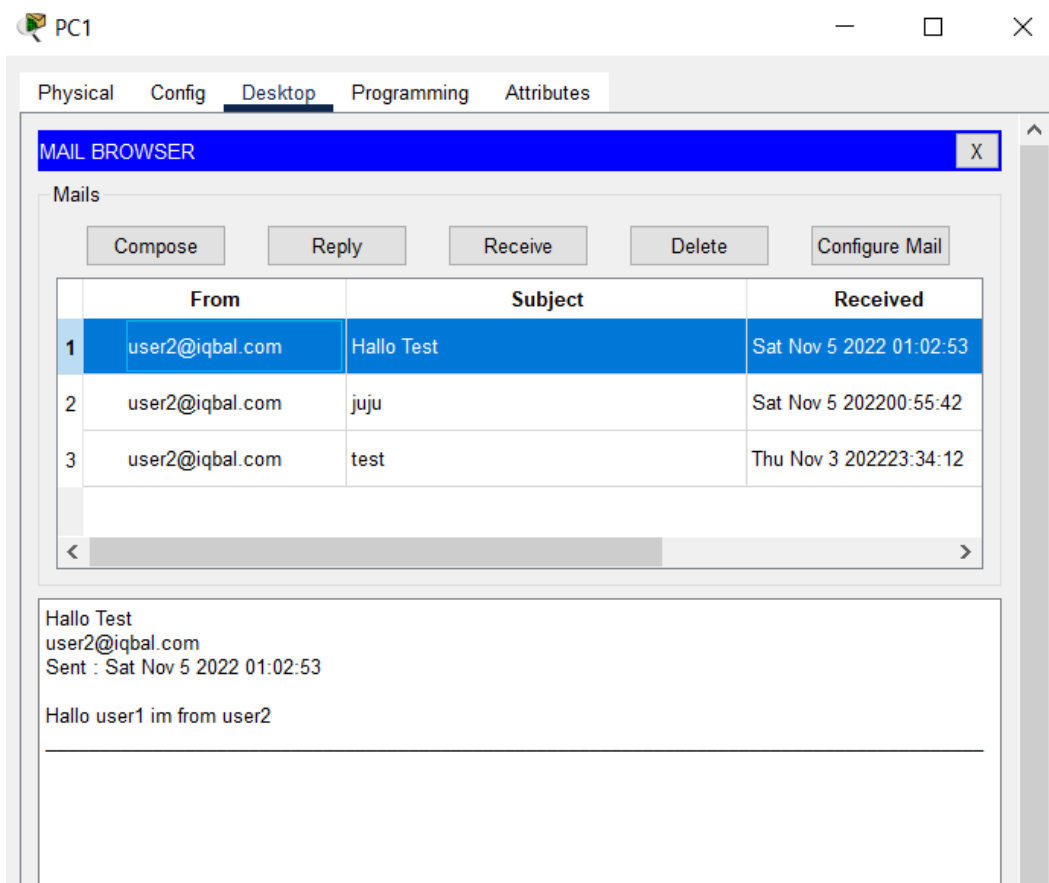
Pengujian Email Service

Pengirim : user2 (PC2)

To: user1 (PC1)



Penerima : user1 (PC1)



Wireless Router

Tab: setup

ip address : 192.168.3.20/26

start ip address : 192.168.3.21

maximum number of users : 7

Wireless Router0

Physical Config **GUI** Attributes

Wireless-N Broadband Router WRT300N

Setup Setup Wireless Security Access Restrictions Applications & Gaming Administration Status

Basic Setup DDNS MAC Address Clone Advanced Routing

Internet Setup

Internet Connection type: Automatic Configuration - DHCP

Optional Settings (required by some internet service providers):

Host Name:

Domain Name:

MTU: Size: 1500

Network Setup

Router IP: IP Address: 192 . 168 . 3 . 20 Subnet Mask: 255.255.255.192

DHCP Server Settings: DHCP Server: ☒ Enabled ☐ Disabled DHCP Reservation

Start IP Address: 192.168.3. 21

Maximum number of Users: 7

IP Address Range: 192.168.3. 21 - 27

Client Lease Time: 0 minutes (0 means one day)

Static DNS 1: 192 . 168 . 3 . 2

Static DNS 2: 0 . 0 . 0 . 0

Static DNS 3: 0 . 0 . 0 . 0

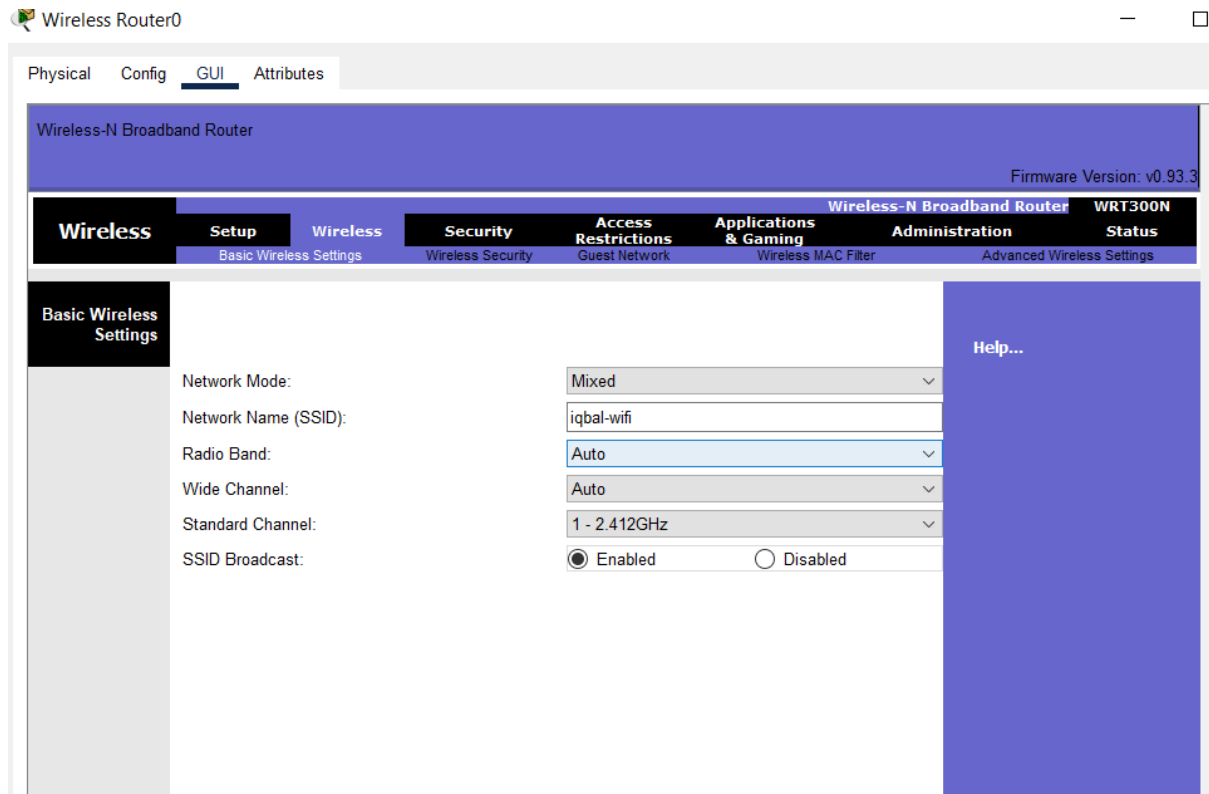
WINS: 0 . 0 . 0 . 0

Help...

Kemudian save changes

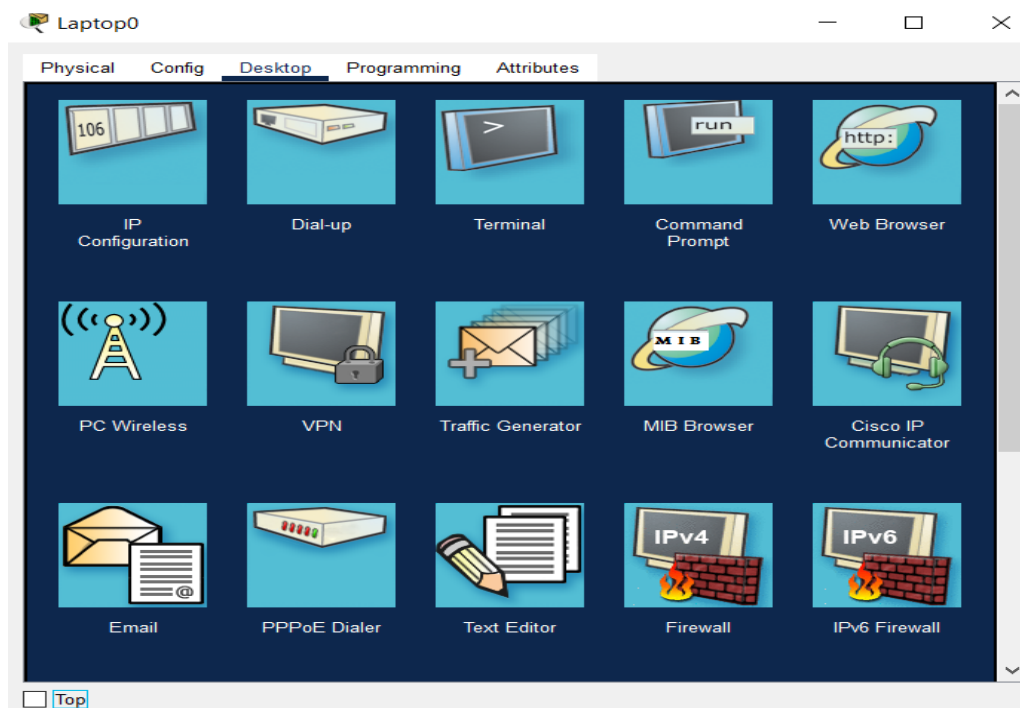
Tab wireless :

ssid : iqbal-wifi

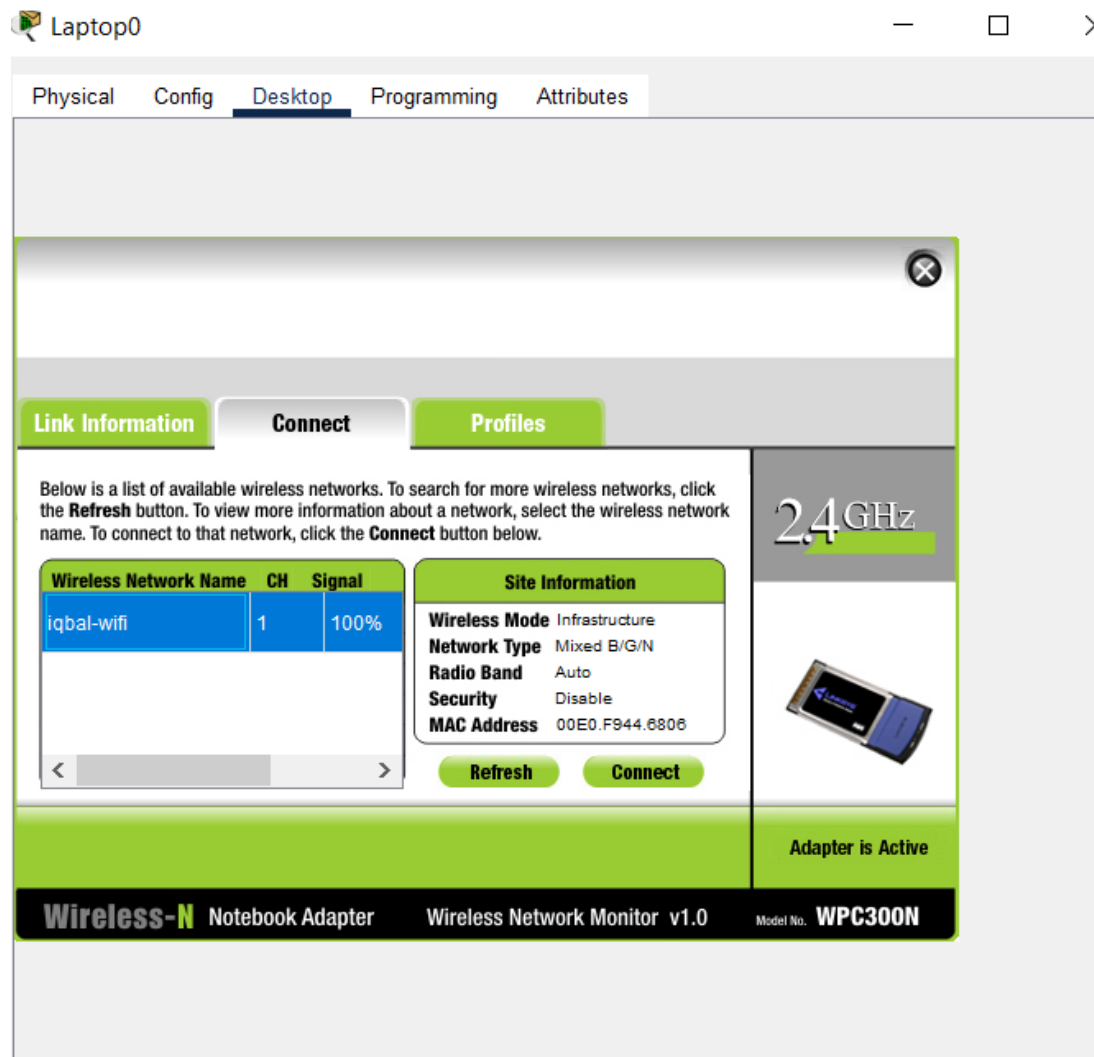


kemudian save changes

Masuk ke Laptop yang sudah terintegrasi dengan network card wireless



Pilih menu PC Wireless



Koneksikan dengan ssid wireless router yang telah dikonfigurasi sebelumnya

Maka laptop akan terkoneksi dengan wireless router :

