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COURSE BROCHURE

# Advanced ATM Network Migration to MPLS and IP Training Course

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Doha

**jupiterprime.uk**
info@jupiterprime.uk
Registered in the United Kingdom and Saudi Arabia

# Advanced ATM Network Migration to MPLS and IP Training Course

**Ref:** 796_30227 **Date:** 12 – 23 September 2027 **Location:** Doha **Fees:** 11700 GBP

ATM Network Migration to MPLS and IP is a 2-week advanced training course for telecom and network engineers who maintain Asynchronous Transfer Mode and carrier networks, built around a migration plan for a legacy ATM network. Operators still carry mobile backhaul, leased lines and utility telemetry over ageing ATM switches whose spares and skills are shrinking. Jupiter Prime Training delivers ATM Network Migration to MPLS and IP for engineers who must retire that estate without disrupting services.

## Why ATM Network Migration to MPLS and IP Matters Now

Three pressures drive ATM network migration today. Switch vendors have withdrawn support, so every hardware fault on an ATM core becomes a scramble for refurbished cards. Engineers who configured permanent virtual circuits and traffic contracts are retiring, taking undocumented knowledge with them. Customers meanwhile expect packet services with flexible bandwidth that ATM cannot offer economically. An operator that migrates carefully keeps service level agreements intact and cuts operating cost; one that delays faces unplanned outages and stranded circuits. Change control in the course follows ITIL 4 service transition practice, and decisions are framed for enterprise IT governance under COBIT 2019.

## Who Gains Most from ATM Network Migration to MPLS and IP

- Engineers responsible for ATM switch configuration, virtual circuit provisioning and fault restoration
- Specialists who design MPLS core, label distribution and traffic engineering on carrier backbones
- Planners accountable for circuit inventory, capacity forecasts and decommissioning schedules
- Service assurance staff who monitor latency, cell loss and customer service level agreements
- Engineers in utilities and transport who run private ATM networks for telemetry and signalling

Operator groups that send their ATM maintainer, MPLS designer and service planner together gain most, because they leave with one inventory, one cutover method and one view of service risk.

## ATM Network Migration to MPLS and IP Capabilities

Participants practise reading a live ATM estate cell by cell and rebuilding each service on a packet core without changing what the customer experiences.

- Analyse ATM cell headers, VPI and VCI tables and switching paths — fault restoration
- Specify AAL selection and service category for each circuit type — service design decisions
- Calculate traffic contract parameters and map them to MPLS quality of service classes — customer service level agreements
- Design pseudowire and circuit emulation transport for ATM services over MPLS — core network planners
- Test cutover procedures with rollback points for live circuits — change advisory boards
- Build a phased decommissioning sequence for ATM switches — finance and operations heads

## Key ATM Network Migration to MPLS and IP Terms

- ATM cell — a fixed 53-byte unit of 48 bytes payload and 5 bytes header used to switch traffic in ATM networks.
- VPI and VCI — virtual path and virtual channel identifiers in each cell header that route it along a virtual circuit.
- ATM Adaptation Layer — the layer that segments higher-layer data into cells and reassembles it, with AAL1, AAL2 and AAL5 suited to different services.
- Pseudowire — an emulated point-to-point circuit carried across an MPLS or IP network that preserves the behaviour of the original service.
- Label switched path — a forwarding path through an MPLS network defined by labels pushed, swapped and popped at each router.
- Cell delay variation tolerance — the permitted jitter in cell arrival times that a traffic contract allows before cells are policed.

## ATM Network Migration to MPLS and IP Day by Day

## Day 1: The Legacy ATM Estate and Its Pressures

- ATM Reference Model Layers — Where Cells, Adaptation And Services Sit
- Services Still Riding ATM — Backhaul, Leased Lines And Telemetry
- End-Of-Support Exposure — Spares, Firmware And Skills Gaps
- Circuit Inventory Discovery — Finding Undocumented Virtual Circuits
- Migration Drivers Matrix — Cost, Risk And Customer Demand

## Day 2: Cells, Virtual Paths and Switching

- Cell Header Structure — GFC, VPI, VCI, PTI And HEC Fields
- Permanent And Switched Virtual Circuits — Provisioning Choices Per Service
- Virtual Path Cross-Connects — Aggregation Across The Core
- PNNI Routing And Signalling — Path Selection In Larger Networks
- OAM Cells And Loopbacks — Locating Faults On Live Circuits

## Day 3: Adaptation Layers and Service Types

- AAL1 Constant Bit Rate — Circuit Emulation For Voice Trunks
- AAL2 Variable Bit Rate — Compressed Voice In Mobile Backhaul
- AAL5 Data Framing — IP And Frame Relay Interworking
- Inverse Multiplexing Over ATM — Bonding Low-Speed Links
- Service Category Mapping — CBR, rt-VBR, nrt-VBR, UBR And ABR

## Day 4: Traffic Management and Quality of Service

- Traffic Contract Parameters — PCR, SCR, MBS And CDVT
- Generic Cell Rate Algorithm — Policing Conformance At Ingress
- Traffic Shaping And Queue Scheduling — Protecting Delay-Sensitive Circuits
- Connection Admission Control — Accepting Circuits Without Overbooking
- Performance Monitoring — Cell Loss, Delay And Jitter Baselines

## Day 5: MPLS Foundations for the Target Core

- Label Switching Operations — Push, Swap And Pop Behaviour
- LDP And RSVP-TE Signalling — Choosing Label Distribution Methods
- MPLS Traffic Engineering Tunnels — Steering Former ATM Loads
- Fast Reroute Protection — Matching ATM Restoration Times
- Segment Routing Option — Simplifying The Control Plane Long Term

## Day 6: Carrying ATM Services over MPLS and IP

- ATM Pseudowire Encapsulation — N-To-One And One-To-One Cell Modes
- AAL5 SDU Mode Transport — Efficiency For Data Circuits
- TDM Circuit Emulation Over Packet — Replacing AAL1 Trunks
- Clock Synchronisation For Emulated Circuits — Timing Recovery Choices
- Layer 3 VPN Conversion — Moving Data Customers Off ATM

## Day 7: QoS Mapping and Service Level Continuity

- ATM Service Category To DiffServ Class Mapping — Preserving Customer Priority
- EXP And Traffic Class Bit Marking — Consistency Across The Core
- Bandwidth Reservation For Emulated Circuits — Avoiding Congestion Loss
- End-To-End Delay Budget — Voice And Telemetry Tolerance Checks
- Service Level Agreement Revision — Packet Metrics Customers Accept

## Day 8: Migration Strategies and Cutover Methods

- Overlay, Interworking And Replacement Strategies — Choosing The Migration Path
- Circuit Grouping By Risk — Sequencing Waves Of Migration
- Parallel Running And Soak Testing — Proving The New Path
- Maintenance Window Runbook — Step Timing And Rollback Points
- Customer Notification Scheme — Expectations Before Each Cutover

## Day 9: Operations, Risk and Decommissioning

- ITIL 4 Change Enablement — Approval Paths For Network Cutovers
- COBIT 2019 Managed Changes — Board Visibility Of Migration Risk
- Migration Risk Register — Timing, Interworking And Skills Exposures
- Switch Decommissioning Sequence — Power, Space And Licence Savings
- Post-Migration Monitoring — Alarms And Telemetry On The Packet Core

## Day 10: Practising the ATM Migration Plan

- Circuit Inventory And Service Mapping Applied — Scope Of The Chosen Network
- Pseudowire And QoS Design Applied — Target Transport For Each Service
- Cutover Waves And Runbooks Applied — Sequence With Rollback
- Peer Design Challenge — Testing Assumptions Before Change Board
- Migration Plan For A Legacy ATM Network — Inventory, Design, Waves And Risks

## Applying ATM Network Migration to MPLS and IP After the Course

- Extract the VPI and VCI tables from every ATM switch in your estate, reconcile them with billing records and flag circuits with no known customer for removal.
- Build a lab pseudowire for one AAL5 and one AAL1 circuit, measure delay and jitter against the original traffic contract and present the results to the change board.

## ATM Network Migration to MPLS and IP Questions FAQ

### What is ATM Network Migration to MPLS and IP and why does it matter now?

ATM Network Migration to MPLS and IP is the moving of services from legacy cell-switched networks onto packet cores without losing service quality. It matters now because ATM hardware support and skills are disappearing while customers still depend on circuits running over it.

### Which roles gain most from ATM Network Migration to MPLS and IP?

Telecom and network engineers who maintain ATM switches or design MPLS cores gain most from ATM Network Migration to MPLS and IP. You benefit if you answer for circuit continuity, quality of service mapping or the schedule for retiring legacy switches.

### How does ATM Network Migration to MPLS and IP differ from a general MPLS course?

ATM Network Migration to MPLS and IP starts from the legacy ATM estate and its traffic contracts. A general MPLS course teaches label switching and VPNs from scratch, while this course concentrates on emulating, mapping and cutting over existing ATM services.

## What do you bring back from ATM Network Migration to MPLS and IP?

You bring back a migration plan for a legacy ATM network you operate, with a circuit inventory, pseudowire and QoS design, cutover waves, runbooks and a risk register. You can submit it to your change board and use it to schedule the first wave.

## ATM Network Migration to MPLS and IP: The Way Forward

The migration plan for a legacy ATM network first informs which circuit group moves in the opening wave. Network engineers build pseudowires from it, planners schedule maintenance windows against it and service managers brief customers with it. After the first wave, compare measured delay and jitter with the original traffic contracts and refine the QoS mapping before later waves.