

Introduction

Congratulations on your decision to pursue Microsoft professional certification, and thanks for inviting us to come along! While the rest of this book is devoted to covering the knowledge you will need to pass the certification exams, we've devoted this introduction to an overview of the exams and the strategies you need to ensure your success.

We've made this book concise and to-the-point so you can complete your study of the exam topics, rather than running out of time while only partway through. We've seen enough book reviews of other certification study materials that said a particular book didn't cover all of the topics adequately, so we've tried hard to cover every topic, and cover it at the level necessary for success with the exams. We also want to provide you with a study guide that is small enough to take everywhere with you and have available when a spare moment arises, rather than a tome that you can barely carry and never have with you when you wished you did.

Throughout the book, we assumed that you, the reader, have the level of experience with Visual FoxPro that we would expect of a candidate for certification, and have not included a lot of foundational material we anticipate you already know. At the same time, we list other materials you can use to round out your knowledge.

Finally, we included some material here in the introduction on the certification process, why it's important for you to be certified, and how to give yourself every advantage to reach your goals.

Who we are

Although we, Evan and Cindy, have moved forward in our careers since passing the Microsoft Visual FoxPro certification exams, at the time we prepared for, and passed the exams we were just like you, beginning-to-intermediate developers with gaps in our knowledge and experience.

We didn't have the advantage of formal training materials such as this book, so we banded together with other Visual FoxPro developers we met online and made our own. You can see our notes and study materials online on the FoxPro Wiki. In fact, we're so sold on online collaboration that we've done this whole book without ever meeting or speaking on the telephone!

How we started

When Microsoft announced that Visual FoxPro Desktop and Distributed exams would begin their Beta period in a few months, several members of the Visual FoxPro community came together to study online in an organized fashion. A series of chats were held in the Universal Thread chat room several times per week for several weeks, covering both the Desktop and Distributed exams. Evan and Cindy decided to join in, and became acquainted with each other through those chats.

When the study group began, Cindy felt that she was pretty much a VFP and OOP newbie. She'd had some excellent fundamental classroom training, but was mostly still supporting FoxPro for Windows applications. She had been doing SQL and reports in Visual FoxPro for about 10 months. Cindy never passes up an opportunity for free education, so she joined the

study group to see what she could pick up and took on the job of editing and posting the logs, thinking that the process of editing would be a good way to work through the material a second time. When she joined the study group, Cindy did not expect to be able to pass the exams before she had several more years of experience.

Cindy took the exams during their Beta period to help provide good statistics for the exam committee, and never expected to pass either exam. She was totally surprised to find that she had passed the Desktop exam and had come close enough on the Distributed exam to know she could pass easily with a little more study when the exam went live in February 2000.

Before the Visual FoxPro exams were announced, Evan had been floundering academically. The old Visual FoxPro 3.0 exams had been retired without a replacement before Evan could take them. To compensate, he decided to get the MCSD certification on the Visual Basic 6.0 track, which meant learning and studying VB at the same time. Not a simple task, and terribly dreary to do alone! Thankfully, at the La Quinta DevCon in June 1999, Microsoft announced that it was developing certification exams for Visual FoxPro 6.0. The dark ages for Evan had ended.

Despite having a good foundation, having used Visual FoxPro since its release, Evan decided he needed to study for the VFP exams. He believed it would solidify his foundation in the language and provide for a jump-start into the MCSD he had been dreaming of. Instead, studying became an eye-opening experience. It quickly exposed areas in which he was weak and areas that he “thought he knew” but that needed more attention. He learned more about areas, like the debugger, that he wasn’t using to their fullest potential. The Distributed exam also opened Evan’s eyes to the power of technologies like XML, Microsoft Transaction Server, and Distributed COM.

As a result, the two-and-a-half-month period that Evan spent studying for the Visual FoxPro certification exams was one of his most productive learning experiences in Visual FoxPro. Evan’s efforts paid off when he passed both Visual FoxPro exams in their Beta period and later achieved his Microsoft Certified Solution Developer status in May 2000.

Who you are

You may be an accomplished Visual FoxPro developer, brushing up on some seldom-used knowledge or technique before taking your exams. You’ll be reminding yourself of a few details you might not encounter very often. For example, you could be a developer in a large group who doesn’t work with disaster recovery planning because a different department in your organization does that.

You may be a mid-level developer with a few years of experience who feels able to pass the exams with some study, and wants a good formal review. There will be a few areas where you have gaps in your experience, and you’ll be using the text and the “Further reading” sections to help identify these areas and fill them in. Perhaps you’ve never had reason or opportunity to use a COM object. You’ll want to make one and see how it behaves when used from inside and outside Visual FoxPro.

You may feel that you’re a relative beginner. We encourage you by reminding you that focused effort brings results, and that this book will help you focus your efforts in the right places. You will need to spend a lot of time reading additional materials, experimenting, and augmenting whatever on-the-job experience you already have by working through some examples. In addition to the samples that come with Visual FoxPro on the MSDN

CD, you'll want to check out the links listed on the FoxPro Wiki page (<http://fox.wikis.com/wc.dll?Wiki~WhereToFindDownloadableVFPSamples>) for pointers to more sample code.

Finally, you may still be sitting on the fence of decision with regard to becoming certified or how many exams to take. Go for it! You'll be glad you did.

You can do this!

We encourage you to pursue Microsoft certification. We feel that most developers who pass the Desktop exam should be able to pass the Distributed exam also. Many developers will also be able to pass the Solution Architectures exam (70-100), especially with some preparation. There are study notes for the 70-100 exam on the Wiki that will help with your preparation, and from the book reviews we've read, we feel that the online notes are better than any of the preparation books that are available for that exam!

If you know another language such as Microsoft Visual Basic, have experience with Microsoft SQL Server, or are good with Microsoft Office, it's a short step to Microsoft Certified Solution Developer certification, and we encourage you to polish up your skills and take the fourth exam necessary for this certification.

Microsoft certification brings one more benefit. If you work with at least one other Microsoft Certified Professional, your organization may qualify to be a Microsoft Certified Partner. This program offers several benefits, including the opportunity to register your business with Microsoft, which will make your name available to customers who need services you may offer.

Why get certified?

What motivates you? Each of us has our own "hot buttons" that light the motivational fire under us and push us forward to our goals. Certification is not an easy process. Many of us are already overloaded with a "day job," moonlighting, and "having a life." Making certification a priority will depend on which of several factors motivate you personally, and how much. Try these on for size:

- Knowledge gained from the preparation process
- Self respect from meeting the challenge
- Demonstrated skill
- Demonstrated commitment to your craft
- Inside track to knowledge or services
- Salary increase, promotion
- Edge over uncertified applicants

Ultimately, the exams test the ability to apply skills and knowledge, not personal qualities like creativity, insight, integrity, dependability, or attention to detail. If any of these qualities are severely lacking, the "less qualified" person may actually do the job better than the certified candidate. However, these qualities are difficult to quantify in a resume or personnel folder, while a certification attained against known standards, or the lack of a

certification, is easily noted. All other factors being equal, we can't imagine anyone preferring an uncertified candidate!

Certification benefits

Microsoft wants you to be certified, and wants you to continue to be certified. Toward this goal they offer tangible benefits that may motivate you to become certified, and access to materials to help you in your business and business education. Microsoft recognizes and promotes certified individuals as experts with the technical skills and knowledge needed to design, implement, and support solutions with Microsoft products. We'll mention several of these benefits in the sections that follow.

Transcript

A transcript of your certification status and the exams you passed to attain it is available online at the Microsoft Certified Professional (MCP) Web site and is updated shortly after each milestone you attain. The secured area of the MCP Web site includes a "Profile Editor," which you can use to keep your contact information up-to-date, and a transcript tool you can use to print a transcript. There is no mention of the number of tries it took you to pass exams or the fact that you have taken exams that you have not passed. Accessing this site and printing a transcript during a job interview is one way to establish the validity of your Microsoft certification if there is any need to do so. You'll want to be sure your employer always has an updated copy of your transcript.

The transcript lists your name and address, your current certification status (MCP, MCSA, and so forth), the date that status was first achieved, the exams you have passed, and the dates they were passed.

Wallet card, lapel pin

The Microsoft Certified Professional Welcome Kit, which arrives with the first certification, includes a lapel pin and wallet card. These are useful to confirm your certification to clients and employers. Cindy put her pin in the space allotted for such awards on her work ID badge.

Logo

You may use the light blue and white Microsoft Certified Professional or Microsoft Certified Solution Developer logos on your business cards, stationery, and Web pages. Several electronic versions of the artwork are provided, and the program agreement includes guidelines you must adhere to for their use.

Other goodies

The other goodies may change, so we'll just discuss the types of goodies available at the time of this writing. The perks vary by certification level and include things like rebates or discounts on MSDN or MSDN Library subscriptions, access to exclusive benefits on the MCP secured site, access to *MCP Magazine Online's* Premier Area, and discounts from Microsoft partners. You may receive discounts on books and other learning materials, and special invitations to Microsoft conferences, technical training sessions, and special events. You may also purchase clothing, mugs, pens, and other logo items through the MVP Store online.

Leveraging your preparation time

One way to ensure success is to focus your time where it is best spent. You may find that studying is best done as part of a group. It will pay off if you know what Microsoft's point of view is when answering exam questions. Finally, you'll want to know where your strengths and weaknesses are.

Study in groups

We all attended school with other people. Having others along on our educational journey kept us motivated, supplied us with new ideas, and offered a format for discussions. Evan and Cindy found that studying with a group, or even one other person, helped immensely.

Groups offer the opportunity to make yourself accountable to other people for your study. It's not easy to skip studying when another person is waiting for you to check in and report on your assignment. You'll also find that your study partners' motivation level may be high when yours lags behind. Finally, study partners can share complementary knowledge where yours may be lacking.

You may be able to find study partners in your workplace, your local user group, or even online. Cindy prepared for the Solution Architectures exam with someone who was half a world away. Her Sunday evening was his Monday morning! Both Cindy and her study partner passed the Solution Architectures exam.

Know what Microsoft wants

Microsoft begins the process of compiling certification exams by identifying and quantifying which appropriate real-world skills are necessary for developers who provide software solutions, and then translating those skills into a series of exam objectives. Then questions are designed that measure those skills.

The Minimally Qualified Candidate

The Minimally Qualified Candidate is a hypothetical individual whom an employer or customer might consider hiring because of a broad background in a particular technology. Each exam question is evaluated against what experience or knowledge the Minimally Qualified Candidate might be expected to demonstrate related to the skill being measured. The resulting exam is one that the Minimally Qualified Candidate should be expected to pass.

Skills being measured

We'll be discussing the actual skills being measured further on in the "Certification Requirements" section, but let's take a few moments to discuss the focus of the exams. In the past, Microsoft certification exams were full of esoteric knowledge and trick questions. This is no longer the case. You are being certified to do a job, not use a tool, so you won't find questions on where or how to set FWEEK, what the syntax of various commands is, or how to use the wizards. You'll find exam questions that require you to apply skills and knowledge, not merely supply a fact.

Think like Bill

When preparing for and answering exam questions, one should always remember to keep the context of the exam in perspective. Don't expect a BROWSE window to be part of a solution when the Grid control has superseded it. Likewise, expect ADO technology to be a correct answer more often than RDO. In general, know as much as you can about what's "hot" at Microsoft and what techniques are considered "best practice." If you are an isolated developer, take special care to expose yourself to good design and good code online or in magazines.

Know what you do best

We think these exams require a combination of real-world experience, knowledge, and exam skills. Not everyone will have experience with every facet of Visual FoxPro represented in the skills being measured. Besides learning the subjects you aren't familiar with, make sure you know the subjects you have experience with as thoroughly as possible. As with any exam, you can either pass the exam by knowing all the answers for a portion of the topics, or a portion of the answers for all of the topics.

We think it's highly unlikely though that anyone would pass these exams without any real-world experience at all. The exam questions are oriented toward using skills to apply knowledge to a situation that might be encountered in the course of a Visual FoxPro developer's job. Experience gives you practice applying skills in real-world situations, and the exams ask you to apply the same skills to similar situations.

Practice

Be sure to download and practice with the Microsoft demo exams. They will take you through the types of questions and allow you to practice with the exam software. It took Cindy a few tries to get the hang of the drop-and-connect type questions, and she was glad she spent all of those tries at home with a demo exam and not at the exam center with the clock ticking!

The scoring procedures are explained in the demo exams, you'll also see how the timer works, and you'll be able to try out the included calculator. You may even discover some undocumented features like the fact that the items in a tree-type question can be dragged and dropped as well as moved using the mover buttons in the middle.

We can't stress enough how understanding the "mechanics" of these exams and practice with the demos is to your advantage.

Overcoming obstacles

We've already covered the reasons to become certified, in the "Why get certified?" section. Some of you may find that although you want to be certified, there are obstacles to overcome, including finding the time and money it takes to complete the certification process.

Some of you may be long-time, experienced developers who are already well-prepared. You may have an exam voucher, or don't find the exam fee hard to come by. The testing center is nearby. You'll just need to schedule the exam, do a quick review, and get yourself to the testing center.

Some of you may have to travel long distances to take an exam, and use vacation time or lose a day's billable hours to do so. We hope you get there and back safely, and find that the lost hours or lost income was worth it in the long run.

Some of you may find that the exam fee is a lot of money out of a tight budget. Your employer may not be willing to subsidize your certification efforts or may not want to pay for failed exams. You may need your business profits to live on, rather than reinvesting in something like certification. This will be difficult to overcome, but over time, most people can find ways to accumulate extra funds.

Finally, many of you will think that you just don't have time. The real obstacle here is not the time you don't have, but the perception that you don't have it. We challenge you to look for ways you waste time. Dealing with wasted time to recover time for exam preparation will give you new habits that you will find useful after your exams are finished. We also challenge you to examine your priorities. While we don't recommend giving up certain types of things like recreation long-term, attaining a career goal is probably worth giving up television or time at the pub for a few weeks or months.

Scheduling and taking the exams

Exams are given worldwide at Prometric and Virtual University Enterprises testing centers. You can find testing centers and register online, or by telephone. We have heard of problems with the online registration, so you may want to use the Web pages to locate centers in your area, and then register by telephone. Cindy found it easiest to have a list of testing centers in her area, prioritized by location, when registering by phone. That way, when offered a choice between taking the exam Thursday afternoon at test center NC21 or the following Monday morning at center NC36, she could easily visualize the exact locations and make her choice. We recommend confirming the registration with the testing center several days before the exam.

Plan to arrive a little early at the testing center. There may be exams scheduled before or after yours, using the same computer, so you will want to be on time to have all of the allotted time available. The testing center will require you show a photo ID and to leave all your belongings in a secure area before entering the exam room. Restroom breaks while taking exams are usually allowed.

The exam room itself usually has several computers, separated by partitions, and will have pencils and plain paper available for your use during the exam. You will be allowed to take a practice exam to familiarize yourself with the testing software and the types of questions you will encounter. We suggest that you download the Microsoft case study-based demo and one of the free Transcender demos to familiarize yourself with the exam software before you get to the test center. (We feel this is crucial to your success with the 70-100 exam if you are taking that one toward your MCSD certification!)

There is partial credit for "check all that apply" questions, and there are penalties for incorrect answers. If you have no idea of an answer, it's best to skip the question entirely, but if you can narrow down the choices, by all means make an "educated guess."

Your exam will be scored immediately after you finish, and you will see your score on the screen before you leave the exam room. You will also be given a paper score report, which will be your only proof of your score until your Microsoft transcript is updated, usually within a few days after completing the exam.

Use the pencil!

The pencil and paper provided for your use in the exam room are important to your success. Write yourself notes about the questions you want to come back to later. You may not have time to go back to all of the questions, but you can prioritize them and return to those you are most likely to be able to answer.

Be sure to write yourself notes about questions you may have answered incorrectly. Though you are not allowed to take any of these notes out of the exam room, you can read them over carefully before leaving, and write down some notes as soon as you are outside the test center. This is an important tactic for those who may need to take an exam more than once before passing.

Certification requirements

The requirements for each certification level are spelled out on the Microsoft Web site, in addition to other details about the program. There are certification programs for application developers, systems engineers, database analysts, and trainers. Each program is made up of individual exams, any one of which, when passed, confers Microsoft Certified Professional status. The premium certifications—MCSD, MCSE, MCDBA, and MCT—require passing a series of required exams and some electives.

MCSD requirements

The Microsoft Certified Solution Developer certification requires passing one Desktop and one Distributed exam, the Solution Architectures exam, and one of a choice of electives. The Desktop and Distributed exams are offered for each of the core Visual Studio languages, Visual C++, Visual Basic, and Visual FoxPro, and it is not necessary that the Desktop and Distributed exams used to attain MCSD certification be in the same language. Finally, any one of the Desktop or Distributed exams that has not been used as a “core” exam can be used to satisfy the elective requirement.

Exams 70-155 and 70-156

There is a lot of overlap in the Skills Being Measured for the Visual FoxPro Desktop (70-156) and Distributed (70-155) exams, which is why we’ve covered them together in this book. The real difference between the exams is one of emphasis.

Expect to see more focus on issues related to a small group of users on a LAN, or topics like user services, or visual components on the Desktop exam, and more focus on COM, MTS, and other things you would need for a large number of users on a WAN in the Distributed exam.

Exam 70-100

We should mention the Solution Architectures exam along with our discussion of Visual FoxPro certification. Many Visual FoxPro developers have considerable experience in database design, a large component of the skills being measured by this exam. We encourage all of you to take this exam also, and work toward the premium certification, Microsoft Certified Solution Developer.

We've heard variable reports about how well the commercially available study materials for this exam cover the topic. We think you may be just as well off by working through the discussion on the Wiki and the demo exam, and spend your allotted dollars on taking the exam a second time, if necessary.

Exam retirement

Microsoft retires exams as the technology is outdated or as new technology replaces it. Exam retirement notices are posted well in advance, and certifications are maintained for one full year after an exam is retired. If you have not passed a different exam by that time, your certification will end.

Some developers may be wondering whether they should bypass Visual FoxPro 6.0 certification and be certified under Visual FoxPro 7.0. In our opinion, you shouldn't wait. Exams have not historically been available for every version of FoxPro since the Microsoft certification program began in 1992. Visual FoxPro 6.0 was released with Visual Studio 6.0 in 1998, yet the VFP6 exams did not go live until February 2000. If that pattern continues, exams for VFP7 might not be ready for quite a while.

Finally, there are not huge sweeping changes between Visual FoxPro 6.0 and 7.0. Any time spent preparing yourself for the Visual FoxPro 6.0 exams will make you that much further ahead toward certification in future versions.

Further reading

- Microsoft certification:
www.microsoft.com/trainingandservices/default.asp?PageID=mcp
- Microsoft Certified Solution Developer program:
www.microsoft.com/trainingandservices/default.asp?PageID=mcp&PageCall=mcsd&SubSite=cert/mcsd&AnnMenu=mcsd
- Microsoft Certified Solution Developer requirements:
www.microsoft.com/trainingandservices/default.asp?PageID=mcp&PageCall=requirements&SubSite=cert/mcsd&AnnMenu=mcsd
- Microsoft Certified Partner program: www.microsoft.com/certpartner/
- Exam 70-100: "Analyzing Requirements and Defining Solution Architectures for Visual Studio,"
www.microsoft.com/trainingandservices/exams/examasearch.asp?PageID=70-100
- Exam 70-100 Wiki pages,
<http://fox.wikis.com/wc.dll?Wiki~Exam70-100StudyGuide>
- Exam 70-156: "Designing and Implementing Desktop Applications with Microsoft Visual FoxPro® 6.0,"
www.microsoft.com/trainingandservices/exams/examasearch.asp?PageID=70-156
- Exam 70-156 Wiki pages,
<http://fox.wikis.com/wc.dll?Wiki~Exam70-156StudyGuide>

- Exam 70-155: “Designing and Implementing Distributed Applications with Microsoft Visual FoxPro® 6.0,”
www.microsoft.com/trainingandservices/exams/examasearch.asp?PageID=70-155
- Exam 70-155 Wiki pages,
<http://fox.wikis.com/wc.dll?Wiki~Exam70-155StudyGuide>
- Exam retirement:
www.microsoft.com/trainingandservices/default.asp?PageID=mcp&PageCall=retired&SubSite=examinfo&AnnMenu=mcdba&AnnLoc=cert/mcdba
- MCP and MCSD logo merchandise: www.mvpstore.com/default.asp

Testing centers

- Prometric Online Registration: www.2test.com/index.jsp
- Virtual University Enterprises: www.vue.com/ms/

Exam demos

- Microsoft demos, especially the case study-based test demo:
www.microsoft.com/trainingandservices/default.asp?PageID=mcp&PageCall=tesinn&SubSite=examinfo
- Transcender demos: www.transcender.com/products/demos.asp