31. Installing and Configuring Hyper-V Virtualization in Windows Server 2016
Installation Steps:

Open Server Manager: Launch Server Manager from the Start menu.
Add Roles and Features: Click on "Add roles and features."
Role-Based or Feature-Based Installation: Choose this installation type.
Select Server: Choose the server where you want to install Hyper-V.
Select Hyper-V Role: Check the Hyper-V role and proceed through the prompts.
Configure Network: Select the network adapter(s) for virtual switches.
Complete Installation: Finish the installation and reboot if prompted.
Configuration Steps:

Open Hyper-V Manager: Go to Tools > Hyper-V Manager.
Create Virtual Switch: Right-click on the server name and select "Virtual Switch Manager" to create and configure virtual switches.
Create Virtual Machines (VMs): Right-click on the server and choose "New > Virtual Machine" to create and configure VMs.
Manage VMs: Use Hyper-V Manager to start, stop, and configure VMs as needed.

32. Monitoring Server Performance and Managing Event Logs
Monitoring Performance:

Performance Monitor: Use the Performance Monitor (perfmon) to add counters and monitor performance metrics.
Task Manager: Access Task Manager to view real-time performance, including CPU, memory, and disk usage.
Resource Monitor: Use Resource Monitor for detailed resource usage analysis.
Managing Event Logs:

Event Viewer: Open Event Viewer (eventvwr.msc) to view and manage logs.
Review Logs: Check application, security, and system logs for warnings and errors.
Create Custom Views: Set up custom views to filter and display relevant logs.
Export Logs: Export logs for analysis or reporting purposes.

33. Different Types of Storage Options in Windows Server
Direct-Attached Storage (DAS): Local storage directly attached to a server (e.g., hard drives, SSDs).
Network-Attached Storage (NAS): Storage devices connected to a network providing data access to multiple clients.
Storage Area Network (SAN): High-speed network that provides access to consolidated block-level storage.
Resilient File System (ReFS): Designed for high availability and data integrity, used with Storage Spaces.
Storage Spaces: Allows combining multiple drives into storage pools for redundancy and performance.

34. Role of File Server in Windows Server and Configuration
Role of File Server:

A file server provides centralized storage and access to files and folders for users

on a network.
Configuration Steps:

Install File Server Role: Use Server Manager to add the File Server role.
Create Shared Folders: Right-click on the folder to share, select "Properties," go to the Sharing tab, and click on "Share."
Set Permissions: Configure share permissions and NTFS permissions to control access.
Manage Quotas: Optionally, set quotas to limit storage space for users.

35. Implementing and Managing Distributed File System (DFS) in Windows Server 2016
Implementation Steps:

Install DFS Role: Add the DFS role through Server Manager.
Open DFS Management: Go to Tools > DFS Management.
Create Namespaces: Right-click on "Namespaces" and select "New Namespace" to create a new DFS namespace.
Add Folders: Add shared folders to the namespace for users to access.
Configure Replication: Set up DFS replication for fault tolerance across servers.

36. Built-in Backup and Recovery Options in Windows Server 2016/2019
Windows Server Backup: A built-in feature that allows full server backups, system state backups, and specific file/folder backups.
System Recovery: Use recovery options to restore the system state, individual files, or the entire server.
Bare Metal Recovery: Enables recovery of the server from scratch using a backup.

37. Configuring Windows Server Backup
Install Backup Feature: Use Server Manager to add the Windows Server Backup feature.
Open Windows Server Backup: Launch the application from the Tools menu.
Schedule Backups: Use the “Backup Schedule” wizard to configure regular backups.
Select Backup Type: Choose between full server backup, custom, or specific items.
Select Destination: Choose where to store the backups (local disk, remote share, etc.).

38. Restoring Files and Folders Using Windows Server Backup
Open Windows Server Backup: Launch the application.
Select Recovery: Click on “Recover” in the Actions pane.
Choose Backup Location: Select the backup location (local or remote).
Select Backup Date: Choose the appropriate backup to restore from.
Select Recovery Type: Choose to restore files or folders and specify the items to recover.
Complete the Wizard: Follow the prompts to restore the selected items.

39. Common Troubleshooting Techniques for Windows Server Startup Issues
Check Hardware: Ensure all hardware components are functioning and properly connected.
Boot in Safe Mode: Use Safe Mode to troubleshoot startup issues.
Use Last Known Good Configuration: Boot using the last known good configuration option.
Check Event Logs: Review system and application event logs for errors during

startup.
Run Startup Repair: Use Windows installation media to access recovery options and perform startup repair.

40. Troubleshooting Network Connectivity Problems in Windows Server
Check Network Configuration: Ensure correct IP configuration using ipconfig.
Ping Tests: Use ping to test connectivity to local and remote devices.
Check Firewall Settings: Verify that firewall rules allow the necessary traffic.
DNS Resolution: Ensure proper DNS settings; use nslookup to check DNS resolution.
Review Event Logs: Look for network-related errors in the event logs.

41. Common Active Directory-Related Issues and Troubleshooting Steps
Replication Failures: Check the replication status using repadmin /replsummary and resolve any issues.
Authentication Problems: Ensure that domain controllers are accessible and DNS is functioning correctly.
Group Policy Issues: Use gpresult to analyze group policy application and troubleshoot accordingly.
User Account Lockouts: Investigate the source of lockouts using event logs or net logon troubleshooting.

42. Troubleshooting Performance Problems on Windows Server 2016/2019
Resource Monitor: Use Resource Monitor to identify processes consuming high resources.
Performance Monitor: Analyze performance counters to diagnose bottlenecks.
Event Logs: Review application and system event logs for warnings and errors.
Check Disk Space: Ensure sufficient disk space is available for optimal performance.
Update Drivers and Software: Ensure all drivers and software are updated to the latest versions.