MOC 10999 A: SQL Server on Linux

Course Summary

Description
This two-day instructor led training course is aimed at database professionals looking to implement SQL Server on Linux.

Objectives
By the end of this course, students will be able to:
- Describe key capabilities and components of SQL Server on Linux
- Describe how to deploy SQL Server on Linux
- Describe how to install the additional optional components to SQL Server
- Describe how to configure SQL Server on Linux
- Describe how to connect and manage SQL server images on Linux
- Describe how to migrate databases from other database systems to SQL Server on Linux and provide disaster recovery
- Describe the high availability features of SQL Server on Linux

Topics
- Introduction to SQL Server on Linux
- Deploying SQL Server on Linux
- Installing additional components
- Configuring SQL Server on Linux
- Managing Database Solutions for SQL Server for Linux
- Migrating Databases to SQL Server on Linux and Disaster Recovery
- High Availability

Audience
The primary audience for this course is existing database professionals with experience of database systems running on Linux. The secondary audience is Linux professionals who are interested in adding database capabilities.

Prerequisite
In addition to their professional experience, students who attend this training should already have the following technical knowledge:
- Familiarity with the SUSE, Red Hat, or Ubuntu operating system and networking.
- Familiarity with the SQL language.

Duration
Two Days
Course Outline

I. Introduction to SQL Server on Linux
   Describe key capabilities and components of SQL Server on Linux.
   A. Why is SQL Server on Linux?
   B. SQL Server on Linux capabilities
   C. Containers
   D. Linux SQL Server VM in Azure

II. Deploying SQL Server on Linux
    This module examines deploying SQL Server to a number of common Linux instances.
    A. Deploying SQL Server on Ubuntu
    B. Deploying SQL Server on SUSE
    C. Deploying SQL Server on Red Hat
    D. Deploying SQL Server containers on Docker
    Lab: Deploying SQL Server on Linux
        - Installing SQL Server
        - Installing command line tools
        - Creating a database
        - Create a SQL Server 2017 Docker container

III. Installing additional components
     When you install the SQL Server on Linux with the mssql-server package, only the core database engine is installed. Additional components, such as SQL Server Agent, Full-Text Search and SQL Server Integration Services must be installed from separate packages. This module covers the installation process for these additional components.
     A. SQL Server agent
     B. SQL Server full-text search
     C. SQL Server integration services
     Lab: Installing additional components
         - SQL Server agent
         - SQL Server full-text search
         - SQL Server integration services

IV. Configuring SQL Server on Linux
    Once a Microsoft SQL Server on Linux instance is installed, you must configure it. Since SQL Server on Linux does not include a Linux-native GUI tool for configuring SQL Server settings, you must use command-line tools and options to configure aspects of the SQL Server behavior. This module covers configuring SQL Server on Linux and SQL Server on Linux Docker containers.
    A. Configuring SQL Server with mssql-conf
    B. Configure a SQL Server on Linux Docker image

V. Managing Database Solutions for SQL Server for Linux
    Once you have installed and configured Microsoft SQL Server on Linux, you need to know how to connect to your SQL Server on Linux instance, both to manage SQL Server and to connect your applications to SQL Server. In this module, you will learn about several ways that developers and administrators can connect to SQL Server instances running on Linux.
    A. Connecting to SQL Server on Linux
    B. Managing SQL Server on Linux
    Lab: Managing SQL Server on Linux
        - Connect to SQL Server on Linux
        - Manage SQL Server on Linux

VI. Migrating Databases to SQL Server on Linux and Disaster Recovery
    Once you are familiar with the basic operation of Microsoft SQL Server on Linux, you are likely to need to import data. The data you import might take the form of whole databases that you are migrating to SQL Server on Linux from SQL Server on Windows, or from another RDBMS. You might also need to import data to or export data from individual tables or groups of tables in
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Course Outline (cont.)

Your databases. This module introduces various techniques for moving data and databases to and from SQL Server on Linux. Backup and restore Database export and import
A. SQL Server migration assistant
B. Bulk copy program
C. SQL Server integration services

Lab: Migrating databases
- Migrate a database with backup and restore
- Migrate a database with SQL Server migration assistant

VII. High Availability
SQL Server on Linux can power mission-critical database systems with high-availability technologies at several different granularities. Log shipping provides high availability for single databases. Failover clustering provides automatic failover and redundancy for SQL Server instances. Availability groups provide high availability, disaster recovery, and read load balancing for groups of databases. This module covers configuring these technologies for SQL Server on Linux.
A. Log shipping
B. Failover clustering
C. Availability groups

Lab: High availability
- Configure log shipping
- Create a read-scale availability group