



Training Portfolio

Course Name: Packet Core–Advanced

Course End in Mind:

Understanding Huawei PS Core: product description, troubleshooting, planning aspects and optimization

Target Audience: PS Network Engineers or PS Network Planners.

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:-

- PS core call flows
- Huawei PACO nodes and their product description
 - Different HW modules and function
 - Logical architecture and MM/SM flows/unit
- Configuration principles and troubleshooting
- DPI/service awareness and charging configurations
 - OCS configuration
 - PCRF configuration
 - Internal DPI configuration in GGSN
- SGSN in pool; Principles, call flow and configurations
- WAP/MMS configuration aspects
- PS network design and planning
- Performance KPIs and Optimization aspects
- Step by step Trace Analysis

Duration: 8 Days

Course Name: Core planning and dimensioning: covering EPC, CS, PS core

Course End in Mind: This training is framed in modular way covering planning and dimensioning of EPC, PS, CS and IMS core domains. This can be delivered in combo pack or can be cherry picked based on CSP's requirements.

Target Audience Network Engineers or Network Planners.

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:-

- Network architecture

- Protocols knowledge and dimensioning per interface
- Evolutions
- Requirement capture
- Tools to be considered
- Traffic modeling and calculations
- Detailed topology designs with pros/cons
- Detailed traffic calculation based on call flow
- How to map above knowledge to HLD (High level Design)
- Step by step configuration aspects and mapping to LLD (Low level design) : (Multi-vendor: During training one vendor is considered if multivendor then 2 additional days/vendor)
- Preparing core capex requirements

Duration: 8 Days (2 days/domain)

Course Name: IMS architecture and overview

Course End in Mind: This course is designed to acquaint trainee with in-depth on IMS architecture; roles of different nodes/modules and VOLTE and IMS role

Target group: Persons with basic knowledge of PS/CS core networks and had worked on both or either

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

After the training, the participant will be able to:

- Architecture/Building-blocks of IP multimedia subsystem
- SIP,RTP,RCTP, Diameter protocols and their role in IMS setup
- IMS and PS/EPC/CS core connectivity
- Call flows under IMS environment
- PCRF/PDF role, QoS and security aspects
- Applications integration and ISC role
- VOLTE (4G networks) and IMS role

Duration: 3 Days

Course Name: IN Basic + advance

Course End in Mind: This course is designed to acquaint trainee on IN overview, generic architecture and its connectivity across CS/PS core domain, this is vendor independent generic training framed based on field experience on IN

This course is divided in 2 parts

- 1 Day training which is basic level
- 2 Days training on deep dive and in-depth technical aspects in generic way (vendor independent)

Target group: Persons having basic knowledge of IN or core networks.

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives: After the training, the participant will be able to:

- Explain different modules of IN systems
- Positioning of IN (OCS) under PS/CS
- Architectural principles
- What are the main services available through IN
- Over view of CAMEL phase-2/3/4
- Overview of Diameter
- Generic view of service creation and aspects of different services; trainee can gear up to any vendor IN after this
- Call flow in details considering CAMEL and BCSM
- Diameter interface from IN (OCS) what all AVPs and customization aspects
- What are different applications in market getting integrated with IN
- Deep dive in to Diameter and CAMEL traces

Duration: 3 Days

Course Name: PS/EPC Network Overview and advance

Course End in Mind: This course is designed to acquaint trainee on PS core network architecture for 2G/3G and evolution towards EPC

Target group: Persons having basic knowledge of mobile networks

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives: After the training, the participant will be able to:

- Explain different nodes for PS/EPC core network under 2G,3G and 4G environment

- Architecture principles
- Protocols used at different interfaces
- Basic concepts of
 - Mobility Management
 - Session management
 - Radio resource management
- Messages flow in 2G/3G/4G environment
- Basics of DPI and SGSN pooling
- Troubleshooting aspects

Duration: 3 Days

Course Name: VAS Basic and advanced

Course End in Mind: This course is designed to provide in-depth of VAS functionalities in CSP environment. This is vendor agnostic training covering different functional entities involved, protocol used and calls flow. Additional it covers experiential aspects from experts in field and best practices for implementing the VAS nodes to optimize the CAPEX

Target group: Persons having basic knowledge of some applications under mobile networks and should have hands on either on VAS or core network side

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives: After the training, the participant will be able to:

- Explain SMSC connectivity and call flows
- SRBT, different ways to implement and best practices from the field experience
- USSD callback, Pay4me (collect call) optimal ways to implement and concepts
- USSD applications in general
- MCA configurations and best practices for implementation
- WAP/MMS connectivity
- VAS Call flows in detail

Duration: 3 Days

Course Name: NGN and VOIP in-depth

Course End in Mind: This course is designed to provide overview of NGN network and all protocols surrounding NGN

Target group: person with basic knowledge of Mobile or fixed telephony switching.

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objective:

- To acquaint participants on basic telephonic parameters
- Differentials of monolithic versus soft switching
- VOIP protocols
- Call flows under NGN
- Fixed Mobile convergence
- IMS basics

Duration: 3 Days

Course Name: EPC protocols in-depth

Course End in Mind: Considering future there will be 3 main protocols in the core networks i.e. SIP Diameter and GTP. This course is dedicated to the messages, protocol structure and their usage under EPC/IMS network, this course covers S1AP protocol as addendum

Target group: Person who has basic knowledge of either CS or PS core and should have hands on experience in core networks.

This training is useful for persons working on VAS side and developers who want to get the network knowledge and protocol in-depth

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

After this course trainee will gear on following knowledge base

- SIP, SDP, RTP and RCTP protocols
- GTP protocol structure details
- Diameter protocol structure details
- Detailed IMS call cases under IMS environment considering SIP and diameter
- Message flow under EPC and legacy breakout
- SRVCC/CSFB
- All-IP and network convergence

Duration: 3 Days

Course Name: IP QOS

Course End in Mind:

This course is designed to provide the basic knowledge about the QoS in the IP network and managing the parameters affecting the network.

Target group: Telecom/IT Engineers with basic knowledge of IP background

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

- QoS requirements for different applications
- How QoS impact the conjunction of IT/Telecom
- Details on Traffic policing and shaping
- COS,TOS and Diffserv details
- Main service parameters, delay, jitter, packet loss and their significance for difference services and QoS role
- Resource Management.
- QoS understanding in conjunction with Telecom and IP
- Requirement of QoS for different applications and standard bench marks of jitter, packet loss, delay for different applications
- Planning QoS
- Description of Mapping principles
- Description of scheduling Strategies
- QOS Service Models
- QOS Approaches
- MPLS and QoS
- QoS in conjunction with IP and telecom

Duration:-3 Days

Course Name: CCNA 200-120 Boot camp

Course End in Mind:

This course is designed to provide the basic knowledge about the IP network and managing the parameters affecting the network.

Target group: Engineers with basic knowledge of IP background, CS and PS core.

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

- Operation of IP Data Networks
- IP Addressing (IPv4/IPv6)
- IP Routing Technologies (IPv4/IPv6)
- IP Services
- Network Device Security
- Troubleshooting
- WAN Technologies

Duration: - 10 Days

Course Name: Cisco Route 642-902 Boot-camp

Course End in Mind:

This course is designed to provide the basic knowledge about the IP network and managing the parameters affecting the network.

Target group: Engineers with basic knowledge of CCNA, IP background, CS and PS core

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

- Implement an EIGRP Based Solution, Given a Network Design and a Set of requirements
- Implement a Multi-Area OSPF Network, Given a Network Design and a Set of requirements
- Implement an eBGP Based Solution, Given a Network Design and a Set of requirements.
- Implement an IPv6 based solution, given a network design and a set of requirements.
- Implement an IPv4 or IPv6 based redistribution solution, given a network design and a set of requirements.
- Implement Layer 3 Path Control Solution.
- Implement basic teleworker and branch services.

Duration:- 10 days

Course Name: Cisco Switch 642-813 Boot camp

Course End in Mind:

This course is designed to provide the basic knowledge about the IP network and managing the parameters affecting the network.

Target group: Engineers with basic knowledge of CCNA, IP background, CS and PS core

Instructional Methods: Lectures in Classroom or Webex on Power-point slides, discussion, Questions & Answers; all participants will also receive comprehensive course materials.

Course Objectives:

- Implement VLAN Based Solution, Given a Network Design and a Set of Requirements.
- Implement a Security Extension of a Layer 2 Solution, Given a Network Design and a Set of Requirements.
- Implement Switch Based Layer 3 Services, Given a Network Design and a Set of Requirements.
- Prepare Infrastructure to Support Advanced Services
- Implement High Availability, Given a Network Design and a Set of Requirements.

Duration:- 10 Days

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