setting first ip on router

=======R1=======

```
R1(config)#interface serial 0/0/0
R1(config)#no shutdown
R1(config-if)#ip address 192.168.100.137 255.255.255.252
R1(config-if)#ipv6 address 2001:db8:acad:6::2/64
R1(config-if)#ipv6 address fe80::1 link-local
R1(config)#ipv6 unicast-routing
```

=====R2======

```
R2(config)#interface serial 0/0/0
R2(config)#no shutdown
R2(config-if)#ip address 192.168.100.138 255.255.255.252
R2(config-if)#ipv6 address 2001:db8:acad:6::1/64
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#exit
R2(config)#ipv6 unicast-routing
R2(config)#interface serial 0/0/1
R2(config)#no shutdown
R2(config-if)#ip address 192.168.100.141 255.255.255.252
R2(config-if)#ipv6 address 2001:db8:acad:7::1/64
R2(config-if)#ipv6 address fe80::2 link-local
R2(config-if)#exit
R2(config)#ipv6 unicast-routing
R2(config)#interface gigabitEthernet 0/0
R2(config-if)#ip address 192.168.100.97 255.255.255.224
R2(config-if)#ipv6 address 2001:db8:acad:4::1/64
R2(config-if)#ipv6 address fe80::2 link-local
```

========R3=====

```
R3(config)#interface serial 0/0/1
R3(config)#no shutdown
R3(config-if)#ip address 192.168.100.142 255.255.255.252
R3(config-if)#ipv6 address 2001:db8:acad:7::2/64
R3(config-if)#ipv6 address fe80::3 link-local
R3(config-if)#exit
R3(config)#ipv6 unicast-routing
R3(config)#interface gigabitEthernet 0/0
R3(config-if)#ipv6 address 2001:db8:acad:5::1/64
R3(config-if)#ipv6 address fe80::3 link
R3(config-if)#ipv6 address fe80::3 link-local
```

vlan settings

========Sw=====
sw1(config)#vlan 2
sw1(config-vlan)#name users
sw1(config-vlan)#exit
sw1(config)#vlan 3
sw1(config-vlan)#name admin
sw1(config-vlan)#exit
sw1(config)#interface fastEthernet 0/2
sw1(config-if)#switchport mode access
sw1(config-if)#switchport access vlan 3
sw1(config-if)#exit
sw1(config)#interface fastEthernet 0/1
sw1(config-if)#switchport mode access
sw1(config-if)#switchport access vlan 2

trunking :

========SW=====
sw1(config)#interface gigabitEthernet 0/1
sw1(config-if)#no shutdown
sw1(config-if)#switchport mode trunk
sw1(config-if)#exit
sw1#show interfaces trunk

========R1=====
R1(config)#interface gigabitEthernet 0/0.2
R1(config-subif)#encapsulation dot1Q 2
R1(config-subif)#ip address 192.168.100.1 255.255.255.192
R1(config)#interface gigabitEthernet 0/0.3
R1(config-subif)#encapsulation dot1Q 3
R1(config-subif)#ip add
R1(config-subif)#ip address 192.168.100.65 255.255.255.224
R1(config)#interface gigabitEthernet 0/0
R1(config-if)#no shutdown
R1(config)#interface gigabitEthernet 0/0.2
R1(config-subif)#encapsulation dot1Q 2
R1(config-subif)#ipv6 add
R1(config-subif)#ipv6 address 2001:db8:acad:2::1/64
R1(config-subif)#exit
R1(config)#interface gigabitEthernet 0/0.3
R1(config-subif)#encapsulation dot1Q 3
R1(config-subif)#ipv6 address 2001:db8:acad:3::1/64

membuat dhcp

(network yang terhubung itu merupakan network dalam atau network yang terhubung secara langsung)
dengan format : network (network id) (wildcard)
lalu untuk ip helper akan masuk ke arah yang akan dialirin untuk ip helper merupakan ip network main
lalu untuk pool hanya berada di main (terhubung antar router) dimana poolnya berisikan ip netwrok dari pc yang ada

```
========R1=====
R1(config)#router eigrp 10
        network 192.168.100.0 0.0.0.57
        network 192.168.100.64 0.0.0.31
        network 192.168.100.136 0.0.0.3
R1(config)#interface gigabitEthernet 0/0.2
R1(config-subif)#ip hel
R1(config-subif)#ip helper
R1(config-subif)#ip helper-address 192.168.100.138
R1(config-subif)#exit
R1(config)#interface gigabitEthernet 0/0.3
R1(config-subif)#ip helper-address 192.168.100.138

========R2=====
R2(config)#router eigrp 10
R2(config-router)#network 192.168.100.96 0.0.0.31
R2(config-router)#network 192.168.100.136 0.0.0.3
R2(config-router)#network 192.168.100.140 0.0.0.3
R2(config-router)#exit
R2(config)#ip dhcp pool r2-r1
R2(dhcp-config)#net
R2(dhcp-config)#network 192.168.100.0 255.255.255.192
R2(dhcp-config)#default-router 192.168.100.0
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#exit
R2(config)#ip dhcp pool r2-server
R2(dhcp-config)#network 192.168.100.96 255.255.255.224
R2(dhcp-config)#default-router 192.168.100.97
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#exit
R2(config)#ip dhcp pool r2-r3
R2(dhcp-config)#network 192.168.100.128 255.255.255.248
R2(dhcp-config)#default-router 192.168.100.129
R2(dhcp-config)#dns-server 8.8.8.8
R2(config)#exit
```

```
R2(config)#ip dhcp pool r2-r1vlan3
R2(dhcp-config)#network 192.168.100.64 255.255.255.224
R2(dhcp-config)#default-router 192.168.100.65
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#exit

========R3=====
R3(config)#router eigrp 10
R3(config-router)#network 192.168.100.128 0.0.0.7
R3(config-router)#network 192.168.100.140 0.0.0.3
R3(config-router)#exit
R3(config)#interface gig
R3(config)#interface gigabitEthernet 0/0
R3(config-if)#ip helper-address 192.168.100.141
```

setelah berhasil dhcp pastikan semua komputer telah mendapatkan ip dengan cara ipconfig , ipnya tidak boleh 169.....

OSPF

```
========R2=====
R2(config)#interface gigabitEthernet 0/0
R2(config-if)#ip ospf 10 area 0
R2(config-if)#ipv6 ospf 10 area 0
R2(config-if)#exit
R2(config)#interface se
R2(config)#interface serial 0/0/0
R2(config-if)#ip ospf 10 area 0
R2(config-if)#ipv6 ospf 10 area 0
R2(config-if)#exit
R2(config)#interface serial 0/0/1
R2(config-if)#ip ospf 10 area 0
R2(config-if)#ipv6 ospf 10 area 0
R2(config-if)#exit

========R1=====
R1(config)#interface gigabitEthernet 0/0.2
R1(config-subif)#ip ospf 10 area 0
R1(config-subif)#ipv6 ospf 10 area 0
R1(config-subif)#exit
R1(config)#interface gigabitEthernet 0/0.3
R1(config-subif)#ip ospf 10 area 0
R1(config-subif)#ipv6 ospf 10 area 0
R1(config-subif)#exit
R1(config)#interface serial 0/0/0
```

R1(config-if)#ip ospf 10 area 0
R1(config-if)#ipv6 ospf 10 area 0
R1(config-if)#
15:35:02: %OSPF-5-ADJCHG: Process 10, Nbr 192.168.100.141 on Serial0/0/0 from LOADING to FULL, Loading Done

15:35:04: %OSPFv3-5-ADJCHG: Process 10, Nbr 192.168.100.141 on Serial0/0/0 from LOADING to FULL, Loading Done

========R3=====
R3(config)#interface serial 0/0/1
R3(config-if)#
R3(config-if)#ip ospf 10 area 0
R3(config-if)#ipv6 ospf 10 area 0
R3(config-if)#exit
R3(config)#
15:38:54: %OSPF-5-ADJCHG: Process 10, Nbr 192.168.100.141 on Serial0/0/1 from LOADING to FULL, Loading Done
int
15:38:58: %OSPFv3-5-ADJCHG: Process 10, Nbr 192.168.100.141 on Serial0/0/1 from LOADING to FULL, Loading Donegig
R3(config)#interface gigabitEthernet 0/0
R3(config-if)#ip ospf 10 area 0
R3(config-if)#ipv6 ospf 10 area 0
R3(config-if)#exit

jika ipv6 diminta manual maka masukan ipv6 nya secara manual lalu ping