

DAT244x

SQL Server Disaster Recovery

Lab 03 | Restoring SQL Server Databases

Estimated time to complete this lab is 60 minutes

Overview

You are a DBA with responsibility for managing the **HumanResources**, **InternetSales**, and **AWDataWarehouse** databases. You have backed up the databases per their individual backup strategies, and you must now recover them in the event of a failure.

The labs in this course are accumulative. You cannot complete the following labs if this lab has not been successfully completed.

What You'll Need

To complete this lab, you will need the following:

- High-speed and reliable internet connectivity (for remote connections to the VM)
- A second monitor is recommended (for the Remote Desktop connection)
- A Microsoft account (such as one used for outlook.com, Hotmail, or other Microsoft services)
- A Microsoft Azure subscription
- To have completed the previous labs in this course.

Exercise 1: Restoring Database, Differential, and Transaction Log Backups

The **AdventureWorks** database has failed to come online—you must recover it to the most recent transaction possible.

The main tasks for this exercise are as follows:

1. List the backups in a backup file.
2. Restore the AdventureWorks database

Start the virtual machine

In this task, you will start the virtual machine for the lab.

- If the virtual machine that you created in Lab 00 is not already running, open the Azure Portal, sign in, select the virtual machine, and click **Start**.

List the Backups in a Backup File

1. On your client machine, in SQL Operations Studio, right-click your server and click **New Query**.
2. Use the following Transact-SQL code to list the backups in in `/var/opt/mssql/backup/AdventureWorks.bak`.

```
USE [master]
RESTORE HEADERONLY FROM DISK =
'/var/opt/mssql/backup/AdventureWorks.bak';
```

Lab Check – You will need these answers for the module quiz – write them down!

Lab 01 ► Restoring a Database Backup

How many backups are in the backup file?

Restore the AdventureWorks Database

1. Close any open query windows.
2. Use the following Transact-SQL code to restore the **AdventureWorks** database from the full backup in `/var/opt/mssql/backup/AdventureWorks.bak`.

```
USE [master]
```

```
RESTORE DATABASE [AdventureWorks2016] FROM DISK =  
'/var/opt/mssql/backup/AdventureWorks.bak' WITH FILE = 1, REPLACE,  
NORECOVERY;
```

Lab Check – You will need these answers for the module quiz – write them down!

Lab 01 ► Restoring a Database Backup

What is the approximate total number of pages processed by the restore operation?

3. Use the following Transact-SQL code to restore the **AdventureWorks** database from the differential backup in C:\Backups\AdventureWorks.bak.

```
USE [master]
```

```
RESTORE DATABASE [AdventureWorks2016] FROM DISK =  
'/var/opt/mssql/backup/AdventureWorks.bak' WITH FILE = 3, NORECOVERY;
```

Lab Check – You will need these answers for the module quiz – write them down!

Lab 01 ► Restoring a Database Backup

What is the approximate total number of pages processed by the restore operation?

4. Use the following Transact-SQL code to restore the **AdventureWorks** log from the tail-log backup in C:\Backups\AdventureWorks.bak.

```
USE [master]
```

```
RESTORE LOG [AdventureWorks2016] FROM DISK =  
'/var/opt/mssql/backup/AdventureWorks.bak' WITH FILE = 4, RECOVERY;
```

You have now completed the lab.

*If you are not immediately continuing with the next lab, you should complete the **Finishing Up** exercise to shut down and stop the VM.*

Finishing Up

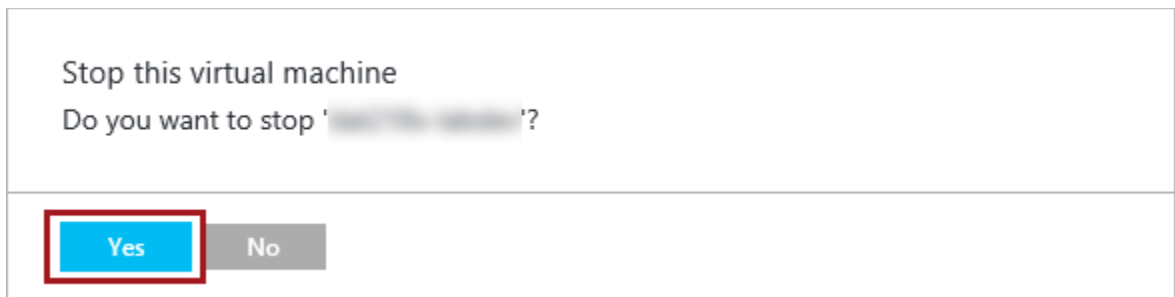
In this exercise, you will shut down and stop the VMs.

1. Deallocate the Linux VM by clicking **Stop**.

Deallocation will take some minutes to complete, and also extends the time required to restart the VM. Consider deallocating the VM if you want to reduce costs, or if you choose to complete the next lab after an extended period.

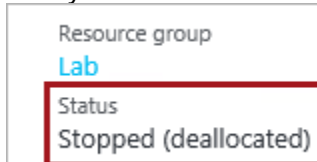


2. When prompted to stop the VM, click **Yes**.



The deallocation can take several minutes to complete.

3. Verify that the VM status updates to **Stopped (Deallocated)**.



In this state, the VM is now not billable—except for a relatively smaller storage cost. Note that a deallocated VM will likely acquire a different IP address the next time it is started.

4. Sign out of the **Azure Portal**.