

70-466:

Implementing Data Models and Reports with Microsoft SQL Server

The following tables show where changes to exam 70-466 have been made to include updates that relate to SQL Server 2014 tasks. These changes are effective as of April 24, 2014.

1. Retitled from: “Build an analysis services database” to: “Build an analysis service multidimensional model” (35-40%)

Tasks currently measured	Tasks Added/Changed post <i>April 2014</i>
Design dimensions and measures Given a requirement, identify the dimension/measure group relationship that should be selected; design patterns for representing business facts and dimensions (many-to-many relationships); design dimensions to support multiple related measure groups (many related fact tables); handle degenerate dimensions in a cube; identify the attributes for dimensions; identify the measures; aggregation behavior for the measures; hierarchies	Added sub-task: <ul style="list-style-type: none">Define granularity of dimension relationships
Implement and configure dimensions in a cube Translations; attribute relations; hierarchies; implement SQL Server Analysis Services (SSAS) dimensions and cubes; identify the Attribute Relationships that should be made for a given set of attributes in a dimension; develop new custom attributes on dimensions; detect possible design flaws in attribute relationships; create attribute relationships correctly in an analysis services dimension; implement time dimensions in cubes; manage SSAS parent-child dimensions; dimension type	Removed sub-task: <ul style="list-style-type: none">create attribute relationships correctly in an analysis services dimension
Design a schema to support cube architecture Multidimensional modeling starting from a star schema; relational modeling for a Data Mart;	Revised sub-tasks: <ul style="list-style-type: none">Multidimensional modeling starting from a star schemaRelational modeling for a data source view

<p>choose or create a topology; identify the appropriate data types with correct precision and size</p>	
<p>Create measures Logically group measures; select appropriate aggregation functions; format measures</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> Logically group measures and configure Measure Group Properties <p>Added sub-task:</p> <ul style="list-style-type: none"> design the measure group for the correct granularity
<p>Implement a cube Use Business Intelligence Development Studio (BIDS) to build the cube; use BIDS to do non additive or semi additive measures in a cube; measures, perspectives; translations; dimension usage; cube specific dimension properties; measure groups; implement reference dimensions; implement many to many relationships; implement fact relationships; implement role-playing relationships; define granularity; create and manage linked measure groups and linked dimensions; actions</p>	<p>Revised sub-tasks:</p> <ul style="list-style-type: none"> Use SQL Server Data Tools - Business Intelligence (SSDT-BI) to build the cube; Use SSDT-BI to do non-additive or semi-additive measures in a cube <hr/> <p>Removed sub-task:</p> <ul style="list-style-type: none"> Define granularity
<p>Create Multidimensional Expressions (MDX) queries 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; implement a custom MDX or logical solution for a pre-prepared case task; graphical query designer or the generic query designer</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> Graphical query designer or the generic query designer
<p>Implement custom logic in a data model Must include: Data Analysis Expressions (DAX) calculated columns and measures; key performance indicators (KPI); calculated members; use MDX functions to calculate members; relative Measures (growth, YoY, same period last year), % of total using MDX; named sets; adding intelligence to dimensions; Analysis Services stored procedures</p>	<p>Revised task – new full definition:</p> <ul style="list-style-type: none"> This objective may include but is not limited to: define key performance indicators (KPI); define calculated members; create relative measures (growth, YoY, same period last year), percentage of total using MDX; named sets; add Time Intelligence; implement ranking and percentile; define MDX script to import partial PowerPivot model
<p>Implement storage design in a multidimensional model Aggregations; partitions; storage modes; proactive caching; manage write-back partitions</p>	<p>Added sub-tasks:</p> <ul style="list-style-type: none"> implement linked cubes implement distributed cubes
<p>Select an appropriate model for data analysis UDM; scalability, cleansed; traditional hierarchical; high volume of data; advanced features (support for financial applications; many to many); organizational BI; Tabular Data Model:</p>	<p>Revised task – new full definition:</p> <ul style="list-style-type: none"> This objective may include but is not limited to: select Tabular vs. Multidimensional based on scalability needs, traditional hierarchical, data volume; select appropriate organizational BI such as

raw data; relational tables and relationships; simpler data structures; team and personal BI; choose between multidimensional and tabular models	corporate BI or PowerBI and team and personal BI needs and data status
--	--

2. Manage, maintain, and troubleshoot an SSAS database (18%)

Tasks Currently Measured	Tasks Added/Changed post <i>April 2014</i>
<p>Analyze data model performance Performance consequences of DWH design; optimize performance by changing the design of the cube or dimension; analyze and optimize performances of an MDX/DAX query; optimize queries for huge data sets; optimize MDX in the calculations; performance monitor counters; DMVs; performance counters (new for tabular model), growth of the cache, logging options</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> identify performance consequences of data source view design
<p>Process data models Processing tables or partitions for tabular models; processing databases, cubes, dimensions for multidimensional models; full processing versus incremental processing, remote processing; lazy aggregations; automate with Analysis Management Objects (AMO) or XML for Analysis (XMLA)</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> processing of tables or partitions for tabular and multidimensional models <p>Added sub-task:</p> <ul style="list-style-type: none"> process and manage partitions by using PowerShell
<p>Troubleshoot data analysis issues Use SQL Profiler; troubleshoot duplicate key dimension processing errors; error logs and event viewer logs of SSAS, mismatch of data: incorrect relationships or aggregations; dynamic security issues; validate logic and calculations</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> incorrect calculations from SOLVE ORDER
<p>Deploy SSAS databases Deployment Wizard; BIDS; SSMS; automation; test solution post deployment; deciding whether or not to process</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> automation <p>Added sub-task:</p> <ul style="list-style-type: none"> test different roles
<p>Install and maintain an SSAS instance Software installation of SSAS; development tools, development and production box installation considerations; upgrade; data file and program file location, planning for Administrator accounts; updates (service packs); install and maintain each instance type of Analysis Services, including PowerPivot; restore and import PowerPivot</p>	<p>Added sub-tasks:</p> <ul style="list-style-type: none"> define server and database level security support scale-out read-only back up and restore by using PowerShell

3. Build a tabular data model (15-20%)

Tasks Currently Measured	Tasks Added/Changed post <i>April 2014</i>
<p>Configure permissions and roles in Business Intelligence Semantic Model (BISM)</p> <p>Server roles; SSAS database roles; implement dynamic security (custom security approaches); role-based access; test security permissions; cell level permissions</p>	<p>No changes</p>
<p>Implement a tabular data model</p> <p>Define tables; import data; calculated columns; relationships; hierarchies and perspectives; manage visibility of columns and tables; optimize BISM for Crescent; mark a date table; sort a column by another column</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> • Embed links <p>Revised sub-task:</p> <ul style="list-style-type: none"> • optimize BISM for Power View
<p>Implement business logic in a tabular data model</p> <p>Measures and KPIs; DAX; relationship navigation; time intelligence; context modification</p>	<p>No changes</p>
<p>Implement data access for a tabular data model</p> <p>Manage partitions; processing; Vertipaq versus Direct Query</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> • Select xVelocity vs. DirectQuery for data access

4. Build a report with SQL Server Reporting Services (SSRS) (25-30%)

Tasks Currently Measured	Tasks Added/Changed post <i>April 2014</i>
<p>Design a report Selecting report components (crosstab report, Tablix, design chart, data visualization components), report templates (Report Definition Language), identify the data source and parameters; designing a grouping structure; drill-down reports, drill-through reports; determine if any expressions are required to display data that is not coming directly from the data source</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> Select report components (Matrix, Tablix, design chart, data visualization components)
<p>Implement a report layout Formatting; apply conditional formatting; page configuration; headers and footers; matrix; table; chart; image; list; indicators, maps, grouping; use Report Builder to implement a report layout; creating a range of reports using different data regions; custom fields (implementing different parts of the report); collections (global collections); using expressions; data visualization components; identifying report parts; group variables and report variables</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> Design for multiple delivery extension formats
<p>Configure authentication and authorization for a reporting solution Configure server-level and item-level role-based security; configure Windows authentication and custom authentication (forms-based authentication); configure reporting service security (setup or addition of role) ; authenticating against data source; storing credential information; describe Report Server security architecture and site level security; create system level roles; item level security; create a new role assignment; assign Windows users to roles; secure reports using roles; configure SharePoint groups and permissions</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> Configure Windows authentication and custom authentication (forms-based authentication) <p>Added sub-task:</p> <ul style="list-style-type: none"> Define varying content for different role memberships
<p>Implement interactivity in a report Drilldown; drillthrough; interactive sorting; parameters: (databound parameters; multi-value parameters); create dynamic reports in SSRS using parameters; show/hide property; actions (jump to report); filters; parameter list; fixed headers; document map, embedded HTML</p>	<p>No changes</p>
<p>Troubleshoot reporting services issues Querying the executionlog views in ReportServer database; viewing reportingservices log files;</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none"> Query the ReportServer database

<p>Windows Reliability and Performance monitor; using the ReportServer: service and web service objects; long running reports; rendering; connectivity issues, use SQL Profiler; data reconciliation: incorrect relationships or aggregations; dynamic security issues; validate logic and calculations</p>	
<p>Manage a report environment Manage subscriptions and subscription settings, manage data sources, integrating SharePoint Server 2010; email delivery settings; managing the number of snapshots; manage schedules, manage running jobs, manage report server logs; manage report server databases, manage the encryption keys, setting up the execution log reporting; reviewing the reports; site level settings; design report lifecycle; automate management of reporting services; create a report organization structure; install and configure reporting services</p>	<p>Added sub-tasks:</p> <ul style="list-style-type: none"> • define data driven subscriptions • deploy custom assemblies
<p>Configure report data sources and datasets Query types (stored procedure versus table versus text only); parameterized connection strings (dynamic connection strings); filter location (dataset versus query); configure data source options, for example, extract and connect to different LOB platforms; shared and embedded data sources and datasets; connect to SQL Azure database; SQL Data Market; MDX queries; work with non-relational data sources such as XML or SharePoint</p>	<p>Revised sub-tasks:</p> <ul style="list-style-type: none"> • configure data source options, for example, extract and connect to multiple data sources • connect to Windows Azure SQL database • connect to Windows Azure Marketplace • implement DAX and MDX queries to retrieve appropriate data sets <p>Added sub-tasks:</p> <ul style="list-style-type: none"> • use custom expressions in data sources • connect to HDinsight Server