GRE Astra Linux

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  - iptables
  - GRE c NetworkManager
  - GRE c NetworkManager nm-connection-editor
  - GRE networking
  - GRE c
- GRE -. GRE
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- GRE

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- Astra Linux Special Edition .10015-01 (1.6)
- Astra Linux Special Edition .10015-16 . 1 . 2
- Astra Linux Special Edition .10265-01 (8.1)
- Astra Linux Common Edition 2.12

GRE , GRE , (, HTTPS).

GRE 24 , MSS , GRE 24 , .

, . , - . :

- c :
  - eth0 ( ):
    - IP-: 192.168.27.137;
  - eth1 ( ):
    - IP-: 192.168.166.237;
    - : 192.168.166.0/24:
  - IP- GRE: 10.0.1.1/30;
- c :
  - eth0:
    - IP-: 192.168.27.56;
  - eth1 ( ):
    - IP-: 192.168.17.174;
    - : 192.168.17.0/24:
  - IP- GRE: 10.0.1.2/30;

GRE

GRE . :

1. /etc/sysctl.conf :

```
net.ipv4.ip_forward=1
```

2. :

```
sudo sysctl -p
```

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iptables

iptables . iptables : iptables.

iptables reject, GRE . :

```
sudo iptables -A INPUT -p gre -j ACCEPT
```

, , :

`sudo iptables -A INPUT -p gre -s 192.168.27.56 -j ACCEPT`	`sudo iptables -A INPUT -p gre -s 192.168.27.137 -j ACCEPT`

- 20 MTU iptables, MSS :

```
sudo iptables -A FORWARD -p tcp --tcp-flags SYN,RST SYN -j TCPMSS --clamp-mss-to-pmtu
```

GRE c NetworkManager

> , , netdev.

, :

1.	GRE gre1. GRE .	
	`nmcli con add type ip-tunnel ip-tunnel.mode gre con-name gre1 ifname gre1 \ remote 192.168.27.56 local 192.168.27.137`	`nmcli con add type ip-tunnel ip-tunnel.mode gre con-name gre1 ifname gre1 \ remote 192.168.27.137 local 192.168.27.56`
2.	GRE IP-. : , :	
	`nmcli con mod gre1 ipv4.addresses '10.0.1.1/30' nmcli con mod gre1 ipv4.method manual`	`nmcli con mod gre1 ipv4.addresses '10.0.1.2/30' nmcli con mod gre1 ipv4.method manual`
3.	(192.168.17.0/24):	(192.168.166.0/24):
	`nmcli con mod gre1 +ipv4.routes "192.168.17.0/24 10.0.1.2"`	`nmcli con mod gre1 +ipv4.routes "192.168.166.0/24 10.0.1.1"`
4.	gre1:	

```
sudo nmcli con up gre1
```

.

GRE c NetworkManager nm-connection-editor

, , netdev.

NetworkManager (, " ")
:

```
nm-connection-manager
```

:

1. "+";
2. "ip-";
3. "";
4. :
    a. "GRE";
    b. ( );
    c. " IPv4";
    d. "" ;
5. "".

.

GRE networking

GRE networking:

1. /etc/network/interfaces :

auto gre1 iface gre1 inet static address 10.0.1.1 netmask 255.255.255.252 mtu 1400 up ifconfig gre1 multicast pre-up iptunnel add gre1 mode gre remote 192.168.27.56 local 192.168.27.137 dev eth0 post-up route add -net 192.168.17.0 netmask 255.255.255.0 gw 10.0.1.2 pointopoint 10.0.1.2 post-down iptunnel del gre1	auto gre1 iface gre1 inet static address 10.0.1.2 netmask 255.255.255.252 mtu 1400 up ifconfig gre1 multicast pre-up iptunnel add gre1 mode gre remote 192.168.27.137 local 192.168.27.56 dev eth0 post-up route add -net 192.168.166.0 netmask 255.255.255.0 gw 10.0.1.1 pointopoint 10.0.1.1 post-down iptunnel del gre1

2. networking:

```
sudo systemctl restart networking
```

.

GRE c


```
sudo ip tunnel add gre1 mode gre
remote 192.168.27.56 local 192.168.
27.137 dev eth0
sudo ifconfig gre1 10.0.1.1
pointopoint 10.0.1.2
sudo ifconfig gre1 mtu 1400
sudo ifconfig gre1 up
sudo route add -net 192.168.17.0
netmask 255.255.255.0 gw 10.0.1.2
```

```
sudo ip tunnel add gre1 mode gre
remote 192.168.27.137 local 192.168
.27.56 dev eth0
sudo /sbin/ifconfig gre1 10.0.1.2
pointopoint 10.0.1.1
sudo /sbin/ifconfig gre1 mtu 1400
sudo /sbin/ifconfig gre1 up
sudo route add -net 192.168.166.0
netmask 255.255.255.0 gw 10.0.1.1
```

⚠ .

GRE -. GRE

- c :
  - IP-: 192.168.0.101;
  - GRE: 10.0.0.1;
- c :
  - IP-: 192.168.0.102;
  - GRE: 10.0.0.2;
- c :
  - IP-: 192.168.0.103;
  - GRE: 10.0.0.3;

, , multicast- (,).

GRE mgre0 GRE.
GRE- 32- , . GRE (IP-):

```
sudo ip tunnel add mgre0 mode gre key 0xfffffffe
```

IP-:

```
sudo ip addr add
10.0.0.1/24 dev mgre0
```

```
sudo ip addr add
10.0.0.2/24 dev mgre0
```

```
sudo ip addr add
10.0.0.3/24 dev mgre0
```

, , multicast- (,).
. :

`sudo ip neigh add 10.0.0.2 lladdr 192.168.0.102 dev mgre0` `sudo ip neigh add 10.0.0.3 lladdr 192.168.0.103 dev mgre0`	`sudo ip neigh add 10.0.0.1 lladdr 192.168.0.101 dev mgre0` `sudo ip neigh add 10.0.0.3 lladdr 192.168.0.103 dev mgre0`	`sudo ip neigh add 10.0.0.1 lladdr 192.168.0.101 dev mgre0` `sudo ip neigh add 10.0.0.2 lladdr 192.168.0.102 dev mgre0`
: `sudo ip link set mgre0 up`		

GRE

:

```
ip tunnel list
```

GRE ping, (eth1):

`ping 192.168.17.174`	`ping 192.168.166.237`