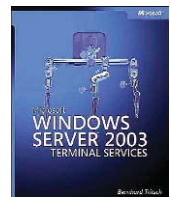
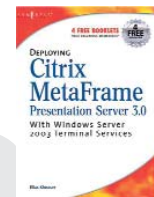




Citrix Certification

By Shawn Conaway



WHAT IS CITRIX?

Citrix Systems, Inc. is best known for its MetaFrame suite of products. Citrix MetaFrame, or Citrix for short, is used to provide low-bandwidth access to remotely hosted applications. Citrix is similar to, but more advanced than Microsoft's Terminal Services. Citrix uses the ICA network protocol, which is more efficient over slow links than the RDP protocol that Terminal Services uses.

The client piece of a client-server application can be 'published,' or made available, using Citrix. Published applications appear to run locally when in reality they are running on a remote Citrix server or server farm. The client piece of a client-server application is installed on a Citrix server located on the same high-speed LAN as the server side of the application. Data that normally would be sent across the network between the client and server stays local instead. The remote user sends keystrokes and mouse clicks through the Citrix client to the published application. Citrix, in turn, sends back screen changes instead of large amounts of data. Client-server applications connected with slow WAN links run dramatically faster with Citrix.

Citrix Systems, Inc. currently offers the Citrix MetaFrame Presentation Server, which is a primary component of the Citrix® MetaFrame® Access Suite. Presentation Server allows users access to applications from any location. Applications can be accessed over the Internet or by using a specialized client. Using Citrix to publish applications also allows IT departments to centralize management of applications.

WHY CERTIFY?

The prime motivator for certification is the money. Certification can be the differentiating factor between two similar job candidates. Someone with a premier certification, like the Citrix Certified Enterprise Administrator, has proved he is able to adapt to change and technical challenge and can command a higher salary than someone who does not have current skills.

Plus, all your friends are doing it.

According to the Microsoft Certified Professional Magazine Salary Survey from September 2004, the average salary in 2003 for a Citrix Certified Enterprise Administrator was \$77,900 and \$69,200 for Citrix Certified Administrators. Salaries are lower for smaller companies and larger in major metropolitan areas like Chicago, New York and Los Angeles. Additional experience and other certifications increase earning potential. As always, consultants earn more than permanent employees.

Certified Citrix professionals hold job titles like Systems Engineer, Systems Administrator, Manager, Senior Desktop Analyst, Citrix Analyst, Citrix Administrator, LAN Analyst, Terminal Services Engineer, Network Engineer, and Network Administrator. Individuals with Citrix certifications in fortune 500 companies are usually part of third-level support.

THE CERTIFICATIONS

In March 2005, Citrix separated their certifications into two distinct tracks aligned with their product offerings. The new certifications are suffixed with 'for MetaFrame Access Suite 3.0' or 'for MetaFrame XP Presentation Server,' reflecting the segmentation along the older MetaFrame XP Presentation Server and the newer MetaFrame Access Suite 3.0. Certifications in this article reference the newer 3.0 track.

Industry rumors suggest that there may be a MetaFrame 4.0 version available by mid-year, so consider your options carefully if you have not already started on the 3.0 track.

Citrix Certified Administrator 3.0 (CCA)—The CCA is Citrix's introductory certification for Citrix Administrators. CCAs have demonstrated their expertise with one of the following applications: Citrix MetaFrame XP Presentation Server, Citrix MetaFrame Presentation Server 3.0 or Citrix MetaFrame Presentation Server for UNIX.

Citrix Certified Enterprise Administrator 3.0 (CCEA)—The CCEA is an advanced certification for individuals who have the

technical skills to install and administer products in the Citrix Metaframe Access Suite.

Citrix Certified Integration Architect (CCIA)—Citrix has recently expanded the number of available certifications with the addition of the CCIA. The CCIA is a premier certification for professionals who are able to design, implement, and integrate Citrix products into a company infrastructure. A CCIA is a technical expert that can design, build, test, and integrate Citrix technologies into an existing infrastructure using Citrix best practices.

Citrix has two other certifications not specifically geared towards systems engineers and administrators: The Citrix Certified Instructor (CCI) and the Citrix Certified Sales Professional 3.0 (CCSP).

QUALIFICATIONS

Citrix certified professionals must be skilled with Citrix applications in addition to being knowledgeable about systems administration, systems engineering, networking, and scripting. A focus on maintaining up to date skills and the ability to learn quickly are key.

The CCEA and CCIA are highly specialized certifications requiring advanced knowledge of Citrix products and other Microsoft products like Active Directory, and Microsoft operating systems like Windows Server 2000 and 2003. CCIA's are often consultants, so intangibles like the willingness and ability to work with customers, to communicate verbally and in writing with customers and company executives, to analyze project requirements, and to manage time wisely are important skills. Good organizational skills, being a team player, being self-motivated, adaptability, ability to solve problems quickly, being willing to escalate problems that cannot be solved quickly are also valuable. Possibly the most important ability is to analyze needs, then design an uncomplicated solution for a complex problem.

DAILY DUTIES

Daily duties include troubleshooting application problems, publishing applications, and monitoring system performance. Excellent customer service is a significant part of a Citrix administrator's job. Administrators will work with users on a daily basis to fix their problems. For instance, users often have problems using published applications. Users also commonly have problems printing through the published applications due to mismatched printer drivers or because large print jobs have stopped the printer spooler service.

TYPICAL EMPLOYER

Citrix professionals work in companies of almost any size. They work in companies that need to provide applications remotely over low bandwidth connections, in companies like hospitals that need to securely provide applications over thin clients, or in companies that benefit from managing centrally published applications.

HOW TO BECOME CITRIX CERTIFIED

Becoming Citrix certified can include passing a test at a testing center, using Internet-based training, and passing training assessments over the Internet. Additionally, potential certificants may attend an instructor lead class or study technical manuals.

Citrix Certified Administrator 3.0 (CCA) requirements:

- ▼ Pass exam #223 Enterprise Edition Administration with a score of 67% or higher. The 79-question exam must be completed within 105 minutes. Testers should have:
 - ▶ Basic knowledge of Windows 2003 Server, network administration, and security concepts.
 - ▶ Six months experience installing, configuring, administering, and troubleshooting Citrix MetaFrame Presentation Server 3.0 Enterprise including the Resolution Manager, Installation Manager, Web Interface, Secure Gateway, and Citrix License Server components.
 - ▶ Six months experience publishing applications and providing user access.
- ▼ Choose one of the following two Internet-based 'eLearning' courses and pass the assessment at the end of the course:
 - ▶ CTX-1300BW Citrix MetaFrame Secure Access Manager 2.2: Introduction
 - ▶ CTX-1320BW Citrix MetaFrame Password Manager 2.5: Introduction

Citrix Certified Enterprise Administrator 3.0 (CCEA) requirements:

The Citrix Certified Enterprise Administrator (CCEA) program is a technical certification that expands the knowledge of Citrix administrators by focusing on deepening the skills required for installing and administering the Citrix MetaFrame Access Suite of products. To get certified, test-takers have to:

Pass the following exams:

- ▼ Exam 223—Enterprise Edition Administration (above)
- ▼ Exam 251—Management and Maintenance for the Enterprise
- ▼ Exam 252—Troubleshooting Enterprise Environment

Choose one pair...

- ▼ eLearning course and assessment—CTX-1300BW Citrix MetaFrame Secure Access Manager 2.2: Introduction
- ▼ Exam—722 Citrix Metaframe Secure Access Manager 2.2: Administration

OR

- ▼ eLearning course and assessment—CTX-1320BW Citrix MetaFrame Password Manager 2.5: Introduction
- ▼ Exam—Take the designated exam: 973 Citrix MetaFrame Password Manager 2.5: Administration

and accept the CCEA certification agreement.

Citrix Certified Integration Architect (CCIA) requirements:

The CCIA is the most difficult technical track Citrix has to offer. Attaining the CCIA requires expertise not only with Citrix products, but also with the operating systems on which they run. The certification requirements are:

Pass each of the following exams.

222 Citrix MetaFrame XP Presentation Server, Feature Release 3: Administration

- ▼ A 62% passing score is required for this 61 question, 115 minute long exam.
- ▼ Testers should know how to install, configure, and maintain MetaFrame XP Presentation Server.
- ▼ Citrix recommends six months experience with designing, supporting, and implementing Citrix products.

610 Citrix Core Technologies and Architecture

- ▼ A 72% passing score is required for this 52 question, 1 hour-long exam.
- ▼ Experience designing Citrix implementations with MetaFrame XP Server, Microsoft IIS Web Server, SQL, Active Directory, and Windows 2000 is recommended
- ▼ Citrix recommends testers have two years designing and supporting multiple MetaFrame XP server farms spanning multiple domains.

611 Citrix Design, Integration and Methodology

- ▼ A 61% passing score is required for this 60 question, 105-minute exam.
- ▼ The recommended knowledge and experience for this exam overlaps with exam #610.

Pass one Microsoft design exam:

- 70-219— Designing a Microsoft Windows® 2000 Directory Services Infrastructure
- 70-220— Designing Security for a Microsoft Windows 2000 Network
- 70-221— Designing a Microsoft Windows 2000 Network Infrastructure
- 70-226— Designing Highly Available Web Solutions with Microsoft Windows 2000 Server Technologies
- 70-297— Designing a Microsoft Windows Server 2003™ Active Directory® and Network Infrastructure
- 70-298— Designing Security for a Microsoft Windows Server 2003 Network

Accept the CCIA certification agreement.

Pass exam 612 Citrix Certified Integration Architect Lab

- ▼ The 6-hour hands-on lab administered by Citrix tests a candidate's ability to integrate Citrix technology into an existing infrastructure.
- ▼ There are no multiple-choice questions.
- ▼ The exam consists approximately of 65% reading and 35% systems verification and configuration.
- ▼ The rigorous, real-world exam is based on the job role of an integration architect.

COST

Multiple training resources are available for each certification level. The Internet-based eLearning classes that Citrix offers are inexpensive, many costing between \$2 and \$20. Instructor lead classes are dramatically more expensive, usually lasting two to four days and costing \$400–\$500 per day. Exams taken at Prometric testing centers cost \$100 for Citrix exams and \$125 for Microsoft exams.

CLASSES, BOOKS AND TRAINING

Each Citrix test has a classroom component. The name of the exam and the name of the class are usually synonymous. Citrix provides training manuals in conjunction with their classes. Unfortunately, those training manuals cannot be purchased separate from the classes. For training on the cheap, consider these books:

Book: Deploying Citrix Metaframe Presentation Server 3.0 With Windows Server 2003 Terminal Services

Author: Elias Khnaser

Cost: \$32.97

Pages: 608

Publisher: Syngress Publishing

Date: January 30, 2005

ISBN: 193226650X

Book: Citrix MetaFrame Access Suite Advanced Concepts : The Official Guide

Authors: Steve Kaplan, Tim Reeser

Cost: \$37.79

Pages: 656

Publisher: McGraw-Hill Osborne Media

Date: October 13, 2004

ISBN: 0072257105

Book: Citrix CCA MetaFrame XP Feature Release 3 Exam Cram 2 (Exam 222)

Author: Todd Mathers

Cost: \$23.79

Pages: 512

Publisher: Que

Date: April 25, 2005

ISBN: 0789732467

Book: Microsoft Windows Server 2003 Terminal Services

Author: Bernhard Tritsch


Cost: \$32.99

Pages: 550

Publisher: Microsoft Press

Date: November 26, 2003

ISBN: 0735619042

If you read the books, but are still unsure if you are ready to take the test, consider purchasing a practice test program. Many vendors have developed practice test programs, but Boson is one of the few that have developed practice tests for Citrix. Boson sells programs that include 200 practice tests for \$39.95 and programs with 250 practice questions for \$49.95. Keep in mind that the test only costs \$100. 



NaSPA member Shawn Conaway is a Systems Administrator for a Fortune 100 retailer. He currently holds the Microsoft Certified Systems Engineer, Citrix Certified Administrator, and A+ certifications. Send questions or comments to s.conaway@naspa.com.