

# Definitive H.323 for engineers

A 2 day **Hands on** training course



## Description

A hands on course covering IP telephony with H.323. The course starts with a brief review of knowledge students should already possess including RTP and RTCP. The main focus is on H.323 protocols though, progressing from what H.323 is through signalling, call processing and architectures, moving onto more advanced issues including security, multimedia, conferencing, 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 H.323 works.
- ✓ Analyse H.323 packets.
- ✓ Deploy H.323 IP telephony solutions.
- ✓ Integrate H.323 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 H.323.

### Prerequisites

Definitive VoIP for engineers.

**Duration:** 2 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 H.323 for engineers

## Course content

### VoIP review

Brief review of VoIP, IP, telephones and voice. RTP, RTCP, mixers and translators.

### What is H.323?

The framework, Why H.323, history, H.323 standards and the ITU, H.323 versions 1,2,3,4, and 5, Annexes and Appendices, capabilities, services, How H.323 works, a basic call.

### H.323 protocol stack

The overall framework, Audio codecs (H.7xx), Video codecs (H.26x), T.120 data conferencing.

### H.323 Architecture

Endpoints: Terminals, MCUs, gateways. Gatekeepers, border and peer elements, design issues, signalling with and without gatekeepers.

### H.225

Packet format, ASN.1, Information elements, Call setup, Call control.

### Gatekeepers

Gatekeeper features, admissions, address translation, bandwidth management, call routing, zones, administrative domains, gatekeeper discovery, call establishment, fast connect. RAS packet formats, RAS signalling. Alternate gatekeepers.

### H.245

Purpose, call control channel, relationship with H.225, message format, tunnelling.

### H.323 Supplementary services

Conferencing: point to point, multipoint, hybrid, broadcast, H.332. H.450.x. Call transfer, diversion, hold and waiting. Remote device control (H.282, H.283). Capability exchange, Video.

### Security

H.235. Authentication, privacy, transport layer level security.

### Interoperability

Gateways, Inter working with PSTN, SIP and H323. H.246.

### Annexes and Appendices

An overview.

