



Simple Network Management Protocol



Foreword

- Management framework solutions for TCP/IP networks were introduced as hardware and software increased, in order to support rapid network growth. SNMP was originally adapted from a simpler SGMP protocol for use as the basis for common network management throughout the system. SNMP has since experienced version revisions, however remains the standard protocol for network management. The SNMP framework, as well as the supporting Management Information Base act as the foundation for network management, and are introduced in support of a well-rounded understanding of the network management framework for TCP/IP.

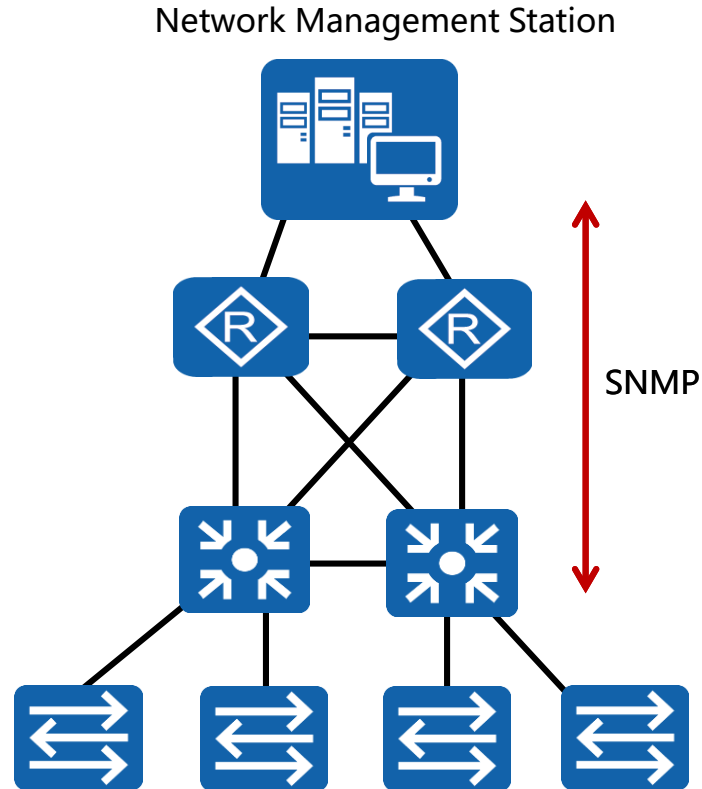


Objectives

- Upon completion of this section, you will be able to:
 - Describe the SNMP architecture and messaging behavior.
 - Describe the function of the Management Information Base (MIB).
 - Configure general SNMP parameters and traps.



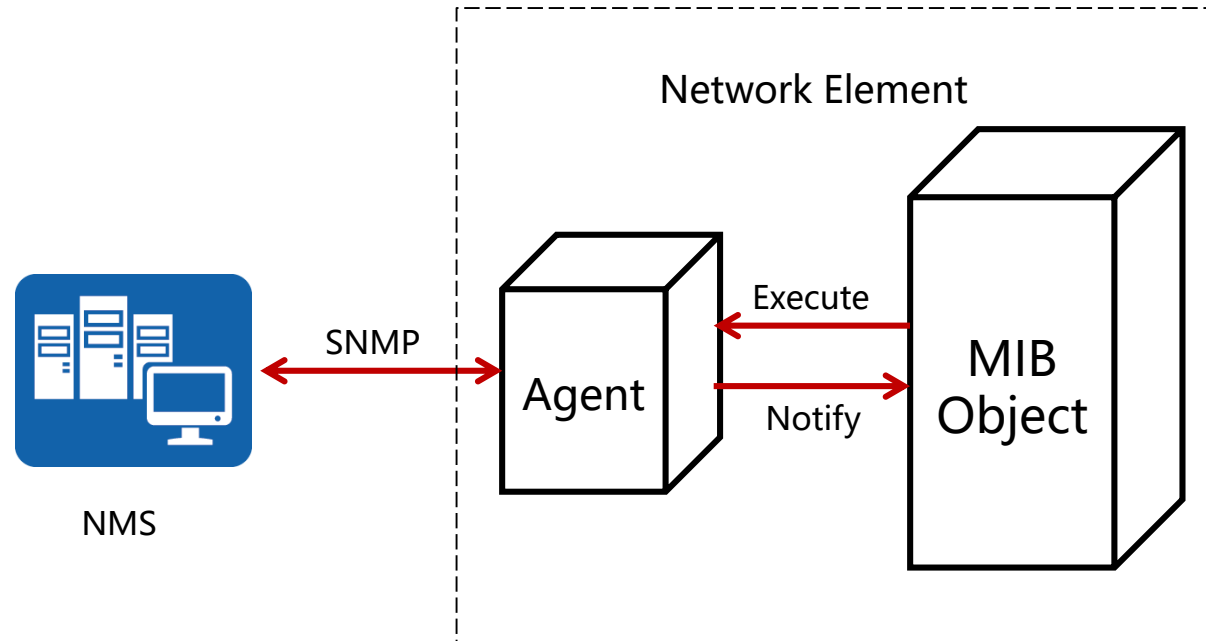
SNMP Application



- SNMP is used to communicate management information between network management stations and network elements.



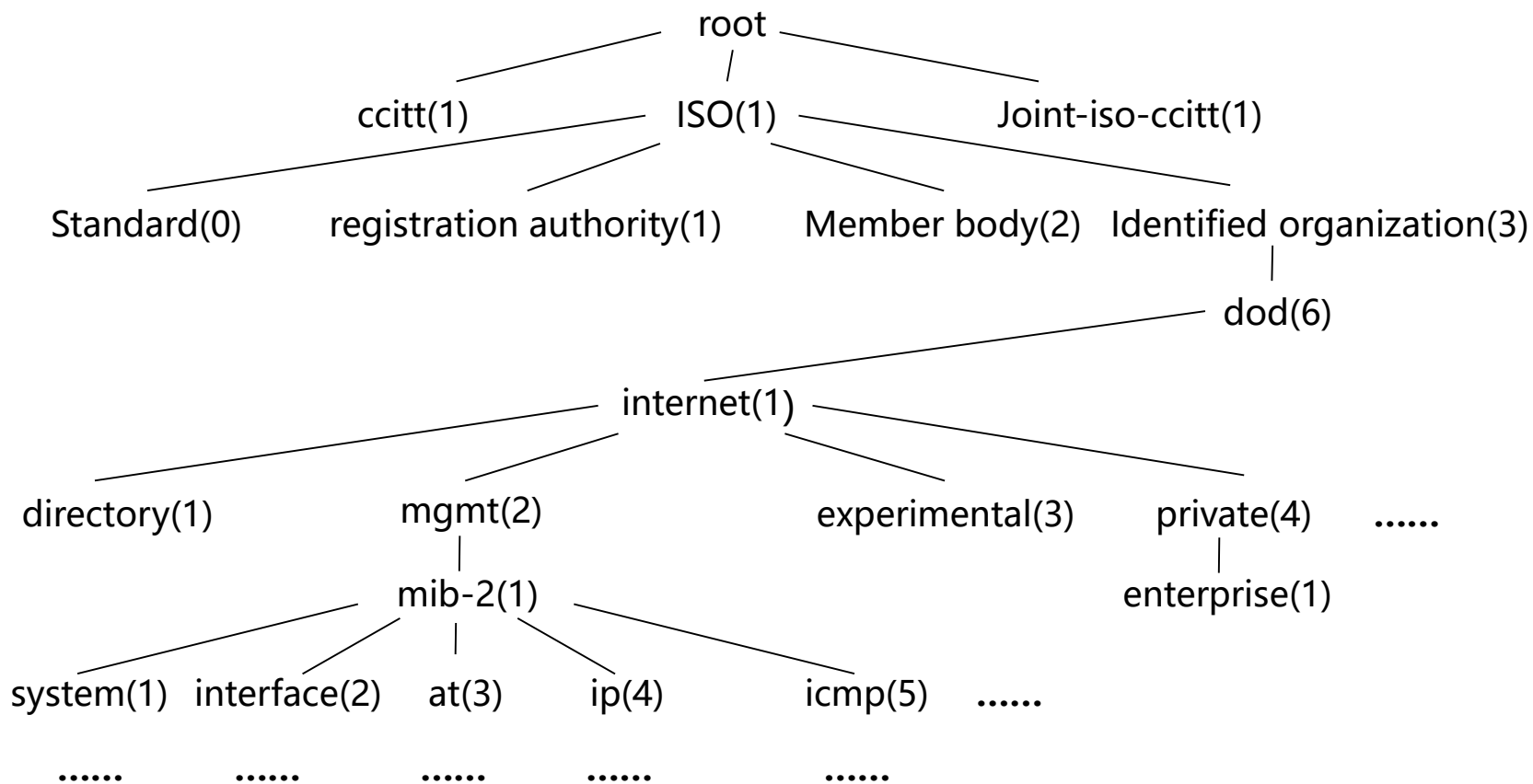
SNMP Architecture



- Agents exist within network elements through which NMS interact to retrieve or alter parameter variables in the MIB.



MIB Objects



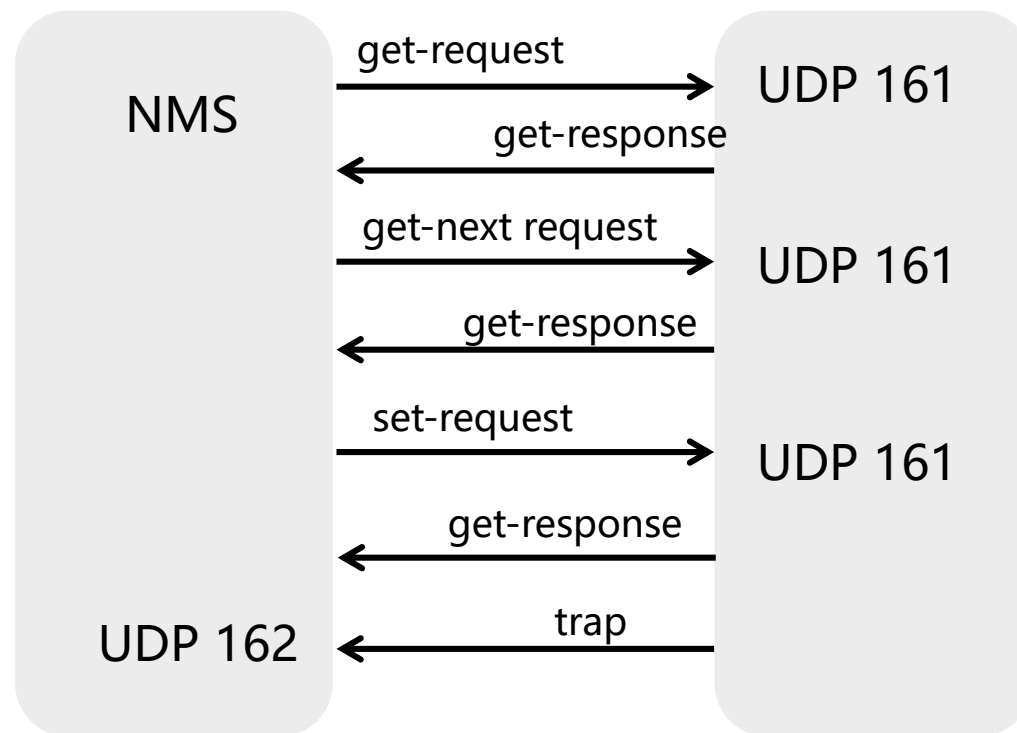
- The MIB acts as a virtual store for the management of objects.



SNMP Operation

SNMP Management Process

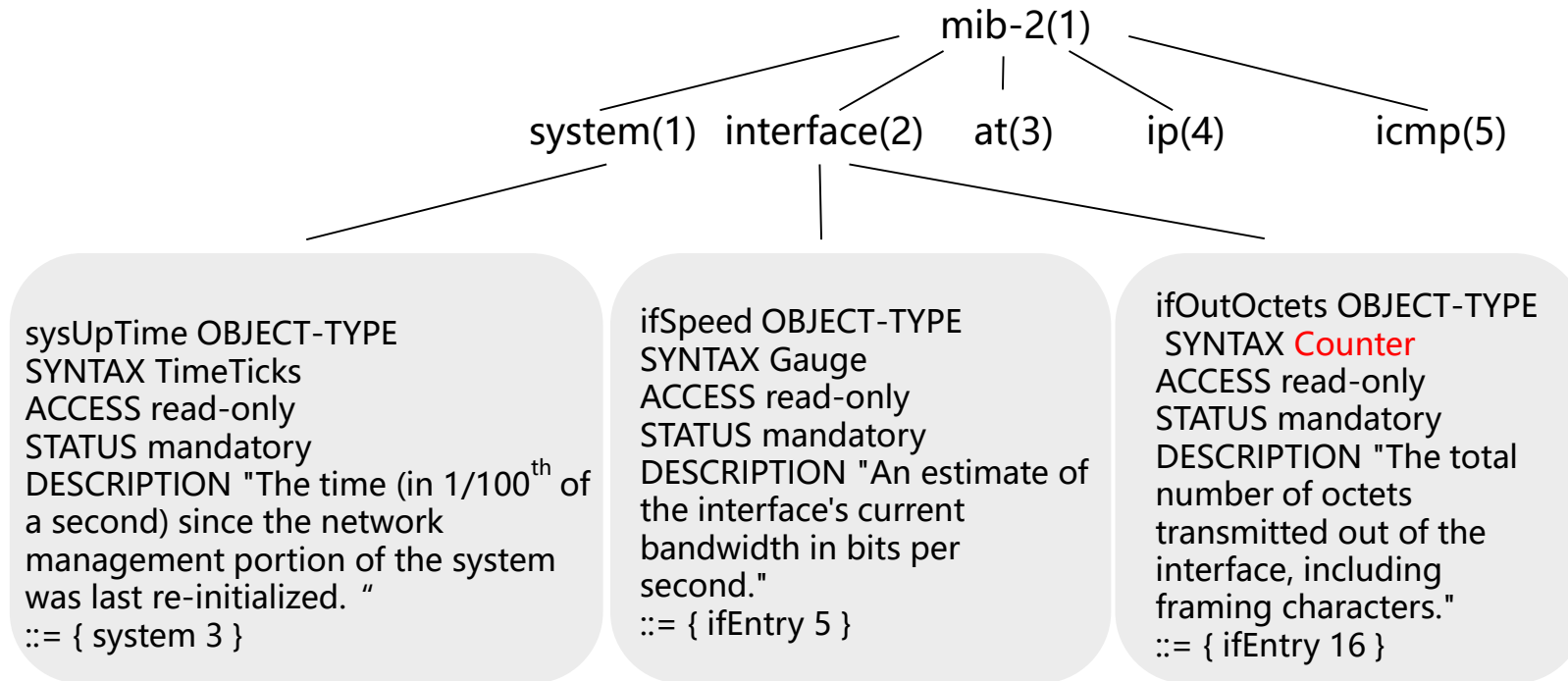
SNMP Agent Process



- Requests are received by an SNMP agent on UDP port 161.



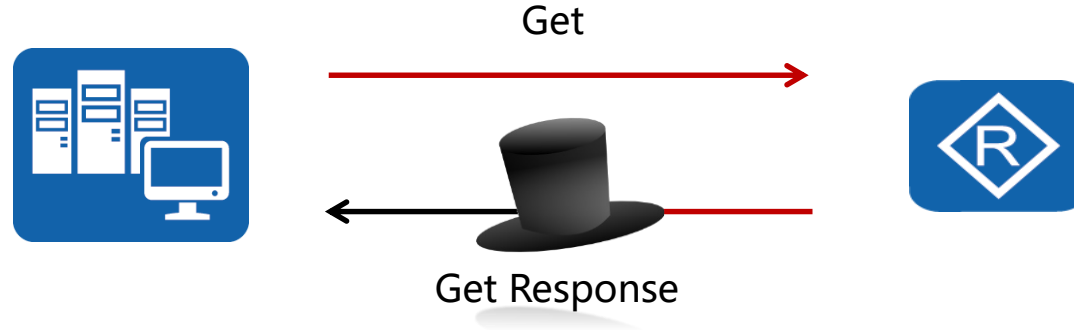
SNMPv2c



- New Get-bulk request PDU and inform request included.
- 64 bit counters introduced to prevent counter wrap.



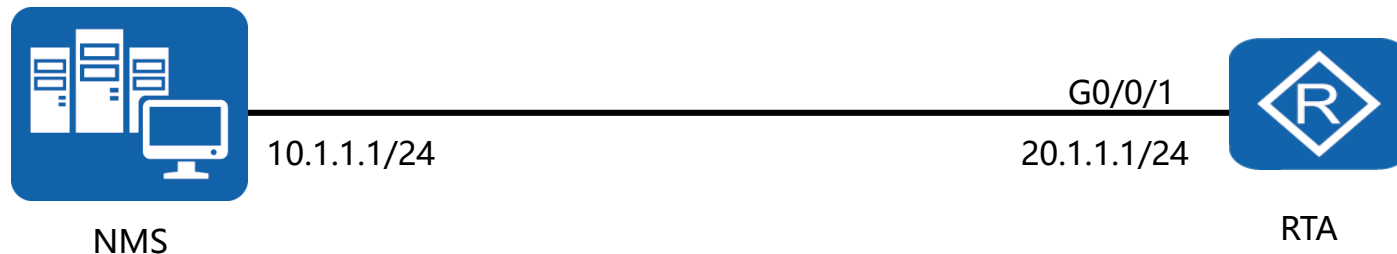
SNMPv3



- SNMPv3 security mechanisms support data integrity, data origin authentication, confidentiality and timely message delivery.



SNMP Configuration



```
[RTA]snmp-agent
[RTA]snmp-agent sys-info version v2c
[RTA]snmp-agent trap enable
Info: All switches of SNMP trap/notification will be open. Continue?
[Y/N]:Y
[RTA]snmp-agent trap source GigabitEthernet 0/0/1
```



Configuration Validation

```
[RTA]display snmp-agent sys-info
```

```
The contact person for this managed node:
```

```
R&D Shenzhen, Huawei Technologies Co., Ltd.
```

```
The physical location of this node:
```

```
Shenzhen China
```

```
SNMP version running in the system:
```

```
SNMPv2c
```



Summary

- Which version(s) of SNMP is/are enabled by default?
- What is the destination port number that is used by an agent to forward traps to a Network Management Station?

The background of the image shows silhouettes of several groups of business professionals in a modern office environment. They are standing on a highly reflective floor, and their reflections are clearly visible. The entire scene is overlaid with a semi-transparent blue filter. In the center, the text "Thank You" is written in a large, white, sans-serif font, with the website address "www.huawei.com" in a smaller, white, sans-serif font directly below it.

Thank You

www.huawei.com