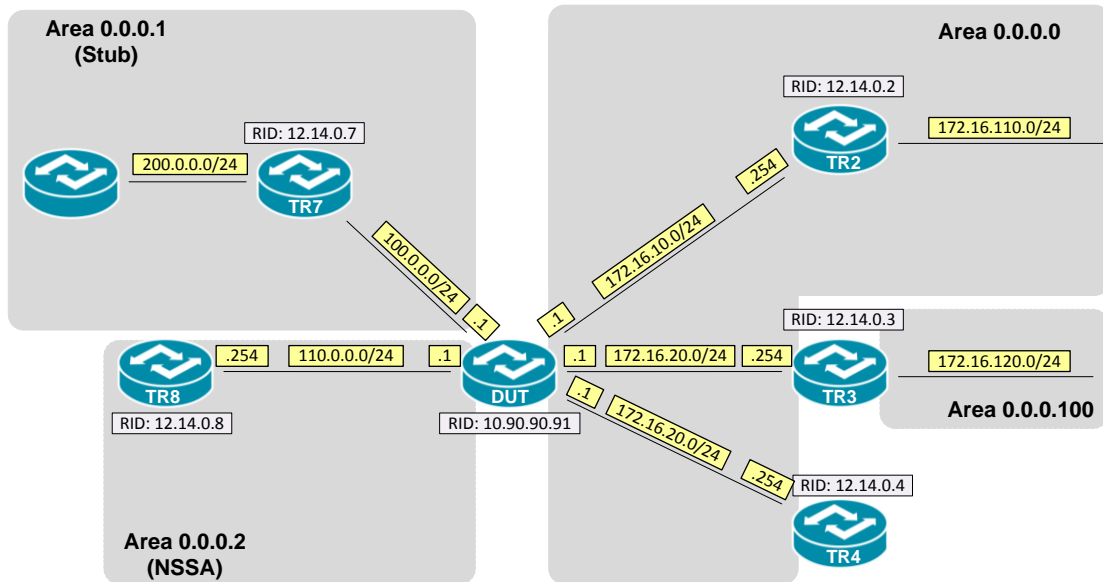# How to use SNMP to get Aging OSPF Link State Database

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

ospfLsdbAge

Name:	ospfLsdbAge
Type:	OBJECT-TYPE
OID:	1.3.6.1.2.1.14.4.1.6
Full path:	iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfLsdbTable(4).ospfLsdbEntry(1).ospfLsdbAge(6)
Module:	OSPF-MIB
Parent:	ospfLsdbEntry
Prev sibling:	ospfLsdbSequence
Next sibling:	ospfLsdbChecksum
Numerical syntax:	Integer (32 bit)
Base syntax:	Integer32
Composed syntax:	Integer32
Status:	current
Max access:	read-only
Reference:	OSPF Version 2, Section 12.1.1 LS age
Description:	This field is the age of the link state advertisement in seconds.

Step-by-Step

I.   SNMP Command

snmpwalk -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.4.1.6.<Area ID>

II.   Result

```
C:\>snmpwalk -v 2c -c private -m ALL 192.168.1.91 1.3.6.1.2.1.14.4.1.6.0.0.0.0
OSPF-MIB::ospfLsdbAge.0.0.0.0.routerLink.10.90.90.91.10.90.90.91 = INTEGER: 897
OSPF-MIB::ospfLsdbAge.0.0.0.0.routerLink.12.14.0.2.12.14.0.2 = INTEGER: 265
OSPF-MIB::ospfLsdbAge.0.0.0.0.routerLink.12.14.0.3.12.14.0.3 = INTEGER: 145
OSPF-MIB::ospfLsdbAge.0.0.0.0.routerLink.12.14.0.4.12.14.0.4 = INTEGER: 145
OSPF-MIB::ospfLsdbAge.0.0.0.0.networkLink.172.16.10.1.10.90.90.91 = INTEGER: 907
OSPF-MIB::ospfLsdbAge.0.0.0.0.networkLink.172.16.20.1.10.90.90.91 = INTEGER: 907
OSPF-MIB::ospfLsdbAge.0.0.0.0.networkLink.172.16.30.1.10.90.90.91 = INTEGER: 908
OSPF-MIB::ospfLsdbAge.0.0.0.0.summaryLink.100.0.0.0.10.90.90.91 = INTEGER: 944
OSPF-MIB::ospfLsdbAge.0.0.0.0.summaryLink.110.0.0.0.10.90.90.91 = INTEGER: 944
OSPF-MIB::ospfLsdbAge.0.0.0.0.summaryLink.172.16.120.0.12.14.0.3 = INTEGER: 146
OSPF-MIB::ospfLsdbAge.0.0.0.0.summaryLink.200.0.0.0.10.90.90.91 = INTEGER: 898
```

The LS age is expressed in seconds. An LSA's LS age field is incremented while it is contained in a router's database. The range is 0 to 3600 (one hour, known as MaxAge).

● OSPF Link-State database of Router LSA in Backbone area

```
DGS-3627:admin#show ospf lsdb area 0.0.0.0 type rtrlink
Command: show ospf lsdb area 0.0.0.0 type rtrlink

Area ID: 0.0.0.0                        LS Type: Router Link
Link State ID: 10.90.90.91/0            Advertising Router: 10.90.90.91
Link State Age: 897
Checksum: 0x489C                        LS Sequence Number: 0x8000002F

Area ID: 0.0.0.0                        LS Type: Router Link
Link State ID: 12.14.0.2/0              Advertising Router: 12.14.0.2
Link State Age: 265
Checksum: 0x6E94                        LS Sequence Number: 0x8000002A

Area ID: 0.0.0.0                        LS Type: Router Link
Link State ID: 12.14.0.3/0              Advertising Router: 12.14.0.3
Link State Age: 145
Checksum: 0x63F                         LS Sequence Number: 0x8000002B

Area ID: 0.0.0.0                        LS Type: Router Link
Link State ID: 12.14.0.4/0              Advertising Router: 12.14.0.4
Link State Age: 145
Checksum: 0xD359                        LS Sequence Number: 0x8000002C

Total Entries: 4
```

Reference

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