

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).

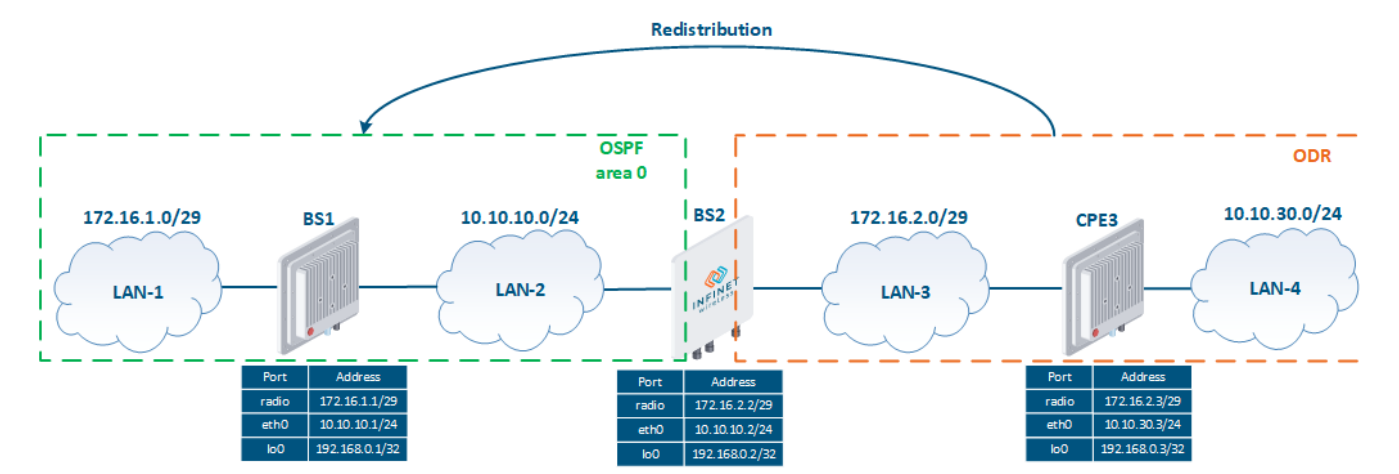


Figure 1 - Route redistribution from ODR to OSPF

Pre-configuration

Description	<div>Perform a preliminary configuration of the devices, consisting of the following steps:<ul style="list-style-type: none">• Configure the device IDs.• Remove the svi1 interface.• Assign IP addresses to the network interfaces, according to the scheme.• Disable switching.• Establish the wireless links.</div>
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BS1	<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>
BS2	<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>
CPE3	<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>

ODR configuration

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

OSPF configuration

Description	<p>Configure the OSPF protocol:</p> <p>Step 1: start the OSPF daemon on the BS1 and BS2 routers.</p> <p>Step 2: set the router IDs. The identifiers will be equal to the IP addresses assigned to the loopback interface.</p> <p>Step 3: define the interfaces where OSPF should be started.</p> <p>Step 4: redistribute the routes from the ODR protocol. Such routes have a kernel type.</p> <p>Step 5: 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.</p>
BS1	<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>

BS2	<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>
CPE3	No changes are required.

Command output analysis

Routing table

Description	<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>
BS1	<pre> BS_1#1> 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>

BS2	<pre>BS_2#1> 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> netstat -r Routing tables Destination Gateway Flags Refs Use Interface mintGateway BS_2 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).

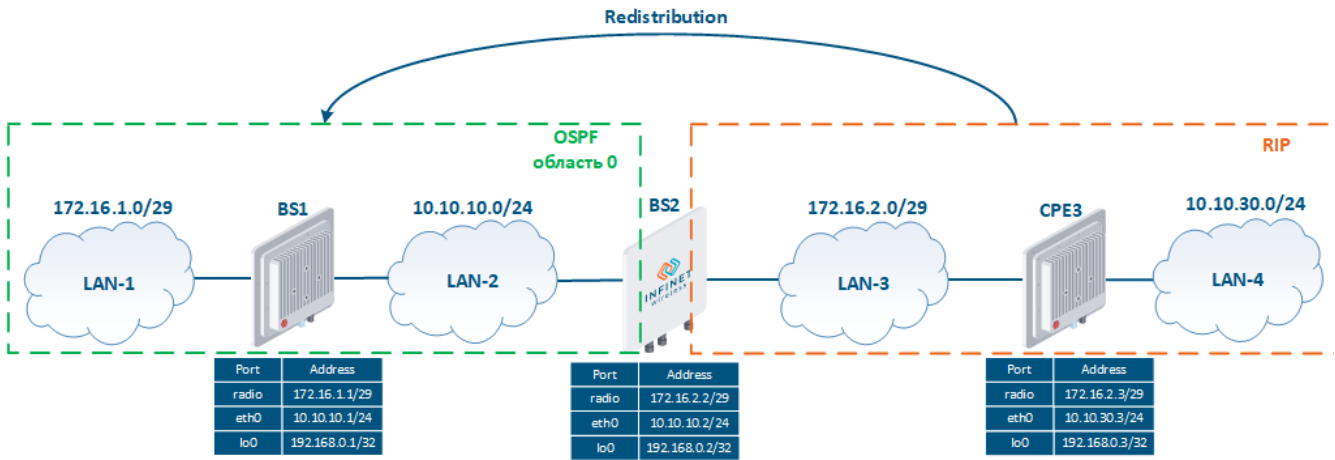


Figure 2 - Route redistribution from RIP to OSPF

Pre-configuration

Description	<p>Perform a preliminary configuration of the devices, consisting of the following steps:</p> <ul style="list-style-type: none">• Configure the device ID.• Remove the svi1 interface.• Assign IP addresses to the network interfaces, according to the scheme.• Disable switching.• Establish the wireless links.
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BS1	<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>
BS2	<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>

CPE3	<pre> Set the device ID system prompt CPE_3 Remove the svtl interface ifc svtl 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

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

Description	<p>Configure the OSPF protocol:</p> <p>Step 1: start the OSPF daemon on the BS1 and BS2 routers.</p> <p>Step 2: set the routers IDs. The identifiers will be equal to the IP addresses assigned to the loopback interface.</p> <p>Step 3: define the interfaces where OSPF should be started.</p> <p>Step 4: redistribute the routes from the RIP protocol. Such routes have a "rip" type.</p> <p>Step 5: advertise the directly connected networks on the BS2 router to announce the route towards the loopback interface at BS1.</p>
BS1	<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>
BS2	<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>
CPE3	No changes are required.

Command output analysis

Routing table

Description	<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>
BS1	<pre>BS_1#1> 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>
BS2	<pre>BS_2#1> 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>
CPE3	<pre>AS_3#1> 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. [arip command](#)