

Государственное бюджетное профессиональное образовательное учреждение
«Нижегородский радиотехнический колледж»

ОП.11 Компьютерные сети

ОТЧЁТ
по практической работе № 13.3.1

**Тема «Использование ICMR для проверки и исправления сетевого
подключения»**

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С помощью команды ping проверяем устройства на потерю пакетов, и по ходу проверки исправляем сетевые ошибки.

Начинаем с PC1. Потеряно 25% пакетов.

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Reply from 203.0.113.100: bytes=32 time=16ms TTL=125
Reply from 203.0.113.100: bytes=32 time=10ms TTL=125
Reply from 203.0.113.100: bytes=32 time=1ms TTL=125
Reply from 203.0.113.100: bytes=32 time=11ms TTL=125

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 16ms, Average = 9ms
```

У PC2 тоже нет потерь.

```
C:\>ping 2001:db8:acad::100

Pinging 2001:db8:acad::100 with 32 bytes of data:

Reply from 2001:DB8:ACAD::100: bytes=32 time=16ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=15ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=10ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=10ms TTL=125

Ping statistics for 2001:DB8:ACAD::100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 16ms, Average = 12ms
```

У PC4 потеряны все пакеты, пытаемся исправить. Был неправильно указан IP адрес. Меняем на нужный и проверяем. Теперь все отлично.

<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	<input type="text" value="10.10.5.10"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="10.10.5.1"/>
DNS Server	<input type="text" value="0.0.0.0"/>

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Request timed out.
Reply from 203.0.113.100: bytes=32 time=10ms TTL=125
Reply from 203.0.113.100: bytes=32 time=10ms TTL=125
Reply from 203.0.113.100: bytes=32 time=12ms TTL=125

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 12ms, Average = 10ms
```

Далее Laptop A. Потерь пакетов нет.

```
C:\>ping 2001:db8:acad::100

Pinging 2001:db8:acad::100 with 32 bytes of data:

Reply from 2001:DB8:ACAD::100: bytes=32 time=27ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=1ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=1ms TTL=125
Reply from 2001:DB8:ACAD::100: bytes=32 time=1ms TTL=125

Ping statistics for 2001:DB8:ACAD::100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 27ms, Average = 7ms
```

Проверяем PC3. Потерь нет.

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Reply from 203.0.113.100: bytes=32 time=17ms TTL=125
Reply from 203.0.113.100: bytes=32 time=1ms TTL=125
Reply from 203.0.113.100: bytes=32 time=9ms TTL=125
Reply from 203.0.113.100: bytes=32 time=16ms TTL=125

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 17ms, Average = 10ms
```

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

У Server1 были потеряны все пакеты. Ищем проблему. Проблема с IP адресом. Исправляем и проверяем. Все отлично работает. Потерь нет.

<input type="radio"/> DHCP	<input checked="" type="radio"/> Static	This address is already used in the network.
IPv4 Address	10.10.5.20	
Subnet Mask	255.255.255.0	
Default Gateway	10.10.5.1	
DNS Server	0.0.0.0	

```
C:\>ping 203.0.113.100

Pinging 203.0.113.100 with 32 bytes of data:

Reply from 203.0.113.100: bytes=32 time=17ms TTL=125
Reply from 203.0.113.100: bytes=32 time=3ms TTL=125
Reply from 203.0.113.100: bytes=32 time=10ms TTL=125
Reply from 203.0.113.100: bytes=32 time=15ms TTL=125

Ping statistics for 203.0.113.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 17ms, Average = 11ms
```

Далее проверяем Лаптор В. Все пакеты были потеряны. Ищем проблему.

```
C:\>ping 2001:db8:acad::100

Pinging 2001:db8:acad::100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 2001:DB8:ACAD::100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

```
RTR-3#show ipv6 int brief
GigabitEthernet0/0/0      [up/up]
    unassigned
GigabitEthernet0/0/1      [up/up]
    FE80::1
    2001:DB8:6::1
Serial10/1/0              [up/up]
    FE80::20C:CFFF:FE29:1B43
    2001:DB8:3::2
Serial10/1/1              [administratively down/down]
    unassigned
Vlan1                    [administratively down/down]
    unassigned
```

Ошибка в RTR-3. Исправляем адрес на нужный.

```
RTR-3(config)#int g0/0/1
RTR-3(config-if)#no ipv6 address 2001:db8:6::1/64
RTR-3(config-if)#ipv6 add 2001:db8:5::1/64
```

Это частично решило проблему, но пакеты все еще теряются. Ищем дальше.

```
C:\>tracert 2001:db8:acad::100

Tracing route to 2001:db8:acad::100 over a maximum of 30 hops:

  1  1 ms      0 ms      0 ms      2001:DB8:5::1
  2  *          *          *          Request timed out.
  3  *          *          *          Request timed out.
  4  *          *          *          Request timed out.
```

```
RTR-3(config-if)#no shutdown
```

```
RTR-3(config-if)#  
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to  
up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface  
GigabitEthernet0/0/1, changed state to up
```

Прописываем no shutdown и проверяем.
Все работает. Потерь нет.

```
C:\>ping 2001:db8:acad::100  
  
Pinging 2001:db8:acad::100 with 32 bytes of data:  
  
Reply from 2001:DB8:ACAD::100: bytes=32 time=11ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=1ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=10ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=10ms TTL=125  
  
Ping statistics for 2001:DB8:ACAD::100:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 1ms, Maximum = 11ms, Average = 8ms
```

У Laptop C потерь пакетов нет.

```
C:\>ping 2001:db8:acad::100  
  
Pinging 2001:db8:acad::100 with 32 bytes of data:  
  
Reply from 2001:DB8:ACAD::100: bytes=32 time=13ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=10ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=1ms TTL=125  
Reply from 2001:DB8:ACAD::100: bytes=32 time=2ms TTL=125  
  
Ping statistics for 2001:DB8:ACAD::100:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 1ms, Maximum = 13ms, Average = 6ms
```

Вывод: Я проверил сетевое подключения и обнаружил сетевых проблемы, исправил их и исправил простые проблемы конфигурации и восстановил подключения к сети.