



Administering a SQL Database Infrastructure



Practice Labs™

Administering a SQL Database Infrastructure



Lab Outline

The 70-764 Practice Lab will provide you with the necessary platform to gain hands on skills Microsoft SQL Server 2016.

By completing the lab tasks, you will improve your practical skills in configuring access to data and auditing, managing backups and restoring a database, managing and monitoring SQL Server instances, managing high availability and disaster recovery.

These same tasks will help you understand the objectives and competencies required by the Microsoft 70-764 Administering a SQL Database Infrastructure exam.

Outcomes

After completing this Practice Lab, students will be able to:

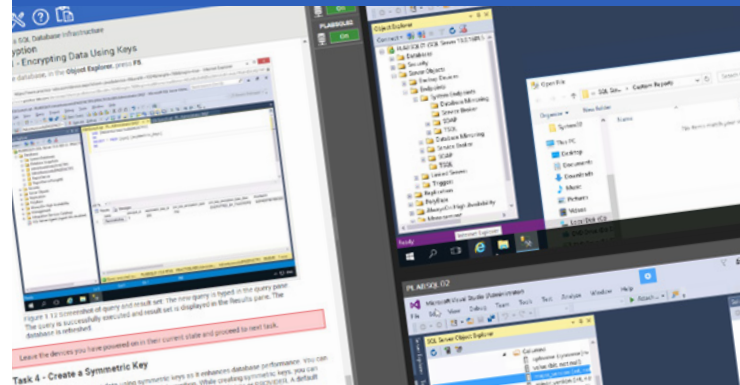
- Protect data with encryption
- Authenticate and authorize users to access resources
- Backup and restore SQL Server databases
- Automate database management
- Configure security for the SQL Server agent
- Manage alerts and notifications
- Manage SQL Server using PowerShell
- Trace access to SQL Server
- Monitor and troubleshoot SQL Server infrastructure
- Import and export data

Course Code
70-764

Skill Level
Advanced

Released
June 2017

Duration
22 hours



Prerequisites

No prior hands-on experience is required to use or complete this Practice Lab. However, it would be beneficial to be familiar with the following concepts:

- Microsoft Windows operating systems
- Transact-SQL
- Relational database knowledge

Who is it For?

The 70-764 certificate is aimed at IT professionals seeing to advance their experience in SQL Server 2016 or developers looking to improve their hands-on skills in implementing a database.

Additional Info

This Practice Lab focuses on the practical aspects of the 70-764 exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives.

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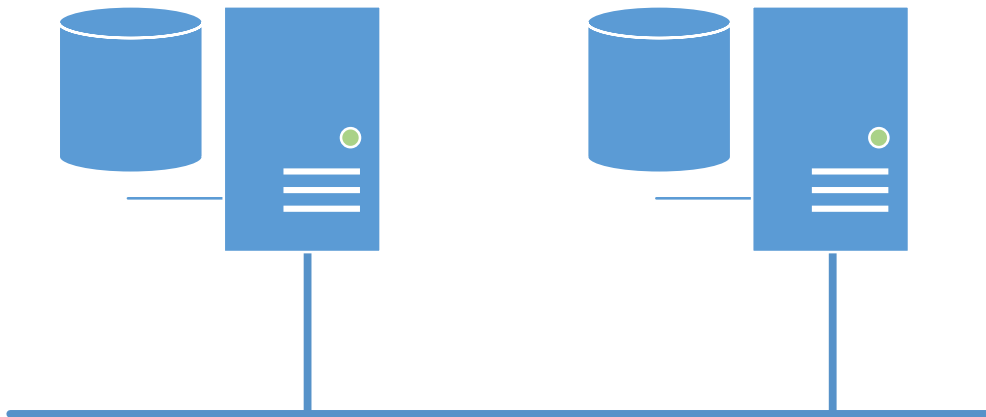


Lab Topologies

You will also have access to the following topologies:

PLABSQLO1
(SQL Server 1)
192.168.0.1 /24

PLABSQLO2
(SQL Server 2)
192.168.0.2 /24



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Modules and Exercises

Data Encryption

- Introduction
- Exercise 1 - Encrypting Data Using Keys
- Exercise 2 - Managing Column-Level Encryption
- Exercise 3 - Managing Encryption and Decryption of Files Using Transparent Data Encryption
- Summary

Backup and Connection Encryption

- Introduction
- Exercise 1 - Configuring Secure Sockets Layer (SSL) to Encrypt Data
- Exercise 2 - Working with Encrypted Backup Files
- Summary

Manage Database Object Permissions

- Introduction
- Exercise 1 - Managing SQL Server Logins, Database Users, and Roles
- Exercise 2 - Working with Database Permissions
- Summary

Configuring Security Options

- Introduction
- Exercise 1 - Working with Row-Level Security
- Exercise 2 - Securing Sensitive Data
- Summary

Configuring Audits for SQL Server

- Introduction
- Exercise 1 - Managing Server-Level Audit
- Exercise 2 - Managing Database-Level Audit
- Exercise 3 - Working with SQL Server Audit Log
- Summary

Backing Up Databases

- Introduction
- Exercise 1 - Working with Jobs
- Exercise 2 - Managing Schedules
- Exercise 3 - Working with Transaction Logs
- Summary

Piecemeal Restore of Database and File Groups

- Introduction
- Exercise 1 - Working with Piecemeal Restore of Database
- Exercise 2 - Working with Piecemeal Restore of File Groups
- Summary

Working with Restore Options

- Introduction
- Exercise 1 - Managing Point-in-Time Recovery
- Exercise 2 - Working with Page Restore
- Exercise 3 - Automating SQL Server Restores
- Summary

Maintaining Database Integrity

- Introduction
- Exercise 2 - Working with Suspect Pages Table
- Exercise 3 - Restoring a Database
- Summary

Monitoring the Database Activity

- Introduction
- Exercise 1 - Managing Activity Monitor
- Exercise 2 - Working with Performance Monitor
- Summary

Configuring Data Collection and UCP

- Introduction
- Exercise 1 - Configuring the Management Data Warehouse
- Exercise 2 - Managing System Data Collection Sets
- Exercise 3 - Working with Utility Control Point
- Summary

Managing a Query Store

- Introduction
- Exercise 1 - Working with Query Store
- Summary

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Using Trace and Extended Events

- Introduction
- Exercise 1 - Working with SQL Server Profiler
- Exercise 2 - Monitoring System Activity Using Extended Events
- Summary

Managing Indexes

- Introduction**
- Exercise 1 - Handling Indexes**
- Exercise 2 - Working with Types of Indexes**
- Summary**

Managing Statistics

- Introduction
- Exercise 1 - Working with Statistics
- Summary

Managing Operators

- Introduction
- Exercise 1 - Working with Alerts and Operators
- Summary

Monitoring SQL Server

- Introduction
- Exercise 1 - Working with Policies
- Exercise 2 - Configuring Database Mail
- Exercise 3 - Using Database Mail
- Summary

Configuring Log Shipping

- Introduction
- Exercise 1 - Setting up Log Shipping using SQL Server Management Studio
- Exercise 2 - Setting up Log Shipping using Transact-SQL
- Summary