

# gre\_ipsec

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## GRE tunnel with IPsec protection

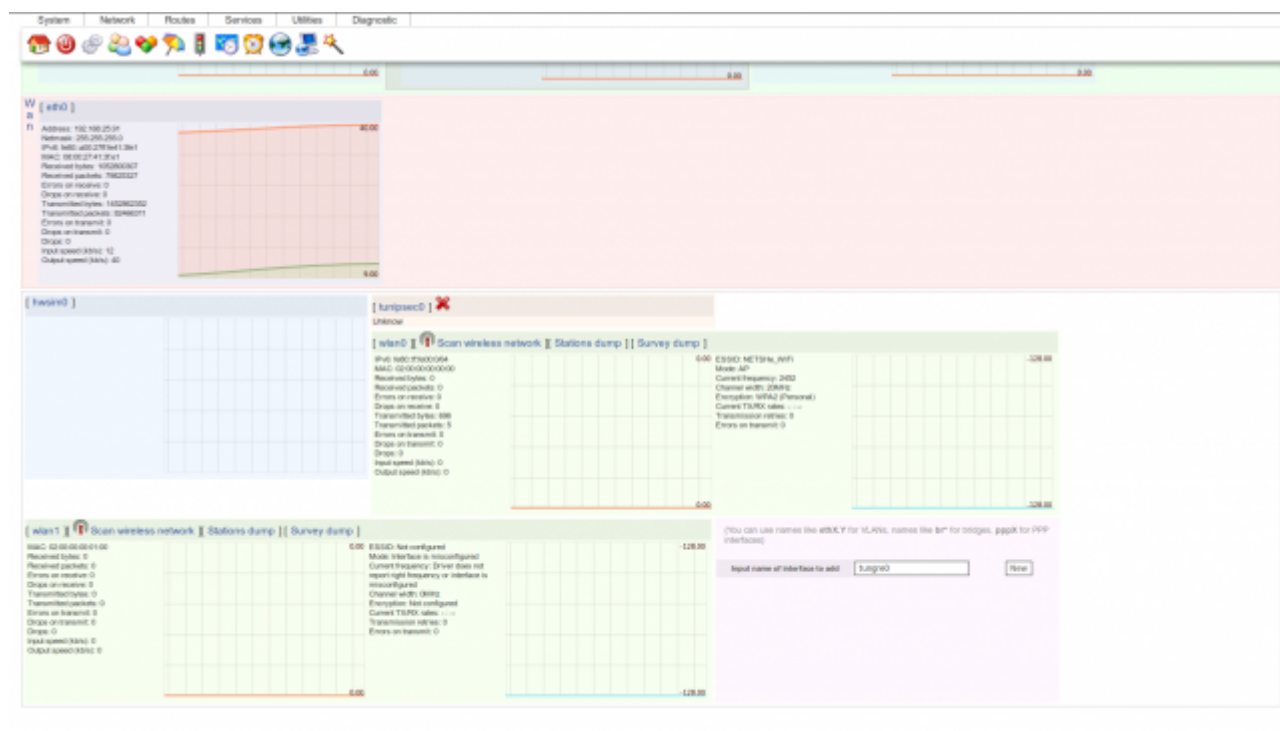
### in NETSHe

### HOW TO

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# Setup GRE tunnel at device

Go to „Network→Interfaces» menu, scroll till „Add interface» box, fill gre tunnel name (.e.g. „tungre0“). First part „tungre“ is mandatory) and press „New“ button.



Tunnel interface page will be open.

System Network Routes Services Utilities Diagnostic

[ Configure interface [ tunnel0 ] ]

Existing interface :

Configure interface Routes through interface

Interface is a member of zone: Lan

Tunnel type: GRE

Local interface to establish tunnel: eth0

Address of remote physical interface / address or hostname to establish tunnel: 193.168.25.18

Address/Netmask: 30.0.0.1/255.255.255.0

Server port: 1194

Server protocol (UDP or TCP): UDP

MTU: 0

Pre-shared key (password) for IPSEC or GRE tunnel: 13

Peer certificate (Certificate of authority). The same for server and all clients / Not installed

Server certificate: Not installed

Server key: Not installed

Tick to restart service(s) after saving:  Save

Save changes and then click this link to configure QoS for this interface

\* Filling of highlighted fields is mandatory!

Please specify zone for tunnel („Lan“ for most cases), outgoing interface, remote side address (DNS name is not allowed here), type of tunnel, local tunnel address and netmask and key for GRE tunnel as shown above.

Press „Save“ button and then return to the same page and switch to the tab „Routes through interface“.

System Network Routes Services Utilities Diagnostic

[ Configure interface [ tunnel0 ] ]

Existing interface :

Configure interface Routes through interface

You can setup static routes to networks through this interface

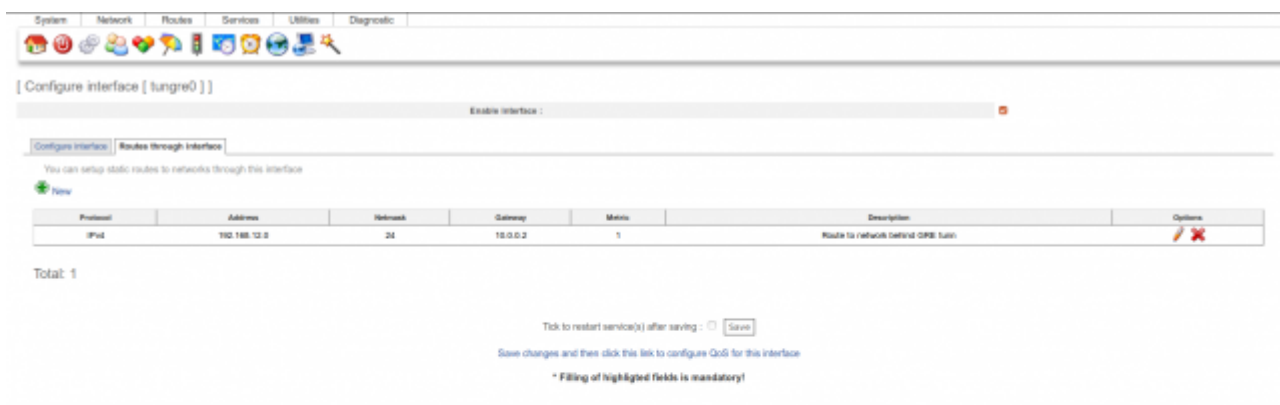
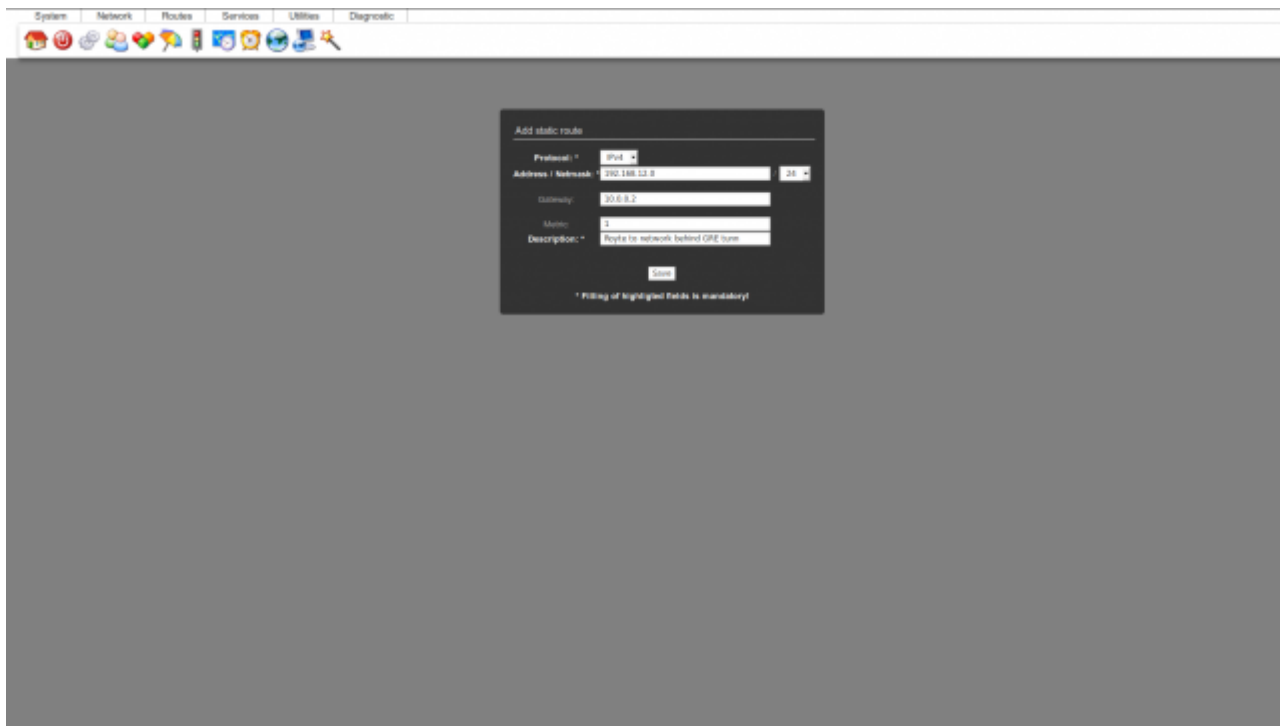
New

Tick to restart service(s) after saving:  Save

Save changes and then click this link to configure QoS for this interface

\* Filling of highlighted fields is mandatory!

Press „Plus“ icon and specify route to remote network which shall be reachable through this tunnel.



Configuration of GRE tunnel is completed.

Please configure GRE tunnel at remote device accordingly (local netmask must be the same; local address must be different but from the same network; remote address must point to configured device; route must point to reliable network).

## IPSec protection for GRE tunnel

IPSec configuration stage is similar to another IPSec setups except local network value.

Go to „Network→Interfaces» menu, scroll till „Add interface» box, fill ipsec tunnel name (.e.g. „tunipsec0“. First part „tunipsec“ is mandatory) and press „New“ button.

You will be redirected to ipsec tunnel configuration page.

Specify outgoing interface for IPSec tunnel (must be the same as for configured GRE tunnel), specify remote side address (must be the same as for configured GRE tunnel), fill „gre“ as „local network to route through tunnel“, do not fill „remote network...“, specify another IPSec related values.

System Network Routes Services Utilities Diagnostic

[ Configure interface [ tunipsec0 ] ]

Enable interface

Local interface to establish tunnel: \* eth0

Address of remote physical interface: address or hostname to establish tunnel: \* 192.168.25.36

Local network to route through tunnel: gre

Remote network to route through tunnel:

Alias/DNS name for local node:

Timeout (in seconds) to check dead peer:

Enable retrying (non-zero value in seconds):

Enable reauth (non-zero value in seconds):

Remote side does not have static address:

Enable aggressive mode:

Enable compression?:

IKE version for tunnel: ikev2

Cipher suite for phase1:

Cipher suite for phase2:

Authentication type: Pre-shared passphrase

Pre-shared key (passphrase) for IPSEC or GRE tunnel: test

Server certificate: Not installed

Server key: Not installed

Local certificate ID:

Remote certificate ID:

OK Cancel

OK Cancel

Tick to restart services() after saving:  Save

\* Filling of highlighted fields is mandatory!

Press „Save“ button and reboot device.

Repeat the same configuration steps on remote side.

## Troubleshooting

Troubleshooting in this case can be divided to two parts:

- troubleshooting of tunnel and
- troubleshhoting of IPSec.

Troubleshooting of GRE tunnel contains verification for correct local addresses and netmask, zone, firewall rules for zone, outgoing interface, remote side address, routing rules and similar tunnel key.

With correct settings, packets from local network which routes through GRE tunnel, must reach existing adress on remote side (ping with correct local and destination addresses must be going through).

Please follow our IPSec troubleshooting guide with remarks below for IPSec troubleshooting.

## Troubleshooting remarks

Correctly configured GRE tunnels will pass traffic according to routes without IPsec tunnel too.

Thus, we recommend to setup GRE tunnel for first time, reboot device and debug packet exchange.

When you have got traffic exchange, you may shift to configure IPsec protection.

IPsec tunnel will be established „on demand“. States „INSTALLED“ and „ESTABLISHED“ will be reached only when traffic is going through tunnel.

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