

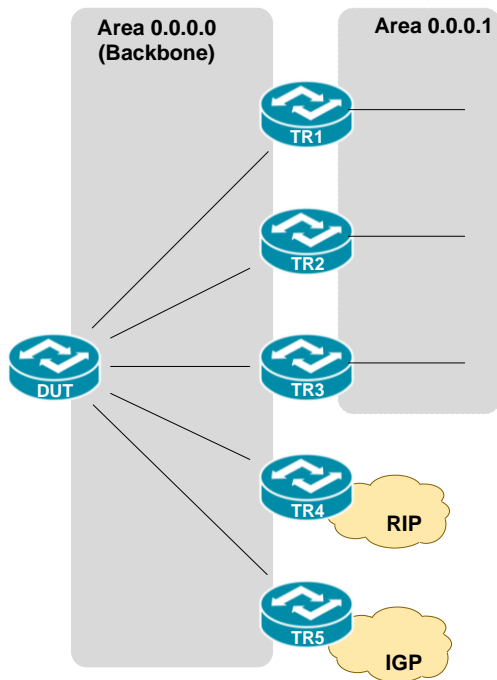
How to use SNMP to get OSPF Area LSA Checksums Sum

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



There are two OSPF areas (0.0.0.0 and 0.0.0.1) in this topology.

OID

ospfAreaLsaCksumSum

Name: ospfAreaLsaCksumSum
Type: OBJECT-TYPE
OID: 1.3.6.1.2.1.14.2.1.8
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfAreaTable(2).ospfAreaEntry(1).ospfAreaLsaCksumSum(8)
Module: OSPF-MIB

Parent: ospfAreaEntry
Prev sibling: ospfAreaLsaCount
Next sibling: ospfAreaSummary

Numerical syntax: Integer (32 bit)
Base syntax: Integer32
Composed syntax: Integer32
Status: current
Max access: read-only
Default values: 1:0 (int*)

Description: The 32-bit unsigned sum of the link-state advertisements' LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.

Step-by-Step

I. SNMP Command

- Blue color is OSPF area ID

```
snmpget -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.2.1.8.0.0.0.0
```

II. Result

```
C:\>snmpget -v 2c -c private -m ALL 10.90.90.91 1.3.6.1.2.1.14.2.1.8.0.0.0.0  
OSPF-MIB::ospfAreaLsaCksumSum.0.0.0.0 = INTEGER: 653596
```

- OSPF area status on device

```
DGS-3627:admin#show ospf area 0.0.0.0  
Command: show ospf area 0.0.0.0  
  
Area ID: 0.0.0.0 Area Type: Normal  
  
SPF algorithm runs for area 0.0.0.0: 19 times  
Number of LSA in this area: 20 Checksum sum: 0x9F91C  
Number of ABR in this area: 3 Number of ASBR in this area: 2  
  
Total Entries : 1
```

The sum 653596 is 0x9f91C in hex format. All OSPF routers in same area should have the same checksum in Link-State database. We could monitor this value to check the database consistency in OSPF domain.

Reference

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