

Hands-on course , 3
day(s)
Ref : SNM

Participants

Network and system
administrators, SNMP
developpers.

Pre-requisites

Basic knowledge of
networking technologies and
IPv4.

Next sessions

Network Management with SNMP

OBJECTIVES

This practical course will give you the skills to implement management of heterogeneous networks based on SNMP. Introduce the concepts of SNMP architecture and recent developments.

[1\) Introduction to network management](#)

[2\) Simple Network Management version 1](#)

[3\) SNMPv2c](#)

[4\) Security with SNMPv3](#)

[5\) Extending agent capabilities](#)

1) Introduction to network management

- Network monitoring and management.
- Architectural model for network management.
- Heterogeneous systems and networks.
- IETF approach vs. OSI approach.

2) Simple Network Management version 1

- Architectural model, management data representation, SNMP verbs.
- SNMP agent, SNMP supervisor, SNMP proxy.
- MIB : Management Information Base.
- SMI : Structure of Management Information.
- ASN.1 : Abstract Syntax Notation 1.
- MIB management rules.
- Scalar versus tabular data.

Workshop

Using basic command line tools to query an SNMP agent. Using Net-SNMP Open Source software. Analyzing data encoding. Comparison of Get and Get-next verbs. Using a graphical MIB Browser.

3) SNMPv2c

- Performance and security requirements for SNMPv2.
- Supervisor to supervisor communication.
- Using Get-Bulk and Inform Request.
- New TrapV2 message.
- Understanding new MIB and agent developement.
- Understanding SNMP traps and notifications.

Workshop

Using Get-Request messages. Using Trap, TrapV2, and Inform Request messages.

4) Security with SNMPv3

- New requirements for SNMPv3.
- New architectural model and terms.
- Authentication and privacy with SNMPv3.
- Notions of SNMP Users and Views.

Workshop

SNMPv3 agent configuration. Implementing authentication and privacy on Linux and Cisco routers and switches. Implementing users and views. Analyzing authentication and privacy.

5) Extending agent capabilities

- Extending agent capabilities.
- Definign new MIBs.
- Using RMON for remote monitoring.
- Using SNMP proxies.

Workshop

Net-SNMP agent extension. Analyzing Microsoft agent extension DLLs.