

# Lab Answer Key: Module 13: Monitoring SQL Server 2014 with Notifications and Alerts

## Lab: Using Notifications and Alerts

### Exercise 1: Configuring Database Mail

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#### Task 1: Prepare the Lab Environment

1. Ensure that the 20462C-MIA-DC and 20462C-MIA-SQL virtual machines are both running, and then log on to 20462C-MIA-SQL as **ADVENTUREWORKS\Student** with the password **Pa\$\$w0rd**.
2. In the D:\Labfiles\Lab13\Starter folder, right-click the **Setup.cmd** file and then click **Run as administrator**.
3. Click **Yes** when prompted to confirm that you want to run the command file, and wait for the script to finish.

#### Task 2: Configure Database Mail

1. Start SQL Server Management Studio and connect to the **MIA-SQL** database engine instance using Windows authentication.
2. In Object Explorer, under the **MIA-SQL** instance, expand **Management**, right-click **Database Mail**, and click **Configure Database Mail**.
3. In the **Welcome to Database Mail Configuration Wizard** page, click **Next**.
4. In the **Select Configuration Task** page, select the option to set up Database Mail and click **Next**.
5. In the **New Profile** page, in the **Profile name** textbox type **SQL Server Agent Profile**, and click **Add**. Then, in the **Add Account to profile 'SQL Server Agent Profile'** dialog

box, click **New Account**.

6. In the **New Database Mail Account** dialog box, enter the following details and click **OK**:
  - o **Account name**: AdventureWorks Administrator
  - o **E-mail address**: administrator@adventureworks.msft
  - o **Display name**: Administrator (AdventureWorks)
  - o **Reply e-mail**: administrator@adventureworks.msft.
  - o **Server name**: mia-sql.adventureworks.msft
7. In the **New Profile** page, click **Next**.
8. In the **Manage Profile Security** page, select **Public** for the **SQL Server Agent Profile** profile, and set its **Default Profile** setting to **Yes**. Then click **Next**.
9. In the **Configure System Parameters** page, click **Next**. Then, in the **Complete the Wizard** page, click **Finish** and when configuration is complete, click **Close**.

### Task 3: Test Database Mail

1. In Object Explorer, right-click **Database Mail** and click **Sent Test E-Mail**.
2. In the **Send Test E-Mail from MIA-SQL** dialog box, ensure that the **SQL Server Agent Profile** database mail profile is selected, and in the **To** textbox, enter **student@adventureworks.msft**. Then click **Send Test Email**.
3. View the contents of the C:\inetpub\mailroot\Drop folder, and verify that an email message has been created here.
4. Double-click the message to view it in Outlook. When you have read the message, close it and delete it, and then minimize the **Drop** folder window.
5. In the **Database Mail Test E-Mail** dialog box (which may be behind SQL Server Management Studio), click **OK**.

6. In SQL Server Management Studio, click **New Query**.
7. Enter the following Transact-SQL code and click **Execute**.

```
SELECT * FROM msdb.dbo.sysmail_event_log;  
SELECT * FROM msdb.dbo.sysmail_mailitems;
```

8. View the results. The first result shows system events for Database Mail, and the second shows records of e-mail messages that have been sent.

**Result:** After this exercise, you should have configured Database Mail with a new profile named SQL Server Agent Profile.

## Exercise 2: Implementing Operators and Notifications

### Task 1: Create Operators

1. In Object Explorer, under **SQL Server Agent**, right-click **Operators** and click **NewOperator**.
2. In the **New Operator** dialog box, in the **Name** box type **Student**, in the **E-mail name** box type **student@adventureworks.msft**, and click **OK**.
3. In Object Explorer, under **SQL Server Agent**, right-click **Operators** and click **NewOperator**.
4. In the **New Operator** dialog box, in the **Name** box type **DBA Team**, in the **E-mail name** box type **dba@adventureworks.msft**, and click **OK**.

### Task 2: Configure the SQL Server Agent Mail Profile

1. In SQL Server Management Studio, in Object Explorer, right-click **SQL Server Agent** and click **Properties**.

2. In the **SQL Server Agent Properties** dialog box, on the **Alert System** page, select **Enable mail profile** and in the **Mail profile** drop-down list, select **SQL Server Agent Profile**.
3. In the **SQL Server Agent Properties** dialog box, select **Enable fail-safe operator**, in the **Operator** drop-down list select **DBA Team**, and for the **Notify using** setting, select **E-mail**. Then click **OK**.
4. In Object Explorer, right-click **SQL Server Agent** and click **Restart**. When prompted to confirm, click **Yes**.

### Task 3: Configure Job Notifications

1. In Object Explorer, under **SQL Server Agent**, expand **Jobs** and view the existing jobs.
2. Right-click the **Back Up Database - AWDataWarehouse** job and click **Properties**.
3. In the **Job Properties - Back Up Database - AWDataWarehouse** dialog box, on the **Notifications** tab, select **E-mail**, select **Student**, and select **When the job fails**. Then click **OK**.
4. Right-click the **Back Up Database - HumanResources** job and click **Properties**.
5. In the **Job Properties - Back Up Database - HumanResources** dialog box, on the **Notifications** tab, select **E-mail**, select **Student**, and select **When the job fails**. Then click **OK**.
6. Right-click the **Back Up Database - InternetSales** job and click **Properties**.
7. In the **Job Properties - Back Up Database - InternetSales** dialog box, on the **Notifications** tab, select **E-mail**, select **Student**, and select **When the job completes**. Then click **OK**.
8. Right-click the **Back Up Log - InternetSales** job and click **Properties**.
9. In the **Job Properties - Back Up Log - InternetSales** dialog box, on the **Notifications** tab, select **E-mail**, select **Student**, and select **When the job completes**. Then click **OK**.
10. Expand the **Operators** folder, right-click **Student** and click **Properties**. On the **Notifications** page, select **Jobs**, note the job notifications that have been defined for this

operator. Then click **Cancel**.

#### Task 4: Test Job Notifications

1. In Object Explorer, right-click the **Back Up Database - AWDataWarehouse** job and click **Start Job at Step**. Then, when the job has completed, note that it failed and click **Close**.
2. In Object Explorer, right-click the **Back Up Database - HumanResources** job and click **Start Job at Step**. Then, when the job has completed, note that it succeeded and click **Close**.
3. In Object Explorer, right-click the **Back Up Database - InternetSales** job and click **Start Job at Step**. Then, when the job has completed, note that it succeeded and click **Close**.
4. Under the **Operators** folder, right-click **Student** and click **Properties**. On the **History** page, note the most recent notification by e-mail attempt. Then click **Cancel**.
5. In the C:\inetpub\mailroot\Drop folder, and verify that new email messages have been created.
6. Open each of the messages and verify that they include a failure notification for the **Back Up Database - AWDataWarehouse** job and a completion notification for the **Back Up Database - InternetSales** job, but no notification regarding the **Back Up Database - HumanResources** job. Then close all e-mail messages and minimize the **Drop** window.

**Result:** After this exercise, you should have created operators name Student and DBA Team, configured the SQL Server Agent service to use the SQL Server Agent Profile Database Mail profile, and configured the Back Up Database - AWDataWarehouse, Back Up Database - HumanResources, Back Up Database - InternetSales, and Back Up Log - InternetSales jobs to send notifications.

#### Exercise 3: Implementing Alerts



## Task 1: Create an Alert

1. In SQL Server Management Studio, in Object Explorer, under **SQL Server Agent**, right-click **Alerts** and click **New Alert**.
2. In the **New Alert** dialog box, on the **General** page, enter the name **InternetSalesLog Full Alert**. In the **Database name** drop-down list, select **InternetSales**; and then select **Error number**, and enter the number **9002**.
3. In the **New Alert** dialog box, on the **Response** page, select **Execute job**, and select the **Back Up Log - InternetSales ([Uncategorized (Local)])** job. Then select **Notify operators** and select the **E-mail** checkbox for the **Student** operator.
4. In the **New Alert** dialog box, on the **Options** page, under **Include alert error text in**, select **E-mail**. Then click **OK**.

## Task 2: Test the Alert

1. In SQL Server Management Studio, open the **TestAlert.sql** script file in the D:\Labfiles\Lab13\Starter folder.
2. Click **Execute** and wait while the script runs. When the log file for the **InternetSales** database is full, error 9002 occurs.
3. In Object Explorer, under the **Alerts** folder, right-click **InternetSales Log Full Alert** and click **Properties**. Then on the **History** page, note the **Date of last alert** and **Date of last response** values and click **Cancel**.
4. In the C:\inetpub\mailroot\Drop folder, and verify that two new email messages have been created.
5. Double-click the new email messages to view them in Outlook. They should include a notification that the transaction log was filled, and a notification that the **Back Up Log - InternetSales** job completed.
6. When you have read the messages, close them and close the **Drop** window.
7. Close SQL Server Management Studio without saving any files.

**Result:** After this exercise, you should have created an alert named InternetSales Log Full Alert.







