BLACKBIRD FOR TRAINING

Advanced Enterprise Infrastructure, VMware Administration and Enterprise Network Management Course



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Introduction:

Advanced enterprise infrastructure, VMware administration and enterprise network management is the work of running virtual servers on VMware vSphere 8, the ESXi hypervisor and vCenter Server management platform, together with the switched and wireless networks they depend on. This one-week course is for senior MIS and infrastructure engineers, system and virtualisation administrators, network engineers, IT assistant managers and infrastructure team leads, and each delegate leaves with an infrastructure operations runbook. It is taught at advanced level through hands-on labs every day, with log analysis and auditing exercises, patching and recovery simulations and a final practical assessment.

Course Objectives:

- Apply vSphere 8 administration on ESXi hosts, vCenter Server and clusters, and distinguish vSphere HA from DRS when setting cluster behaviour
- Apply role-based access control and least privilege, and distinguish default from custom roles when granting administrative permissions
- Interpret ESXi and vCenter logs and syslog feeds to audit user activity, investigate events and identify suspicious changes
- Select VLAN, trunking, STP and LACP settings and enterprise wireless controls that segment traffic and keep links redundant
- Compare patching, backup and recovery options, including images and baselines in vSphere Lifecycle Manager, to reduce downtime during change
- Apply structured diagnostics to virtual and physical faults and justify standard operating procedures that make operations consistent

Target Audience:

- Senior MIS and infrastructure engineering professionals who run the server estate and must decide how hosts, clusters and storage are configured
- System and virtualisation administration professionals who operate ESXi and vCenter daily and must judge when to patch, migrate or restore workloads
- Network engineering professionals who manage switching and wireless and must choose how VLANs, trunks and aggregated links are designed
- IT assistant managers responsible for infrastructure services who must decide which security, access and maintenance standards the team follows
- Infrastructure team leads who coordinate operations staff and must judge whether recovery plans, runbooks and change windows are ready



Course Outline:

Day 1: VMware vSphere and ESXi Administration Foundations

- vSphere Architecture vs Traditional Server Estates: Enterprise Virtualisation Layers and Components
- ESXi Host Installation and Configuration: Host Client, DCUI, Networking and Services
- vCenter Server Administration and VM Provisioning: Templates, Clones and Resource Allocation
- Standard vs Distributed Switches and Datastores: Virtual Networking and Storage Design
- Cluster Management With vSphere HA and DRS: Failover, Load Balancing and Practices

Day 2: VMware Security, Access Control and Log Management

- Default vs Custom Roles in vCenter: Access Control Architecture and Privilege Sets
- User and Group Permissions: Identity Sources, Inheritance and Least Privilege Assignment
- Securing Administrative Access: Lockdown Mode, SSH Control and Separate Privileged Accounts
- Syslog Configuration and Forwarding vs Local Log Retention: ESXi and vCenter Log Maintenance
- Log Analysis and User Activity Auditing Lab: Event Investigation and Suspicious Change Tracing

Day 3: Enterprise Wired and Wireless Network Management

- Enterprise Network Architecture and Performance Monitoring: Core, Distribution, Access Layers and Telemetry
- VLAN Trunking, Inter-VLAN Routing and STP Loop Prevention: Segmentation Configuration Lab
- LACP vs Static Link Aggregation: Redundancy, Failover and Uplink Bandwidth Design
- Enterprise Wi-Fi Architecture and Wireless Security: Controllers, Access Points and Authentication
- vSphere Virtual Networking vs Physical Switching: Integration and Connectivity Troubleshooting

Day 4: Infrastructure Hardening, Patching, Maintenance and Disaster Recovery

- Secure Configuration and Hardening: Host Baselines, Services, Certificates and Security Practices
- Images vs Baselines in vSphere Lifecycle Manager: Patching, Updates and Version Planning
- ESXi and vCenter Preventive Maintenance: Maintenance Mode, Alarms, Health Checks and Monitoring
- Backup Strategies and Disaster Recovery Planning: RPO, RTO, Business Continuity and Recovery Testing
- vSphere HA vs Fault Tolerance: Redundancy Choices and Minimising Downtime During Changes



Day 5: Lab Practice: Advanced Troubleshooting, Recovery Scenarios and the Operations Runbook

- ESXi and vCenter Troubleshooting Lab: esxtop Performance Diagnostics and Failure Log Analysis
- Virtual vs Physical Network Fault Diagnosis: VLAN, Trunking, STP and LACP Issues
- Access, Permission and Security Configuration Review Lab: Resolving Role and Hardening Gaps
- Disaster Recovery Simulation and Case Studies: Host Failure, Restore and Failover Validation
- Final Practical Assessment and Runbook Completion: Standard Operating Procedures and Maintenance Recommendations

Skills You Will Gain:

- vSphere Cluster Administration
- Role-Based Access Control Design
- Syslog and Event Log Analysis
- VLAN and Trunk Configuration
- Link Aggregation and Loop Prevention
- vSphere Lifecycle Management
- Disaster Recovery Testing
- Infrastructure Fault Isolation

Why Attend This Course:

- From fixing hosts and clusters case by case to administering vSphere through consistent, documented settings
- From broad shared administrator accounts to roles, permissions and audited logs that show who changed what
- From finding VLAN, STP and LACP faults by trial and error to isolating them step by step across virtual and physical layers
- From untested backups and ad hoc patching to an infrastructure operations runbook with standard procedures, maintenance schedules and a validated recovery checklist

Conclusion:

Running a virtualised enterprise estate means keeping ESXi hosts, vCenter Server and the networks beneath them secure, patched, recoverable and quick to diagnose. The course makes three distinctions clear: vSphere HA against DRS and Fault Tolerance, default roles against custom least-privilege roles, and virtual switch faults against physical VLAN, STP and LACP faults. It suits engineers, administrators and team leads who already operate vSphere and enterprise networks every day and now need advanced, lab-tested skills to standardise operations and reduce downtime, rather than newcomers seeking an introduction to virtualisation.



Frequently Asked Questions FAQ:

What should a delegate know before an advanced enterprise infrastructure, VMware administration and enterprise network management course?

Delegates should already administer ESXi hosts or vCenter Server and understand IP addressing, switching and VLAN basics. Bringing anonymised logs, network diagrams or change procedures from their own environment makes the labs and the runbook exercise more useful.

How does an advanced VMware administration and enterprise network management course differ from a vendor installation course?

It joins virtualisation, switching, wireless, security, patching and recovery into one operational course built around troubleshooting and standard procedures. A vendor installation course focuses on deploying and configuring one product, and it does not cover physical network design or cross-layer fault diagnosis.

What is the difference between vSphere HA and DRS in VMware administration?

vSphere HA restarts virtual machines on surviving hosts after a host fails, limiting downtime. DRS balances running workloads across a cluster by recommending or performing live migrations. HA protects availability; DRS manages resource use, and most enterprise clusters run both.

What does a delegate take back from an advanced enterprise infrastructure, VMware administration and enterprise network management course?

Each delegate takes back an infrastructure operations runbook: standard operating procedures, a maintenance and patching schedule, a recovery checklist and troubleshooting steps for virtual and physical networks, tested during the labs and the final practical assessment.

