

# Definitive SIP for engineers

A 3 day **Hands on** training course



## Description

A hands on course covering IP telephony with SIP. The course starts with a brief review of knowledge students should already possess including RTP and RTCP. The main focus is on SIP though, progressing from what SIP is through SIP signalling, call processing and architectures, moving onto more advanced issues including security, multimedia, and interoperability. Hands on practicals follow each major theory session.



## Key outcomes

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

- ✓ Explain how SIP works.
- ✓ Analyse SIP packets.
- ✓ Deploy SIP IP telephony solutions.
- ✓ Integrate SIP with other telephony solutions.



## 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?

Technical staff working with SIP.

### Prerequisites

Definitive VoIP for engineers.

**Duration:** 3 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

# Definitive SIP for engineers

## Course content

### VoIP review

What is VoIP? Brief review of IP, Brief review of telephones and voice. RTP, RTCP, mixers and translators. Hands on: Analysing RTP packets.

### What is SIP?

Why SIP? SIP history, SIP standards, SIP capabilities, key services, how SIP works, and a basic SIP call. Hands on: Peer to peer SIP.

### SIP messages

SIP sessions, SIP flows, Message structure, INVITE, ACK, BYE, CANCEL, OPTIONS, REGISTER. Extension methods. Response codes. SIP call flows. Hands on: Analysing SIP packets.

### SIP architectures

UA client, UA server, Proxy servers, Redirect servers, registrars. SIP phones, gateways, application servers, and other products. Stateful and stateless servers. Various call scenarios. Hands on: SIP proxies.

### SIP addressing

URLs, SIP addresses, registration, Location and Directory servers. Address tracking. Hands on: SIP and DNS.

### Supplementary services

SIP signalling, signalling compression, Call hold, Call forwarding, Home and away scenarios, transfers, conferences, call control. Hands on: Analysing SIP supplementary services.

### SDP

What is SDP? Multimedia, multimedia session announcement, invitation and others. Relationship with SIP. Hands on: Video conferencing with SIP.

### SIP security

Access control, Authentication, encryption, firewalls. Hands on: SIP authentication.

### Interoperability

Inter working with PSTN, ISUP to SIP mapping, SIP and 3G, SIP-T, SIP and SIGTRAN. SIP and H323. Hands on: SIP and gateways.

### SIP mobility

Terminal mobility, service mobility, personal mobility, Mobile IP, SIP signalling flows in 3G.

