SCANDINAVIAN ACADEMY
For Training and Development

Course: ATM: Networking and Internetworking

Code	City	Hotel	Start	End	Price	Language - Hours
433	Frankfurt (Germany)	Hotel Meeting	2025-05-26	2025-05-30	5450 €	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

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- **Theoretical Lectures:**
    - We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.
- **Scientific Assessment:**
    - We evaluate trainees skills before and after the course to ensure their progress.
- **Brainstorming and Interaction:**
    - We encourage active participation through brainstorming sessions and applying concepts through role play.
- **Practical Cases:**
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- **Professional Completion Certificate:**
    - Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.
- **Program Timings:**
    - Training programs are held from 10:00 AM to 2:00 PM and include coffee break sessions during lectures.