

70-460:

Transition Your MCITP: Business Intelligence Developer 2008 to MCSE: Business Intelligence

The following tables show where changes to exam 70-460 have been made to include updates that relate to SQL Server 2014 tasks. These changes are effective as of May 15, 2014.

1. Retitled from: “Build an analysis services database” to: “Build an analysis service multidimensional model”

Tasks currently measured	Tasks Added/Changed post <i>May 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
Create measures Logically group measures; select appropriate aggregation functions; format measures	Revised sub-task: <ul style="list-style-type: none">Logically group measures and configure Measure Group Properties Added sub-task: <ul style="list-style-type: none">design the measure group for the correct granularity
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	Revised sub-tasks: <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 Removed sub-task: <ul style="list-style-type: none">Define granularity

granularity; create and manage linked measure groups and linked dimensions; actions	
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	Removed sub-task: <ul style="list-style-type: none"> Graphical query designer or the generic query designer
Implement storage design in a multidimensional model Aggregations; partitions; storage modes; proactive caching; manage write-back partitions	Added sub-tasks: <ul style="list-style-type: none"> implement linked cubes implement distributed cubes

2. Manage, maintain, and troubleshoot an SSAS database

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
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)	Revised sub-task: <ul style="list-style-type: none"> processing of tables or partitions for tabular and multidimensional models Added sub-task: <ul style="list-style-type: none"> process and manage partitions by using PowerShell
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	Added sub-task: <ul style="list-style-type: none"> incorrect calculations from SOLVE ORDER

3. Build a tabular data model

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
Configure permissions and roles in Business Intelligence Semantic Model (BISM) Server roles; SSAS database roles; implement dynamic security (custom security approaches); role-based access; test security permissions; cell level permissions	No changes
Implement a tabular data model 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	Added sub-task: <ul style="list-style-type: none">• Embed links Revised sub-task: <ul style="list-style-type: none">• optimize BISM for Power View

4. Build a report with SQL Server Reporting Services (SSRS)

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
<p>Design a report</p> <p>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</p> <p>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>Implement interactivity in a report</p> <p>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>Manage a report environment</p> <p>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

5. Plan business intelligence (BI) infrastructure

Tasks currently measured	Tasks Added/Changed post <i>May 2014</i>
<p>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</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> • understand performance consequences of Unified Dimension Model (UDM) and Data Warehouse (DWH) design • optimize queries for huge data sets <hr/> <p>Revised sub-task:</p> <ul style="list-style-type: none"> • optimize Analysis Services cubes in SQL Server Data Tools • create aggregations <hr/> <p>Added sub-task:</p> <ul style="list-style-type: none"> • understand performance consequences of named queries in a data source view
<p>Plan for scalability Multidimensional OLAP (MOLAP); Relational OLAP (ROLAP); Hybrid OLAP (HOLAP)</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> • change binding options for partitions

6. Design BI infrastructure

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
<p>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</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> plan and implement security requirements of a BI solution
<p>Design a backup strategy Design a High Availability (HA) and Disaster Recovery (DR) strategy; proactively prevent issues</p>	<p>Revised task to: Design a High Availability and Disaster Recovery strategy – new full definition:</p> <ul style="list-style-type: none"> 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

7. Design a reporting solution

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
<p>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</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> creating appropriate SQL queries for an application (MDX queries) <p>Added sub-task:</p> <ul style="list-style-type: none"> create appropriate DAX queries for an application <hr/> <p>Revised sub-task:</p> <ul style="list-style-type: none"> extract data from analysis services by using MDX queries
<p>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</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> customize data acquisition using DAX with reporting services data sources
<p>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</p>	<p>Revised sub-tasks:</p> <ul style="list-style-type: none"> 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) <p>Added sub-tasks:</p> <ul style="list-style-type: none"> enable Data Alerts design map visualization

8. Design BI data models

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
<p>Design a schema Multidimensional modeling starting from a star schema; relational modeling for a Data Mart; choose or create a topology</p>	<p>Removed sub-task:</p> <ul style="list-style-type: none"> Choose or create a topology <p>Revised sub-task:</p> <ul style="list-style-type: none"> Multidimensional modeling starting from a star or snowflake schema
<p>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</p>	<p>Removed sub-tasks:</p> <ul style="list-style-type: none"> Produce efficient aggregated cubes design cube aggregations to maintain a balance between storage and performance <p>Revised sub-task:</p> <ul style="list-style-type: none"> design the data file layout <p>Added sub-tasks:</p> <ul style="list-style-type: none"> 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
<p>Design fact tables Design a data warehouse that supports many to many dimensions with factless fact tables</p>	<p>No changes</p>
<p>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</p>	<p>Added sub-task:</p> <ul style="list-style-type: none"> create calculated members in an MDX statement

9. Design an ETL solution

Tasks Currently Measured	Tasks Added/Changed post <i>May 2014</i>
<p>Plan to deploy SSIS solutions</p> <p>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</p>	<p>Revised sub-task:</p> <ul style="list-style-type: none">• demonstrate awareness of SSIS packages/projects and how they interact with environments (including recoverability) <p>Added sub-tasks:</p> <ul style="list-style-type: none">• plan to automate SSIS deployment• plan the administration of the SSIS Catalog database