VoLTE and the IMS Fundamentals

- 5 Days
- Lecture and Call Flow Analysis

Course Overview

Learn VoLTE, IMS, and the SIP protocol in this intensive 5-day class. This class thoroughly studies call flow through the EU-TRAN, the EPC and into the IMS core. We will make the entire picture clear and backup all that we teach with call flows and live labs using an IMS platform. This course also covers enough of other technologies like Diameter and DNS to allow you to understand the complete picture. The lessons in this course are clear, very technical, and always practical, and since much of it is hands-on, you can investigate and reinforce each lesson.

Review this course online at https://www.alta3.com/courses/volte

What You'll Learn

- VoLTE call flow
- The EPC
- The IMS Core
- Diameter Essentials
- DNS

Outline

VoLTE and the IMS

- 💻 Lecture + Lab: IMS Architecture & SIP Proxies
- 💻 Lecture + Lab: IMS Identifiers
- 💻 Lecture + Lab: VoLTE Architecture
- 💻 Lecture + Lab: Bearer and APNs
- 💻 Lecture + Lab: Power up Process
- 💻 Lecture + Lab: Handover Between eNodeBs
- 💻 Lecture + Lab: Tracking and Paging A UE
- 💻 Lecture + Lab: SIP Architecture
- 💻 Lecture + Lab: SIP Via Paths
- 💻 Lecture + Lab: SIP Route Headers
- 💻 Lecture + Lab: SIP/IMSc Headers
- 💻 Lecture + Lab: Diameter
- 💻 Lecture + Lab: H248
- 💻 Lecture + Lab: Initial Filter Criteria (content/volte/iFC)
- 💻 Lecture + Lab: Presence
- 💻 Lecture + Lab: Session Description Protocol
- 💻 Lecture + Lab: QoS
- 💻 Lecture + Lab: IMS Call Flow Examples
- 💻 Lecture + Lab: Circuit Switched Fallback
- 💻 Lecture + Lab: SR-VCC
- 💻 Lecture + Lab: Emergency Call Flow

- 💻 Lecture + Lab: Charging in the IMS
- 💻 Lecture + Lab: VoLTE and the DNS
- 💻 Lecture + Lab: Regex
- 💻 Lecture + Lab: SIP Entities
- 💻 Lecture + Lab: ENUM
- 💻 Lecture + Lab: RTP
- 💻 Lecture + Lab: DTMF
- 💻 Lecture + Lab: SIP Timers
- 💻 Lecture + Lab: NAT

Wireshark Labs

- 💻 Lecture + Lab: Introduction to Wireshark
- 💻 Lecture + Lab: Successful REGISTER by a User Agent
- 💻 Lecture + Lab: REGISTER Fails Auth
- 💻 Lecture + Lab: SIP deREGISTER
- 💻 Lecture + Lab: SIP INVITE
- 💻 Lecture + Lab: SIP INVITE Packet Analysis with Wireshark
- 💻 Lecture + Lab: Troubleshooting Common SIP Failures with Wireshark
- 💻 Lecture + Lab: Session Description Protocol
- 💻 Lecture + Lab: One-Way Audio
- 💻 Lecture + Lab: SIP PUBLISH