Lesson 19: Configuring Group Policy Processing

MOAC 70-411: Administering Windows Server 2012

Microsoft Official Academic Course

WILEY

Overview

- Exam Objective 4.2: Configure Group Policy Processing
- Understanding Group Policy Processing

Understanding Group Policy Processing

Lesson 19: Configuring Group Policy Processing

Group Policies and GPOs

- Group policies are defined using group policy objects (GPOs).
- GPOs are the collection of configuration instructions that the computer processes.
- To assign a group policy, it is linked to an Active Directory container (site, domain, or organizational unit).

Scoping a GPO

Mechanisms for scoping a GPO:

- A GPO link to a site, domain, or organizational unit (OU)
- The GPO link enabled or disabled
- Enforced option of the GPO
- The Block Inheritance option of an OU
- Security group filtering
- WMI filtering
- Loopback policy processing
- Preferences targeting (discussed in Lesson 22)

Configuring Processor Order and Precedence

1. When a computer first starts up, it establishes a secure link between the computer and a domain controller.
2. The computer obtains a list of GPOs that are applied to the computer.
3. Computer configuration settings are applied synchronously (one by one) during computer startup before the Logon dialog box is presented to the user.
4. When the computer configuration settings have been applied and the startup scripts have been applied, users have the Ctrl+Alt+Del option to log on.

Configuring Processor Order and Precedence

5. A user is authenticated and the user profile is loaded.
6. The computer obtains a list of GPOs that are applied to the user. Again, GPO processing is hidden from the user.
7. After the user policies run, any logon scripts defined by GPOs run. Scripts are executed asynchronously.
8. The login script defined for the user in Active Directory user properties is executed.
9. The user's desktop is displayed.

Understanding Group Policy Inheritance

A computer and user can be affected by multiple GPOs. GPOs are processed in the following order:

1. Local group policy
2. Site
3. Domain
4. OU

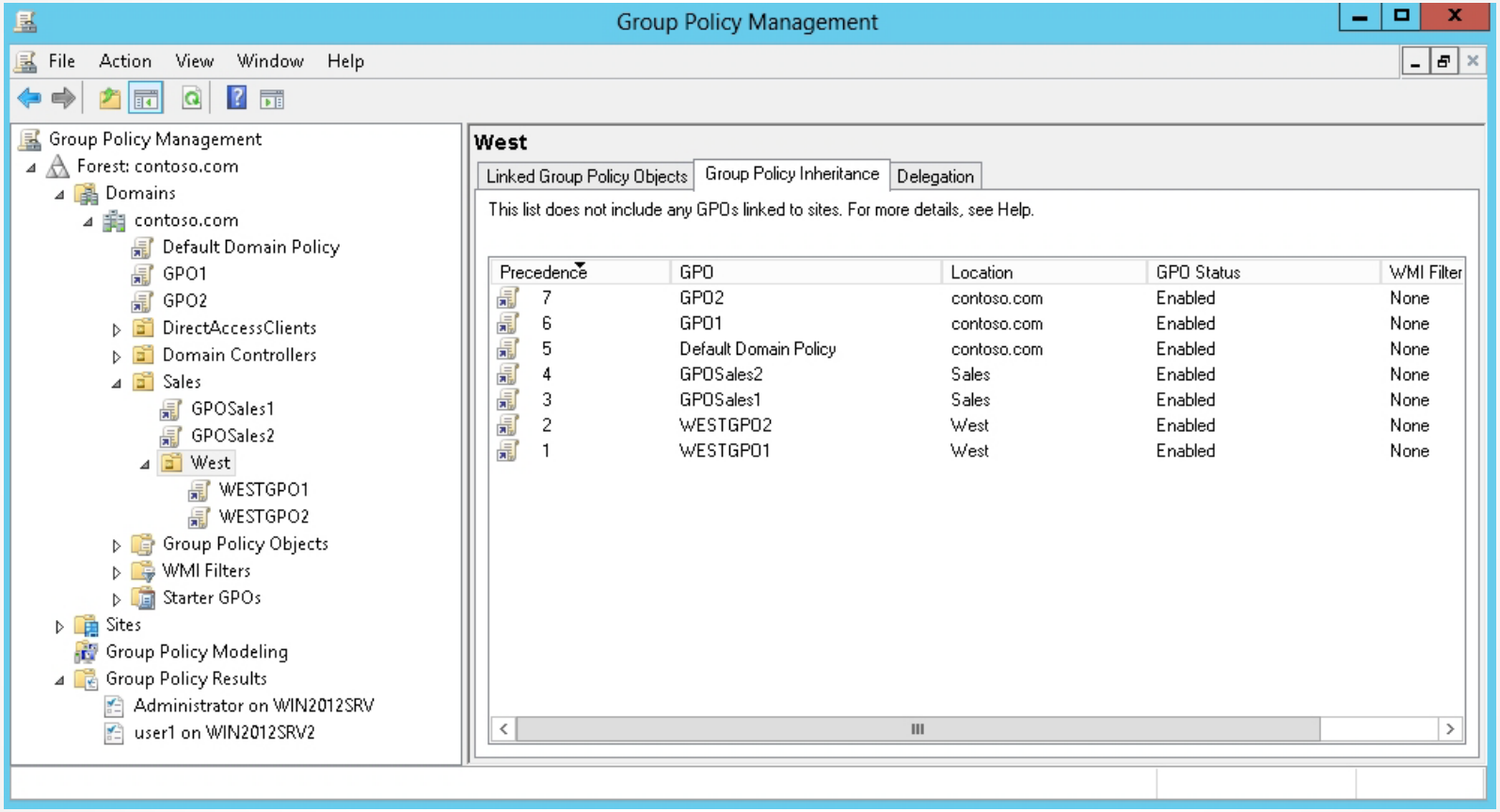
A Group Policy uses ***inheritance*** in which settings are inherited from the container above.

Understanding Group Policy Inheritance

When Active Directory is installed, two domain GPOs are created by default:

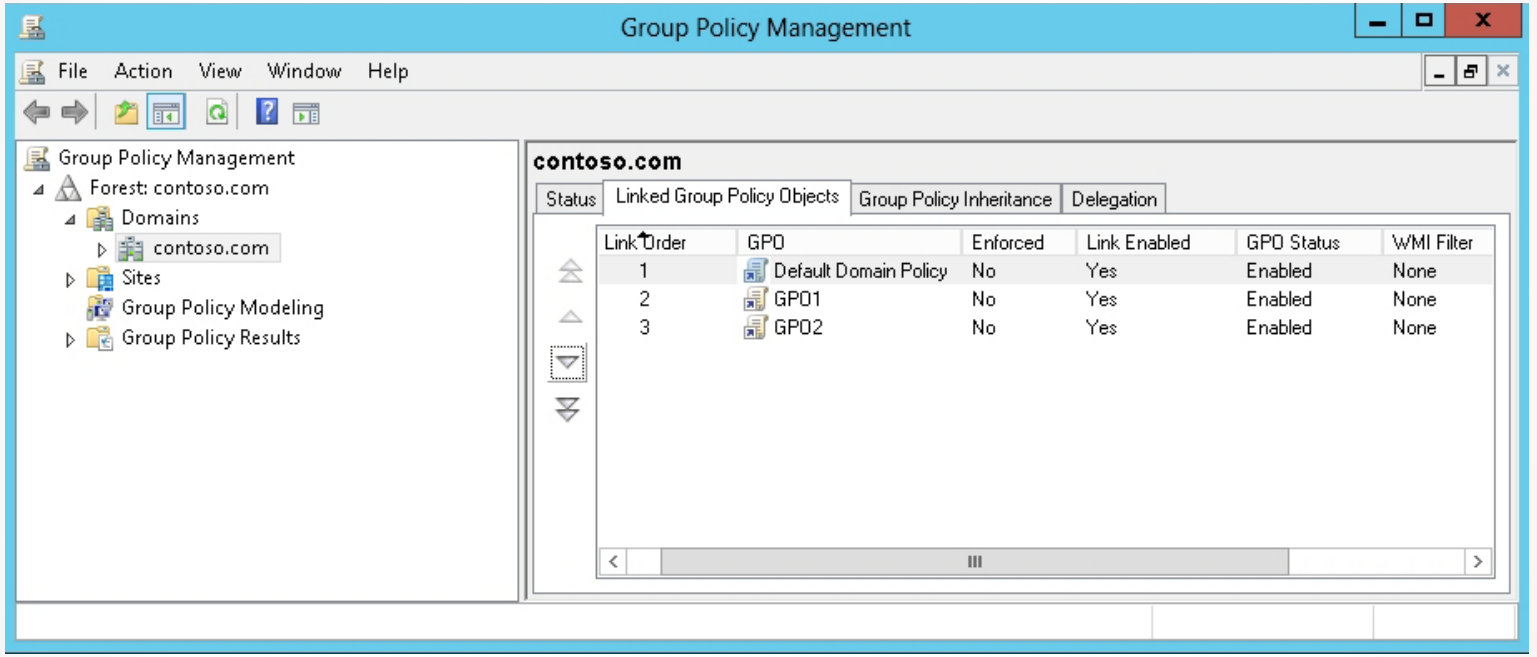
- ***Default Domain Policy***: Linked to the domain. It affects all users and computers in the domain including domain controllers. It specifies the password, account lockout, and Kerberos policies.
- ***Default Domain Controller Policy***: Linked to the Domain Controllers organization unit, which then affects the domain controllers. It contains the default user rights assignments.

Understanding Group Policy Inheritance



Displaying GPOs for a domain

Change the Precedence of a GPO

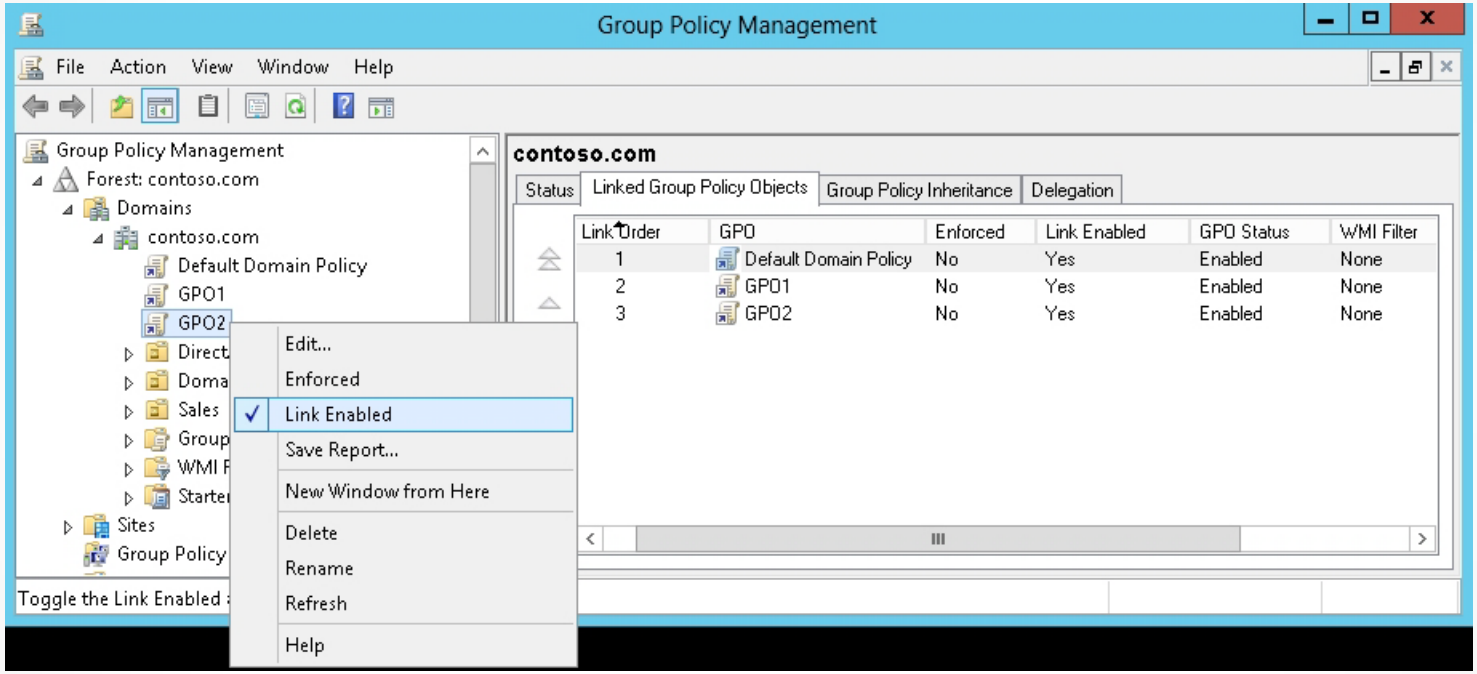


Changing the precedence

Managing Group Policy Links

To disable a group policy for a container, you right-click the GPO for the container and click the *Link Enabled* link.

Managing Group Policy Links



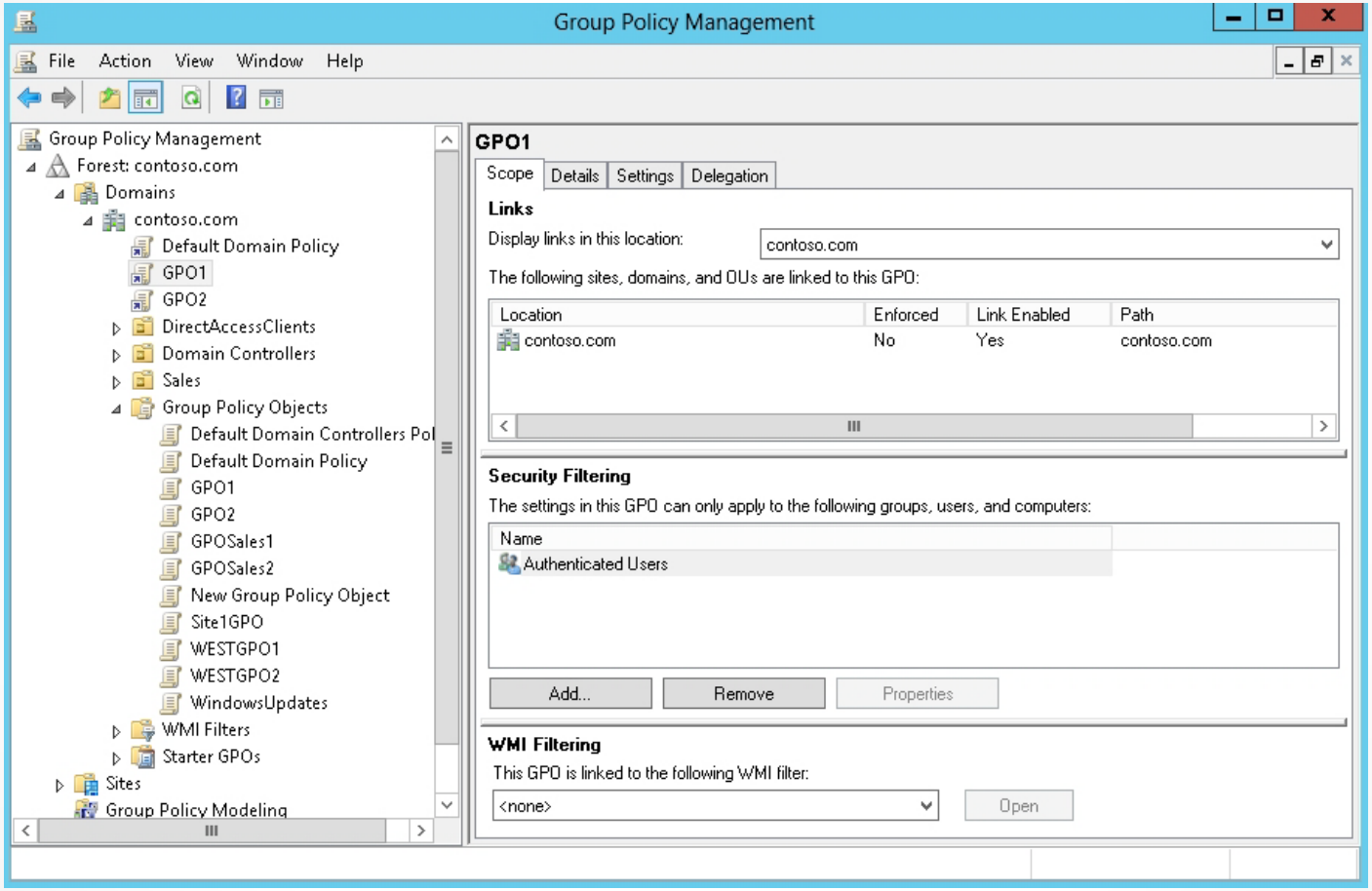
Showing a link is enabled for a GPO

Managing Group Policy Links

After a GPO is created, you can:

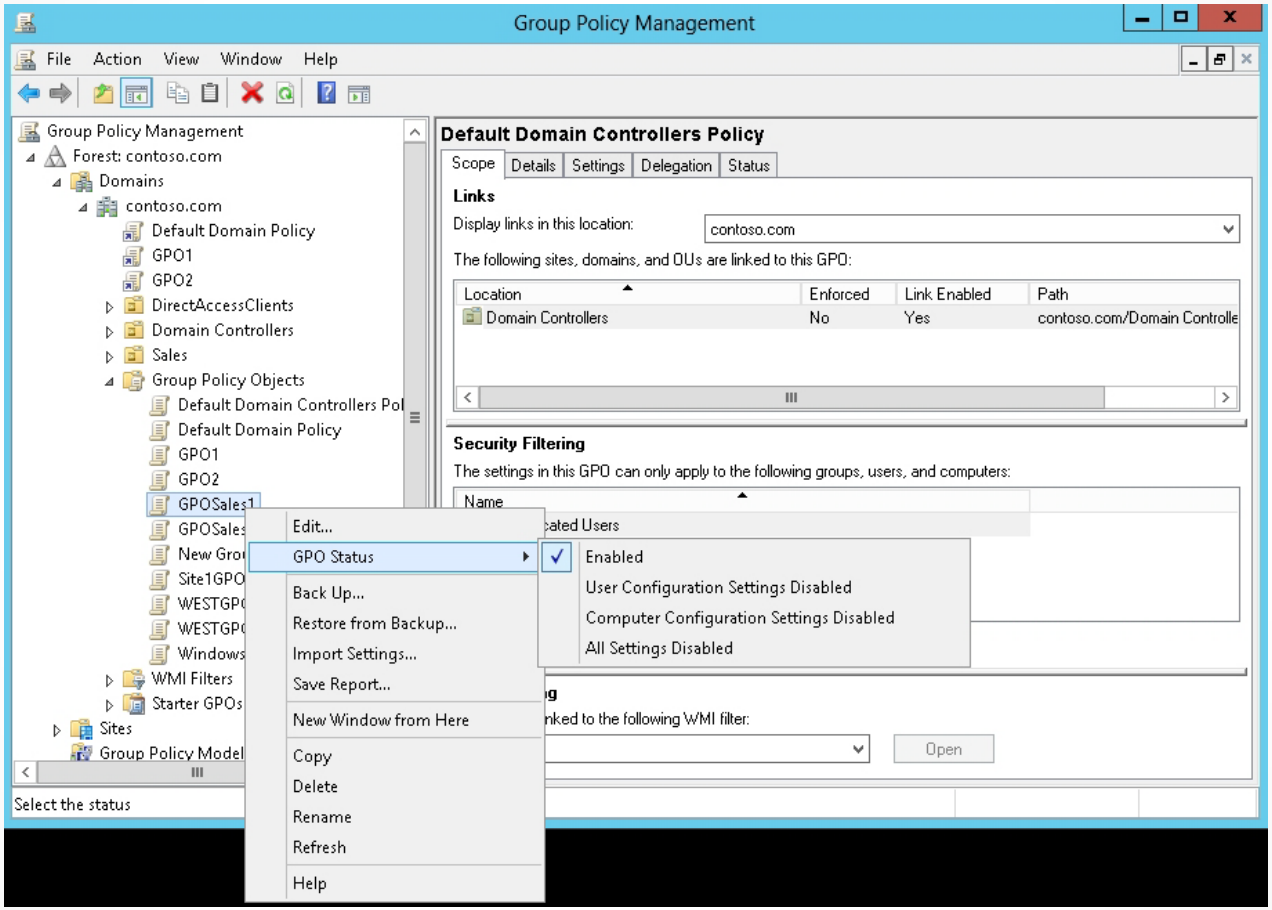
- View the containers that a GPO is linked to by clicking the GPO in Group Policy Management and viewing the Scope tab.
- Delete a link to a container for a GPO without deleting the GPO by right-clicking the GPO for a container and clicking *Delete*. When it asks whether to delete the link, click *OK*.
- Disable the link or delete a link for a container by right-clicking the container in the Scope tab and clicking the *Link Enabled* option or the *Delete Link(s)* option.

Managing Group Policy Links



Showing the containers a GPO is linked to

Managing Group Policy Links



Configuring the GPO status

Using Filtering with Group Policies

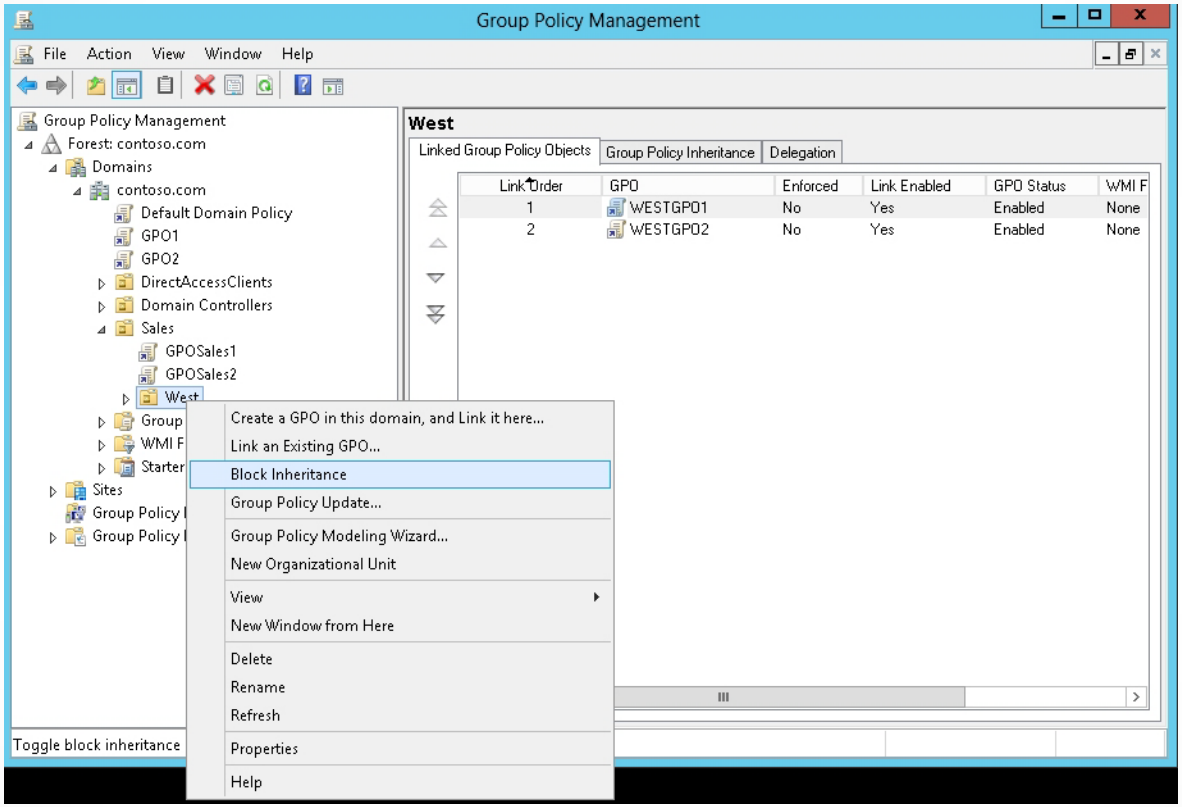
The exceptions to the processing of group policies can be modified with these options:

- Block inheritance
- Enforced

Configuring Blocking of Inheritance

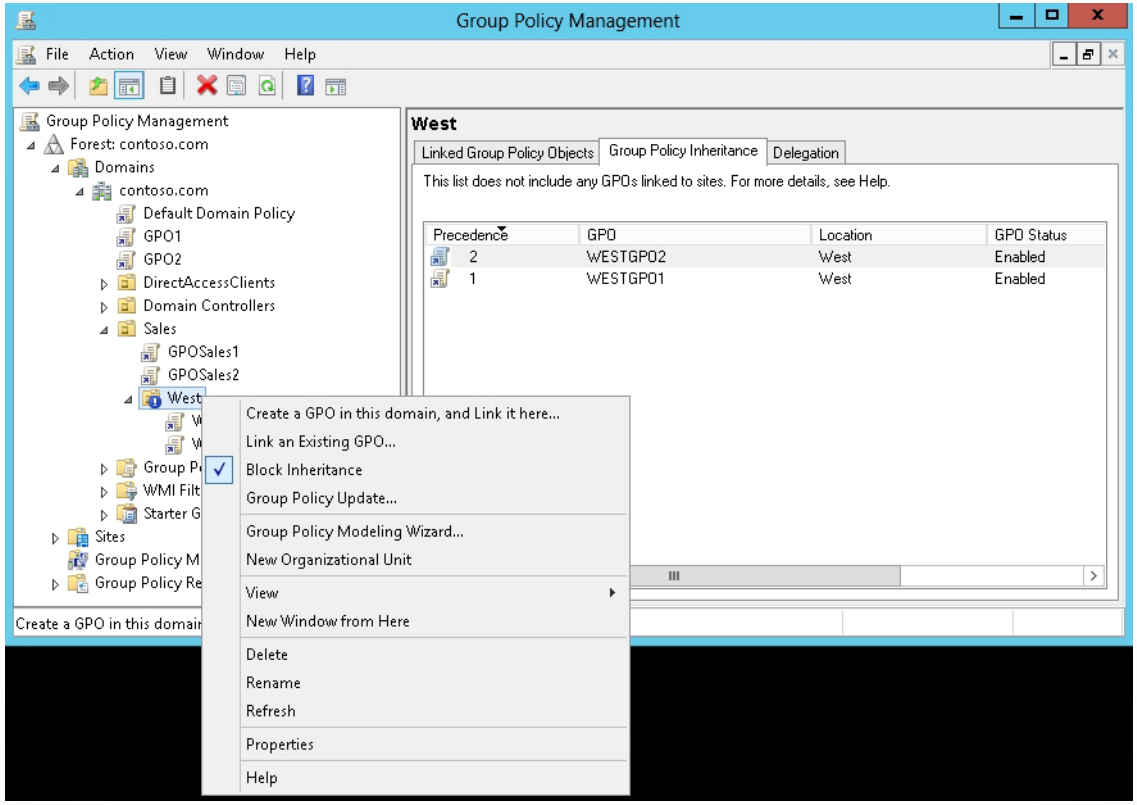
- By default, group policies flow down to the lower containers and objects.
- To prevent the inheritance of policy settings, block all Group Policy settings from the GPOs linked to parent containers in the Group Policy hierarchy.
- GPOs linked directly to the container and GPOs linked to lower containers are unaffected.

Block the Inheritance of GPOs



Selecting the Block Inheritance option

Block the Inheritance of GPOs

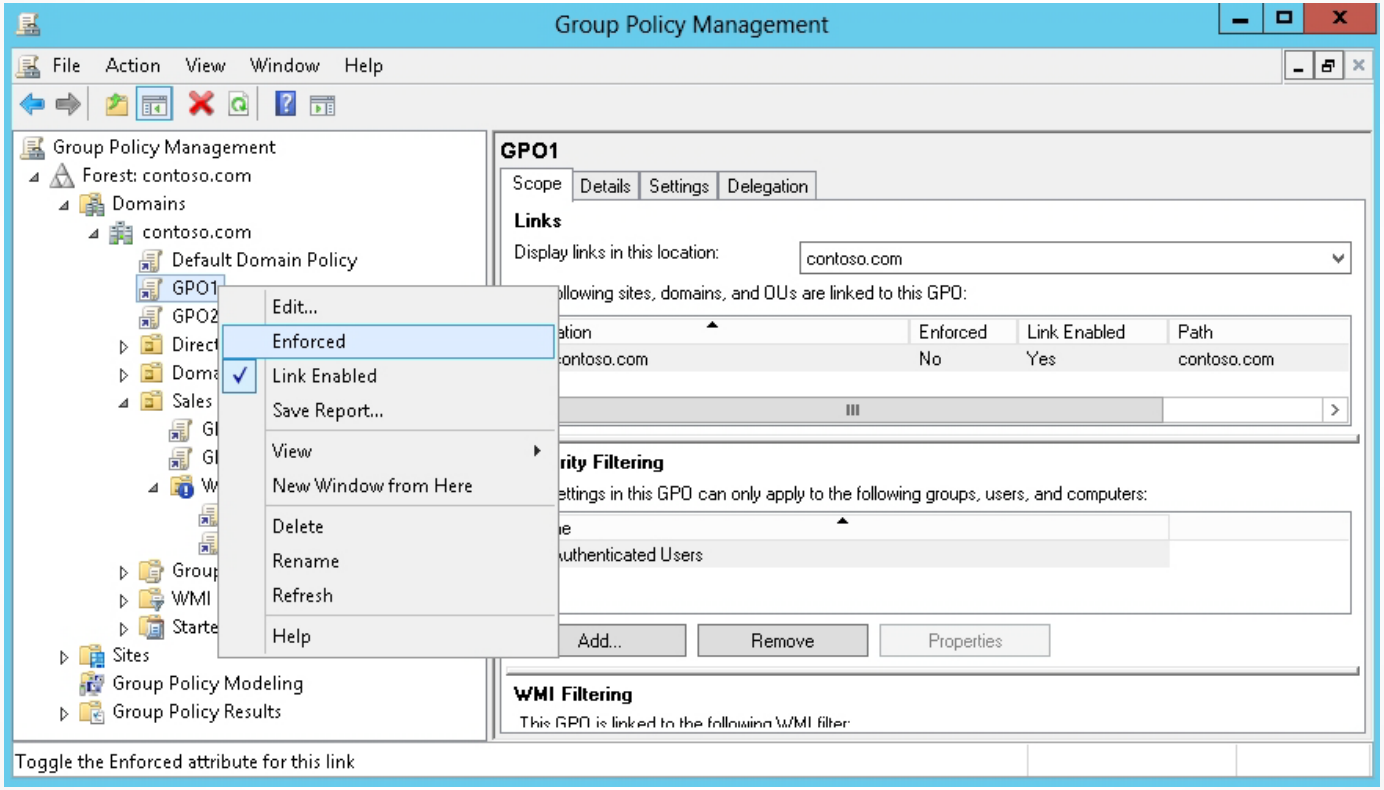


A GPO with the Block Inheritance option enabled

Configuring Enforced Policies

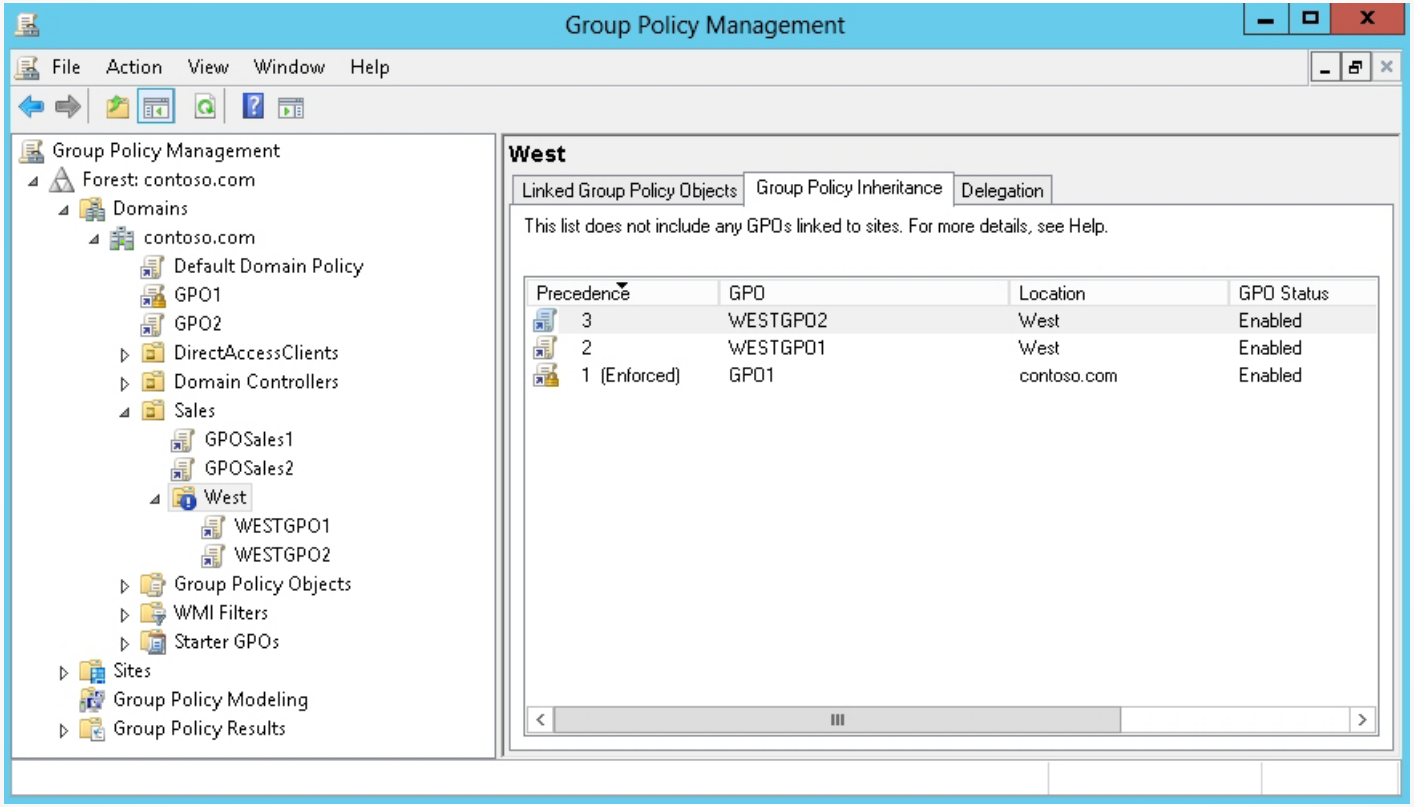
- By enforcing a GPO link, the GPO takes the highest precedence, which will prevail over any conflicting policy settings in other GPOs.
- An enforced link applies to child containers even when those containers are set to Block Inheritance.

Enforce a GPO



Enforcing a GPO

Enforce a GPO



Showing the effect of enforcing a GPO

Configuring Security Filtering/WMI Filtering

For granular control over who or what receives a group policy, use these filters:

- **Security group filtering**: Uses a security access list (ACL) to determine who can modify or read a policy and who or what a GPO is applied to.
- **WMI filtering**: Uses the WMI Query Language (WQL) to control who or what a GPO is applied to.

Using Security Filtering

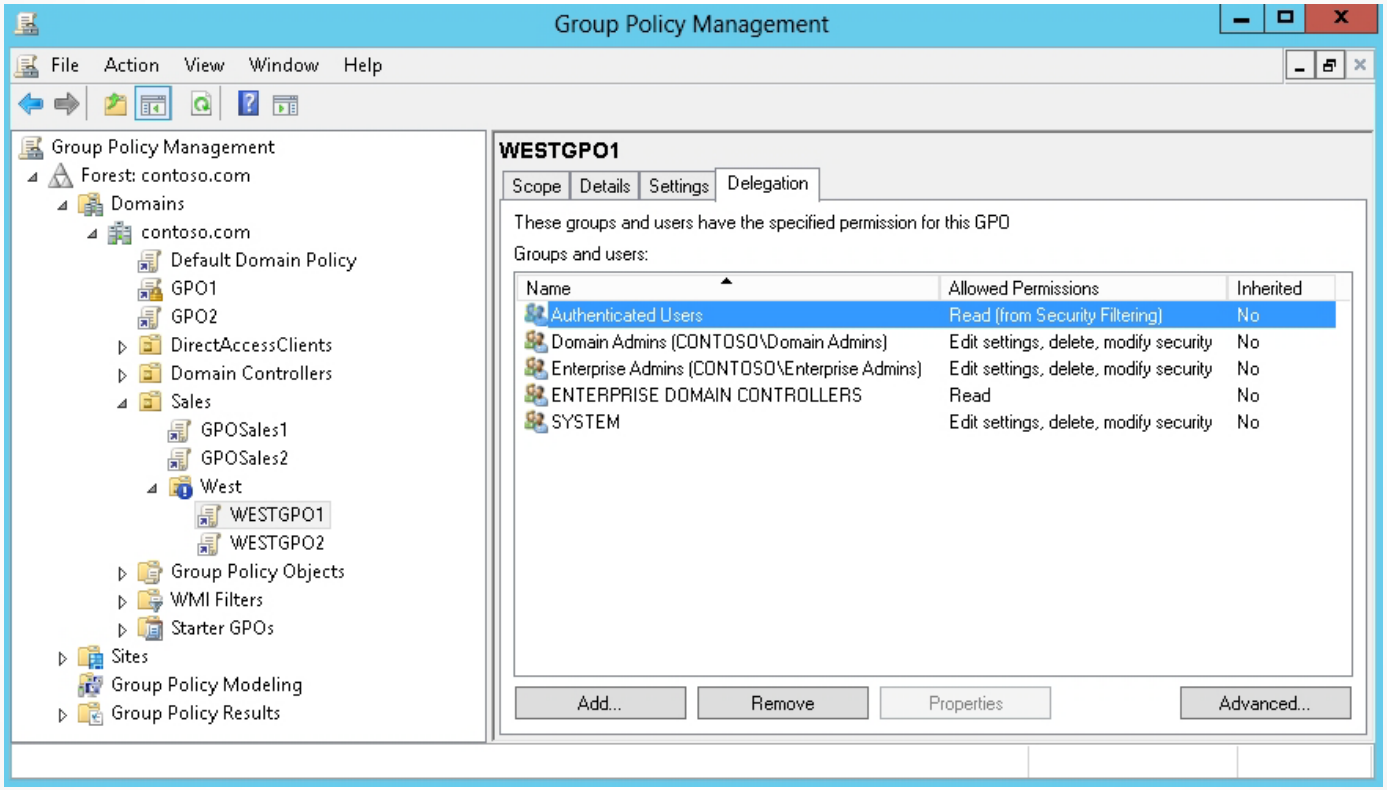
Security group filtering specifies which users, computers, or groups based on ACL receive a GPO.

Filtering GPO Scopes

Here are the ways to filter GPO scopes:

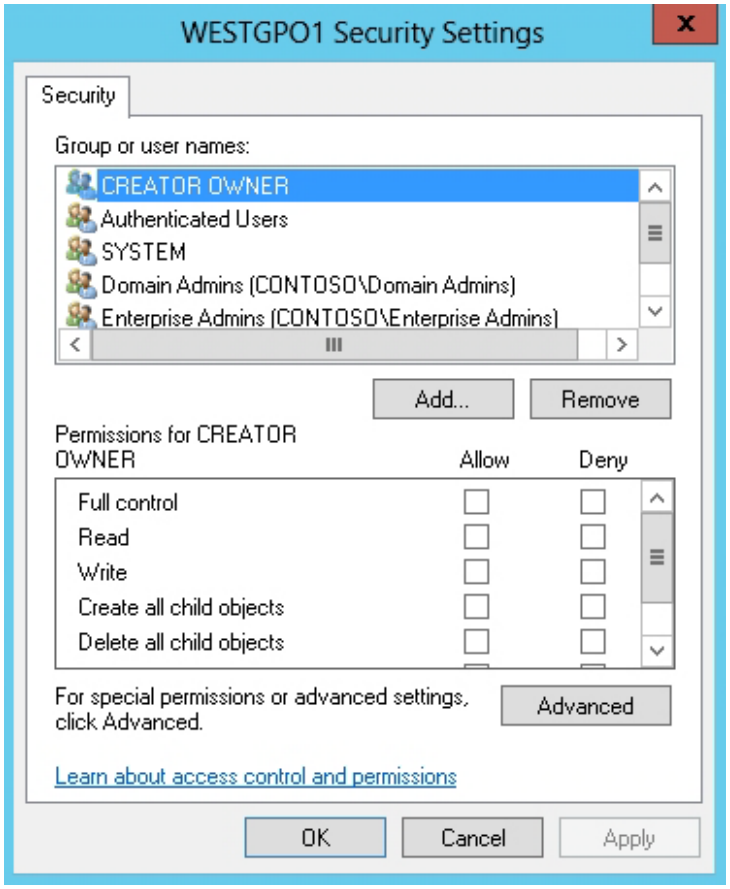
- Remove the Allow Apply group policy permission from a group such as Authenticated Users.
- Remove the Authenticated Users group access control entry (ACE), add other groups or users, and assign the Allow Apply group policy permission.
- Add ACE for another group, user, or computer and assign the Deny Apply group policy permission. Like NTFS permissions, the Deny settings always supersede any Allow settings granted to a user through membership in another group or to the user directly.

Configure a Security Group Filtering



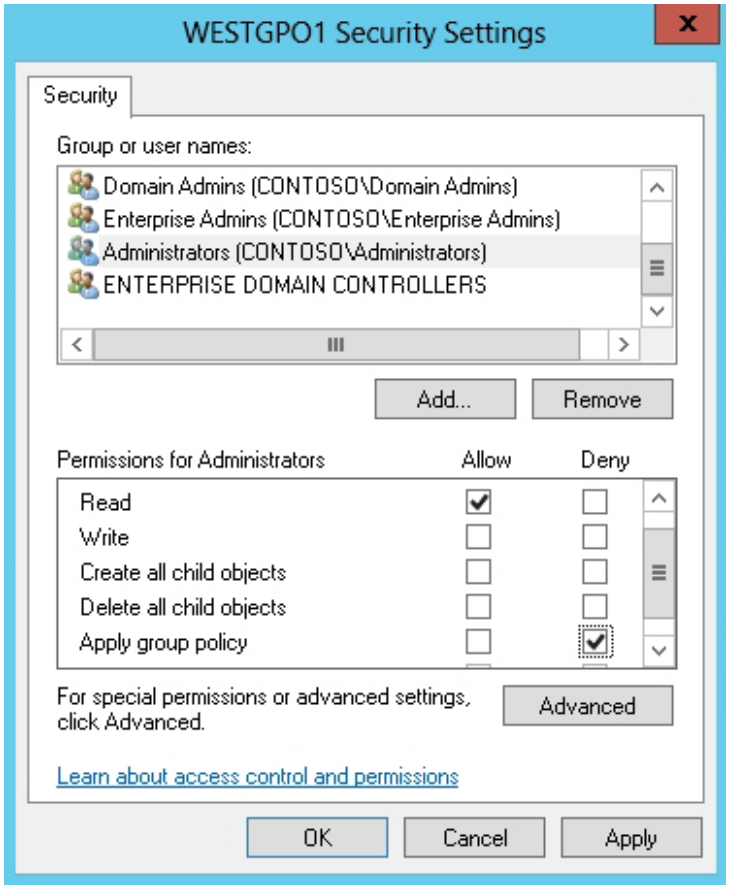
Showing current groups and users that have permissions to a GPO

Configure a Security Group Filtering



Showing the ACL for a GPO

Configure a Security Group Filtering



Clicking the Deny Apply group policy permission

WMI Filtering

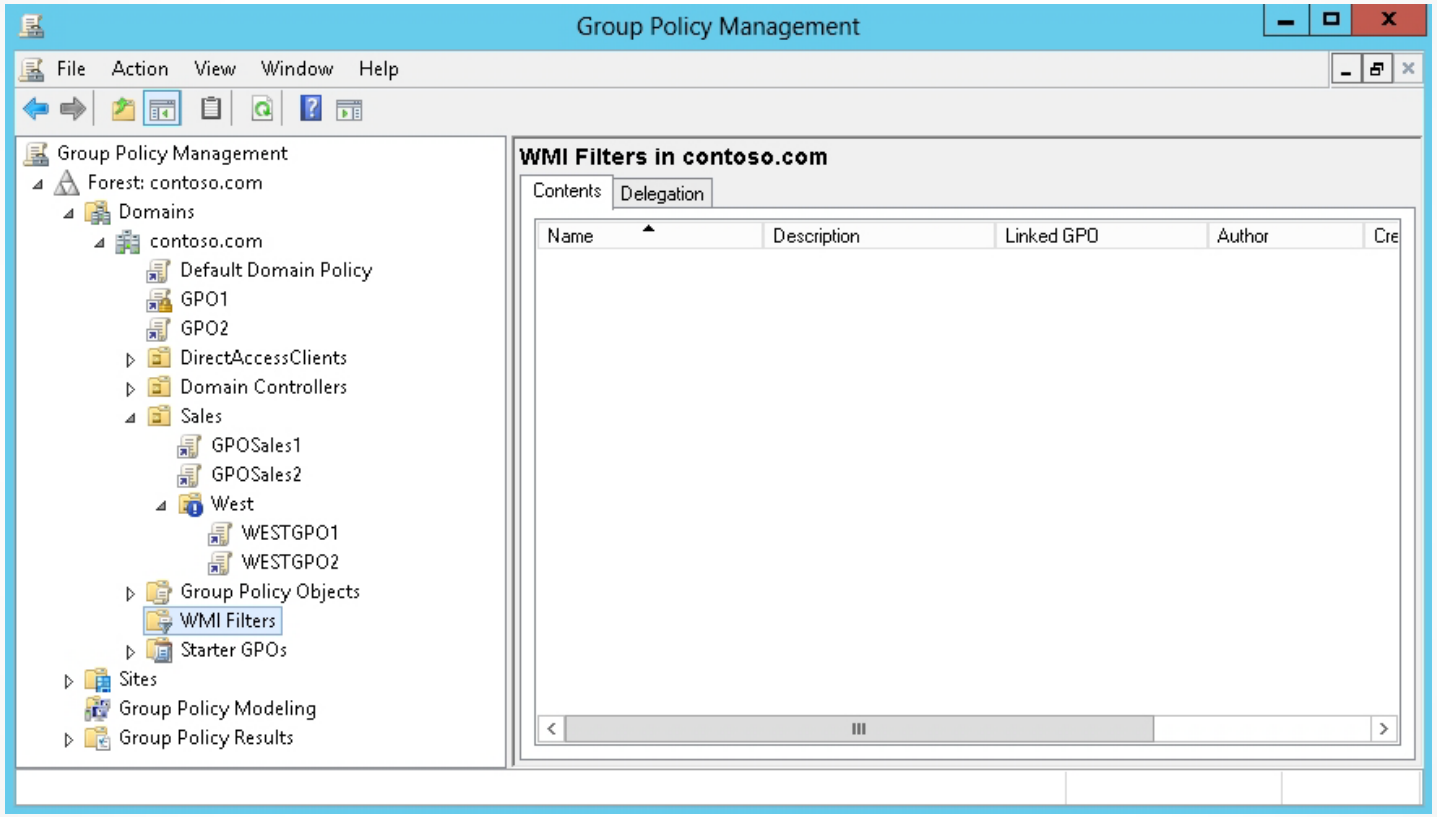
- ***Windows Management Instrumentation (WMI)***: A component that extends the Windows Driver Model through an operating system interface that provides information and notification on hardware, software, operating systems, and services.
- ***WMI filtering***: Configures a GPO to be applied to certain users or computers based on specific hardware, software, operating systems, and services.

Using WMI Filtering

To use WMI filters:

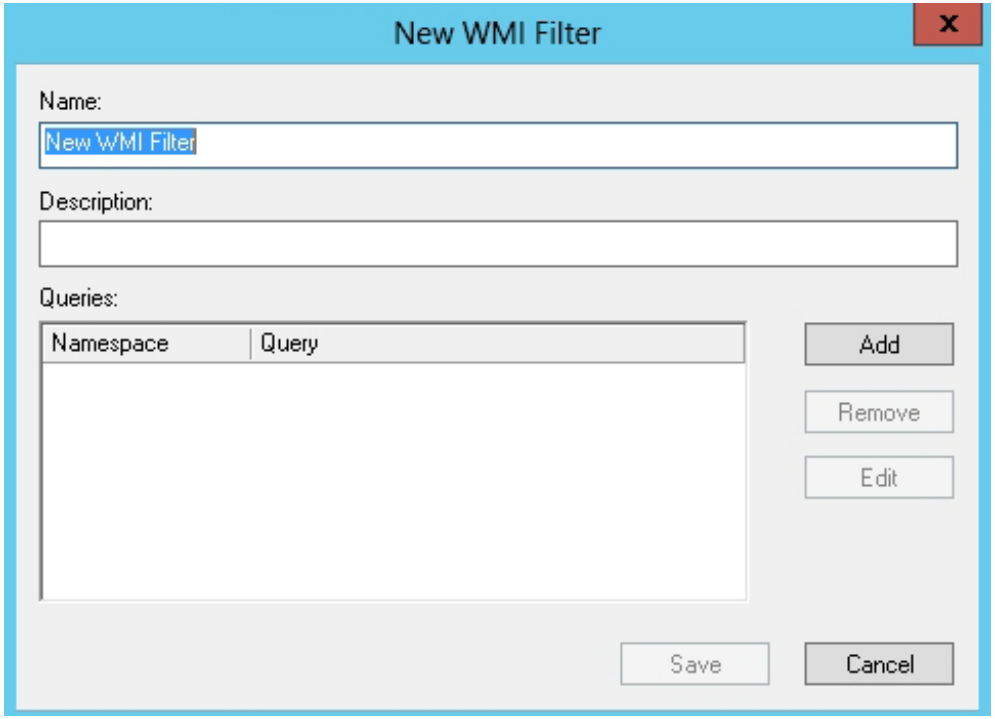
- You need to have one domain controller running Windows Server 2003 or higher.
- WMI filters will be applied only to computers running Windows XP Professional or newer, or Windows Server 2003 or newer.
- All filter criteria must have an outcome of true for the GPO to be applied.
- Only one WMI filter can be configured per GPO. After a WMI filter has been created, it can be linked to multiple GPOs.

Use WMI with GPOs



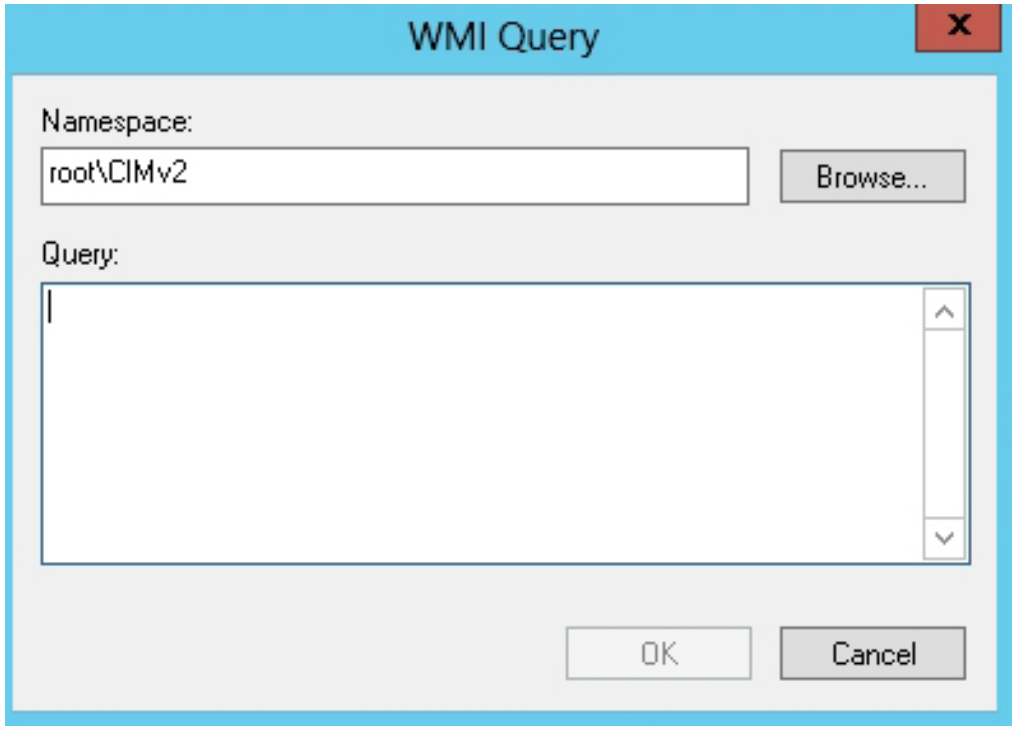
Opening the WMI Filters node

Use WMI with GPOs



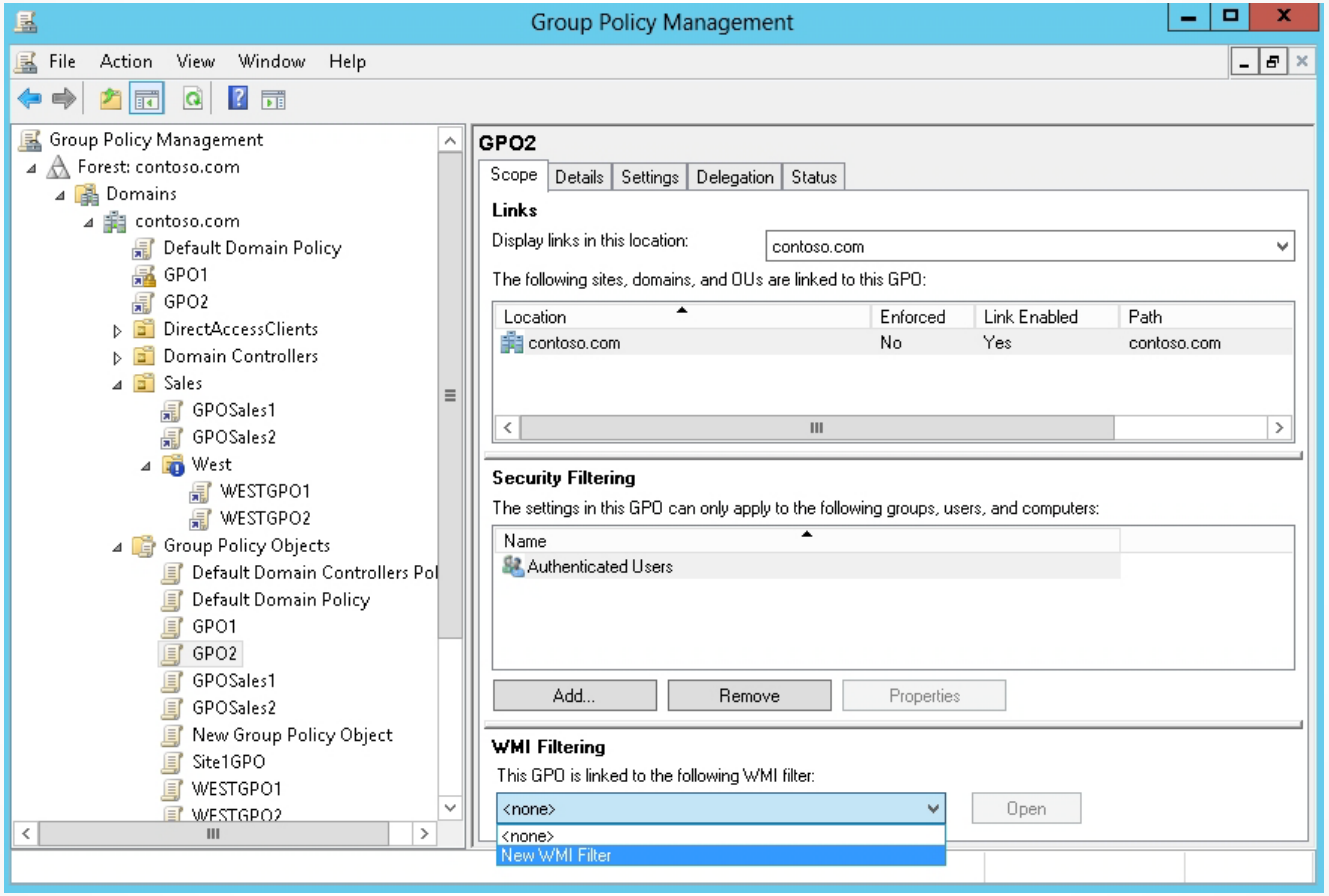
Opening the New WMI Filter dialog box

Use WMI with GPOs



Opening the WMI Query dialog box

Use WMI with GPOs



Selecting the name of the WMI filter on the Scope tab

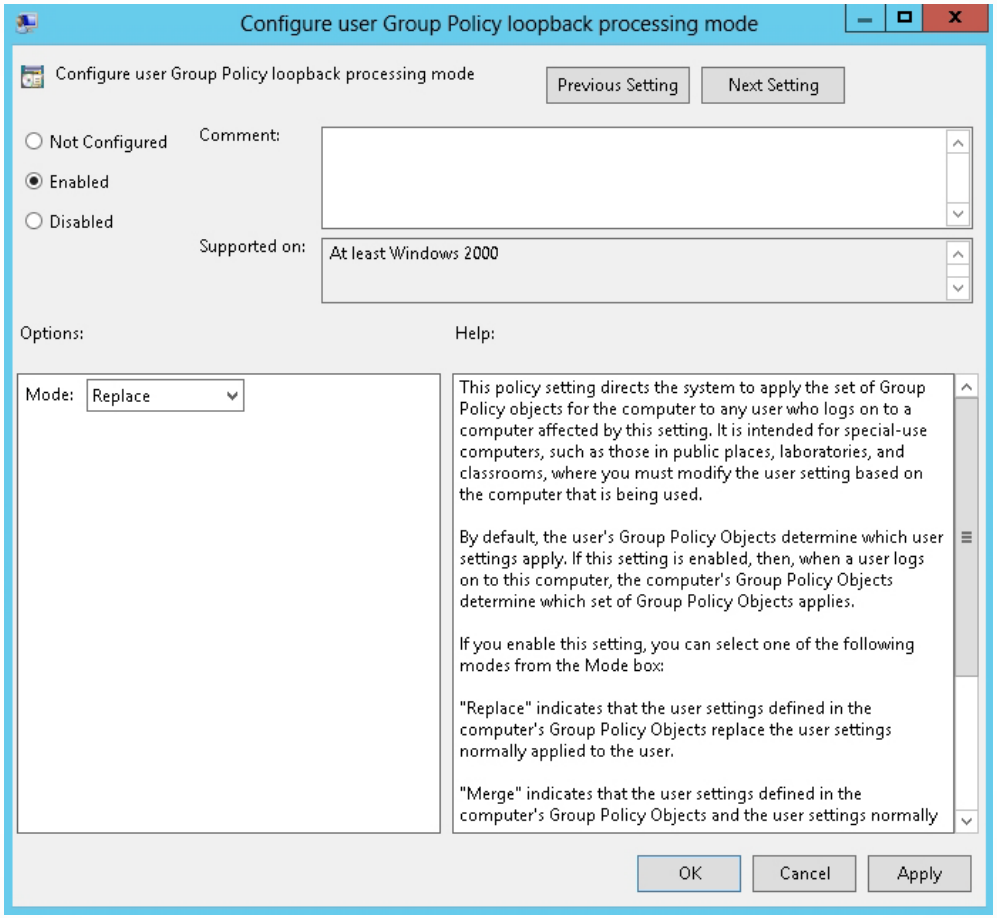
Configuring Loopback Processing

- Group Policy ***loopback processing*** is used to assign user policies to computer objects.
- No matter who logs on to a computer, the user policies are applied to the computer.

Configuring Loopback Processing

- The loopback policy is enabled using the Group Policy Management Editor, specifically the Computer Configuration\Administrative Templates\System\Group Policy\Configure user Group Policy Loopback processing mode.
- After you enable the setting, you have two modes to choose from that specify the loopback processing mode:
  - Replace mode
  - Merge mode

Configuring Loopback Processing

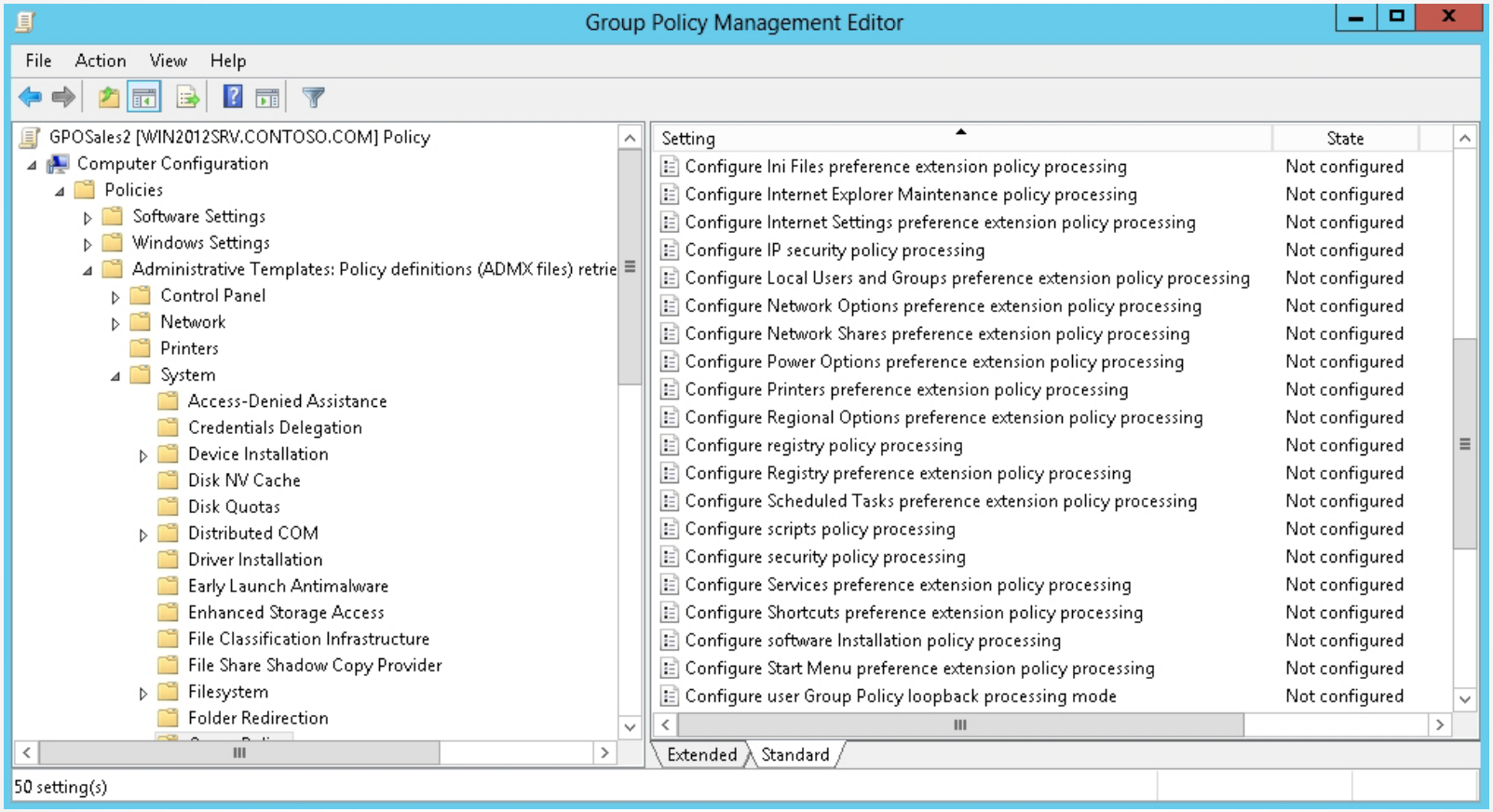


Configuring the Group Policy loopback processing mode

Configuring Client-Side Extension Behavior

- ***Client-side extensions (CSEs)*** are processes that interrupt the settings in a GPO and make the changes to the local computer or the currently logged-on user.
- CSEs are triggered when a Group Policy client pulls the GPOs from the domain.
- Each major category of policy setting has CSEs.

Configuring Client-Side Extension Behavior

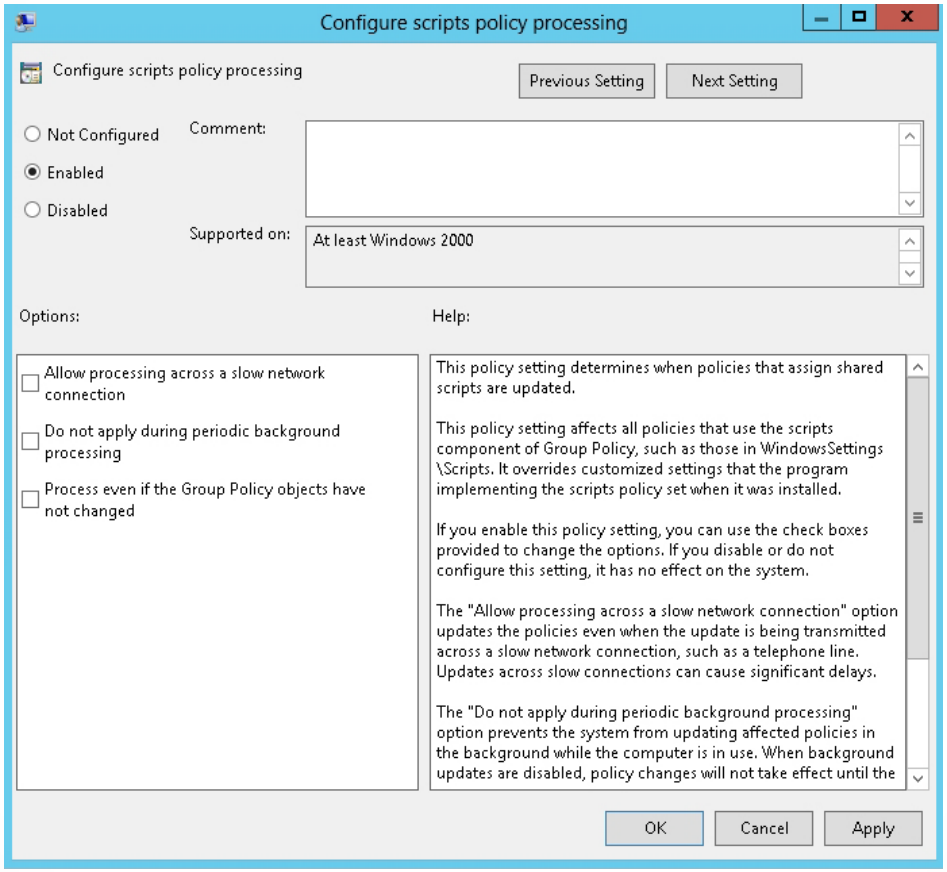


Displaying some of the available client-side extensions

Configuring Client-Side Extension Behavior

You can configure the behavior of CSEs by using Group Policy, specifically \Computer Configuration\Policies\Administrative Template\System\Group Policy\.

Configuring Client-Side Extension Behavior

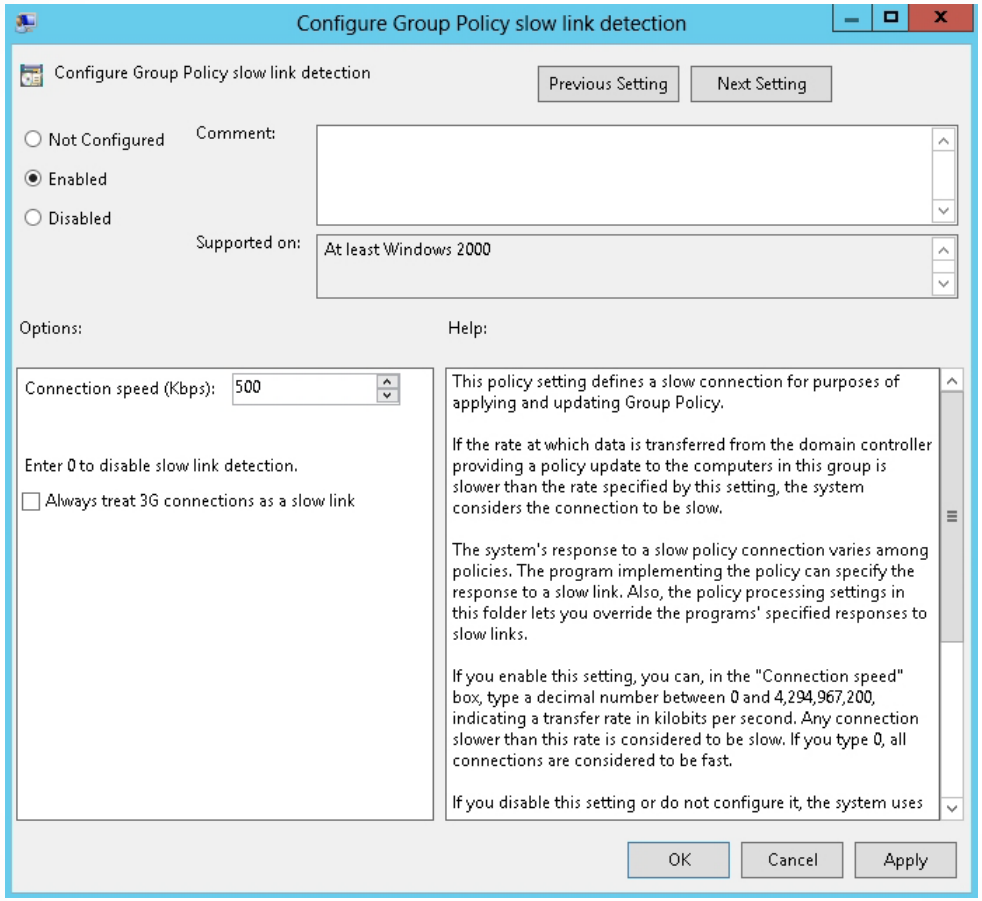


Configuring scripts policy processing

Configuring/Managing Slow-Link Processing

- Group policies executed over slow network links can affect the performance of the client computer, between a site and the corporate office of a site, or the computer being configured via a GPO.
- A link is considered slow if the link is less than 500 kilobits per second (kbps).
- The Configure Group Policy slow-link detection is used to define what is considered a slow-link connection.

Configuring/Managing Slow-Link Processing



Defining the maximum speed of a slow link

Troubleshooting GPOs

Windows Server 2012 provides the following tools for performing Result Set of Policy (RSoP) analysis:

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

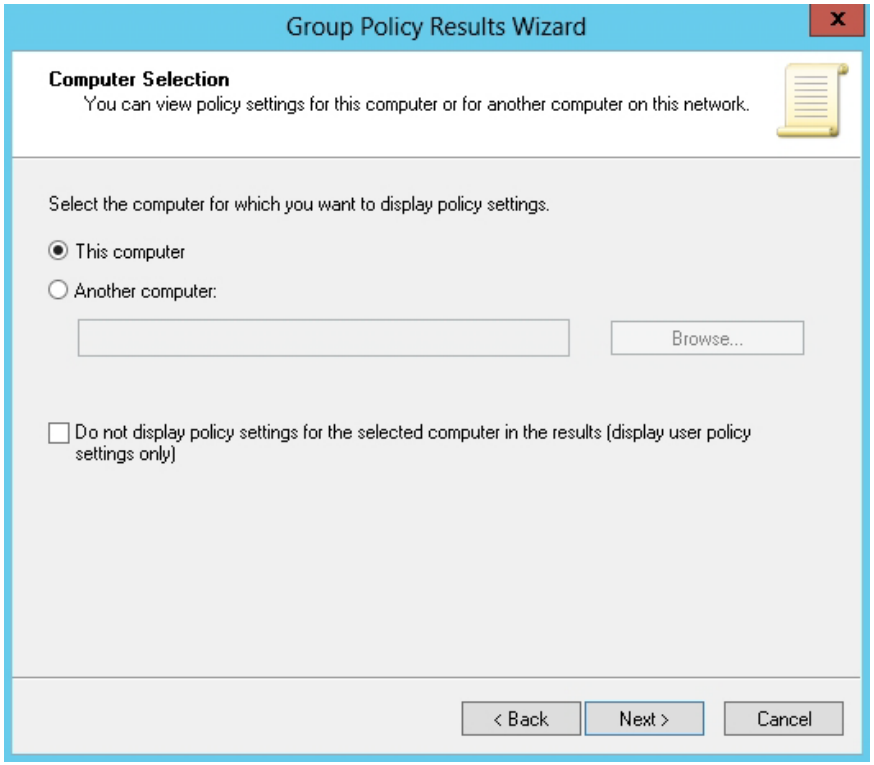
Troubleshooting GPOs

The ***Group Policy Results Wizard*** helps you analyze the cumulative effect of GPOs and policy settings on a user or computer.

To run the Group Policy Results Wizard, the following must be true:

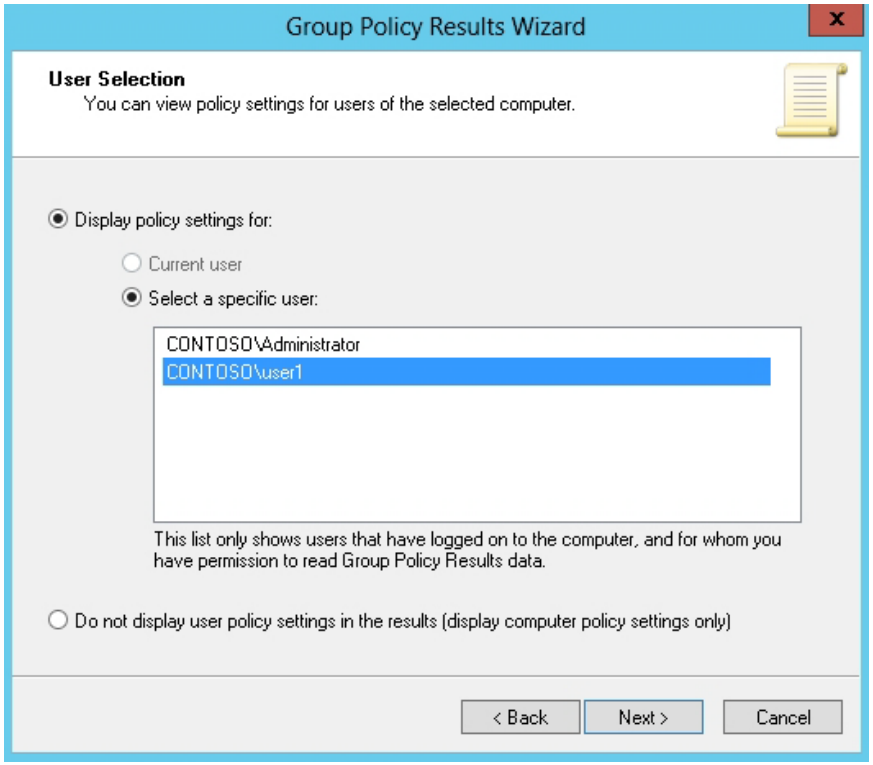
- The target computer must be online.
- You must have administrative credentials on the target computer.
- The target computer must run Windows XP or newer.
- WMI must be running on the target computer and ports 135 and 445 must be available to access WMI on the target computer.

Run the Group Policy Results Wizard



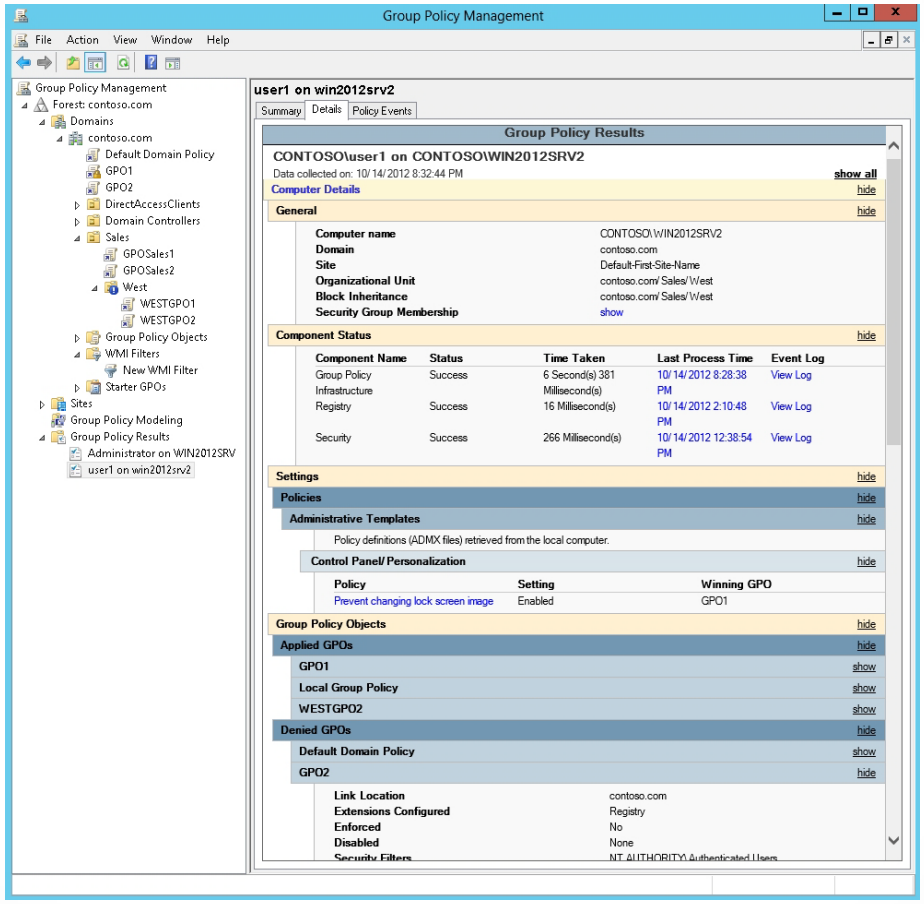
Viewing the Computer Selection page

Run the Group Policy Results Wizard



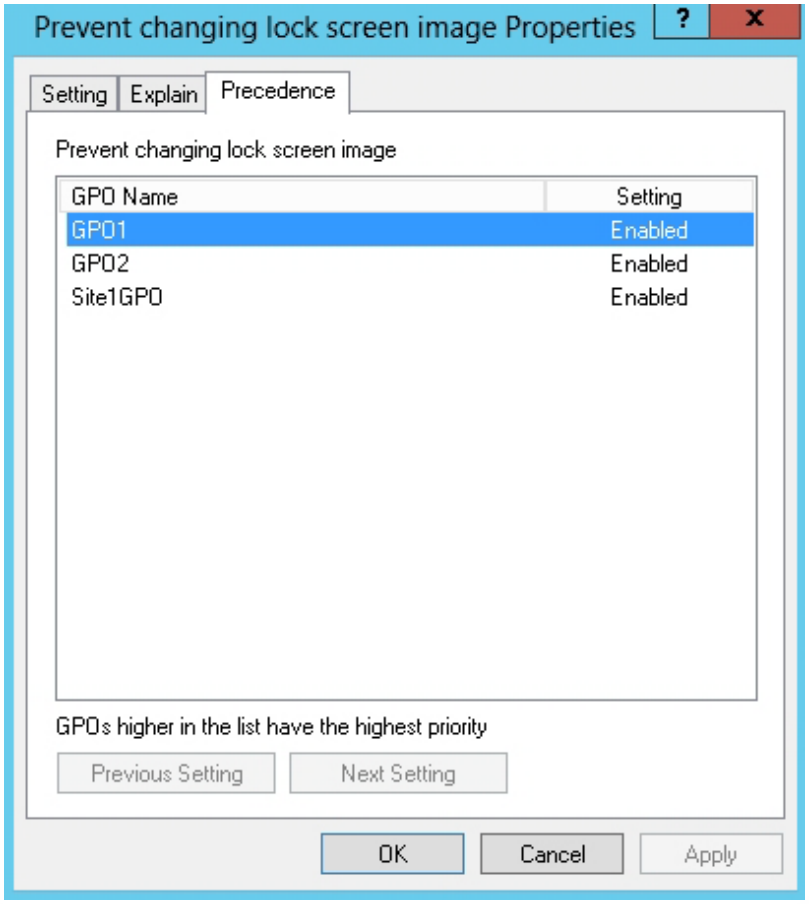
Viewing the User Selection page

Run the Group Policy Results Wizard



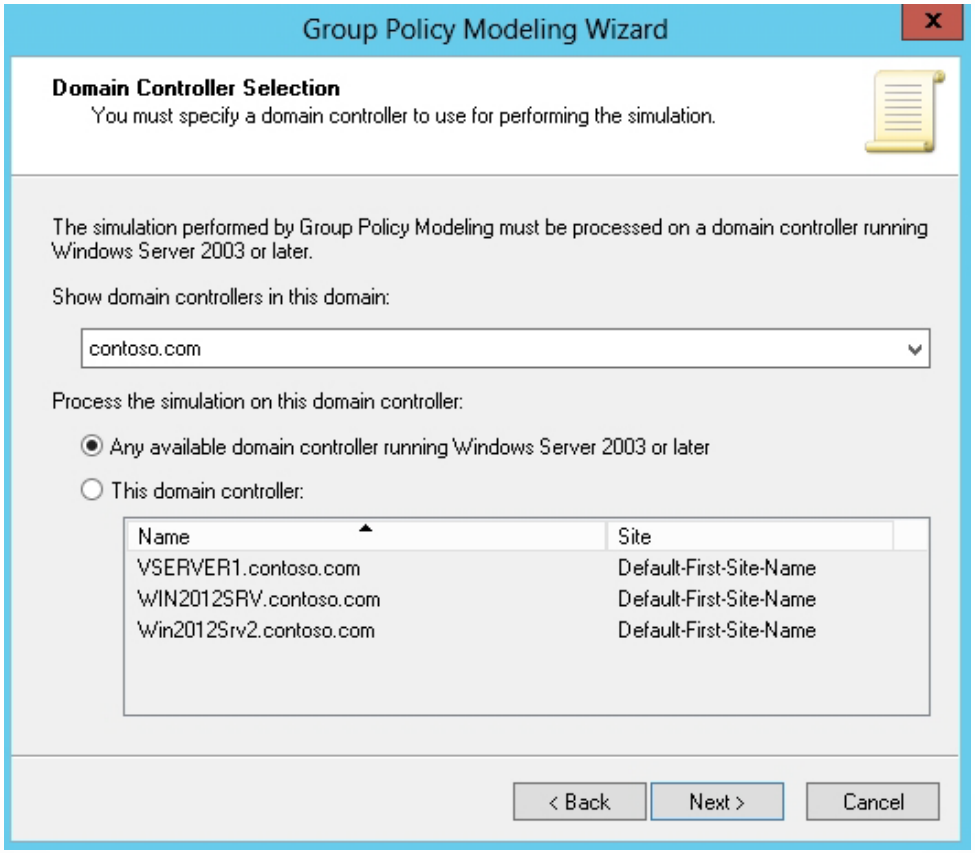
Viewing the Details tab for Group Policy Results

Run the Group Policy Results Wizard



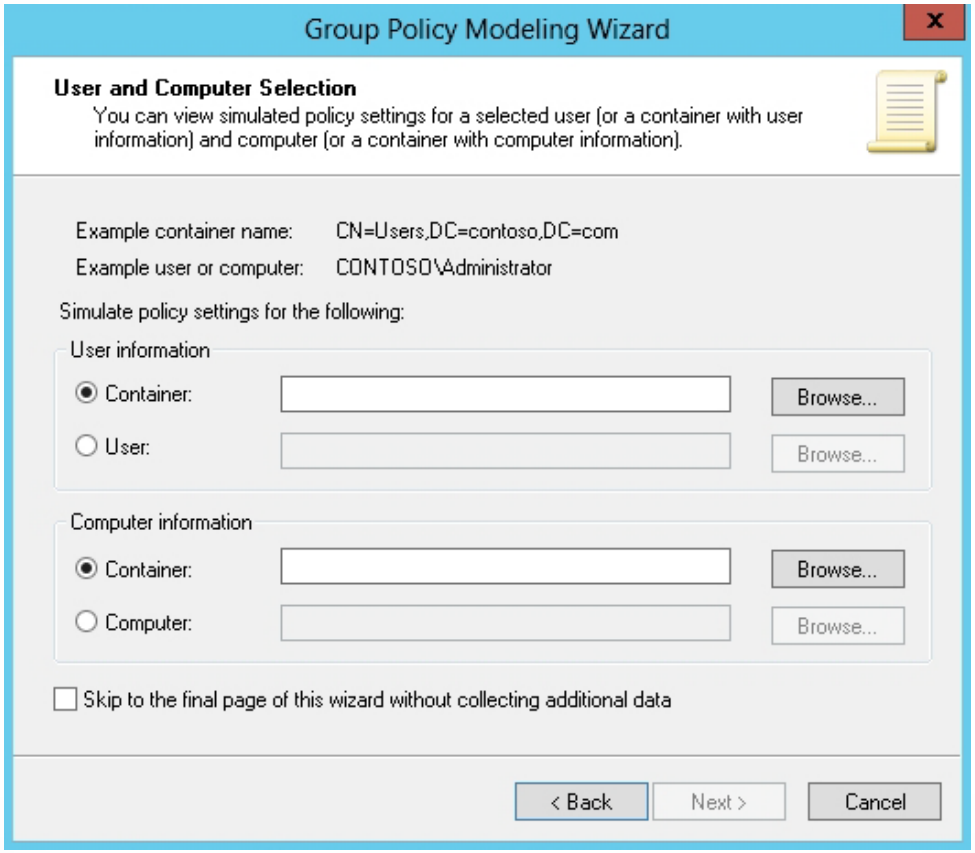
Using the Resultant Set of Policy console

Run the Group Policy Modeling Wizard



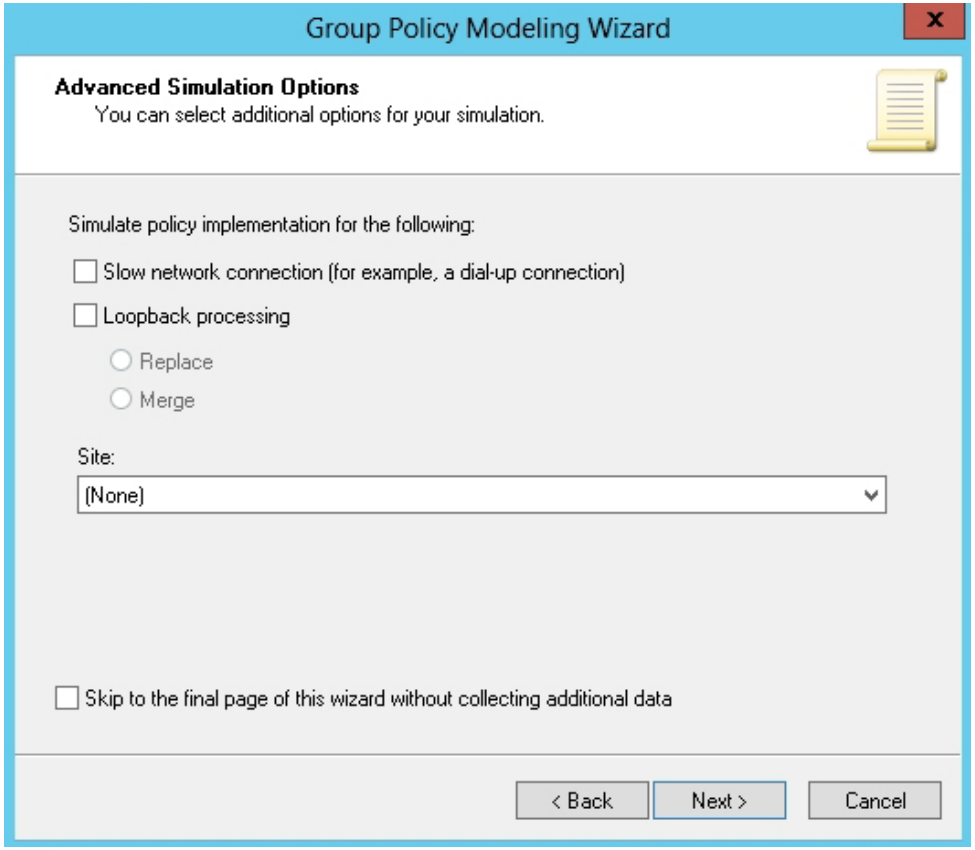
Selecting the domain controller

Run the Group Policy Modeling Wizard



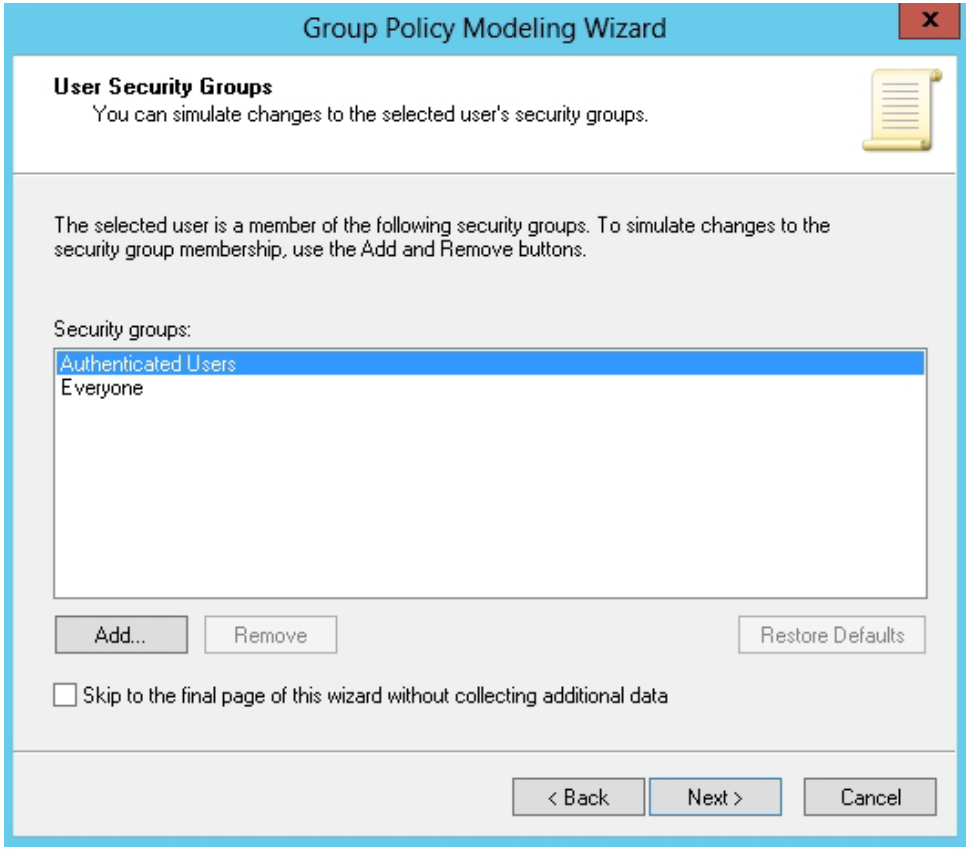
Selecting the user and computer to model

Run the Group Policy Modeling Wizard



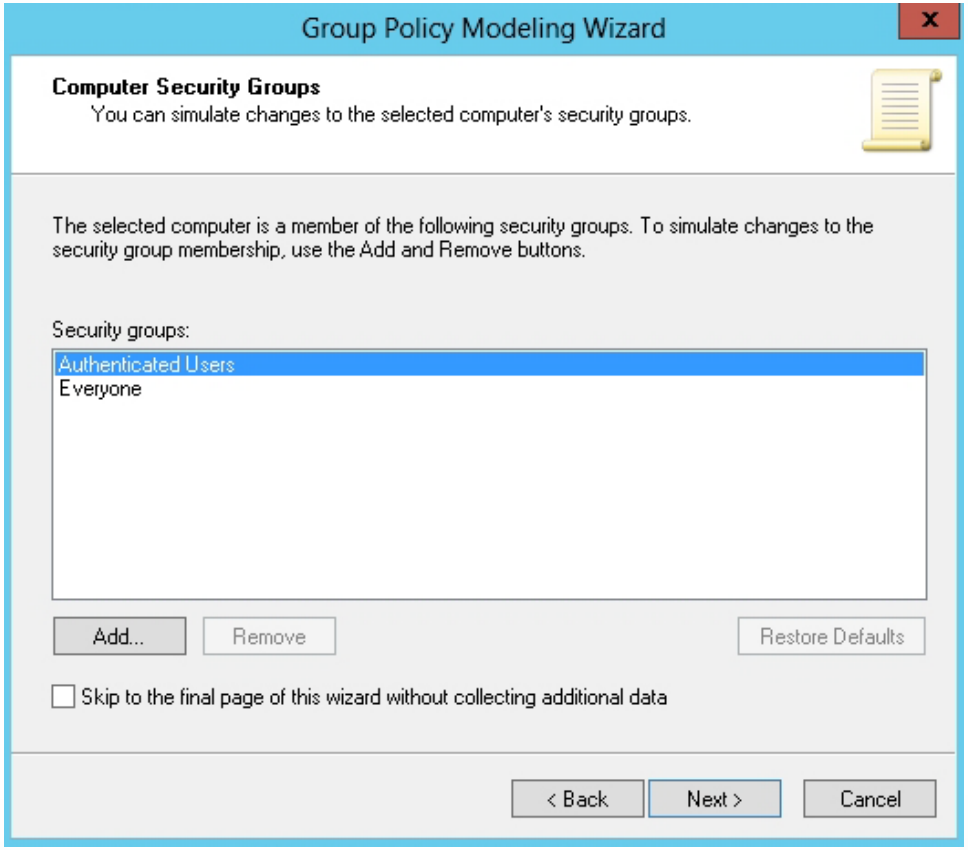
Selecting advanced simulation options

Run the Group Policy Modeling Wizard



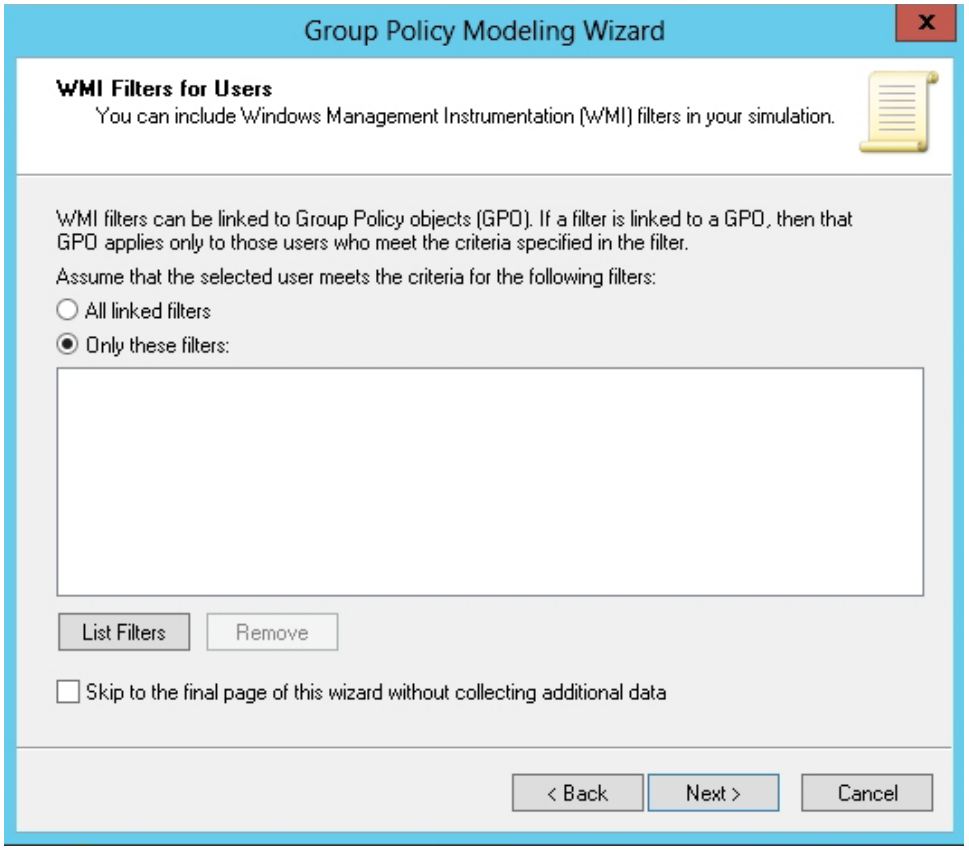
Changing the user security groups

Run the Group Policy Modeling Wizard



Changing the computer security groups

Run the Group Policy Modeling Wizard



Changing WMI Filters for Users

Lesson Summary

- Group policies are defined using group policy objects (GPOs), which are the collection of configuration instructions that are processed by the computer.
- To assign a group policy, it is linked to an Active Directory container (site, domain, or organizational unit).
- GPOs are processed in the following order: local group policy, site, domain, and OU.
- By default, a group policy uses inheritance, whereas settings are inherited from the container above.
- When Active Directory is installed, there are two domain GPOs created by default: Default Domain Policy and Default Domain Controller Policy.
- The exceptions to the processing of group policies can be modified with the Block inheritance and Enforced options.

Lesson Summary

- Windows Management Instrumentation (WMI) filtering configures a GPO to be applied to certain users or computers based on specific hardware, software, operating systems, and services.
- Loopback processing allows the Group Policy processing order to circle back and reapply the computer policies after all user policies and logon scripts run.
- Client-side extensions (CSEs) are processes that interrupt the settings in a GPO and make the changes to the local computer or the currently logged-on user.
- Windows Server 2012 provides the following tools for performing RSoP analysis: the Group Policy Results Wizard, the `GPResult.exe` command, and the Group Policy Modeling Wizard.