

Scandinavian Academy Training Center

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Course: ATM: Networking and Internetworking

Code	City	hotel	Start	End	price	Language - Hours
IT-433SA	Alula	Hotel Meeting	2027-08-08	2027-08-12	10950 SR	En - 25

Overview

This seminar covers all aspects of ATM technology concerned with building an ATM network in either a service provider of private backbone environment to function as a multi-service platform. It explores the objectives and mechanisms of ATM, especially its ability to provide quality of service and describes how these are used to carry voice data and video applications. A high quality workbook that contains fully documented text as well as a copy of all the slides accompanies the course. The intention is that the workbook should provide a useful reference volume for delegates long after they have attended the course.

Modules

Basic Concepts (6 topics)

- What does an ATM network look like?
- How ATM is different from other packet switching technologies
- The basic principles of cell switching
- Connection identifiers and how they are used
- The advantages of the ATM approach in delivering quality of service
- Comparison of ATM with other QoS technologies

ATM Connections (3 topics)

- ATM connection characteristics

- The significance between permanent and on-demand connections
- Virtual channels and virtual paths

The ATM cell (3 topics)

- why they are there and when they are used
- The principle of point to multipoint connections
- What are Soft/smart PVCs and where are they used

Above and Below (2 topics)

- What we mean by the UNI and NNI interfaces.
- The ATM Cell header format

Implementation Scenarios (4 topics)

- at the UNI and NNI
- The need for ATM Idle/unassigned and management cell
- ATM layer Operation And Maintenance (OAM) cells
- When are where these functions used?

ATM Standards (7 topics)

- What is ATM adaptation and why do we need it
- The layered approach to adaptation
- The old and new ATM protocol architecture
- Common layer ATM adaptation protocols (AAL1/AAL2/AAL5)
- Adaptation convergence sublayer and SAR sublayers
- The main physical layers used by ATM
- ATM over SDH and PDH networks

Traffic Management and Quality of Service (5 topics)

- How is a public ATM network presented to the customer

- Different ATM service network architectures
- What ATM features are available in today`s ATM services?
- How will ATM be provided as a service option in the future
- Inhibitors to ATM deployment

Addressing (5 topics)

- Who is in charge of ATM standardization?
- Who are the main players?
- The evolution of ATM standards
- What is the role of the ATM Forum?
- What standards are available now and what`s coming along soon

Signalling (16 topics)

- What is Quality of Service (QoS) and why is it ATM`s biggest advantage
- ATM service categories revisited (CBR/VBR/UBR/ABR)
- ATM traffic contracts
- Sizing considerations for ATM networks
- The essential principles of traffic management
- The differences between traffic policing and traffic shaping
- Blocking and non-blocking switches
- Traffic Control Functions
- Early Packet Discard and Partial Packet Discard
- The Generic Cell Rate Algorithm (Leaky Bucket Algorithm)
- What is meant by Dual Leaky Buckets
- ABR flow control procedures
- Where will ABR be used
- What QoS is available now?
- Differences between the QoS available on PVCs and SVCs
- Quality of service features in products

ATM Network Management (8 topics)

- The difference between private and public ATM networks
- Private and public ATM address structure
- How to obtain registered ATM addresses
- How do I assign addresses to my ATM network
- How ATM addresses will be used in the future
- Group addresses Anycast and scope
- ATM address registration via ILMI
- The ATM name service

LAN Emulation (9 topics)

- The various components of ATM signalling
- The UNI signalling protocol and its modular structure
- A walk through of connection set-up
- Setting up point to multipoint connections
- The evolution of signalling capabilities from 3.x to 4.0
- The future of ATM signalling - Leaf Initiated Join
- Prefix based call routeing
- Overview of Private Network Network Interface (PNNI) call routeing
- Comparison with public routeing protocols

Other ATM Services (1 topic)

- SS7 and BISUP

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

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