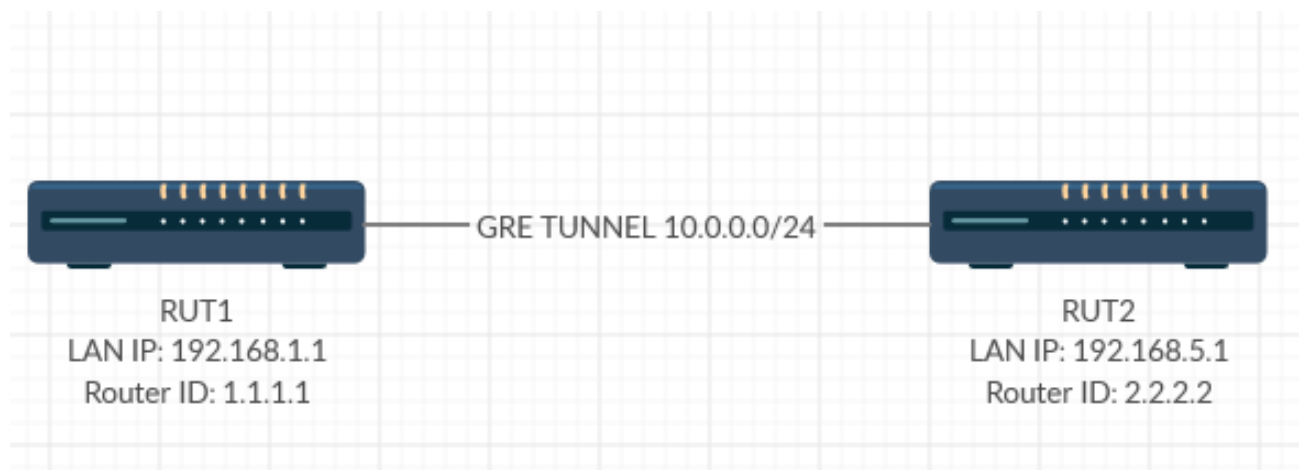


# OSPF through GRE TUNNEL between two RUT9XX

This guide provides a configuration example with details on how to create OSPF dynamic routes through GRE tunnel.



## Prerequisites:

- Two RUT9XX routers.
- Both routers need public IP addresses.
- At least one end device (PC, Laptop, Tablet, Smartphone) to configure the routers.

## RUT1 configuration

Connect to routers **WebUI** and go to **Services > VPN>GRE Tunnel**. Enter a name for your GRE Tunnel instance and click **ADD**.

OpenVPN	IPsec	<b>GRE Tunnel</b>	PPTP	L2TP	SSTP	Stunnel	DMVPN
---------	-------	-------------------	------	------	------	---------	-------

### GRE

GRE Configuration

Tunnel name	Enabled	
Testas	<input checked="" type="checkbox"/>	<div>Edit</div> <div>Delete</div>
<input type="text"/>		<div>Add</div>

Back to Overview

Save

Your instance will appear in **GRE CONFIGURATION** field, click **edit**.

OpenVPN	IPsec	<b>GRE Tunnel</b>	PPTP	L2TP	SSTP	Stunnel	DMVPN
---------	-------	-------------------	------	------	------	---------	-------

### GRE

GRE Configuration

Tunnel name	Enabled	
Testas	<input checked="" type="checkbox"/>	<div>Edit</div> <div>Delete</div>
<input type="text"/>		<div>Add</div>

Back to Overview

Save

OpenVPN IPsec **GRE Tunnel** PPTP L2TP SSTP Stunnel DMVPN

## GRE Tunnel Instance: Testas

Main Settings

1

2

3

4

5

6

Tunnel Settings

5

Routing Settings

There are no routes created yet

Add

Back to Overview

Save

1. **Enable** instance.
2. Select **Tunnel source** (your WAN interface).
3. Enter **Remote endpoint IP address** (RUT2 WAN IP).
4. Enable **Keep alive** and add interval (anything from 1 to 255).
5. Write **Local GRE interface IP address and netmask** (create GRE tunnel IP address or just use the same as in the example).
6. Leave everything else as default and click **Save**.

Go to **Network > Routing > Dynamic Routes > OSPF protocol**.

Static Routes
Dynamic Routes

BGP Protocol
RIP Protocol
OSPF Protocol
NHRP

### OSPF Protocol Configuration

General Settings

Enable ☒

Enable vty ☒

Import config
Browse...
No file selected

Router ID 1.1.1.1

OSPF interface

Enable	Interface	
<input checked="" type="checkbox"/>	wwan0	Edit Delete

Interface br-lan
Add New

OSPF networks

Enable	Network	Area	
<input checked="" type="checkbox"/>	192.168.1.0/24	0	Delete
<input checked="" type="checkbox"/>	10.0.0.0/24	0	Delete

Add

Save

1. **Enable** instance.
2. **Enable vty** instance.
3. Add **Router ID** (any arbitrary 32bit number).
4. Create new **OSPF interface** (select your WAN source and press **Add New**).
5. Add **OSPF network 1** (write your LAN network, netmask, area number and enable it).
6. Add **OSPF network 2** (write your GRE tunnel IP, netmask, area number and enable it).
7. Click **Save**.

Now press edit **OSPF interface** which you have created.

Static Routes
Dynamic Routes

BGP Protocol
RIP Protocol
OSPF Protocol
NHRP

### OSPF Protocol Configuration

General Settings

Enable ☒

Enable vty ☒

Import config  No file selected.

Router ID

OSPF interface

Enable	Interface		
<input checked="" type="checkbox"/>	wwan0	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Interface

OSPF networks

Enable	Network	Area	
<input checked="" type="checkbox"/>	<input type="text" value="192.168.1.0/24"/>	<input type="text" value="0"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	<input type="text" value="10.0.0.0/24"/>	<input type="text" value="0"/>	<input type="button" value="Delete"/>

Static Routes
Dynamic Routes

BGP Protocol
RIP Protocol
OSPF Protocol
NHRP

### OSPF Interface Configuration

General Settings

Enable ☒

Cost 5

Hello Interval 10

Router Dead Interval 40

Retransmit 5

Priority 1

Type ▼

Authentication None ▼

Back to Overview
Save

1. **Enable** instance.
2. Add **Cost** (this is used for SPF calculation, you can write your own number or just the number in the example).
3. Leave everything else as default and click **Save**.

## RUT2 Configuration

Connect to routers WebUI and go to **Services > VPN > GRE Tunnel**. Enter name of your instance, click **add** and when new instance appears, click **Edit**.

OpenVPN	IPsec	GRE Tunnel	PPTP	L2TP	SSTP	Stunnel	DMVPN
---------	-------	------------	------	------	------	---------	-------

### GRE

GRE Configuration

Tunnel name	Enabled
Testas	<input checked="" type="checkbox"/>
	<div><div>Edit</div><div>Delete</div></div>

Add

Back to Overview

Save

OpenVPN IPsec **GRE Tunnel** PPTP L2TP SSTP Stunnel DMVPN

## GRE Tunnel Instance: Testas

### Main Settings

Enabled ☒ 1

Tunnel source Mobile (PPP) 2

Remote endpoint IP address 3

MTU 1476

TTL 255

Outbound key

Inbound key

Don't fragment ☒ 4

Keep alive ☒ 5

Keep alive interval 10

### Tunnel Settings

Local GRE interface IP address 10.0.0.2 5

Local GRE interface netmask 255.255.255.0

### Routing Settings

There are no routes created yet

Add

Back to Overview

Save 6

1. **Enable** instance.
2. Select **Tunnel source** (your WAN interface).
3. Enter **Remote endpoint IP address** (RUT1 WAN IP).
4. Enable **Keep alive** and add interval (anything from 1 to 255).
5. Write **Local GRE interface IP address and netmask** (create GRE tunnel IP address or just use the same as in the example).
6. Leave everything else as default and click **Save**.



Static Routes
Dynamic Routes

BGP Protocol
RIP Protocol
OSPF Protocol
NHRP

### OSPF Protocol Configuration

General Settings

Enable ☒

Enable vty ☒

Import config
Browse...
No file selected

Router ID 2.2.2.2

OSPF interface

Enable	Interface	
<input checked="" type="checkbox"/>	wwan0	Edit Delete

Interface br-lan
Add New

OSPF networks

Enable	Network	Area	
<input checked="" type="checkbox"/>	192.168.5.0/24	0	Delete
<input checked="" type="checkbox"/>	10.0.0.0/24	0	Delete

Add

Save

1. **Enable** instance.
2. **Enable vty** instance.
3. Add **Router ID** (any arbitrary 32bit number).
4. Create new **OSPF interface** (select you WAN source and press **Add New**).
5. Add **OSPF network 1** (write your LAN network, netmask, area number and enable it).
6. Add **OSPF network 2** (write your GRE tunnel IP, netmask, area number and enable it).
7. Click **Save**.

Now press edit **OSPF interface** which you have created.

Static Routes

Dynamic Routes

BGP Protocol

RIP Protocol

OSPF Protocol

NHRP

### OSPF Protocol Configuration

General Settings

Enable

☒

Enable vty

☒

Import config

Browse...

No file selected.

Router ID

OSPF interface

Enable	Interface		
<input checked="" type="checkbox"/>	wwan0	<div>Edit</div>	<div>Delete</div>

Interface

br-lan

▼

Add New

OSPF networks

Enable	Network	Area	
<input checked="" type="checkbox"/>	<input type="text" value="192.168.5.0/24"/>	<input type="text" value="0"/>	<div>Delete</div>
<input checked="" type="checkbox"/>	<input type="text" value="10.0.0.0/24"/>	<input type="text" value="0"/>	<div>Delete</div>

Add

Save

Static Routes
Dynamic Routes

BGP Protocol
RIP Protocol
OSPF Protocol
NHRP

### OSPF Interface Configuration

General Settings

1

2

3

Enable
☒

Cost
5

Hello Interval
10

Router Dead Interval
40

Retransmit
5

Priority
1

Type

▼

Authentication
None

▼

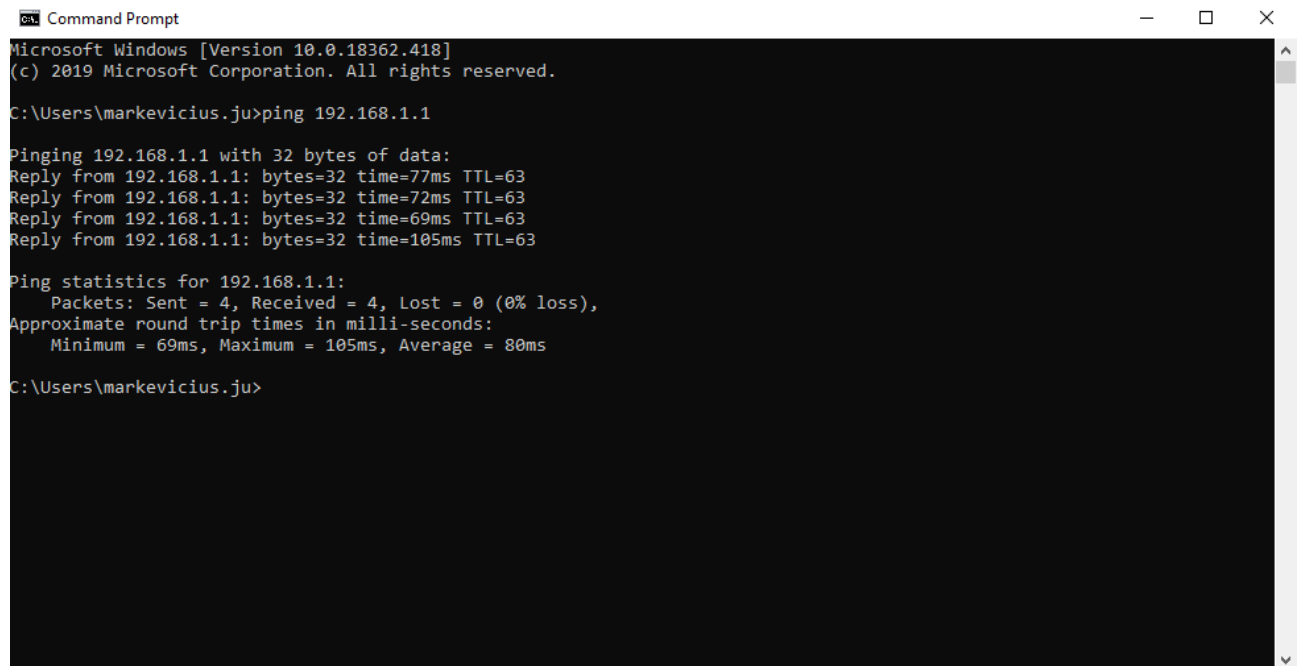
Back to Overview
Save

1. **Enable** instance.
2. Add **Cost** (this is used for SPF calculation, you can write your own number or just the number in the example).
3. Leave everything else as default and click **Save**.

## Testing configuration

Connect RUT1 or RUT2 router to your PC via LAN cable and try to ping RUT2 or RUT1 by using CMD.

Use this command: **ping (ip)**



```

Microsoft Windows [Version 10.0.18362.418]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\markevicius.ju>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=77ms TTL=63
Reply from 192.168.1.1: bytes=32 time=72ms TTL=63
Reply from 192.168.1.1: bytes=32 time=69ms TTL=63
Reply from 192.168.1.1: bytes=32 time=105ms TTL=63

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 69ms, Maximum = 105ms, Average = 80ms

C:\Users\markevicius.ju>
  
```

Also you should see new routes in the routing table, which you can find **Status>Routes**.

RUT1:

Active IP Routes			
Network	Target	IP gateway	Metric
Testas	10.0.0.0/24	0.0.0.0	0
Testas	192.168.5.0/24	10.0.0.2	20

RUT2:

Active IP Routes			
Network	Target	IP gateway	Metric
Testas	10.0.0.0/24	0.0.0.0	0
Testas	192.168.1.0/24	10.0.0.1	20