

# OSPF Route Failover New

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## Summary

The information in this page is updated in accordance with the [RUTXXX\\_R\\_00.07.08.1](#) firmware version.

In this example we will setup redundant links using dynamic routing where 2 routers will be connected using multiple links directly - Main WAN and two Backup WANs in order to make sure LAN devices on each end would be available in case Main links fail.

## Configuration Overview & Prerequisites

For this example, we will need two routers with 3 separate WAN interfaces. It can either be Wired links or Private Mobile networks. In this example we will use 3 wired links for the simplicity of testing. However, there can be other variations, such as 1 Wired link and 2 Mobile links.

Each WAN on both ends has to be in the same private network. In other words:

- RUT1 WAN1 interface must be able to reach RUT2 WAN1 interface;
- RUT1 WAN2 interface must be able to reach RUT2 WAN2 interface;
- RUT1 WAN3 interface must be able to reach RUT2 WAN3 interface.

## Network Topology



### Router 1 Configuration

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### LAN as WAN Configuration

#### VLAN Configurion

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Open router's WebUI and navigate to **Network** → **VLAN** → **Port Based** configuration:

#### Port based VLAN

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Add new VLANs by clicking  and Make following changes to 3 new VLANS:

1. VLAN ID: **192** | lan1: **Untagged** | Lan2: **Off** | Lan3: **Off**
2. VLAN ID: **10** | lan1: **Off** | Lan2: **Untagged** | Lan3: **Off**
3. VLAN ID: **172** | lan1: **Off** | Lan2: **Off** | Lan3: **Untagged**



## WAN Interface Configuration

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Open router's **WebUI** and navigate to **Network** → **WAN** → **WAN interfaces** configuration:

### Creating And Configuring WAN 1 Interface

---

Add new WAN by clicking  and Make following changes to new interface configuration:

#### General Settings

---

Make the following changes:

1. Enter Name: **Wan1Main**
2. Select Protocol: **Static**
3. Enter IPv4 address: **192.168.110.1**
4. Enter IPv4 net mask: **255.255.255.252**



#### Physical Settings

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Make the following changes:

1. Select interface: **eth0.192**



### Creating And Configuring WAN 2 Interface

---

Add new WAN by clicking  and Make following changes to new interface configuration:

#### General Settings

---

Make the following changes:

1. Enter Name: **Wan2Backup**
2. Select Protocol: **Static**
3. Enter IPv4 address: **10.0.110.1**
4. Enter IPv4 net mask: **255.255.255.252**



## Physical Settings

---

Make the following changes:

1. Select interface: **eth0.10**



## Creating And Configuring WAN 3 Interface

---

Add new WAN by clicking  and Make following changes to new interface configuration:

### General Settings

---

Make the following changes:

1. Enter Name: **Wan3Backup**
2. Select Protocol: **Static**
3. Enter IPv4 address: **172.16.110.1**
4. Enter IPv4 net mask: **255.255.255.252**



### Physical Settings

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Make the following changes:

1. Select interface: **eth0.172**



## OSPF Configuration

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Open router's **WebUI** and navigate to **Network → Routing → Dynamic routes → OSPF** configuration:

### OSPF - Global Settings

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Make following changes:

1. Enable Service: **on**
2. Enable Vty: **on**

3. Enter Router ID: **192.168.110.1**
4. Select External Route: **Default**
5. Select Redistribution Options: **Connected**



### OSPF interfaces

Add new OSPF interface for each WAN interface created by clicking

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Make following changes to new interfaces:

1. Select Interface: **eth0.192 (WanMAIN)** | Enable Interface: **on**
2. Select Interface: **eth0.10 (Wan2Backup)** | Enable Interface: **on**
3. Select Interface: **eth0.172 (Wan3Backup)** | Enable Interface: **on**



### OSPF area

Add new OSPF area for each WAN interface by entering the area name and clicking

---

Make following changes to the areas:

1. Name: **First** | Area: **1005** | Stub: **off** | **on**
2. Name: **Second** | Area: **1004** | Stub: **off** | **on**
3. Name: **Third** | Area: **1003** | Stub: **off** | **on**



### OSPF networks

Add new OSPF network for each WAN interface by entering the area name and clicking

---

Make following changes to the networks:

1. Name: **WAN1** | Network: **192.168.110.0/30** | Area: **First** | **on**
2. Name: **WAN2** | Network: **10.0.110.0/30** | Area: **Second** | **on**
3. Name: **WAN3** | Network: **172.16.110.0/30** | Area: **Third** | **on**



## Router 2 Configuration

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### LAN as WAN Configuration

## VLAN Configuration

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Open router's WebUI and navigate to **Network** → **VLAN** → **Port Based** configuration:

### Port based VLAN

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Add new VLANs by clicking  and Make following changes to 3 new VLANs:

1. VLAN ID: **192** | lan1: **Untagged** | Lan2: **Off** | Lan3: **Off**
2. VLAN ID: **10** | lan1: **Off** | Lan2: **Untagged** | Lan3: **Off**
3. VLAN ID: **172** | lan1: **Off** | Lan2: **Off** | Lan3: **Untagged**



## WAN Interface Configuration

---

Open router's **WebUI** and navigate to **Network** → **WAN** → **WAN interfaces** configuration:

### Creating And Configuring WAN 1 Interface

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Add new WAN by clicking  and Make following changes to new interface configuration:

#### General Settings

---

Make the following changes:

1. Enter Name: **Wan1Main**
2. Select Protocol: **Static**
3. Enter IPv4 address: **192.168.110.2**
4. Enter IPv4 net mask: **255.255.255.252**



#### Physical Settings

---

Make the following changes:

1. Select interface: **eth0.192**



## Creating And Configuring WAN 2 Interface

---

Add new WAN by clicking  and Make following changes to new interface configuration:

### General Settings

---

Make the following changes:

1. Enter Name: **Wan2Backup**
2. Select Protocol: **Static**
3. Enter IPv4 address: **10.0.110.2**
4. Enter IPv4 net mask: **255.255.255.252**



### Physical Settings

---

Make the following changes:

1. Select interface: **eth0.10**



## Creating And Configuring WAN 3 Interface

---

Add new WAN by clicking  and Make following changes to new interface configuration:

### General Settings

---

Make the following changes:

1. Enter Name: **Wan3Backup**
2. Select Protocol: **Static**
3. Enter IPv4 address: **172.16.110.2**
4. Enter IPv4 net mask: **255.255.255.252**



### Physical Settings

---

Make the following changes:

1. Select interface: **eth0.172**



## OSPF Configuration

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Open router's **WebUI** and navigate to **Network** → **Routing** → **Dynamic routes** → **OSPF** configuration:

### OSPF - Global Settings

---

Make following changes:

1. Enable Service: **on**
2. Enable Vty: **on**
3. Enter Router ID: **192.168.110.2**
4. Select External Route: **Default**
5. Select Redistribution Options: **Connected**



### OSPF interfaces

Add new OSPF interface for each WAN interface created by clicking 

---

Make following changes to new interfaces:

1. Select Interface: **eth0.192 (WanMAIN)** | Enable Interface: **on**
2. Select Interface: **eth0.10 (Wan2Backup)** | Enable Interface: **on**
3. Select Interface: **eth0.172 (Wan3Backup)** | Enable Interface: **on**



### OSPF area

Add new OSPF area for each WAN interface by entering the area name and clicking 

---

Make following changes to the areas:

1. Name: **First** | Area: **1005** | Stub: **off** | **on**
2. Name: **Second** | Area: **1004** | Stub: **off** | **on**
3. Name: **Third** | Area: **1003** | Stub: **off** | **on**



## OSPF networks

Add new OSPF network for each WAN interface by entering the area name and clicking 

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Make following changes to the networks:

1. Name: **WAN1** | Network: **192.168.110.0/30** | Area: **First** | **on**
2. Name: **WAN2** | Network: **10.0.110.0/30** | Area: **Second** | **on**
3. Name: **WAN3** | Network: **172.16.110.0/30** | Area: **Third** | **on**



## Testing Configuration

If everything was set up correctly, we should see routes to the second network through the main link in the routing table:



Let us simulate Main link failure by disconnecting the cable and see how that affects routes to the second network:



As we can see, dynamic routing automatically switched to the next available route.

## Testing communication between LAN devices

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Let us connect a LAN device to each of the routers and see if they can communicate with each other, for this example, we will connect laptop to the first router and another laptop to the second router:

- Laptop 1 IP: **192.168.1.220**
- Laptop 2 IP: **192.168.2.5**

Let us run a ping command from the first laptop to the second and disconnect the Main link cable midway through:



We can see that after a short delay, laptop on the second router continued communication, which means dynamic routes are being set correctly.