

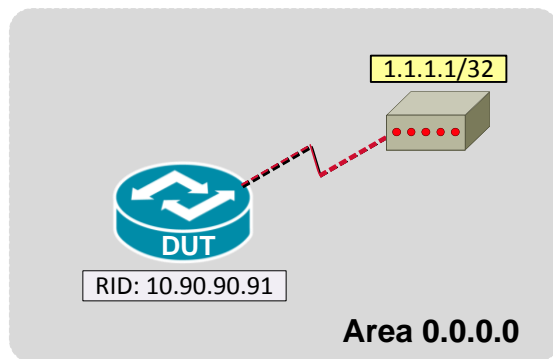
# How to use SNMP to get OSPF Host Entry

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

## ospfHostEntry

Name: ospfHostEntry  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1)  
Module: OSPF-MIB

Parent: ospfHostTable  
First child: ospfHostIpAddress

Numerical syntax: Null  
Base syntax: OspfHostEntry  
Composed syntax: OspfHostEntry  
Status: current  
Max access: not-accessible  
Sequences: 1: ospfHostIpAddress - IpAddress(64 - IP address)  
2: ospfHostTOS - TOSType(2 - integer (32 bit))  
3: ospfHostMetric - Metric(2 - integer (32 bit))  
4: ospfHostStatus - RowStatus(2 - integer (32 bit))  
5: ospfHostArealD - ArealD(64 - IP address)

Indexes: 1: ospfHostIpAddress  
2: ospfHostTOS

Description: A metric to be advertised, for a given type of service, when a given host is reachable.

## ospfHostIpAddress

Name: ospfHostIpAddress  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1.1  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1).ospfHostIpAddress(1)  
Module: OSPF-MIB

Parent: ospfHostEntry  
Next sibling: ospfHostTOS

Numerical syntax: IP Address  
Base syntax: IpAddress  
Composed syntax: IpAddress  
Status: current  
Max access: read-only

Reference: OSPF Version 2, Appendix C.6 Host route parameters

Description: The IP Address of the Host.

## ospfHostTOS

Name: ospfHostTOS  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1.2  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1).ospfHostTOS(2)  
Module: OSPF-MIB

Parent: ospfHostEntry  
Prev sibling: ospfHostIpAddress  
Next sibling: ospfHostMetric

Numerical syntax: Integer (32 bit)  
Base syntax: Integer32  
Composed syntax: TOSType  
Status: current  
Max access: read-only

Reference: [OSPF Version 2, Appendix C.6 Host route parameters](#)

Description: [The Type of Service of the route being configured.](#)

## ospfHostMetric

Name: ospfHostMetric  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1.3  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1).ospfHostMetric(3)  
Module: OSPF-MIB

Parent: ospfHostEntry  
Prev sibling: ospfHostTOS  
Next sibling: ospfHostStatus

Numerical syntax: Integer (32 bit)  
Base syntax: Integer32  
Composed syntax: Metric  
Status: current  
Max access: read-create

Reference: [OSPF Version 2, Appendix C.6 Host route parameters](#)

Description: [The Metric to be advertised.](#)

## ospfHostStatus

Name: ospfHostStatus  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1.4  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1).ospfHostStatus(4)  
Module: OSPF-MIB

Parent: ospfHostEntry  
Prev sibling: ospfHostMetric  
Next sibling: ospfHostArealD

Numerical syntax: Integer (32 bit)  
Base syntax: INTEGER  
Composed syntax: RowStatus  
Status: current  
Max access: read-create

Description: This variable displays the status of the entry. Setting it to 'invalid' has the effect of rendering it inoperative. The internal effect (row removal) is implementation dependent.

## ospfHostArealD

Name: ospfHostArealD  
Type: OBJECT-TYPE  
OID: 1.3.6.1.2.1.14.6.1.5  
Full path: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ospf(14).ospfHostTable(6).ospfHostEntry(1).ospfHostArealD(5)  
Module: OSPF-MIB

Parent: ospfHostEntry  
Prev sibling: ospfHostStatus

Numerical syntax: IP Address  
Base syntax: IpAddress  
Composed syntax: ArealD  
Status: current  
Max access: read-only

Reference: [OSPF Version 2, Appendix C.2 Area parameters](#)

Description: The Area the Host Entry is to be found within. By default, the area that a subsuming OSPF interface is in, or 0.0.0.0

## Step-by-Step

### I. SNMP Command

```
snmpwalk -v 2c -c private <DUT IP> 1.3.6.1.2.1.14.6.1
```

## II. Result

```
C:\>snmpwalk -v 2c -c private -m ALL 192.168.1.91 1.3.6.1.2.1.14.6.1
OSPF-MIB::ospfHostIpAddress.1.1.1.1.0 = IPAddress: 1.1.1.1
OSPF-MIB::ospfHostTOS.1.1.1.1.0 = INTEGER: 0
OSPF-MIB::ospfHostMetric.1.1.1.1.0 = INTEGER: 64
OSPF-MIB::ospfHostStatus.1.1.1.1.0 = INTEGER: active<1>
OSPF-MIB::ospfHostAreaID.1.1.1.1.0 = IPAddress: 0.0.0.0
```

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

```
DUT#show ip ospf database router 10.90.90.91 | begin Stub
Link connected to: a Stub Network
(Link ID) Network/subnet number: 1.1.1.1
(Link Data) Network Mask: 255.255.255.255
Number of MTID metrics: 0
TOS 0 Metrics: 64
```

Host routes are advertised in router-LSAs as stub networks with mask 0xffffffff. They indicate either router interfaces to point-to-point networks, looped router interfaces, or IP hosts that are directly connected to the router (e.g., via a SLIP line).

## Reference

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