LDP OSPF Autoconfig

« Basic LDP (/workbook/view/service-provider-v4/task/basic-ldp-Mjg0Ng%3D%3D) | LDP IS-IS Autoconfig (/workbook/view/service-provider-v4/task/ldp-is-is-autoconfig-Mjg0OA%3D%3D) »

Last updated: April 23, 2016

Note:

Initial Configuration & Diagrams: Load the initial configuration files for the section named **OSPFv2**, which can be found in CCIE SPv4 Topology Diagrams & Initial Configurations (http://labs.ine.com/workbook/view/service-provider-v4/task/ccie-spv4-topology-diagrams-initial-configs). Refer to the **Base IPv4 Diagram** in order to complete this task.

Task

- Using MPLS LDP Autoconfig in OSPF, configure MPLS Label Distribution with LDP on all links connecting R2, R3, R4, R5, R6, and XR1.
- Statically set their MPLS LDP Router-IDs to be their Loopback0 interfaces.

Configuration **Click to *collapse***

```
R2:
router ospf 1
 mpls ldp autoconfig
!
mpls ldp router-id Loopback0


R3:
router ospf 1
 mpls ldp autoconfig
!
mpls ldp router-id Loopback0


R4:
router ospf 1
 mpls ldp autoconfig
!
mpls ldp router-id Loopback0


R5:
router ospf 1
 mpls ldp autoconfig
!
mpls ldp router-id Loopback0


R6:
router ospf 1
 mpls ldp autoconfig
!
mpls ldp router-id Loopback0


XR1:
router ospf 1
 mpls ldp auto-config
!
mpls ldp
 router-id 19.19.19.19
!
```

Verification

Similar to the previous example, LDP is enabled on the interfaces running IGP of the routers. The only difference from this config and the previous one, other than the obvious shortcut in the syntax of enabling LDP once globally, is that LDP is running on the edge interfaces of R2 connecting to R1 and of XR1 connecting to XR2.

```
R2#show mpls interfaces
Interface              IP            Tunnel   BGP Static Operational
GigabitEthernet1.23    Yes (ldp)     No       No  No     Yes
GigabitEthernet1.24    Yes (ldp)     No       No  No     Yes
GigabitEthernet1.12    Yes (ldp)     No       No  No     Yes


RP/0/0/CPU0:XR1#show mpls interfaces
Thu Apr 30 03:19:15.532 UTC
Interface                  LDP      Tunnel   Static   Enabled
-------------------------- -------- -------- -------- --------
GigabitEthernet0/0/0/0.519 Yes      No       No       Yes
GigabitEthernet0/0/0/0.619 Yes      No       No       Yes
GigabitEthernet0/0/0/0.1920 Yes     No       No       Yes
```

If desired these interfaces could have LDP selectively *disabled* as follows, not with the **no mpls ip** command, but with the **no mpls ldp igp autoconfig** in regular IOS.

```
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int Gig1.12
R2(config-if)#no mpls ip
% LDP remains enabled on interface Gi1.12 by autoconfig.
 Autoconfig can be removed from Gi1.12 with 'no mpls ldp igp autoconfig.'
R2(config-if)#no mpls ldp igp autoconfig
R2(config-if)#end R2#
%SYS-5-CONFIG_I: Configured from console by console
R2#show mpls interfaces
Interface              IP            Tunnel   BGP Static Operational
GigabitEthernet1.23    Yes (ldp)     No       No  No     Yes
GigabitEthernet1.24    Yes (ldp)    No       No  No     Yes
```

In IOS XR autoconfig can be selectively disabled under the **mpls ldp** subconfiguration mode, as seen below.

```
RP/0/0/CPU0:XR1#conf t
Thu Apr 30 03:22:30.809 UTC
RP/0/0/CPU0:XR1(config)#mpls ldp
RP/0/0/CPU0:XR1(config-ldp)#interface g0/0/0/0.1920
RP/0/0/CPU0:XR1(config-ldp-if)#igp auto-config disable
RP/0/0/CPU0:XR1(config-ldp-if)#show config
Thu Apr 30 03:22:57.167 UTC
Building configuration...
!! IOS XR Configuration 5.2.0
mpls ldp
 interface GigabitEthernet0/0/0/0.1920
  address-family ipv4
   igp auto-config disable
  !
 !
!
end

RP/0/0/CPU0:XR1(config-ldp-if)#commit
Thu Apr 30 03:23:16.776 UTC
RP/0/0/CPU0:XR1(config-ldp-if)#end

RP/0/0/CPU0:XR1#show mpls interfaces
Thu Apr 30 03:23:22.645 UTC
Interface                  LDP      Tunnel   Static   Enabled
-------------------------- -------- -------- -------- --------
GigabitEthernet0/0/0/0.519 Yes      No       No       Yes
GigabitEthernet0/0/0/0.619 Yes      No       No       Yes


R6#show mpls interfaces detail
Interface GigabitEthernet1.36:
        Type Unknown
        IP labeling enabled (ldp) :
          IGP config
        LSP Tunnel labeling not enabled
        IP FRR labeling not enabled
        BGP labeling not enabled
        MPLS operational
        MTU = 1500
Interface GigabitEthernet1.46:
        Type Unknown
        IP labeling enabled (ldp) :
          IGP config
        LSP Tunnel labeling not enabled
        IP FRR labeling not enabled
        BGP labeling not enabled
        MPLS operational
        MTU = 1500
Interface GigabitEthernet1.56:
        Type Unknown
        IP labeling enabled (ldp) :
          IGP config
```

```
        LSP Tunnel labeling not enabled
        IP FRR labeling not enabled
        BGP labeling not enabled
        MPLS operational
        MTU = 1500
Interface GigabitEthernet1.619:
        Type Unknown
        IP labeling enabled (ldp) :
          IGP config
        LSP Tunnel labeling not enabled
        IP FRR labeling not enabled
        BGP labeling not enabled
        MPLS operational
        MTU = 1500
```

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