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- [username](#)

auth-nocache

OPENVPN-.

(no) OPENVPN-.

[no] auth-nocache

.

.

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CONFIG-OPENVPN

```
esr(config)# auth-nocache
```

authentication algorithm

, OPENVPN-.

(no) .

authentication algorithm <ALGORITHM>

no authentication algorithm

<ALGORITHM> – , : md4, rsa-md4, md5, rsa-md5, mdc2, rsa-mdc2, sha, sha1, rsa-sha, rsa-sha1, rsa-sha1-2, dsa, dsa-sha, dsa-sha1, dsa-sha1-old, ripemd160, rsa-ripemd160, ecdsa-with-sha1, sha-224, rsa-sha-224, sha-256, rsa-sha-256, sha-384, rsa-sha-384, sha-512, rsa-sha-512, whirlpool.

.

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CONFIG-OPENVPN

```
esr(config-openvpn)# authentication algorithm md5
```

authentication method

, PPPoE, PPTP L2TP.
(no) .

authentication method <METHOD>
no authentication method <METHOD>

<METHOD> – , : chap, mschap, mschap-v2, eap, pap.

chap

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CONFIG-PPPOE
CONFIG-PPTP
CONFIG-L2TP

```
esr(config-pppoe)# authentication method mschap-v2
```

authentication required disable

PPP PPTP L2TP.
(no) PPP PPTP L2TP.

[no] authentication required disable

.

.

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CONFIG-PPPOE
CONFIG-PPTP
CONFIG-L2TP

```
esr(config-pppoe)# authentication required disable
```

certificate

OPENVPN-.

(no) .

certificate <CERTIFICATE-TYPE> <NAME>

no certificate <CERTIFICATE-TYPE>

<CERTIFICATE-TYPE>- , :

- ca - ;
- client-crt - ;
- client-key - ;
- crl - ;
- dh - -;
- ta - HMAC-.

<NAME>- , 31 .

.

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CONFIG-OPENVPN

```
esr(config-openvpn)# certificate ca KEY
```

clear ip nhrp

NHRP- .

clear ip nhrp [{ dynamic | static | incomplete | nhs }] [{ nbma-address <ADDR> | tunnel gre <ID> | tunnel-address <ADDR> }] [vrf <VRF>]

<ID>- ;

<ADDR>- IP- AAA.BBB.CCC.DDD, [0..255];

<VRF>- VRF, 31 . NHRP-, VRF;

dynamic - ;

incomplete - ;

nbma-address - , NBMA-;

nhs - , NHS;

static - , ;

tunnel - , ;

tunnel-address - , ;

vrf - , c VRF.

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ROOT

```
esr# clear ip nhrp vrf vrf_test tunnel gre 9 static
```

clear tunnels counters

```
clear tunnels counters [{ <TUN> | pseudowire [ <ID> <NEIGBOR-ADDR> ] | dypseudowire pseudowire [ <ID> <NEIGBOR-ADDR> ] } ]
```

<TUN> – , , .

«,» «-». , .

<ID> – / .

<NEIGBOR-ADDR> – IP- AAA.BBB.CCC.DDD, [0..255];

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ROOT

```
esr# clear tunnels counters dypseudowire 2 192.0.2.10
```

clear tunnels softgre

softgre /.

```
clear tunnels softgre [ remote-address <REMOTE-IP> ]
```

<REMOTE-IP> – IP-, softgre-.

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ROOT

```
esr# clear tunnels softgre esr#clear tunnels softgre remote-address10.10.42.10
```

compression

OPENVPN.

(no) .

[no] compression

.

.

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CONFIG-OPENVPN

```
esr(config-openvpn)# compression
```

default-profile

SoftGRE- mode local address.

(no) .

[no] default-profile

.

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CONFIG-SOFTGRE

```
esr(config-softgre)# default-profile
```

description

.

(no) .

description <DESCRIPTION>

no description

<DESCRIPTION> – , 255 .

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CONFIG-IP4IP4

CONFIG-SUBTUNNEL

CONFIG-GRE

CONFIG-L2TP

CONFIG-L2TPV3

CONFIG-VTI

CONFIG-LT

CONFIG-PPTP

CONFIG-PPPOE

CONFIG-OPENVPN

```
esr(config-gre)# description "tunnel to branch"
```

dscp

DSCP IP- .

(no) DSCP .

dscp <DSCP>

no dscp

<DSCP> – DSCP, [0..63].

.

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CONFIG-IP4IP4

CONFIG-GRE

```
esr(config-ip4ip4)# dscp 40
```

enable

.
(no) .

[no] enable

.

.

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CONFIG-IP4IP4

CONFIG-GRE

CONFIG-SUBTUNNEL

CONFIG-L2TP

CONFIG-L2TPV3

CONFIG-VTI

CONFIG-LT

CONFIG-PPTP

CONFIG-PPPOE

CONFIG-OPENVPN

```
esr(config-gre)# enable
```

encryption algorithm

, .
(no) .

encryption algorithm <ALGORITHM>

no encryption algorithm

<ALGORITHM> – , : des, blowfish128, aes128, des-ede, aes192, 3des, desx, aes256.

.

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CONFIG-OPENVPN

```
esr(config-openvpn)# encryption algorithm aes128
```

history statistics

```
.  
(no) .
```

```
[no] history statistics
```

```
.
```

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CONFIG-GRE

CONFIG-SOFTGRE

CONFIG-SUBTUNNEL

CONFIG-IP4IP4

CONFIG-L2TPV3

CONFIG-LT

CONFIG-VTI

CONFIG-PPTP

CONFIG-PPPOE

CONFIG-OPENVPN

CONFIG-L2TP

```
esr(config-ip4ip4)# history statistics
```

ignore-default-route

```
, , , .  
(no) .
```

```
[no] ignore-default-route
```

```
.
```

```
, , .
```

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CONFIG-L2TP

CONFIG-PPTP

CONFIG-PPPOE

```
esr(config-pptp)# ignore-default-route
```

interface

PPPoE-.

(no) .

interface <IF>

no interface

<IF> – , , .

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CONFIG-PPPOE

```
esr(config-pppoe)# interface gigabitethernet 1/0/5.100
```

ip nhrp authentication

NHRP. NHRP- .

(no) .

ip nhrp authentication { <WORD> | encrypted <ENCRYPTED-TEXT> }

[no] ip nhrp authentication

<WORD> – , [1..8], [0-9a-fA-F].

<ENCRYPTED-TEXT> – , [1..8], [2..16].

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CONFIG-GRE

```
esr(config-gre)# ip nhrp authentication pass
```

ip nhrp enable

NHRP .

(no) NHRP .

```
[no] ip nhrp enable
```

.

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CONFIG-GRE

```
esr(config-gre)# ip nhrp enable
```

ip nhrp holding-time

, NHRP- . NHRP-, 1/3 NHRP holding time.

(no) .

```
ip nhrp holding-time <TIME>
```

```
[no] ip nhrp holding-time
```

<TIME> – , , [1..65535].

7200

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CONFIG-GRE

```
esr(config-gre)# ip nhrp holding-time
```

ip nhrp ipsec

IPsec-VPN mGRE .

(no) IPsec-VPN mGRE .

```
ip nhrp ipsec <WORD> { static | dynamic }  
no ip nhrp ipsec <WORD> { static | dynamic }
```

<WORD> – VPN, 31 ;
static – , NHRP-, , ;
dynamic – , NHRP-.

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CONFIG-GRE

```
esr(config-gre)# ip nhrp ipsec VPN static
```

ip nhrp map

«» «» NBMA-.

(no) .

```
[no] ip nhrp map <ADDR-IN> <ADDR-OUT>
```

<ADDR-IN> – IP- AAA.BBB.CCC.DDD, [0..255].
<ADDR-OUT> – IP- AAA.BBB.CCC.DDD, [0..255].

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CONFIG-GRE

```
esr(config-gre)# ip nhrp map 192.168.1.2 67.86.141.231
```

ip nhrp multicast

.

(no) .

```
[no] ip nhrp multicast { dynamic | nhs | <ADDR> }
```

dynamic — , ;
nhs — NHRP-;
<ADDR> — IP-, AAA.BBB.CCC.DDD, [0..255].

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CONFIG-GRE

```
esr(config-gre)# ip nhrp multicast nhs
```

ip nhrp nhs

« () » NHRP .

(no) .

```
ip nhrp nhs <ADDR/LEN> [ no-registration ]  
no ip nhrp nhs <ADDR/LEN>
```

<ADDR/LEN> — , AAA.BBB.CCC.DDD/EE, AAA – DDD [0..255] EE [1..32];
no-registration — NHRP .

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CONFIG-GRE

```
esr(config-gre)# ip nhrp nhs 192.168.1.2
```

ip nhrp redirect

, NHRP- NHRP Traffic Indication.

(no) .

```
[no] ip nhrp redirect
```

.

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CONFIG-GRE

```
esr(config-gre)# ip nhrp redirect
```

ip nhrp shortcut

, .
(no) .

[no] ip nhrp shortcut

.

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CONFIG-GRE

```
esr(config-gre)# ip nhrp shortcut
```

ip tcp adjust-mss

MSS (Maximum segment size) TCP-.

(no) MSS.

ip tcp adjust-mss <MSS>

no ip tcp adjust-mss

<MSS> – MSS, [500..1460].

1460

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CONFIG-IP4IP4

CONFIG-GRE

CONFIG-L2TP

CONFIG-PPPOE

CONFIG-PPTP

CONFIG-VTI

CONFIG-LT

```
esr(config-gre)# ip tcp adjust-mss 1400
```

ipsec authentication method

IKE-. IKE-, «ipsec authentication pre-shared-key» (. [ipsec authentication pre-shared-key](#)).

(no) .

```
ipsec authentication method pre-shared-key
```

```
no ipsec authentication method
```

pre-shared-key – , .

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CONFIG-L2TP

```
esr(config-l2tp-server)# ipsec authentication method psk
```

ipsec authentication pre-shared-key

, , .

(no) .

```
ipsec authentication pre-shared-key { ascii-text { <TEXT> | encrypted <ENCRYPTED-TEXT> } | hexadecimal { <HEX> | encrypted <ENCRYPTED-HEX> } }
```

```
no ipsec authentication pre-shared-key
```

<TEXT> – [1..64] ASCII .

<HEX> – [1..32] [2..128] (0xYYYY...) (YYYY...).

<ENCRYPTED-TEXT> – [1..32], [2..128];

<ENCRYPTED-HEX> – [2..64], [2..256] .

none

10

CONFIG-L2TP

```
esr(config-l2tp-server)# ipsec authentication pre-shared-key ascii-text password
```

keepalive dhcp dependent-interface

IP- DHCP GRE- keepalive. 8- GRE-.

(no) IP- DHCP.

keepalive dhcp dependent-interface <IF>

no keepalive dst-address

<IF> – , , .

.

10

CONFIG-GRE

```
esr(config-gre)# keepalive dhcp dependent-interface gi 1/0/1
```

keepalive dhcp link-timeout

GRE- IP- / keepalive dhcp dependent-interface (. [keepalive dhcp dependent-interface](#))

(no) .

keepalive dhcp link-timeout <SEC>

no keepalive dhcp link-timeout

<SEC> – GRE- IP- / keepalive dhcp dependent-interface, [1..32767] .

10

10

CONFIG-GRE


```
esr(config-gre)# keepalive dhcp link-timeout 90
```

keepalive dst-address

IP- keepalive . IP-, DOWN. keepalive (. [keepalive enable](#)).
(no) .

```
keepalive dst-address <ADDR>  
no keepalive dst-address
```

<ADDR> – IP- GRE-.

.

10

CONFIG-GRE

```
esr(config-gre)# keepalive dst-address 192.168.1.57
```

keepalive enable

. , DOWN.
(no) .

```
[no] keepalive enable
```

.

.

.

10

CONFIG-GRE

```
esr(config-gre)# keepalive enable
```

keepalive retries

keepalive retries

(no) .

keepalive retries <VALUE>

no keepalive retries

<VALUE> – , [1..255].

6

10

CONFIG-GRE

```
esr(config-gre)# keepalive retries 8
```

keepalive timeout

keepalive .

(no) .

keepalive timeout <TIME>

no keepalive timeout

<TIME> – , [1..32767].

10

10

CONFIG-GRE

```
esr(config-gre)# keepalive timeout 18
```

keepalive timeout ipsec

keepalive timeout ipsec, IPsec VPN, . OTT. .

(no) 180.

keepalive timeout ipsec <TIME>
no keepalive timeout ipsec

<TIME> – , [30-32767].

180

10

CONFIG-GRE

```
esr(config-gre)# keepalive timeout ipsec 1000
```

key

(Key) GRE (RFC 2890) . GRE-
(no) .

key <KEY>
no key

<KEY> – KEY, [1..2000000].

.

10

CONFIG-GRE

```
esr(config-gre)# key 40
```

load-average

, .
.

load-average <TIME>

no load-average

<TIME> - , [5..150].

5

10

CONFIG-GRE

CONFIG-IP4IP4

CONFIG-LT

CONFIG-SUBTUNNEL

CONFIG-L2TPv3

CONFIG-VTI

CONFIG-PPTP

CONFIG-PPPOE

CONFIG-OPENVPN

CONFIG-L2TP

```
esr(config-gre)# load-average
```

local address

IP- .

(no) IP- .

local address <ADDR>

no local address

<ADDR> - IP- .

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CONFIG-IP4IP4

CONFIG-GRE

CONFIG-L2TPV3

CONFIG-VTI

```
esr(config-ip4ip4)# local address 192.168.1.1
```

local address xauth

, mode config, IPsec VPN XAUTH-
(no) .

```
local address xauth <NAME>  
no local address
```

<NAME> – IPsec VPN, 31 .

.

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CONFIG-GRE

```
esr(config-)# local address xauth IPsecVPN
```

local checksum

GRE- .
(no) .

```
[no] local checksum
```

.

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CONFIG-GRE

```
esr(config-gre)# local checksum
```

local cookie

cookie .
(no) cookie.

```
local cookie <COOKIE>
no local cookie
```

<COOKIE> – COOKIE, [8 16].

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CONFIG-L2TPV3

```
esr(config-l2tpv3)# local cookie 8FB51B8FB
```

local interface

IP-, GRE-.

(no) IP-, .

```
local interface { <IF> | <TUN> }
no local interface
```

<IF> – , , ;

<TUN> – , , .

10

CONFIG-GRE

```
esr(config-gre)# local interface gigabitethernet 1/0/1
```

local port

UDP-, UDP-.

(no) UDP-.

```
local port <UDP>
no local port
```

<UDP> – UDP- [1..65535].

10

CONFIG-L2TPV3

```
esr(config-l2tpv3)# local port 1501
```

local session-id

.

(no) .

```
local session-id <SESSION-ID>
no local session-id
```

<SESSION-ID> - , [1..200000].

10

CONFIG-L2TPV3

```
esr(config-l2tpv3)# local session-id 200
```

mode

SoftGRE-.

(no) .

```
mode <MODE>
no mode
```

<MODE> - , :

- data - ;
- management - .

10

CONFIG-SOFTGRE

```
esr(config-softgre)# mode data
```

mode

GRE-.

(no) .

mode <MODE>

<MODE> – GRE-:

- ip – IP- GRE;
- ethernet – Ethernet- GRE.

ip

10

CONFIG-GRE

```
esr(config-gre)# mode ethernet
```

mtu

MTU (Maximum Transmission Unit) .

(no) MTU .

mtu <MTU>

no mtu

<MTU> – MTU, [552..10000].

- PPPoE-, [552..1500]

1500

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CONFIG-IP4IP4

CONFIG-GRE

CONFIG-SUBTUNNEL

CONFIG-L2TP

CONFIG-L2TPV3

CONFIG-VTI

CONFIG-LT

CONFIG-PPTP

CONFIG-PPPOE

CONFIG-OPENVPN

```
esr(config-l2tpv3)# mtu 1400
```

multipoint

multipoint .

(no) , point-to-point .

[no] multipoint

.

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CONFIG-GRE

```
esr(config-gre)# multipoint
```

password

OPENVPN-.

(no) .

password { <CLEAR-TEXT> | encrypted <ENCRYPTED-TEXT> }

no password

<CLEAR-TEXT> – , [8..32], [0-9a-fA-F];

<ENCRYPTED-TEXT> – , [8..32] .



CONFIG-OPENVPN

```
esr(config-openvpn)# password 01234567
```

peer lt

(VRF) .

(no) .

[no] peer lt <ID>

<ID> – .

10

CONFIG-LT

```
esr(config-lt)# peer lt 2
```

ppp failure-count

data-link .

(no) .

ppp failure-count <NUM>

no ppp failure-count

<NUM> – data-link , [1..100].

10

10

CONFIG-L2TP

CONFIG-PPPOE

CONFIG-PPTP

```
esr(config-l2tp)# ppp failure-count 20
```

ppp timeout keepalive

, keepalive-.

(no) .

```
ppp timeout keepalive <TIME >
```

```
no ppp timeout keepalive
```

<TIME> – , [1..32767].

10

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CONFIG-L2TP

CONFIG-PPPOE

CONFIG-PPTP

```
esr(config-l2tp)# ppp timeout keepalive 5000
```

protocol

L2TPv3.

```
protocol <TYPE>
```

```
no protocol
```

<TYPE> – , :

- IP- IP-;
- UDP- UDP-.

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CONFIG-L2TPV3

```
esr(config-l2tpv3)# protocol ip
```

protocol

OPENVPN.

```
protocol <TYPE>
```

```
no protocol
```

<TYPE> – , :

- TCP – TCP-;
- UDP – UDP-.

TCP

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CONFIG-OPENVPN

```
esr(config-openvpn)# protocol tcp
```

remote address

IP- .

(no) IP- .

```
remote address <ADDR>
```

```
no remote address
```

<ADDR> – IP- .

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CONFIG-IP4IP4

CONFIG-GRE

CONFIG-SOFTGRE

CONFIG-L2TP

CONFIG-L2TPV3

CONFIG-VTI

CONFIG-PPTP

```
esr(config-ip4ip4)# remote address 192.168.1.2
```

remote address

IP- TCP/UDP- .

(no) IP- .

[no] remote address <ADDR> [port <PORT>]

<ADDR> – IP- ;

<PORT> – TCP/UDP [1..65535].

<PORT> – 1194.

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CONFIG-OPENVPN

```
esr(config-openvpn)# remote address 192.168.1.2 port 1233
```

remote address xauth

management-ip data-ip, mode config, IPsec VPN XAUTH-. IPsec-VPN-.

(no) .

remote address xauth <NAME> {management-ip|data-ip}

no remote address

<NAME> – IPsec VPN, 31 ;

management-ip – , mode config IPsec VPN XAUTH-. IPsec-VPN- ELTEX_MANAGEMENT_IP (28683).

data-ip – , mode config IPsec VPN XAUTH-. IPsec-VPN- ELTEX_DATA_IP (28684)

.

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CONFIG-GRE

```
esr(config-gre)# remote address xauth IPsecVPN
```

remote checksum

GRE-.

(no) .

[no] remote checksum

.

.

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CONFIG-GRE

```
esr(config-gre)# remote checksum
```

remote cookie

cookie .

(no) cookie.

remote cookie <COOKIE>

no remote cookie

<COOKIE> – COOKIE, [8 16].

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CONFIG-L2TPV3

```
esr(config-l2tpv3)# remote cookie 8FB51B8FB
```

remote port

UDP-, UDP.

(no) UDP-.

remote port <UDP>

no remote port

<UDP> – UDP [1..65535].

.

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CONFIG-L2TPV3

```
esr(config-l2tpv3)# remote port 65000
```

remote session-id

.

(no) .

remote session-id <SESSION-ID>

no remote session-id

<SESSION-ID> – , [1..200000].

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CONFIG-L2TPV3

```
esr(config-l2tpv3)# remote session-id 2
```

route-metric

OPENVPN-.

(no) .

route-metric <METRIC>

```
no route-metric
```

<METRIC> – , [0..255].

0

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CONFIG-OPENVPN

```
esr(config)# route-metric 100
```

route-nopull

, OPENVPN-.

(no) .

```
[no] route-nopull
```

.

.

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CONFIG-OPENVPN

```
esr(config)# route-nopull
```

snmp init-trap

snmp-trap /.

(no) snmp-trap /.

```
[no] snmp init-trap
```

.

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CONFIG-GRE

CONFIG-SUBTUNNEL

```
esr(config-gre)# snmp init-trap
```

show ip nhrp

NHRP-.

```
show ip nhrp [ { dynamic | static | incomplete | nhs } ] [ { nbma-address <ADDR> | tunnel gre <ID> | tunnel-  
address <ADDR> } ] [ vrf <VRF> ]
```

<ID> - ;

<ADDR> - IP- AAA.BBB.CCC.DDD, [0..255];

<VRF> - VRF, 1 31. NHRP-, VRF;

dynamic - , ;

incomplete - ;

nbma-address - NBMA-;

nhs - NHS;

static - , ;

tunnel - ;

tunnel-address - ;

vrf - , c VRF.

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ROOT

```

esr# hub-12# sh ip nhrp
Tunnel address      NBMA address      Interface  Peer type      Expire      Created      Flags
-----
12.1.1.3            192.168.3.4       gre 1      dynamic        0:04:38     00:23:18     lower-up,
up
12.1.1.9            192.168.9.4       gre 1      dynamic        0:04:45     00:23:49     lower-up,
up
12.1.1.99           120.12.120.12     gre 1      dynamic        0:01:14     00:24:11     lower-up,
up

```

show tunnels configuration

.

show tunnels configuration [{ <TUN> | pseudowire [<ID> <NEIGBOR-ADDR>] | dypseudowire pseudowire [<ID> <NEIGBOR-ADDR>] }]

<TUN>- , , .

<ID>- / .

<NEIGBOR-ADDR>- IP- AAA.BBB.CCC.DDD, [0..255];

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ROOT

```

esr# show tunnels configuration gre 25
State:                                     enabled
Description:
Local address:                           14.0.0.2
Remote address:                           14.0.0.1
Calculates checksums for outgoing GRE packets: no
Requires that all input GRE packets were checksum: no
key:                                       -
TTL:                                      Inherit
DSCP:                                     0
MTU:                                     1500
Security zone:                           remote

```

show tunnels counters

.

show tunnels counters [{ <TUN> | pseudowire [<ID> <NEIGBOR-ADDR>] | dypseudowire pseudowire [<ID> <NEIGBOR-ADDR>] }]

<TUN>- , , .

. , . , .

<ID> - / .

<NEIGBOR-ADDR> - IP- AAA.BBB.CCC.DDD, [0..255];

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ROOT

```
esr# show tunnels counters dypseudowire 2 192.0.2.10
Tunnel 'dypseudowire 2_192.0.2.10' counters:
Packets received:          1006
Bytes received:            84200
Dropped on receive:        0
Receive errors:            0
Multicasts received:      0
Receive length errors:    0
Receive buffer overflow errors: 0
Receive CRC errors:       0
Receive frame errors:     0
Receive FIFO errors:      0
Receive missed errors:    0
Receive compressed:       0
Packets transmitted:      1006
Bytes transmitted:        102308
Dropped on transmit:      0
Transmit errors:          0
Transmit aborted errors:  0
Transmit carrier errors:  0
Transmit FIFO errors:     0
Transmit heartbeat errors: 0
Transmit window errors:   0
Transmit compressed:      0
Collisions:               0
```

show tunnels history

.

```
show tunnels history [{ <TUN> | pseudowire [ <ID> <NEIGBOR-ADDR> ] | dypseudowire pseudowire [ <ID> <NEIGBOR-
ADDR> ] } ] [ timer <TIMER> ]
```

<TUN> - , , .

<ID> - / .

<NEIGBOR-ADDR> - IP- AAA.BBB.CCC.DDD, [0..255];

<TIMER> - timer. :

- hours 72;
- minutes 60;
- seconds 60;
- timer, 3 ().

5

ROOT

```
esr# show tunnel history gre 1 timer minutes
gre 1
Last 60 minutes:
Timer  Recv utilization, Kbit/s  Sent utilization, Kbit/s  Recv errors  Sent errors  Output drops
-----
0-1    240          16          0           0           0
1-2    961          64          0           0           0
2-3    962          64          0           0           0
3-4    962          64          0           0           0
4-5    960          64          0           0           0
5-6    961          64          0           0           0
6-7    719          64          0           0           0
7-8    960          64          0           0           0
8-9    800          65          0           0           0
9-10   962          64          0           0           0
10-11  865          64          0           0           0
11-12  962          64          0           0           0
12-13  817          65          0           0           0
13-14  962          65          0           0           0
14-15  961          65          0           0           0
15-16  880          60          0           0           0
16-17  960          63          0           0           0
17-18  0             0           0           0           0
18-19  0             0           0           0           0
19-20  0             0           0           0           0
20-21  0             0           0           0           0
21-22  0             0           0           0           0
```

show tunnels status

.

```
show tunnels status [{ <TUN> | pseudowire [ <ID> <NEIGBOR-ADDR> ] | dypseudowire pseudowire [ <ID> <NEIGBOR-ADDR>
] } ]

<TUN>- , , .
. , . , .
<ID>- / .
<NEIGBOR-ADDR>- IP- AAA.BBB.CCC.DDD, [0..255];
```

1

ROOT

```
esr# show tunnels status
Tunnel      Admin state      MTU      Local IP      Remote IP      Uptime
-----
ip4ip4 4      Up              1500      115.0.0.100    115.0.0.30      1 minute and 4 seconds
```

show tunnels utilization

.

```
show tunnels utilization [{ <TUN> | pseudowire [ <ID> <NEIGBOR-ADDR> ] | dypseudowire pseudowire [ <ID> <NEIGBOR-ADDR> ] } ]
```

<TUN>- , , .

«,» «-». , .

<ID>- / .

<NEIGBOR-ADDR>- IP- AAA.BBB.CCC.DDD, [0..255];

10

ROOT

```
esr# show tunnels utilization gre 2
```

Tunnel	Period, s	Sent, Kbit/s	Recv, Kbit/s	Frames Sent	Frames Recv
gre 2	15	0	0	0	0

ttl

TTL .

(no) TTL .

ttl <TTL>

no ttl

<TTL>- TTL, [1..255].

.

10

CONFIG-IP4IP4

CONFIG-GRE

```
esr(config-ip4ip4)# ttl 10
```

tunnel

.
(no) .

[no] tunnel <TUN>

<TUN> - , , .

10

CONFIG

1

l2tp 10:

```
esr(config)# tunnel l2tp 10
esr(config-l2tp)#
```

2

l2tpv3 10:

```
esr(config)# tunnel l2tpv3 10
esr(config-l2tpv3)#
```

3

ip4ip4 200:

```
esr(config)# tunnel ip4ip4 200
esr(config-ip4ip4)#
```

4

gre 25:

```
esr(config)# tunnel gre 25
esr(config-gre)#
```

5

vti 125:

```
esr(config)# tunnel vti 125
esr(config-vti)#
```

6

pptp 10

```
esr(config)# tunnel ptp 10
esr(config-ptp)#
```

7

ppoe 8

```
esr(config)# tunnel pppoe 8
esr(config-pppoe)#
```

tunnel

OPENVPN.

(no) .

tunnel <MODE>

<MODE> – OPENVPN:

- ip – IP- OPENVPN;
- ethernet – Ethernet- OPENVPN.

ip

10

CONFIG-OPENVPN

```
esr(config-openvpn)# mode ethernet
```

tunnel-source

VRF IP- GRE-. , GRE- VRF VRF .

(no) , GRE- IP- GRE- VRF.

```
tunnel-source [ vrf <VRF> ]
[no] tunnel-source
```

<VRF> – VRF, 31 .

"vrf" VRF, IP- .

(GRE- IP- VRF).

CONFIG-GRE

```
esr(config-gre)# tunnel-source vrf magistral
```

username

L2TP-, PPPoE- PPTP-.

(no) .

```
username <NAME> password ascii-text { <CLEAR-TEXT> | encrypted <ENCRYPTED-TEXT> }
no username <NAME>
```

<NAME> - , 31 ;

<CLEAR-TEXT> - , [1 .. 64] ;

<ENCRYPTED-TEXT> - , [2..128] .

CONFIG-L2TP

CONFIG-PPPOE

CONFIG-PPTP

```
esr(config-pptp)# username fedor password ascii-text password
```

username

OPENVPN-.

(no) .

```
username <NAME>
no username <NAME>
```

<NAME> - , 31 .

CONFIG-OPENVPN


```
esr(config-openvpn)# username fedor
```