

# Total SNMP for engineers

A 5 day **Hands on** training course



## Description

A hands on generic look at the technical operation of SNMP. The course starts with an overview of all the components, which make up SNMP. Hands on starts early with configuration of a managed network. The major versions of SNMP are then put into perspective followed by a look at the SNMP protocol. MIBs are then studied both from the perspective of reading MIBs and writing MIBs. The course finishes with a look at the security implications of SNMP.



## Key outcomes

By the end of the course delegates will be able to:

- ✓ Describe the SNMP architecture.
- ✓ Analyse SNMP packets.
- ✓ Recognise the MIB structure.
- ✓ Describe the SMI.
- ✓ Recognise the strengths and weaknesses of SNMPv2 and SNMPv3.



## Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



## Details

### Who will benefit?

Network administrators. Network operators. Programmers writing MIBs and agents.

### Prerequisites

TCP/IP foundation. Hands on experience of an SNMP management station would also be beneficial.

**Duration:** 5 days

**Customer rating:** ★★★★★

### Generic training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

*"Friendly environment with expert teaching that teaches the why before the how."*  
G.C. Fasthosts

### Small class sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

*"Excellent course. The small class size was a great benefit..."*  
M.B. IBM

### Hands On training



The majority of our courses use hands on sessions to reinforce the theory.

*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."*  
J.W. Vodafone

### Our courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

*"Comprehensive materials that made the course easy to follow and will be used as a reference point."*  
V.B. Rockwell Collins

### Customise your course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."*  
S.R. Qinetiq

# Total SNMP for engineers

## Course content

### Network management

What is network management? Benefits, issues.

### What is SNMP?

SNMP architecture, SNMP MIBs, SMI, the SNMP protocol, polling security, alternatives to SNMP: CMIP, web based management.

### Configuring SNMP

Auto discovery for management stations, NMS configuration, agent configuration, traps. Hands on: Configuring agents and an NMS.

### SNMP background

SNMP history, RFCs, standards, SNMP protocol versions, SNMPv1, SNMPv2, SNMPv3, SNMP SMI versions, which version should you use? Futures.

### SNMPv1 packets

SNMP in the 7 layer model, port numbers, general packet format, BER, GET, GET-NEXT, tables, SET, TRAP, bandwidth issues, in band versus out of band management. Hands on: Analysing SNMPv1 packets.

### SNMPv2 packets

SNMPv2 improvements, error handling, GET-BULK, v2traps, INFORM. Hands on: Analysing SNMPv2 packets.

### SNMPv3 packets

SNMPv3 packet format, use of SNMPv2 messages, REPORT PDU.

### MIB structure

The internet MIB branch, standard mib-2, extra parts of mib-2, private enterprise MIBs, loading extra MIBs. Hands on: MIB browsing.

### mib-2

The mib-2 groups, system group, interfaces group, IP group, ICMP group, TCP group, UDP group, transmission group, SNMP group, RMON. Hands on: mib-2 browsing in detail.

### SMI

The MIB layout, obtaining a private enterprise number, MIB definitions, IMPORT, Module identity, Textual conventions, object definitions, notifications, compliance statements, object groups, base SMI data types, application data types, scalars, instances, tables, table definition, writing agents, SMInG.

### SNMP security

Community strings, SNMPv1 and SNMPv2c security practices, SNMPv3 security, SNMPv3 architecture, SNMP applications, the SNMP engine, the EngineID, security fields in SNMPv3 packets, USM, authentication, encryption, timeliness, VBAC, SNMPv3 configuration.

