Module Overview

• Introducing Group Policy
• Implementing and Administering GPOs
• Group Policy Scope and Group Policy Processing
• Troubleshooting the Application of GPOs
Lesson 1: Introducing Group Policy

- What Is Configuration Management?
- Overview of Group Policies
- Benefits of Using Group Policy
- Group Policy Objects
- GPO Scope
- Group Policy Client and Client-Side Extensions
- Demonstration: How to Create a GPO and Configure GPO Settings

What Is Configuration Management?

- Configuration management is a centralized approach to applying one or more changes to one or more users or computers
- The key elements of configuration management are:
  - Setting
  - Scope
  - Application
Overview of Group Policies

• The most granular component of Group Policy is known as a *policy* and defines a specific configuration change

• Most policy settings can have three states:
  • Not Configured
  • Enabled
  • Disabled

• Many policy settings are complex, and the effect of enabling or disabling them might not be obvious

Benefits of Using Group Policy

• GPOs are very powerful administrative tools and you can use them to enforce various types of settings to a large number of users and computers

• Typically, GPOs are used in the following way:
  • Apply security settings
  • Manage desktop application settings
  • Deploy application software
  • Manage Folder Redirection
  • Configure network settings
Group Policy Objects

A GPO is:

• A container for one or more policy settings
• Managed with the GPMC
• Stored in the GPOs container
• Edited with the Group Policy Management Editor (GPME)
• Applied to a specific level in the AD DS hierarchy

GPO Scope

• The scope of a GPO is the collection of users and computers that will apply the settings in the GPO.

• You can use several methods to scope a GPO:
  • Link the GPO to a container, such as an OU
  • Filter by using security settings
  • Filter by using WMI filters
1. Group Policy Client retrieves GPOs
2. Client downloads and caches GPOs
3. CSEs process the settings

- Policy settings in the Computer Configuration node are applied at system startup and every 90–120 minutes thereafter
- User Configuration policy settings are applied at logon and every 90–120 minutes thereafter

Demonstration: How to Create a GPO and Configure GPO Settings

In this demonstration, you will see how to:

- Use the GPMC to create a new GPO
- Configure Group Policy settings
Lesson 2: Implementing and Administering GPOs

• Domain-Based GPOs
• GPO Storage
• Starter GPOs
• Common GPO Management Tasks
• Delegating Administration of Group Policies
• Managing GPOs with Windows PowerShell
**Domain-Based GPOs**

GPO Storage

- **GPO**
  - Contains Group Policy settings
  - Stores content in two locations

- **Group Policy Container**
  - Stored in AD DS
  - Provides version information

- **Group Policy Template**
  - Stored in a shared SYSVOL folder
  - Provides Group Policy settings
Starter GPOs

A Starter GPO:
- Stores Administrative Template settings on which the new GPOs will be based
- Can be exported to .cab files
- Can be imported into other areas of the enterprise

Common GPO Management Tasks

GPMC provides several options for managing the state of GPOs

- Backup GPOs
- Restore GPOs
- Copy GPOs
- Import GPOs
Delegating Administration of Group Policies

- Delegation of GPO-related tasks allows the administrative workload to be distributed across the enterprise

- The following Group Policy tasks can be independently delegated:
  - Creating GPOs
  - Editing GPOs
  - Managing Group Policy links for a site, domain, or OU
  - Performing Group Policy Modeling analysis on a domain or OU
  - Reading Group Policy Results data in a domain or OU
  - Creating WMI filters in a domain

Managing GPOs with Windows PowerShell

In addition to using GPMC and the Group Policy Management Editor, you can also perform common GPO administrative tasks by using Windows PowerShell

Examples:
- Create a new GPO called Sales:
  \texttt{New-GPO -Name Sales -comment "This the sales GPO"}
- Import the settings from the backup Sales GPO in the \texttt{C:\Backups} folder into the NewSales GPO:
  \texttt{import-gpo -BackupGpoName Sales -TargetName NewSales -path c:\backups}
Lesson 3: Group Policy Scope and Group Policy Processing

- GPO Links
- Demonstration: Linking GPOs
- Group Policy Processing Order
- Configuring GPO Inheritance and Precedence
- Using Security Filtering to Modify Group Scope
- What Are WMI Filters?
- Demonstration: Filtering Policies
- Enable and Disable GPOs and GPO Nodes
- Loopback Policy Processing
- Strategies for Slow Links and Disconnected Systems
- Identifying When Settings Become Effective
- Considerations For Managing Group Policy In A Multi-Domain Environment
Demonstration: Linking GPOs

In this demonstration, you will see how to:

- Create and link GPOs to different locations
- Disable a GPO link
- Delete a GPO link
Group Policy Processing Order
Configuring GPO Inheritance and Precedence

1. The application of GPOs that are linked to each container results in a cumulative effect called inheritance
   - Default Precedence: Local → Site → Domain → OU → OU... (LSDOU)
   - Seen on the Group Policy Inheritance tab

2. Link order (attribute of GPO Link)
   - Lower number → Higher on list → Precedent

3. Block Inheritance (attribute of OU)
   - Blocks the processing of GPOs from above

4. Enforced (attribute of GPO link)
   - Enforced GPOs “blast through” Block Inheritance
   - Enforced GPO settings win over conflicting settings in lower GPOs

Using Security Filtering to Modify Group Scope

- Apply Group Policy permission
  - GPO has an ACL (Delegation tab → Advanced)
  - Default: Authenticated Users have Allow Read and Allow Apply Group Policy
- Scope only to users in selected global groups
  - Remove Authenticated Users
  - Add appropriate global groups
    - Must be global groups (GPOs do not scope to domain local)
- Scope to users except for those in selected groups
  - On the Delegation tab, click Advanced
  - Add appropriate global groups
  - Deny Apply Group Policy permission
  - Does not appear on the Delegation tab or in filtering section
What Are WMI Filters?

Demonstration: Filtering Policies

In this demonstration, you will see how to:

- Filter group policy application by using security group filtering
- Filter Group Policy application by using WMI filtering
Enable and Disable GPOs and GPO Nodes

![Group Policy Management Interface]

- **GPO Status**: Enabled
- **Comment**: All settings disabled
  - Computer configuration settings disabled
  - User configuration settings disabled
Loopback Policy Processing

Strategies for Slow Links and Disconnected Systems
Identifying When Settings Become Effective

- GPO replication must happen
- Group changes must be replicated
- Group Policy refresh must occur
- User must log off or log on, or the computer must restart
- Manual refresh
- Most CSEs do not reapply unchanged GPO settings

Considerations For Managing Group Policy In A Multi-Domain Environment

- Domain trust is required for simplifying multi-domain management of Group Policy
  - Use migration tables to automate the updates to UNC paths and security principals
- Common GPO management techniques are valid across domains
  - Copy GPOs (**Copy-GPO**)
  - Import GPOs (**Import-GPO**)
  - Backing up and restoring (**Backup-GPO, Restore-GPO**)
- Multi-domain environment may be made up of an internal test implementation of AD DS and a production implementation of AD DS
Lesson 4: Troubleshooting the Application of GPOs

- Refreshing GPOs
- What is RSoP?
- Generate RSoP Reports
- Demonstration: Performing What-If Analysis with the Group Policy Modeling Wizard
- Examine Policy Event Logs

### Refreshing GPOs

- When you apply GPOs, remember that:
  - Computer settings apply at startup
  - User settings apply at logon
  - Policies refresh at regular, configurable intervals
  - Security settings refresh at least every 16 hours
  - Policies refresh manually by using:
    - The `Gpupdate` command
    - The Windows PowerShell cmdlet `Invoke-GPUpdate`
- With the new Remote Policy Refresh feature in Windows Server 2012, you can remotely refresh policies
What is RSoP?

Windows Server 2012 provides the following tools for performing RSoP analysis:

- The Group Policy Results Wizard
- The Group Policy Modeling Wizard
- GPResult.exe

Generate RSoP Reports
Demonstration: Performing What-If Analysis with the Group Policy Modeling Wizard

In this demonstration, you will see how to:

- Use GPResult.exe and the Group Policy Reporting Wizard
- Use the Group Policy Modeling Wizard
Examine Policy Event Logs
Lab: Implementing a Group Policy Infrastructure

- Exercise 1: Creating and Configuring GPOs
- Exercise 2: Managing GPO Scope
- Exercise 3: Verifying GPO Application
- Exercise 4: Managing GPOs

Logon Information
Virtual machines: 20411D-LON-DC1, 20411D-LON-CL1
User name: Adatum\Administrator
Password: Pa$$w0rd

Estimated Time: 90 minutes

Lab Scenario


You have been asked to use Group Policy to implement standardized security settings to lock computer screens when users leave computers unattended for 10 minutes or more. You also have to configure a policy setting that will prevent
Lab Scenario

access to certain programs on local workstations.

After some time, you have been made aware that a critical application fails when the screensaver starts, and an engineer has asked you to prevent the setting from applying to the team of Research engineers that uses the application every day. You also have been asked to configure conference room computers to use a 45-minute timeout.

After creating the policies, you need to evaluate the RSoPs for users in your environment to ensure that the Group Policy infrastructure is optimal and that all policies apply as intended.

Lab Review

• Which policy settings are already being deployed by using Group Policy in your organization?
• Many organizations rely heavily on security group filtering to scope GPOs, rather than linking GPOs to specific OUs. In these organizations, GPOs typically are linked very high in the Active Directory logical structure—to the domain itself or to a first-level OU. What advantages do you gain by using security group filtering rather than GPO links to manage a GPO’s scope?
Lab Review

• Why might it be useful to create an exemption group—a group that is denied the Apply Group Policy permission—for every GPO that you create?
• Do you use loopback policy processing in your organization? In which scenarios and for which policy settings can loopback policy processing add value?
• In which situations have you used RSoP reports to troubleshoot Group Policy application in your organization?
• In which situations have you used, or might you anticipate using, Group Policy Modeling?

Module Review and Takeaways

• Review Question(s)
• Tools
• Common Issues and Troubleshooting Tips