

how to connect OSPF stub area and pass interface route

Before the scenario hands-on, we assume that the readers already along with following abilities:

1. Basic knowledge of OSPF.
2. Basic concept of IP routing.

Scenario summary:

DFL-210/800/1600/2500 f/w:v2.26 or later



Object:

Enable OSPF routing protocol in the scenario above and SW1 can learn FW1's LAN2 interface route from area 0.0.0.0.

FW1

Step1. Set the IP address for LAN and WAN respectively

```
DFL-1600:/> routes -all -verbose
Flags Network      Iface      Gateway      Local IP      Metric
-----
192.168.3.1        core       (Iface IP)   0
192.168.2.1        core       (Iface IP)   0
192.168.1.1        core       (Iface IP)   0
172.17.100.254    core       (Iface IP)   0
192.168.120.254   core       (Iface IP)   0
192.168.150.254   core       (Iface IP)   0
127.0.0.1         core       (shared IP)  0
192.168.150.0/24  wan1      100
192.168.120.0/24  wan2      100
172.17.100.0/24   dmz       100
192.168.1.0/24    lan1      100
192.168.2.0/24    lan2      100
192.168.3.0/24    lan3      100
224.0.0.0/4       core      (Iface IP)   0
```

Step2. Create an OSPF process as the screenshot.

The screenshot shows the configuration page for an OSPF process named 'ospf-100'. The 'General' tab is selected. The configuration includes:

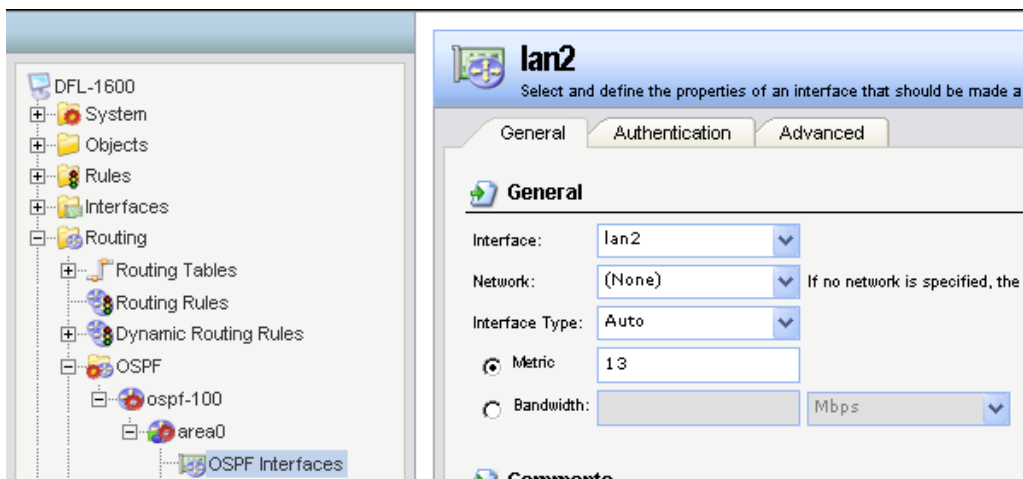
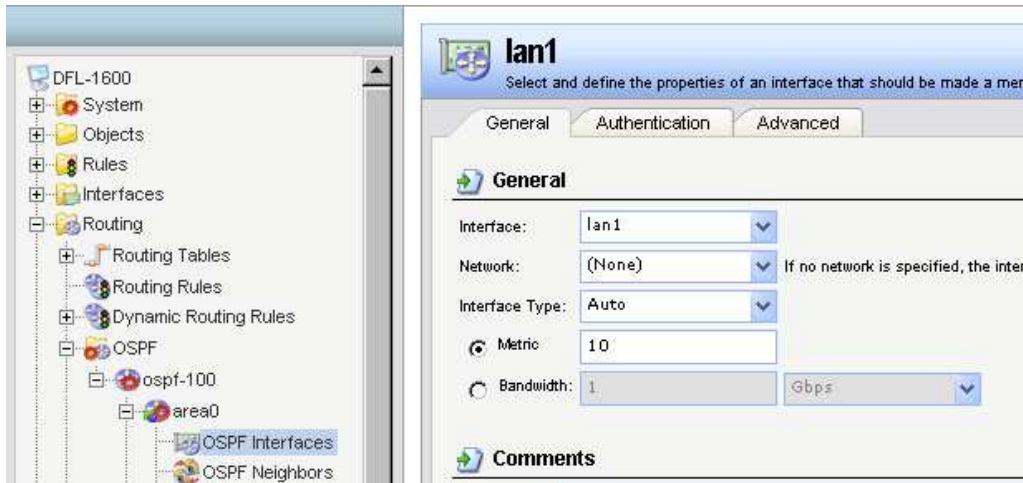
- Name: ospf-100
- Router ID: lan1_ip
- Private Router ID: (None)
- Reference Bandwidth: 1 Gbps
- RFC 1583 Compatibility Mode

Step3. Create an OSPF area, 0.0.0.0.

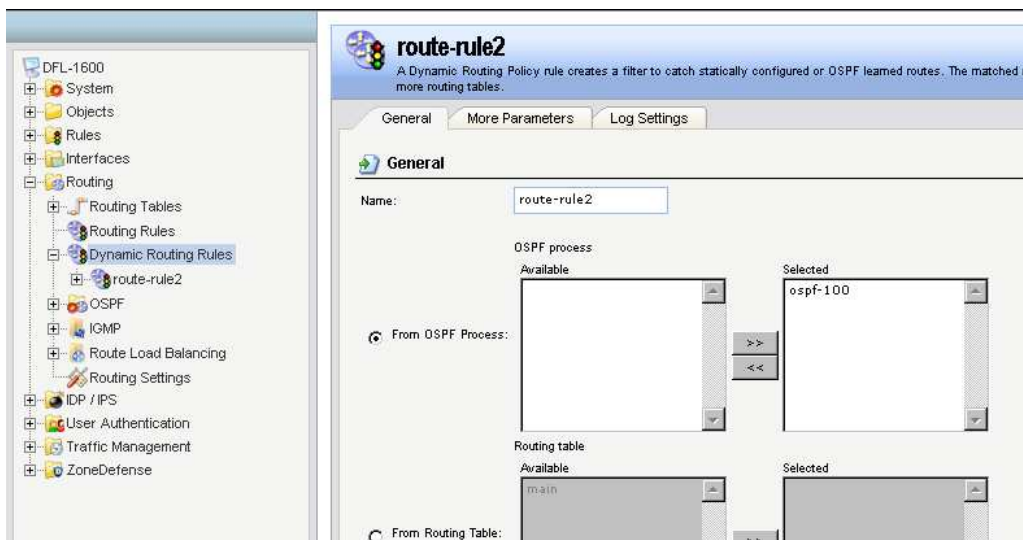
The screenshot shows the configuration page for an OSPF area named 'area0'. The 'General' tab is selected. The configuration includes:

- Name: area0
- Area ID: 0.0.0.0
- Area is Stub Area
- Become a default router for stub area ("Summarize")
- Metric: (empty field)
- Import Filters:
 - External: (None)
 - Interarea: (None)

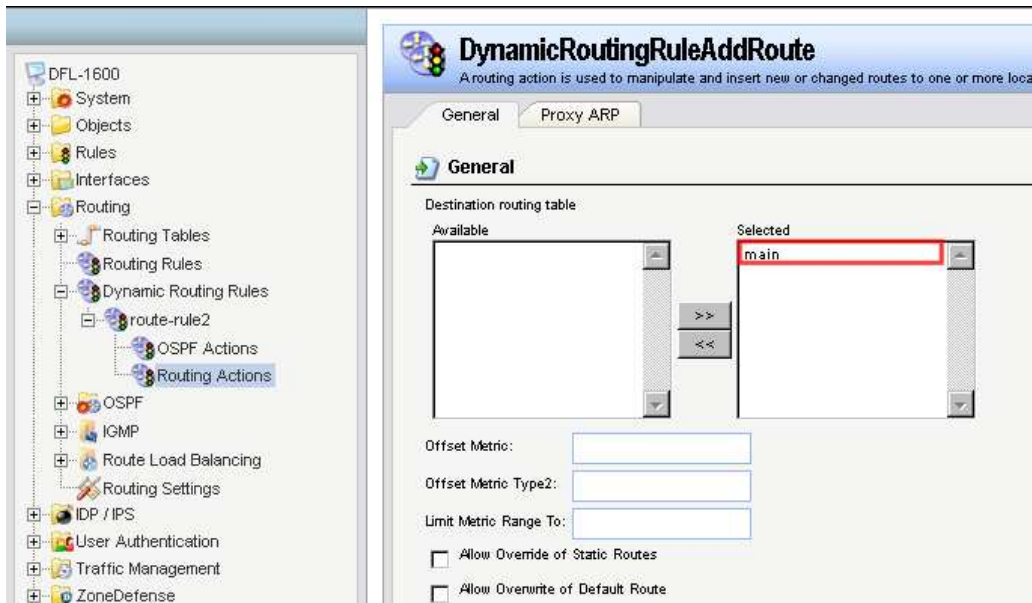
Step4. Add interface lan1 and lan2 in area 0.0.0.0.



Step8. Create a Dynamic Routing Rules to allow the routes are learnt by OSPF to inject in main routing table.



Step9. In the rule created above, add a Routing Actions as the screenshot. Select “main” routing table to be the Destination Routing table.



Step10. Add two IPrules for the PC1 and PC2

IP Rules
IP rules are used to filter IP-based network traffic. In addition, they provide means for address translation as well as Server Load Balancing.

[Add](#)

#	Name	Action	Src If	Src Net	Dest If	Dest Net	Service
1	lan1-to-lan2	Allow	lan1	10.0.0.0/24	lan2	192.168.2.0/24	all_services
2	lan2-to-lan1	Allow	lan2	192.168.2.0/24	lan1	10.0.0.0/24	all_services

FW2

Step1. Set the IP address for LAN and WAN respectively

```
DFL-1600:/> routes main -all -verbose
-----
Flags Network          Iface      Gateway      Local IP      Metric
-----
      10.0.4.1          core       (Iface IP)   0
      10.0.0.1          core       (Iface IP)   0
     192.168.1.2       core       (Iface IP)   0
      10.0.3.1          core       (Iface IP)   0
      10.0.2.1          core       (Iface IP)   0
      10.0.1.1          core       (Iface IP)   0
      127.0.0.1         core       (Shared IP)  0
     10.0.1.0/24       wan1       100
     10.0.2.0/24       wan2       100
     10.0.3.0/24       dmz        100
     192.168.1.0/24   lan1       100
     10.0.0.0/24       lan2       100
     10.0.4.0/24       lan3       100
     224.0.0.0/4       core       (Iface IP)   0
```

Step2. Create an OSPF process as the screenshot.

The screenshot shows the configuration page for an OSPF process named 'ospf-100'. The 'General' tab is selected. The configuration includes:

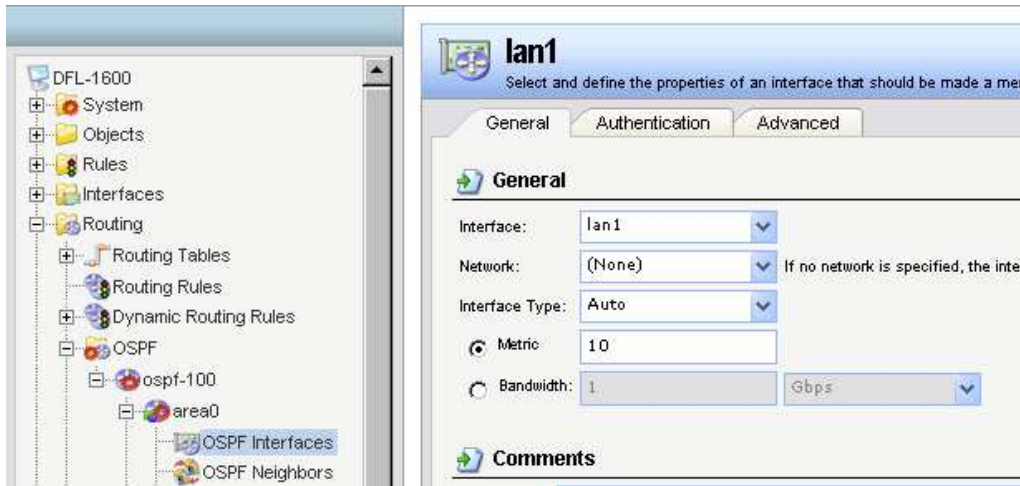
- Name: ospf-100
- Router ID: lan1_ip
- Private Router ID: (None)
- Reference Bandwidth: 1 Gbps
- RFC 1583 Compatibility Mode

Step3. Create an OSPF area, 0.0.0.0.

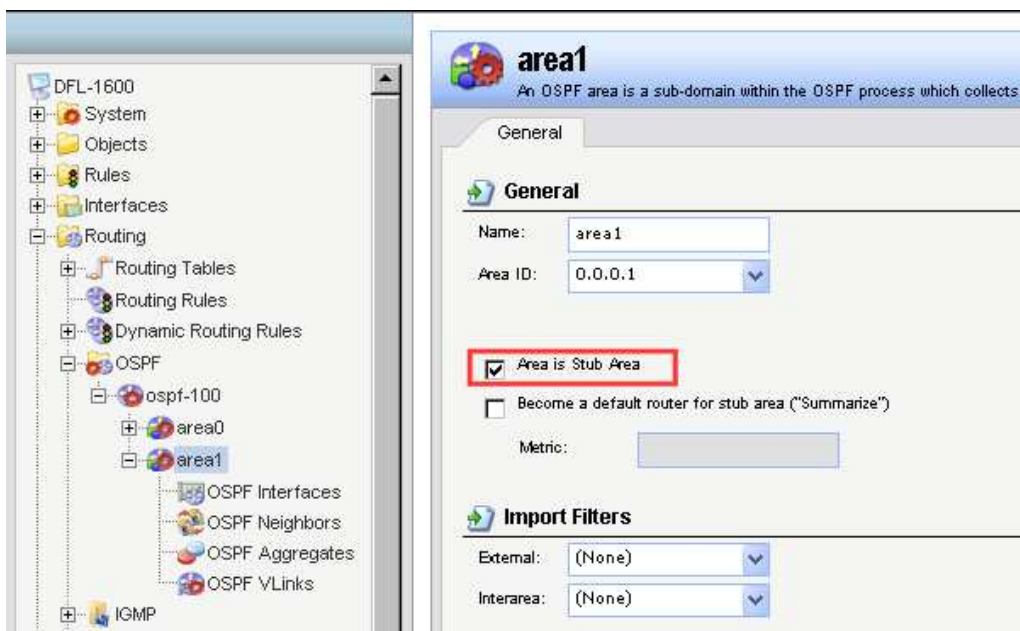
The screenshot shows the configuration page for an OSPF area named 'area0'. The 'General' tab is selected. The configuration includes:

- Name: area0
- Area ID: 0.0.0.0
- Area is Stub Area
- Become a default router for stub area ("Summarize")
- Metric: (empty field)
- Import Filters:
 - External: (None)
 - Interarea: (None)

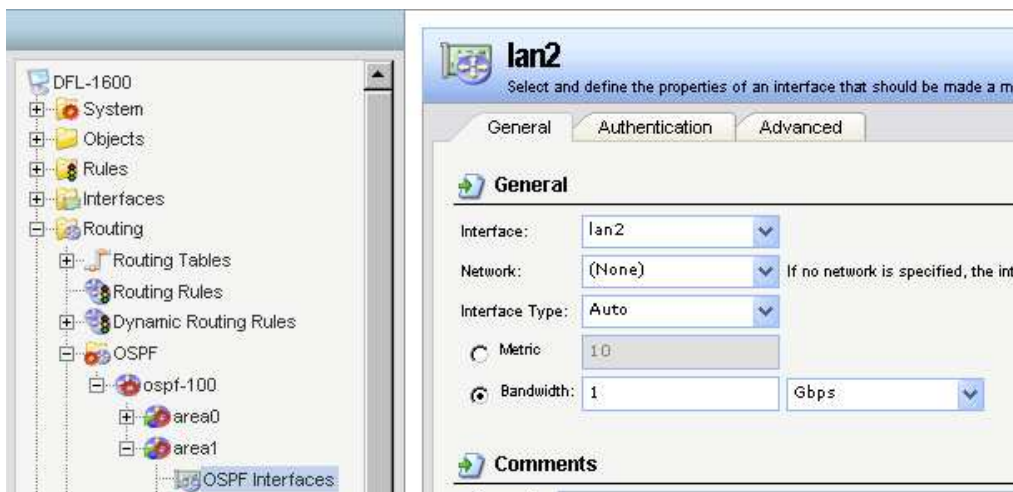
Step4. Add interface lan1 in area 0.0.0.0.



Step5. Create another OSPF area, 0.0.0.1 for stub area. Note if enable the option, “Become a default router for stub area (“Summarize”)”, this router only send default route to neighbor in the stub area instead of each routing entries which is learnt by OSPF process.

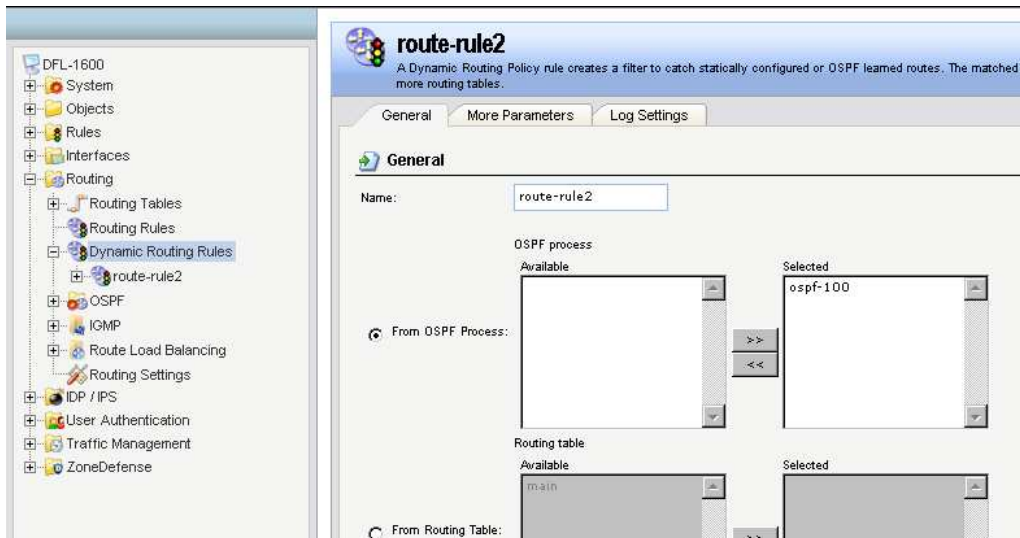


Step7. Add interface lan2 in area 0.0.0.1.

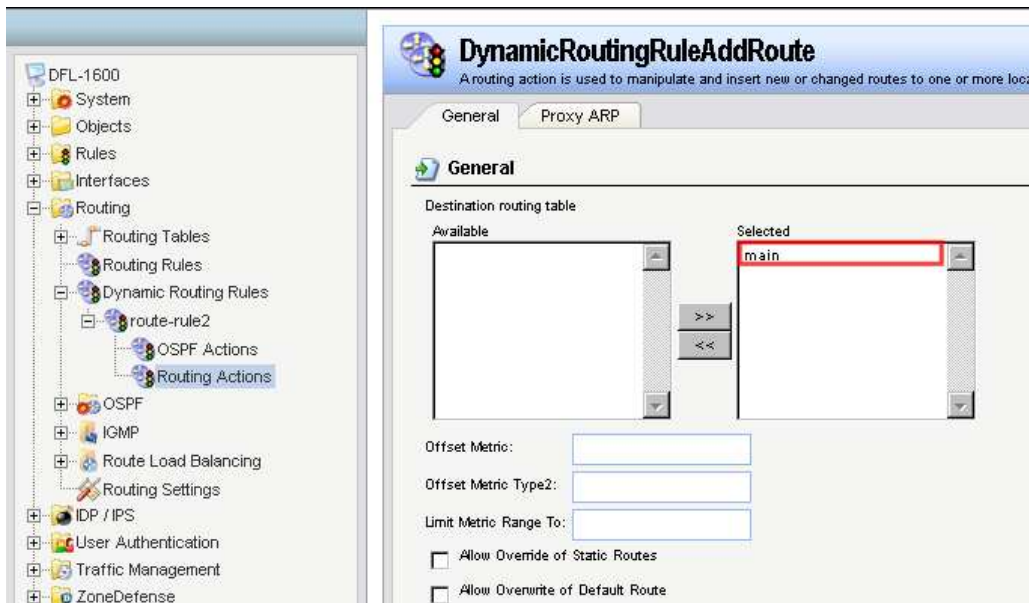


Step8. Create a Dynamic Routing Rules to allow the routes are learnt by OSPF to inject in main routing

table.



Step9. In the rule created above, add a Routing Actions as the screenshot. Select “main” routing table to be the Destination Routing table.



Step10. Add two IPrules for the PC1 and PC2

IP Rules
IP rules are used to filter IP-based network traffic. In addition, they provide means for address translation as well as Server Load Balancing.

#	Name	Action	Src If	Src Net	Dest If	Dest Net	Service
1	lan2-to-lan1	Allow	lan2	10.0.0.0/24	lan1	192.168.2.0/24	all_services
2	lan1-to-lan2	Allow	lan1	192.168.2.0/24	lan2	10.0.0.0/24	all_services
3	ping_fw	Allow	lan1	lan1net	core	lan1_ip	ping-inbound
4	lan1_to_wan1						

SW1:

config vlan default del 9-16

create vlan v10 tag 10

config vlan v10 add untagged 9-16 advertisement disable

config ipif System ipaddress 10.0.0.2/24 vlan default

create ipif v10 10.0.5.1/24 v10 state enable

create ospf area 0.0.0.1 type stub stub_summary enabled metric 1

config ospf ipif System area 0.0.0.1 priority 1 hello_interval 10 dead_interval 40

config ospf ipif System authentication none metric 1 state enable

config ospf ipif v10 area 0.0.0.1 priority 1 hello_interval 10 dead_interval 40

config ospf ipif v10 authentication none metric 1 state enable

config ospf router_id 10.0.0.2

enable ospf

Show the routing table on the SW1

```
DGS-3627G:admin#show iproute
Command: show iproute

Routing Table

IP Address/Netmask  Gateway          Interface        Cost    Protocol
-----
10.0.0.0/24         0.0.0.0          System           1       Local
10.0.5.0/24         0.0.0.0          v10              1       Local
192.168.1.0/24      10.0.0.1         System           11      OSPF
192.168.2.0/24      10.0.0.1         System           24      OSPF

Total Entries : 4
```

Show the routing table on the FW1

```
DFL-1600:/> routes -all -verbose
Flags Network      Iface      Gateway          Local IP        Metric
-----
192.168.3.1        core      (Iface IP)      0
192.168.2.1        core      (Iface IP)      0
192.168.1.1        core      (Iface IP)      0
172.17.100.254     core      (Iface IP)      0
192.168.120.254    core      (Iface IP)      0
192.168.150.254    core      (Iface IP)      0
127.0.0.1          core      (Shared IP)     0
o 10.0.0.0/24       lan1      192.168.1.2     2
o 10.0.5.0/24       lan1      192.168.1.2     3
originator: OSPF process "ospf-100"
192.168.150.0/24    wan1      100
192.168.120.0/24    wan2      100
172.17.100.0/24     dmz       100
192.168.1.0/24     lan1      100
192.168.2.0/24     lan2      100
192.168.3.0/24     lan3      100
224.0.0.0/4        core      (Iface IP)      0
DFL-1600:/>
```