

How to use SNMP to get Advertising Router ID in OSPF

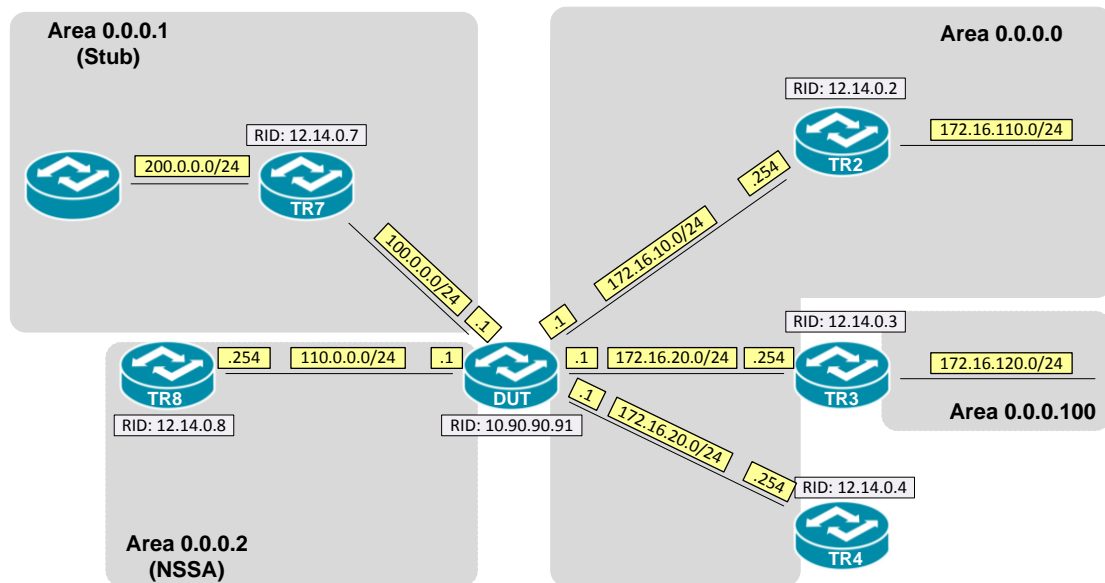
Link-State database

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Introduction

Simple Network Management Protocol (SNMP) is a widely used protocol for monitoring the health and welfare of network equipment.

Topology



OID

ospfLsdbRouterId

Name: ospfLsdbRouterId
Type: OBJECT-TYPE
OID: 1.3.6.1.2.1.14.4.1.4
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfLsdbTable(4).ospfLsdbEntry(1).ospfLsdbRouterId(4)
Module: OSPF-MIB

Parent: ospfLsdbEntry
Prev sibling: ospfLsdbLsid
Next sibling: ospfLsdbSequence

Numerical syntax: IP Address
Base syntax: IpAddress
Composed syntax: RouterID
Status: current
Max access: read-only

Reference: [OSPF Version 2, Appendix C.1 Global parameters](#)

Description: [The 32 bit number that uniquely identifies the originating router in the Autonomous System.](#)

Step-by-Step

I. SNMP Command

```
snmpwalk -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.4.1.4.<Area ID>
```

II. Result

```
C:\>snmpwalk -v 2c -c private -m ALL 192.168.1.91 1.3.6.1.2.1.14.4.1.4.0.0.0
OSPF-MIB::ospfLsdbRouterId.0.0.0.routerLink.10.90.90.91.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.routerLink.12.14.0.2.12.14.0.2 = IpAddress: 12.14.0.2
OSPF-MIB::ospfLsdbRouterId.0.0.0.routerLink.12.14.0.3.12.14.0.3 = IpAddress: 12.14.0.3
OSPF-MIB::ospfLsdbRouterId.0.0.0.routerLink.12.14.0.4.12.14.0.4 = IpAddress: 12.14.0.4
OSPF-MIB::ospfLsdbRouterId.0.0.0.networkLink.172.16.10.1.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.networkLink.172.16.20.1.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.networkLink.172.16.30.1.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.summaryLink.100.0.0.0.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.summaryLink.110.0.0.0.10.90.90.91 = IpAddress: 10.90.90.91
OSPF-MIB::ospfLsdbRouterId.0.0.0.summaryLink.172.16.120.0.12.14.0.3 = IpAddress: 12.14.0.3
OSPF-MIB::ospfLsdbRouterId.0.0.0.summaryLink.200.0.0.0.10.90.90.91 = IpAddress: 10.90.90.91
```

For example, Type-2 Network LSA is advertised by DR which its Router ID is 10.90.90.91 (DUT in the topology)

- OSPF Link-State database of Backbone area

```
DGS-3627:admin#show ospf lsdb
Command: show ospf lsdb
```

Area ID	LSDB Type	Advertising Router ID	Link State ID	Cost	Sequence Number
0.0.0.0	RTRLINK	10.90.90.91	10.90.90.91/0	*	0x8000002A
0.0.0.0	RTRLINK	12.14.0.2	12.14.0.2/0	*	0x80000024
0.0.0.0	RTRLINK	12.14.0.3	12.14.0.3/0	*	0x80000025
0.0.0.0	RTRLINK	12.14.0.4	12.14.0.4/0	*	0x80000026
0.0.0.0	NETLINK	10.90.90.91	172.16.10.1/24	*	0x80000004
0.0.0.0	NETLINK	10.90.90.91	172.16.20.1/24	*	0x80000004
0.0.0.0	NETLINK	10.90.90.91	172.16.30.1/24	*	0x80000004
0.0.0.0	Summary	10.90.90.91	100.0.0.0/24	1	0x80000004
0.0.0.0	Summary	10.90.90.91	110.0.0.0/24	1	0x80000004
0.0.0.0	Summary	12.14.0.3	172.16.120.0/24	50	0x80000023
0.0.0.0	Summary	10.90.90.91	200.0.0.0/24	251	0x80000005

Reference

- This example is made by DGS-3600 series in firmware R 2.80.B61.
- SNMP Tools is Net-SNMP.