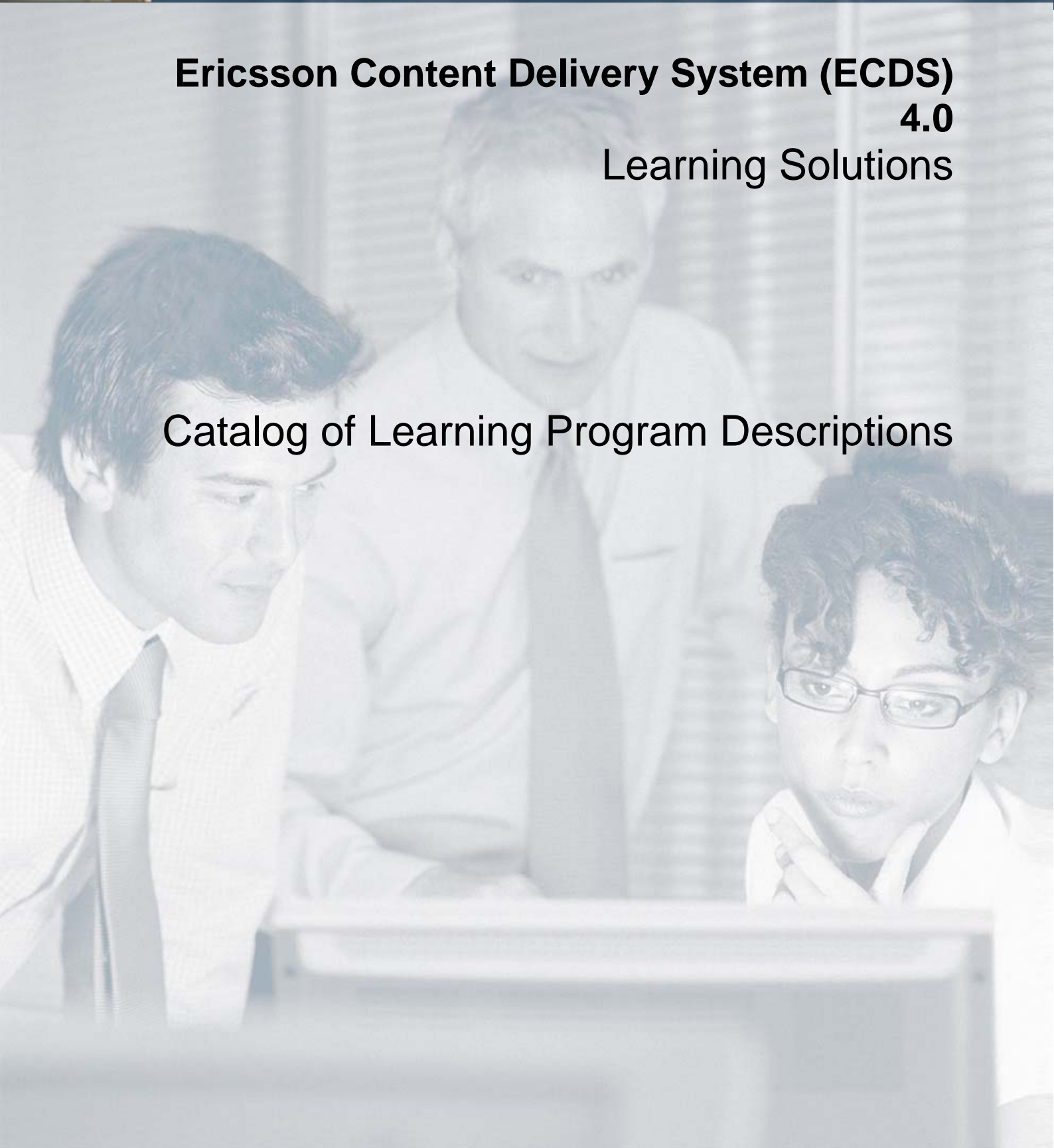




Ericsson Content Delivery System (ECDS) 4.0 Learning Solutions

Catalog of Learning Program Descriptions





Catalog of Learning Program Descriptions

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Introduction

Ericsson has developed comprehensive Learning Solutions to satisfy the customers' need for expertise. Customers require fast access to a range of expertise varying from the skills and knowledge required to operate a network to the expertised required to develop new end-user services.

These Learning Solutions consist of a Competence Gap Analysis which identifies the customer's competence needs, and flexible, practical learning programs consisting of either Structured Knowledge Transfer (SKT), performed at the customer's site, or a form of Instructor Led Training (ILT), called Task Oriented Learning (TOL), performed at an Ericsson test site. These programs are facilitated by experts who ensure that the required performance is achieved. Tests are administered prior to the training and afterwards to verify this.

Service delivery is supported using various delivery methods including:

Icon	Delivery Method
	Instructor Led Training (ILT) or Task Oriented Learning (TOL)
	Seminar (SEM)
	Workshop (WS)
	Virtual Classroom Training (VCT)
	Web Based Learning (WBL)
	Short Article (SA)
	Streaming Video (SV)
	CD-ROM (CD)
	Structured Knowledge Transfer (SKT)
Delivery Enablers	
	Remote Training Lab (RTL)
	Web Portal (WP)
Ericsson Education E-Learning	
	EEOnline @ http://learning.ericsson.net/eeonline/

Ericsson Content Delivery System (ECDS) 4.0 Overview



LZU 108 7112 R1A

Description

Do you want to understand how The Ericsson Content Delivery System (ECDS) enables people today to download to their handsets and to enjoy services such as personalised music, video clips, games and mobile TV?

ECDS is the core component in Ericsson's Mobile TV & Video offering, it is a complete and network independent system supporting a wide range of multimedia streaming and download services, such as news, entertainment, sports and music. ECDS supports content creation, content storage, content delivery and integration services.

Upon completion of this course you will be able to understand the concept of multimedia content delivery, the features, architecture, operation and maintenance, and use cases of ECDS.

Learning objectives

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

- 1 Multimedia Content Delivery Concept
 - 1.1 Concept of content Delivery
 - 1.2 Delivery Methods
 - 1.3 Solution View
 - 1.4 Content Production Network
 - 1.5 Media Types
 - 1.6 Encoding Tools
 - 1.7 Content Delivery Market
 - 1.7.1 Service Providers Benefits
 - 1.7.2 Mobile TV
 - 1.7.3 Revenue Potential
 - 1.7.4 Payment Methods
- 2 ECDS 4.0 Functional Highlights & Features
 - 2.1 Streaming and download functionality
 - 2.2 Video portal support
 - 2.3 Mobile TV support
 - 2.4 Encoding
 - 2.5 Flexible charging functionality
 - 2.6 Subscription management and O&M
 - 2.7 Robustness and QoS
 - 2.8 Single Sign-on
 - 2.9 CS channel selector
 - 2.10 PS channel selector
 - 2.11 Mobile TV Redundant Live Encoding setup



- 2.12 URL Rewriter
- 2.13 CDMA 2000 support
- 2.14 High performance NIN
- 2.15 Support for Helix IP transmitter (on EMTV)
- 2.16 Charging support for OMA download
- 2.17 Token authentication support
- 2.18 Interactivity interfaces (on NIN & EMTV) and specifications
- 2.19 ESG/EPG interfaces (on NIN) and specifications
- 2.20 Enhanced TV Client interface
- 2.21 Advertisement insertion functionality
- 2.22 Network proxy functionality
- 2.23 Enhanced adaptive streaming

- 3 ECDS 4.0 Architecture
 - 3.1 ECDS interfaces and protocols
 - 3.2 ECDS nodes and components
 - 3.3 NIN functions
 - 3.4 EMTV functions
 - 3.5 NIN connectivity components
 - 3.6 Common hardware configurations
 - 3.7 Common software configurations
 - 3.8 Network deployments

- 4 Operation and Maintenance
 - 4.1 Fault management
 - 4.2 Performance management
 - 4.3 Configuration management
 - 4.4 Service management
 - 4.5 Statistics and logging
 - 4.6 Security management
 - 4.7 Installations
 - 4.8 Start / Stop / Restart
 - 4.9 Backup and restore

- 5 Use Cases (Appendix)
 - 5.1 Typical ECDS Use Case
 - 5.2 PS Channel Selector Use Case
 - 5.3 Sequence Diagram
 - 5.3.1 Subscription Management
 - 5.3.2 EPG
 - 5.3.3 Voting
 - 5.3.4 Chatting
 - 5.3.5 Advertisement
 - 5.3.6 Ticker



Target audience

The target audience for this course is personnel who need an overview of the system, for example:

- System Administrators
- System Technicians / Engineers
- Service Technicians / Engineers
- Application Developers
- Customer Care Administrators
- Business Managers
- Business Developers

Prerequisites

The participants should be familiar with Mobile Internet and have a general understanding of telecommunications. The participants should also have successfully completed the following course:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities (LZU 108 6935).

Duration and class size

The length of the course is 1 day and the maximum number of participants is 16.

Learning situation

This course is based on theoretical Instructor-Led lessons given in a classroom environment.



Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated time
1	<ul style="list-style-type: none">• Multimedia Content Delivery Concepts	1 hour
1	<ul style="list-style-type: none">• ECDS 4.0 Features	1.5 hour
1	<ul style="list-style-type: none">• ECDS 4.0 Architecture	2 hour
1	<ul style="list-style-type: none">• Operation and Maintenance	1 hour
1	<ul style="list-style-type: none">• Use Cases (Appendix)	0.5 hour

Ericsson Content Delivery System (ECDS) 4.0 Service Engineer



LZU 108 7110 R1A

Description

By participating in this learning program, you will acquire the skills and knowledge necessary to support your ECDS 4.0 system. You will be capable of monitoring alarms, analyzing log files, making configuration changes, managing streaming content and subscriber provisioning.

This training is delivered in the form of Task Orientated Learning (TOL) in order to provide a structured, practical training for SIG on an Ericsson site, using Ericsson equipment. This training covers the generic tasks which are not customer specific.

This training is also available as a Structured Knowledge Transfer (SKT), which performs the job tasks adapted to the customer's unique environment and job roles, and facilitated by a mentor (LZP 101 084 R1A).

Learning objectives

On completion of this learning program the participants will be able to successfully perform the following:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file
 - 2.5 Analyse EMTV log files
 - 2.6 Startup/shutdown EMTV server
 - 2.7 View Unix system log
 - 2.8 Determine EMTV server process
 - 2.9 Check EMTV server session port



- 2.10 Examine EMTV server routing table
- 2.11 Perform house keeping on EMTV server logs
- 2.12 Backup EMTV server configuration files

- 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS Startup/Shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files

- 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files

- 5 Manage Vidiator Live Encoder
 - 5.1 Start the Device Live Service
 - 5.2 Start the local file service
 - 5.3 Record Live Streaming
 - 5.4 Generate the SDP file
 - 5.5 Connect Vidiator live encoder to the Helix Universal Mobile Server/EMTV Server & create SDP file

- 6 Administer Packet Switched Channel Selector Editor
 - 6.1 Launch VideoPortal editor
 - 6.2 Configure VideoPortal editor
 - 6.3 Prepare video files for menu and contents
 - 6.4 Prepare icon files for content channels
 - 6.5 Create introduction menu
 - 6.6 Create news menu
 - 6.7 Add channel 1 for news menu
 - 6.8 Create program information for news channel 1
 - 6.9 Add channel 2 for news menu
 - 6.10 Create program information for news channel 2
 - 6.11 Create movies menu



- 6.12 Add channel 1 for movies menu
- 6.13 Create program information for Action channel 1
- 6.14 Add channel 2 for movies menu
- 6.15 Create program information for Action channel 1
- 6.16 Open Content Information Database

- 7 Administer Content Information Database
 - 7.1 Launch Content Information Database web GUI
 - 7.2 Define CIDB menu structure and for clips
 - 7.3 Define pricing information for clips
 - 7.4 Add content provider
 - 7.5 Remove content provider
 - 7.6 Update content provider
 - 7.7 Manage currency

- 8 Administer Subscriber Database
 - 8.1 Launch Subscriber and AAA database provisioning interface
 - 8.2 Manage subscriber data
 - 8.3 Manage AAA user data
 - 8.4 Manage user group data

Target audience

The target audience for this learning program is: Service Engineers.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

**Duration and class size**

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

Learning situation

This training is delivered as Task Oriented Learning (TOL) where participants perform practical tasks for their job role in an Ericsson lab environment.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	Administer NIN server	1.5
1	Administer EMTV server	1
1	Administer Helix Universal Mobile Server	1
1	Administer Helix Universal Mobile Proxy	1
1	Manage Vidiator Live Encoder	0.5
1	Administer Packet Switched Channel Selector Editor	1
1	Administer Content Information Database	1
1	Administer Subscriber Database	0.5

Ericsson Content Delivery System (ECDS) 4.0 Service Engineer SKT



LZP 101 084 R1A

Description

By participating in this learning program, you will acquire the skills and knowledge necessary to support your ECDS 4.0 system. You will be capable of monitoring alarms, analyzing log files, making configuration changes, managing streaming content and subscriber provisioning.

This training is delivered in the form of a Structured Knowledge Transfer (SKT) in order to provide structured and practical hands-on training for students in their working environment. This flexible program is aligned with your business and operational requirements and is highly customized to suit the specific needs of your group.

This training is also available as a standard off-the-shelf course (Task Oriented Learning) which performs standard non-customized job tasks in an Ericsson lab environment (LZU 108 7110 R1A).

Learning objectives

The tasks completed during SKT training may vary due to the degree of customization required by your group. On completion of this learning program the participants will be able to successfully perform the following tasks:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file
 - 2.5 Analyse EMTV log files



- 2.6 Startup/shutdown EMTV server
- 2.7 View Unix system log
- 2.8 Determine EMTV server process
- 2.9 Check EMTV server session port
- 2.10 Examine EMTV server routing table
- 2.11 Perform house keeping on EMTV server logs
- 2.12 Backup EMTV server configuration files

- 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS Startup/Shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files

- 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files

- 5 Manage Vidiator Live Encoder
 - 5.1 Start the Device Live Service
 - 5.2 Start the local file service
 - 5.3 Record Live Streaming
 - 5.4 Generate the SDP file
 - 5.5 Connect Vidiator live encoder to the Helix Universal Mobile Server/EMTV Server & create SDP file

- 6 Administer Packet Switched Channel Selector Editor
 - 6.1 Launch VideoPortal editor
 - 6.2 Configure VideoPortal editor
 - 6.3 Prepare video files for menu and contents
 - 6.4 Prepare icon files for content channels
 - 6.5 Create introduction menu
 - 6.6 Create news menu
 - 6.7 Add channel 1 for news menu
 - 6.8 Create program information for news channel 1



- 6.9 Add channel 2 for news menu
- 6.10 Create program information for news channel 2
- 6.11 Create movies menu
- 6.12 Add channel 1 for movies menu
- 6.13 Create program information for Action channel 1
- 6.14 Add channel 2 for movies menu
- 6.15 Create program information for Action channel 1
- 6.16 Open Content Information Database

- 7 Administer Content Information Database
 - 7.1 Launch Content Information Database web GUI
 - 7.2 Define CIDB menu structure and for clips
 - 7.3 Define pricing information for clips
 - 7.4 Add content provider
 - 7.5 Remove content provider
 - 7.6 Update content provider
 - 7.7 Manage currency

- 8 Administer Subscriber Database
 - 8.1 Launch Subscriber and AAA database provisioning interface
 - 8.2 Manage subscriber data
 - 8.3 Manage AAA user data
 - 8.4 Manage user group data

Target audience

The target audience for this learning program is: Service Engineers.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

**Duration and class size**

The length of the service is 1 day and the maximum number of participants is 4.

Learning situation

This training is delivered as an on-the-job mentoring program called Structure Knowledge Transfer (SKT). In SKT, the mentor demonstrates the tasks involved in the job, working with the participants until they successfully perform each duty and task that are defined for their job function. The SKT takes place at the customer's site using the customer's network.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	Administer NIN server	1.5
1	Administer EMTV server	1
1	Administer Helix Universal Mobile Server	1
1	Administer Helix Universal Mobile Proxy	1
1	Manage Vidiator Live Encoder	0.5
1	Administer Packet Switched Channel Selector Editor	1
1	Administer Content Information Database	1
1	Administer Subscriber Database	0.5

Ericsson Content Delivery System (ECDS) 4.0 System Engineer



LZU 108 7109 R1A

Description

Do you need to be able to operate and administer your ECDS 4.0 system? If so, the Ericsson Content Delivery System (ECDS) 4.0 System Engineer learning program is the service that you and your staff need. This program leads the participants through the job tasks associated with support of ECDS 4.0, ensuring that they have the skills required to administer, configure, monitor and restart ECDS 4.0 nodes.

This training is delivered in the form of Task Orientated Learning (TOL) in order to provide a structured, practical training for SIG on an Ericsson site, using Ericsson equipment. This training covers the generic tasks which are not customer specific.


This training is also available as a Structured Knowledge Transfer (SKT), which performs the job tasks adapted to the customer's unique environment and job roles, and facilitated by a mentor (LZP 101 083 R1A).

Learning objectives

On completion of this learning program the participants will be able to successfully perform each duty, task and step listed in the checklist for the ECDS 4.0 System Engineer. As standard, the following duties and tasks are addressed:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file
 - 2.5 Analyse EMTV log files

- 
- 2.6 Startup/shutdown EMTV server
 - 2.7 View Unix system log
 - 2.8 Determine EMTV server process
 - 2.9 Check EMTV server session port
 - 2.10 Examine EMTV server routing table
 - 2.11 Perform house keeping on EMTV server logs
 - 2.12 Backup EMTV server configuration files

 - 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS startup/shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files

 - 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files

 - 5 Administer Sun Web Server
 - 5.1 Analyse web server configuration file
 - 5.2 Analyse web server log files
 - 5.3 Startup/shutdown Web Server
 - 5.4 View Unix system log
 - 5.5 Determine web server process
 - 5.6 Check web server session port
 - 5.7 Examine web server routing table
 - 5.8 Operate web server administration GUI
 - 5.9 Perform house keeping on web server logs
 - 5.10 Backup web server configuration files

 - 6 Administer Network File System
 - 6.1 Analyse NFS configuration files
 - 6.2 Inspect NFS Startup/Shutdown script
 - 6.3 View Unix system log
 - 6.4 Determine NFS process

- 6.5 Examine NFS routing table
- 6.6 Determine NFS mount points

- 7 Administer F5 Networks BigIP Load Balancer
 - 7.1 Launch load balancer GUI
 - 7.2 Check the load balancer interfaces
 - 7.3 Inspect the load balancer configuration
 - 7.4 Monitor the load balancer using the “B” command
 - 7.5 View the load balancer virtual servers and pools
 - 7.6 Analyse BigIP log files
 - 7.7 Backup BigIP configuration files

- 8 Administer EMC CX3-20f Storage Array
 - 8.1 Obtain information on the disks
 - 8.2 Acquire information on the storage groups
 - 8.3 Retrieve error information
 - 8.4 Obtain information on the RAID groups
 - 8.5 Obtain information on the logical units

- 9 Administer Veritas Cluster Server
 - 9.1 Analyse VCS configuration files
 - 9.2 Analyse VCS log files
 - 9.3 Access the Veritas GUI
 - 9.4 View the status of the service groups I
 - 9.5 View the status of the service groups II
 - 9.6 View the status of the service groups III
 - 9.7 Clear a faulted Veritas resource
 - 9.8 Remove a node from a stale
 - 9.9 Check the Veritas licenses

Target audience

The target audience for this learning program is: System Engineers.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,



- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

Duration and class size

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

Learning situation

This training is delivered as Task Oriented Learning (TOL) where participants perform practical tasks for their job role in an Ericsson lab environment.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	Administer NIN server	1.5
1	Administer EMTV server	1
1	Administer Helix Universal Mobile Server	1
1	Administer Helix Universal Mobile Proxy	1
1	Administer Sun Web Server	1
1	Administer Network File System	0.5
1	Administer F5 Networks BigIP Load Balancer	1
1	Administer EMC CX3-20f Storage Array	0.5
1	Administer Veritas Cluster Server	0.5

Ericsson Content Delivery System (ECDS) 4.0 System Engineer SKT



LZP 101 083 R1A

Description

Do you need to be able to operate and administer your ECDS 4.0 system? If so, the Ericsson Content Delivery System (ECDS) 4.0 System Engineer learning program is the service that you and your staff need. This program leads the participants through the job tasks associated with support of ECDS 4.0, ensuring that they have the skills required to administer, configure, monitor and restart ECDS 4.0 nodes.

This training is delivered in the form of a Structured Knowledge Transfer (SKT) in order to provide structured and practical hands-on training for students in their working environment. This flexible program is aligned with your business and operational requirements and is highly customized to suit the specific needs of your group.


This training is also available as a standard off-the-shelf course (Task Oriented Learning) which performs standard non-customized job tasks in an Ericsson lab environment (LZU 108 7109 R1A).

Learning objectives

On completion of this learning program the participants will be able to successfully perform each duty, task and step listed in the checklist for the ECDS 4.0 System Engineer. As standard, the following duties and tasks are addressed:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file

- 
- 2.5 Analyse EMTV log files
 - 2.6 Startup/shutdown EMTV server
 - 2.7 View Unix system log
 - 2.8 Determine EMTV server process
 - 2.9 Check EMTV server session port
 - 2.10 Examine EMTV server routing table
 - 2.11 Perform house keeping on EMTV server logs
 - 2.12 Backup EMTV server configuration files
-
- 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS startup/shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files
-
- 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files
-
- 5 Administer Sun Web Server
 - 5.1 Analyse web server configuration file
 - 5.2 Analyse web server log files
 - 5.3 Startup/shutdown Web Server
 - 5.4 View Unix system log
 - 5.5 Determine web server process
 - 5.6 Check web server session port
 - 5.7 Examine web server routing table
 - 5.8 Operate web server administration GUI
 - 5.9 Perform house keeping on web server logs
 - 5.10 Backup web server configuration files
-
- 6 Administer Network File System
 - 6.1 Analyse NFS configuration files
 - 6.2 Inspect NFS Startup/Shutdown script
 - 6.3 View Unix system log

- 6.4 Determine NFS process
- 6.5 Examine NFS routing table
- 6.6 Determine NFS mount points

- 7 Administer F5 Networks BigIP Load Balancer
 - 7.1 Launch load balancer GUI
 - 7.2 Check the load balancer interfaces
 - 7.3 Inspect the load balancer configuration
 - 7.4 Monitor the load balancer using the "B" command
 - 7.5 View the load balancer virtual servers and pools
 - 7.6 Analyse BigIP log files
 - 7.7 Backup BigIP configuration files

- 8 Administer EMC CX3-20f Storage Array
 - 8.1 Obtain information on the disks
 - 8.2 Acquire information on the storage groups
 - 8.3 Retrieve error information
 - 8.4 Obtain information on the RAID groups
 - 8.5 Obtain information on the logical units

- 9 Administer Veritas Cluster Server
 - 9.1 Analyse VCS configuration files
 - 9.2 Analyse VCS log files
 - 9.3 Access the Veritas GUI
 - 9.4 View the status of the service groups I
 - 9.5 View the status of the service groups II
 - 9.6 View the status of the service groups III
 - 9.7 Clear a faulted Veritas resource
 - 9.8 Remove a node from a stale
 - 9.9 Check the Veritas licenses

Target audience

The target audience for this learning program is: System Engineers.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

Duration and class size

The length of the service is 1 day and the maximum number of participants is 4

Learning situation

This training is delivered as an on-the-job mentoring program called Structure Knowledge Transfer (SKT). In SKT, the mentor demonstrates the tasks involved in the job, working with the participants until they successfully perform each duty and task that are defined for their job function. The SKT takes place at the customer's site using the customer's network.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	Administer NIN server	1.5
1	Administer EMTV server	1
1	Administer Helix Universal Mobile Server	1
1	Administer Helix Universal Mobile Proxy	1
1	Administer Sun Web Server	1
1	Administer Network File System	0.5
1	Administer F5 Networks BigIP Load Balancer	1
1	Administer EMC CX3-20f Storage Array	0.5
1	Administer Veritas Cluster Server	0.5

Ericsson Content Delivery System (ECDS) 4.0 System Administrator



LZU 108 7111 R1A

Description

Do you need the skills and knowledge to perform administration tasks as well as manage configuration, faults and performance in ECDS 4.0? Upon completion of this learning program you will be able to perform backups, monitor alarms, analyze log files and utilise the main GUI's associated with the ECDS 4.0 nodes as well as managing streaming content and subscriber provisioning.

This training is delivered in the form of Task Orientated Learning (TOL) in order to provide a structured, practical training for SIG on an Ericsson site, using Ericsson equipment. This training covers the generic tasks which are not customer specific.

This training is also available as a Structured Knowledge Transfer (SKT), which performs the job tasks adapted to the customer's unique environment and job roles, and facilitated by a mentor (LZP 101 085 R1A).

Learning objectives

On completion of this learning program the participants will be able to successfully perform the following:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/Shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file
 - 2.5 Analyse EMTV log files
 - 2.6 Startup/shutdown EMTV server
 - 2.7 View Unix system log


- 2.8 Determine EMTV server process
- 2.9 Check EMTV server session port
- 2.10 Examine EMTV server routing table
- 2.11 Perform house keeping on EMTV server logs
- 2.12 Backup EMTV server configuration files

- 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS Startup/Shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files

- 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files

- 5 Manage Vidiator Live Encoder
 - 5.1 Start the Device Live Service
 - 5.2 Start the local file service
 - 5.3 Record Live Streaming
 - 5.4 Generate the SDP file
 - 5.5 Connect Vidiator live encoder to the Helix Universal Mobile Server/EMTV Server & create SDP file

- 6 Administer Sun Web Server
 - 6.1 Analyse web server configuration file
 - 6.2 Analyse web server log files
 - 6.3 Startup/shutdown Web Server
 - 6.4 View Unix system log
 - 6.5 Determine web server process
 - 6.6 Check web server session port
 - 6.7 Examine web server routing table
 - 6.8 Operate web server administration GUI
 - 6.9 Perform house keeping on web server logs
 - 6.10 Backup web server configuration files

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- 7 Administer Packet Switched Channel Selector Editor
 - 7.1 Launch VideoPortal editor
 - 7.2 Configure VideoPortal editor
 - 7.3 Prepare video files for menu and contents
 - 7.4 Prepare icon files for content channels
 - 7.5 Create introduction menu
 - 7.6 Create news menu
 - 7.7 Add channel 1 for news menu
 - 7.8 Create program information for news channel 1
 - 7.9 Add channel 2 for news menu
 - 7.10 Create program information for news channel 2
 - 7.11 Create movies menu
 - 7.12 Add channel 1 for movies menu
 - 7.13 Create program information for Action channel 1
 - 7.14 Add channel 2 for movies menu
 - 7.15 Create program information for Action channel 1
 - 7.16 Open Content Information Database

 - 8 Administer Content Information Database
 - 8.1 Launch Content Information Database web GUI
 - 8.2 Define CIDB menu structure and for clips
 - 8.3 Define pricing information for clips
 - 8.4 Add content provider
 - 8.5 Remove content provider
 - 8.6 Update content provider
 - 8.7 Manage currency

 - 9 Administer Subscriber Database
 - 9.1 Launch Subscriber and AAA database provisioning interface
 - 9.2 Manage subscriber data
 - 9.3 Manage AAA user data
 - 9.4 Manage user group data

 - 10 Administer Network File System
 - 10.1 Analyse NFS configuration files
 - 10.2 Inspect NFS Startup/Shutdown script
 - 10.3 View Unix system log
 - 10.4 Determine NFS process
 - 10.5 Examine NFS routing table
 - 10.6 Determine NFS mount points

 - 11 Administer F5 Networks BigIP Load Balancer
 - 11.1 Launch load balancer GUI
 - 11.2 Check the load balancer interfaces
 - 11.3 Inspect the load balancer configuration
 - 11.4 Monitor the load balancer using the "B" command
 - 11.5 View the load balancer virtual servers and pools
 - 11.6 Analyse BigIP log files

11.7 Backup BigIP configuration files

12 Administer EMC CX3-20f Storage Array

- 12.1 Obtain information on the disks
- 12.2 Acquire information on the storage groups
- 12.3 Retrieve error information
- 12.4 Obtain information on the RAID groups
- 12.5 Obtain information on the logical units

13 Administer Veritas Cluster Server

- 13.1 Analyse VCS configuration files
- 13.2 Analyse VCS log files
- 13.3 Access the Veritas GUI
- 13.4 View the status of the service groups I
- 13.5 View the status of the service groups II
- 13.6 View the status of the service groups III
- 13.7 Clear a faulted Veritas resource
- 13.8 Remove a node from a stale
- 13.9 Check the Veritas licenses

14 Administer Extreme Summit Switch

- 14.1 Login to the Extreme Summit switch
- 14.2 launch the switch GUI

15 Trace traffic flow between mobile terminal and NIN

- 15.1 Trace streaming session (RTSP/RTP) on NIN
- 15.2 Trace streaming session (RTSP/RTP) on EMTV server
- 15.3 Trace streaming session (RTSP/RTP) on Helix Universal Mobile Server
- 15.4 Trace NIN log files

Target audience

The target audience for this learning program is: System Administrators.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

Duration and class size

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

Learning situation

This training is delivered as Task Oriented Learning (TOL) where participants perform practical tasks for their job role in an Ericsson lab environment.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	• Administer NIN server	1.5
1	• Administer EMTV server	1.5
1	• Administer Helix Universal Mobile Server	1.5
1	• Administer Helix Universal Mobile Proxy	1.5
2	• Manage Vidiator Live Encoder	0.5
2	• Administer Sun Web Server	1
2	• Administer Packet Switched Channel Selector Editor	1
2	• Administer Content Information Database	1.5
2	• Administer Subscriber Database	1
2	• Administer Network File System	1
3	• Administer F5 Networks BigIP Load Balancer	1.5
3	• Administer EMC CX3-20f Storage Array	1
3	• Administer Veritas Cluster Server	1.5
3	• Administer Extreme Summit Switch	1
3	• Trace traffic flow between mobile terminal and NIN	1

Ericsson Content Delivery System (ECDS) 4.0 System Administrator SKT



LZP 101 085 R1A

Description

Do you need the skills and knowledge to perform administration tasks as well as manage configuration, faults and performance in ECDS 4.0? Upon completion of this learning program you will be able to perform backups, monitor alarms, analyze log files and utilise the main GUI's associated with the ECDS 4.0 nodes as well as managing streaming content and subscriber provisioning.

This training is delivered in the form of a Structured Knowledge Transfer (SKT) in order to provide structured and practical hands-on training for students in their working environment. This flexible program is aligned with your business and operational requirements and is highly customized to suit the specific needs of your group.

This training is also available as a standard off-the-shelf course (Task Oriented Learning) which performs standard non-customized job tasks in an Ericsson lab environment (LZU 108 7111 R1A).

Learning objectives

The tasks completed during SKT training may vary due to the degree of customization required by your group. On completion of this learning program the participants will be able to successfully perform the following tasks:

- 1 Administer NIN server
 - 1.1 Analyse NIN configuration file
 - 1.2 Examine NIN remote configuration file
 - 1.3 Inspect NIN connector files
 - 1.4 Analyse NIN log files
 - 1.5 Rotate NIN log files
 - 1.6 Startup/Shutdown NIN
 - 1.7 View UNIX system log
 - 1.8 Determine NIN process
 - 1.9 Check NIN session ports
 - 1.10 Examine NIN routing table
 - 1.11 Backup NIN configuration files

- 2 Administer EMTV server
 - 2.1 Analyse EMTV server configuration file
 - 2.2 Inspect EMTV server flute.conf configuration file
 - 2.3 Inspect EMTV server hlxLiveFile.conf configuration file
 - 2.4 Inspect EMTV server adaptStreaming.conf configuration file
 - 2.5 Analyse EMTV log files
 - 2.6 Startup/shutdown EMTV server

- 2.7 View Unix system log
- 2.8 Determine EMTV server process
- 2.9 Check EMTV server session port
- 2.10 Examine EMTV server routing table
- 2.11 Perform house keeping on EMTV server logs
- 2.12 Backup EMTV server configuration files

- 3 Administer Helix Universal Mobile Server (HUMS)
 - 3.1 Analyse HUMS configuration file
 - 3.2 Analyse HUMS log files
 - 3.3 Inspect HUMS Startup/Shutdown script
 - 3.4 View Unix system log
 - 3.5 Determine HUMS process
 - 3.6 Check HUMS session port
 - 3.7 Examine HUMS routing table
 - 3.8 Operate HUMS administrator GUI
 - 3.9 Perform house keeping on HUMS logs
 - 3.10 Backup HUMS configuration files

- 4 Administer Helix Universal Mobile Proxy (HUMP)
 - 4.1 Analyse HUMP configuration file
 - 4.2 Analyse HUMP log files
 - 4.3 Inspect HUMP startup/shutdown script
 - 4.4 View Unix system log
 - 4.5 Determine HUMP process
 - 4.6 Check HUMP session port
 - 4.7 Examine HUMP routing table
 - 4.8 Operate HUMP administration GUI
 - 4.9 Perform house keeping on HUMP logs
 - 4.10 Backup HUMP configuration files

- 5 Manage Vidiator Live Encoder
 - 5.1 Start the Device Live Service
 - 5.2 Start the local file service
 - 5.3 Record Live Streaming
 - 5.4 Generate the SDP file
 - 5.5 Connect Vidiator live encoder to the Helix Universal Mobile Server/EMTV Server & create SDP file

- 6 Administer Sun Web Server
 - 6.1 Analyse web server configuration file
 - 6.2 Analyse web server log files
 - 6.3 Startup/shutdown Web Server
 - 6.4 View Unix system log
 - 6.5 Determine web server process
 - 6.6 Check web server session port
 - 6.7 Examine web server routing table
 - 6.8 Operate web server administration GUI
 - 6.9 Perform house keeping on web server logs

- 6.10 Backup web server configuration files

- 7 Administer Packet Switched Channel Selector Editor
 - 7.1 Launch VideoPortal editor
 - 7.2 Configure VideoPortal editor
 - 7.3 Prepare video files for menu and contents
 - 7.4 Prepare icon files for content channels
 - 7.5 Create introduction menu
 - 7.6 Create news menu
 - 7.7 Add channel 1 for news menu
 - 7.8 Create program information for news channel 1
 - 7.9 Add channel 2 for news menu
 - 7.10 Create program information for news channel 2
 - 7.11 Create movies menu
 - 7.12 Add channel 1 for movies menu
 - 7.13 Create program information for Action channel 1
 - 7.14 Add channel 2 for movies menu
 - 7.15 Create program information for Action channel 1
 - 7.16 Open Content Information Database

- 8 Administer Content Information Database
 - 8.1 Launch Content Information Database web GUI
 - 8.2 Define CIDB menu structure and for clips
 - 8.3 Define pricing information for clips
 - 8.4 Add content provider
 - 8.5 Remove content provider
 - 8.6 Update content provider
 - 8.7 Manage currency

- 9 Administer Subscriber Database
 - 9.1 Launch Subscriber and AAA database provisioning interface
 - 9.2 Manage subscriber data
 - 9.3 Manage AAA user data
 - 9.4 Manage user group data

- 10 Administer Network File System
 - 10.1 Analyse NFS configuration files
 - 10.2 Inspect NFS Startup/Shutdown script
 - 10.3 View Unix system log
 - 10.4 Determine NFS process
 - 10.5 Examine NFS routing table
 - 10.6 Determine NFS mount points

- 11 Administer F5 Networks BigIP Load Balancer
 - 11.1 Launch load balancer GUI
 - 11.2 Check the load balancer interfaces
 - 11.3 Inspect the load balancer configuration
 - 11.4 Monitor the load balancer using the "B" command
 - 11.5 View the load balancer virtual servers and pools

- 11.6 Analyse BigIP log files
- 11.7 Backup BigIP configuration files

- 12 Administer EMC CX3-20f Storage Array
 - 12.1 Obtain information on the disks
 - 12.2 Acquire information on the storage groups
 - 12.3 Retrieve error information
 - 12.4 Obtain information on the RAID groups
 - 12.5 Obtain information on the logical units

- 13 Administer Veritas Cluster Server
 - 13.1 Analyse VCS configuration files
 - 13.2 Analyse VCS log files
 - 13.3 Access the Veritas GUI
 - 13.4 View the status of the service groups I
 - 13.5 View the status of the service groups II
 - 13.6 View the status of the service groups III
 - 13.7 Clear a faulted Veritas resource
 - 13.8 Remove a node from a stale
 - 13.9 Check the Veritas licenses

- 14 Administer Extreme Summit Switch
 - 14.1 Login to the Extreme Summit switch
 - 14.2 launch the switch GUI

- 15 Trace traffic flow between mobile terminal and NIN
 - 15.1 Trace streaming session (RTSP/RTP) on NIN
 - 15.2 Trace streaming session (RTSP/RTP) on EMTV server
 - 15.3 Trace streaming session (RTSP/RTP) on Helix Universal Mobile Server
 - 15.4 Trace NIN log files

Target audience

The target audience for this learning program is: System Administrators.

Prerequisites

Successful completion of the following courses:

- Telecom Operator 2.0 - Technical Realization of Multimedia Services (LZU 108 6936)
- ECDS 4.0 Overview LZU 108 7112
- IP Networking LZU 102 397
- Unix System Administration Level 1 LZUBB 108 356

and, optionally,

- Telecom Operator 2.0 – Multimedia Business Challenges & Opportunities Business (LZU 108 6935).

The participants should be familiar with Mobile Internet and have a general understanding of telecommunication and datacom concepts.

Duration and class size

The length of the service is 3 days and the maximum number of participants is 4.

Learning situation

This training is delivered as an on-the-job mentoring program called Structure Knowledge Transfer (SKT). In SKT, the mentor demonstrates the tasks involved in the job, working with the participants until they successfully perform each duty and task that are defined for their job function. The SKT takes place at the customer's site using the customer's network.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the learning program	Estimated time
1	• Administer NIN server	1.5
1	• Administer EMTV server	1.5
1	• Administer Helix Universal Mobile Server	1.5
1	• Administer Helix Universal Mobile Proxy	1.5
2	• Manage Vidiator Live Encoder	1
2	• Administer Sun Web Server	1
2	• Administer Packet Switched Channel Selector Editor	1.5
2	• Administer Content Information Database	1.5
2	• Administer Subscriber Database	1
3	• Administer Network File System	1.5
3	• Administer F5 Networks BigIP Load Balancer	1.5
3	• Administer EMC CX3-20f Storage Array	1
3	• Administer Veritas Cluster Server	1.5
3	• Administer Extreme Summit Switch	0.5
3	• Trace traffic flow between mobile terminal and NIN	0.5

IP Networking



LZU 102 397 R4A

Description

This course will give the students an insight and understanding of the TCP / IP protocol stack from the physical layer to the application layer. The students will learn the operation of different protocols and applications within the TCP / IP suite such as DHCP, DNS, NFS, NIS, NTP, HTTP, SNMP, SMTP, Telnet, FTP, TFTP and RTP. Students will learn about IP addresses, both classful and classless (CIDR) and how subnetting / aggregation and VLSM operates. Students will learn about different network devices and will get a detailed understanding of LAN Switching, Routing and Routing protocols. The hands-on exercises and analysers are used to facilitate the understanding of theory sessions.

Learning objectives

On completion of each module the participants will be able to:

1 List and describe the IP networking including the involved Bodies.

- List the functions of the different bodies involved in IP standards / RFCs.
- Analyze the OSI reference model and how it relates to the TCP / IP stack.
- Explain Ethernet as Physical and Data Link Layer: MAC Address, CSMA/CD principles, Fast Ethernet, Gigabit Ethernet and speed negotiation.
- Explain the operation of Hubs, Switches and Routers.
- Explain Wireless LANs.
- Explain IP Protocol.
- Explain IPv4 packet structure, protocol header and features.
- Explain VLSM, CIDR, Subnetting, aggregation, NAT and NAPT.
- Explain ICMP protocol, ping and traceroute.
- Explain IGMP protocol.
- Perform exercises configuring IPv4 addresses, and check connectivity.
- Demonstrate IPv6 packet structure, protocol header, features.

2 Explain and compare the transport protocols.

- Explain TCP, UDP and SCTP protocol structures, headers and functionality.

3 List the applications protocols.

- List and explain the operation of different protocols / applications such as DHCP, DNS, NFS, NIS, NTP, HTTP, SNMP, SMTP, Telnet, FTP, TFTP and RTP.

4 Describe IP Switching and Routing Protocols and perform exercises using Netsim Simulator.

- Explain and perform exercises about ARP.
- Explain and perform exercises of VLANs.



Explain the purpose of Spanning Tree Protocol (STP).
Explain the operation of Static and Dynamic routing protocols.
Perform Static routing exercises.
List the differences between Vector Distance and Link State protocols.
Explain RIP routing protocol.
Explain OSPF routing protocol.
Explain BGP routing protocol.
Explain IS-IS routing protocol.
Perform routing Protocol exercises.

Target audience

The target audience for this course are personnel who are involved in IP networking or those who require more knowledge on IP addressing, application and routing protocols.

Prerequisites

There are no pre-requisites

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 or simulation tools.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Short description of the topics in the course	Estimated time
1	• List the functions of the different Standard Bodies involved in IP Standards / RFCs	0,5
	• Analyze the OSI Reference Model and how it relates to the TCP / IP stack	1
	• Explain Ethernet as Physical and Data Link Layer: MAC Address, CSMA/CD principles, Fast Ethernet, Gigabit Ethernet and speed negotiation	1,5
	• Explain the operation of Hubs, Switches and Routers	2,5
	• Explain Wireless LANs	0,5
2	• Explain IP Protocol	0,5
	• Explain IPv4 packet structure, protocol header and features	1
	• Explain VLSM, CIDR, Subnetting, aggregation, NAT and NAPT	1
	• Explain ICMP protocol, ping and traceroute	1
	• Explain IGMP protocol	1
3	• Perform exercises configuring IPv4 addresses, and check connectivity	3
	• Demonstrate IPv6 packet structure, protocol header, features	0,5
	• Explain TCP, UDP and SCTP protocol structures, headers and functionality	2
	• List and explain the operation of different protocols / applications such as DHCP, DNS, NFS, NIS, NTP, HTTP, SMNP, SMTP, Telnet, FTP, TFTP and RTP	2,5
	• Explain and perform exercises about ARP	2
4	• Explain and perform exercises of VLANs	3
	• Explain the purpose of Spanning Tree Protocol (STP)	0,5
	• Explain the operation of Static and Dynamic routing protocols	0,5
	• Perform Static routing exercises	1
	• List the differences between Vector Distance and Link State protocols	0,5
5	• Explain RIP routing protocol	1
	• Explain OSPF routing protocol	1,5
	• Explain BGP routing protocol	0,5
	• Explain IS-IS routing protocol	0,5
	• Perform routing protocol exercises	4

Telecom Operator 2.0 – Multimedia Business Challenges and Opportunities



LZU 108 6935 R1A

Description

This course provides an overview of the Service Layer from a business perspective.

The focus is to describe the Service Layer business seen from an operator point of view. The course is generic and does not contain any product information.

The instructor led element of the course examines the telecoms marketplace, how the Service Layer business is structured, who the key players in the Service Layer are and what their needs are. It discusses business models, business roles and revenue flow. The issues related to charging, pricing and common functions are also outlined. Much focus is also on showing real life examples of successful services from different operators globally and trends in general for the telecom business.

The workshop part of the course explores more fully the problems faced by operators and service providers. Through case studies and success stories, participants learn about the solutions and tools that have been applied in response to these problems, and the components of successful service delivery launches.

Learning objectives

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

- 1 List the main drivers behind the changing telecom industry**
 - 1.1 Describe how the market evolution affects operators, and what they expect from the service layer.
 - 1.2 Briefly state the role of the Service Layer and Service Network in providing end-user services
 - 1.3 List the main business challenges for an operator in providing a service layer solution
- 2 Describe the operator challenge of understanding end-users and their needs**
 - 2.1 Recognize the importance of identifying and segmenting end-users
 - 2.2 Briefly describe an example segmentation model
 - 2.3 State how business end-users differentiate from consumers
 - 2.4 Describe the general classification and characteristics of mobile terminals and how this impacts end-user services
 - 2.5 Briefly describe how mobile terminal technologies impact of the business
- 3 Explain how to launch and encourage the uptake of services**
 - 3.1 Describe how and why the service environment is changing

- 
- 3.2 Give examples of service categories and new innovative services within each category (verified with real life example services)
 - 3.3 Briefly describe what are the drivers for end-user service uptake
 - 3.4 Understand how to maximize service uptake through e.g. different branding-, packaging-, and pricing options
 - 3.5 Describe the service life cycle
 - 3.6 Describe the main steps at service launch
 - 3.7 Discuss service evolution and likely future applications
- 4 Describe the operator challenge of managing the supply chain and establishing win-win business models**
- 4.1 Identify the different stakeholder roles in the Service Layer and their key needs and challenges
 - 4.2 Describe the operator needs and possible roles
 - 4.3 Describe various operator business models in the Service Layer including Mobile Virtual Network Operators (MVNOs) and hosting services
 - 4.4 Describe the revenue flow between stakeholders
 - 4.5 Briefly describe the process for application development and the business issues related to that
- 5 Describe the business challenge of integrating the Service Layer with the rest of the telecom business**
- 5.1 List the major benefits of taking a horizontal service layer approach
 - 5.2 Describe the main operator actions needed in order to implement a future-proof service network
 - 5.3 List the main functionality required from a service delivery platform and the benefits of implementing one
 - 5.4 Understand how the evolution to IMS and All-IP will affect the service layer

Target audience

The target audience for this course is anyone working in the telecom industry and who needs a better understanding of how...

- increased competition,
 - new services,
 - end-user segmentation,
 - technology evolution, and
 - flexible business models
- ...will impact the future telecom business.

Example of roles: C-level (executive) Management, Business Management, Product Development, Product Marketing, Sales, Business Strategy, Product Management and Project Management.



Prerequisites

There are no prerequisites for this course.

This course is a prerequisite for other Service Layer training, such as product and application development training.

Duration and class size

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

Learning situation

The course is a combination of theoretical instructor-led lessons given in a classroom environment and exercises based on interactive training sessions in a classroom environment. These sessions are interleaved during the two days.

Course Material

The course material for each participant will include copies of teaching material and the book *Mobile Media and Applications – From Concept to Cash; Successful Service Creation and Launch* by Christoffer Andersson et al.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated time
1	[1] Business and technology drivers	2 hours
	[2] Consumers and terminals	3 hours
	[3] Service launch and uptake	2 hours
2	Service launch and uptake – continued	2 hours
	[4] Business models and supply chain	3 hours
	[5] Integrating the business	2 hours

Telecom Operator 2.0 Technical Realization of Multimedia Services



LZU 108 6936 R1A

Description

This course addresses the evolving multimedia business and the technologies available for efficient delivery of multimedia services. The multimedia services are now part of every operator's portfolio, with ever-increasing earnings from non-voice services. In order to best make use of these opportunities, this course provides a technical overview of multimedia service delivery.

This course goes through how the telecom operator can use the new technologies, frameworks and innovations to provide an effective service delivery environment. Various service enablers, integrated with business support systems and enhanced by gateways are presented to show the end-to-end service delivery.

The technical aspects of the solutions are discussed during the course. Examples are used throughout the course to illustrate the use of concepts, technologies and applications. Students are expected to complete short group exercises whereby the various technologies, standards and products are selected and put together in a simple (conceptual) end-to-end solution.

Learning objectives

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

- 1 Describe the fundamental frameworks and standards which enable a move from vertical to horizontal layered architecture**
 - 1.1 Describe the importance of standards & frameworks in the Service Layer
 - 1.2 Describe the important standardization bodies and list their standards/protocols, such as ITU, 3GPP, IETF, OMA
 - 1.3 Provide an overview of the basic IP protocols used in multimedia services (IP, TCP, UDP, HTTP)
 - 1.4 Outline the layered architecture and its benefits.
 - 1.5 Define Service Layer & Service Layer network
 - 1.6 List major enablers and business support systems
- 2 Provide an overview of service enablers and terminal support systems**
 - 2.1 List the common enablers used in the Service Layer for browsing, messaging, video services, content delivery, location-based services and Mobile TV
 - 2.2 Provide a brief overview of each enabler in terms of function, protocols and traffic, including:
 - WAP Gateway
 - Short Message Service Centre (SMS-C)
 - Multimedia Messaging Service Centre (MMS-C)

- Unified Messaging
 - Content Delivery System
 - Video Gateway
 - Location-based Services/Positioning.
- 2.3 Identify the sample products that implement the functions of the enablers listed above
- 2.4 Describe support functions needed for secure and efficient usage of terminals for multimedia services including device configuration & management, security and synchronization
- 2.5 Select relevant enablers to implement an example end-user service
- 3 List the business support systems needed to provide end-to-end services and describe their functionality**
- 3.1 Provide a brief overview of business support systems in terms of function, protocols and traffic, including:
- Provisioning & service activation
 - Authorization/Single Sign On (SSO)
 - Rating, Charging & Billing
 - Operation and Maintenance
 - Application Integration
- 3.2 Describe the common functions that need to be implemented to solve typical business and technical problems in a simplified service network
- 4 Analyze the need for a service delivery platform & describe its structure**
- 4.1 Explain the main domains of a service delivery platform including subscriber domain, service provider domain and operator domain
- 4.2 Identify and explain the functions within each domain
- 4.3 Discuss the use cases for each domain
- 4.4 Provide an overview of solutions available
- 4.5 Map the solution to the service delivery structure
- 4.6 Explain the need and the role of system integration in deployment of a service delivery platform
- 5 Provide an overview of IMS (IP Multimedia Systems)**
- 5.1 Compare IMS and existing multimedia solutions
- 5.2 List and describe the various subscriber services available including push-to-talk, we-share, messaging and presence
- 5.3 Describe the structure of IMS including the core, mobile and wireline implementation
- 5.4 List the main protocols and briefly describe their function including SIP and Diameter

Target audience

The target audience for this course is: Service Design Engineers, Service Deployment Engineers, System Technicians, System Engineers, System Administrators, Application Developers, Business Management, Customer Care.

This audience will be anyone requiring an introduction to the technical aspects of multimedia services, for example, all technical and marketing/sales staff new to the multimedia services and delivery.

Prerequisites

The participants should be familiar with basic mobile telecommunications and/or Internet.

This course is a prerequisite for other Service Layer training, such as product and application development training.

Duration and class size

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

Learning situation

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

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated time (hours)
1	Describe the fundamental frameworks and standards which enable a move from vertical to horizontal layered architecture	1
	Provide an overview of service enablers and terminal support systems	5
2	List the business support systems needed to provide end-to-end services and describe their functionality	3
	Analyze the need for a service delivery platform & describe its structure and function	2
	Provide an overview of IP Multimedia Subsystems (IMS)	1

UNIX System Administration Level 1



LZUBB 108 356 R1A

Description

This course Unix System Administration Level 1 is a practical course, which will enable the students to perform the basic system administration tasks for a Solaris based Unix platform which include installation, file system management, backup procedures, process control, user administration and device management.

Learning objectives

On completion of this course the participants will be able to

- 1 Describe the role of a UNIX System Administrator
- 2 Access system documentation and reference sources for performing administration tasks and troubleshooting
- 3 Perform an installation of the UNIX Operating System
- 4 Add and remove software packages
- 5 Add and configure new devices
- 6 Perform booting and shutdown procedures
- 7 Manage User and Group accounts
- 8 Manage the File System and Disk devices
- 9 Monitor system performance (Memory, File System, Processes, CPU)
- 10 Understand how to implement UNIX security features
- 11 Perform backup and restore
- 12 Implement System Administrator Tools and Utilities.

Target audience

The target audience for this course primarily personnel new to UNIX administration and who will be involved in supporting UNIX based nodes and applications.

Prerequisites

Successful completion of the following courses:

- UNIX Fundamentals (LZU 108 170).

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.