ANTHONY SEQUEIRA

Cert Guide

Learn, prepare, and practice for exam success

MCSA 70-740

Installation, Storage, and Compute with Windows Server 2016

PEARSON IT CERTIFICATION

To enable Data Deduplication in Server Manager, follow these steps:

Step 1. Select **File and Storage Services** in Server Manager.

Step 2. Select **Volumes** from File and Storage Services.

Step 3. Right-click the desired volume and select **Configure Data Deduplication,** as shown in Figure 6-2.

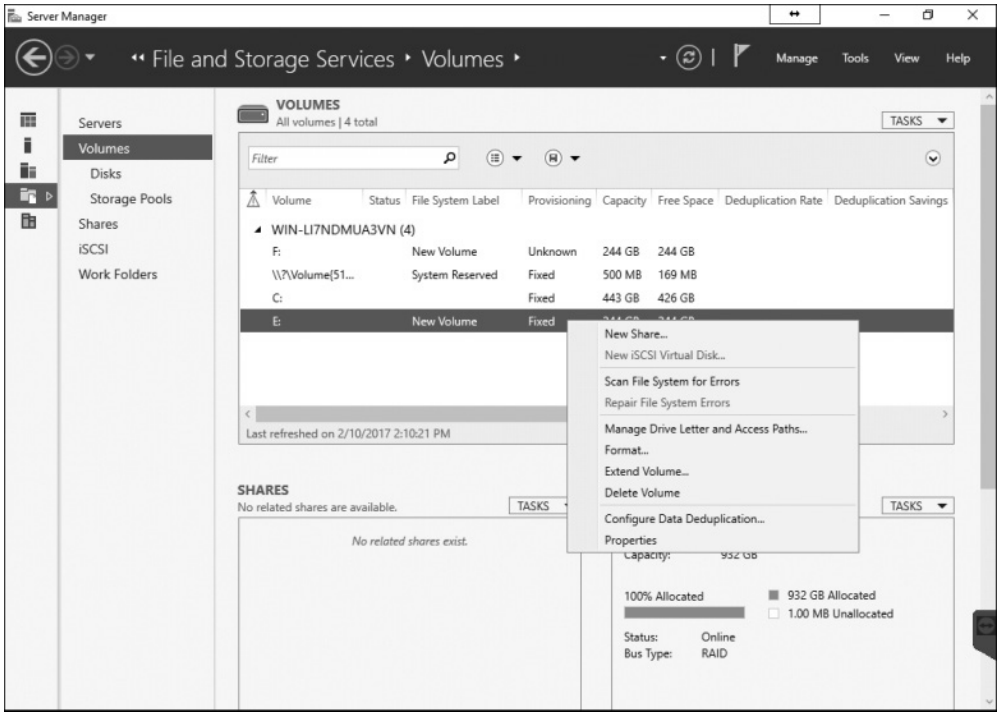

Figure 6-2 Selecting a Volume for Data Deduplication

Step 4. Select the desired usage type from the drop-down box and click **OK**, as shown in Figure 6-3.

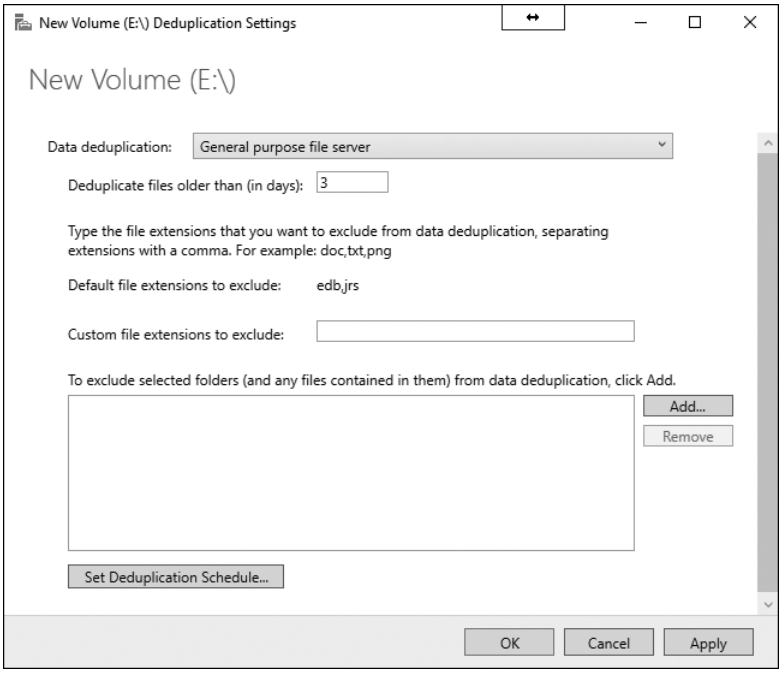

Figure 6-3 Configuring the Data Deduplication Settings

Key Topic

For PowerShell, use the **Enable-DedupVolume** cmdlet, which has the following syntax:

```
Enable-DedupVolume [-Volume] <String[]> [-CimSession <CimSession[]>
] [-DataAccess] [-ThrottleLimit <Int32> ] [-UsageType <UsageType>
{Default | HyperV | Backup} ] [ <CommonParameters>]
```

Data deduplication jobs can be run manually at any time using the following PowerShell cmdlets:

- **Start-DedupJob**: Starts a new data deduplication job:

```
Start-DedupJob [-Type] <Type> {Optimization | GarbageCollection
  | Scrubbing | Unoptimization} [[-Volume] <String[]>
  ] [-CimSession <CimSession[]> ] [-Cores <System.
  UInt32> ] [-Full] [-InputOutputThrottle <System.UInt32> ]
  [-InputOutputThrottleLevel <InputOutputThrottleLevel> {None |
  Low | Medium | High | Maximum} ] [-Memory <UInt32> ]
  [-Preempt] [-Priority <Priority> {Low | Normal | High} ]
  [-ReadOnly] [-StopWhenSystemBusy] [-ThrottleLimit <Int32> ]
  [-Timestamp <DateTime> ] [-Wait] [ <CommonParameters>]
```

- **Stop-DedupJob**: Stops a data deduplication job that's already in progress (or removes it from the queue):

```
Stop-DedupJob [-Volume] <String[]> [[-Type] <Type[]> ]
  [-CimSession <CimSession[]> ] [-PassThru] [-ThrottleLimit
  <Int32> ] [ <CommonParameters>]
```

- **Get-DedupJob**: Shows all the active and queued data deduplication jobs:

```
Get-DedupJob [[-Type] <Type[]> ] [[-Volume] <String[]> ]
  [-CimSession <CimSession[]> ] [-ThrottleLimit <Int32> ] [
  <CommonParameters>]
```

To disable date deduplication, run the following:

```
Start-DedupJob -Type Unoptimization -Volume <Desired-Volume>
```

NOTE The Unoptimization job fails if the volume does not have sufficient space to hold the unoptimized data.

Deduplication Monitoring

Obviously, monitoring is a key element of your success with data deduplication.

Key Topic

You can use **Get-DedupStatus** in PowerShell for the most effective monitoring. Keep in mind the following:

- For the Optimization job, look at LastOptimizationResult (0 = success), LastOptimizationResultMessage, and LastOptimizationTime (should be recent)
- For the Garbage Collection job, look at LastGarbageCollectionResult (0 = success), LastGarbageCollectionResultMessage, and LastGarbageCollectionTime (should be recent)
- For the Integrity Scrubbing job, look at LastScrubbingResult (0 = success), LastScrubbingResultMessage, and LastScrubbingTime (should be recent)

An important indicator of Optimization job failure is a downward-trending optimization rate, which might indicate that the Optimization jobs are not keeping up with the rate of changes, or churn. You can check the optimization rate by using the **Get-DedupStatus** PowerShell cmdlet.

Get-DedupStatus has two fields that are relevant to the optimization rate, both of which are important values to track:

- **OptimizedFilesSavingsRate** applies only to the files that are "in-policy" for optimization (space used by optimized files after optimization/logical size of optimized files)
- **SavingsRate** applies to the entire volume (space used by optimized files after optimization/total logical size of the optimization)

Here is the complete syntax for the **Get-DedupStatus** cmdlet:

```
Get-DedupStatus [[-Volume] <String[]> ] [-CimSession <CimSession[]> ]
  [-ThrottleLimit <Int32> ] [ <CommonParameters>]
```

Exam Preparation Tasks

As mentioned in the section "How to Use This Book" in the Introduction, you have a couple choices for exam preparation: the exercises here, Chapter 21, "Final Preparation," and the exam simulation questions in the Pearson Test Prep Software Online.

Review All Key Topics

Review the most important topics in this chapter, noted with the Key Topics icon in the outer margin of the page. Table 6-2 lists these key topics and the page number on which each is found.

Table 6-2 Key Topics for Chapter 6

Key Topic Element	Description	Page Number
List	Scenarios for data deduplication	105
List	Data deduplication terminology	106
Command	PowerShell implementation of data deduplication	110
Command	PowerShell monitoring of data deduplication	111

Complete Tables and Lists from Memory

There are no memory tables in this chapter.

Define Key Terms

Define the following key terms from this chapter and check your answers against the glossary:

Chunk, Chunk Store, Dedup, File Metadata, File Stream, File System, File System Filter, Optimization, Optimization Policy, Reparse Point, Volume, Workload

Q&A

The answers to these questions appear in Appendix A. For more practice with exam format questions, use the Pearson Test Prep Software Online.

1. Name three scenarios that would be ideal for data deduplication.
2. What data deduplication policy specifies that files should be considered for data deduplication?
3. What two fields in **Get-DedupStatus** are relevant to the optimization rate?

This chapter covers the following subjects:

- **Preparing for Installation:** Just as with Server 2016 itself, you must carry out careful planning before you attempt to roll out a Hyper-V deployment. This section ensures that you are aware of the various requirements.
- **Installing Hyper-V:** When it is time to deploy Hyper-V, you should use this section as a guide. It discusses the installation of Hyper-V using the GUI as well as PowerShell.
- **Managing VMs:** There are many options for managing the many VMs you might have in a Hyper-V deployment. This section ensures that you are familiar with these options.