STRATEGIES FOR PASSING (MOSTLY) MICROSOFT CERTIFICATION EXAMS

By George Squillace

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“SQL” is in the name!

- Husband & Dad
- Twenty Four Years of New Horizons service (June 2016)
- 30+ years in Information Technology
- Microsoft Certified Trainer (MCT) since 1997
- Microsoft SQL Server certifications
  - MCSE: Business Intelligence
  - MCSE: Data Platform
  - MCSA
- SQL user group presenter
- Microsoft Virtual Academy presenter
- SQLSaturday presenter

For fun: (no particular order)
- Movies
- Reading
- Bicycling (road / city / trail)
- Travel
- Music / Acoustic Guitar
- Computers
- Aircraft

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Agenda

- What is certification?
- Why should I certify?
- How do I certify?
- How do I prepare?
My Qualifications...  
Why Listen to Me?

- 99 exam sittings in the past 24+ years

- Passed *almost* every exam sitting on the first try  
  (Thank you, dear Lord!)

- I’ve taken (and passed) vendor *exams* from Novell, CompTIA and Microsoft  
  - (So, my testing experience is not from only one test vendor’s reference point)

- I’ve earned a number of *certifications* from Novell, CompTIA and Microsoft over a range of *products*

- Certified in every version of *SQL Server* since SQL Server 2000

- Certified in every version of *Windows Server* from Windows NT 4.0 – Windows Server 2008
What is Certification?

- Certification refers to the confirmation of certain characteristics of an object, person, or organization. This confirmation is often, but not always, provided by some form of external review, education, assessment, or audit.

- One of the most common types of certification in modern society is professional certification, where a person is certified as being able to competently complete a job or task, usually by the passing of an examination.

- Passing one or more challenging, computer-administered exams

Credit: Wikipedia
Why Certify?

- Verify skills / Confidence
- Prestige
  - Not everyone can pass these exams
  - Not everyone is a good test-taker
- Job opportunities
  - “Those holding an MCSE in the US, earn 17% more, on average, than those not certified.”
- Salary / Raise / Bonus / Promotion $$$
- Recognition
- Learn the product much more thoroughly / find more solutions
- Challenge
- Certification is not a “golden ticket”
Microsoft Certification Tracks

- **Microsoft Technology Associate (MTA)**
  - “...an entry-level certification intended for people seeking knowledge of fundamental technology concepts”
  - “...addresses a wide spectrum of basic technical concepts”

- **Microsoft Certified Solutions Associate (MCSA)**
  - “...intended for people who seek entry-level jobs in an information technology environment. MCSA is a prerequisite for more advanced Microsoft certifications”

- **Microsoft Certified Solutions Expert (MCSE)**
  - Requires a prescribed MCSA certification
  - “...intended for IT professionals seeking to demonstrate their ability to build innovative solutions across multiple technologies, both on-premises and in the cloud”
MTA: Database Fundamentals

- Exam 98-364, Database Fundamentals
- “...candidates for this exam are seeking to prove introductory knowledge of and skills with databases, including relational databases, such as Microsoft SQL Server”
Data – Related

MCSA Certifications

- **MCSA: SQL Server 2012/2014** (three exams)
  - Exam 70-461, Querying Microsoft SQL Server 2012/2014
  - Exam 70-462, Administering Microsoft SQL Server 2012/2014 Databases
  - Exam 70-463, Implementing a Data Warehouse with Microsoft SQL Server 2012/2014

- **MCSA: SQL 2016 Database Administration** (two exams)
  - Exam 70-764, Administering a SQL Database Infrastructure
  - Exam 70-765, Provisioning SQL Databases

- **MCSA: SQL 2016 Database Development** (two exams)
  - Exam 70-761, Querying Data with Transact-SQL
  - Exam 70-762, Developing SQL Databases

- **MCSA: SQL 2016 BI Development** (two exams)
  - Exam 70-767, Implementing a SQL Data Warehouse
  - Exam 70-768, Developing SQL Data Models

- **MCSA: BI Reporting** (two exams)
  - Exam 70-778, Analyzing and Visualizing Data with Power BI
  - Exam 70-779, Analyzing and Visualizing Data with Microsoft Excel (beta)

- **MCSA: Machine Learning** (two exams)
  - Exam 70-773, Analyzing Big Data with Microsoft R
  - Exam 70-774, Perform Cloud Data Science with Azure Machine Learning

- **MCSA: Data Engineering with Azure**
  - Exam 70-775, Perform Data Engineering on Microsoft HD Insight
  - Exam 70-776, Perform Big Data Engineering on Microsoft Cloud Services (beta)
Data – Related MCSE Certifications

- **MCSE: Data Management and Analytics** (two exams)
  - Earn MCSA (six different MCSAs qualify)
  - Pass one of the following exams:
    - Exam 70-473, Designing and Implementing Cloud Data Platform Solutions
    - Exam 70-475, Designing and Implementing Big Data Analytics Solutions
    - Exam 70-464, Developing Microsoft SQL Server Databases
    - Exam 70-465, Designing Database Solutions for Microsoft SQL Server
    - Exam 70-466, Implementing Data Models and Reports with Microsoft SQL Server
    - Exam 70-467, Designing Business Intelligence Solutions with Microsoft SQL Server
    - Exam 70-762, Developing SQL Databases
    - Exam 70-767, Implementing a Data Warehouse using SQL
    - Exam 70-768, Developing SQL Data Models
    - Exam 70-773, Analyzing Big Data with Microsoft R
    - Exam 70-774, Perform Cloud Data Science with Azure Machine Learning
    - Exam 70-775, Perform Data Engineering on Microsoft Azure HDInsight
SQL Server 2016 Certifications

(partial certification list)

- MTA
- MCSA
- MCSE

Microsoft Certified Solutions Expert (MCSE)
(must possess one exam and requires earning MCSA first)

Microsoft Certified Technology Associate (MTA)

Database Fundamentals
Exam 98-364

MCSE: Data Management and Analytics
Exams 70-463, 466, and 473 are not yet available.

- Developing Microsoft SQL Server Databases
  Exam 70-464
- Designing Database Solutions for SQL Server
  Exam 70-465
- Implementing Data Models and Reports with SQL Server
  Exam 70-466
- Designing Business Intelligence Solutions with SQL Server
  Exam 70-467
- Designing Cloud Data Platform Solutions
  Exam 70-473
- Designing and Implementing Big Data Analytics Solutions
  Exam 70-475

MCAS: SQL 2016 Database Development
- Querying Data with Transact-SQL
  Exam 70-761
- Developing SQL Databases
  Exam 70-762

MCAS: SQL 2016 Database Administration
- Administering a SQL Database Infrastructure
  Exam 70-764
- Provisioning SQL Databases
  Exam 70-765

MCAS: SQL 2016 Business Intelligence Development
- Implementing Data Warehouses with SQL Server 2012
  Exam 70-767
- Developing Data Models
  Exam 70-768

Microsoft Certified Solutions Associate (MCSA) certifications
So, You’ve Decided to Certify: Test Registration Details

- Pearson Vue [website](#)
- Determine testing *location*
  - [Remote testing](#) is now available
- Determine desired *timeframe*
  - Morning
  - Afternoon
- Fees
  - Example, $165 for the Power BI exam
  - Keep an eye out for promotions
- Payment types
  - Voucher
  - Credit Card
- Identification (two forms required)
  - Government ID with name, photo, and signature
  - Secondary form with name and signature

Select exam time
Microsoft Courses v. Microsoft Exams

Course 20761 - Querying with Transact-SQL

Exam 70-761: Querying Data with Transact-SQL

Course 20762 - Developing SQL Databases

Obvious conclusions:
Most exams relate to more than one course.
Some exam topics aren't found in any course.
Some course topics aren't covered in any exam.

Each exam has a "Skills Measured" description which becomes your studying target.

Skills measured
Preparation Resources

- Exam preparation guide (a.k.a. “Skills Measured”)  
  - Microsoft Learning website
- Microsoft Official Courses (at New Horizons)
- Forums, such as TechNet
- Microsoft TechNet videos
- Microsoft Virtual Academy videos
- Test preparation “Training Kits” (for the SQL 2012/2014 exams)
- Test preparation software
  - See upcoming slides
Test Preparation Software, Part 1

- Test preparation software can be very helpful...
  - ...the harder the exam
  - ...the newer you are to testing
  - ...the more anxiety you have
  - ...the newer you are to the subject matter

- **Cost**, $100 < $150 per exam

- Preparation exams are *very often* harder than the actual exam

- Consider persuading your employer to cover the exam and preparation s’ware costs

- Sometimes abbreviated sample exams are available for free
Test Preparation Software, Part 2

- There are at least two test prep software deployment methods
  - Web-based
    - Connect to a subscription-based website, providing (for example) a six month preparation time window
    - **Advantage**: Allows you to connect anywhere, as long as you have a live connection
  - Local executable
    - Install a **program** to your local computer
      - **Transcender**
    - **Advantage**: Allows you to prepare anywhere, as long as you have the computer where you installed the software

- Test Prep Tip #1: Take five question tests while preparing
- Test Prep Tip #2: Take one test with every question and the answers and print the results with the answers to PDF
- Test Prep Tip #3: Don’t worry about completing all of the questions; I don’t generally visit even half the questions but I’m still properly prepared
Test Preparation Software, Part 3
Study Tip #1: Know Your Target
(Exam Objectives)

Skills measured

This exam measures your ability to accomplish the technical tasks listed below. The percentages indicate the relative weight of each major topic area on the exam. The higher the percentage, the more questions you are likely to see on that content area on the exam.

Please note that the questions may test on, but will not be limited to, the topics described in the bulleted text.

Hide all

- Create database objects (24%)  
  Create and alter tables using T-SQL syntax (simple statements)
  - Create tables without using the built in tools; ALTER, DROP, ALTER COLUMN, CREATE
  Create and alter views (simple statements)
  - Create indexed views; create views without using the built in tools; CREATE, ALTER, DROP
  Design views
  - Ensure code non regression by keeping consistent signature for procedure, views and function (interfaces); security implications
  Create and modify constraints; (simple statements)
  - Create constraints on tables; define constraints; unique constraints; default constraints; primary and foreign key constraints
  Create and alter DML triggers.
  - Inserted and deleted tables; nested triggers; types of triggers; update functions; handle multiple rows in a session; performance implications of triggers

Preparation resources
- Tables
- Views
- table_constraint (Transact-SQL)

- Work with data (27%)

Query data by using SELECT statements
  - Use the ranking function to select top(1) rows for multiple categories in a single query; write and perform queries efficiently using the new (SQL 2005/8+) code items such as synonyms, and joins (except intersect); implement logic which uses dynamic SQL and system metadata; write efficient, technically complex SQL queries, including all types of joins versus the use of views.
Study Tip #2: Managing the Volume of Material

- In regard to each product feature ask, “Is this a feature or skill every administrator / developer should know?”

- Concentrate on those features
Study Tip #3: You’ll Never Feel Ready Enough

- So, schedule your exam **now**
- You can always postpone a day or two or more
- For what it’s worth, near panic sets in a day or two before I take my test because I know I need to know more and better. I’ve learned to expect this (and my family gives me a lot of room then also)
What to Expect in the Testing Booth

- Can
  - Marker board and pens
  - Windows Calculator
  - Use the restroom during the test
- Can’t (no personal items)
  - “You will not be allowed to take any personal items with you into the testing room. This includes all bags or purses, books, notes, personal computers or devices, cell phones, pagers, watches and wallets.”
- Dress for all temperatures
- There may be multiple people in the testing room
- Expect being viewed by camera remotely
- Expect quiet
- Required passing score and total points presented at the beginning of the exam
- **Tip #4:** At the beginning of the exam calculate the points per question to determine the number of questions you must score correctly to obtain a passing score
- Exam score/outcome is immediately reported and printed
Test Question Formats

- **Active Screen** (interact with a complex dialog box, make appropriate choices)
- **Build List** (from a list of objects on the left pane need to be dragged into the right pane in the correct order)
- **Case Studies** (lengthy scenario, multiple questions, often include exhibits, often separately timed)
- **Create-a-Tree**
- **Drag and Drop**
- **Hot Area**
- **Multiple Choice** (sometimes the number of correct answers is provided, other times not)
- **Repeated Answer Choices** (same, large number of answers repeated over several questions)
- **Simulations** (portion wizard walkthrough)
- **Short Answer Code** (type programming code, key word list may be available)
- **Best Answer** (multiple choice, only one correct answer)

**Click here for short videos on what each of these look like**
  - Scroll down a bit more to see how exams are developed and modified
Test Question Format

Active Screen

Question 18 of 32

You configure a SharePoint Server 2010 Service Pack 1 (SP1) server farm.

You need to enable the cache profile for anonymous users on internal collaboration sites for the site collection. You also need to allow administrators to choose a different page output cache profile for page layouts.

What should you do? (To answer, configure the appropriate option or options in the dialog box in the answer area.)
You are responsible for the Program Management role on an application development project. The Stabilizing Phase of the project is beginning.

What is the correct order for completion of the Stabilizing Phase milestones?

Milestones

- Internal releases
- Pilots
- Bug convergence
- Site deployment
- Zero bug bounce
- Project close-out report baseline
- User acceptance testing
- Release candidates

Answer Area
They have a “story problem” format with 5-8 questions

This is the primary format for design exams

Irrelevant information is often included (just like the real world)

Case study question series are often separately timed

Often cannot return to review these questions
Test Question Format

Drag and Drop

You have a SharePoint Server 2010 Service Pack 1 (SP1) server farm.

You need to recommend which tools must be used to recover deleted SharePoint site groups, deleted document libraries, and deleted Microsoft SharePoint Designer 2010 workflows. The solution must use the minimum amount of administrative effort.

Which tool should you use for each type of content?

To answer, drag the appropriate tool to the correct recovery task in the answer area.
You have a computer that runs Windows 7.
You start the computer and receive the following error message:
BOOTMGR is missing
Press Ctrl+Alt+Del to restart

You then start the computer from the Windows 7 installation media.
You need to ensure that the computer successfully starts Windows 7.
What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

☐ A. Run Startup Repair.
☐ B. Run System Restore.
☐ C. Run Bootrec /RebuildBcd.
☐ D. Run Bcdedit /createstore.
A company has a deployment of Windows Deployment Services (WDS), the Microsoft Deployment Toolkit (MDT), and the Windows Automated Installation Kit (WAIK).

You are preparing to capture an image of a Windows 7 reference computer. You plan to deploy the image to new computers that have the same hardware as the reference computer.

You need to ensure that the captured image contains the device drivers from the reference computer.

What should you do?

- **A.** Add a boot image in WDS.
- **B.** Use Sysprep with an answer file and set the `PersistAllDeviceInstalls` option in the answer file to **True**.
- **C.** Run the `BCDEdit` command.
- **D.** Run the `PEImg /Prep` command.
- **E.** Run the `Start /wocsetup` command.
- **F.** Run the `Dism` command with the `/Add-Driver` option.
- **G.** Run the `Dism` command with the `/Mount-Wim` option.
- **H.** Run the `Dism` command with the `/Add-Package` option.
Test Question Format

Short Answer Code

You need to choose all the rows from the addresses table per these instructions. Choose the first three fields from this list: A, B, C, D, E, F, G, H. Fields F and G must be equal. Order the results by the last field in the table.

What would your SQL statement look like?

To answer, type the correct code in the answer area.

```
SELECT a, b, c FROM addresses
WHERE f = g
ORDER BY h
```
You are designing a Windows desktop application for your company by using Microsoft .NET Framework 4 and Microsoft SQL Server 2008.

The middle tier of the application uses several `DataAdapter` objects that query a SQL Server database. The user interface (UI) tier of the application uses controls that are bound to Typed `DataSet` objects.

The database schema frequently changes.

You need to ensure that changes in the database schema do not impact the UI tier.

What should you do? (More than one answer choice may achieve the goal. Select the **BEST** answer.)

- **A.** Encapsulate the `DataAdapter` objects in a custom Data Transfer Object (DTO) class.
- **B.** Replace the `DataSet` objects with Language Integrated Natural Query (LINQ) objects.
- **C.** Encapsulate the `DataSet` objects in a custom Data Transfer Object (DTO) class.
- **D.** Replace the `DataAdapter` objects with `DataReader` objects.

> More than one answer may be correct.
Test Question Format
Simulation
More on Test Question Formats

- On average 40-60 questions, more for CompTIA and Cisco
  - One of my Microsoft MCITP exams had 88 lengthy story problems

- One test question per screen page
  - Some questions have “Exhibits” which are one or more pictures that provide insight into answering the question (like a configuration screenshot)

- Some tests (most) allow you to return to previous questions, and to review marked questions before ending the exam

- Tip #5: look for opposites, exceptions, and look for patterns in answers
Exam Tip #6:
Of Course, Some of the Test Answers Are Made to Look Legitimate

- i.e., a test question may suggest running “CHECKDOMAIN.EXE /C” before running DCPROMO.
- But there’s no such command!
Exam Tip #7: Use the Process of Elimination

- My (Corny) Conventions
  - X no way, can’t be the answer
  - B not sure if it’s the answer
    (no mark placed)
  - C not likely the answer
  - D very likely the answer
Exam Tip #8:
Put Your Best Effort Forth to Answer Each Question on the *First Pass* Through the Test

- Even though some tests permit question review
Exam Tip #9:
Manage Your Testing Time

- I have been very time-challenged in my “recent” exams
- Determine the number of questions to be completed by the half-way point
- Check your watch a few times during the test, especially at half-way and maybe hourly
Exam Tip #10:
Aim to Pass the Exam on the First Try

- Plan on visiting each question only once, so...
- Make your first answer your best answer
- Remember, “P” is for “Pass”
  - Certifications don’t include your test scores
Exam Tip #11:
What time of the day should you take the exam?

- Choices: morning, afternoon, (sometimes) evening
- The test center may dictate their availability
- It depends on your biological or body clock
- Not usually at the end of the work day (but I’ve done it multiple times)
- Not right after lunch
- I like the morning to get it over with and because I’m the freshest
It’s Not a Perfect Testing World... Expect the Following:

- No Correct Answer on a Question
- More Than One Correct Answer
- Not Enough Detail Provided
- Remember, Select the Best Answer
Lots of rumors surround the test scoring process.

If the vendor doesn’t clearly state something as fact then it may not be fact, such as...
- Whether or not the test is “adaptive”
- Are questions “weighted”

The testing vendors don’t explain the exam scoring methodology
- Partial credit?
- Adaptive tests?
Totally Obvious
Test-Taking Tips, Part 1

- **Tip #12**: Know Your Product *Well*
  - Read your courseware completely through, maybe twice
  - Hands-on practice with the product is *mandatory* to obtain product mastery
    - Consider running each lab 2-3 times

- **Tip #13**: Be Calm, Try to *stay* calm

- **Tip #14**: Come well rested; don’t pull an “all-nighter” the night before the exam

- **Tip #15**: As you answer a question, in general, go with your first impression
Totally Obvious
Test-Taking Suggestions, Part 2

- **Tip #16:** Read the question *very carefully*, and answer the specific question. Don’t rush!

- **Tip #17:** When permitted to return to previous questions, leverage previous questions to answer future questions.

- **Tip #18:** When you have >1 test to take for a certification track consider taking the easiest exam first to build your confidence.
Some Tests Allow Feedback

- Mark questions for review and/or comment during the exam
- Provide feedback (comments) on marked questions at the end of the exam
- For example:
  - Some test questions are incomplete
  - Some test questions are have no correct answers
  - “Trial” test questions
Testing Trends

- Much harder exams
- More clever exam questions
- Broader test question formats
- Test questions diverge greater from the related course material
Upon Completing Certification
(What to Expect)

- Expect email
- Per the email above you may have to order your certificate rather than receive it automatically
Let’s Look at Some Sample Questions for 70-463
Go Get ‘em!

- I dare you!
- I love to hear about your successes *and* your missed attempts.
- Let me know via [email](mailto:email) about your test experience!