

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

Certificate in Network Operations (N-Ops)

Foundation Level



LAPT — London Academy of Professional Training

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Reference IT-NIC-F • IT Centres

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AT A GLANCE

REFERENCE	IT-NIC-F
AWARD	Certificate
ASSESSMENT	450 marks — 270 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1 Introduction to Cloud Computing 4 chapters · 20 classes 45 marks	1 Understanding Cloud Computing Basics and Models — 5 classes 1.1 Defining Cloud Computing and Its Benefits 1.2 Exploring Different Cloud Service Models 1.3 Identifying Cloud Deployment Models 1.4 Understanding Cloud Computing Key Terms 1.5 Analyzing Use Cases of Cloud Computing 2 Cloud Deployment Models and Their Applications — 5 classes 2.1 Understanding Cloud Deployment Models 2.2 Exploring Public Cloud Applications 2.3 Examining Private Cloud Benefits 2.4 Analyzing Hybrid Cloud Solutions 2.5 Identifying Community Cloud Use Cases 3 Introduction to Cloud Security and Compliance — 5 classes 3.1 Understanding Cloud Security Basics 3.2 Exploring Regulatory Compliance in the Cloud 3.3 Identifying Threats and Vulnerabilities in Cloud Environments 3.4 Applying Security Measures and Best Practices 3.5 Evaluating Cloud Provider Compliance Certifications 4 Exploring Cloud Service Providers and Emerging Trends — 5 classes 4.1 Understanding Major Cloud Service Providers 4.2 Comparing Cloud Service Models: IaaS, PaaS, SaaS 4.3 Identifying Key Features of Leading Cloud Platforms 4.4 Evaluating Security Protocols in Cloud Services 4.5 Exploring Emerging Trends in Cloud Computing
2 Introduction to Network Infrastructure 4 chapters · 20 classes 115 marks	1 Chapter 1 — Fundamentals of Network Infrastructure — 5 classes 1.1 Understanding Network Infrastructure: Concepts and Components 1.2 Exploring Network Topologies: Analyzing Structures and Types 1.3 Examining Network Hardware: Identifying Key Devices 1.4 Investigating Data Transmission: Understanding Protocols and Models 1.5 Applying Basic Networking: Building and Testing Simple Networks 2 Chapter 2 — Network Design and Topologies — 5 classes 2.1 Understanding Network Design Principles 2.2 Exploring Common Network Topologies 2.3 Analyzing the Benefits and Drawbacks of Star Topology 2.4 Comparing Ring and Mesh Topologies 2.5 Designing a Simple Network Layout 3 Chapter 3 — Introduction to IP Addressing and Subnetting — 5 classes 3.1 Understanding IP Address Structure 3.2 Exploring Subnet Masks and Their Purpose 3.3 Differentiating Between IPv4 and IPv6 3.4 Calculating Subnets and Network Addresses 3.5 Applying Subnetting to Network Design 4 Chapter 4 — Basics of Cloud Computing Integration — 5 classes 4.1 Understanding Cloud Computing Fundamentals 4.2 Exploring Different Cloud Service Models 4.3 Navigating Cloud Deployment Models 4.4 Integrating Cloud Services into Existing Network Infrastructure 4.5 Ensuring Security and Compliance in Cloud Integration

3

Network Design Principles

4 chapters · 20 classes

65 marks

• 1 Understanding Fundamental Network Architectures — 5 classes

- › 1.1 Exploring the Basics of Network Architectures
- › 1.2 Identifying Key Network Topologies
- › 1.3 Understanding Protocols and Standards in Network Design
- › 1.4 Analyzing Network Design Components
- › 1.5 Applying Fundamentals to Simple Network Designs

• 2 Analyzing Network Topologies and Protocols — 5 classes

- › 2.1 Identifying Common Network Topologies
- › 2.2 Examining the Characteristics of Network Protocols
- › 2.3 Understanding the Impact of Topologies on Network Performance
- › 2.4 Comparing Network Protocols and Their Applications
- › 2.5 Analyzing the Integration of Topologies and Protocols

• 3 Incorporating Security and Scalability in Network Design — 5 classes

- › 3.1 Understanding Network Security Risks
- › 3.2 Identifying Scalability Requirements
- › 3.3 Integrating Security Protocols into Network Design
- › 3.4 Designing Network Architecture for Scalability
- › 3.5 Evaluating Security and Scalability in Network Proposals

• 4 Designing for Cloud Integration and Future Trends — 5 classes

- › 4.1 Understanding Cloud Integration Fundamentals
- › 4.2 Exploring Network Architectures for Cloud Readiness
- › 4.3 Assessing Security and Compliance in Cloud Environments
- › 4.4 Implementing Scalable Network Solutions for Cloud
- › 4.5 Evaluating Future Trends in Network Design

4

Network Operations and Maintenance

4 chapters · 20 classes

45 marks

• 1 Understanding Network Operations Frameworks — 5 classes

- › 1.1 Exploring Network Operations Frameworks
- › 1.2 Identifying Key Components of Network Management
- › 1.3 Understanding Roles and Responsibilities in Network Operations
- › 1.4 Analyzing Network Performance and Metrics
- › 1.5 Implementing Network Operation Best Practices

• 2 Monitoring and Performance Management — 5 classes

- › 2.1 Understanding Network Monitoring Concepts
- › 2.2 Exploring Key Network Performance Metrics
- › 2.3 Implementing Network Monitoring Tools
- › 2.4 Analyzing Network Performance Data
- › 2.5 Optimizing Network Performance Based on Data Insights

• 3 Routine Network Maintenance Procedures — 5 classes

- › 3.1 Understanding Routine Network Maintenance
- › 3.2 Identifying Common Network Maintenance Tasks
- › 3.3 Executing Network Monitoring Techniques
- › 3.4 Performing Scheduled Network Hardware Checks
- › 3.5 Implementing Software Updates and Patches

• 4 Troubleshooting and Incident Management — 5 classes

- › 4.1 Understanding Common Network Issues
- › 4.2 Identifying Symptoms of Network Failures
- › 4.3 Analyzing Issues Using Diagnostic Tools
- › 4.4 Implementing Immediate Resolution Techniques
- › 4.5 Documenting and Reporting Network Incidents

5

Network Security Fundamentals

4 chapters · 20 classes

90 marks

• 1 Understanding Network Security Basics — 5 classes

- › 1.1 Identifying Key Network Security Threats
- › 1.2 Understanding Basic Network Security Measures
- › 1.3 Recognizing Secure Network Protocols
- › 1.4 Analyzing Encryption and Authentication Methods
- › 1.5 Applying Fundamental Network Defense Strategies

• 2 Identifying and Mitigating Network Threats — 5 classes

- › 2.1 Understanding Network Threats: Types and Characteristics
- › 2.2 Identifying Common Network Vulnerabilities
- › 2.3 Recognising Signs of Network Threats
- › 2.4 Implementing Basic Mitigation Strategies
- › 2.5 Evaluating the Effectiveness of Network Security Measures

• 3 Implementing Access Control and Authentication — 5 classes

- › 3.1 Understanding Access Control Models
- › 3.2 Differentiating Between Authentication Methods
- › 3.3 Implementing Role-Based Access Control
- › 3.4 Configuring Authentication Protocols
- › 3.5 Evaluating Security Risks in Access Control Systems

• 4 Network Security Tools and Best Practices — 5 classes

- › 4.1 Understanding Network Security Tools
- › 4.2 Identifying Common Network Vulnerabilities
- › 4.3 Implementing Firewalls for Network Protection
- › 4.4 Configuring Intrusion Detection Systems
- › 4.5 Applying Best Practices for Network Security

• 1 Fundamentals of Network Troubleshooting — 5 classes

- › 1.1 Understanding Network Infrastructure Components
- › 1.2 Identifying Common Network Problems
- › 1.3 Utilizing Basic Network Diagnostic Tools
- › 1.4 Implementing Structured Troubleshooting Methodologies
- › 1.5 Analyzing and Resolving Network Performance Issues

• 2 Troubleshooting Physical and Data Link Layers — 5 classes

- › 1.1 Understanding Physical Layer Issues
- › 1.2 Identifying Common Data Link Layer Problems
- › 1.3 Implementing Basic Cable Testing Techniques
- › 1.4 Troubleshooting Network Interface Cards (NICs)
- › 1.5 Applying Flow Control to Resolve Data Collisions

• 3 Network Layer and Routing Troubleshooting — 5 classes

- › 3.1 Understanding the Network Layer: Concepts and Functions
- › 3.2 Identifying Common Network Layer Issues
- › 3.3 Analyzing Routing Protocols and Their Challenges
- › 3.4 Diagnosing Routing Problems with Tools and Techniques
- › 3.5 Implementing Solutions for Routing and Network Layer Issues

• 4 Advanced Troubleshooting for Application and Cloud Services — 5 classes

- › 4.1 Identifying Common Application Layer Issues
- › 4.2 Diagnosing Cloud Service Connectivity Problems
- › 4.3 Utilizing Network Tools for Application Troubleshooting
- › 4.4 Analyzing Logs and Metrics in Cloud Environments
- › 4.5 Implementing Solutions and Best Practices for Network Operations