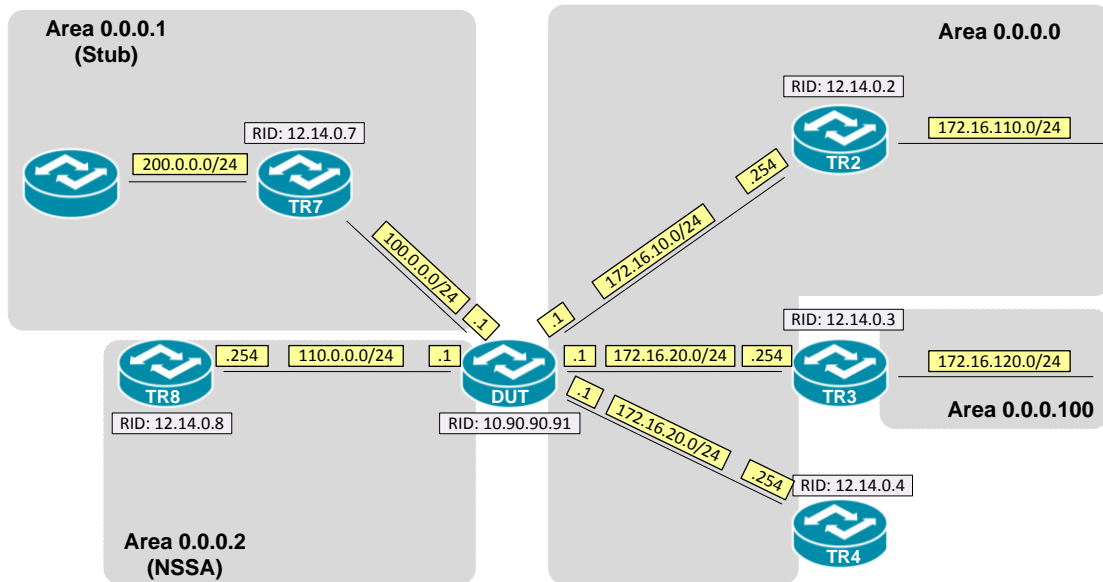# How to use SNMP to get OSPF Link-State Database Type

Created at 2011/05/31

## Introduction

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

## Topology

# OID

## ospfLsdbType

```
Name:              ospfLsdbType
Type:              OBJECT-TYPE
OID:               1.3.6.1.2.1.14.4.1.2
Full path:         iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfLsdbTable(4).ospfLsdbEntry(1).ospfLsdbType(2)
Module:            OSPF-MIB

Parent:            ospfLsdbEntry
Prev sibling:      ospfLsdbAreaId
Next sibling:      ospfLsdbLsid

Numerical syntax:  Integer (32 bit)
Base syntax:       INTEGER
Composed syntax:   INTEGER
Status:            current
Max access:        read-only
Value list:        1: routerLink(1)
                   2: networkLink(2)
                   3: summaryLink(3)
                   4: asSummaryLink(4)
                   5: asExternalLink(5)
                   6: multicastLink(6)
                   7: nssaExternalLink(7)

Reference:         OSPF Version 2, Appendix A.4.1 The  Link  State
                   Advertisement header

Description:       The type  of  the  link  state  advertisement.
                   Each  link state type has a separate advertise-
                   ment format.
```

# Step-by-Step

## I.    SNMP Command

snmpwalk -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.4.1.2<Area ID>

## II.    Result

```
C:\>snmpwalk -v 2c -c private -m ALL 192.168.1.91 1.3.6.1.2.1.14.4.1.2.0.0.0.0
OSPF-MIB::ospfLsdbType.0.0.0.0.routerLink.10.90.90.91.10.90.90.91 = INTEGER: routerLink(1)
OSPF-MIB::ospfLsdbType.0.0.0.0.routerLink.12.14.0.2.12.14.0.2 = INTEGER: routerLink(1)
OSPF-MIB::ospfLsdbType.0.0.0.0.routerLink.12.14.0.3.12.14.0.3 = INTEGER: routerLink(1)
OSPF-MIB::ospfLsdbType.0.0.0.0.routerLink.12.14.0.4.12.14.0.4 = INTEGER: routerLink(1)
OSPF-MIB::ospfLsdbType.0.0.0.0.networkLink.172.16.10.1.10.90.90.91 = INTEGER: networkLink(2)
OSPF-MIB::ospfLsdbType.0.0.0.0.networkLink.172.16.20.1.10.90.90.91 = INTEGER: networkLink(2)
OSPF-MIB::ospfLsdbType.0.0.0.0.networkLink.172.16.30.1.10.90.90.91 = INTEGER: networkLink(2)
OSPF-MIB::ospfLsdbType.0.0.0.0.summaryLink.100.0.0.0.10.90.90.91 = INTEGER: summaryLink(3)
OSPF-MIB::ospfLsdbType.0.0.0.0.summaryLink.110.0.0.0.10.90.90.91 = INTEGER: summaryLink(3)
OSPF-MIB::ospfLsdbType.0.0.0.0.summaryLink.172.16.120.0.12.14.0.3 = INTEGER: summaryLink(3)
OSPF-MIB::ospfLsdbType.0.0.0.0.summaryLink.200.0.0.0.10.90.90.91 = INTEGER: summaryLink(3)
```

- OSPF Link-State database of Backbone area

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

Area          LSDB       Advertising       Link State          Cost      Sequence
ID            Type       Router ID         ID                            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.