

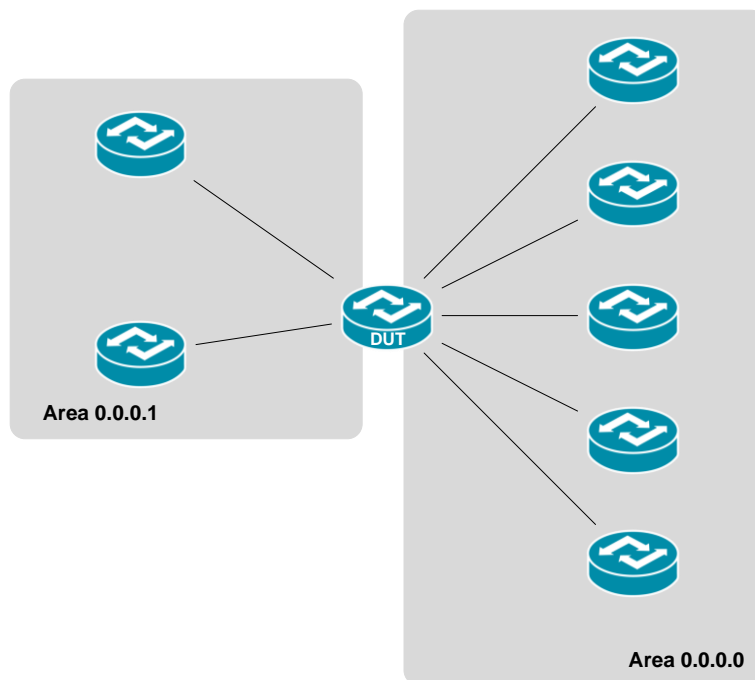
How to use SNMP to get OSPF SPF Runs

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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



There are two OSPF area (0.0.0.0 and 0.0.0.1) in this topology, the DUT is an Area Border router which attach to both of area.

OID

Name: ospfSpfRuns
Type: OBJECT-TYPE
OID: 1.3.6.1.2.1.14.2.1.4
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfAreaTable(2).ospfAreaEntry(1).ospfSpfRuns(4)
Module: OSPF-MIB

Parent: ospfAreaEntry
Prev sibling: ospfImportAsExtern
Next sibling: ospfAreaBdrRtrCount

Numerical syntax: Counter (32 bit)
Base syntax: Counter32
Composed syntax: Counter32
Status: current
Max access: read-only

Description: The number of times that the intra-area route table has been calculated using this area's link-state database. This is typically done using Dijkstra's algorithm.

Step-by-Step

I. SNMP Command

```
snmpwalk -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.2.1.4
```

II. Result

```
C:\>snmpwalk -v 2c -c private -m ALL 10.90.90.91 1.3.6.1.2.1.14.2.1.4  
OSPF-MIB::ospfSpfRuns.0.0.0.0 = Counter32: 51  
OSPF-MIB::ospfSpfRuns.0.0.0.1 = Counter32: 42
```

We can see the backbone are has been running SPF algorithm 51 times to calculate Link-state database. We could use SNMP graphic tool (e.g. Cacti) to monitor the statistics of this change and analyze if any particular time the route flapping occurs often inside the area.

Reference

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