Systems & Network Training

Definitive SIP in the IMS for engineers

A 2 day training course

Save on expenses. This course is also available on your premises.

Description

The IP Multimedia Core Network Subsystem (IMS) is defined by 3GPP as a mobile infrastructure. This advanced course looks at the use of SIP in the IMS.

Key outcomes

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

- ✔ Describe the role of SIP in the IMS.
- ✔ Explain how SIP works in the IMS.
- ✔ Describe the SIP architecture in the IMS.
- ✔ Explain how SIP and SDP are used in basic IMS procedures.

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.

Details

Who will benefit?
Technical telecommunications staff.

Prerequisites
Definitive SIP for engineers. (hands on)
Essential 4G

Duration: 2 days

Customer rating: ★★★★★

Generic training	Small class sizes	Hands On training	Our courseware	Customise your course
Generic training complements product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".	We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.	The majority of our courses use hands on sessions to reinforce the theory.	We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.	Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.
"*Friendly environment with expert teaching that teaches the why before the how.*" G.C. Fasthosts	*"Excellent course. The small class size was a great benefit..."* M.B. IBM	*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."* J.W. Vodafone	*"Comprehensive materials that made the course easy to follow and will be used as a reference point."* V.B. Rockwell Collins	*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."* S.R. Qinetiq

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Course content

Introduction
SIP review, SIP elements, Simple SIP call flow, What is IMS? Why IMS? Why SIP in the IMS? SIP and IMS relationship.

Standards
3GPP, IETF, 3GPPr5, 3GPPr6, 3GPP SIP extensions.

SIP and IMS
IMS architecture, SIP interfaces.

Server functions
Registration, home and away, location and directory services, stateful and stateless servers.

SIP servers,
P-CSCF, I-CSCF, S-CSCF, PSTN gateways.

SIP registration in the IMS
SIP REGISTER, IMS identities, registration process, P-CSCF discovery, S-CSCF assignment, IMS subscriber and IMS registrar signalling flow. IMS routing in the registration process. Re and De-registration.

SIP sessions in the IMS
SIP INVITE, Establishing IMS SIP sessions, User at home network, user roaming, IMS offer answer architecture, SIP preconditions, QoS, reserving resources, IMS bearer network interactions, IMS subscriber and IMS service signalling flow. Typical call flows.

SIP services in the IMS
IMS specifications, IMS service procedures, call scenarios, call services. IMS multimedia related procedures. IMS presence, IMS messaging, IMS conferencing, IMS PoC.

SIP-T
SIP and the PSTN, URIs and ENUM, NAPTR, SRV, ISUP numbers and URI mapping, IAM and INVITE, SIP to PSTN/ISUP mapping, PSTN/ISUP to SIP mapping, PSTN to PSTN over SIP. MIME media types for ISUP, DTMF transmission, CLIP and CLIR in SIP, ring tone, split gateways.

SIP-I
ISO standards, translation versus tunnelling.

IMS SIP extensions
Security (RFC 3310, 3329), Resource reservation (RFC 3312), Media authorisation (RFC 3313), SigComp (RFC 3320), P Headers (RFC 3325, 3455), Mobile registration (RFC 3327, 3608), Reg event (RFC 3680), Preconditions (RFC 4032).

Security
IMS security architecture, identities, HTTP digest, TLS. Affect of security on SIP media sessions.