Module 4

Automating Active Directory Domain Services Administration

Module Overview

You can use command-line tools and Windows PowerShell® to automate Active Directory® Domain Services (AD DS) administration. Automating administration speeds up processes that you might otherwise perform manually. Windows PowerShell includes cmdlets for performing AD DS administration and for performing bulk operations. You can use bulk operations to change many AD DS objects in a single step rather than updating each object manually.

Lesson 1

Using Command-line Tools for AD DS Administration

Windows Server® 2012 R2 includes several command-line tools that you can use to perform AD DS administration. Many organizations create scripts that use command-line tools to automate the creation and management of AD DS objects, such as user accounts and groups. You must understand how to use these command-line tools to ensure that if required, you can modify the scripts that your organization uses.

Command-line tools allow you to automate AD DS administration

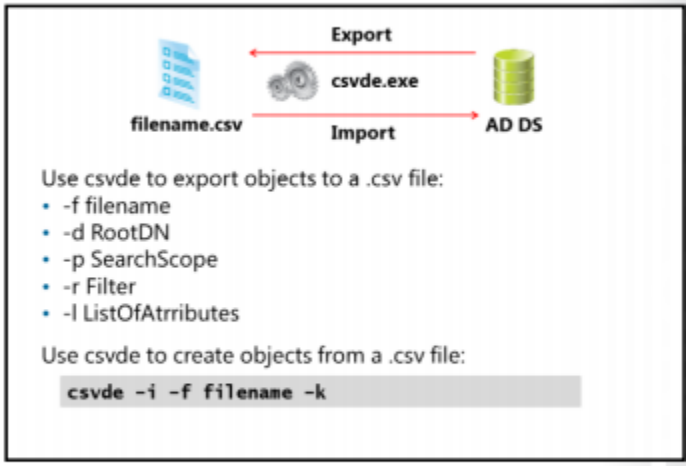
Benefits of using command-line tools:

- Faster implementation of bulk operations
- Customized processes for AD DS administration
- AD DS administration on server core

What Is Csvde?

Csvde is a command-line tool that exports or imports AD DS objects to or from a comma-separated values (.csv) file. Many programs and apps are capable of exporting or importing data from .csv files. This makes csvde useful for interoperability with other programs and apps, such as databases or spreadsheets.

The main limitation of csvde is that it cannot modify existing Active Directory objects; it can only create new objects. For example, you can use csvde to create a set of new user accounts, but you cannot use it to modify the properties of the user accounts after they are created. You can also use csvde to export object properties, such as a list of users and their email addresses.



Use csvde to export objects to a .csv file:

- -f filename
- -d RootDN
- -p SearchScope
- -r Filter
- -l ListOfAtrributes

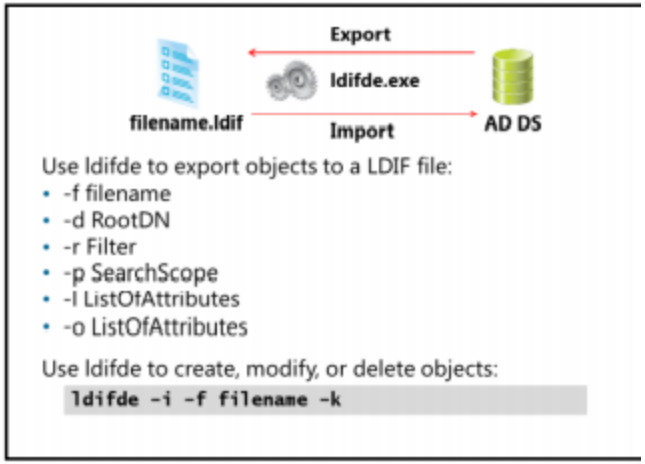
Use csvde to create objects from a .csv file:

```
csvde -i -f filename -k
```

What Is Ldifde?

Ldifde is a command-line tool that you can use to export, create, modify, or delete AD DS objects. Like csvde, ldifde uses data that is stored in a file. The file must be in LDAP Data Interchange Format (LDIF). Most programs and apps cannot export or import data in LDIF format. It is more likely that you will obtain data in LDIF format from another directory service.

An LDIF file is text-based, with blocks of lines composing a single operation such as creating or modifying a user object. Each line within the operation specifies something about the operation, such as an attribute or the type of operation. A blank line separates multiple operations within the LDIF file.



Use ldifde to export objects to a LDIF file:

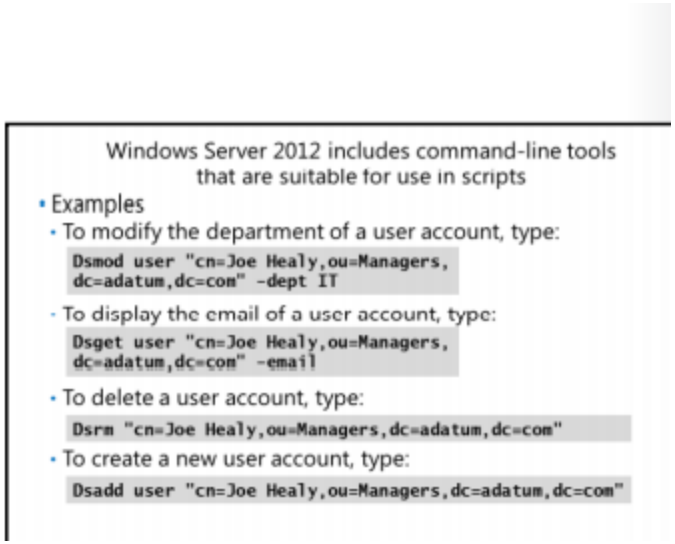
- -f filename
- -d RootDN
- -r Filter
- -p SearchScope
- -l ListOfAttributes
- -o ListOfAttributes

Use ldifde to create, modify, or delete objects:

```
ldifde -i -f filename -k
```

What Are DS Commands?

Windows Server 2012 includes command-line tools called *DS commands*, which are suitable for use in scripts. You can use DS command-line tools to create, view, modify, and remove AD DS objects. The following table describes DS command-line tools.



Using Windows PowerShell for AD DS Administration

Windows PowerShell is the preferred scripting environment in Windows Server 2012. It is much easier to use than previous scripting languages such as Microsoft® Visual Basic Scripting Edition (VBScript). Windows PowerShell includes an extensive list of cmdlets to manage AD DS objects. You can use cmdlets to create, modify, and remove user accounts, groups, computer accounts, and organizational units (OUs).

Performing Bulk Operations with Windows PowerShell

Windows PowerShell is a powerful scripting environment that you can use to perform bulk operations, which are normally tedious to perform manually. You can also perform some bulk operations in graphical tools.

To perform bulk operations using Windows PowerShell, you must first understand how to create queries for a list of AD DS objects, and how to work with .csv files. Then you can create scripts that perform the bulk operations that you require.

- A bulk operation is a single action that changes multiple objects
- Sample bulk operations
  - Create user accounts based on data in a spreadsheet
  - Disable all accounts not used in 6 months
  - Rename the department for many users
- You can perform bulk operations by using:
  - Graphical tools
  - Command-line tools
  - Script

Module 4

Lab: Automating AD DS Administration by Using Windows PowerShell

Exercise 1: Creating User Accounts and Groups by Using Windows PowerShell

▶ Task 1: Create a user account by using Windows PowerShell

1. On LON-DC1, on the taskbar, click the **Windows PowerShell** icon.
2. At the Windows PowerShell prompt, type the following command, and then press Enter:

```
New-ADOrganizationalUnit LondonBranch
```

3. Type the following command, and then press Enter:

```
New-ADUser -Name Ty -DisplayName "Ty Carlson" -GivenName Ty -Surname Carlson -Path
"ou=LondonBranch,dc=adatum,dc=com"
```

4. Type the following command, and then press Enter:

```
Set-ADAccountPassword Ty
```

5. When prompted for the current password, press Enter.
6. When prompted for the desired password, type **Pa$$w0rd**, and then press Enter.
7. When prompted to repeat the password, type **Pa$$w0rd**, and then press Enter.
8. At the Windows PowerShell prompt, type **Enable-ADAccount Ty**, and then press Enter.
9. On LON-CL1, sign in as **Ty** with the password **Pa$$w0rd**.
10. Verify that the sign-in is successful and then sign out of LON-CL1.

▶ Task 2: Create a group by using Windows PowerShell

1. To create a new global security group for users in the London branch office, on LON-DC1, at the Windows PowerShell prompt, type the following command, and then press Enter:

```
New-ADGroup LondonBranchUsers -Path "ou=LondonBranch,dc=adatum,dc=com" -GroupScope
Global -GroupCategory Security
```

2. To add **Ty** as a member of LondonBranchUsers, type the following command, and then press Enter:

```
Add-ADGroupMember LondonBranchUsers -Members Ty
```

3. To confirm that Ty has been added as a member of LondonBranchUsers, type the following command, and then press Enter:

```
Get-ADGroupMember LondonBranchUsers
```

Results: After completing this exercise, you will have created user accounts and groups by using Windows PowerShell.

Exercise 2: Using Windows PowerShell to Create User Accounts in Bulk

▶ Task 1: Prepare the .csv file

1. On LON-DC1, on the taskbar, click the **File Explorer** icon.
2. In File Explorer, expand drive **E:**, expand **Labfiles**, and then click **Mod04**.
3. Right-click **LabUsers.ps1**, and then click **Edit**.
4. In Windows PowerShell Integrated Scripting Environment (ISE), read the comments at the top of the script, and then identify the requirements for the header in the .csv file.
5. Close **Windows PowerShell ISE**.
6. In File Explorer, double-click **LabUsers.csv**.
7. In the **How do you want to open this type of file (.csv)?** message, click **Notepad**.
8. In Notepad, type the following line at the top of the file:
   FirstName,LastName,Department,DefaultPassword
9. Click **File**, and then click **Save**.
10. Close Notepad.

▶ Task 2: Prepare the script

1. On LON-DC1, in File Explorer, right-click **LabUsers.ps1**, and then click **Edit**.
2. In Windows PowerShell ISE, under Variables, replace **C:\path\file.csv** with **E:\Labfiles\Mod04\LabUsers.csv**.
3. Under Variables, replace **"ou=orgunit,dc=domain,dc=com"** with **"ou=LondonBranch,dc=adatum,dc=com"**.
4. Click **File**, and then click **Save**.
5. Scroll down and review the contents of the script.
6. Close Windows PowerShell ISE.

▶ Task 3: Run the script

1. On LON-DC1, on the taskbar, click the **Windows PowerShell** icon.
2. At the Windows PowerShell prompt, type **cd E:\Labfiles\Mod04**, and then press Enter.
3. Type **.\LabUsers.ps1**, and then press Enter.
4. Type the following command, and then press Enter:

```
Get-ADUser -Filter * -SearchBase "ou=LondonBranch,dc=adatum,dc=com"
```

5. Close Windows PowerShell.
6. On LON-CL1, sign in as **Luka** with the password **Pa$$w0rd**.

Results: After completing this exercise, you will have used Windows PowerShell to create user accounts in bulk.

Exercise 3: Using Windows PowerShell to Modify User Accounts in Bulk

▶ Task 1: Force all user accounts in LondonBranch to change their passwords at next sign in

1. On LON-DC1, on the taskbar, click the **Windows PowerShell** icon.
2. To create a query for user accounts in the LondonBranch OU, at the Windows PowerShell Prompt, type the following command, and then press Enter:

```
Get-ADUser -Filter * -SearchBase "ou=LondonBranch,dc=adatum,dc=com" | Format-Wide
DistinguishedName
```

3. Verify that only users from the LondonBranch organizational unit (OU) are listed.
4. To modify the previous command to force all user to change their password the next time they sign in, at the Windows PowerShell prompt, type the following command, and then press Enter:

```
Get-ADUser -Filter * -SearchBase "ou=LondonBranch,dc=adatum,dc=com" | Set-ADUser
-ChangePasswordAtLogon $true
```

5. Close **Windows PowerShell**.

▶ Prepare for the next module

When you finish the lab, revert all virtual machines back to their initial state by performing the following steps:

1. On the host computer, start Hyper-V® Manager.
2. In the **Virtual Machines** list, right-click **20410C-LON-CL1**, and then click **Revert**.
3. In the **Revert Virtual Machine** dialog box, click **Revert**.
4. Repeat steps 2 to 3 for **20410C-LON-DC1**.