

Microsoft® Official Course



Module13

Maintaining Windows Server

Microsoft®

Module Overview

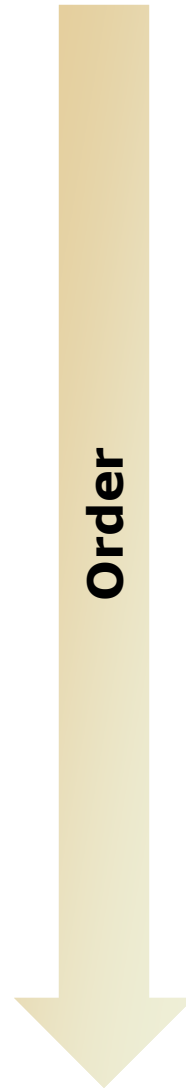
- Troubleshooting Windows Server Startup
- Business Continuity and Disaster Recovery
- Applying Updates to Windows Server
- Troubleshooting Windows Server

Lesson 1: Troubleshooting Windows Server Startup

- Windows Server Startup
- Troubleshooting Tools in the Startup Environment
- Considerations for Troubleshooting Startup
- Demonstration: How to Recover the Startup Environment

Windows Server Startup

- BIOS, EFI, and UEFI initialization and POST
 - Firmware Identifies and Initializes H/W
 - Starts Bootmgr.exe
- OS Loader
 - Controlled by WinLoad.exe
 - Loads device drivers and registry into memory
- Main Startup Cycle
 - Kernel takes control
 - Initializes data and H/W structures for use
 - Sub-phases initialized (smss.exe, csrss.exe, wininit.exe, winlogon.exe, explorer.exe)
- Post-Startup
 - H/W, services, applications continue to load



Troubleshooting Tools in the Startup Environment

- Repair Your Computer
 - System Image Recovery
 - Command Prompt
 - Windows 8 has additional options
- Safe Mode
 - Safe mode with Command Prompt
 - Safe mode with networking
- Last Known Good Configuration
- Other Options include:
 - Logging, video resolution, DSRM, debugging, disabling automatic restarts, disabling driver signature enforcement options, and disabling anti-malware driver

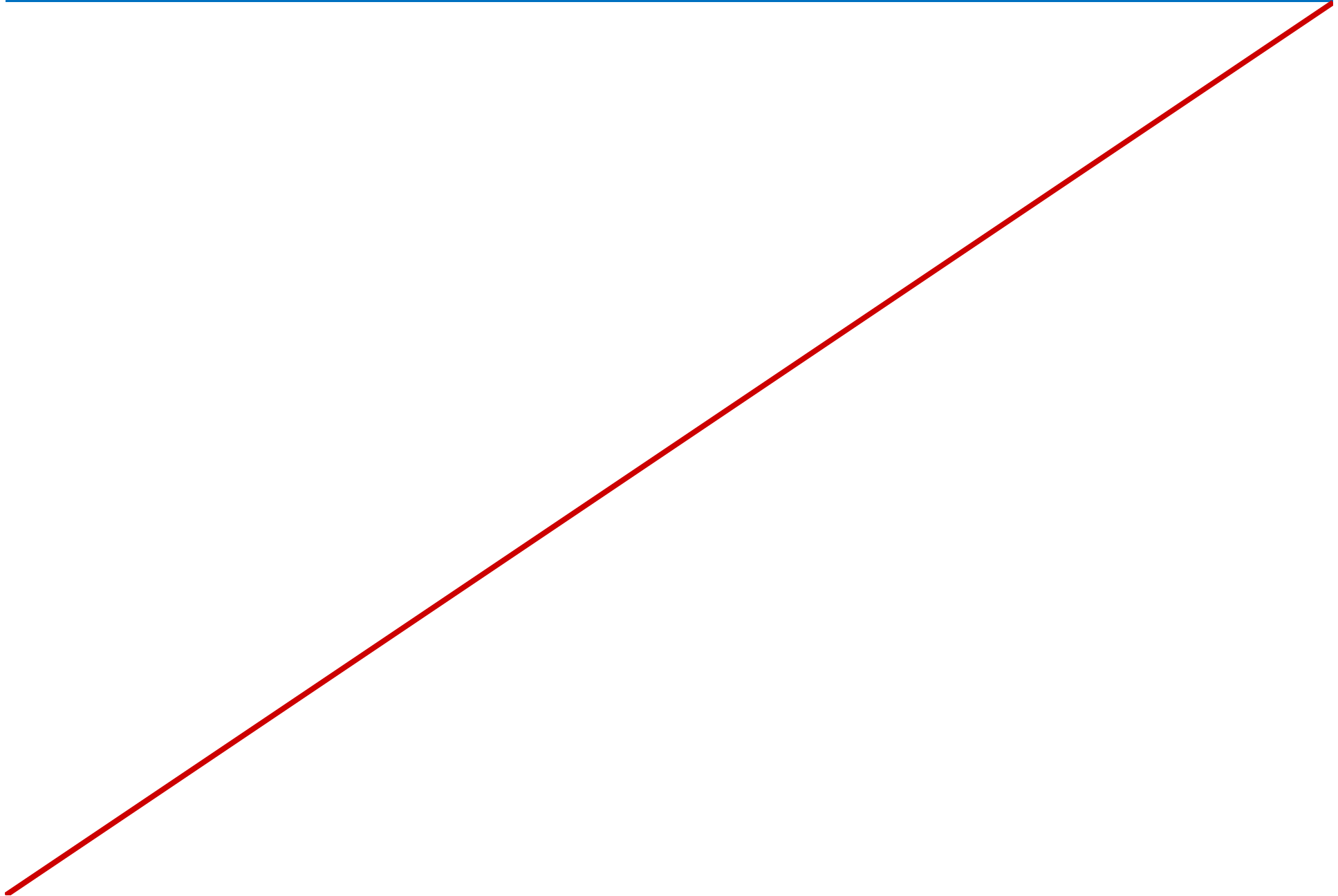
Considerations for Troubleshooting Startup

- Possible startup related issues:
 - MBR corruption
 - BCD misconfiguration
 - System file corruption
 - Crash or hang after splash screen appears
- The tool you should use to troubleshoot startup can often be determined by the symptoms of the startup issue

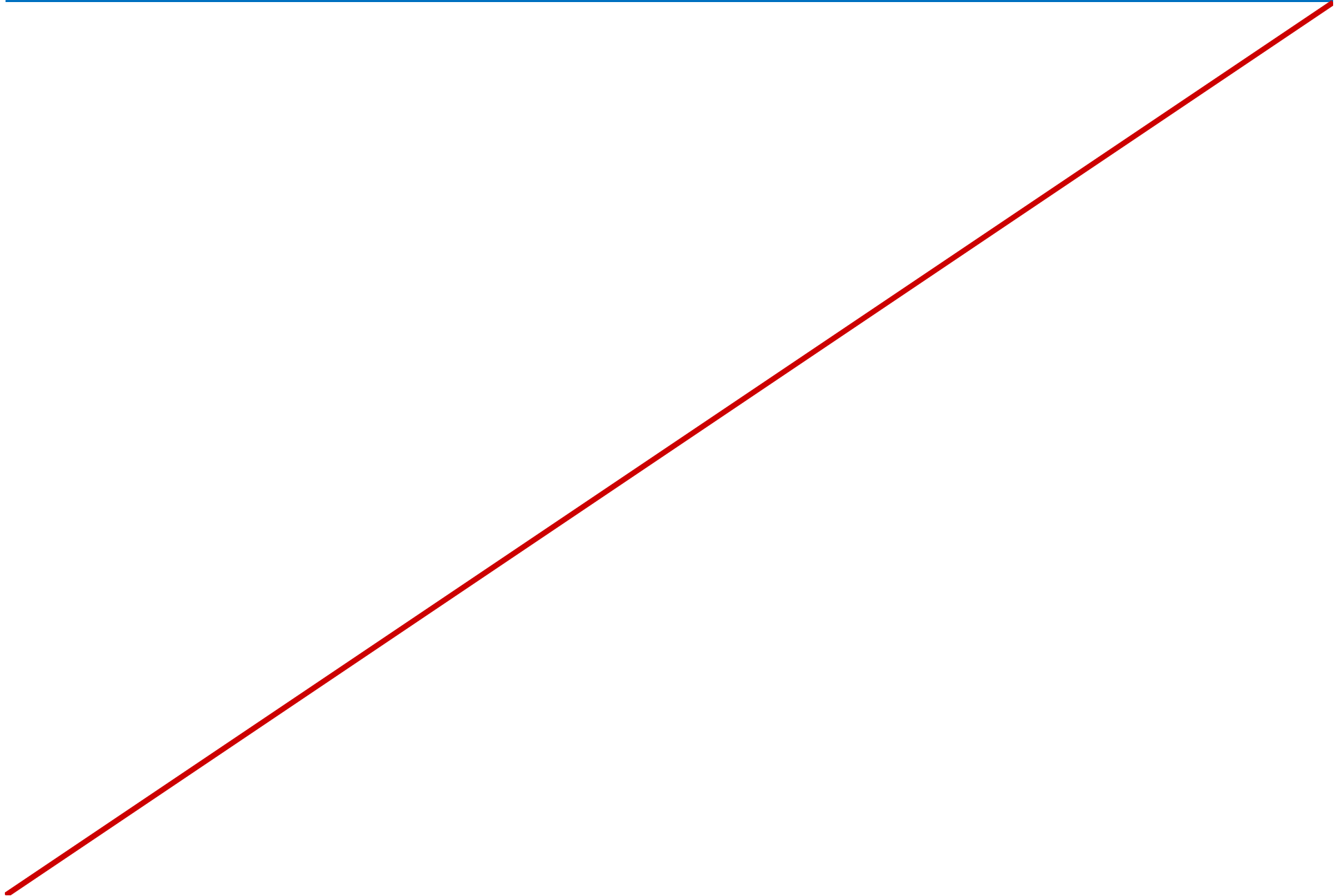
Demonstration: How to Recover the Startup Environment

- In this demonstration, you will see how to use Windows tools to troubleshoot and repair a nonfunctioning startup environment

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Lesson 2: Business Continuity and Disaster Recovery

- Why Backup Data?
- Discussion: The Importance of Business Continuity
- Increased Availability and Data Recovery
- Network Load Balancing
- Failover Clustering
- Providing for Data Recovery

Why Backup Data?

- Backing up data is important because:
 - Data often contains important business information
 - Data can be lost or destroyed
 - Historical data might be necessary for business or legal purposes
- Data categories:
 - User data: Data containing business or user information such as documents or databases
 - System data: Data containing system information or information that allows the system to run like application settings, registry keys, and system files

Discussion: The Importance of Business Continuity

- How does business continuity loss occur and what are the repercussions?
- What types of events could interfere with business continuity?
- What would be the cost to your organization if your server infrastructure was unable?



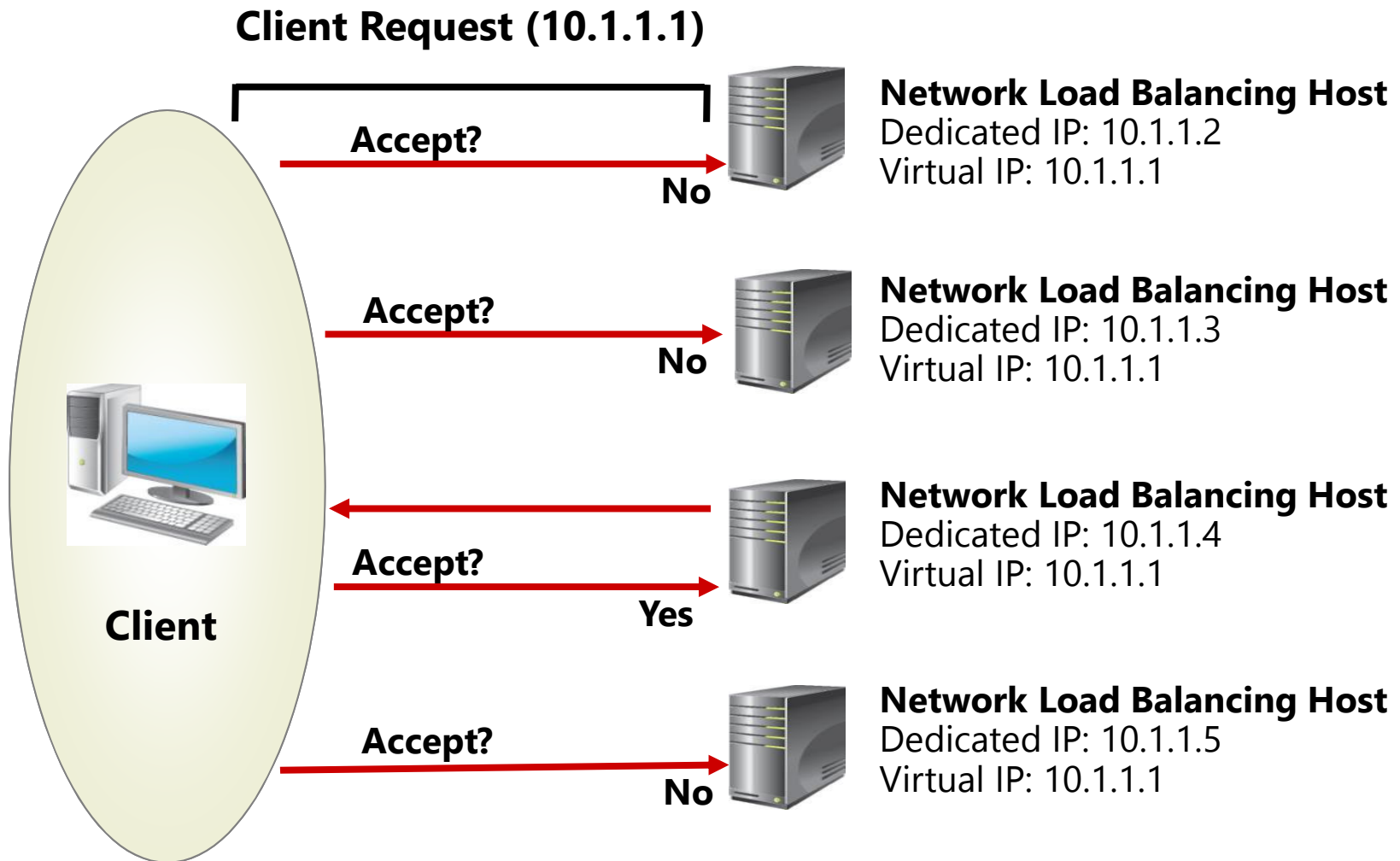
15 minutes



Increased Availability and Data Recovery

	Increased Availability	Data Recovery
Features	<ul style="list-style-type: none">• High Availability provides for uninterrupted server uptime• Can be used to satisfy SLAs• Requires extra hardware and time resources to configure	<ul style="list-style-type: none">• Provides for protection of existing data• Protects against data loss, corruption, and destruction• Allows for data availability after catastrophic events
Tools	<ul style="list-style-type: none">• Fault tolerant hardware support• Fault Tolerant Application Support• Failover clustering• Network Load Balancing	<ul style="list-style-type: none">• Windows Server Backup• Windows Azure Online Backup

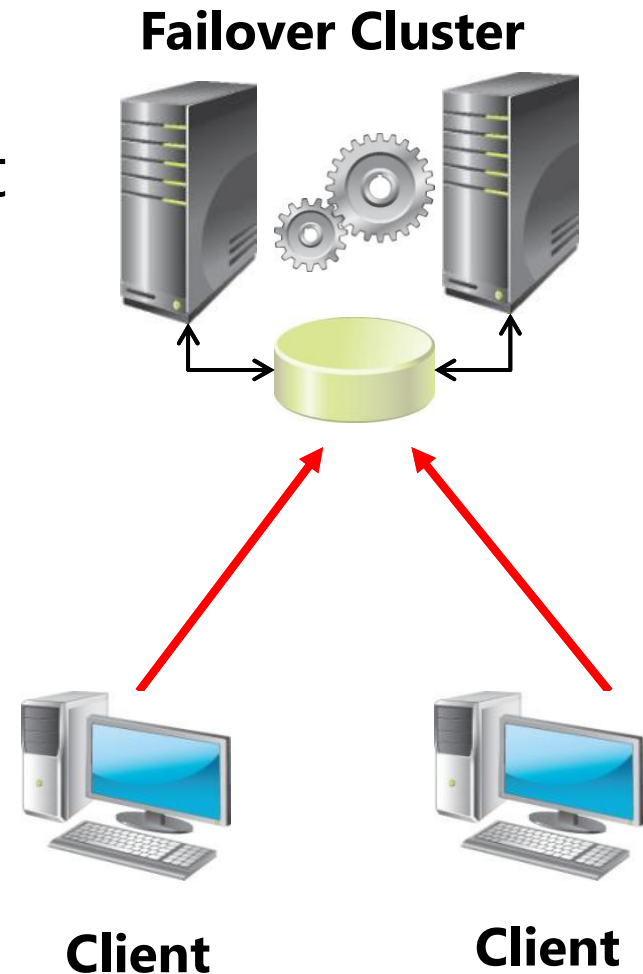
Network Load Balancing



Network Load Balancing provides high availability and scalability for TCP/IP-based services

Failover Clustering

- In a failover cluster, a group of servers work together to increase the availability of a set of applications and services
- Cluster-aware applications:
 - DFS Namespace Server
 - DHCP Server
 - Exchange Server
 - File Server
 - Print Server
 - SQL Server
 - WINS Server



Providing for Data Recovery

Preparing a backup plan

- What to backup?
- When to backup?
- What media to use?
- Where to store the backups?
- Who should perform backup and restore operations

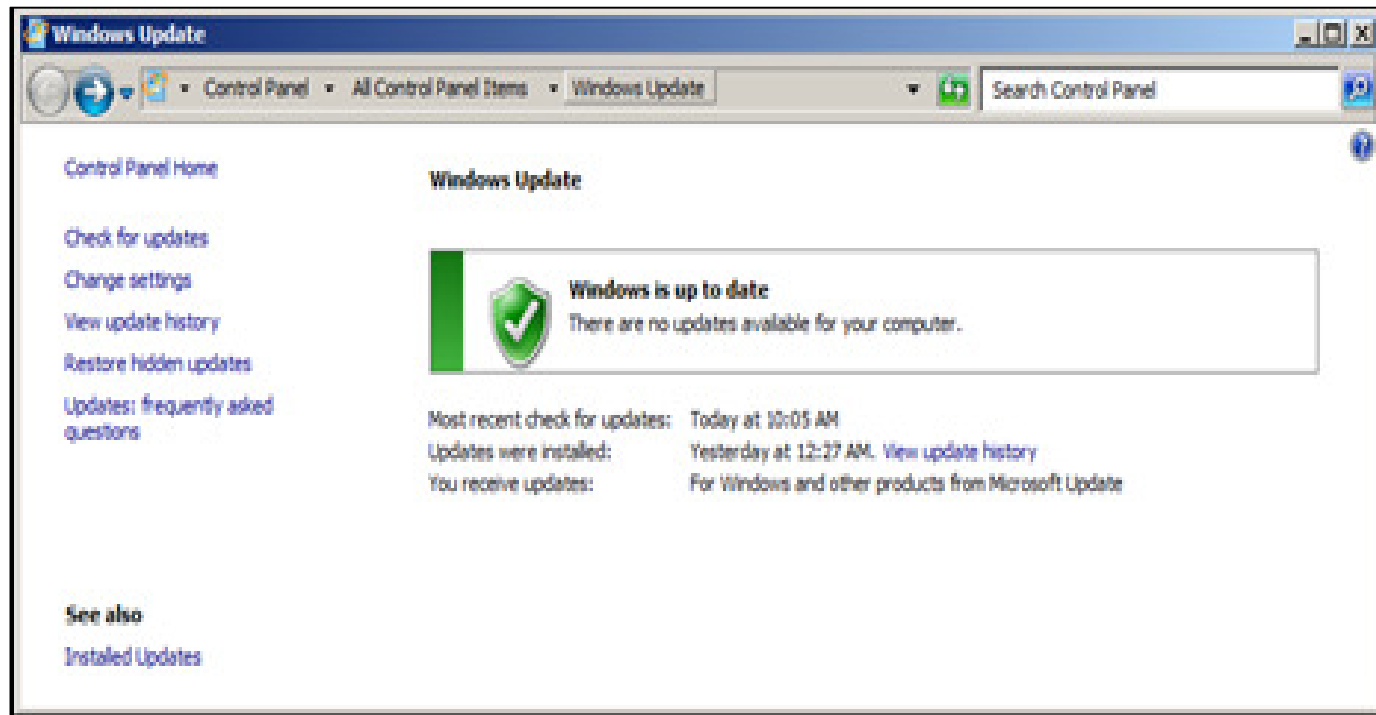
Lesson 3: Applying Updates to Windows Server

- Why Update Windows?
- What Must be Updated?
- Windows Server Update Services
- Demonstration: Review WSUS Group Policy settings

Why Update Windows?

Updating Windows

- Provides protection against system vulnerabilities
- Ensures that system hardware operates efficiently



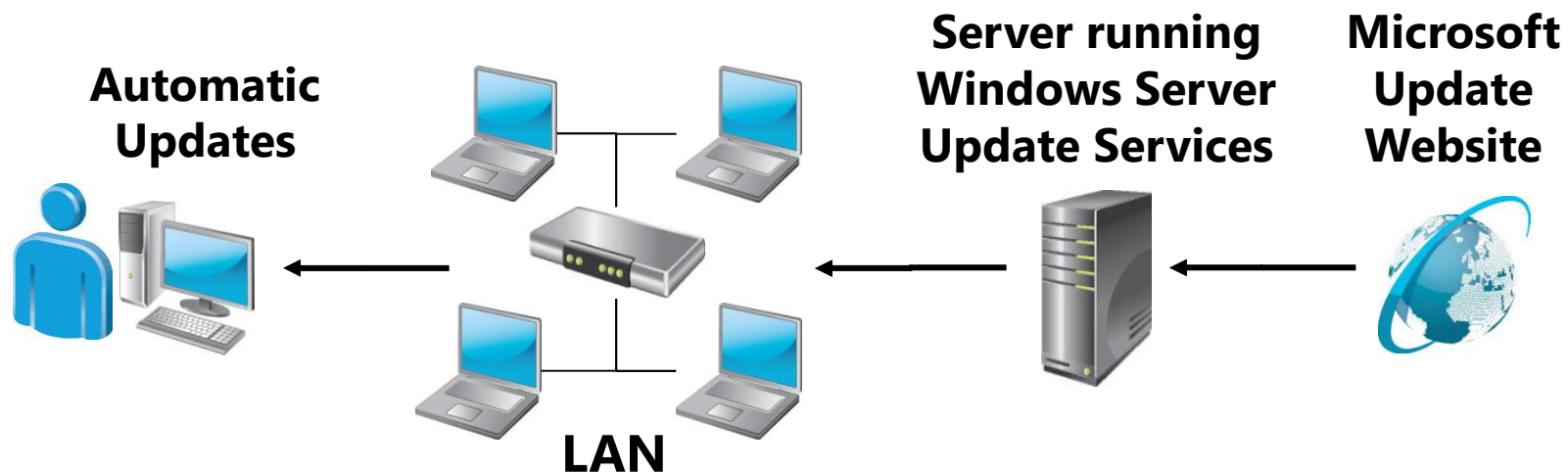
What Must be Updated?

The following are key areas that require updating:

- Core operating system
 - Updated executable
 - Updated .dll
 - New features
- Drivers
 - Changes in functionality
 - Hardware compatibility
- Applications
 - New features
 - Functionality fixes
 - Service packs

Windows Server Update Services

- Windows Server Update Services allows you to deploy the latest Microsoft product updates
- Provides a centralized way to push Windows Update to users



Demonstration: Review WSUS Group Policy Settings

- In this demonstration, you will see how to use Group Policy to manage the WSUS environment

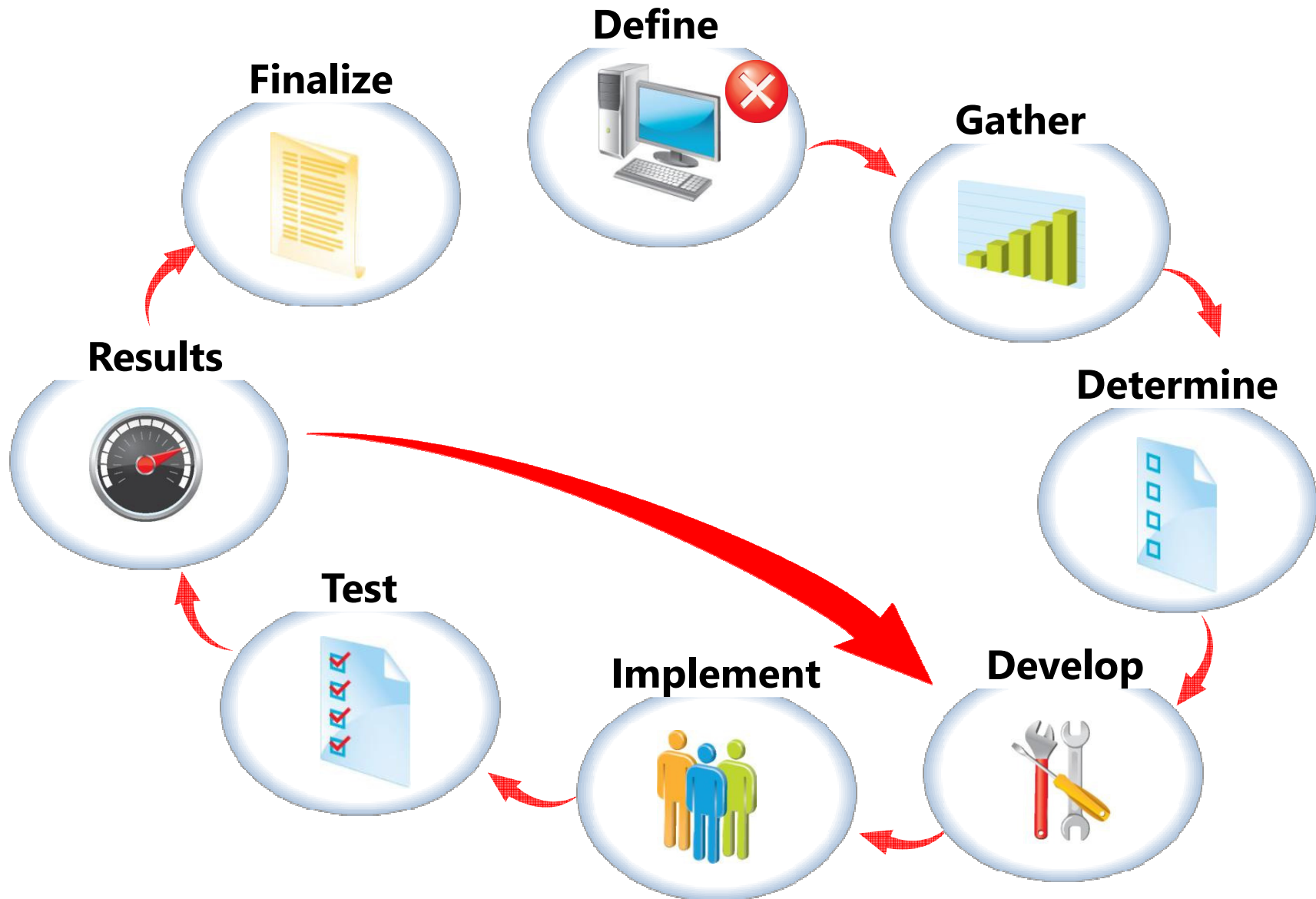
Lesson 4: Troubleshooting Windows Server

- Developing a Troubleshooting Methodology
- Stages of a Typical Troubleshooting Methodology
- Troubleshooting Component Areas
- Windows Server Troubleshooting Tools
- Demonstration: How to Use Windows Tools to Help Troubleshoot Windows Server Problems

Developing a Troubleshooting Methodology

- A troubleshooting methodology can help your troubleshooting process remain consistently organized, efficient, and effective
- Key aspects of troubleshooting:
 - Assessment of impact
 - Communication
 - Documentation

Stages of a Typical Troubleshooting Methodology



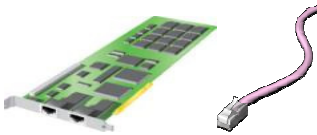
Troubleshooting Component Areas



Operating system



Hardware



Network components



Security



Applications

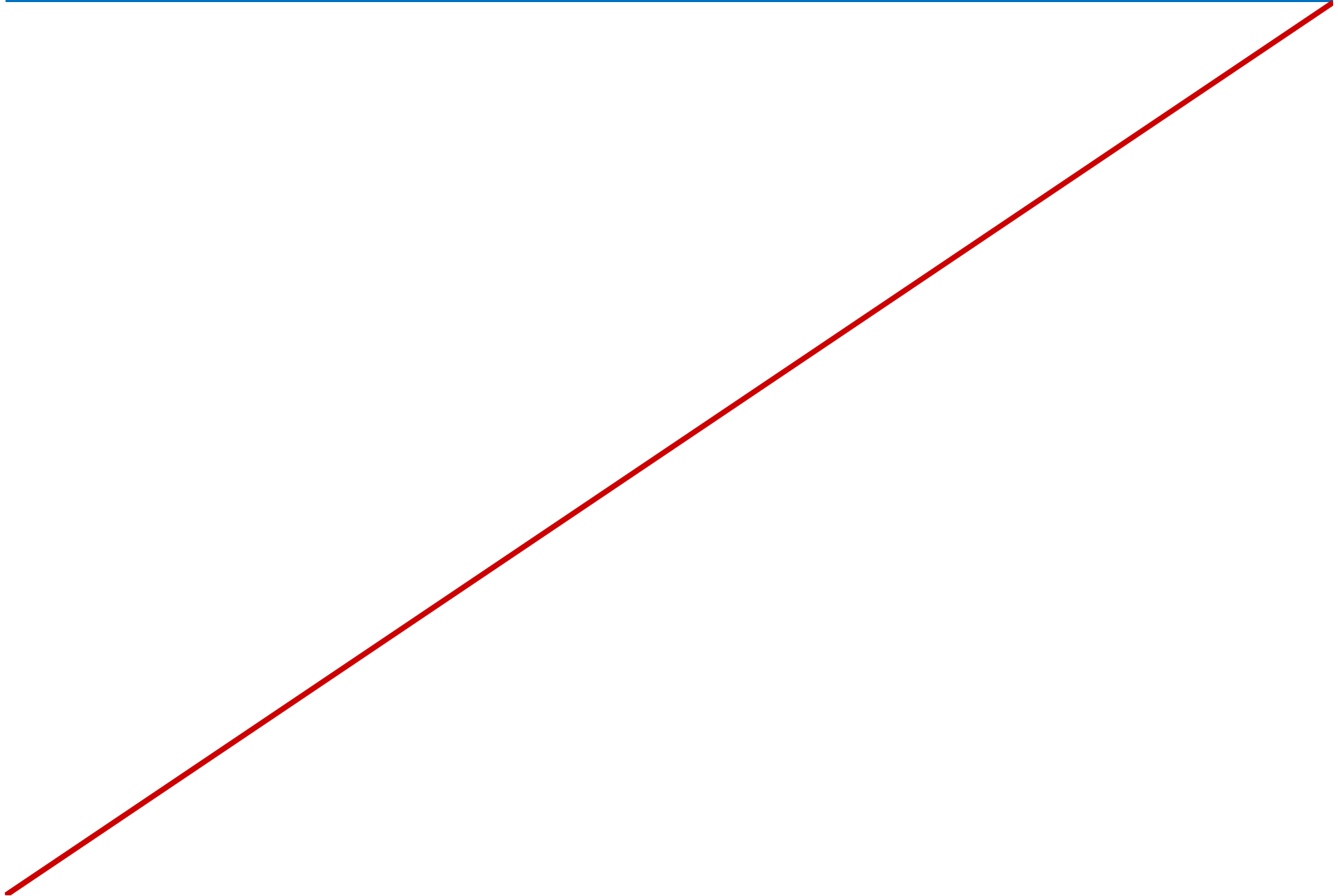
Windows Server Troubleshooting Tools

- Event Viewer
- Task Manager
- Resource Monitor
- Performance Monitor
- Reliability Monitor
- External websites, documentation, and forums
 - <http://support.microsoft.com>

Demonstration: How to Use Windows Tools to Help Troubleshoot Windows Server Problems

- In this demonstration, you will see how to use Event Viewer, Task Manager, and Resource Monitor

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Lab: Maintaining Windows Server

- Exercise 1: Installing and Configuring Windows Server Update Services
- Exercise 2: Troubleshooting the Startup Process
- Exercise 3: Gathering Information to Start the Troubleshooting Process

Logon Information

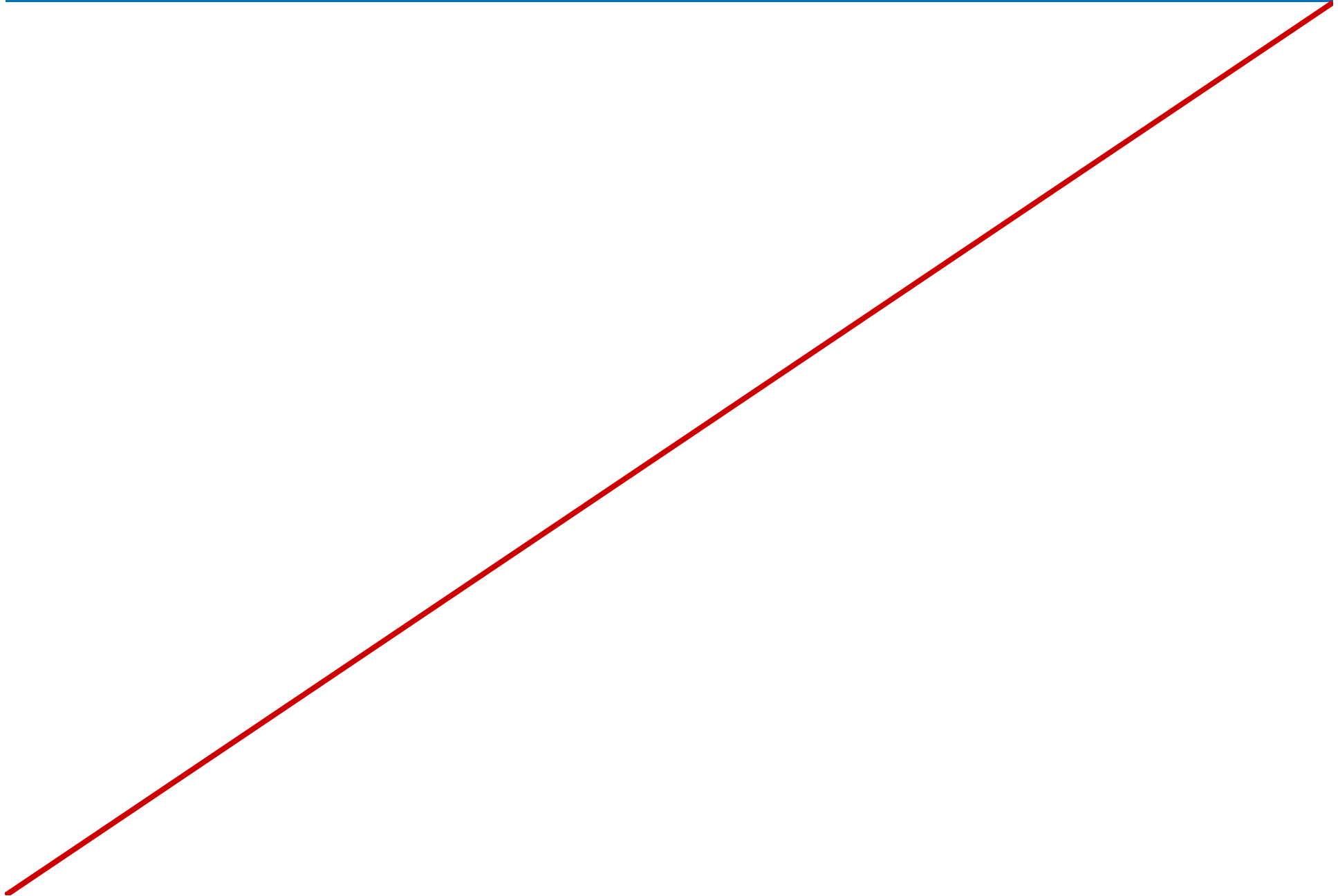
Virtual Machines: 10967A-LON-DC1, 10967A-LON-CL1
and 10967A-LON-SVR5

User Name: ADATUM\Administrator

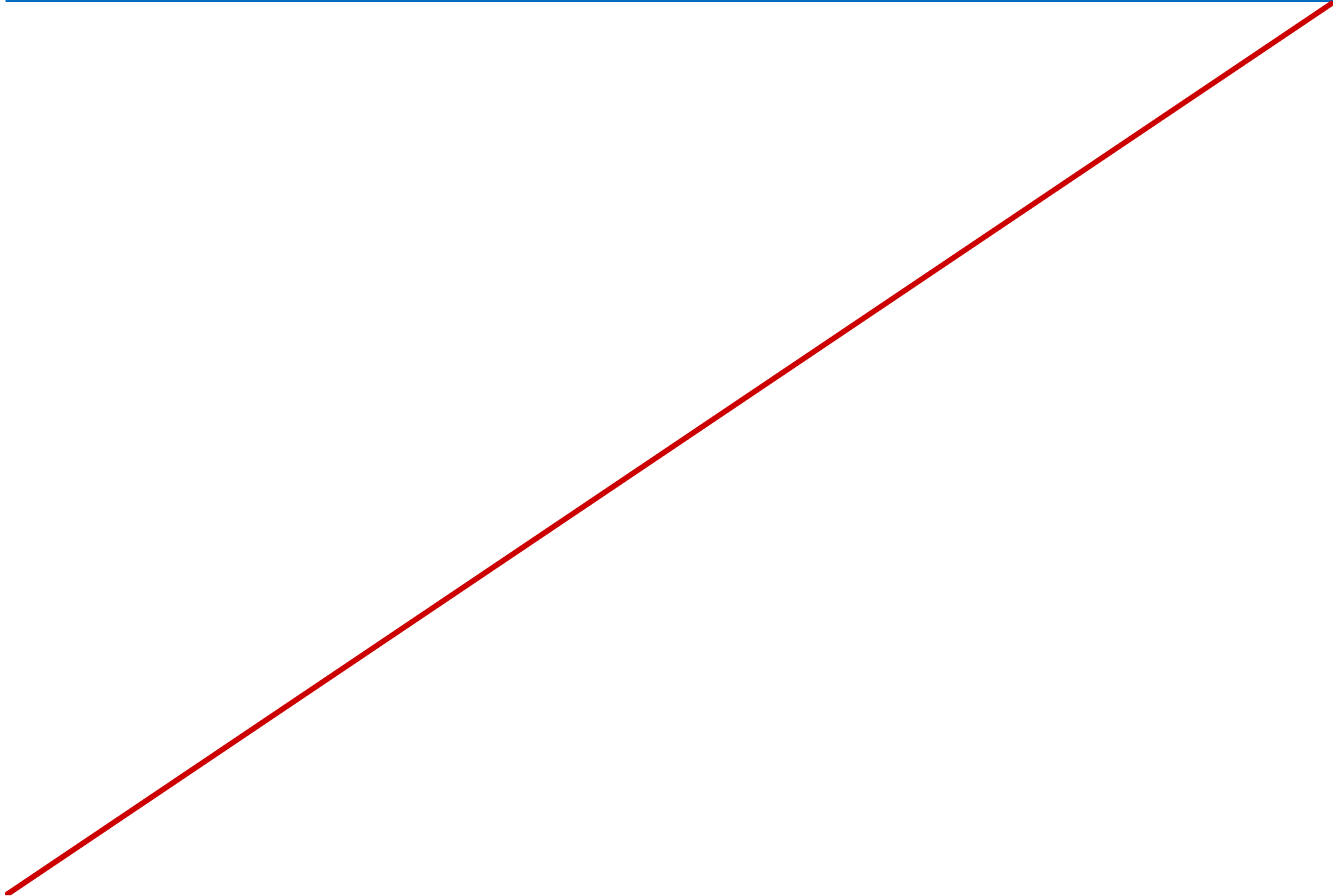
Password: Pa\$\$w0rd

Estimated Time: 90 minutes

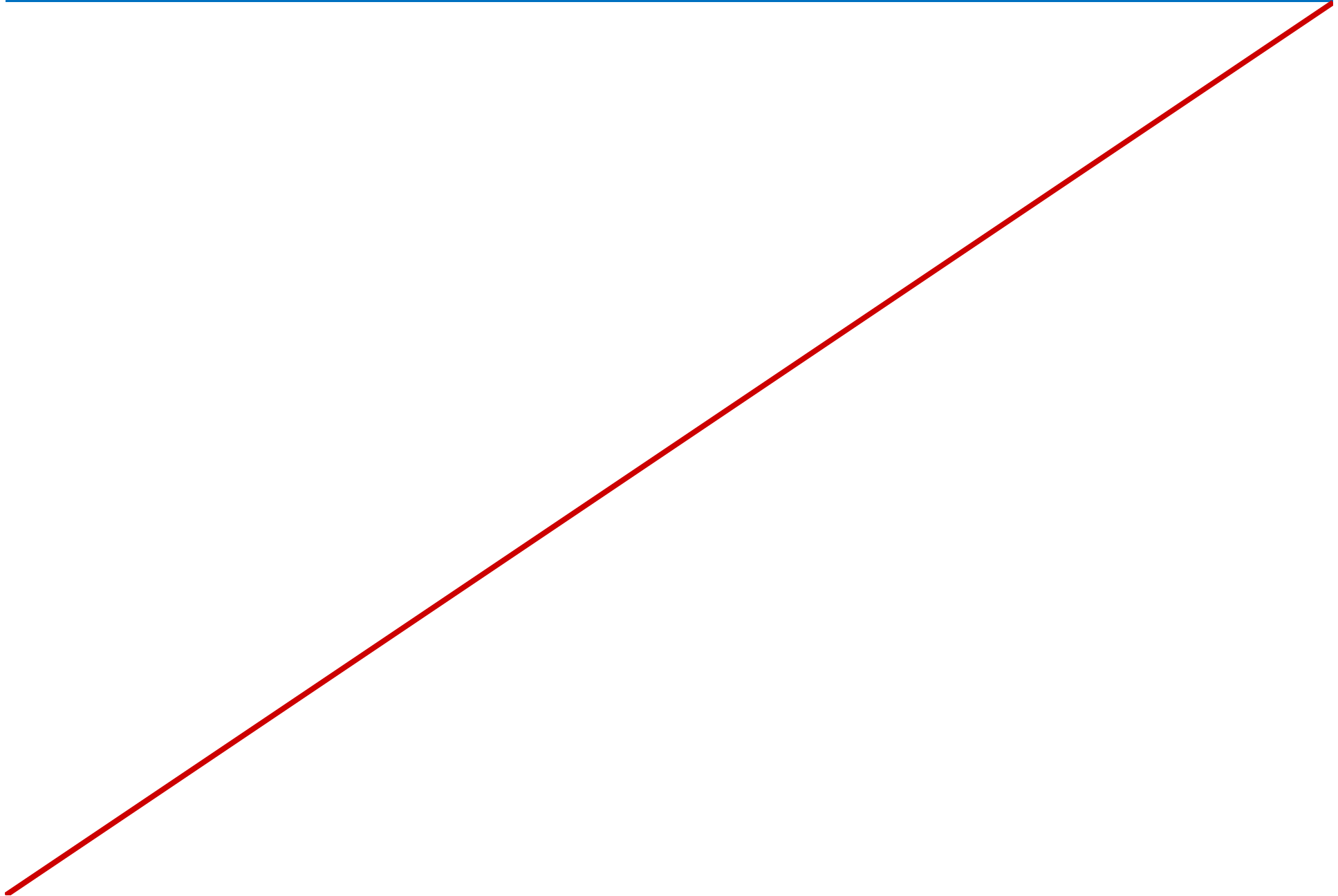
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Lab Scenario

Several troubleshooting tickets have been submitted to you to correct. Three separate issues exist in the A. Datum company network.

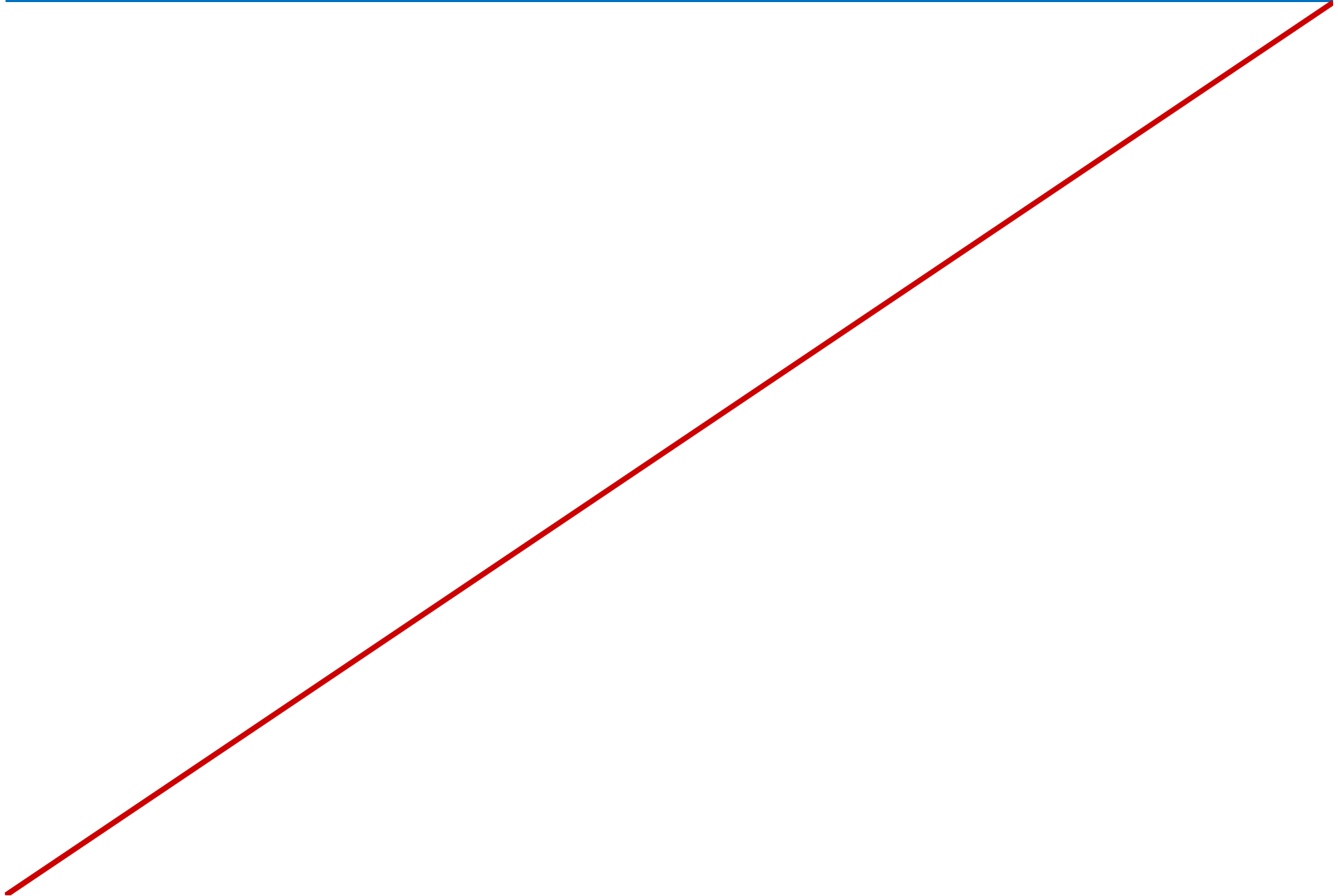
Lab Review

- If, after a network adapter installation on a server, Windows startup failed while the splash screen was displayed, which startup based tool would you use to troubleshoot the issue?
- What would be the most efficient way to configure hundreds of clients in a Windows domain to receive updates from a newly installed WSUS server?

Module Review and Takeaways

- Review Questions
- Tools

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Course Evaluation

