70-467:
Designing Business Intelligence Solutions with Microsoft SQL Server

The following tables show where changes to exam 70-467 have been made to include updates that relate to SQL Server 2014 tasks. These changes are effective as of April 24, 2014.

1. Plan business intelligence (BI) infrastructure (15-20%)

Tasks currently measured	Tasks Added/Changed post *April 2014*
Plan for performance Optimize batch procedures: extract, transform, load (ETL) in SQL Server Integration Services (SSIS)/SQL and processing phase in Analysis Services; configure Proactive Caching within SQL Server Analysis Services (SSAS) for different scenarios; understand performance consequences of Unified Dimension Model (UDM) and Data Warehouse (DWH) design; analyze and optimize performances of Multidimensional Expression (MDX) and Data Analysis Expression (DAX) queries; optimize queries for huge data sets; understand the difference between partitioning for load performance versus query performance in SSAS; appropriately index a fact table; optimize Analysis Services cubes in UDM; create aggregations using Usage Based Optimizations	**Removed sub-task:** • understand performance consequences of Unified Dimension Model (UDM) and Data Warehouse (DWH) design • optimize queries for huge data sets **Revised sub-task:** • optimize Analysis Services cubes in SQL Server Data Tools • create aggregations **Added sub-task:** • understand performance consequences of named queries in a data source view
Plan for scalability Multidimensional OLAP (MOLAP); Relational OLAP (ROLAP); Hybrid OLAP (HOLAP)	**Added sub-task:** • change binding options for partitions
Plan and manage upgrades Plan change management for a BI solution	No changes
Maintain server health Design an automation strategy	No changes

2. Design BI infrastructure (15-20%)

Tasks Currently Measured	Tasks Added/Changed post *April 2014*
Design a security strategy Configure security and impersonation between database, analysis services and frontend; implement Dynamic Dimension Security within a cube; configure security for an extranet environment; configure Kerberos security; skills in authentication mechanisms, ability to build secure solutions end to end; design security roles for calculated measures; understand the tradeoffs between regular SSAS security and dynamic security; plan and implement security requirements of a BI solution	**Removed sub-task:** • plan and implement security requirements of a BI solution
Design a SQL partitioning strategy Choose the proper partitioning strategy for the data warehouse and cube; implement a parallel load to fact tables by using partition switching; use data compression in fact tables	**Revised sub-task:** • design optimal data compression
Design a backup strategy Design a High Availability (HA) and Disaster Recovery (DR) strategy; proactively prevent issues	**Revised task to: Design a High Availability and Disaster Recovery strategy – new full definition:** • Design a recovery strategy; back up and restore SSAS databases; back up and restore SSRS databases; move and restore the SSIS Catalog; design an AlwaysON solution
Design a logging and auditing strategy Design a new SSIS logging infrastructure (for example, information available through the catalog views); validate data is balancing and reconciling correctly	No changes

3. Design a reporting solution (20-25%)

Tasks Currently Measured	Tasks Added/Changed post *April 2014*
Design a Reporting Services dataset Data query parameters; creating appropriate SQL queries for an application (MDX queries); managing data rights and security; extracting data from analysis services; balancing query-based processing versus filter-based processing; managing data sets through the use of stored procedures	**Removed sub-task:** • creating appropriate SQL queries for an application (MDX queries) **Added sub-task:** • create appropriate DAX queries for an application **Revised sub-task:** • extract data from analysis services by using MDX queries
Manage Excel Services/reporting for SharePoint Configure data refresh schedules for PowerPivot published to SharePoint; publish BI info to SharePoint; use SharePoint to accomplish BI administrative tasks	**Added sub-tasks:** • install and configure Power View • publish PowerPivot and Power View to SharePoint
Design a data acquisition strategy Identify the data sources that need to be used to pull in the data; determine the changes (incremental data) in the data source (time window); identify the relationship and dependencies between the data sources; determine who can access which data; what data can be retained for how long (regulatory compliance, data archiving, aging); design a data movement strategy; profile source data	**Added sub-task:** • customize data acquisition using DAX with reporting services data sources
Plan and manage reporting services configuration Native mode	**Revised sub-task:** • Choose the appropriate reporting services requirements (including native mode and SharePoint mode)
Design BI reporting solution architecture Linked reports, drill-down reports, drill-through reports, migration strategies, access report services API, sub reports, code-behind strategies; identify when to use Reporting Services, Report Builder, or Crescent; design/implement context transfer when interlinking all types of reports (RS, RB, Crescent, Excel, PowerPivot); implement BI tools for reporting in SharePoint (Excel Services versus Performance Point versus Reporting Services); select a subscription strategy	**Revised sub-tasks:** • Identify when to use Reporting Services, Report Builder, or Power View • Design/implement context transfer when interlinking all types of reports (RS, RB, Power View, Excel) • Implement BI tools for reporting in SharePoint (Excel Services versus Power View versus Reporting Services) **Added sub-tasks:** • enable Data Alerts • design map visualization

4. Design BI data models (30-35%)

Tasks Currently Measured	Tasks Added/Changed post *April 2014*
Design the data warehouse Design a data model that is optimized for reporting; design and build a cube on top; design enterprise data warehouse (EDW) and OLAP cubes; choose between natural keys and surrogate keys when designing the data warehouse; use the facilities available in SQL Server to design, implement and maintain a data warehouse (partitioning, slowly changing dimensions (SCD), change data capture (CDC), Clustered Index Views, etc.); identify design best practices; implement a many to many relationship in an OLAP cube; design a data mart/warehouse in reverse from an Analysis Services cube (or empty Analysis Services cube that was created referring requirements); use rowstamp in the data warehouse; choose between performing aggregation operations in the SSIS pipeline or the relational engine; select surround architecture	**Removed sub-tasks:** • use rowstamp in the data warehouse • select surround architecture **Revised sub-tasks:** • Use SQL Server to design, implement, and maintain a data warehouse (including partitioning, slowly changing dimensions [SCD], change data capture [CDC], Index Views, and columnstore indexes) • Design a data mart/warehouse in reverse from an Analysis Services cube
Design a schema Multidimensional modeling starting from a star schema; relational modeling for a Data Mart; choose or create a topology	**Removed sub-task:** • Choose or create a topology **Revised sub-task:** • Multidimensional modeling starting from a star or snowflake schema
Design cube architecture Produce efficient aggregated cubes; partition cubes and build aggregation strategies for the separate partitions; design a data model; choose the proper partitioning strategy for the data warehouse and cube; design the data file layout for a data warehouse keeping maximum performance in mind; given a requirement, identify the aggregation method that should be selected for a measure in a MOLAP cube; design cube aggregations to maintain a balance between storage and performance; performance tune a MOLAP cube using aggregations; design a data source view; cube drill-through and write back actions	**Removed sub-tasks:** • Produce efficient aggregated cubes • design cube aggregations to maintain a balance between storage and performance **Revised sub-task:** • design the data file layout **Added sub-tasks:** • choose the correct grain of data to store in a measure group • design analysis services processing by using indexes, indexed views, and order by statements
Design fact tables Design a data warehouse that supports many to many dimensions with factless fact tables	No changes
Design BI semantic models	**Revised task – new full definition:**

Plan for a multidimensional cube; write a UDM model with many to many (this is related to MDX/BISM code, but it is a good example for exercises); choose between UDM and BISM depending on the type of data and workload	• Plan for a multidimensional cube; support a many-to-many relationship between tables; choose between multidimensional and tabular depending on the type of data and workload
Design and create MDX calculations MDX authoring; identify the structures of MDX and the common functions (tuples, sets, topcount, SCOPE etc.); identify which MDX statement would return the required result (single result and multiple MDX options provided to test taker); implement a custom MDX or logical solution for a pre-prepared case task	**Added sub-task:** • create calculated members in an MDX statement

5. Design an ETL solution (10-15%)

Tasks Currently Measured	Tasks Added/Changed post *April 2014*
Design SSIS package execution Using new project deployment model; passing values at execution time; share parameters between packages	**Added sub-tasks:** • plan for incremental loads vs. full loads • optimize execution by using Balanced Data Distributor (BDD) • choose optimal processing strategy (including Script transform, flat file incremental loads, and Derived Column transform)
Plan to deploy SSIS solutions Deploy the package to another server with different security requirements; secure integration services packages that are deployed at the file system; demonstrate awareness of SSIS packages/projects and how they interact with environments; decide between performing aggregation operations in the SSIS pipeline or the relational engine	**Revised sub-task:** • demonstrate awareness of SSIS packages/projects and how they interact with environments (including recoverability) **Added sub-tasks:** • plan to automate SSIS deployment • plan the administration of the SSIS Catalog database
Design package configurations for SSIS packages Avoid repeating configuration information entered in SSIS packages and use configuration files	No changes