

DHCP, static route

```
Router>en
```

```
Router#conf t
```

```
Router(config)#hostname R0
```

```
R0(config)#interface gigabitEthernet 0/0
```

```
R0(config-if)#ip address 195.83.240.254 255.255.255.0
```

```
R0(config-if)#no shutdown
```

```
R0(config-if)#exit
```

Конфигурирование DHCP сервера на маршрутизаторе

```
R0(config)#ip dhcp pool one
```

//указание диапазона IP адресов для раздачи 195.83.240.1 - 195.83.240.254

```
R0(dhcp-config)#network 195.83.240.0 255.255.255.0
```

```
R0(dhcp-config)#dns 8.8.8.8
```

//указание времени аренды 2 day 10 hour

```
R0(dhcp-config)#lease 2 10 //данная команды packet tracer не поддерживается
```

//указание IP адреса шлюза

```
R0(dhcp-config)#default-router 195.83.240.254
```

```
R0(dhcp-config)#exit
```

//исключение IP адреса из раздачи

Проверка работы и настроек DHCP сервера

- R0# show ip dhcp binding
- R0# show ip dhcp pool /*данная команда packet tracer 6.2 не поддерживается*/
- R0# show running-config

```
R0(config)#ip dhcp pool one
```

```
//указание диапазона IP адресов для раздачи 195.83.240.1 -  
195.83.240.254
```

```
R0(dhcp-config)#network 195.83.240.0 255.255.255.0
```

```
R0(dhcp-config)#exit
```

```
// 195.83.240.10 - 195.83.240.20
```

```
//исключение IP адреса из раздачи
```

```
R0(config)#ip dhcp excluded-address 195.83.240.1 195.83.240.9
```

```
R0(config)#ip dhcp excluded-address 195.83.240.21 195.83.240.254
```

```
R0(config)#exit
```

```
Router>EN
```

```
Router#conf t
```

```
Router(config)#hostname R3
```

```
R3(config)#interface gigabitEthernet 0/0
```

```
R3(config-if)#ip address 196.202.35.254 255.255.255.0
```

```
R3(config-if)#no shutdown
```

```
R3(config-if)#exit
```

```
R3(config)#interface gigabitEthernet 0/1
```

```
R3(config-if)#ip address 197.197.10.1 255.255.255.0
```

```
R3(config-if)#no shutdown
```

```
R3(config-if)#exit
```

Конфигурирование DHCP сервера на удаленном маршрутизаторе

```
Router#conf t
```

```
Router(config)#hostname R2
```

```
R2(config)#interface gigabitEthernet 0/0
```

```
R2(config-if)#ip address 197.197.10.2 255.255.255.0
```

```
R2(config-if)#no shutdown
```

```
R2(config-if)#exit
```

```
R2(config)#ip dhcp pool two
```

```
R2(dhcp-config)#network 196.202.35.0 255.255.255.0
```

```
R2(dhcp-config)#dns-server 8.8.8.8
```

```
• R2(dhcp-config)#default-router 196.202.35.254
```

DHCP RELAY

(проброс DHCP сообщений через маршрутизатор)

DHCP Discover R3: ip helper-address 197.197.10.2 DHCP Discover

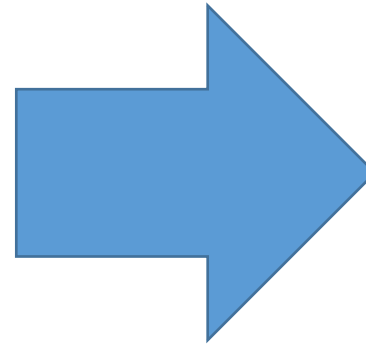
Data – help me

S: 0.0.0.0

D: 255.255.255.255

S: MAC PC2

D: FF:FF:FF:FF:FF:FF



Data – help me

S: 196.202.35.254

D: 197.197.10.2

S: MAC gi0/1 R3

D: MAC gi0/0 R2

BROADCAST

UNICAST


```
R2(config)#ip dhcp pool two
```

```
R2(dhcp-config)#network 196.202.35.0 255.255.255.0
```

```
R2(dhcp-config)#default-router 196.202.35.254
```

```
R2(dhcp-config)#exit
```

```
R2(config)#ip dhcp pool three
```

```
R2(dhcp-config)#network 198.202.35.0 255.255.255.0
```

```
R2(dhcp-config)#default-router 198.202.35.254
```

```
R2(dhcp-config)#exit
```

```
R2(config)#ip dhcp pool four
```

```
R2(dhcp-config)#network 199.202.35.0 255.255.255.0
```

```
R2(dhcp-config)#default-router 199.202.35.254
```

```
R2(dhcp-config)#exit
```

RECEIVE

Data – help me

S: 196.202.35.25

D: 197.197.10.2

S: MAC gi0/1 R3

D: MAC gi0/0 R

SEND

Data – 196.202.
24h, dns 8.8.8.8

S: 197.197.10.2

D: 196.202.35.2

S: MAC gi0/0 R

Конфигурирование DHCP RELAY (проброс DHCP сообщений через маршрутизатор)

```
R3#conf t
```

```
R3(config)#interface gigabitEthernet 0/0
```

```
// указание IP адреса DHCP сервера
```

```
R3(config-if)#ip helper-address 197.197.10.2
```

```
R3(config-if)#exit
```

```
R3(config)#exit
```

```
R3#show ip interface gigabitEthernet 0/0
```

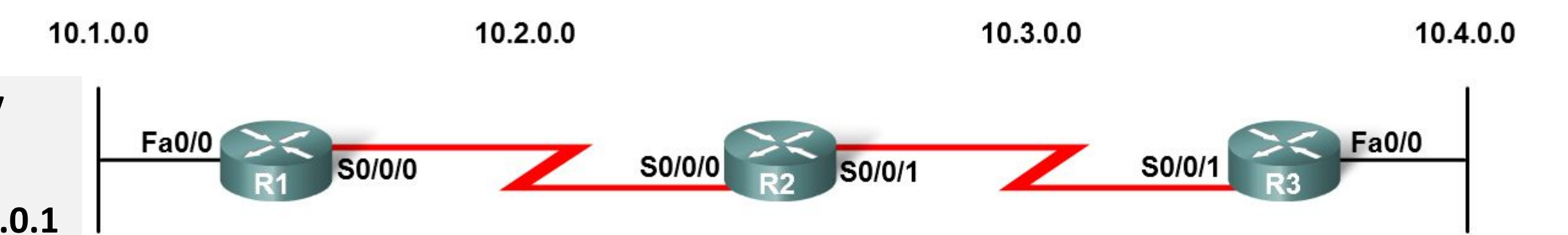
Конфигурирование статического маршрута

```
R2#conf t
```

```
R2(config)#ip route 196.202.35.0 255.255.255.0 gi0/0
```

```
R2(config)#exit
```

```
R2#show ip route
```



0.1

Network	Interface	Hop
10.1.0.0	Fa0/0	0
10.2.0.0	S0/0/0	0

S 10.4.0.0/16 se0/0/0

Network	Interface	Hop
10.2.0.0	S0/0/0	0
10.3.0.0	S0/0/1	0

S 10.4.0.0/16 se0/0/1

S 10.1.0.0/16 se0/0/0

Network	Interface	Hop
10.3.0.0	S0/0/1	0
10.4.0.0	Fa0/0	0

S 10.1.0.0/16 se0/0/1

R2(config)#ip route 10.1.0.0 255.255.0.0 se0/0/0

R3(config)#ip route 10.1.0.0 255.255.0.0 se0/0/1

Конфигурирование статической маршрутизации

```
R0#conf t
```

```
R0(config)#interface gigabitEthernet 0/1
```

```
R0(config-if)#ip address 197.197.12.1 255.255.255.0
```

```
R0(config-if)#no shutdown
```

```
R0(config-if)#exit
```

```
// add static route to network_pc2
```

```
R0(config)#ip route 196.202.35.0 255.255.255.0 gi0/1
```

```
R0(config)#exit
```

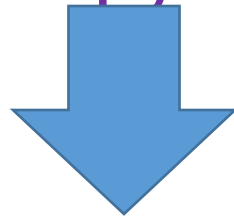
```
R0#show ip route
```

// R0 - gi0/1 – shutdown – gi0/0 R1

R0(config)#ip route 196.202.35.0 255.255.255.0 gi0/1

R0#show ip route - маршрут до сети 196.202.35.0 не отображается

R0#show running-config - маршрут до сети 196.202.35.0 отображается



// R0 - gi0/1 – UP – gi0/0 R1

R0(config)#ip route 196.202.35.0 255.255.255.0 gi0/1

R0#show ip route - маршрут до сети 196.202.35.0 отображается

R0#show running-config - маршрут до сети 196.202.35.0 отображается

```
Router#conf t
```

```
Router(config)#hostname R1
```

```
R1(config)#interface gigabitEthernet 0/0
```

```
R1(config-if)#ip address 197.197.12.2 255.255.255.0
```

```
R1(config-if)#no shutdown
```

```
R1(config-if)#exit
```

```
// убедиться в наличии маршрута до сети
```

```
196.202.35.0/24
```

```
R0# show ip route
```

Конфигурирование статической маршрутизации

```
R1(config)#interface gigabitEthernet 0/2
```

```
R1(config-if)#ip address 197.197.11.1 255.255.255.0
```

```
R1(config-if)#no shutdown
```

```
R1(config-if)#exit
```

```
// add static route to network_pc0
```

```
R1(config)#ip route 195.83.240.0 255.255.255.0 gi0/0
```

```
// add static route to network_pc2
```

```
R1(config)#ip route 196.202.35.0 255.255.255.0 gi0/2
```

```
R1(config)#exit
```

```
R1#show ip route
```



```
R2#conf t
```

```
R2(config)#interface gigabitEthernet 0/1
```

```
R2(config-if)#ip address 197.197.11.2 255.255.255.0
```

```
R2(config-if)#no shutdown
```

```
R2(config-if)#exit
```

```
// add static route to network_pc0
```

```
R2(config)#ip route 195.83.240.0 255.255.255.0 gi0/1
```

```
R2(config)#exit
```

```
R2#show ip route
```

```
R3#conf t
```

```
// add static route to network_pc0
```

```
R3(config)#ip route 195.83.240.0 255.255.255.0 gi0/1
```

```
R3(config)#exit
```

```
R3#show ip route
```