Publication date : 01/05/2024

Course : SIP, implementation

Practical course - 3d - 21h00 - Ref. SIC
Price : 2020 € E.T.

This practical training course provides you with all the knowledge you need to successfully implement your new IP telephony projects. We don't just go into detail about the SIP protocol, we give you a real hands-on understanding of the context in which SIP is used.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the different aspects of the SIP protocol: signalling, syntax, protocol
- Analyze a SIP message exchange trace
- Describe the SIP routing mechanism
- Identify the main implementation difficulties

Intended audience

Engineers or network architects wishing to acquire concrete knowledge of SIP.

Prerequisites

Good knowledge of TCP/IP.

Practical details

Hands-on work

Point-to-point call between two UACs. Registration of UACs on the registrar server. Call via proxy server between two UACs.

Course schedule

1 Objectives and traditional telephony

- The SIP Forum.
- Why SIP? SIP objectives.
- Comparison of traditional telephony and SIP architectures.

PARTICIPANTS

Engineers or network architects wishing to acquire concrete knowledge of SIP.

PREREQUISITES

Good knowledge of TCP/IP.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 SIP architecture

- The SIP protocol. The protocol. Voice signaling and flow mechanisms.
- Interfaces with protocols (DHCP, HTTP, DNS). SIP /H323 comparison.
- The different SIP components and their roles within the architecture.
- UAC/UAS. User Agent, proxy server, redirect server, registrar server. Gateway.
- SIP addressing mechanisms (URI, IP, E164).
- Related functions (billing, accouting, codec translation).

3 SIP messages

- The request/response principle.
- Query types. Response types.
- Interpretation of Header requests, TO, FROM and CONTACT fields.
- Case study: SIP client dialog;--> SIP client (peer to peer).

4 SIP methods and extensions

- The methods. Details of methods: INFO, OPTION, MESSAGE.
- SIP and mobiles. GSM, GPRS. 3GPP.
- SIP and IMS (IP Multimedia Subsystem).
- IMS applications, components and architecture.

5 SIP routing mechanisms

- How do I locate servers?
- SIP routing: description of the mechanism.
- Proxy servers.
- SIP-related solutions and protocols.
- SIP and address translation. NAT Traversal.
- Solutions: SBC, TURN, STUN, ICE, UPNP.

6 Voice-over-IP security

- The most common threats and risks.
- Availability (LAN, WAN, IPBX).
- Different levels of integrity (network, system, extension).
- Confidentiality, non-repudiation, authentication, authorization.
- Backup and restore. Architecture of security solutions.
- SIP and firewalls.

7 Conclusion

- The future of SIP. Market applications.

Dates and locations

REMOTE CLASS
2026 : 24 June, 7 Sep.

PARIS LA DÉFENSE
2026 : 24 June, 7 Sep.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.