



5G Core 2019

Training Programs

Catalog of Course Descriptions



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Introduction

Ericsson has developed a comprehensive Training Programs service to satisfy the competence needs of our customers, from exploring new business opportunities to expertise required for operating a network. The Training Programs service is delineated into packages that have been developed to offer clearly defined, yet flexible training to target system and technology areas. Each package is divided into flows, to target specific functional areas within your organization for optimal benefits.

Service delivery is supported using various delivery methods including:

Delivery Method

Instructor Led Training (ILT)

Web-based Learning (WBL)



5G Core Concepts

LZU1082641 R3A

Description:

Transforming today's networks to 5G is key to keeping pace with the demands of an evolving Networked Society, where opportunities span new high-bandwidth applications, low latency powered Internet of Things (IoT) services and beyond.

Are you interested in expanding your knowledge in the area of 5G core? Would you like to gain insight into the basic concepts of the 5G core network? This course can address your needs. The course explains the architecture and technical concepts for the 5G core network. It describes the concepts of Network Slicing and Life-Cycle Management and also explains the additional features for 5G EPC, communication services support and migration scenarios.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Explore the background and reasons for developing the 5G Core
 - 1.1 Identify the operator challenges to enable new types of business
 - 1.2 Explain the new technical requirements arising from new customer segments
- 2 Review the 5G Core standardization
 - 2.1 Analyze the 3GPP 5G Core standardization time plan
 - 2.2 List the 5G Core deployment options studied by 3GPP
 - 2.3 Discuss the main purpose of the Next Generation Mobile Networks Alliance
- 3 Outline the main additional features of the 5G EPC network
 - 3.1 Differentiate between the network slice selection mechanisms, DECOR and eDECOR
 - 3.2 Explore the control plane and user plane split (CUPS)
 - 3.3 Review dynamic mobility switching and distributed cloud concepts
- 4 Explain the basic conceptual network architecture and technology for the 5G Core
 - 4.1 Examine the 3GPP key principals for the overall 5G core architecture
 - 4.2 Review the 5G Core system architecture according to 3GPP TS 23.501
 - 4.3 Identify the main 5G Core terms and definitions according to TS 23.501
 - 4.4 Review the node functions and interfaces for the 3GPP 5G Core reference architecture
 - 4.5 List the basics for network slicing in 5G Core
- 5 Discuss the suggested use cases and basic network slice types supported in 5G
- 6 Explain the basic concepts for 5G core orchestration and management
 - 6.1 Determine the Network as a Service (NaaS) concept
 - 6.2 Outline the network slice blueprint concept



- 6.3 Evaluate the basic principle of lifecycle management for network slice instances
- 7 Explain interoperable communication services support in the 5G Core
- 7.1 Define how communication services (IMS) will be used for different 5G Core deployment options
- 8 Discuss different 4G to 5G migration scenarios
- 8.1 Explore possible migration paths for the different 3GPP 5G architecture options
- 8.2 Describe 4G to 5G migration per network slice type

Target audience:

This course is suitable for anyone who is required to be familiar with 5G Core Concepts.

Prerequisites:

Successful completion of the following courses:

Understanding of the 4G EPC network

Duration and class size:

The length of the course is 2 days and the maximum number of participants per session is 16

Learning situation:

This course is based on theoretical instructor-led lessons given in a classroom environment.



5G Core Concepts Introduction

LZU1082642 R1A

Description:

This course is a web based learning, explaining the basic architecture and technical concepts for the 5G core network. It explains the main concepts of Network Slicing and Life-Cycle Management. Additional features for 5G EPC, communication services support and migration scenarios are also described. The course is divided into six e-learning modules.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Explain the background and reasons for developing the 5G Core
 - 1.1 Explain the operator challenges to enable new types of business
 - 1.2 Explain the new technical requirements arising from new customer segments
- 2 Describe the 5G Core standardization
 - 2.1 Describe the 3GPP 5G Core standardization time plan
 - 2.2 List the 5G Core deployment options studied by 3GPP
 - 2.3 Describe the main purpose of the Next Generation Mobile Networks Alliance
- 3 Explain the main additional features of the 5G EPC network
 - 3.1 Explain the network slice selection mechanisms, DECOR and eDECOR
 - 3.2 Explain the Control Plane and User Plane split (CUPS)
- 4 Explain the basic conceptual network architecture and technology for the 5G Core
 - 4.1 Explain the 3GPP key principals for the overall 5G core architecture
 - 4.2 Explain the 5G Core system architecture according to 3GPP TS 23.501
 - 4.3 Explain the Main 5G Core terms and definitions according to TS 23.501
 - 4.4 List the node functions and interfaces for the 3GPP 5G Core reference architecture
 - 4.5 Explain the basics for network slicing in 5G Core
- 5 Explain the suggested use cases and basic network slice types supported in 5G
- 6 Explain the basic concepts for 5G core orchestration and management
 - 6.1 Explain the Network as a service (NaaS) concept
 - 6.2 Explain the network slice blueprint concept
 - 6.3 Explain the basic principle of lifecycle management for network slice instances
- 7 Explain interoperable communication services support in the 5G Core
 - 7.1 Elaborate how communication services (IMS) will be used for different 5G Core deployment options
- 8 Describe different 4G to 5G migration scenarios



- 8.1 Explore possible migration paths for the different 3GPP 5G architecture options
- 8.2 Describe 4G to 5G migration per network slice type

Target audience:

Solution Architects, Service Engineers, Support Engineers and Instructors

Prerequisites:

Successful completion of the following courses:

Understanding of the 4G EPC network.

Duration and class size:

The length of the course is 3 hours and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



5G Core Protocols and Procedures

LZU1082643 R1A

Description:

Transforming today's networks to 5G is key to keeping pace with the demands of an evolving Networked Society, where opportunities span new high-bandwidth applications, low latency powered Internet of Things (IoT) services and beyond.

This course explains the protocols and the signaling used for the 5G Core (5GC) infrastructure. It describes the interfaces in 5GC and the interworking with 3GPP 5G RAN. The course describes various 5GC use case scenarios such as Connection, Registration, Mobility, and Session management based on the 3GPP Release 15.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Explain the basic conceptual network architecture and technology for the 5G Core
- 2 List and explain the identifiers relevant for the 5GC
- 3 List the interfaces and explain the signaling, protocols and service exchange between the network functions.
- 4 Analyze the basic procedures for 5GC
 - 4.1 Explain the Registration Procedures
 - 4.2 Explore the Service Request Procedures
 - 4.3 Examine the Session Management Procedures
 - 4.4 Interpret the Handover Procedures

Target audience:

Service Planning Engineer, Network Deployment Engineer, Network Design Engineer, System Engineer

Prerequisites:

Successful completion of the following courses:

Successful completion of the following course:

5G Core Concepts, LZU1082641



Duration and class size:

The length of the course is 2 days and the maximum number of participants per session is 16

Learning situation:

This course is based on theoretical instructor-led lessons given in a classroom environment.



5G EPC Introduction

LZU1082644 R1A

Description:

Transforming today's networks to 5G is key to keeping pace with the demands of an evolving Networked Society, where opportunities span new high-bandwidth applications, low latency powered Internet of Things (IoT) services and beyond.

Ericsson is driving 5G in the industry with unmatched experience from four generations of mobile networks, the strongest global 5G ecosystem, engagement in standards around the world, and technology leadership in all 5G domains.

How will 5G Evolved Packet Core (EPC) architecture evolve as Ericsson moves from 4G towards 5G?

The course will explore the features and enhancements for 5G EPC such as the Control Plane/User Plane split etc. and go through the different LTE/5G slicing options.

The course is given as a Web Based Learning (WBL).

Learning objectives:

On completion of this course the participants will be able to:

- 1 List the main benefits of 5G EPC.
 - 1.1 Explain the 5G EPC architecture and the 5GC architecture.
 - 1.2 Mention the migration alternatives to 5G.
 - 1.3 Describe the main 5G Use Cases.
- 2 Explore the main 5G EPC features.
 - 2.1 Describe the feature 20/10 Gbps subscribed QoS for 5G/New Radio (NR).
 - 2.2 Outline the feature 5G/NR admission control.
 - 2.3 Assess the feature dual connectivity LTE/NR.
 - 2.4 Evaluate the NR usage reporting.
 - 2.5 Discuss the operator control of UE 5G NR admission and resource use.
 - 2.6 Review the CP/UP separation.
 - 2.7 Describe the Core Network selection based on UE 5G/NR Capability.
 - 2.8 Explain the slicing LTE/5G option.

Target audience:

Service Planning Engineer, Network Deployment Engineer, Network Design Engineer, System Engineer



Prerequisites:

Successful completion of the following courses:

Successful completion of the following courses:

Virtual EPC Overview, LZU1082264

5G Core Concepts, LZU1082641

Duration and class size:

The length of the course is 1 hour and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



5G Transport Overview

LZU1082662 R1A

Description:

Are you starting your journey towards 5G? This course will give you an overview of 5G and 5G transport. It will outline the requirements 5G have on transport, and the how mobile operators can build a transport network to meet these requirements. It will give an overview of Ericsson's offering for 5G transport with Ericsson Radio System, and it will give you an insight to some of the 5G related features available in the Ericsson transport nodes.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Understand 5G transport on an overview level
 - 1.1 Market drivers
 - 1.2 Use cases
 - 1.3 The 5G journey
- 2 Describe requirements that 5G will put on transport
 - 2.1 More Bandwidth
 - 2.2 More Connections
 - 2.3 More Security
 - 2.4 Lower Latency
 - 2.5 New Interfaces
 - 2.6 New Concepts
 - 2.7 Synchronization
 - 2.8 TCO
- 3 Describe Ericsson's 5G transport offering
 - 3.1 The Ericsson 5G platform
 - 3.2 Ericsson Radio System
 - 3.3 Complete 5G Ready Transport
 - 3.4 Management system
 - 3.5 Partner products

Target audience:

Overview training - This course is suitable for anyone who is required to be familiar with 5G transport



Prerequisites:

Successful completion of the following courses:

General understanding of mobile networks and the transport segment.

Duration and class size:

The length of the course is 30 minutes and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



An Overview of ENM Application on Cloud

LZU1082563 R1A

Description:

Are you working or starting to work with Ericsson Network Manager (ENM)? Are you a System Administrator or in a role that interacts with an OSS?

ENM is now available with different deployment options that includes ENM Integrated System with verified performance and ENM Application on operator cloud. It is essential for you to understand these deployment options so as to take advantage of its benefits.

This web-based training provides knowledge to the participants about what constitutes ENM application on cloud and also introduces the main ENM functionalities that are available as part of the product. This course will serve as a primer to Cloud Technology and also as an introduction to more detailed ENM training courses such as ENM System Administration and as such is suitable as for a general audience.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Overview of Ericsson Network Manager (ENM)
- 2 Explain the main functional applications in ENM
- 3 Describe ENM deployment options
- 4 Introduce the concepts of Cloud Computing
- 5 Identify ENM application on cloud in a hosted environment
- 6 List the high-level requirements for ENM application on cloud
- 7 State one example of ENM application on cloud deployment
- 8 Outline the evolution of ENM in becoming 5G ready

Target audience:

ENM Operators, ENM System Administrators



Prerequisites:

Successful completion of the following courses:

Students should be familiar with OSS Systems and have prior knowledge of Cloud and Virtualization.

Attending Ericsson Cloud System Overview - LZU1089909 would be an added advantage.

Duration and class size:

The length of the course is 1 hour and the maximum number of participants is 1

Learning situation:

This is self-paced Web based Learning.



An Overview of ENM for Classical OSS Users

LZU1082519 R2A

Description:

This online training develops fundamental overview of the Ericsson Network Manager (ENM) applications. It is the first step to using ENM in RAN or Core Network and is a prerequisite for attending other training in ENM Portfolio.

It consists of two modules focused at Ericsson Network Manager User Interface and ENM Applications and their salient features. This covers all aspects of what ENM as a Network Management system does. Applications for fault, configuration, accounting, performance and security (FCAPS) are explained here. It prepares participants to go through deeper dive on various hands-on training after its completion.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Navigate Ericsson Network Manager's user interface
- 2 Access various configuration management applications via ENM's Application launcher
- 3 Describe the salient features of each application in brief
- 4 Access various Fault Management applications via ENM's Application launcher
- 5 Access Performance Management applications via ENM Application launcher
- 6 Access Security Management through ENM Application launcher
- 7 Describe the salient features of each application in brief
- 8 Explain ENM 5G Management

Target audience:

Engineers and technicians who require the use of ENM tools to configure, monitor and troubleshoot telecommunication networks.



Prerequisites:

Successful completion of the following courses:

Basic knowledge of Classic OSS Network Operations and Administration will be useful for better understanding.

Duration and class size:

The length of the course is 2 hours and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



An Overview of the Ericsson Cloud Infrastructure

LZU1082558 R1A

Description:

The Ericsson Cloud provides an infrastructure to support all workloads, including next generation applications in the mobile networks such as 5G and IoT technologies. This course will provide the participant an overview of the products and solutions in the Ericsson Future Digital Infrastructure.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Describe the future digital infrastructure characteristics.
 - 1.1 Describe the concept of Software Defined Infrastructure (SDI).
 - 1.2 Describe the concept of hardware disaggregation.
 - 1.3 Describe the concept of distributed cloud infrastructure.
- 2 Identify the Ericsson Hyperscale Datacenter System 8000 as the data center infrastructure hardware solution.
 - 2.1 Describe the foundation of the Hyperscale Datacenter System 8000 with the concept of Intel® Rack Scale Design.
 - 2.2 Identify the hardware components for compute, networking and storage.
 - 2.3 Identify the optical interconnect providing for high speed connectivity within the solution.
 - 2.4 Identify the Command Center as a central management software providing for virtual Performance Optimized Datacenter (vPOD) operation.
- 3 Describe the solution for cloud infrastructure management software with the Ericsson Cloud Execution Environment.
 - 3.1 Describe the virtualization and abstraction function of the Cloud Execution Environment.
 - 3.2 Describe the virtual infrastructure management features.
 - 3.3 Identify components of the Cloud Execution Environment to manage virtual compute, networking and storage functions.
 - 3.4 Describe the function of Atlas providing a graphical interface for system administration purposes.
- 4 Explore the Ericsson Cloud Manager product as the BSS function.
 - 4.1 Identify the architecture of the Cloud Manager.
 - 4.2 Describe the service catalog capabilities to build services within the cloud.
 - 4.3 Describe the orchestration function providing automated deployment of applications and services.
 - 4.4 Identify features for building reports and analytics.
- 5 Describe security solutions provided with the Ericsson cloud infrastructure.



- 5.1 Identify security features built in to the Ericsson cloud portfolio, from basic physical security fencing to hardening practices.
- 5.2 Compare the differences between security, integrity and privacy.
- 5.3 Describe the Data Centric Security product providing for data integrity through blockchain and hashtree technology.

Target audience:

Service Planning Engineer, Service Design Engineer, Network Design Engineer, Network Deployment Engineer, Service Deployment Engineer, System Technician, Service Technician, Service Engineer, System Engineer, Field Technician, System Administrator, Application Developer, Business Developer, Customer Care Administrator

Prerequisites:

Successful completion of the following courses:

None

Duration and class size:

The length of the course is 2 hours and the maximum number of participants is 1

Learning situation:

This course is delivered as a web based online learning module

Ericsson AB
Global Services
SE-164 80 Stockholm
Telephone: +46 10 719 0000



ENM 18 Operations for Core Network

LZU1082672 R1A

Description:

Is your Core network management moving from OSS-RC to the latest Ericsson Network Manager (ENM)? Are you concerned with the competence needed to manage your Core network with ENM?

This course provides you with an understanding of the Ericsson Network Manager (ENM) applications available for managing networks with a focus on Packet Core nodes. These may include the SGSN-MME, vMME, vSAPC, EPG (SGW/PGW) and vEPG. This course is extremely instrumental in enabling you to access and navigate the ENM tools using practical (hands-on) sessions.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Ericsson Network Manager Overview
 - 1.1 Describe the overall functionality of the Ericsson Network Manager (ENM)
 - 1.2 Compare ENM and OSS-RC
 - 1.3 Describe at a high level the ENM Fault Management (FM) features
 - 1.4 Explain ENM Configuration Management (CM) features
 - 1.5 Review the ENM Performance Management (PM) features
 - 1.6 List the ENM Security Management features
 - 1.7 Introduce the ENM Node License Management features
 - 1.8 Discuss at a high level the ENM Node Hardware Management features
 - 1.9 Identify the ENM Node Backup Management features
 - 1.10 Outline the ENM Node Software Management features
 - 1.11 List other tools available in ENM
 - 1.12 List the nodes supported by ENM
- 2 Describe ENM Tools at a high level
 - 2.1 Introduce the general ENM tools
 - 2.2 Interpret ENM Documentation features
 - 2.3 Describe ENM Network Explorer features
 - 2.4 List the supported node tools
 - 2.5 Explain ENM Topology Browser features
 - 2.6 Review ENM Log Viewer features
 - 2.7 Describe ENM Command Line Interface features
- 3 Accessing the ENM Server
 - 3.1 Describe the ENM access environment



- 3.2 Review how user roles are used in ENM
- 3.3 Access the ENM server and log into ENM
- 3.4 Learn how to view and edit your user profile
- 3.5 Explain how to change your password
- 3.6 Discuss how to log out of ENM

- 4 Navigating the ENM Graphical User Interface
 - 4.1 List the features of the ENM Application Launcher
 - 4.2 Describe the Application Launcher Page Layout
 - 4.3 Use Application Launcher favorites to access regularly used applications

- 5 Access the ENM Documentation
 - 5.1 List the available ENM documentation
 - 5.2 Access and view ENM online Help
 - 5.3 Access and view the Customer Product Information (CPI) using ALEX
 - 5.4 Access and view ENM command documentation using the Command Line Interface

- 6 Using the Network Explorer Application
 - 6.1 Describe features and functions of the Network Explorer application
 - 6.2 Launch Network Explorer and access the application online help
 - 6.3 Describe the Network Explorer application page layout
 - 6.4 Perform simple searches using the search box
 - 6.5 Perform complex searches using the criteria builder
 - 6.6 View and edit Managed Object(MO) attributes
 - 6.7 Describe, create and manage Collections
 - 6.8 Describe, create and manage Saved Searches

- 7 Access the Node Tools
 - 7.1 Review the Node tools available in ENM
 - 7.2 Access Advanced MO Scripting for supported nodes
 - 7.3 Access the Element Manager for supported nodes
 - 7.4 Access the Cabinet Viewer for supported nodes
 - 7.5 Access the Node CLI for supported nodes

- 8 Use the Topology Browser Application
 - 8.1 Describe features and functions of the Topology Browser application
 - 8.2 Launch the Topology Browser and access it's online help
 - 8.3 List and describe the Topology Browser application page layout
 - 8.4 View the Managed Object Model of selected nodes
 - 8.5 View an object's MO attributes
 - 8.6 Modify an object's MO attributes

- 9 Navigate the ENM Command Line Interface (CLI)
 - 9.1 Describe the common features of the ENM CLI
 - 9.2 Launch the ENM CLI and access the application online help
 - 9.3 Run example commands
 - 9.4 Create command aliases



- 9.5 Create and use batch files in the ENM CLI
- 9.6 Export CLI results
- 9.7 Use the ENM Shell Terminal
- 9.8 List and describe the ENM CLI command sets

- 10 Describe Node Monitoring in ENM Overview
- 10.1 Describe at a high level the network monitoring functionality in ENM
- 10.2 Review how alarms are managed in ENM
- 10.3 List and describe the purpose of the graphical user applications used for monitoring
- 10.4 Describe how the ENM CLI functionality can be used to monitor the network

- 11 Monitor Active Alarms using the Alarm Monitor
- 11.1 Describe features and functions of the Alarm Monitor application
- 11.2 Launch the Alarm Monitor and access the application online help
- 11.3 Describe and configure the Alarm Monitor application layout
- 11.4 Use the Alarm Monitor filtering function to view selected alarms
- 11.5 View alarm details, acknowledge/un-acknowledge and export alarms
- 11.6 Export Active Alarms

- 12 Use the Alarm overview to Monitor Alarm Statistics in the Network
- 12.1 Describe features and functions of the Alarm Overview application
- 12.2 Launch the Alarm Overview and use the application online help
- 12.3 Describe and configure the Alarm Overview application windows
- 12.4 Use the Alarm Overview to view the alarm statistics in the network

- 13 View Active and Historical Alarms using Alarm Search
- 13.1 Describe features and functions of the Alarm Search application
- 13.2 Launch the Alarm Search and access the application online help
- 13.3 Describe and configure the Alarm Search application page layout
- 13.4 Define alarm search criteria
- 13.5 View and export the alarm search results

- 14 Use the Alarm Supervision Status to Monitor Alarms collection in the Network
- 14.1 Describe features and functions of the Alarm Supervision Status application
- 14.2 Launch the Alarm Supervision Status and access the application online help
- 14.3 Describe the Alarm Supervision Status application page layout
- 14.4 View network supervision summary
- 14.5 View and filter network supervision status by network element

- 15 Use the Network Health Monitor to verify the health of the Network
- 15.1 Describe features and functions of the Network Health Monitor application
- 15.2 Launch the Network Health Monitor application and access the application online
- 15.3 Describe and configure the Network Health Monitor Status application
- 15.4 View network operational state summary
- 15.5 View network synchronization status
- 15.6 View Worst Performing nodes by KPI
- 15.7 View Nodes Breached by KPI



- 16 Use Node Monitor to monitor cell status
 - 16.1 Describe features and functions of Node Monitor application
 - 16.2 Launch the Node Monitor and access the application online help
 - 16.3 Describe and configure the Node Status application
 - 16.4 Use the Node Monitor to analyze the status of network cells
- 17 Use ENM CLI ccredit Command Set to monitor Radio Access Nodes
 - 17.1 Describe purpose and function of the ENM CLI ccredit Command Set
 - 17.2 Access the ENM CLI ccredit Command Set documentation
 - 17.3 List the ENM CLI ccredit Command Set commands
 - 17.4 Use the ccredit get command to list the status of node managed objects (cells,
 - 17.5 Use the ccredit set command to lock/unlock a managed object
 - 17.6 Use the ccredit set command to restart nodes and node hardware
- 18 Describe features and functions of the Software and Hardware Management Application
 - 18.1 Describe features and functions of the Software and Hardware Management
 - 18.2 Describe how the OSS-RC SMO functionality is implemented in EMN
 - 18.3 Access the Software and Hardware Management Application Status Online Help
 - 18.4 View jobs, job Details and job logs
 - 18.5 Delete jobs
 - 18.6 View, Filter and Export Job Logs
 - 18.7 View Node Activities
- 19 Manage Node Backups
 - 19.1 Describe the ENM Node backup administration features
 - 19.2 Access the Backup Administration Online Help
 - 19.3 Describe and configure the Backup Administration application windows
 - 19.4 View and filter the Backup Inventory
 - 19.5 View Backup details
 - 19.6 Create a Backup Job
 - 19.7 Create and Delete CVs
 - 19.8 Manage Backups
 - 19.9 Install license Keys
- 20 Manage Node Hardware Inventory
 - 20.1 Describe features and functions of then node hardware Inventory management
 - 20.2 Access the Hardware Inventory Management Online Help
 - 20.3 Describe and configure the Hardware Inventory Management application windows
 - 20.4 View and filter the hardware and hardware items
- 21 Manage Node Software
 - 21.1 Describe the ENM node software administration features
 - 21.2 Access the Software Administration Online Help
 - 21.3 Describe and configure the software administration application windows
 - 21.4 View the installed software on network elements
 - 21.5 Import and view available software packages



- 21.6 Create an upgrade job
- 22 Provide an Overview of ENM Performance Management
 - 22.1 List and describe how the network performance data is initiated, collected and managed in ENM
 - 22.2 List and describe the purpose of the PM graphical user applications
 - 22.3 View Performance data using CLI
- 23 Manage network performance Initiation and collection
 - 23.1 Describe features and functions of the PMIC application
 - 23.2 Launch the PM Initiation and Collection (PMIC) Application and access the
 - 23.3 Describe the PMIC page layout
 - 23.4 View and analyze the PMIC subscription dashboard
 - 23.5 View existing performance subscriptions
 - 23.6 Create, modify and delete a Subscription Profile
 - 23.7 View subscription Profile Status
 - 23.8 Activate/Deactivate a Subscription Profile
- 24 Initiate and view LTE Core traces
 - 24.1 Describe the LTE Core network trace features
 - 24.2 Initiate and activate EBM/EBM-S traces
 - 24.3 Create EBM Subscription Counters
 - 24.4 Create EBM Subscription Events
- 25 Provide an overview of Configuration Management(CM) in ENM
 - 25.1 List and describe how the network Configuration Management data is managed in ENM
 - 25.2 List and describe the purpose of the CM graphical user applications
 - 25.3 List and describe the purpose of the CM CLI functionality
- 26 Use Configuration Management CLI to manage the network configuration
 - 26.1 Describe purpose and function of the ENM Configuration Management CLI
 - 26.2 Access the ENM Configuration Management CLI documentation (cmedit)
 - 26.3 View managed object attributes using the CM CLI
 - 26.4 Set managed object attributes using the CM CLI
 - 26.5 Create managed objects using the CM CLI
 - 26.6 Delete managed objects using the CM CLI
- 27 Manage Live and Non-live configurations for network configuration
 - 27.1 Understand the ENM configuration concepts of Live and Non-live configurations
 - 27.2 List the operations that can be performed using ENM configurations
 - 27.3 List existing configurations
 - 27.4 Create a Non-Live Configurations
 - 27.5 Activate a Non-Live Configuration
 - 27.6 Compare Configurations
 - 27.7 Delete a Non-Live Configuration
- 28 Import and export network configurations using ENM CLI
 - 28.1 Describe the ENM CLI Configuration export and import features



- 28.2 List the export file formats
- 28.3 Explain how to create export filters
- 28.4 Review the configuration export process
- 28.5 List and use the export commands to export a configuration
- 28.6 List the import file formats
- 28.7 Review the configuration import process
- 28.8 List and use the export commands to import a configuration
- 28.9 Core Network Operations Manager (CNOM) Overview

Target audience:

The target audience for this course consists of engineers and technicians who require the use of ENM tools to configure, monitor and troubleshoot LTE and WDCMA networks.

Prerequisites:

Successful completion of the following courses:

Students should have prior experience using OSS-RC to manage the network.

Duration and class size:

The length of the course is 3 days and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both classroom and in a technical environment using equipment and tools, which are accessed remotely.



ENM on Third-party OpenStack Cloud System Administration

LZU1082738 R1A

Description:

Are you a System Administrator? Will you be working with Ericsson Network Manager? This course will give the student thorough knowledge required to administer the ENM application running on the customer's own cloud.

This course prepares ENM System Administrators to handle maintenance activities and backup key ENM components, manage ENM user accounts, monitor the status of ENM services and log files, and perform basic troubleshooting of issues in preparation for opening Customer Service Requests with Ericsson support. The core ENM concepts and technical fundamentals of the system are overviewed on the first day.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Describe the origins and evolution of ENM
 - 1.1 Describe the origins and evolution of ENM
 - 1.2 Overview ENM System Basics
- 2 Overview ENM System Basics
 - 2.1 Overview the layered Architecture underlying ENM
 - 2.2 Explain ENM as a Tenant in a cloud environment
- 3 Overview the layered Architecture underlying ENM
 - 3.1 Describe the purpose and function of the main 3PPs in ENM
 - 3.2 Describe and examine the function of the ENM Databases
- 4 Explain ENM as a Tenant in a cloud environment
- 5 Describe the purpose and function of the main 3PPs in ENM
 - 5.1 Explain the main concepts of Northbound and Southbound interfaces in Network Management
 - 5.2 Overview the ENM associated Northbound and Southbound interfaces
- 6 Describe and examine the function of the ENM Databases
 - 6.1 List the High Level technical details of ENM security functions
- 7 Explain Availability Management in ENM application on cloud
 - 7.1 Describe the main ENM applications by functional area
 - 7.2 Identify the principle ENM use cases
- 8 List the ENM Interfaces (NB/SB) & Protocols



- 8.1 Overview Basic Navigation of the ENM System
- 8.2 Overview of the ENM Launcher User Interface and the main Applications in ENM
- 9 Overview Security in ENM
 - 9.1 Identify and discuss the Database Management Systems
 - 9.2 Describe the Different Databases in ENM
 - 9.3 Employ the database utilities
- 10 Appreciate the Main ENM Use Cases
 - 10.1 Place the ALEX Libraries
 - 10.2 Illustrate OPI Access set up
 - 10.3 Implement collections in ENM Workspaces
- 11 Explore the Navigation of Applications in ENM
 - 11.1 Interpret the use of Single Sign-on (SSO) in ENM
 - 11.2 Describe User Management in ENM
 - 11.3 Perform the Add, Remove, Enable & Disable tasks on ENM User Accounts
 - 11.4 Implement the modification of a User's Authority and Policies
 - 11.5 Perform Monitoring of user related Managed Component status and logs
 - 11.6 Discuss User Management housekeeping activities
- 12 Investigate ENM Database Systems
 - 12.1 Provide an Overview description of Security management in ENM
 - 12.2 Explain Policy Management principles
 - 12.3 Explore and recall Perimeter Security
 - 12.4 Acknowledge and recount Data Protection
- 13 Implement the ENM Workspaces Same
 - 13.1 List the different logs in ENM
 - 13.2 Discuss Monitoring in ENM
 - 13.3 Activate Monitoring Alerts
 - 13.4 Employ the ESM Monitoring Tool
 - 13.5 Review the maintenance of log files
- 14 Practice User Account and Policy Management No Change
 - 14.1 Describe the Software Hardware Manager (SHM)
 - 14.2 Execute license management for System use
- 15 Discuss and apply Security Management in ENM
 - 15.1 Identify and describe the North Bound Interfaces (NBIs)
- 16 Acknowledge and activate Logging and Monitoring in ENM
 - 16.1 Investigate the use of the GUI/Command line interfaces to configure Backups
 - 16.2 Describe the functionality of Restore as part of OMBS
- 17 Define and describe ENM License Handling and SHM
 - 17.1 Critique the Bulk Export Files
 - 17.2 Identify and describe Health Checks in ENM
 - 17.3 Describe Guideline System Administrator Tasks



- 18 List and discuss integration of ENM with other systems
- 18.1 Explain the Fault Management Architecture in ENM
- 18.2 Explore and describe Fault Management application Administration Tasks
- 18.3 Illustrate Performance Management application and describe Performance Management Initiation and Collection Administration Tasks
- 18.4 Explore SMRS Administration Tasks
- 18.5 Describe AMOS Administration Tasks
- 18.6 Investigate Configuration Management application interfaces
- 18.7 Explore how to Commission Nodes for Management in ENM
- 19 Describe the ENM O&M Backup Solution
- 19.1 Configuring VNF-LCM ENM Parameters
- 19.2 VNF-LCM System Backup and Restore
- 19.3 VNF-LCM Standard Maintenance Procedures
- 19.4 VNF-LCM System Backup and Restore
- 20 Identify and cite examples of housekeeping tasks in ENM
- 21 Explore Operation and Maintenance System Administration tasks in ENM
- 22 VNF Lifecycle Management Administration Tasks

Target audience:

System Administrators

Prerequisites:

Successful completion of the following courses:

PostgreSQL

SQL

Red Hat Enterprise Linux

Duration and class size:

The length of the course is 5 days and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both classroom and in a technical environment using equipment and tools, which are accessed remotely.

Ericsson AB
Global Services
SE-164 80 Stockholm
Telephone: +46 10 719 0000



EPC Signaling in 5G

LZU1082647 R2A

Description:

Transforming today's networks to 5G is key to keeping pace with the demands of an evolving Networked Society, where opportunities span new high-bandwidth applications, low latency powered Internet of Things (IoT) services and beyond.

Ericsson is driving 5G in the industry with unmatched experience from four generations of mobile networks, the strongest global 5G ecosystem, engagement in standards around the world, and technology leadership in all 5G domains.

This course explains the protocols and the signaling used for the 5G Evolved Packet Core (5G EPC) infrastructure. It describes the interfaces in 5G EPC and the interworking with 3GPP 5G NR access.

The course will explore various 5G EPC use case scenarios such as Mobility, Session and Bearer management based on the 3GPP Release 15, also signaling traces will be analyzed.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Examine the 5G EPC nodes and Interfaces
 - 1.1 List and describe the function of the nodes in the Ericsson 5G EPC
 - 1.2 Explore the LTE and NR access interfaces related to 5G EPC
 - 1.3 Describe the 5G EPC core interfaces
- 2 Analyze the signaling and protocols between the nodes
 - 2.1 List and explain some EPS identifiers, e.g. Geographical Identifier TA, MME Pool Area, SGW Serving area. E-UTRAN identifiers, PLMN identifiers, UE temporary identifiers.
 - 2.2 Outline and describe the protocols used in the EPC network, SCTP, Diameter, S1-AP, NAS, SGs-AP, GTP, and PFCP
- 3 Describe how different traffic cases are handled by the 5G EPC nodes
 - 3.1 Outline the Identity, Authentication, and Location Management procedures
 - 3.2 Describe selected traffic cases for mobility and handover procedures
 - 3.3 Analyze detailed EPS signaling flows and message content for EPS procedure, e.g. Attach, Detach, TAU etc. from actual traces.
 - 3.4 Identify the main elements in the signaling between the PGW and S-MME.
 - 3.5 Explain the Internet of Thing related signaling flows related to Power Saving Mode (PSM), Data over NAS (DoNAS), and SMS over SGs.
 - 3.6 Describe Dedicated Core network selection (DeCOR).



- 3.7 Describe the traffic flow in the Sx interface (CP/UP split in EPG).
- 4 Explain the supporting services for 5G EPC
- 4.1 Describe signaling from the Home Subscriber Server (HSS) and AAA
- 4.2 Describe the DNS procedures for EPC
- 4.3 Explain e2e voice signaling using CSFB, VoLTE and SRVCC

Target audience:

This course is suitable for anyone who is required to have detailed knowledge of EPC Signaling in 5G.

Prerequisites:

Successful completion of the following courses:

EPC System Survey, LZU1087977

5G Core Concepts, LZU1082641

Knowledge of basic GPRS concepts and signaling in GPRS is helpful but not required.

Duration and class size:

The length of the course is 2 days and the maximum number of participants per session is 16

Learning situation:

This course is based on theoretical instructor-led lessons given in a classroom environment.

Ericsson AB
Global Services
SE-164 80 Stockholm
Telephone: +46 10 719 0000



Ericsson CEE Overview R6.6

LZU1082719 R1A

Description:

The Ericsson Cloud Execution Environment (CEE) provides virtual infrastructure management for cloud services. This allows various applications to make use of the virtual resources for compute, storage and networking. The CEE provides virtual machine lifecycle management in a high available and low latency performance environment. Upon the completion of this course, the participant will be able to understand the basic function of the CEE, its architecture and VM lifecycle management in CEE R6.6.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Describe the highlights of the Cloud Execution Environment (CEE)
 - 1.1 Discuss the positioning of the CEE software in the overall Ericsson Cloud System solution
 - 1.2 Identify the logical architecture of the CEE
 - 1.3 List the hardware integrations for the CEE
 - 1.4 Discuss the enhancements introduced with the CEE R6.6 release
- 2 Describe the functions of the CEE for virtual machine lifecycle management
 - 2.1 Explore the virtual machine lifecycle management through the OpenStack services in CEE
 - 2.2 Describe the services running in the infrastructure hosts, such as operating system, hypervisor and storage architecture
- 3 Describe the virtual infrastructure management function of the CEE.
 - 3.1 Describe the function of the vCIC in CEE
 - 3.2 List high availability (HA) features in CEE for services and databases
 - 3.3 Describe the function of Atlas as a virtual infrastructure management dashboard

Target audience:

This course is suitable for anyone who is required to be familiar with CEE R6.6.

Prerequisites:

Successful completion of the following courses:

None



Duration and class size:

The length of the course is 1 hour and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



Ericsson Cloud Manager 18.0 Operations

LZU1082746 R1A

Description:

In today's information-driven marketplace, gaining a competitive edge takes a new level of agility that can only be reached through a more dynamic approach to managing the service and the resource upon which they depend. Ericsson Cloud Manager (ECM) provides an end-to-end multivendor cloud application and services management capability, addressing access management, service management and service optimization.

The students will be introduced to the functionality of the Ericsson Cloud Manager and its Graphical User Interface. Through a series of hands-on exercises the students will learn how to perform user tasks, such as creation of virtual data centers, virtual networks and virtual machine images.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Understand the Cloud Fundamentals and Cloud Manager
 - 1.1 Establish the fundamental concepts of Cloud
 - 1.2 Differentiate between Cloud Manager components
- 2 Introduction of User Administration, Basic Navigation and High-Level Architecture
 - 2.1 Navigate the user interface
 - 2.2 Manage tenant(s)/sub-tenant(s) and user(s)
- 3 Describe the Internal NFVO and VNF-M Operations
 - 3.1 Create orders of all asset types from the Cloud Manager service catalog
 - 3.2 Operate as a Provider Administrator to manage resources
 - 3.3 Operate as a Tenant to manage virtual assets
 - 3.4 Identify supported VIM zones in Cloud Manager
- 4 Explore the ETSI MANO
 - 4.1 Distinguish between ETSI MANO "or-vnfm support" in Cloud Manager 18 and proprietary instantiation use cases
 - 4.2 Interpret HOT/OVF based VNF templates
 - 4.3 Apply generic VNF-Management tasks
 - 4.4 Examine the ETSI MANO reference architecture and interfaces
- 5 Determine the Network Service Orchestration
 - 5.1 Interpret TOSCA based network services descriptor
 - 5.2 Perform Network Service Orchestration tasks
 - 5.3 Perform Network Service life cycle management tasks



- 6 Understand the Custom workflows
- 6.1 Review capabilities of Custom workflows
- 7 Explain the Performance Management
- 7.1 Recognize capabilities for retrieving Performance Management data from VIM zones
- 7.2 Locate PM data in Cloud Manager
- 7.3 Practice running Performance Management tasks on assets deployed on NFVI
- 8 Explain the Fault Management
- 8.1 Locate Fault Management data in Cloud Manager
- 8.2 Detect service impacting fault management alarms in Cloud Manager

Target audience:

Service Planning Engineer, Service Design Engineer, Network Design Engineer, Network Deployment Engineer, Service Deployment Engineer, Service Engineer, System Engineer, System Administrator, Application Developer

Prerequisites:

Successful completion of the following courses:

General knowledge of cloud fundamental concepts.
Knowledge of the NFV ETSI MANO framework an advantage
Basic knowledge of OpenStack or similar virtual infrastructure
Basic knowledge of REST API an advantage

Duration and class size:

The length of the course is 4 days and the maximum number of participants is 12

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both classroom and in a technical environment using equipment and tools, which are accessed remotely.

Ericsson AB
Global Services
SE-164 80 Stockholm
Telephone: +46 10 719 0000



Ericsson Cloud Manager 18.0 System Administration

LZU1082747 R1A

Description:

In today's information-driven marketplace, gaining a competitive edge takes a new level of agility that can only be reached through a more dynamic approach to managing the service and the resource upon which they depend. Ericsson Cloud Manager provides an end-to-end multivendor cloud application and services management capability, addressing access management, service management and service optimization.

Upon the completion of this course, the participant will be able to understand the how to perform first level troubleshooting and problem isolation.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Understand the Ericsson Cloud manager 18.0 System Administration
 - 1.1 Discuss the architecture of Cloud Manager 18.0
 - 1.2 Review relevant deployment models in Cloud Manager
 - 1.3 Discuss the architecture of Cloud Manager 18.0
 - 1.4 Review relevant deployment models in Cloud Manager
 - 1.5 Discuss component up-lift in Cloud Manager 18.0 release
 - 1.6 Practice using the language support tool
 - 1.7 Describe method for obtaining licenses in Cloud Manager
 - 1.8 Review logs
 - 1.9 Maintain user profiles and roles
 - 1.10 Health-check/Troubleshoot on the Core VM.
 - 1.11 Health-check/Troubleshoot on the Activation VM
 - 1.12 Check and verify service orchestration logs

Target audience:

This course is suitable for anyone who is required to be familiar with Ericsson Cloud Manager system Administration



Prerequisites:

Successful completion of the following courses:

Ericsson Cloud Manager 18.0 Operations

Duration and class size:

The length of the course is 1 day and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both classroom and in a technical environment using equipment and tools.



UDC in 5G EPC Introduction

LZU1082649 R1A

Description:

This course is a web based learning, describing the feature and function delta between UDC for LTE/EPC networks and UDC used for 5G RAN (NR)/5G EPC networks according to 3GPP option 3. The course is divided into three e-learning modules.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Describe the 5G (NR) subscription authorization support
- 2 Explain support for extended bit rates for Subscribed AMBR
- 3 Explain the Slicing Routing Database (DB) support
- 4 Explain 5G NR support in SAPC
- 5 Explain the extension of the HSS-EPC profile in CUDB to support 5G EPC
- 6 Explain the Slicing Routing Data Base (DB) in CUDB

Target audience:

Service Planning Engineer, Network Deployment Engineer, Network Design Engineer, System Engineer



Prerequisites:

Successful completion of the following courses:

Virtual EPC Overview, LZU1082264

5G Core Concepts, LZU1082641

Duration and class size:

The length of the course is 1 hour and the maximum number of participants is 1

Learning situation:

This course is delivered as a web based online learning module.



Virtual EPC Onboarding and Management

LZU1082651 R1A

Description:

The course provides an overview of the Ericsson Evolved Packet Core (EPC) solution implemented as Virtualized Network Functions (VNFs). The course helps the participants to understand the prerequisite of installing the vEPC on NFVI, its preparation, steps to onboard it with manual process and also automatic deployment using the orchestration tools. The participants will also learn implementation and management of vEPC on a cloud environment by performing practical exercises.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Identify the role and purpose of virtual EPC (vEPC).
 - 1.1 Explain why there is a need for a vEPC.
 - 1.2 Describe the vEPC solution in brief – its architecture and capabilities.
 - 1.3 Prepare the templates based on the lab setup.
- 2 Onboard a virtual EPC VNF.
 - 2.1 Explain the orchestration possibilities using ATLAS GUI, CLI and ECM.
 - 2.2 Instantiate the VNF appropriate tools.
- 3 Verify the VNF.
 - 3.1 Check the connectivity for the instantiated VNF.
 - 3.2 Perform health check of the instantiated VNF.

Target audience:

Network Deployment Engineer, Service Deployment Engineer, System Technician, Service Technician, System Engineer, Service Engineer, Field Technician

Prerequisites:

Successful completion of the following courses:

Virtual EPC Overview, LZU1082264

Virtualization Concepts Introduction, LZU1082654



Duration and class size:

The length of the course is 1 day and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both a classroom and a technical environment using equipment and tools, which are accessed remotely.



Virtual IMS Onboarding and Management

LZU1082652 R1A

Description:

Transforming today's networks to 5G is key to keeping pace with the demands of an evolving Networked Society, where opportunities span new high-bandwidth applications, low latency powered Internet of Things (IoT) services and beyond.

The course explains the Ericsson virtualized IMS solution implemented as Virtualized Network Functions (VNFs). It will list the prerequisites of installing the virtual (v)IMS on a cloud infrastructure (NFVI), what preparations are required, and go through the steps for the manual onboarding and instantiation process by using orchestration tools. Practical exercises for onboarding and instantiation of a vCSCF will be performed in the course.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Explain the basics of the NFV reference architecture and the Ericsson cloud Execution Environment (CEE)
- 2 Discuss the infrastructure requirements for virtual IMS
 - 2.1 List the requirements of virtual IMS
 - 2.2 Discuss the details of vIMS implementations
 - 2.3 Prepare the templates based on the lab setup
- 3 Onboard and Instantiate a CSCF VNF
 - 3.1 Prepare HOF templates based on the lab setup
 - 3.2 Onboard a CSCF VNF using OpenStack CLI
 - 3.3 Instantiate a CSCF VNF using OpenStack CLI
- 4 Verify and Scale-Out a CSCF VNF
 - 4.1 Check the connectivity for the instantiated CSCF VNF
 - 4.2 Perform health check of the instantiated CSCF VNF
 - 4.3 Scale-Out the instantiated CSCF VNF

Target audience:

Network Deployment Engineer, Service Deployment Engineer, System Technician, Service Technician, System Engineer, Service Engineer, Field Technician



Prerequisites:

Successful completion of the following courses:

IMS Overview, LZU1082585

Virtualization Concepts Introduction, LZU1082654

Duration and class size:

The length of the course is 1 day and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both a classroom and a technical environment using equipment and tools, which are accessed remotely.



Virtual UDC Onboarding and Management

LZU1082653 R1A

Description:

The course provides an overview of the Ericsson User Data Consolidation (UDC) solution implemented as Virtualized Network Functions (VNFs). The course helps the participants to understand the prerequisite of installing the vUDC on NFVI, its preparation, steps to onboard it with manual process and also automatic deployment using the orchestration tools. The participants will also learn implementation and management of vUDC on a cloud environment by performing practical exercises.

Learning objectives:

On completion of this course the participants will be able to:

- 1 Discuss the infrastructure requirements for virtual UDC (vUDC)
 - 1.1 List the requirements of vUDC
 - 1.2 Discuss the details of vUDC implementations
 - 1.3 Prepare the templates based on the lab setup
- 2 Onboard an UDC VNF
 - 2.1 Explain the Orchestration possibilities using the ATLAS GUI and CLI
 - 2.2 Instantiate the VNF using appropriate tools
- 3 Manage the VNF
 - 3.1 Check the connectivity for the instantiated VNF
 - 3.2 Perform health and management of the instantiated VNF

Target audience:

Network Deployment Engineer, Service Deployment Engineer, System Technician, Service Technician, System Engineer, Service Engineer, Field Technician

Prerequisites:

Successful completion of the following courses:

Ericsson User Data Consolidation (UDC) 1 Overview, LZU1082477
Virtualization Concepts Introduction, LZU1082654



Duration and class size:

The length of the course is 1 day and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both a classroom and a technical environment using equipment and tools, which are accessed remotely.





Virtualization Concepts Introduction

LZU1082654 R1A

Description:

The general Telecom Industry trend has been to move from networks that were dedicated and purpose built with hardware and software tightly integrated to support a certain network service to converged networks where different services and applications share the same IP transport functionality. The current evolution of the networks is to evolve into a platform supporting virtualization of applications and Cloud computing.

The course explains the virtualization and the cloud concepts and describes the deployment of applications implemented as Virtualized Network Functions (VNFs). It explores the Network Functions Virtualization (NFV) architecture according to ETSI NFV, the open source platform OPNFV with the OpenStack services and additional services provided by the Ericsson Cloud Execution Environment.

The course is given as a Web Based Learning (WBL).

Learning objectives:

On completion of this course the participants will be able to:

- 1 Explore the virtualization and cloud concepts
 - 1.1 Analyze the virtualization efficiency and revenue opportunities
 - 1.2 Discuss what is meant by a Virtual Machine (VM)
 - 1.3 Examine the cloud concept according to the US National Institute of Standards and Technology (NIST)
- 2 Review the ETSI Network Functions Virtualization (NFV) architecture
 - 2.1 Explore the functionality and interfaces for NFVI, VNF, VNFC, MANO and Hypervisor
 - 2.2 Discuss what is meant by VNF Instantiation and Transition
 - 2.3 Determine what is meant with VNF scaling
 - 2.4 Identify virtual switching
- 3 Review the open source platform OPNFV
 - 3.1 Demonstrate how OPNFV relates to ETSI NFV
 - 3.2 Explore the main OPNFV software components: OpenStack, KVM, OpenFlow, Open vSwitch (OVS) and Open Virtualization Format (OVF)
 - 3.3 Analyze the OpenStack services such as Nova, Neutron, Glance, Cinder, Keystone and Horizon and the Ericsson enhancements
- 4 Identify the additional services provided by Ericsson Cloud Execution Environment
 - 4.1 List additional services provided by CEE such as Fuel, Atlas, security, orchestration, performance and fault management



- 5 Compare Ericsson's VNF offerings
- 5.1 Relate the Ericsson VNFs to ETSI NFV
- 5.2 Determine the VM types for IMS, EPC, UDC VNFs
- 5.3 Discuss high availability and robustness concepts for VNFs
- 5.4 Explore the Ericsson NFV delivery Models

Target audience:

Network Deployment Engineer, Service Deployment Engineer, System Technician, Service Technician, System Engineer, Service Engineer, Field Technician

Prerequisites:

Successful completion of the following courses:

General knowledge of Ericsson IMS, EPC and UDC

Duration and class size:

The length of the course is 1,5 hours and the maximum number of participants per session is 1

Learning situation:

This is a web-based interactive training course with multimedia content.



VNF LCM in ENM

LZU1082742 R1A

Description:

Do you work with Ericsson Network Manager (ENM) and need to orchestrate the Virtual Network Functions (VNF)? Do you need to support the VNF Life Cycle Management (LCM) use cases, such as: VNF Instantiation, VNF Scaling and VNF Decommissioning?

Then this course is for you, since it introduces the student to the ENM VNF Lifecycle Automation Framework provided by the cloud based application VNF-LCM. In addition, the course provides a base of understanding to evaluate and consider each VNF requirement on the Network Function Virtualization Infrastructure (NFVI).

Learning objectives:

On completion of this course the participants will be able to:

- 1 VNF Lifecycle Manager Overview
 - 1.1 Working with VNF Lifecycle Manager
 - 1.2 Introduction to Workflow Manager
- 2 Getting Started
 - 2.1 Launching/Exiting VNF Lifecycle Manager
 - 2.2 Working with Workflow Manager User Interface
- 3 Starting a Workflow
 - 3.1 Starting Workflow from Workflows View
- 4 Completing User Task
- 5 Monitoring Workflow Progress
- 6 View Completed Workflow Instance Details
- 7 Workflow Administration

Target audience:

Users of the VNF Lifecycle Manager application.



Prerequisites:

Successful completion of the following courses:

An Overview of ENM for Classical OSS Users, LZU1082519
Ericsson Cloud Execution Environment
Ericsson Cloud Manager

Duration and class size:

The length of the course is 2 days and the maximum number of participants is 8

Learning situation:

This course is based on theoretical and practical instructor-led lessons given in both classroom and in a technical environment using equipment and tools, which are accessed remotely.