

# Redistribution to the OSPF protocol



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## Route redistribution from ODR to OSPF

Let's look at an example of routing information redistribution from the ODR protocol to the OSPF protocol, using the network scheme described in the [main document](#) (Figure 1).

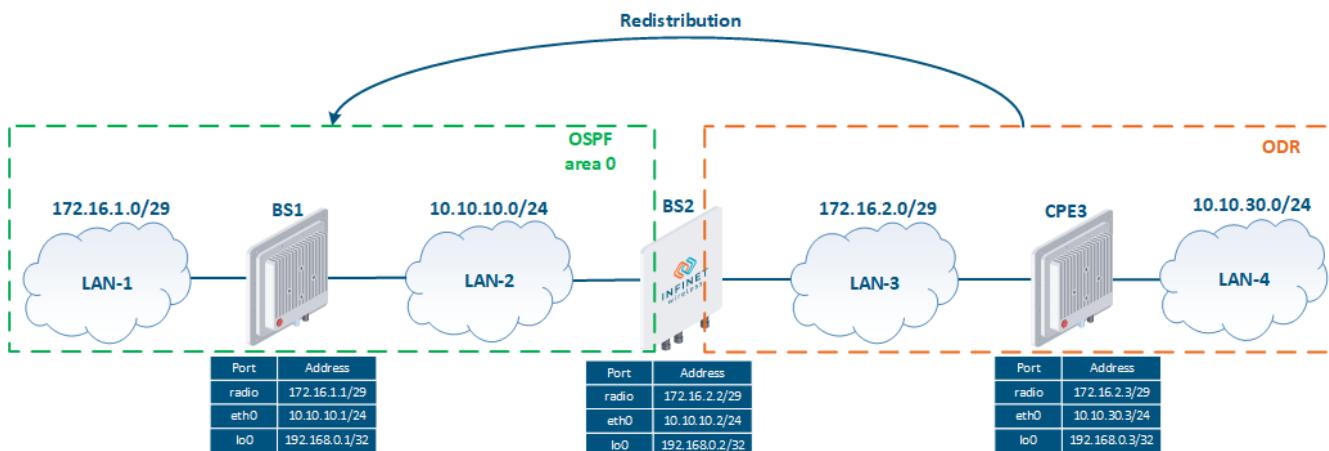


Figure 1 - Route redistribution from ODR to OSPF

## Pre-configuration

<b>Description</b>	Perform a preliminary configuration of the devices, consisting of the following steps:
	<ul style="list-style-type: none"> <li>Configure the device IDs.</li> <li>Remove the svi1 interface.</li> <li>Assign IP addresses to the network interfaces, according to the scheme.</li> <li>Disable switching.</li> <li>Establish the wireless links.</li> </ul>

## Title

<b>BS1</b>	<pre>Set the device ID system prompt BS_1  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.10.1/24 ifc rf5.0 172.16.1.1/29 ifc lo0 192.168.0.1/32  Disable switching switch stop  Establish the radio link rf rf5.0 band 20 rf rf5.0 freq 5100  mint rf5.0 -name "BS_1" mint rf5.0 -type master</pre>
<b>BS2</b>	<pre>Set the device ID system prompt BS_2  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.10.2/24 ifc rf5.0 172.16.2.2/29 ifc lo0 192.168.0.2/32  Disable switching switch stop  Establish the radio link rf rf5.0 band 20 rf rf5.0 freq 5000  mint rf5.0 -name "BS_2" mint rf5.0 -type master</pre>
<b>CPE3</b>	<pre>Set the device ID system prompt CPE_3  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.30.3/24 ifc rf5.0 172.16.2.3/29 ifc lo0 192.168.0.3/32  Disable switching switch stop  Establish the radio link mint rf5.0 -name "CPE_3" mint rf5.0 -type slave mint rf5.0 prof 1 -band 20 -freq 5000 -type slave</pre>

# Title

## ODR configuration

Description	Configure the ODR protocol:  <b>Step 1:</b> launch the ODR protocol on the radio interfaces of the BS2 and CPE3 routers. BS2 will be configured as hub, CPE3 - as spoke.  <b>Step 2:</b> advertise the directly connected networks on the CPE3 router.
BS1	No changes are required.
BS2	Start ODR: mint rf5.0 -odr hub
CPE3	Start ODR: mint rf5.0 -odr spoke  Advertise the directly connected networks: mint rf5.0 -odr spoke connected

## OSPF configuration

Description	Configure the OSPF protocol:  <b>Step 1:</b> start the OSPF daemon on the BS1 and BS2 routers.  <b>Step 2:</b> set the router IDs. The identifiers will be equal to the IP addresses assigned to the loopback interface.  <b>Step 3:</b> define the interfaces where OSPF should be started.  <b>Step 4:</b> redistribute the routes from the ODR protocol. Such routes have a kernel type.  <b>Step 5:</b> redistribute the directly connected networks on the BS2 router. During route redistribution from ODR, only the routes received from the devices having a spoke role will be imported. Thus, to transmit routing information about the networks 172.16.2.0/29 and 192.168.0.2/32, it is necessary to advertise the directly connected networks on BS2.
BS1	Start OSPF: ospf start  Set the router-id: ospf config router router-id 192.168.0.1  Start OSPF on the interfaces: ospf config router network 172.16.1.0/29 area 0.0.0.0 network 192.168.0.1/32 area 0.0.0.0 network 10.10.10.0/24 area 0.0.0.0

# Title

<b>BS2</b>	<pre> Start OSPF: ospf start  Set the router-id: ospf config router router-id 192.168.0.2  Start OSPF on the interfaces: ospf config router network 10.10.10.0/24 area 0.0.0.0  Route redistribution from ODR: ospf config router redistribute kernel  Advertise the directly connected networks: ospf config router redistribute connected </pre>
<b>CPE3</b>	No changes are required.

## Command output analysis

### Routing table

<b>Description</b>	<p>Analyze the routing table on each device.</p> <p>The routing tables of the wireless devices contain entries about each subnet shown in the scheme. This means that the route redistribution from ODR to OSPF was performed successfully.</p> <p>CPE3's routing table consists of the routes to the directly connected networks and a default route. This confirms the statement about the unidirectional redistribution.</p>
<b>BS1</b>	<pre> BS_1#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs      Use   Interface 10.10.10.0/24    link#2          UC        0        0     eth0 10.10.30.0/24    10.10.10.2      UG3       0        0     eth0 127.0.0.1        127.0.0.1      UH        3        19    lo0 172.16.1.0/29    link#3          UC        0        0     rf5.0 172.16.2.0/29    10.10.10.2      UG3       0        0     eth0 192.168.0.1      192.168.0.1      UH        0        0    lo0 192.168.0.2      10.10.10.2      UGH3      0        0     eth0 192.168.0.3      10.10.10.2      UGH3      0        0     eth0 224.0.0.0/8       127.0.0.1      UGS       1      335    lo0 </pre>

# Title

BS2	<pre>BS_2#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs   Use   Interface 10.10.10.0/24    link#2          UC        0       0     eth0 10.10.30.0/24    00:04:35:13:5e:4e  ULO       0       0     rf5.0 127.0.0.1         127.0.0.1       UH        3       27    lo0 172.16.1.0/29    10.10.10.1     UG3       0       0     eth0 172.16.2.0/29    link#3          UC        0       0     rf5.0 192.168.0.1       10.10.10.1     UGH3      0       0     eth0 192.168.0.2       192.168.0.2     UH        0       0     lo0 192.168.0.3       00:04:35:13:5e:4e  UHLO      0       0     rf5.0 224.0.0.0/8        127.0.0.1      UGS       1      167    lo0</pre>
CPE3	<pre>CPE_3#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs   Use   Interface mintGateway      BS_2            UC        0       0     rf5.0 10.10.30.0/24    link#2          UC        0       0     eth0 127.0.0.1         127.0.0.1       UH        1       0     lo0 172.16.2.0/29    link#3          UC        0       0     rf5.0 192.168.0.3       192.168.0.3     UH        0       0     lo0 224.0.0.0/8        127.0.0.1      UGS       0       0     lo0</pre>

## Route redistribution from RIP to OSPF

Let's look at an example of routing information redistribution from RIP to OSPF using the scheme described in the [main document](#) (Figure 2).

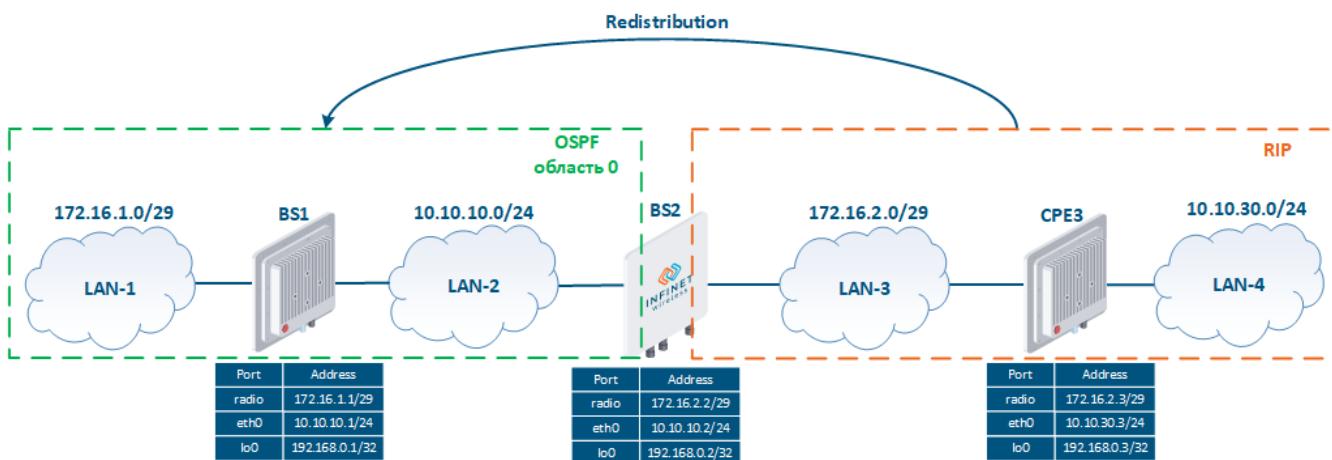


Figure 2 - Route redistribution from RIP to OSPF

## Pre-configuration

Description	Perform a preliminary configuration of the devices, consisting of the following steps: <ul style="list-style-type: none"><li>Configure the device ID.</li><li>Remove the sv1 interface.</li><li>Assign IP addresses to the network interfaces, according to the scheme.</li><li>Disable switching.</li><li>Establish the wireless links.</li></ul>
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# Title

<b>BS1</b>	<pre>Set the device ID system prompt BS_1  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.10.1/24 ifc rf5.0 172.16.1.1/29 ifc lo0 192.168.0.1/32  Disable switching switch stop  Establish the radio link rf rf5.0 band 20 rf rf5.0 freq 5100  mint rf5.0 -name "BS_1" mint rf5.0 -type master</pre>
<b>BS2</b>	<pre>Set the device ID system prompt BS_2  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.10.2/24 ifc rf5.0 172.16.2.2/29 ifc lo0 192.168.0.2/32  Disable switching switch stop  Establish the radio link rf rf5.0 band 20 rf rf5.0 freq 5000  mint rf5.0 -name "BS_2" mint rf5.0 -type master</pre>

## Title

<b>CPE3</b>	<pre>Set the device ID system prompt CPE_3  Remove the svil interface ifc svil destroy  Assign IP addresses ifc eth0 10.10.30.3/24 ifc rf5.0 172.16.2.3/29 ifc lo0 192.168.0.3/32  Disable switching switch stop  Establish the radio link mint rf5.0 -name "CPE_3" mint rf5.0 -type slave mint rf5.0 prof 1 -band 20 -freq 5000 -type slave</pre>
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### RIP configuration

<b>Description</b>	Configure RIP on the BS2 and CPE3 devices.  <b>Step 1:</b> Start RIP on the routers.  <b>Step 2:</b> define the interfaces through which routing information should exchanged.
<b>BS1</b>	No changes are required.
<b>BS2</b>	<pre>Start RIP: arip start  Start RIP on the interfaces: arip config router network 172.16.2.0/29</pre>
<b>CPE3</b>	<pre>Start RIP: arip start  Start RIP on the interfaces: arip config router network 10.10.30.0/24 network 172.16.2.0/29 network 192.168.0.3/32</pre>

### OSPF protocol configuration

# Title

	<p><b>Description</b> Configure the OSPF protocol:</p> <p><b>Step 1:</b> start the OSPF daemon on the BS1 and BS2 routers.</p> <p><b>Step 2:</b> set the routers IDs. The identifiers will be equal to the IP addresses assigned to the loopback interface.</p> <p><b>Step 3:</b> define the interfaces where OSPF should be started.</p> <p><b>Step 4:</b> redistribute the routes from the RIP protocol. Such routes have a "rip" type.</p> <p><b>Step 5:</b> advertise the directly connected networks on the BS2 router to announce the route towards the loopback interface at BS1.</p>
<b>BS1</b>	<pre>Start OSPF: ospf start  Set the router-id: ospf config router router-id 192.168.0.1  Start OSPF on the interfaces: ospf config router network 172.16.1.0/29 area 0.0.0.0 network 192.168.0.1/32 area 0.0.0.0 network 10.10.10.0/24 area 0.0.0.0</pre>
<b>BS2</b>	<pre>Start OSPF: ospf start  Set the router-id: ospf config router router-id 192.168.0.2  Start OSPF on the interfaces: ospf config router network 10.10.10.0/24 area 0.0.0.0  Route redistribution from RIP: ospf config router redistribute rip  Advertise the directly connected networks: ospf config router redistribute connected</pre>
<b>CPE3</b>	No changes are required.

## Command output analysis

Routing table

# Title

	<p><b>Description</b></p> <p>Analyze the routing table on each device.</p> <p>The routing tables of BS1 and BS2 are synchronized and contain entries about each subnet shown in the scheme. This means that the route redistribution from RIP to OSPF was performed successfully.</p> <p>CPE3's routing table consists of routes to the directly connected networks and a default route. This confirms the statement about the unidirectional redistribution.</p>
<b>BS1</b>	<pre>BS_1#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs     Use   Interface 10.10.10.0/24    link#2          UC        0        0     eth0 10.10.30.0/24    10.10.10.2    UG3       0        0     eth0 127.0.0.1         127.0.0.1      UH        3        35    lo0 172.16.1.0/29    link#3          UC        0        0     rf5.0 172.16.2.0/29    10.10.10.2    UG3       0        0     eth0 192.168.0.1       192.168.0.1    UH        0        0     lo0 192.168.0.2       10.10.10.2    UGH3      0        0     eth0 192.168.0.3       10.10.10.2    UGH3      0        0     eth0 224.0.0.0/8        127.0.0.1     UGS       1      862    lo</pre>
<b>BS2</b>	<pre>BS_2#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs     Use   Interface 10.10.10.0/24    link#2          UC        0        0     eth0 10.10.30.0/24    172.16.2.3    UG3       0        0     rf5.0 127.0.0.1         127.0.0.1      UH        5        60    lo0 172.16.1.0/29    10.10.10.1    UG3       0        0     eth0 172.16.2.0/29    link#3          UC        0        0     rf5.0 192.168.0.1       10.10.10.1    UGH3      0        0     eth0 192.168.0.2       192.168.0.2    UH        0        0     lo0 192.168.0.3       172.16.2.3    UGH3      0        0     rf5.0 224.0.0.0/8        127.0.0.1     UGS       1      462    lo</pre>
<b>CPE3</b>	<pre>AS_3#1&gt; netstat -r Routing tables Destination      Gateway          Flags    Refs     Use   Interface 10.10.30.0/24    link#2          UC        0        0     eth0 127.0.0.1         127.0.0.1      UH        3        60    lo0 172.16.2.0/29    link#3          UC        0        0     rf5.0 192.168.0.3       192.168.0.3    UH        0        0     lo0 224.0.0.0/8        127.0.0.1     UGS       0      91    lo</pre>

## Additional materials

### Webinars

1. [Typical scenario of routing setting using Infinet Wireless devices. Part I.](#)
2. [Typical scenario of routing setting using Infinet Wireless devices. Part II](#)

### Other

1. [Ifconfig command \(interfaces configuration\)](#)
2. [mint command \(MINT version\)](#)
3. [mint command \(TDMA version\)](#)
4. [ARDA \(Aqua Router Daemon\)](#)
5. [OSPF command](#)
6. [arp command](#)