SQL Server 2012: Installation and Configuration

Module 1: Introduction

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Introduction

- **Proper installation and configuration is very important!**
  - Affects security, performance, scalability, and maintainability
- **SQL Server 2012 Editions**
  - Different editions and licensing compared to previous versions
- **Installing SQL Server 2012 is more complex than it seems**
  - Default choices and configurations are often not the best choice
- **Both the OS and SQL Server need to be configured correctly**
  - Operating system level configuration and settings
  - SQL Server instance-level settings
- **Both the OS and SQL Server need to be maintained properly**
  - Both have Service Packs and individual hotfixes
  - SQL Server 2012 also has Cumulative Updates

Main SQL Server 2012 Editions

- **SQL Server 2012 Enterprise Edition**
  - Top of the line edition, only uses core-based licensing
  - Many valuable features are only in Enterprise Edition
  - OS limit for memory and logical processors for any use
    - Windows Server 2012: 4TB RAM, 640 logical processors
    - Windows Server 2008 R2: 2TB RAM, 256 logical processors
- **SQL Server 2012 Business Intelligence Edition**
  - New edition for 2012, uses Server plus CAL licensing
  - OS limit for memory and logical processors for SSAS and SSRS
  - 64GB limit for memory for Database Engine
- **SQL Server 2012 Standard Edition**
  - Most affordable edition, lacks many valuable features
  - You can choose Server plus CAL or core-based licensing
  - 64GB limit for memory for Database Engine
  - 64GB limit for memory for SSAS, and for SSRS
  - Four-socket or 16 logical core limit

Additional SQL Server 2012 Editions

- **SQL Server 2012 Developer Edition**
  - All features of Enterprise Edition, licensed for development and test usage
  - Best choice for developer and DBA workstations
  - Very inexpensive (less than $50.00)
  - Free for high school and college students from Microsoft Dreamspark
- **SQL Server 2012 Express Edition**
  - Free edition
  - Lesser of 1 socket or four core CPU limit, 1GB RAM limit
  - 10GB database size limit
- **SQL Server 2012 Web Edition**
  - Targeted at web hosting
  - 64GB limit for memory for Database Engine
  - 64GB limit for memory for SSAS

Licensing Changes for SQL Server 2012

- **SQL Server 2012 Enterprise Edition**
  - Core-based
    - $6874.00 per core (four-core minimum per socket)
- **SQL Server 2012 Business Intelligence Edition**
  - Server license plus CALs
    - $8592.00 per server, plus CALs
- **SQL Server 2012 Standard Edition (you can pick method)**
  - Core-based
    - $1793.00 per core (four-core minimum per socket)
  - Server license plus CALs
    - $898.00 per server, plus CALs
- **Client Access License (CAL)**
  - $209.00 per CAL

Why Install SQL Server 2012 Properly?

- **A proper installation will prevent many future problems**
  - Appropriate service accounts
  - Default locations for database files
- **Only install the components you actually need**
  - Reduces resource usage
  - Reduces the attack surface
  - Reduces the amount and length of patching
- **Use the correct type of service accounts**
  - Provides a more secure and reliable environment

Why Configure SQL Server 2012 Properly?

- **Many default configuration settings are incorrect**
  - Operating system configuration settings
  - Instance-level configuration settings
  - Database-level configuration settings
- **Changing to "best-practices" values has many benefits**
  - Increased performance and scalability
  - Increased reliability
  - Decreased restore and recovery time

Why Maintain SQL Server 2012 Properly?

- **Proactive, preventative maintenance has many benefits**
  - Reduces occurrence of known issues
  - Forces you to exercise your testing and planning efforts
  - Forces you to exercise your HA infrastructure
- **Give you a better supportability experience with vendors**
  - Hardware vendor
  - Storage vendor
  - Microsoft
    - Operating system
    - SQL Server

Summary

- **Proper installation and configuration is very important!**
  - Prevents many future problems
  - Provides better performance, scalability and security
  - Makes the instance easier to maintain
- **SQL Server 2012 uses a new licensing model**
  - Core-based licensing requires you to rethink hardware choices
    - High core-count processors can be very expensive for licensing
  - SQL Server 2012 Business Intelligence edition is new
    - Can save a lot of money for dedicated SSAS instances
- **OS and SQL Server maintenance is very important!**
  - Helps you avoid known problems
  - Keeps you in a supported configuration

Course Structure

- **Module 1: Introduction**
- **Module 2: Pre-installation Tasks for the Operating System**
- **Module 3: Pre-installation Tasks for SQL Server 2012**
- **Module 4: Properly Installing SQL Server 2012**
- **Module 5: Post-installation Tasks for SQL Server 2012**
- **Module 6: Automating Common Maintenance Tasks**