

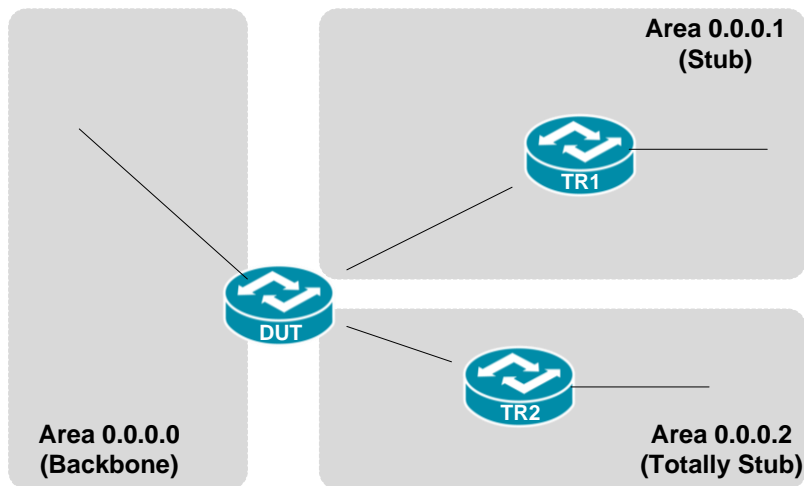
How to use SNMP to get OSPF Area Summary Control

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 three OSPF areas (0.0.0.0, 0.0.0.1 and 0.0.0.2) in this topology.

OID

ospfAreaSummary

Name: ospfAreaSummary
Type: OBJECT-TYPE
OID: 1.3.6.1.2.1.14.2.1.9
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfAreaTable(2).ospfAreaEntry(1).ospfAreaSummary(9)
Module: OSPF-MIB

Parent: ospfAreaEntry
Prev sibling: ospfAreaLsaChecksumSum
Next sibling: ospfAreaStatus

Numerical syntax: Integer (32 bit)
Base syntax: INTEGER
Composed syntax: INTEGER
Status: current
Max access: read-create
Value list: 1: noAreaSummary(1)
2: sendAreaSummary(2)
Default values: 1: noAreaSummary (name)

Description: The variable ospfAreaSummary controls the import of summary LSAs into stub areas. It has no effect on other areas.

If it is noAreaSummary, the router will neither originate nor propagate summary LSAs into the stub area. It will rely entirely on its default route.

If it is sendAreaSummary, the router will both summarize and propagate summary LSAs.

Step-by-Step

I. SNMP Command

- Blue color is OSPF area ID

```
snmpget -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.2.1.9.0.0.0.1
```

II. Result

- Area 0.0.0.1 is Stub Area which Summary LSA inject into this area and use Summary LSA to advertise a single default route.

```
C:\>snmpget -v 2c -c private -m ALL 10.90.90.91 1.3.6.1.2.1.14.2.1.9.0.0.0.1  
OSPF-MIB::ospfAreaSummary.0.0.0.1 = INTEGER: sendAreaSummary(2)
```

- Area 0.0.0.2 is Totally Stub Area which it will block not only type 5 external LSA and all Summary LSA except a single Type 3 default route.

```
C:\>snmpget -v 2c -c private -m ALL 10.90.90.91 1.3.6.1.2.1.14.2.1.9.0.0.0.2
OSPF-MIB::ospfAreaSummary.0.0.0.2 = INTEGER: noAreaSummary(1)
```

iii. OSPF area status on device

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

OSPF Area Settings

Area ID          Type      Stub Import Summary LSA Stub Default Cost Translate
-----
0.0.0.0          Normal   None                    None
0.0.0.1          Stub    Enabled                  1      None
0.0.0.2          Stub    Disabled                 1      None

Total Entries : 3
```

Reference

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