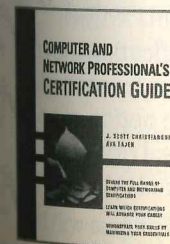


Chapter 25

CHOOSING THE RIGHT CERTIFICATION FOR YOU

The decision to pursue a certification should be made with forethought. It can take months or years, and a good amount of money, to reach your goal. You want to be certain that the certification(s) you obtain will help you meet your career goals. There may be advantages to obtaining almost any certification related to your career, but taking the time to define your goals and outline a career development plan will allow you to maximize your return on the certification investment.

This chapter offers suggestions on how to go about selecting a certification program, a set of questions that will help you plan specific steps, and a timeline for attaining your certification.



Adapted from *Computer and Network Professional's Certification Guide* by J. Scott Christianson and Ava Fajen
ISBN 0-7821-2260-4 560 pages \$19.99

SELECTING A CERTIFICATION PROGRAM

Matching your career goals with a specific certification program can be challenging. One of the main reasons that certification is so popular is because it attempts to keep pace with the rapid changes in the computer and networking industry; certification programs are rapidly being developed and changed to accommodate the latest technology. This can make a certification goal into a moving target for the candidate. At the same time, as new technologies emerge and evolve, your own career goals may change rapidly as well.

There are a number of things you may want to consider in choosing your certification path. Relevant questions include: Do you need to establish a new set of skills or do you have evidence of your core skills and just want something recent to add to your resume? Will you have to pay for all tests and required courses or will your employer pay? Are you looking for a comprehensive knowledge base in a certain area or do you need vendor-specific product knowledge?

This chapter offers you an introduction to all the certification programs available (that we know of). As you consider which certification programs may be of most interest to you, use the tables in this chapter to get a feel for the options that are available within certain general categories.

If you are just beginning your career, we suggest that you try to obtain a respected entry-level certification that covers a wide variety of skills. For example, if you are not yet in the computer networking field and you want certification in order to get a networking job at a company that uses Novell NetWare, you might choose to obtain the Certified Novell Administrator (CNA) certification. The CNA program requires only one test, which covers general knowledge of Novell's network operating system. This might be a more logical starting point than the Certified Novell Engineer (CNE) certification, which, while more impressive, involves six tests that require a very detailed working knowledge of the product.

In addition, you may want to consider selecting a certification program that has multiple levels (see the tables later in this chapter for examples). Once you attain the entry-level certification, you have the option of building on that certification by taking it to the next higher level or pursuing a different product certification in order to diversify your credentials.

For some, the choice of which certification program to pursue will be easier. If you have set your sights on a job or a promotion that requires a

specific certification, your goal is very clear. But it never hurts to think ahead as well. See if you can meet the certification requirement in a way that will help you add on other certifications later. For example, if you decide to get the Microsoft Certified Professional (MCP) credential, make sure that the test you take can also be applied to a more advanced certification, such as the Microsoft Certified Systems Engineer (MCSE) or Microsoft Certified Solutions Developer (MCSd), whichever would be more appropriate for you.

We also recommend that you take time to study the job market. Even if you are not ready to make an immediate move, following developments in the market can be extremely valuable. It will be worth your while to notice the directions the computer and networking industry is taking and to track current salary ranges, duties, and requirements for jobs that are of interest. A surefire way to make your certification efforts pay off is to notice what technology or product is just getting hot and make sure that you are one of the first people to get credentials in that area.

REACHING YOUR CERTIFICATION GOALS

Once you have selected a certification goal, it's important to make a definite plan for achieving your goal. A lot of folks never develop a concrete plan for attaining their goals, and, as a result, never reach them. For example, we have a friend who passed one Novell test three years ago and is not officially certified, but always claims to be "working on my CNE." Don't let yourself get caught in certification limbo. First, write down your goals. Next, outline specific steps that will help you accomplish them. Then develop a strategy for taking those steps within a reasonable time frame.

The questions that follow will help you to chart a plan for meeting your goals. Use Figure 25.1 to answer the questions. To get a bigger form with more space for completing each section, check out the online version of this form at the Certification Update Web site (<http://www.certification-update.com>). If you are working toward more than one certification, complete a separate form for each one.

Certification goal What is the title of the certification program you have selected?

Purpose of certification How will attaining this certification help you meet your job or career goals?

Deadline for attaining certification When will you be certified? This can be a self-imposed deadline, or there may be a time limitation imposed by your employer or the certification program itself. For example, some programs demand that you meet all the requirements for a certification within one year of taking your first certification test.

What I need to know Take a look at the exam objectives. Are you already proficient in any of the content areas? Take any available sample tests to check your knowledge. Determine what areas you need to focus on, what topics you will need to review, and what hands-on experience you will need.

Hands-on time How will you gain hands-on experience with the product or technology? Are you currently using it every day? If not, can you make special arrangements with a friend who has it, or will you need take a course?

Self-study opportunities What opportunities exist for self-study? Are books, CD-ROMs, or Internet courses available that are specifically designed for this certification? What study guides and resources are available from the certifying entity? Will you will able to learn all that you need to know from these resources? If not, how will you address these areas?

Courses and other opportunities What formal courses are available that would help you? Be sure to check with area community colleges and high schools for any continuing education courses that might address the topics you need to learn. Is there a friend or colleague that you can go to for help or mentoring? Can you form a study group with others who are pursuing this certification?

Study plan timeline After you have collected the information above, construct a detailed timeline for completing your certification. List the specific steps you plan to take to get the education and training you need. We suggest that you mark your timeline in terms of weeks, noting what you will be studying, courses or tests you will be taking, and topics that you will be reviewing each week. Some certification programs may require longer time frames; in this case, months or quarters would be appropriate markers.

**TIP**

The purpose of a timeline is not to make you feel bad if you miss a deadline, but to allow you to chart your progress toward your goal and to keep moving forward. If you find that you need extra time, simply revise your timeline as you go along.

Mapping Your Certification Goals

Certification Goal:

Purpose of Certification:

Deadline:

What I Need to Know:

Hands-On Time:

Self-Study Opportunities:

Courses and Other Opportunities:

Study Plan Timeline (add more rows as needed):

Step	Start Date	End Date	Learning Objective or Task	Resources Needed
1				
2				
3				
4				
5				

FIGURE 25.1: Mapping your goals

After you have selected the certification track that meets your professional development and career goals, you may also want to contact the organization or vendor that awards the certification you seek. In this way, you can find out more about the company that will be providing the certification that you are counting on to make a difference in your career. By talking to the certification staff, you may gain additional insight into the long-term value of attaining this particular certification, and learn about any imminent changes to the program.

CERTIFICATIONS

The sections that follow describe what certifications are available by category and present tables to help you compare the number of required tests, the test format, the approximate costs of taking the test(s), number of required courses, costs of any required courses, and the relative difficulty of the certification program. Use the cost information as a general guideline; since things change rapidly in the world of certification programs, once you have selected a specific course of action, you may want to double-check the costs.



NOTE

Before you start pursuing a certification, check with the Certification Update Web site (<http://www.certification-update.com>) or the certifying entity to make sure that the ID numbers and costs for the required tests and/or courses have not changed.

We rated the difficulty of attaining particular certifications by sorting them into three categories—Moderate, Challenging, and Extremely Challenging—based on the number of required tests and courses, and the relative difficulty of those tests or lab exams. These ratings are approximate and are offered simply as a general guide to help the reader distinguish between entry-level programs and those that require more advanced skill and knowledge. This rating scale assumes that one has experience with

the product or technology and has studied the appropriate subject content before attempting the exams.

Hardware Certifications

These are certification programs that validate an individual's ability to set up, maintain, and troubleshoot computer hardware. Compaq and IBM have programs to certify professionals who have knowledge and experience with their product lines. Learning Tree International, a training organization, has developed its own vendor-independent hardware certification program. The other certification program listed in this chapter—offered by the Disaster Recovery Institute International—involves training to ensure that a company can survive a disaster or natural catastrophe.

TABLE 25.1: Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Compaq Certifications							
Associate Accredited Systems Engineer Specializing in Novell IntranetWare	3	MC	\$300	None	NA	●	

Certification Difficulty:



Moderate



Challenging



Very Challenging

Test Format:

MC: Multiple choice
PR: Hands-on Lab

AT: Adaptive Testing

LA: Live Application
NA: Not Applicable

Test Fee:

VF: Test Fees can vary;
consult testing center

CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.1 continued: Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Compaq Certifications (continued)							
Associate Accredited Systems Engineer Specializing in Microsoft Windows NT	3	MC	\$300	None	NA	○	
Accredited Systems Engineer Specializing in Novell IntranetWare	None	NA	NA	None	NA	●	You must first obtain certification at the Associate level and must hold current certification as a Certified Novell Engineer (CNE).
Accredited Systems Engineer Specializing in Microsoft Windows NT	None	NA	NA	None	NA	●	You must first obtain certification at the Associate level and must hold current certification as a Microsoft Certified Systems Engineer (MCSE).
Disaster Recovery Institute International Certifications							
Associate Business Continuity Planner (ABCP)	1	MC	\$250	None	NA	○	
Certified Business Continuity Planner (CBCP)	None	NA	NA	None	NA	○	You must first be an Associate Business Continuity Planner and have two years of experience in the field. \$100 application fee.

Certification Difficulty:

○ Moderate

◐ Challenging

● Very Challenging

Test Format:

MC: Multiple choice
PR: Hands-on Lab

AT: Adaptive Testing

LA: Live Application
NA: Not Applicable

Test Fee:

VF: Test Fees can vary; consult testing center

CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.1 continued: Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Disaster Recovery Institute International Certifications (continued)							
Master Business Continuity Planner (MBCP)	None	NA	NA	None	NA	●	You must first be a Certified Business Continuity Planner, have five years of experience and complete a case study or independent research project. \$200 application fee.
IBM Certifications							
Professional Server Specialist (PSS)	1	MC	CV	1	\$750	○	
Professional Server Expert (PSE): Novell NetWare	1	MC	CV	1	\$600	●	You must first obtain PSS certification and hold current certification as a Certified Novell Engineer (CNE).
Professional Server Expert (PSE): OS/2 Warp Server	1	MC	CV	1	\$600	●	You must first obtain PSS certification and hold current certification as an OS/2 Warp Server Engineer.
Professional Server Expert (PSE): Windows NT Server	1	MC	CV	1	\$600	●	You must first obtain PSS certification and hold current certification as a Microsoft Certified Systems Engineer (MCSE).

Certification Difficulty:

○ Moderate

◐ Challenging

● Very Challenging

Test Format:

MC: Multiple choice
PR: Hands-on Lab

AT: Adaptive Testing

LA: Live Application
NA: Not Applicable

Test Fee:

VF: Test Fees can vary; consult testing center

CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.1 continued: Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Learning Tree International Certification							
Learning Tree International PC Service and Support Certified Professional	6	MC CV		6	\$12,000 to \$14,000		Discount pricing available; contact Learning Tree.
Certification Difficulty:  Moderate  Challenging  Very Challenging Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application PR: Hands-on Lab NA: Not Applicable Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.							

Operating System Certifications

Operating system certifications are offered by several makers of UNIX-based operating systems—IBM, Santa Cruz Organization, Silicon Graphics, and Sun—as well as Learning Tree International's vendor-independent UNIX certification. In addition, IBM offers certifications related to its AS/400 systems and two certification programs on OS/2, IBM's PC-based operating system. Finally, Microsoft offers the Microsoft Certified Professional (MCP) credential for technical professionals who are proficient in either Windows 95/98 or Windows NT.

TABLE 25.2 : Operating System Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
IBM AIX Certifications							
IBM Certified AIX User	1	MC VF	None	NA			Designed for AIX users rather than technical specialists.
IBM Certified Specialist: AIX System Administration	1	MC VF	None	NA			
IBM Certified Specialist: AIX Support	1	MC VF	None	NA			
IBM Certified Advanced Technical Expert: RS/6000 AIX	3	MC VF	None	NA			You must first be an IBM Certified Specialist in AIX System Administration or Support.
IBM AS/400 Certifications							
IBM Certified Specialist: AS/400 Associate System Operator	1	MC VF	None	NA			
IBM Certified Specialist: AS/400 Professional System Operator	1	MC VF	None	NA			
IBM Certified Specialist: AS/400 Associate System Administrator	1	MC VF	None	NA			
Certification Difficulty:  Moderate  Challenging  Very Challenging Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application PR: Hands-on Lab NA: Not Applicable Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.							

TABLE 25.2 continued: Operating System Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
IBM AS/400 Certifications (continued)							
IBM Certified Specialist: AS/400 Professional System Administrator	1	MC	VF	None	NA	●	
IBM OS/2 Certifications							
IBM Certified Systems Expert: OS/2 Warp	4	MC	VF	None	NA	●	Covers OS/2 Warp version 3.
IBM Certified Systems Expert: OS/2 Warp 4	3	MC	VF	None	NA	●	
Learning Tree International Certification							
Learning Tree International Unix Systems Certified Professional	6	MC	CV	6	\$12,000-\$14,000	●	Discount pricing available; contact Learning Tree.
Microsoft Certification							
Microsoft Certified Professional	1	MC	\$100	None	NA	○	
Santa Cruz Organization (SCO) Certifications							
Santa Cruz Organization Advanced Certified Engineer (SCO ACE): Server Track	4	MC	VF (\$500-\$640)	None	NA	●	
SCO ACE: Open Server Release 5 Track	3	MC	VF (\$375-\$540)	None	NA	●	

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.2 continued: Operating System Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Santa Cruz Organization (SCO) Certifications (continued)							
SCO ACE UnixWare 2.1 Track	3	MC	VF (\$375-\$540)	None	NA	●	
Silicon Graphics Certifications							
Silicon Graphics Certified IRIX 6.x System Administrator	2	MC	VF	None	NA	●	
Silicon Graphics Certified IRIX Network Administrator	1	MC	VF	None	NA	●	You must first be a Silicon Graphics Certified IRIX 6.x Systems Administrator.
Sun Certifications							
Sun Certified Solaris Administrator	2	MC	\$300	None	NA	●	
Sun Certified Solaris 2.5 Network Administrator	1	MC	\$150	None	NA	●	You must first be a Sun Certified Solaris Administrator.

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Software Certifications

There are a number of software certifications that are of interest to all computer users. Adobe offers the Adobe Certified Expert certification for a number of its products. Baan, a maker of business intelligence software, offers both basic and advanced certifications. Corel's certification program includes two levels of certification on its WordPerfect, Quattro Pro, and Presentations programs. Lotus offers a wide variety of certifications on its software. In addition, Microsoft offers several levels of certification on its Microsoft Office and related software products.

TABLE 25.3: Software Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Adobe Certification							
Adobe Certified Expert	1	MC	\$150	None	NA	○	Available on: Illustrator 7.0, Acrobat 3.0, After-Effects 3.1, Framemaker 5.5, Pagemaker 6.5, PageMill 2.0, Photoshop 4.0
Baan Certifications							
Baan Basic Certification	1	MC	\$300	None	NA	○	
Baan Advanced Certification in Enterprise Logistics	1	MC	\$300	None	NA	◐	You must first obtain the Baan Basic Certification.

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.3 continued: Software Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Baan Certifications (continued)							
Baan Advanced Certification in Enterprise Finance	1	MC	\$300	None	NA	◐	You must first obtain the Baan Basic Certification.
Baan Advanced Certification in Enterprise Tools	1	MC	\$300	None	NA	◐	You must first obtain the Baan Basic Certification.
Baan Advanced Certification in Enterprise Modeler	1	MC	\$300	None	NA	◐	You must first obtain the Baan Basic Certification.
Corel Certifications							
Corel WordPerfect 7 Certified Resource	1	MC	\$55	None	NA	○	
Corel Quattro Pro 7 Certified Resource	1	MC	\$55	None	NA	○	
Corel Presentations 7 Certified Resource	1	MC	\$55	None	NA	○	
Corel WordPerfect 7 Certified Expert	1	MC	\$80	None	NA	◐	\$55 application fee (currently waived).
Corel Quattro Pro 7 Certified Expert	1	MC	\$80	None	NA	◐	\$55 application fee (currently waived).
Corel Presentations 7 Certified Expert	1	MC	\$80	None	NA	◐	\$55 application fee (currently waived).

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.3 continued: Software Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Lotus Certifications							
Certified Lotus Specialist (CLS)	1	MC	\$90	None	NA	○	
Certified Lotus Professional (CLP): Application Developer	3	MC or LA	\$270	None	NA	◐	
Certified Lotus Professional (CLP): Principal Application Developer	1	MC or LA	\$90	None	NA	●	You must first be a CLP Application Developer.
Certified Lotus Professional (CLP): System Administrator	3	MC or LA	\$270	None	NA	◐	
Certified Lotus Professional (CLP): Principal System Administrator	1	MC or LA	\$90	None	NA	●	You must first be a CLP System Administrator.
Certified Lotus Professional (CLP): cc:Mail System Administrator	2	MC	\$90	None	NA	◐	

Microsoft Certifications

Microsoft Office Proficient Specialist	1	LA	VF (suggested fee is \$50)	None	NA	○	Available for Word 95, Word 97, Excel 95, and Excel 97.
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Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice
PR: Hands-on Lab AT: Adaptive Testing LA: Live Application
NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.3 continued: Software Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Microsoft Certifications (continued)							
Microsoft Office Expert Specialist	1	LA	VF (suggested fee is \$50)	None	NA	◐	Available for Access 97, Excel 95, Excel 97, FrontPage 97, Outlook 97, PowerPoint 95, PowerPoint 97, Word 95, and Word 97.
Microsoft Office Expert	1	LA	VF (suggested fee is \$50)	None	NA	●	You must first be a Microsoft Office Expert Specialist in five core Office 97 applications (Word, Excel, Access, PowerPoint, and Outlook).

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice
PR: Hands-on Lab AT: Adaptive Testing LA: Live Application
NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Networking Hardware Certifications

Networking hardware certifications are from the major manufacturers of networking equipment. Ascend offers a certification for its product line, which includes remote-access and switching equipment. Bay Networks and Cisco are both well-known for their routers, but are also big players in remote-access and switching technology. Bay Networks offers two levels of certification in a number of different types of technology. Cisco's Certified Internetworking Expert (CCIE) program has recently expanded to include Cisco Certified Network Associate (CCNA), Cisco Certified Network Professional (CCNP), Cisco Certified Design Associate (CCDA), and Cisco Certified Design Professional (CCDP).

Learning Tree International offers vendor-independent certification programs in local area networking, wide area networking, and internet-working. Finally, Xylan offers two new certifications in its switching technology product line: the Xylan Switch Specialist and the Xylan Switch Expert.

TABLE 25.4: Networking Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Ascend Certification							
Ascend Certified Technical Expert	3	MC, PR	\$1250	None	NA	●	
Bay Networks Certifications							
Bay Networks Certified Specialist: Hub Technology	1	MC	\$125	None	NA	○	
Bay Networks Certified Expert: Hub Technology	2	MC, PR	\$550	None	NA	●	You must first be a Certified Specialist in Hub Technology.
Bay Networks Certified Specialist: Router Technology	1	MC	\$125	None	NA	○	
Bay Networks Certified Expert: Router Technology	2	MC, PR	\$650	None	NA	●	You must first be a Certified Specialist in Router Technology.
Bay Networks Certified Specialist: Network Management Technology	1	MC	\$125	None	NA	○	

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.4 continued: Networking Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Bay Networks Certifications (continued)							
Bay Networks Certified Expert: Network Management Technology	2	MC, PR	\$800	None	NA	●	You must first be a Certified Specialist in Network Management Technology.
Bay Networks Certified Specialist: Switching Technology	1	MC	\$125	None	NA	○	
Bay Networks Certified Expert: Remote Access Technology	1	MC	\$125	None	NA	○	
Cisco Certifications							
Cisco Certified Internetworking Expert (CCIE): WAN Switching Expert	2	MC, PR	\$1200	None	NA	●	
Cisco Certified Internetworking Expert (CCIE): Internet Service Provider Dial Expert	2	MC, PR	\$1200	None	NA	●	
Cisco Certified Internetworking Expert (CCIE): Routing and Switching Expert	2	MC, PR	\$1200	None	NA	●	

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.4 continued: Networking Hardware Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Learning Tree International Certifications							
Learning Tree International Local Area Networks Certified Professional	5	MC	CV	5	\$12,000-\$14,000	●	Discount pricing available; contact Learning Tree.
Learning Tree International Wide Area Networks Certified Professional	5	MC	CV	5	\$12,000-\$14,000	●	Discount pricing available; contact Learning Tree.
Learning Tree International Internet-networking Certified Professional	5	MC	CV	5	\$12,000-\$14,000	●	Discount pricing available; contact Learning Tree.
Xylan Certifications							
Xylan Certified Switching Specialist (XCSS)	1	MC	\$100	None	NA	○	
Xylan Certified Switching Expert (XCSE)	1	MC	\$200	None	NA	●	You must first be a Certified Switching Specialist.
Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application PR: Hands-on Lab NA: Not Applicable Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.							

Networking Operating System Certifications

There are currently four certification programs related to network operating systems. Banyan's certification program concentrates on the Vines network operating system, which is used primarily to link UNIX servers with a variety of clients. IBM offers certifications on its PC-based network operating systems—OS/2 Warp Server and OS/2 LAN server. Novell's certification program, initiated in 1987, offers four levels of certification on Novell NetWare, IntranetWare, and GroupWare products. The Microsoft Certified Systems Engineer (MSCE) credential certifies individuals on Microsoft's network operating system, Windows NT Server.

TABLE 25.5: Networking Operating Systems Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Banyan Certifications							
Certified Banyan Specialist (CBS)	3	MC	\$360	None	NA	○	
Certified Banyan Specialist (CBS): Windows NT	3	MC	\$340	2	\$3,300	●	
Certified Banyan Engineer (CBE)	2	MC	\$240	2	\$4,500	●	You must first be a Certified Banyan Specialist.
IBM Certifications							
IBM Certified Specialist: OS/2 Warp Server Administration	1	MC	VF	None	NA	○	
Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application PR: Hands-on Lab NA: Not Applicable Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.							

TABLE 25.5 continued: Networking Operating Systems Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
IBM Certifications (continued)							
IBM Certified Expert: OS/2 Warp Server	3	MC	VF	None	NA	●	
IBM Certified Specialist: OS/2 LAN Server 4.0 Administration	1	MC	VF	None	NA	○	
IBM Certified Expert: OS/2 LAN Server 4.0	6	MC	VF	None	NA	●	
Microsoft Certification							
Microsoft Certified Systems Engineer (MCSE)	6	MC	\$600	None	NA	●	Pick your elective test carefully and you can obtain MCP + Internet at the same time.
Novell Certifications							
Certified Novell Administrator (CNA)	1	AT, MC	\$85	None	NA	○	Available in either NetWare 3, IntranetWare, GroupWise 4, GroupWise 5.
Certified Novell Engineer (CNE)	7	AT, MC	VF	None	NA	●	Available in either NetWare 3, IntranetWare, GroupWise 4, GroupWise 5.
Master Certified Novell Engineer (MCNE)	4 to 6	AT, MC	VF	None	NA	●	Available to current CNEs. MCNE specialties are Management, Connectivity, Messaging, Internet/Intranet Solutions, AS/400 Integration, Unix Integration, or Windows NT Integration.

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Client/Server and Database System Certifications

Several highly specialized certification programs were designed by vendors that make database and client/server products. Borland, Centura, Informix, Oracle, and Sybase all offer certifications on their database products. These certifications focus on the tasks involved in administering and managing large databases for a variety of purposes.

TABLE 25.6: Client/Server Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Borland Certification							
Delphi 3 Certified Developer	1	MC	\$150	None	NA	○	
Centura Certifications							
Centura Database Developer	1	MC	\$120	None	NA	○	
Centura Database Administrator	1	MC	\$120	None	NA	○	
Informix Certifications							
Database Specialist: Informix Dynamic Server	2	MC	\$500	None	NA	●	

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.6 continued: Client/Server Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Informix Certifications (continued)							
System Administration: Informix Dynamic Server	2	MC	\$500	None	NA	●	
INFORMIX-4GL Certified Professional	2	MC	\$500	None	NA	●	
Oracle Certifications							
Certified Database Administrator	4	MC	\$500	None	NA	●	
Certified Application Developer for Developer/2000	5	MC	\$625	None	NA	●	
Sybase Certifications							
Certified PowerBuilder Developer Associate	2	MC	VF	None	NA	●	
Certified PowerBuilder Developer Professional	1	LA	VF	None	NA	●	You must first be a PowerBuilder Developer Associate.
Certified Database Administrator	2	MC	VF	None	NA	●	
Certified Performance and Tuning Specialist	1	MC	VF	None	NA	●	You must first be a Certified Database Administrator.

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Internet Certifications

Internet certifications are both vendor-based and vendor-independent certification programs that address Internet strategies, procedures, and protocols. The IBM Certified Solutions Expert: Net.Commerce addresses security for financial transactions on the Internet; the IBM Certified Solution Expert: Firewall targets technical professionals who install secure links between company networks and the Internet. The vendor-independent Learning Tree International certification program covers TCP/IP protocols for setting up and administering intranets and Internet connections.

The Microsoft certifications—Microsoft Certified Professional + Internet and Microsoft Certified Systems Engineer + Internet—are focused on the implementation of intranet and Internet solutions using Microsoft products. Novell offers a number of certifications for Internet professionals. Prosoft/Net Guru Technologies offers certification programs in all aspects of the Internet, from Web site design and business strategies to server administration and TCP/IP security. Finally, USWeb Learning offers two vendor-neutral certifications that focus on broadly applicable fundamentals and principles of Web development.

TABLE 25.7: Internet Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
IBM Certifications							
Certified Solutions Expert: Net.Commerce	1	MC	VF	None	NA	○	

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.7 continued: Internet Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
IBM Certifications (continued)							
Certified Solutions Expert: Firewall Resources	1	MC	VF	None	NA	○	
Learning Tree International Certification							
Learning Tree International Internet/Intranet Certified Professional	5	MC	CV	5	\$12,000-\$14,000	●	Discount pricing available; contact Learning Tree.
Microsoft Certifications							
Microsoft Certified Professional + Internet	3	MC	\$300	None	NA	●	
Microsoft Certified Systems Engineer + Internet	9	MC	\$900	None	NA	●	
Novell Certified Internet Professional Certifications							
Internet Business Strategist	1	MC	VF	None	NA	○	
Web Designer	4	MC	VF	None	NA	●	
Intranet Manager	5	MC	VF	None	NA	●	
Internet Architect	5	MC	VF	None	NA	●	

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.7 continued: Internet Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Prosoft/Net Guru Technologies Certified Internet Webmaster Certifications							
Designer	1	MC	CV	3	\$995	●	
Developer I	1	MC	CV	2	\$2275	●	
Developer II	1	MC	CV	2	\$2275	●	
Administrator	1	MC	CV	2	\$2440	●	
Network Professional	1	MC	CV	2	\$2275	●	
Security Professional	1	MC	CV	4	\$4400	●	
ECCommerce Professional	2	MC	CV	1	\$1445	●	
USWeb Learning Certifications							
Certified Specialist	2	MC	VF	3-4	VF	●	
Certified Architect	3	MC	VF	5	VF	●	

Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Instructor and Trainer Certifications

There are a number of certification programs for instructors and trainers who want to provide "authorized training" for specific vendors, including Adobe, Banyan, Borland, Corel, IBM, Lotus, Microsoft, Novell, and Prosoft/Net Guru Technologies. The vendor-independent Certified Technical Trainer credential offered by the Chauncey Group is a widely respected certification program and a required component of several of the vendor-based training certifications.

TABLE 25.8: Instructor/Trainer Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Adobe Certification							
Adobe Certified Instructor	None	NA	NA	None	NA	●	You must be a Certified Technical Trainer and be an Adobe Certified Expert on the product you will teach.
Banyan Certifications							
Certified Banyan Instructor (CBI)	None	NA	NA	1	VF	●	Must be a CBE. Must also be a CTT, have vendor instructor certification, or take an approved instructional skills course.
CBI: Problem Solving for Vines Networks Authorization	None	NA	NA	1	VF	●	Obtain CBI status first.

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.8 continued: Instructor/Trainer Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Borland Certification							
Borland Delphi 3 Certified Trainer	None	NA	NA	1	\$1000	◐	You must first be a Delphi 3 Certified Developer.
Chauncey Group International Certification							
Certified Technical Trainer (CTT)	1	MC	\$150	None	NA	◐	Also requires a performance video (\$135 fee for processing).
Corel Certifications							
Corel WordPerfect Suite 7 Certified Instructor	None	NA	NA	None	NA	◐	You must first be a WordPerfect Certified Expert and a CTT. \$200 application fee.
CorelDRAW 5 Certified Instructor	1	MC	VF	None	NA	◐	
IBM Certifications							
IBM Certified Instructor: OS/2 Warp	None	NA	NA	None	NA	◐	Must be a Certified Systems Expert: OS/2 Warp and provide proof of teaching experience.
IBM Certified Instructor: OS/2 LAN Server	None	NA	NA	None	NA	◐	Must be a Certified Systems Expert: OS/2 Warp and provide proof of teaching experience.
IBM Certified Instructor: OS/2 Warp Server	None	NA	NA	None	NA	◐	Must be a Certified Systems Expert: OS/2 Warp and provide proof of teaching experience.

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.8 continued: Instructor/Trainer Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Lotus Certifications							
Certified Lotus Instructor (CLI): Level One	2	MC	\$180	3	VF (\$1500-2000)	○	Must provide proof of instructional experience.
Certified Lotus Instructor (CLI): Level Two	2	MC	\$180	3	VF (\$1500-2000)	◐	Must also have experience teaching Level One courses.
Certified Lotus Instructor (CLI): Advanced Course	None	NA	C	None	NA	●	Must have experience teaching Level Two courses; take courses, and pass tests on what you will teach.
Microsoft Certification							
Microsoft Certified Trainer	None	NA	NA	None	NA	◐	Must prove instructional skills (CTT, instructional course, or other vendor trainer certification).
Novell Certifications							
Certified InfiLearn-ing Instructor	None	NA	NA	None	NA	◐	Must prove instructional skills (CTT or course); attend course and pass test for the course you will teach.
Certified Novell Instructor	None	NA	NA	None	NA	●	Obtain CNE, prove instructional skills (CTT or course); take course and pass test for course you will teach.

Certification Difficulty:



Moderate



Challenging



Very Challenging

Test Format:

MC: Multiple choice
PR: Hands-on Lab

AT: Adaptive Testing

LA: Live Application
NA: Not Applicable

Test Fee:

VF: Test Fees can vary; consult testing center

CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.8 continued: Instructor/Trainer Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Novell Certifications (continued)							
Master Certified Novell Instructor	None	NA	NA	None	NA	●	Obtain Master CNE, prove instructional skills (CTT or course); take course and pass test for course you will teach.
Prosoft/Net Guru Technology Certifications							
Prosoft/NGT Certified Windows NT Instructor	1	MC	CV	2	\$3425	◐	
Prosoft/NGT Certified Network Professional Instructor	1	MC	CV	4	\$5700	◐	
Prosoft/NGT Certified Security Professional Instructor	3	MC	CV	4	\$7775	●	
Prosoft/NGT Certified Internet Web Developer Instructor	3	MC	CV	3	\$6645	●	

Certification Difficulty:



Moderate



Challenging



Very Challenging

Test Format:

MC: Multiple choice
PR: Hands-on Lab

AT: Adaptive Testing

LA: Live Application
NA: Not Applicable

Test Fee:

VF: Test Fees can vary; consult testing center

CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Other Vendor-Based Certifications

Additional vendor-based certification programs cover aspects of computing and networking that did not fit neatly into the previous categories. Two certification programs concentrate on computer security: the Certified Information Systems Security Professional designation, offered by the International Information Systems Security Certification Consortium, and the Certified Information Systems Auditor credential, offered by Information Systems Audit and Control Association.

Two certifications focus on programming. The Microsoft Certified Solution Developer certification program is designed for computer professionals who develop custom applications using Microsoft products and/or programming languages. The Sun Certified Java Programmer and Developer are two popular certifications offered by the inventors of the Java programming language.

The final two certifications in this category concentrate on network management software. This type of software is used for large-scale monitoring and troubleshooting of networks that are comprised of equipment and software from multiple vendors. The two network management certifications are Computer Associates' Certified Unicenter Engineer credential and Hewlett-Packard's OpenView Certified Consultant designation.

TABLE 29.9: Other Vendor Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
International Information Systems Security Certification Consortium							
(ISC) ² Certified Information Systems Security Professional	1	MC	\$395	None	NA	○	Three years field experience required
Information Systems Audit and Control Association Certification							
Certified Information Systems Auditor (CISA)	2	MC	\$295-\$385	None	NA	●	Five years field experience required
Microsoft Certification							
Microsoft Certified Solutions Developer	4	MC	\$400	None	NA	●	
Sun Certifications							
Certified Java Programmer: JDK 1.0.2	1	MC	\$150	None	NA	○	
Certified Java Programmer: JDK 1.1	1	MC	\$150	None	NA	○	
Certified Java Developer: JDK 1.0.2	1	MC	\$150	None	NA	●	Must complete a programming assignment (\$250 fee).
Certified Java Developer: JDK 1.1	1	MC	\$150	None	NA	●	Must complete a programming assignment (\$250 fee).

Certification Difficulty: ○ Moderate ○ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.9 continued: Other Vendor Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
Computer Associates Certification							
Certified Unicenter Engineer	2	MC	VF	2	VF	●	
Hewlett-Packard Certifications							
HP OpenView Certified Consultant: UNIX	2	MC	VF	None	NA	●	
HP OpenView Certified Consultant: Windows NT	2	MC	VF	None	NA	●	
HP OpenView Certified Consultant: UNIX and Windows NT	2	MC	VF	None	NA	●	

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

Organization-Based Certifications

These certifications are offered by organizations or associations, rather than by vendors. These certification programs are well respected in the computer and networking fields because they tend to be comprehensive and standards-based.

BICSI offers the Registered Communications Distribution Designer program, which certifies experts who design and install cabling and networking for new and existing buildings. The Computer Technology Industry Association, or CompTIA, offers two important certifications: the A+ certification for computer service technicians, and the Certified Document Architect for imaging specialists. The Certified Network Professional credential—developed by the Network Professional Association—certifies networking expertise, as does the Certified Network Expert credential, which is offered by a consortium of industry representatives. The Institute for Certification of Computing Professionals (ICCP) was founded in 1973 and offers the Certified Computing Professional credential, which covers many different aspects of computing and networking.

TABLE 25.10: Organization-Based Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
BICSI Certifications							
Registered Communications Distribution Designer (RCDD)	1	MC	\$100	None	NA	●	Requires annual membership (\$100) and two years experience.

Certification Difficulty: ○ Moderate ◐ Challenging ● Very Challenging

Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application
PR: Hands-on Lab NA: Not Applicable

Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.

TABLE 25.10 continued: Organization-Based Certifications

Certification	# of Required Tests	Test Format(s)	Total Cost of Required Tests	# of Required Courses	Total Cost of Required Courses	Difficulty	Notes
BICSI Certifications (continued)							
RCDD: Local Area Network Specialty	1	MC	\$100	None	NA	●	Must obtain an RCDD.
CompTIA Certifications							
A+ Certification	2	MC	\$190-220	None	NA	●	
Certified Document Image Architect (CDIA)	1	MC	\$150-165	None	NA	●	
CNX Consortium Certification							
CNX	1	MC	\$250	None	NA	●	Specializations: Token Ring, Ethernet, FDDI, or LAN Cabling
ICCP Certification							
Certified Computer Professional (CCP)	3-4	MC	\$350-\$400	None	NA	●	
Network Professional Association Certification							
Certified Network Professional (CNP)	1	MC	VF	None	NA	●	
Certification Difficulty: ○ Moderate ● Challenging ● Very Challenging Test Format: MC: Multiple choice AT: Adaptive Testing LA: Live Application PR: Hands-on Lab NA: Not Applicable Test Fee: VF: Test Fees can vary; consult testing center CV: Voucher for taking the exam is included in the fee for the required course(s); additional attempts cost extra.							

WHAT'S NEXT?

This chapter provided an overview of the many certification programs that are available. The next chapter focuses on Microsoft Certified Systems Engineer (MCSE) certification.