
Setting Up Multiple OpenManage Essentials Instances on the Same SQL Server Database Instance

This Dell technical white paper explains how to redirect OpenManage Essentials to a system on a single SQL Server database instance so that one SQL Server database instance supports multiple OpenManage Essentials instances.

OME Engineering Team



This document is for informational purposes only and may contain typographical errors and technical inaccuracies. The content is provided as is, without express or implied warranties of any kind.

© 2013 Dell Inc. All rights reserved. Dell and its affiliates cannot be responsible for errors or omissions in typography or photography. Dell, the Dell logo, and PowerEdge are trademarks of Dell Inc. Intel and Xeon are registered trademarks of Intel Corporation in the U.S. and other countries. Microsoft, Windows, and Windows Server are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell disclaims proprietary interest in the marks and names of others.

July 2013| Version 1.0

Contents

Executive Summary	4
Introduction	4
Advantages of setting up multiple OpenManage Essentials installations to run on same instance of SQL Server database	4
Setting Up Multiple OpenManage Essentials Installations on a Single SQL Server Instance	5
First Approach: Back Up and Restore	6
Second Approach: Using MDF/LDF Files	9
Removing the Connection Between OpenManage Essentials and the Database	11
Common Problem During Back-Up/Restore Process	17
Conclusion	17

Figures

Figure 1. Installing OpenManage Essentials on a Local Server Without SQL	5
Figure 2. Creating a Back-Up of the OpenManage Essentials Database	6
Figure 3. Final Step in Creating a Back Up of the OpenManage Essentials Database	7
Figure 4. Restoring the Database	8
Figure 5. Restoring the Back Up of OpenManage Essentials Database	9
Figure 6. Taking the OpenManage Essentials Database Offline	10
Figure 7. Attaching the OpenManage Essentials Database Using MDF/LDF Files	11
Figure 8. Changing the Account Password for the OpenManage Essentials Database	12
Figure 9. Changing the Status of OpenManage Essentials Database	13
Figure 10. Connection is Lost Between OpenManage Essentials and the Database	14
Figure 11. Database Retargeting to the Centralized SQL Database	14
Figure 12. Changing the Registry Value Under Database	15
Figure 13. Changing the Registry Value Under UserDefined	16
Figure 14. Restarting OpenManage Essentials Services From the Preferences page	16
Figure 15. Microsoft SQL error which might occur during back-up and restore process	17
Figure 16. Changing the details for restore to point to correct database back-up	17

Executive Summary

OpenManage Essentials is a one-to-many systems management tool which helps in monitoring servers, storage devices, printers, KVMs, UPSs, PDUs, chassis and network devices, etc. With the highest configuration supported (i.e. 8 GB RAM and 8 core processor) on the server running OpenManage Essentials, a maximum of 2000 devices can be monitored using OpenManage Essentials. This white paper provides a way to scale up the monitoring to more than 2000 devices by targeting multiple OpenManage Essentials instances to the same SQL Server database instance. The only pre-requisite is to install OpenManage Essentials on multiple servers first, as one server supports only one installation of OpenManage Essentials. This scalability feature is supported by OpenManage Essentials v1.2 and above.

Introduction

The goal of this white paper is to describe how you can set up multiple OpenManage Essentials instances to run on the same SQL Server instance. When there are multiple OpenManage Essentials instances running on the same SQL Server instance, then the administrator has the privilege of using a single system for installing SQL Server which is used as the database for all OpenManage Essentials instances.

During installation, OpenManage Essentials supports the installation of only one OpenManage Essentials server on one database. This white paper provides a way to set up multiple OpenManage Essentials instances to run on the same database instance. Instead of installing multiple SQL Servers, the administrator can install OpenManage Essentials with a local database using SQL Express 2012 which is included with OpenManage Essentials v1.2.

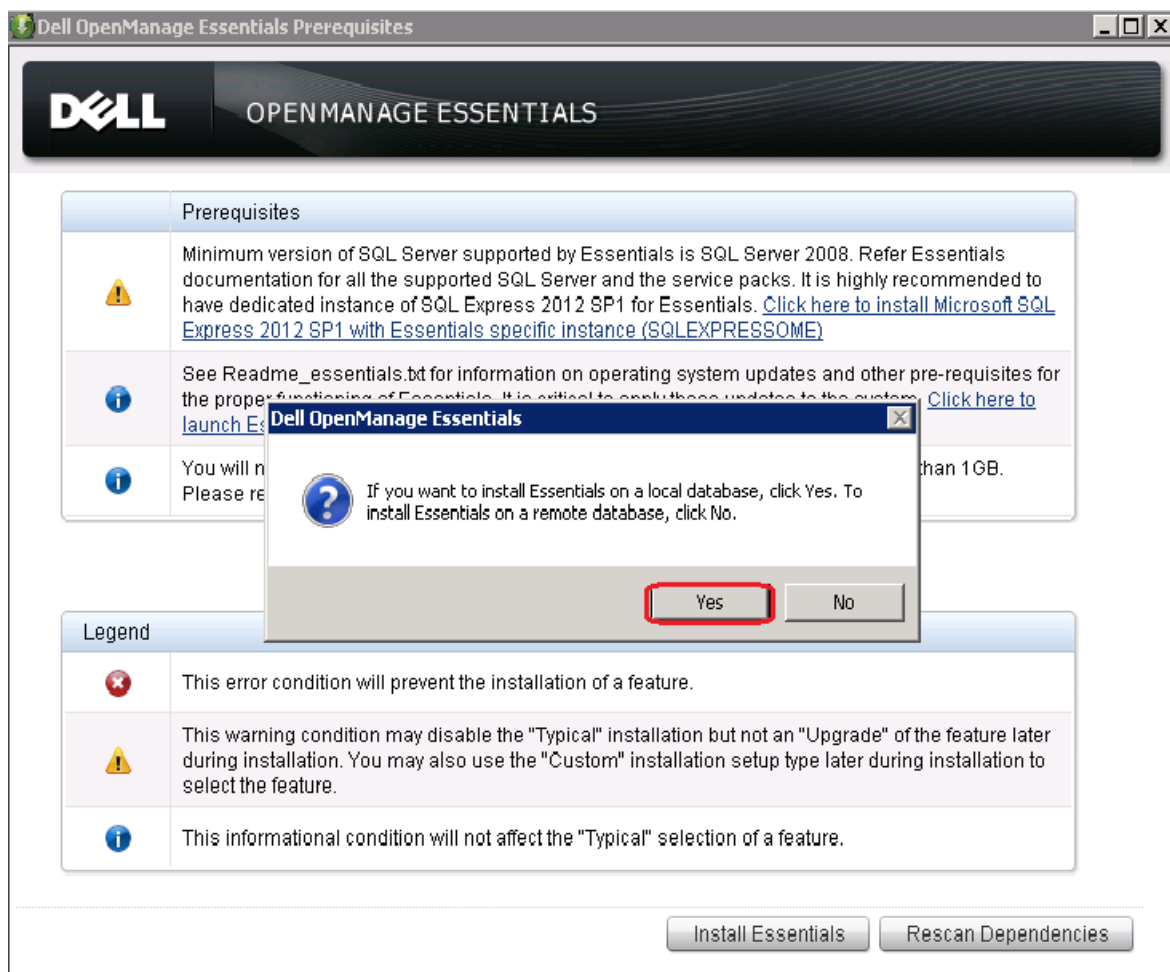
Advantages of setting up multiple OpenManage Essentials instances to run on same instance of SQL Server database

1. When there are multiple subnets, sites and geographies that need to be managed, multiple OpenManage Essentials servers managing different geographies can be run on the same database instead of all being run on different databases.
2. When the set up is such that there is a centralized SQL Server which is used as the database for various applications, then OpenManage Essentials can be installed on the same centralized SQL Server instead of having multiple systems running SQL Server for all the OpenManage Essentials servers.
3. There is a limit to manage only 2000 devices using one OpenManage Essentials server. If there are more than 2000 devices that need to be managed in a data center, setting up multiple OpenManage Essentials instances on the same SQL Server instance, allows you to scale up the management of all the devices on the same SQL database.
4. Multiple OpenManage Essentials servers can be installed with different databases and database names respectively, on the same SQL Server instance. Doing this helps in saving resources and time which would otherwise be consumed in the creation of individual SQL databases for the installation of each OpenManage Essentials instance.

Setting Up Multiple OpenManage Essentials Instances on a Single SQL Server Instance

1. Install OpenManage Essentials on the remote or local database which is the centralized SQL server. For this example, let us assume it as OMEssentials1.
2. On another server, install OpenManage Essentials on a different local or remote database. OpenManage Essentials can also be installed on a local server that does not have a database. While installing OpenManage Essentials, if a database is not found, then OpenManage Essentials prompts for the installation of SQL Express 2012 on the local server as shown in Figure 1. On clicking 'Yes', SQL Express 2012 will be installed on the same server and after that a typical or custom installation of OpenManage Essentials can be performed. For this example, let us assume this OpenManage Essentials to be OMEssentials2.

Figure 1. Installing OpenManage Essentials on a Local Server Without SQL

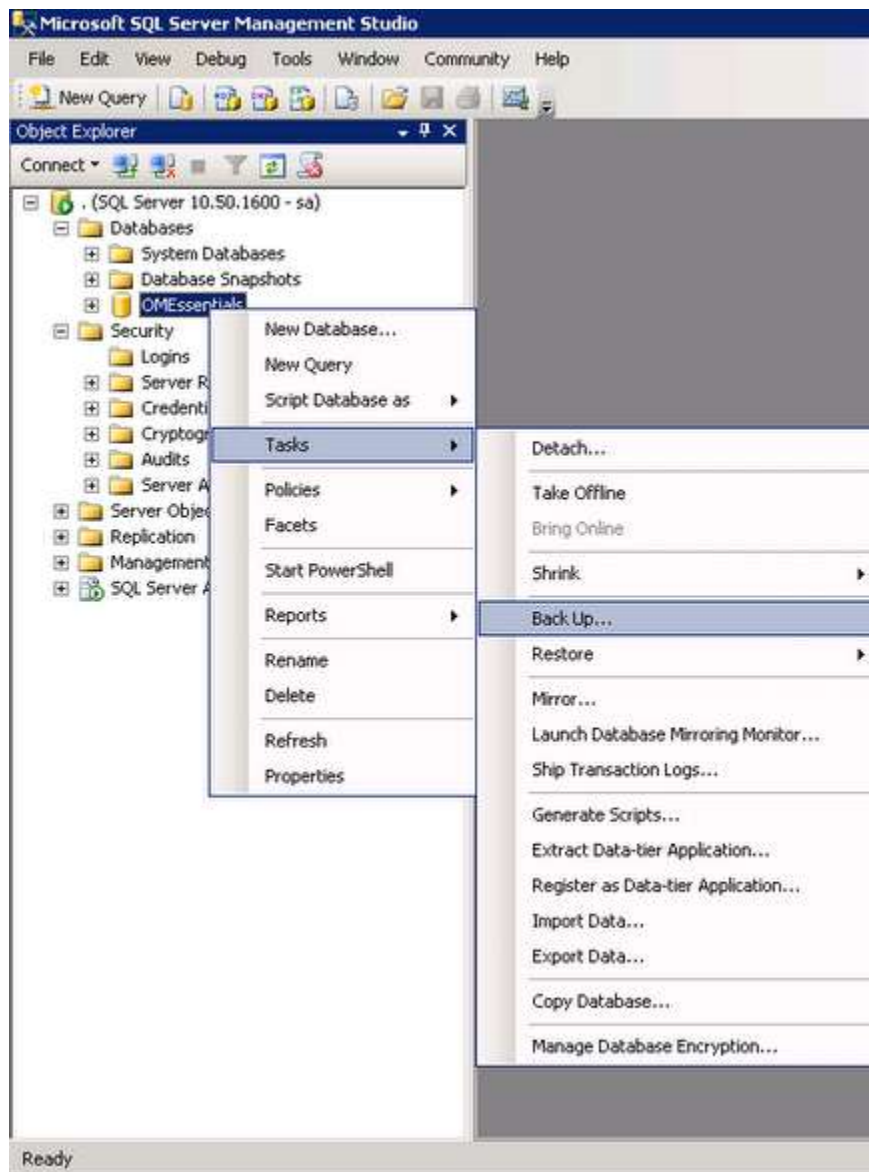


3. Copy the SQL Server database instance from the second OpenManage Essentials instance(i.e. OMEssentials2) and attach it to the centralized SQL server. This can be done in two ways:

First Approach: Back Up and Restore

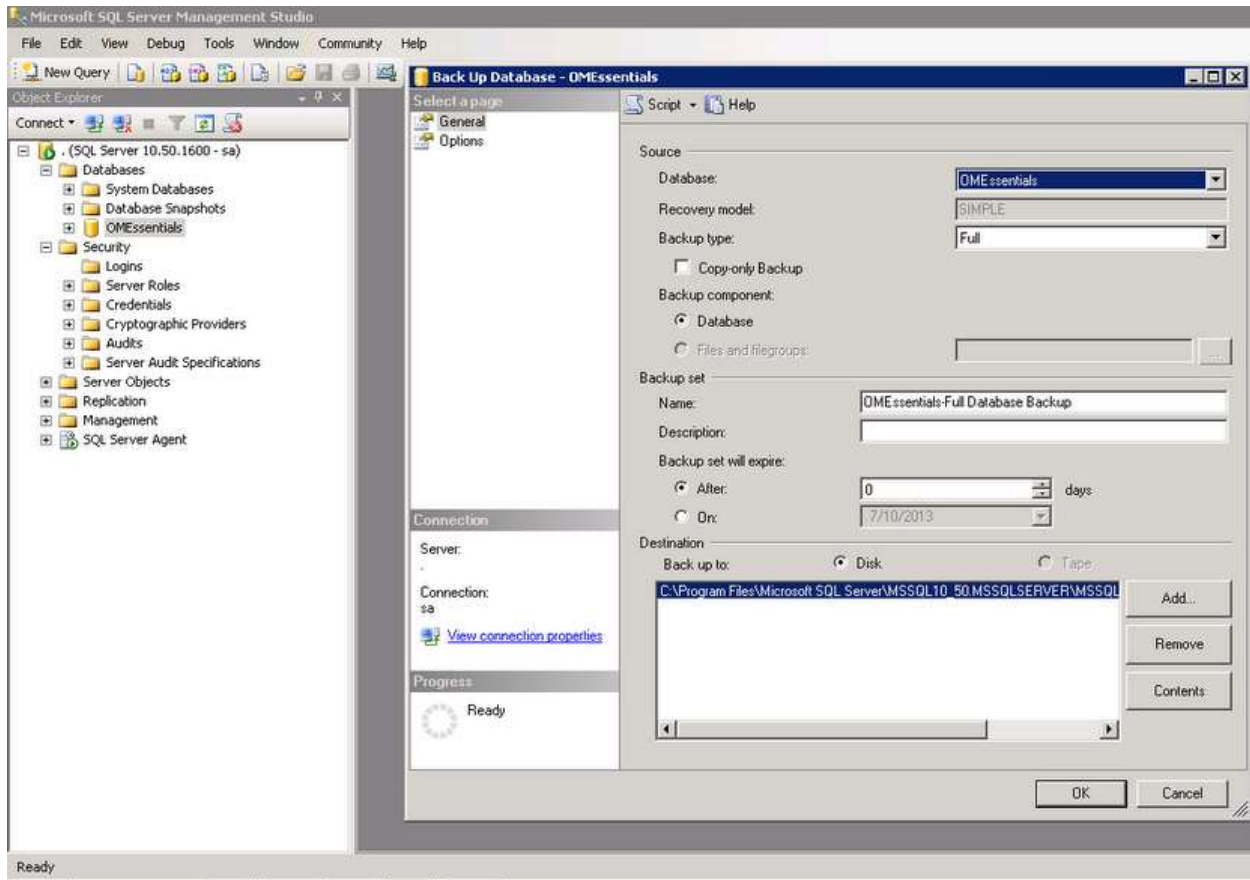
- i. Launch SQL Server Management Studio and connect to the OpenManage Essentials database.
- ii. Right click Databases>>OMEssentials and click “Back Up” under “Tasks” as shown in Figure 2.

Figure 2. Creating a Back-Up of the OpenManage Essentials Database



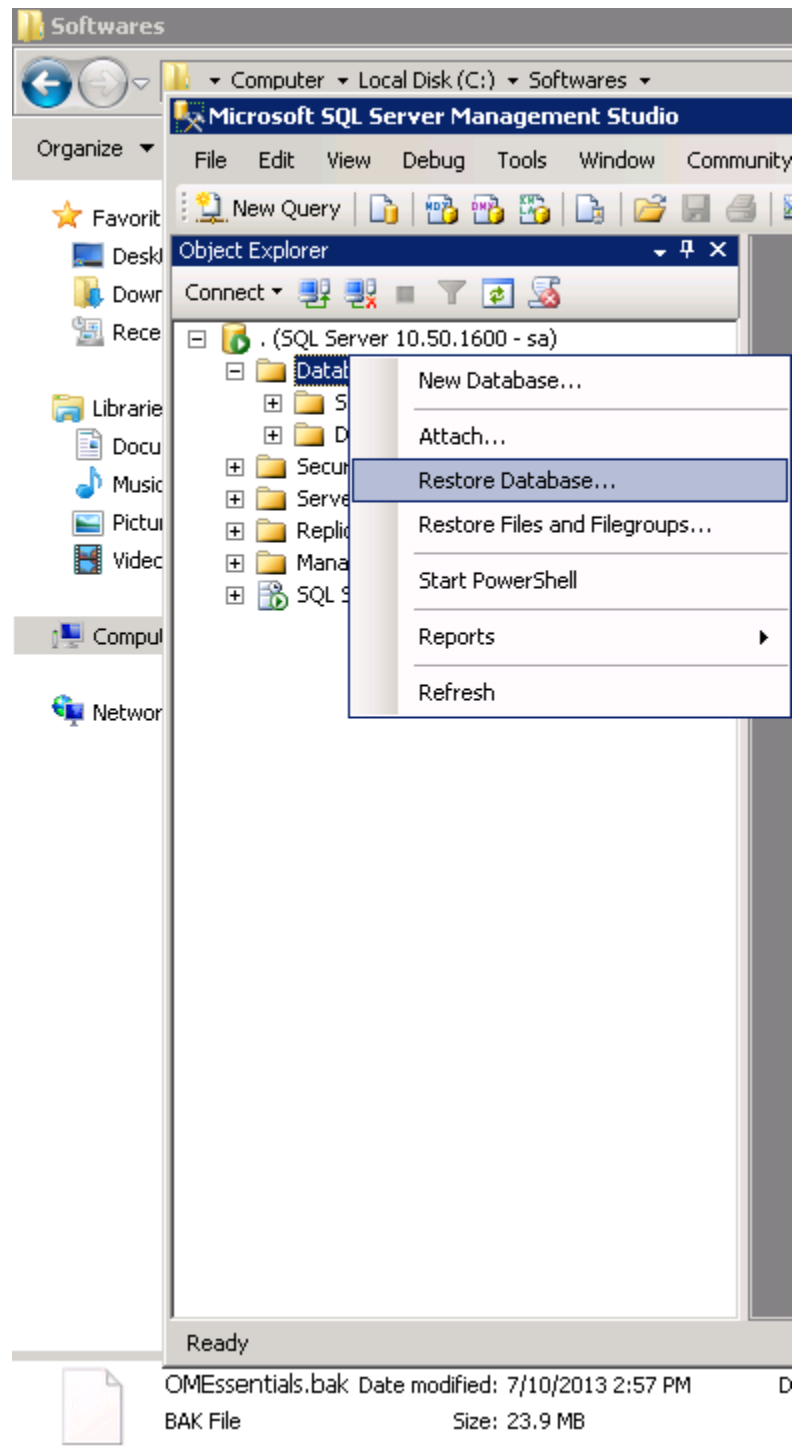
- iii. A window will open as shown in Figure 3. Verify that the values are the same as shown in Figure 3, and then click “OK.”
- iv. The back up is created in the mentioned folder location under “**Destination**”. Copy the back up file to the centralized SQL server.

Figure 3. Final Step in Creating a Back Up of the OpenManage Essentials Database



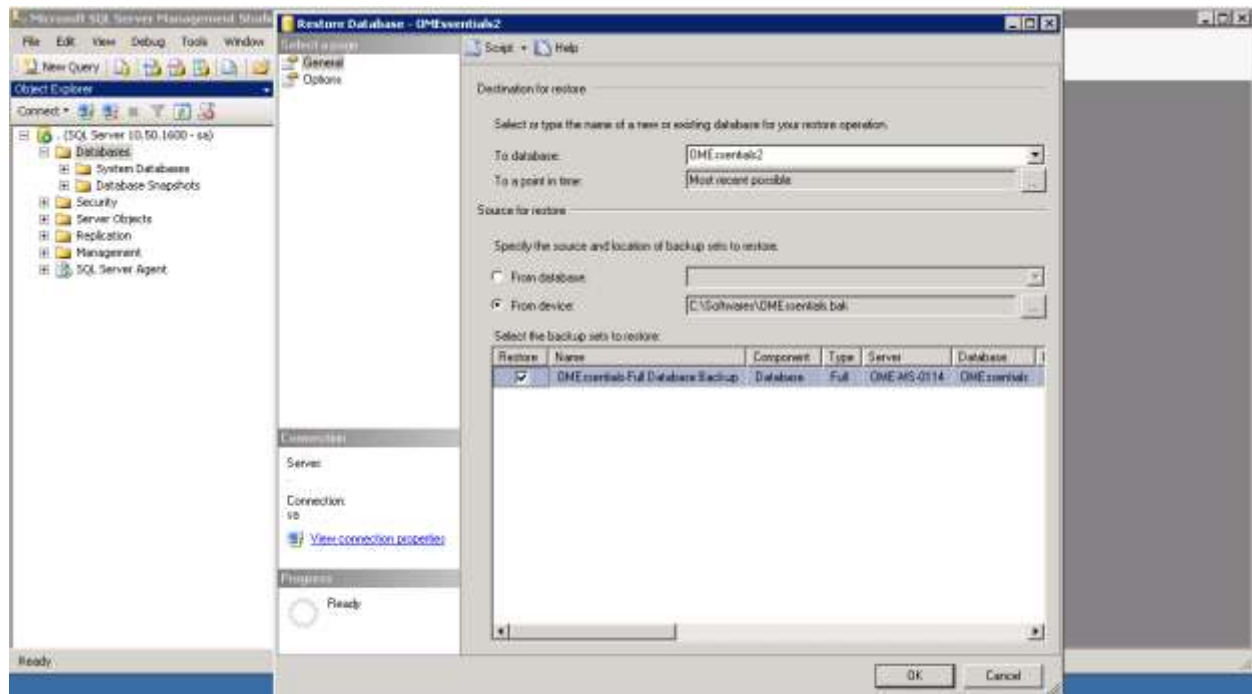
- v. Launch SQL Server Management Studio on the centralized SQL server and right-click “Databases” and select “Restore Database.”

Figure 4. Restoring the Database



- vi. Enter the name of the database and provide the location of the back up database in the window that opens as shown in Figure 5.

Figure 5. Restoring the Back Up of OpenManage Essentials Database

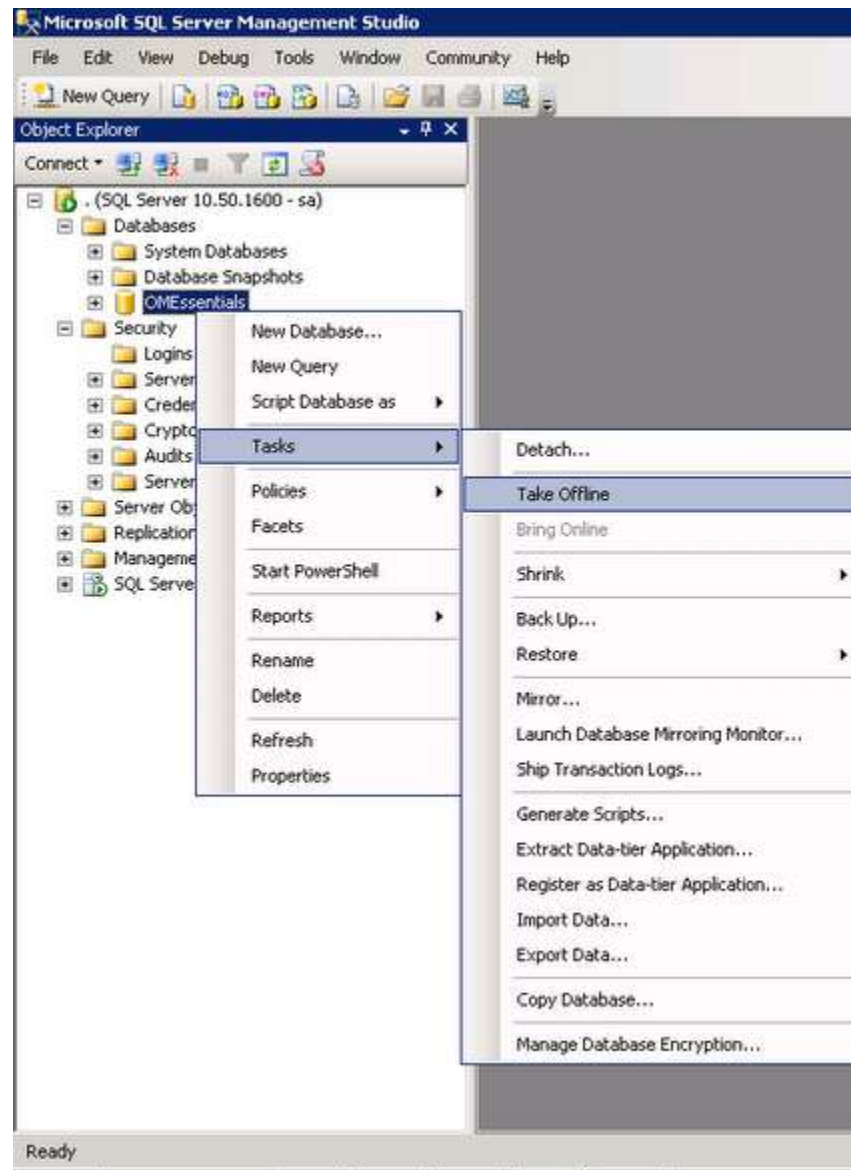


- vii. Click "OK." The new database should be created and shown under databases with the name as given by the administrator.

Second Approach: Using MDF/LDF Files

- i. Identify the location of the mdf and ldf files: right-click the database and select "**Properties**". In the window that opens, click "**Files**" and copy the location of the mdf and ldf files
- ii. Stop the SQL Server service for the instance on which OpenManage Essentials is installed or take the database offline. The service can be stopped from "SQL Server Configuration Manager" or by typing services.msc in the Run console. To take the database offline, right-click the database and select "**Take Offline**" under "**Tasks**" as shown in Figure 6.

Figure 6. Taking the OpenManage Essentials Database Offline

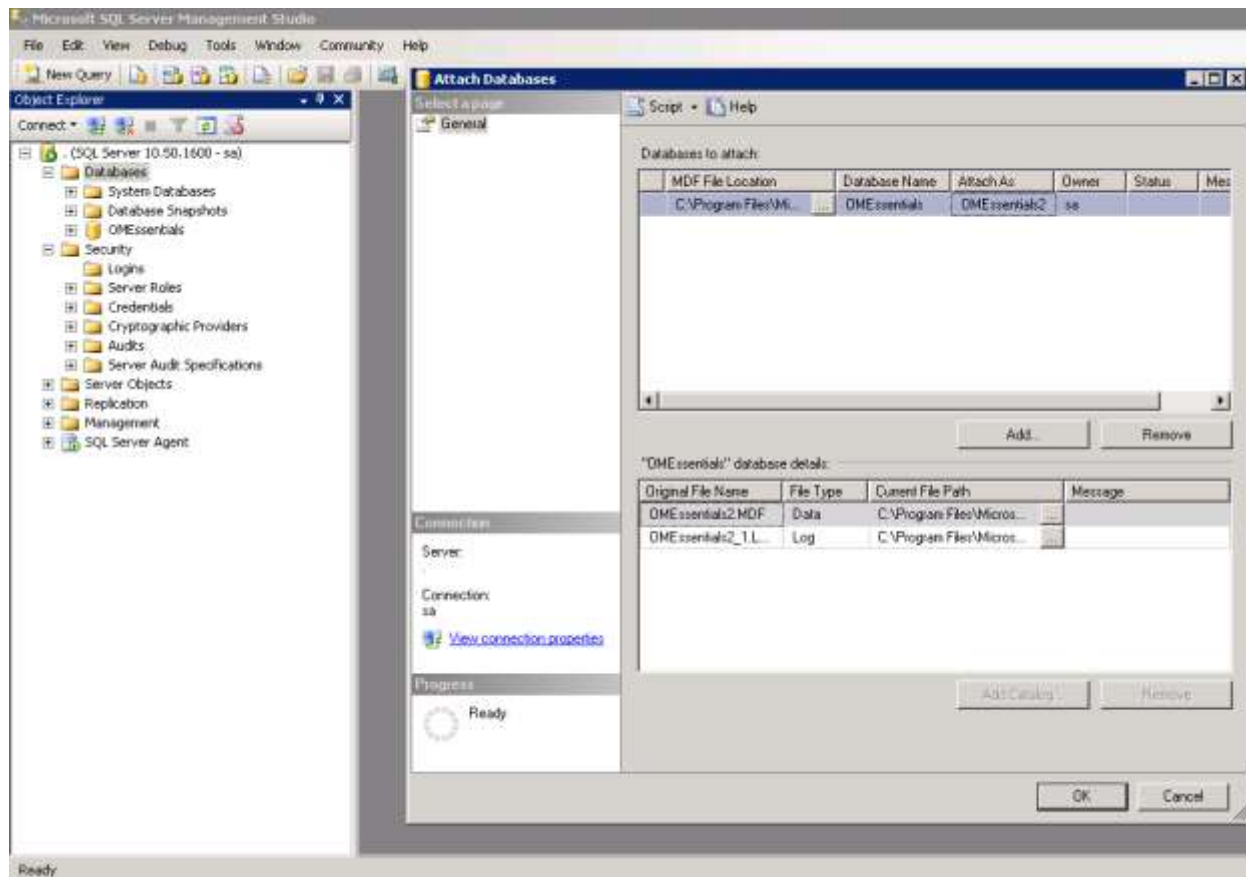


- iii. Once the database is offline, open the location of the mdf/ldf files and copy the files. Change the name of the mdf and ldf files to anything other than OMEssentials.mdf and OMEssentials_1.mdf. Assume, OMEssentials2.mdf and OMEssentials2_1.ldf.
- iv. Copy these renamed mdf/ldf files to the centralized SQL server.
- v. Once the files are copied, launch the Microsoft SQL server Management Studio in the centralized SQL server and right-click "**Databases**".
- vi. Click "**Attach**". A window opens up. Enter the name of the database under "**Databases to attach**" by clicking "**Add**". Change the name under the "**Attach As**" option to match the name of the copied mdf and ldf files shown in Figure 7.
- vii. Provide the path of the mdf and ldf files in "**Current File Path**" under "**OMEssentials database details**" as shown in Figure 7.

Setting Up Multiple OpenManage Essentials Instances on the Same SQL Server Database Instance

- viii. Click **“OK”**. The new database should be created and shown under databases with the name as given by the administrator.

Figure 7. Attaching the OpenManage Essentials Database Using MDF/LDF Files



4. Remove the connection between second OpenManage Essentials and the database. This can be done as explained in the steps below.

Removing the Connection Between OpenManage Essentials and the Database

- i. Launch SQL Server Management Studio and login.
- ii. Navigate to Security→ Logins and right-click the login used for installing OpenManage Essentials. If it is a typical installation, a login with the name **“OMEService”** gets created.
- iii. Click **“Properties”** and under the **“General”** section change the password as shown in Figure 8 or change the **“status”** as shown in Figure 9.

Figure 8. Changing the Account Password for the OpenManage Essentials Database

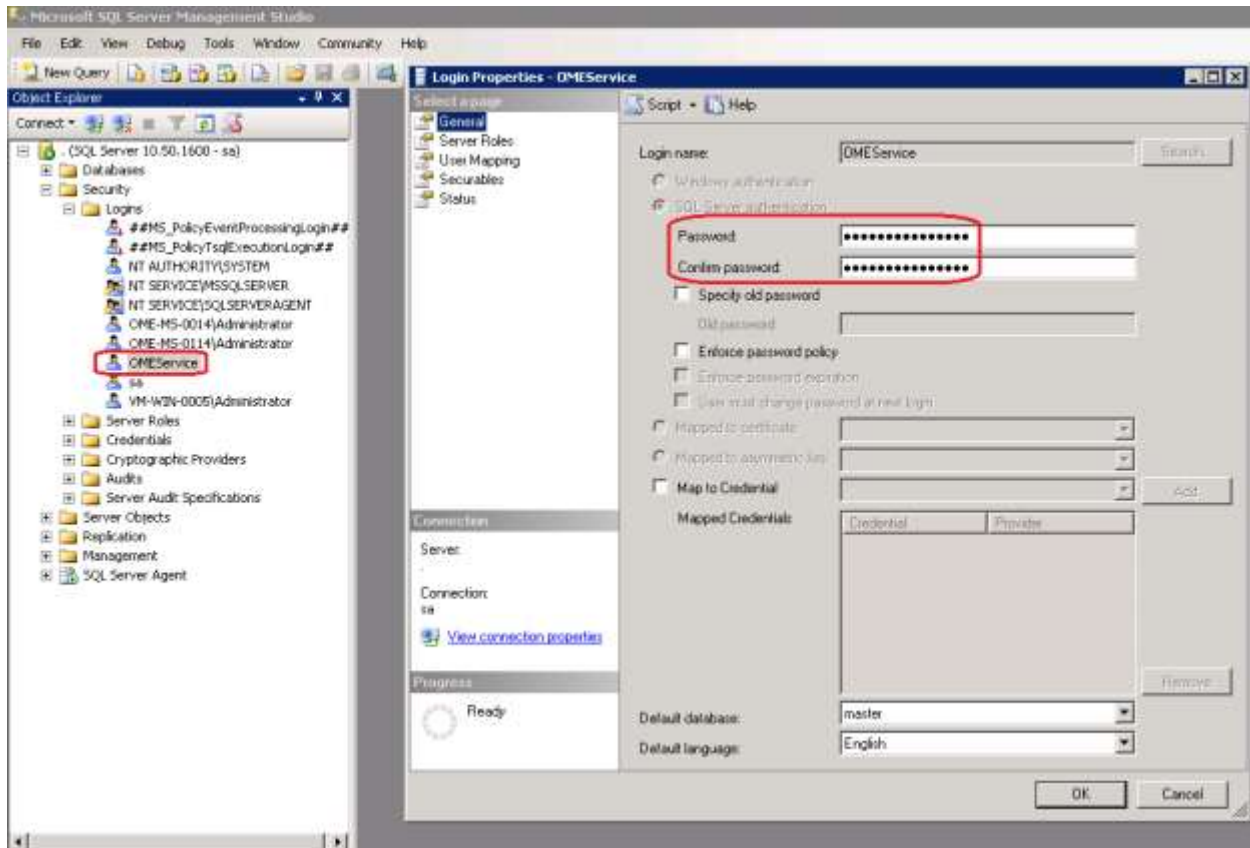
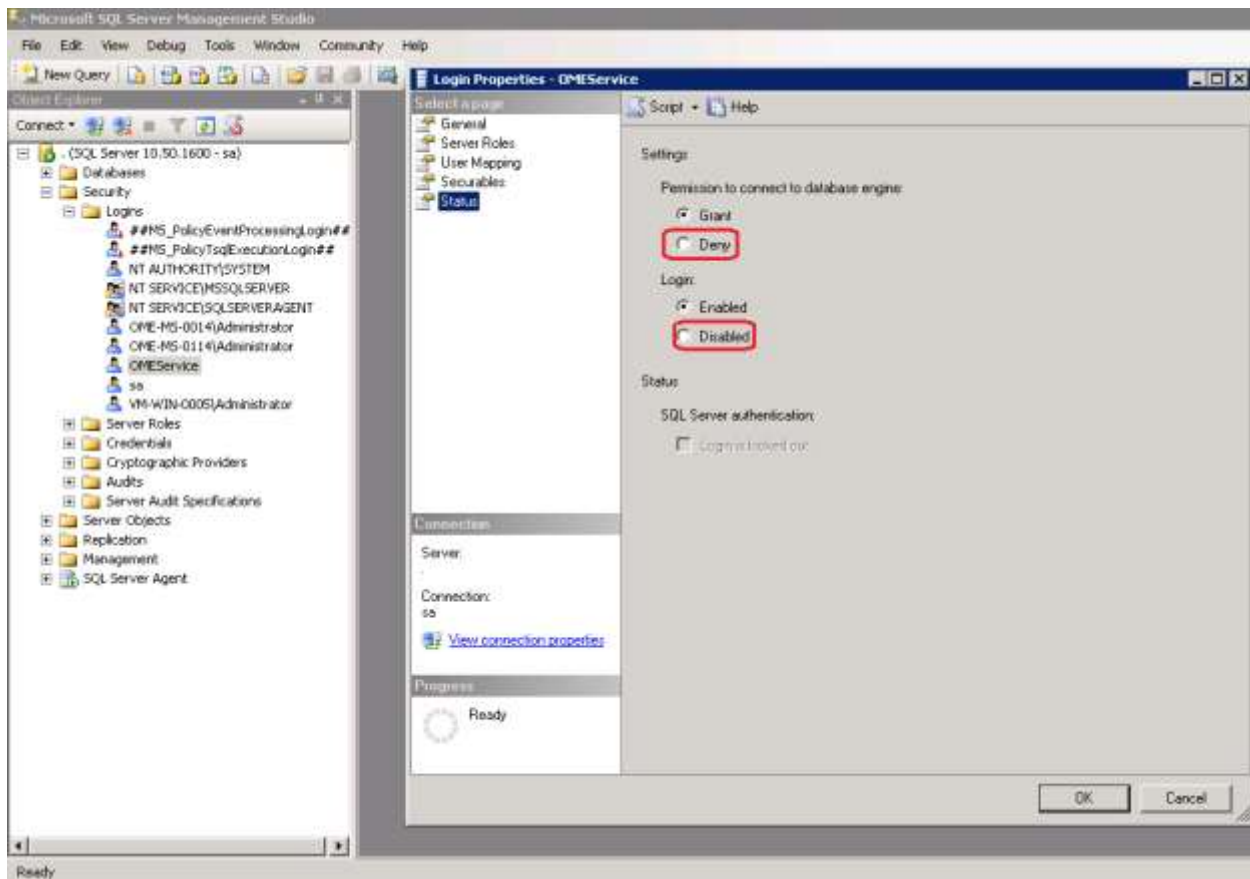


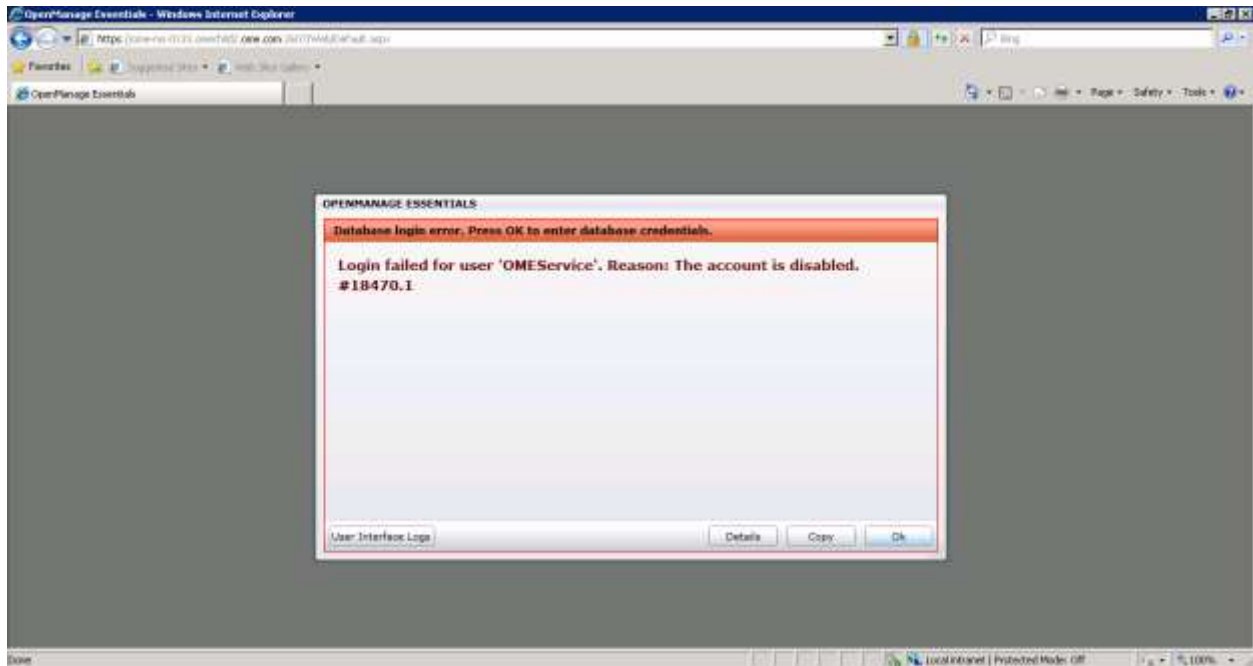
Figure 9. Changing the Status of OpenManage Essentials Database



- iv. Click **“OK”**.
5. Shut down the first OpenManage Essentials instance. Keep it off till the second OpenManage Essentials instance is up and running.
6. Once the connection between database and OpenManage Essentials is lost in the second OpenManage Essentials (i.e. OMEssentials2), a pop up is shown on the OpenManage Essentials screen which helps in database retargeting as shown in Figure 10. Click **“OK”**.

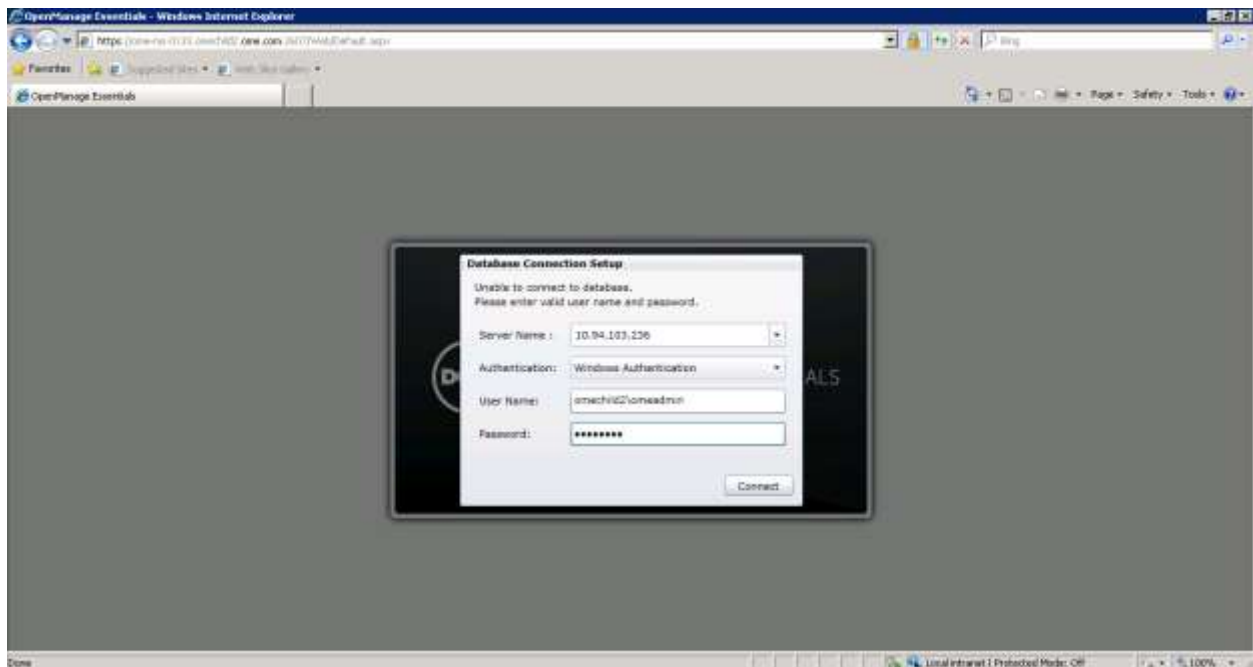
Setting Up Multiple OpenManage Essentials Instances on the Same SQL Server Database Instance

Figure 10. Connection is Lost Between OpenManage Essentials and the Database



7. Provide the IP or hostname of the centralized SQL database and the credentials as show in Figure 11. Click "**Connect**".

Figure 11. Database Retargeting to the Centralized SQL Database

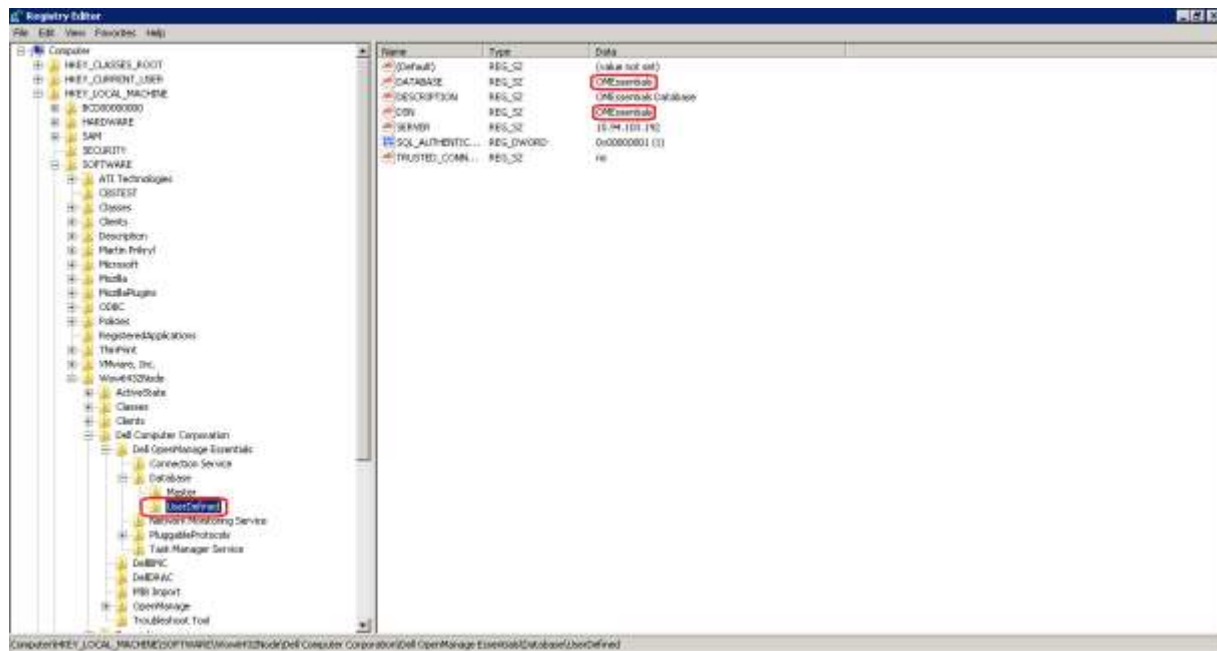


8. Once the retargeting is complete, the second OpenManage Essentials instance will start using the database of the first OpenManage Essentials instance. Launch the registry editor in the

Downloaded from <http://ajph.org/> on November 10, 2015

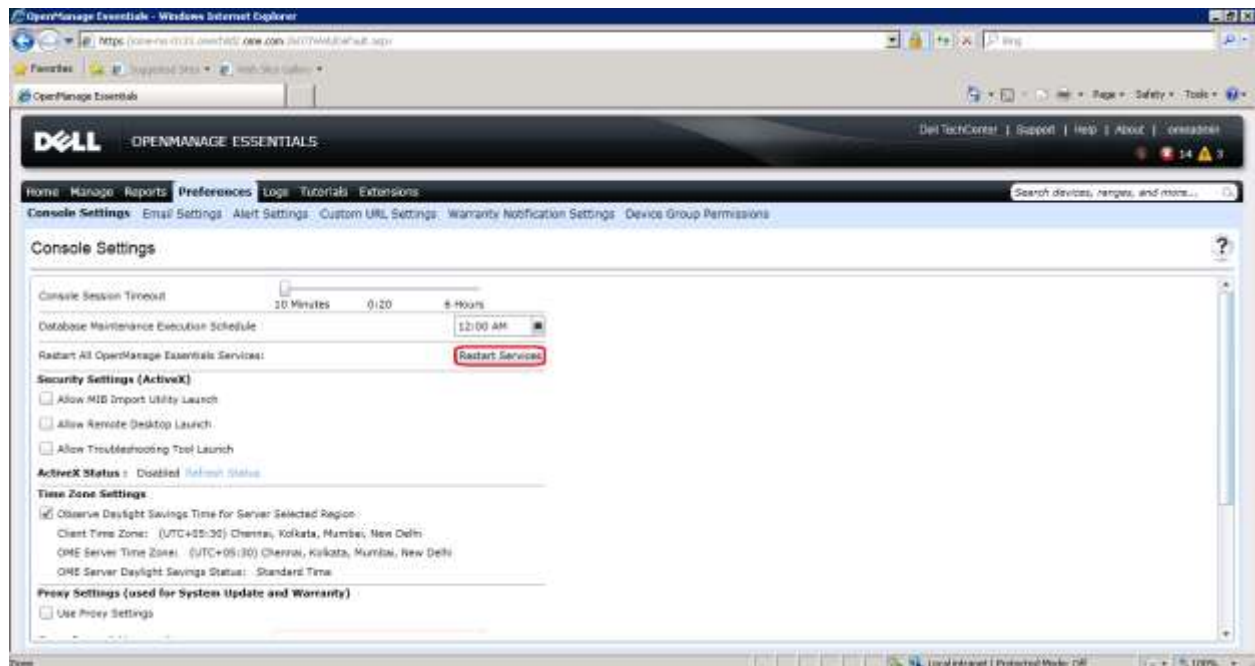
Setting Up Multiple OpenManage Essentials Instances on the Same SQL Server Database Instance

Figure 13. Changing the Registry Value Under UserDefined



10. Restart OpenManage Essentials services from the Preferences page as shown in Figure 14. This is for setting up the odbc connection with the new database.

Figure 14. Restarting OpenManage Essentials Services From the Preferences page



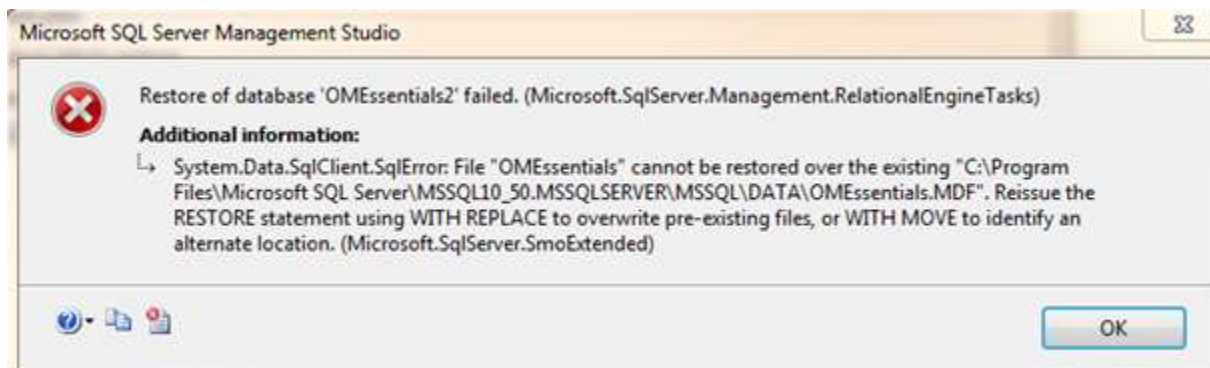
11. Reset IIS from the command prompt using the `iisreset` command.
12. The second OpenManage Essentials instance should now be pointing to its original database which was restored.

13. Start the first OpenManage Essentials instance, which should be pointing to its own database.

Common Problem During Back-Up/Restore Process

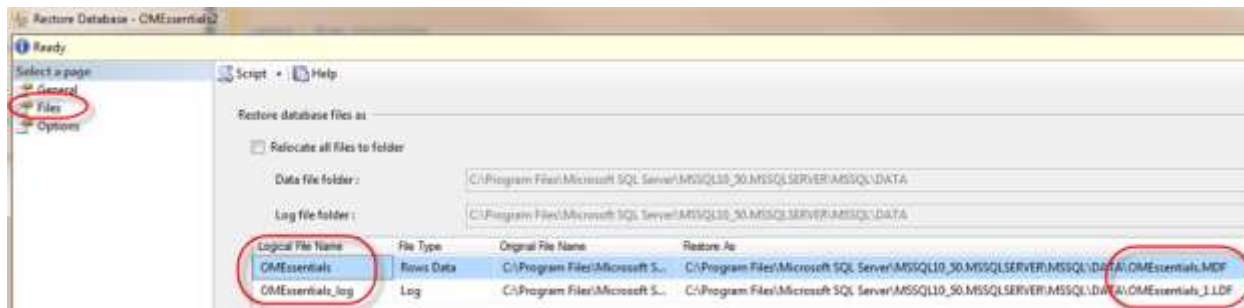
During the back up and restore process, there is a possibility of landing up on this common problem where SQL throws an error as shown in Figure 15.

Figure 15. Microsoft SQL error which might occur during back-up and restore process



Microsoft SQL server by default takes OMEssentials.mdf and OMEssentials_1.ldf files during the restore operation. The path of the files needs to be changed to point to the backed up database. To fix this problem, go back to the restore operation performed as indicated in Figure 16 and edit the files to point to a new name and the new backed up database.

Figure 16. Changing the details for restore to point to correct database back-up



Conclusion

OpenManage Essentials version 1.2 provides this feature of using the same SQL Server database instance with multiple databases for multiple OpenManage Essentials installations. Using this feature, the same SQL server can be used to manage more than 2000 devices and it helps in managing devices which are located in a different subnets or different geographical location.