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70-462:

Administering Microsoft SQL Server 2012 Databases

The following tables show where changes to Exam 70-462 have been made to include updates that relate to database development and management-related tasks. These changes are effective as of February 18, 2016.

1. **Install and configure (increased: 20-25%)**

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| **Tasks currently measured** | **Tasks to be added/removed/changed in February 2016** |
| **Plan installation**  Evaluate installation requirements; design the installation of SQL Server and its components (drives, service accounts, etc.); plan scale-up vs. scale-out basics; plan for capacity, including if/when to shrink, grow, autogrow, and monitor growth; manage the technologies that influence SQL architecture (for example, service broker, full text, scale out); design the storage for new databases (drives, filegroups, partitioning); design database infrastructure; configure a SQL Server standby database for reporting purposes; Windows-level security and service level security; Core mode installation; benchmark a server before using it in a production environment (SQLIO, Tests on SQL Instance); choose the right hardware | No change |
| **Install SQL Server and related services**  Test connectivity; enable and disable features; install SQL Server database engine and SSIS (not SSRS and SSAS); configure an OS disk | No change |
| **Implement a migration strategy**  Restore vs detach/attach; migrate security; migrate from a previous version; migrate to new hardware; migrate systems and data from other sources | No change |
| **Configure additional SQL Server components**  Set up and configure all SQL Server components (Engine, AS, RS and SharePoint integration) in a complex and highly secure environment; configure full-text indexing; SSIS security; filestream; filetable | No change |
| **Manage SQL Server Agent**  Create, maintain, and monitor jobs; administer jobs and alerts; automate (setup, maintenance, monitoring) across multiple databases and multiple instances; send to "Manage SQL Server Agent jobs" | No change |

1. **Maintain instances and databases (no change: 15-20%)**

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| **Tasks Currently Measured** | **Tasks to be added/removed/changed in February 2016** |
| **Manage and configure databases**  Design multiple file groups; database configuration and standardization: autoclose, autoshrink, recovery models; manage file space, including adding new filegroups and moving objects from one filegroup to another; implement and configure contained databases; data compression; configure TDE; partitioning; manage log file growth; DBCC | No change |
| **Configure SQL Server instances**  Configure and standardize a database: autoclose, autoshrink, recovery models; install default and named instances; configure SQL to use only certain CPUs (affinity masks, etc.); configure server level settings; configure many databases/instance, many instances/server, virtualization; configure clustered instances including MSDTC; memory allocation; database mail; configure SQL Server engine: memory, filffactor, sp\_configure, default options | No change |
| **Implement a SQL Server clustered instance**  Install a cluster; manage multiple instances on a cluster; set up subnet clustering; recover from a failed cluster node | No change |
| **Manage SQL Server instances**  Install an instance; manage interaction of instances; SQL patch management; install additional instances; manage resource utilization by using Resource Governor; cycle error logs | No change |

1. **Optimize and troubleshoot (increased: 15-20%)**

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| **Tasks Currently Measured** | **Tasks to be added/removed/changed in February 2016** |
| **Identify and resolve concurrency problems** Examine deadlocking issues using the SQL server logs using trace flags; design reporting database infrastructure (replicated databases); monitor via DMV or other MS product; diagnose blocking, live locking and deadlocking; diagnose waits; performance detection with built in DMVs; know what affects performance; locate and if necessary kill processes that are blocking or claiming all resources | No change |
| **Collect and analyze troubleshooting data**  Monitor using Profiler; collect performance data by using System Monitor; collect trace data by using SQL Server Profiler; identify transactional replication problems; identify and troubleshoot data access problems; gather performance metrics; identify potential problems before they cause service interruptions; identify performance problems;, use XEvents and DMVs; create alerts on critical server condition; monitor data and server access by creating audit and other controls; identify IO vs. memory vs. CPU bottlenecks; use the Data Collector tool | No change |
| **Audit SQL Server instances**  Implement a security strategy for auditing and controlling the instance; configure an audit; configure server audits; track who modified an object; monitor elevated privileges as well as unsolicited attempts to connect; policy-based management | No change |

1. **Manage data (increased: 20-25%)**

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| **Tasks Currently Measured** | **Tasks to be added/removed/changed in February 2016** |
| **Configure and maintain a back-up strategy**  Manage different backup models, including point-in-time recovery; protect customer data even if backup media is lost; perform backup/restore based on proper strategies including backup redundancy; recover from a corrupted drive; manage a multi-TB database; implement and test a database implementation and a backup strategy (multiple files for user database and tempdb, spreading database files, backup/restore); back up a SQL Server environment; back up system databases | No change |
| **Restore databases**  Restore a database secured with TDE; recover data from a damaged DB (several errors in DBCC checkdb); restore to a point in time; file group restore; page level restore | No change |
| **Implement and maintain indexes**  Inspect physical characteristics of indexes and perform index maintenance; identify fragmented indexes; identify unused indexes; implement indexes; defrag/rebuild indexes; set up a maintenance strategy for indexes and statistics; optimize indexes (full, filter index); statistics (full, filter) force or fix queue; when to rebuild vs. reorg and index; full text indexes; column store indexes | No change |
| **Import and export data**  Transfer data; bulk copy; bulk insert | No change |

1. **Implement security (no change: 15-20%)**

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| **Tasks Currently Measured** | **Tasks to be added/removed/changed in February 2016** |
| **Manage logins and server roles**  Configure server security; secure the SQL Server using Windows Account / SQL Server accounts, server roles; create log in accounts; manage access to the server, SQL Server instance, and databases; create and maintain user-defined server roles; manage certificate logins | No change |
| **Manage database permissions**  Configure database security; database level, permissions; protect objects from being modified | Revised task:  **Manage database security**  Additional subtasks:  auditing; encryption |
| **Manage users and database roles**  Create access to server / database with least privilege; manage security roles for users and administrators; create database user accounts; contained logins | Revised subtask:  contained login |
| **Troubleshoot security**  Manage certificates and keys; endpoints | No change |

1. **Implement high availability (decreased: 5-10%)**

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| **Tasks Currently Measured** | **Tasks to be added/removed/changed in February 2016** |
| **Implement AlwaysOn**  Implement a mirroring solution using AlwaysOn; failover | Revised subtasks:  implement AlwaysOn availability groups; implement AlwaysOn failover clustering |
| **Implement database mirroring**  Set up mirroring; monitor the performance of database mirroring | Removed task |
| **Implement replication**  Troubleshoot replication problems; identify appropriate replication strategy | No change |