

E-guide | U.S. 2019

CAREER PATHWAYS IN INFORMATION TECHNOLOGY:

Using Your International Education in the U.S.

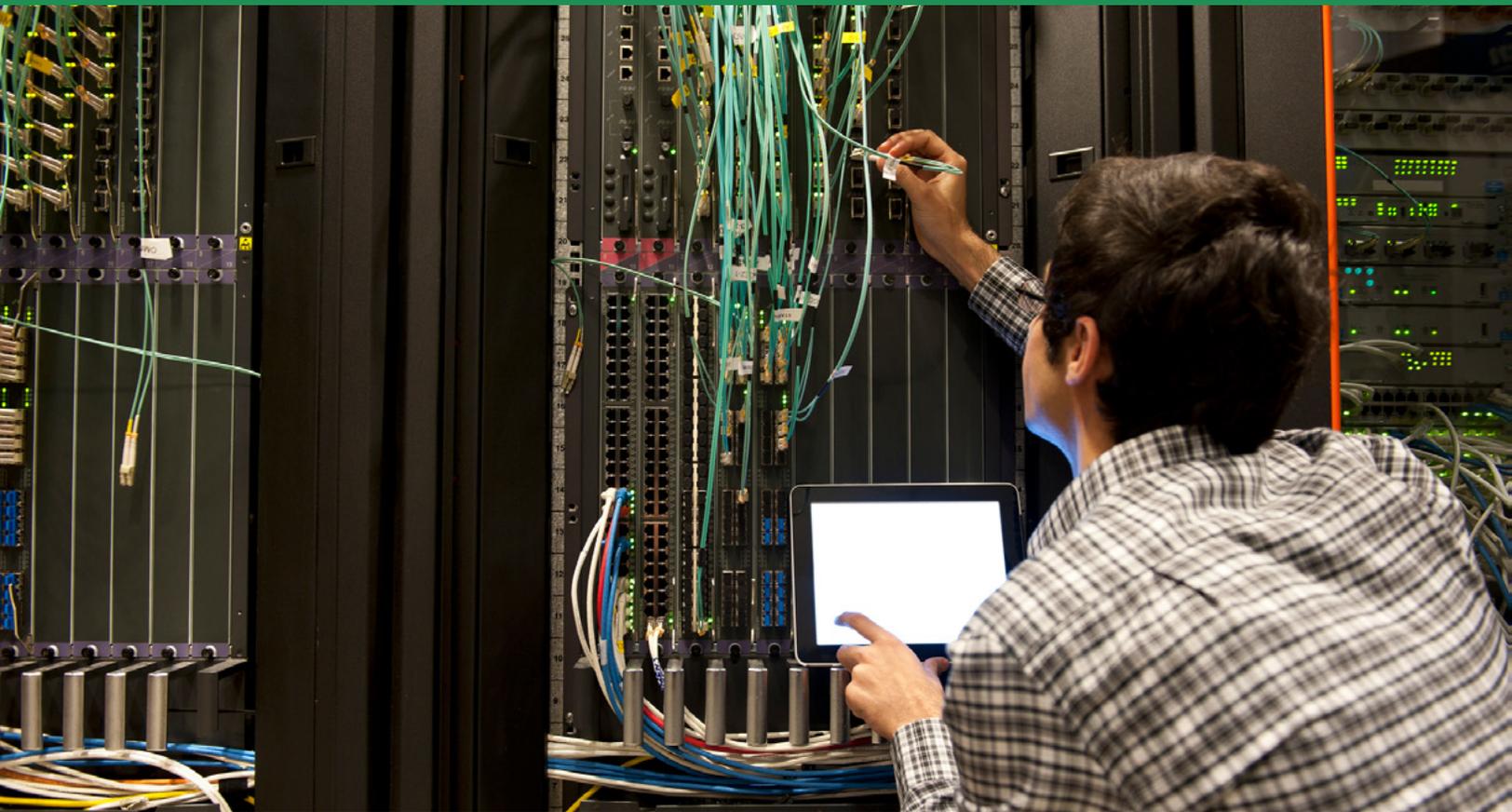


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The information contained in this e-guide is currently undergoing additional review by experts in the field of information technology.



INTRODUCTION

Immigrating to the United States is an opportunity to use your international training to either advance in your field or pursue a new career that builds on your education and experience. While there is no licensing requirement for Information Technology (IT) professionals, the various career paths do often involve obtaining certification—a process that can be costly and time-consuming—so it is especially important to fully consider your options.

The Pathways Guide at a Glance

If you have completed your education in another country and are now starting your career in the United States, you will need to understand to what extent you meet the academic requirements of your chosen career.

- **The Gaining Recognition for Your International Education section** (p. 8) will explain how to determine the U.S. equivalency of your foreign degree to help you explore career pathways in IT and other fields.
- **The Educational Pathways in the Field of Information Technology section** (p. 10) provides examples of careers in IT that may match your qualifications.
- If you want to continue your IT career in the United States, you must obtain the certifications specific to your field. See the **Certification Requirements in Information Technology section** (p. 23).
- Not all internationally trained IT professionals decide to pursue certifications in the United States, either because of the time and expense involved, or because they want to pursue a different career. See the **Transferable Skills and Using Them in Related or Alternative Careers section** (p. 24).

Let's get started!

Strategies for Success

Ask Lots of Questions

While you may have a strong idea of what your career will be in the United States based on the professional experience you already have, establishing yourself in a new country is a chance to reach new goals and possibilities. Analyzing your career options in the U.S. can be challenging, but by remaining flexible you can use the education and experience you already have to take steps to succeed in the U.S.

As you research your options, ask yourself:

- What are my short term and long term employment goals?
- What options are available to me based on my skills and qualifications?
- What are the steps and requirements in terms of time, costs, and additional training to pursue my goal?
- Who can I talk to about my options?

Make a Plan

After you've explored some of the career options available to you in the United States, it is time to make decisions and come up with a plan. In the U.S., developing your career path requires a life-long commitment to learning, networking, and taking risks.

A successful plan includes realistic steps and time frames for completion. Your plan should also make it possible for you to work towards multiple goals at once and allow for some setbacks along the way. It will take patience to reach your goals and it is normal to change your mind or adapt to new circumstances as you move forward.

Think about the steps it will take to reach your goal. A clear goal-oriented plan may look something like this:

GOAL: Improve my language skills.

STEPS TO GOAL:

- Take an English language course that suits my needs.
- Meet with an English language conversation partner weekly.
- Learn terminology and professional language in my field.
- Read the newspaper every day.

You can use the SMART Goal Worksheet (p. 28) to guide you as you outline your plan.

Take Initiative

While your **academic and professional credentials** are very important in your professional success, so are skills like your communication style, English language level, and ability to adapt to U.S. workplace culture. **Networking** with IT professionals you know, meeting professionals in the field, joining a professional association, attending conferences, and volunteering¹ with non-profit organizations that need IT help are great ways to practice the skills you will need to succeed in your job.

Finding meaningful work as an immigrant can take time and you may face challenging obstacles. Although many factors are out of your control, try to remain flexible, be persistent, and take initiative. As you explore this guide, you will find a number of helpful resources to support you.

GLOSSARY

Academic and professional credential: The degree, diploma, or license you receive when you complete a program, pass examinations, or meet a set of requirements

Networking: Interacting with other people to exchange information and develop contacts, especially to further one's career.

YOUR CAREER PATHWAY IN THE UNITED STATES

Like many immigrants, you may initially struggle to gain entry into your professional field in U.S. While you may have adequate knowledge or experience, the challenge often occurs in translating your skills and qualifications in a way that local employers will value and understand. You may also need further education and training, an understanding of your local labor market, and knowledge of how to navigate your options to choose a **career pathway**.



Your career pathway is made up of the educational and professional decisions that will open doors to new opportunities. Education and training are the building blocks of your career—with the skills you acquire, you can earn promotions and take on additional professional responsibilities.

To start thinking about your career options, you will need to understand the difference between regulated and non-regulated professions.

Understanding Regulated Professions

Each state decides which professions it will regulate and what level of formal education or training is required for entry into the field. In the United States, specific authorities or regulatory bodies are responsible for recognizing professional credentials required for state licensing. While the IT profession does encourage the pursuit of certifications, it is not a regulated profession, so licensure does not exist. However, careers where certification is of substantial benefit are clearly marked in this guide.

Understanding Non-Regulated Professions

Some occupations in the United States are either internally regulated by professional associations, or are entirely non-regulated. However, although less strict than **regulated professions**, certain standards of professional practice or **designations** might still be preferred by employers and professional associations in non-regulated professions. You can demonstrate that you meet these standards through a certification process linked to training programs provided by employers or community colleges.

GLOSSARY

Career pathway: A series of connected education and training programs that enable individuals to secure a job or advance in an industry or occupation.

Regulated professions: Professions that require a license or certification.

Designation: A title earned by an individual through a certification process.

Can I work as an Information Technology (IT) professional in the United States?

The IT industry in the U.S. is not regulated. That means that IT occupations in the U.S. do not require a license, although **certification** may be required to practice. Since **relicensing** is not required, you have good options for working as an IT professional in the U.S. You have access to employment opportunities in a variety of roles, often with voluntary certification either required or preferred by employers.

The IT certification you may have from your home country may or may not be valid in the U.S. For instance, Microsoft certification exams are the same in every country, and so your Microsoft certification acquired in a foreign country is also valid in the U.S.; however, a certification from a professional association in a foreign country would not be recognized in the U.S. Internationally trained IT professionals need to meet the same requirements as those educated in the U.S.



In this guide, occupations that require a certification process are clearly marked.

If you decide against pursuing IT certification in the United States, you can still work in the field of IT in a less technical occupation. Some related careers are discussed in the **Transferable Skills and Using Them in Related or Alternative Careers** section of this guide (p. 24).

GLOSSARY

Certification: A voluntary credentialing process by a non-governmental, private professional association, or by a private vendor in the use of their products.

Relicensing: Having to meet licensing requirements in the United States, even if you have a license from another country.

THE INFORMATION TECHNOLOGY PROFESSION IN THE UNITED STATES

Information technology is an unregulated profession that focuses on developing, maintaining, and utilizing computer systems, networks, and software for the processing and distribution of data.²

As our world's dependence on computers and digital information deepens, the need for IT professionals in almost every field is rapidly increasing. IT professionals fulfill a number of vital roles, with special areas of expertise. Depending on their level of training and their specific role, IT professionals use technical or managerial skills. They usually practice in offices, which can be in virtually any setting, including hospitals, schools, private corporations, non-profit organizations, or even from remote/home offices. Specializations are numerous, and include software development, web development, cybersecurity, networking, and data management.

Working as an IT Professional in the United States

An IT professional's roles and responsibilities in the United States may be different than in other countries. Internationally trained IT professionals need to meet the same requirements as U.S.-educated ones, so even if you have many years of experience, you must obtain the required certifications if you plan to work in the U.S.

Internationally educated IT professionals can obtain certifications in the U.S., although it can be a costly and time-consuming process. However, if you already have vendor certifications, such as Oracle, then those are already also valid in the U.S.

Roles and Responsibilities

There are many different areas of specialty within the IT field, and each has different roles and responsibilities.

In the U.S., an IT professional might be responsible for:

- The daily operation of an organization's computer networks.
- Creating and maintaining websites.
- Assisting computer users and organizations.
- Writing code that allows computer programs to function properly.
- Storing and organizing data, and ensuring that it is secure and accessible to users.
- Developing computer applications and/or computer and network systems.
- Designing and building data communication networks.
- Planning and implementing security systems to protect an organization's computer networks from outside interference.
- Supervising and directing computer-related activities for an organization.
- Outlining an organization's IT goals and working to ensure those goals are met.

Understanding Job Titles

The roles and responsibilities of IT professionals are highly dependent on areas of expertise and experience. For example, when searching for employment in the field of IT, you may see job postings with the following titles:

- Data Analyst
- Network Administrator
- Cyber Security Specialist
- Web Application Developer
- Tech Support
- Enterprise Architect



You can read more about academic and professional credentials in the [Educational Pathways in the Field of Information Technology](#) section of this guide (p. 10).

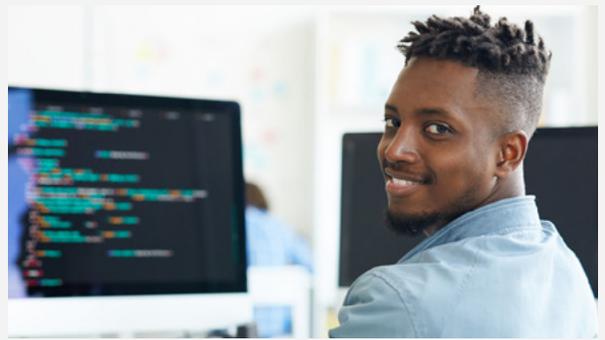
GAINING RECOGNITION FOR YOUR INTERNATIONAL EDUCATION

Your education is the foundation of your career. Although there may be challenges to using your foreign credentials in the United States, you do not have to start over. For an internationally trained professional, exploring career pathways begins with an understanding of the value of the education you received in your home country.

Obtaining a **foreign credential evaluation** is often the first step an immigrant takes to gain access to educational and employment opportunities in the U.S. A credential evaluation helps you gain recognition for your previous studies by considering your country's educational system, the status of the institution you attended, the content of the program, and any entry and graduation requirements.



A credential evaluation compares the education you received in your country to a similar degree or diploma in the United States and provides a **degree equivalency**.



In the United States, employers, licensing boards, and universities use credential evaluations to judge the quality and level of your academic achievements in comparison to U.S.-educated candidates.

- Universities, for example, use the information to make admissions decisions and to award transfer credit or advanced standing in a program.
- Employers and licensing boards refer to credential evaluations to evaluate whether or not you meet their academic requirements.

Unlike many other countries, the U.S. does not have a national education ministry to evaluate foreign degrees. As a result, some academic institutions and state licensing boards—and nearly all employers—rely on agencies like **World Education Services** (WES) to examine official documents. Others perform their own evaluations or use preferred agencies.

Before requesting a credential evaluation from any agency, contact the institution that needs the evaluation to understand their requirements. These institutions are responsible for the final recognition decision.

GLOSSARY

Foreign credential evaluation: An expert analysis of a foreign degree or diploma.

Degree equivalency: The extent to which a degree or diploma earned abroad compares to a similar U.S. credential.

If you are exploring a new career, it may be helpful to have an idea of the U.S. equivalency of your foreign credentials.

WES allows you to preview the U.S. equivalency of your highest completed degree by using the **WES free equivalency tool**.

Note: This preview does not replace a formal credential evaluation that may be needed for official purposes.

Many organizations that require academic transcripts also require you to have your foreign degree evaluation conducted by a professional association or preferred provider. If you are applying for a certification, always remember to check with your certifying institution to ensure that a WES evaluation is recognized and accepted. If so, you can apply for a **WES Credential Evaluation**.



Watch the *WES Credential Evaluation & Recognition video* to learn more about credential evaluation.

Advanced Standing and Transfer Credit

If you are applying to an academic program, you may be eligible for advanced standing or transfer credit for previous education.

- **Advanced standing:** This means you may be allowed to skip prerequisites for admission into a course, or not repeat a required course, reducing the time to complete a degree.
- **Transfer credit:** This means that your previous education is counted toward the total number of credits required for the degree.

For internationally educated individuals, advanced standing and transfer credit is usually determined at the time of application through a foreign credential evaluation.

GLOSSARY

Foreign credential evaluation: An expert analysis of a foreign degree or diploma.

Degree equivalency: The extent to which a degree or diploma earned abroad compares to a similar U.S. credential.

EDUCATIONAL PATHWAYS IN THE FIELD OF INFORMATION TECHNOLOGY

Once you know the value of your foreign degree, you can use the information in this section to move forward in your career.

IT is a growing and rewarding field that offers many exciting career options. In this section you will find some examples of IT careers that you may be qualified for, including their key roles and responsibilities and where further education may be helpful. You will also find information on how to meet the academic requirements for some popular IT careers.

There are many ways to enter the IT field. Some internationally trained IT professionals gain U.S. experience in entry-level professions as they pursue certification. Others begin by enrolling in degree programs to gain access to higher-level jobs.



HELPFUL TIPS

Research shows that immigrants who add a U.S. degree or certification to their international education and training are more likely to progress faster in their careers.



A career pathway is a series of connected education and training programs that lead to successively higher educational credentials and job opportunities.

ASSOCIATE
DEGREE

BACHELOR'S
DEGREE

MASTER'S
DEGREE

DOCTORATE
DEGREE

ASSOCIATE OF INFORMATION TECHNOLOGY

ASSOCIATE DEGREE IN COMPUTER SCIENCE

Computer Support Specialist

- Provide assistance to computer users and organizations.
- Relevant certifications often required.

Computer Programmer

- Write code that allows computer programs to function properly.
- Test new programs to ensure that they operate as expected, and fix them if necessary.
- While most employers prefer a bachelor's degree, some will accept a candidate with an associate degree who has at least two years of work experience.
- Relevant certifications often required.

Web Developer

- Design and build websites.
- Relevant certifications often required.

Computer Systems Analyst/Architect

- Study an organization's existing computer systems, and produce solutions to improve their operations.
- While most employers prefer a bachelor's degree, some will accept a candidate with an associate degree who has at least two years of work experience.
- Relevant certifications often required.

Network and Computer System Administrator

- Responsible for the regular daily operation of an organization's computer networks.
- While most employers prefer a bachelor's degree, some will accept a candidate with an associate degree who has at least two years of work experience.
- Relevant certifications often required.

Database Administrator

- Store and organize data, and make sure that it is secure and accessible to users.
- While most employers prefer a bachelor's degree, some will accept a candidate with an associate degree who has at least two years of work experience.
- Relevant certifications often required.



Nanodegrees and boot camps are two relatively new educational options specific to the IT field. A nanodegree is an online credential that teaches the necessary skills for a specific IT job, like data analyst or robotics software engineer. The focus of online boot camp programs, on the other hand, is to prepare you for specific IT certification exams.³



While IT professionals can find jobs with an associate degree, a bachelor's degree may increase your chances of finding employment.

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Computer Programmer

- Write code that allows computer programs to function properly.
- Test new programs to ensure that they operate as expected, and fix them if necessary.
- While some employers will hire a candidate with just an associate degree and at least two years of work experience, most prefer a candidate with a bachelor's degree.
- Relevant certifications often required.

Computer Systems Analyst/Architect

- Study an organization's existing computer systems, and produce solutions to improve their operations.
- While some employers will accept a candidate with an associate degree who has at least two years of work experience, most prefer a candidate with a bachelor's degree.
- Relevant certifications often required.

Database Administrator

- Store and organize data, and make sure that it is secure and accessible to users.
- While some employers will accept a candidate with an associate degree who has at least two years of work experience, most prefer a candidate with a bachelor's degree.
- Relevant certifications often required.

Network and Computer System Administrator

- Responsible for the regular daily operation of an organization's computer networks.
- While some employers will accept a candidate with an associate degree who has at least two years of work experience, most prefer a candidate with a bachelor's degree.
- Relevant certifications often required.

Software Developer

- Develop computer applications, or the systems that run computers and control networks.
- Most positions require minimum 2-5 years of work experience.
- Relevant certifications often required.

Computer Network Architect

- Design and build data communication networks (such as local area networks (LANs), wide area networks (WANs), and Intranets).
- Relevant certifications often required.

Information Security Analyst

- Plan and implement security systems to protect an organization's computer networks from outside interference.
- Some employers prefer to hire candidates with a master's degree.
- Some employers require employee to hold U.S. citizenship, due to the sensitive nature of the job.
- Relevant certifications often required.

Computer and Information Systems Managers/IT Manager

- Supervise and direct all computer-related activities for an organization.
- Help decide upon the organization's IT goals and work to ensure those goals are met.
- Many employers prefer to hire a candidate with a master's degree.
- Relevant certifications often required.



GO FURTHER

You can upgrade your education and skills to qualify for more jobs in the field of IT by earning a master's degree.

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

MASTER OF SCIENCE IN COMPUTER SCIENCE

Computer and Information Systems Managers/IT Manager

- Supervise and direct all computer-related activities for an organization.
- Help decide upon the organization's IT goals, and work to ensure those goals are met.
- Although some employers will hire a candidate with just a bachelor's degree, many prefer to hire a candidate with a master's degree.
- Relevant certifications often required.

Director of Information Technology/Chief Information Officer (CIO)/ Chief Technology Officer (CTO)

- Supervise IT managers.
- Continuously assess the organization's technology needs and how best to meet those needs.
- Coordinate between the IT department and other departments in the organization, such as operations and customer service.
- Relevant certifications often required.

IT/Computer Research Scientist

- Find innovative uses for existing technology, and invent new approaches to computing and information technology.
- Study complex computing problems in other fields such as medicine and business, and design solutions.
- Relevant certifications often required.

Professor of Information Technology or Computer Science

- Teach students, conduct research, and publish academic articles or books.
- While most employers prefer to hire a candidate with a PhD, many will hire a qualified candidate with a master's degree.
- Relevant certifications often required.



Master of Business Administration (MBA)

An MBA with a technology concentration will help you secure management level employment with a tech firm. These degrees go by many different names (i.e. MBAs with concentrations in Technology Management, Information Systems, Data Analytics, Technology Leadership, etc.). The field of technology management is growing rapidly, and, as a result, many universities are starting new MBA programs.⁴



GO FURTHER

Upgrade your education and skills to qualify for more jobs in the IT field by earning an advanced degree.

DOCTOR OF PHILOSOPHY IN INFORMATION TECHNOLOGY (PHD)

DOCTOR OF INFORMATION TECHNOLOGY (DIT)

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE (PHD)

As the need for technical expertise increases rapidly in the American workplace, a growing number of jobs will either require a doctorate degree or give preference to candidates who have one.⁵ The PhD primarily focuses on theoretical work like research and teaching, while a DIT prepares you more for practical work in the field.⁶

Note: A doctoral degree is optional for some occupations, but can make you more competitive in the job market.

Senior IT/Computer Research Scientist

- Find innovative uses for existing technology, and invent new approaches to computing and information technology.
- Study complex computing problems in other fields such as medicine and business, and design solutions.
- Relevant certifications often required.

Professor of Information Technology or Computer Science

- Teach students, conduct research, and publish academic articles or books.
- While some employers will hire a candidate with a master's degree, most prefer to hire a candidate with a PhD.

Academic Requirements in Information Technology

Consider these educational requirements for careers in the field of IT, from entry-level to advanced professions.



Requirements for Computer Support Specialist

- ✓ Associate degree preferred.
- ✓ In order to be admitted to associate degree programs, you must have the equivalent of a high school diploma.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the support specialist certifications most preferred by employers are:⁷
 - CompTIA A+
 - HDI-CSR (HDI)
 - ACMT (Apple)
 - MCSA: Windows 10 (Microsoft)
 - ITIL Foundation (ITIL)



Requirements for Web Developer

- ✓ Associate degree preferred.
- ✓ In order to be admitted to associate degree programs, you must have the equivalent of a high school diploma.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the developer certifications most preferred by employers are:⁸
 - ACE Web Specialist (Adobe)
 - Google AdWords, MCSD (Microsoft)
 - MTA: HTML5 App Development (Microsoft)
 - Zend Certified PHP Engineer
 - Google Analytics Individual Qualification (IQ)



Requirements for Network and Computer System Administrator

- ✓ Most employers prefer a bachelor's degree, but some will accept a candidate with an associate degree who has at least two years of work experience.
- ✓ In order to be admitted to associate or bachelor's degree programs, you must have the equivalent of a high school diploma.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the system administrator certifications most preferred by employers are:⁹
 - Cloud Platform and Infrastructure (Microsoft)
 - Oracle Linux System Administrator (Oracle)
 - RHCE (Red Hat)
 - Server+ (CompTIA)
 - VCP6-DCV (VMware)
- ✓ Some of the network administrator certifications most preferred by employers are:¹⁰
 - CompTIA A+ Certification
 - CompTIA Security+ Certification
 - Cisco CCNP Certification
 - Microsoft Certified Solutions Expert (MCSE)
 - CompTIA Network+ Certification
 - Cisco CCNA Certification
 - Microsoft Certified Solutions Associate (MCSA)
 - VMware Certified Professional (VCP)



Requirements for Computer Programmer

- ✓ Most employers prefer a bachelor's degree, but some will accept a candidate with an associate degree who has at least two years of work experience.
- ✓ In order to be admitted to associate or bachelor's degree programs, you must have the equivalent of a high school diploma.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the computer programmer certifications most preferred by employers are:¹¹
 - C Language Certified Associate
 - MCSD (Microsoft)
 - CSSLP [(ISC)2]
 - ACE (Adobe)
 - PCP (Puppet)



Requirements for Database Administrator

✓ Most employers prefer a bachelor's degree, but some will accept a candidate with an associate degree who has at least two years of work experience.

✓ In order to be admitted to associate or bachelor's degree programs, you must have the equivalent of a high school diploma.

✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the database administrator certifications most preferred by employers are:¹²

- | | | |
|--|---|--|
| <ul style="list-style-type: none">• IBM Certified Database Administrator• DB2 | <p style="text-align: center;">Microsoft SQL Server
database certifications (MCSA):</p> <ul style="list-style-type: none">◦ SQL Database Administration◦ MCSA: SQL Database Development | <ul style="list-style-type: none">• Oracle Certified Professional: MySQL Database Administrator• Oracle Database 12c Administrator• SAP HANA |
|--|---|--|



Requirements for Computer Systems Analyst/Architect

✓ Most employers prefer a bachelor's degree, but some will accept a candidate with an associate degree who has at least two years of work experience.

✓ In order to be admitted to associate or bachelor's degree programs, you must have the equivalent of a high school diploma.

✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the systems analyst certifications most preferred by employers are:¹³

- CompTIA Network+
- CompTIA Linux+
- CompTIA Project+
- In addition, employers often prefer that systems analysts hold vendor certifications in whichever systems the organization uses.



Requirements for Software Developer

✓ Bachelor's degree required.

✓ In order to be admitted to bachelor's degree programs, you must have the equivalent of a high school diploma.

✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the software developer certifications most preferred by employers are:¹⁴

- Oracle Certified Associate Java SE 6/SE 5
 - Oracle Certified Professional Java SE 6/SE 5 Programmer
 - Oracle Certified Master Java SE6 Developer
 - Oracle Certified Master Java EE 5 Enterprise Architect
 - Microsoft Technology Associate: Developer Track
 - Microsoft Specialist: Programming in C#
 - Microsoft Certified Solutions Developer
 - AWS Certified Developer – Associate
 - AWS Certified DevOps Engineer – Professional
 - Certified Scrum Professional
-



Requirements for Computer Network Architect

✓ Bachelor's degree required.

✓ In order to be admitted to bachelor's degree programs, you must have the equivalent of a high school diploma.

While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the network certifications most preferred by employers are:¹⁵

- CCIE (Cisco)
 - CCNP (Cisco)
 - JNCIE-ENT (Juniper)
 - Network+ (CompTIA)
 - WCNA (Wireshark)
-



Requirements for Information Security Analyst

- ✓ Bachelor's degree required; some employers prefer to hire candidates with a master's degree.

- ✓ In order to be admitted to bachelor's degree programs, you must have the equivalent of a high school diploma; in order to be admitted to master's degree programs, you must have the equivalent of a bachelor's degree.

- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the information security certifications most preferred by employers are:^{16, 17}
 - CEH: Certified Ethical Hacker
 - CISM: Certified Information Security Manager
 - CompTIA Security+
 - CompTIA Cybersecurity Analyst (CySA+)
 - CISSP: Certified Information Systems Security Professional
 - GSEC: SANS GIAC Security Essentials.



Requirements for Computer and Information Systems Managers/IT Manager

- ✓ Bachelor's degree required; many employers prefer to hire a candidate with a master's degree.

- ✓ In order to be admitted to bachelor's degree programs, you must have the equivalent of a high school diploma; in order to be admitted to master's degree programs, you must have the equivalent of a bachelor's degree.

- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the systems management certifications most preferred by employers are:^{18, 19}
 - ITIL Foundation
 - ITIL Practitioner
 - ITIL Intermediate
 - ITIL Expert (Axelos)
 - Certified Information Systems Manager (ISACA)
 - Project Management Professional (PMP) from the Project Management Institute



Requirements for Director of Information Technology / Chief Information Officer (CIO) / Chief Technology Officer (CTO)

- ✓ Master's degree required; many employers prefer a Master of Business Administration (MBA).²⁰
- ✓ In order to be admitted to master's degree programs, you must have the equivalent of a bachelor's degree.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the governance certifications most preferred by employers are:²¹
 - ITIL Expert (Axelos)
 - CGEIT (ISACA)
 - CGRC (The GRC Group)
 - CRISC (ISACA)
 - PMI-RMP (PMI)



Requirements for IT/Computer Research Scientist

- ✓ Master's degree required; PhD preferred for senior positions.
- ✓ In order to be admitted to master's degree and PhD programs, you must have the equivalent of a bachelor's degree; some PhD programs may require the equivalent of a master's degree as well.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers. Some of the research scientist certifications most preferred by employers are:²²
 - Data Science Associate (Dell)
 - Computer Science Associate (ICCP)
 - Certified Computer Scientist (ICCP)
 - Certified Biometrics Professional (IEEE)



Requirements for Professor of Information Technology or Computer Science

- ✓ Master's degree required, although many employers prefer a PhD.
- ✓ In order to be admitted to master's degree and PhD programs, you must have the equivalent of a bachelor's degree; some PhD programs may require the equivalent of a master's degree as well.
- ✓ While certifications are not required, they may make you a more attractive candidate to potential employers, who often prefer that professors hold certifications in the specialty areas that they plan to teach.



Apply to College or Graduate School as an Advanced Standing Student

Many U.S. colleges and universities allow internationally trained IT professionals to receive credit for previous education and gain advanced standing. For example, an individual with the equivalent of an associate degree may want to obtain a bachelor's degree for better career prospects or professional advancement. When researching schools, be sure to check with the admissions office to see if this advanced standing can apply to you.

CERTIFICATION REQUIREMENTS IN INFORMATION TECHNOLOGY

IT is a very diverse field with many different areas of specialization, each of which requires its own certifications. IT certifications fall into two broad categories: vendor certifications offered by private corporations, such as Microsoft and Oracle, and vendor-neutral certifications, offered by industry associations. Many organizations require employees to hold certifications from vendors whose products they use, while vendor-neutral certifications can offer a job candidate an advantage by proving competency in a specific area such as computing support or network security.²³

Certifications are arguably more important in the IT field than in other industries. Rather than simply measuring what you already know, earning an IT certification actually involves an education process, as each one requires the candidate to take one or more courses to learn about the certification subject.

The importance that the IT industry places on certifications reflects the work that goes into achieving them: a survey from the Computing Technology Industry Association (CompTIA) found that 96% of HR managers look for IT certifications when screening job applicants.²⁴ In addition, certification can help you secure a higher salary from your employer – an average of 11.7 percent higher than what you would be paid for doing the same job without certification.²⁵

Because the certifications are so specific to different roles in the field of IT, decide what kind of IT job you will be looking for before choosing which certifications to pursue. Once you have decided the path you wish to take, you may decide to enroll in a training or boot camp to prepare you to pass the certification exam, or you may choose to prepare with the help of online resources. See the **Additional Resources in the Field of Information Technology section** of this guide (p. 29) for more information on educational and certification resources

Vendor certifications from companies such as Microsoft are standard regardless of where you lived when you took the exam; so if you have already earned such a certification while living in a foreign country, that certification is still valid in the U.S.

Certification takes time. Make sure to plan sufficient time for this process.

TRANSFERABLE SKILLS AND USING THEM IN RELATED OR ALTERNATIVE CAREERS

Transferable Skills

Many immigrants find that they may not be qualified for the same job they had in their home country because job titles and requirements in their field are different in the United States. On account of a lengthy certification process or a need for immediate employment, they may pursue other options that use their training and experience.

The key to finding alternative paths to a fulfilling career is to identify your skills (what you know how to do), knowledge (what you know), competencies (what you are good at), and aptitudes (what is easy for you to learn) that can be useful in a related or alternative career. These **transferable skills** are essential for career success and will enable you to adapt to changing circumstances, especially when your education and experience are from another country.

As you identify your transferable skills, it can be helpful to think about the difference between *hard skills* and *soft skills*. Employers place great value on *soft skills*, such as your ability to communicate, lead others, organize projects, and work effectively on a team—skills you probably already use on a daily basis. You can also apply your more technical *hard skills*, such as computer skills, foreign language fluency, and understanding specialized vocabulary, to a completely different career.

Soft skills in particular depend on your ease and ability to communicate in English, which can be a challenge when it is not your first language. In order for your soft skills to benefit you in a U.S. job search, you must practice both your written and spoken English, and familiarize yourself with English terminology that is specific to your field. You may want to consider taking a course or pursuing a course of self-study that will teach you the vocabulary specific to working in your industry. The following are some options for learning English for IT:

- **English for IT Professionals** covers key vocabulary and grammar to upgrade your IT English. It includes 3.5 hours of lectures and a variety of reading material and downloadable resources.
- The **American Accent Training for IT Professionals** course teaches Information Technology professionals how to communicate clearly and effectively in American English. It includes 3.5 hours of lectures and a variety of downloadable resources.
- **Activities at English4IT** include: reading, grammar, listening, writing, and speaking exercises – many free, but registration is required for access. 21 units are available online.

GLOSSARY

Transferable skills: Skills developed in one situation or occupation that can be transferred to another context.

- **English for Information Technology** offers a printed manual combining a strong grammar syllabus with the specialist vocabulary students need to succeed in this area.

Are you including your transferable skills on your résumé?

Information Technology (IT) professionals typically have the following skills and expertise that could be applied to a different career:

- Advanced computer skills
- Intense focus
- Mathematical abilities
- Analyzing complex systems
- Attention to detail
- Ability to learn new skills quickly

Related and Alternative Careers in Information Technology

Why consider a different career?

Finding employment in a related or alternative job can:

- Open doors to new career possibilities
- Grow your **professional network** in the United States
- Provide income while you work toward your certifications
- Help you gain American work experience

If you have spent many years committed to an occupation, it is understandable to feel that your career—just like your relationships, hobbies, and beliefs—is a key part of your identity. It is not unusual to experience a sense of identity loss or failure at having to explore a new career path.²⁶ In the United States, however, going back to school to switch careers is quite common.

Some of the careers described in this section require additional education or training. It is possible to find options that take only a few months, as well as more in-depth options that can take a year or more.

GLOSSARY

Professional network: Acquaintances with whom you stay in contact with based on professional rather than personal connections.

Examples of Related Careers

Some IT related careers do not require you to be certified. These are ideal options for IT professionals who have worked in other countries and who want to continue working in the IT field, but who do not want to undergo the certification process, or who want to work while pursuing certification in the United States.

IT Vendor Manager

- Evaluate vendors of IT products and services, select appropriate products and services for the organization, and negotiate contracts for their purchase.
- Manage relationships with vendors.
- College degree usually required.
- Certifications offered by professional associations, but often not required by employers.

IT Recruiter

- Recruit, interview, and place IT professionals in jobs.
- May also handle related tasks such as employee training and negotiating salary and benefits packages.
- College degree usually required.

Computer Forensic Investigator/Analyst

- Search for, recover, and evaluate digital information, often for use as trial evidence.
- Often work for or with law enforcement.
- College degree usually required.
- Certifications offered by professional associations and private companies, but not always required by employers.²⁷

Examples of Alternative Careers

Alternative careers are careers outside of the field of information technology in which you can use the skills and knowledge you gained as an IT professional.

Consider these types of careers if you are interested in exploring a different career path.

Technical Writer

- Prepare instruction manuals, how-to guides, journal articles, and other resources to clearly communicate complex information.
- Work in a variety of industries.
- A college degree is usually required, as well as experience or expertise in a specific subject.

Bookkeeping/Accounting Clerk/Assistant

- Keep records of an organization's financial transactions.
- Use special accounting software and databases to calculate and keep track of data.
- May sometimes take on additional responsibilities such as payroll, purchasing, and billing.
- An associate degree is usually required.

Logistics Analyst

- Analyze and coordinate an organization's supply chain, a complex system that includes purchasing, transport, inventory, and warehousing.
- Use special software to plan and track the movement of goods through the supply chain.
- A college degree is usually required.

ADDITIONAL RESOURCES IN THE FIELD OF INFORMATION TECHNOLOGY

You can explore the following helpful resources for more information on education, employment, licensing, and financial assistance to pursue a career in the field of IT.

Educational Resources

- **Udacity** offers nanodegrees in specialized areas of IT.
- **Coursera** offers inexpensive online college-level courses that are open to everyone, and taught by professors from respected universities. Students can also pursue a multi-course specialization or an online degree program.
- **SwitchUp** is a hub for information on IT boot camps, including listings and reviews of schools and courses. Also includes a career resource center and job board.
- **Microsoft Virtual Academy** offers free training courses.
- **Digital Intelligence** offers training specific to the specialty of computer forensics.

Career/Employment Resources

- **Dice** is the most often recommended website for IT jobs. In addition to an advanced job search tool, Dice also offers a career path planning tool, a salary estimator, a skills center, and an “Insights” article and resource center.
- **ITJobCafe** offers an advanced job search tool as well as a career advice blog.
- **ComputerJobs** offers an advanced job search tool.
- **IT Career Finder** includes a job search tool, a certification training and degree search tool, a guide to certifications, and descriptions of the various careers within the IT field.
- **Tech Ladies** is an online community of women who work in IT, whose mission is to connect female IT professionals with employment opportunities. They offer a job board as well as networking events and webinars.
- **Power to Fly** is also devoted to connecting women with IT employment opportunities. In addition to a job search tool, it also offers a professional networking platform, a blog, events, and webinars.

Certification Resources

- **GoCertify** offers a wide variety of certification resources, including information on certification options, a certification search tool, a certification cost calculator tool, free practice quizzes, exam reviews and tips, news on the latest available certifications, and salary information by certification.
- **The Computing Technology Industry Association (CompTIA)** is a major provider of vendor neutral certifications. CompTIA offers IT certifications in four categories, covering a variety of subjects and skill levels from entry-level to expert.
- The **IT Certification Roadmap** from CompTIA is a graphic showing possible certification pathways to various IT careers.
- Vendor neutral certifications are especially valued in the field of cyber security. The following organizations offer vendor neutral (and in some cases, also vendor specific) training courses, boot camps, and certifications in cyber security:
 - **InfoSec Institute**
 - **International Information Systems Security Certification Consortium (ISC)²**
 - **EC-Council**
- As an authorized training partner for such companies as Amazon Web Services, Cisco, Google, IBM, ITIL[®], Microsoft, Red Hat[®], and VMware, **Global Knowledge** offers training courses leading to vendor certification.

Financial Resources

- The Office of the U.S. Department of Education provides **resources for eligible non-U.S. citizens**.
- The **Maryland Department of Labor, Licensing, and Regulation** maintains a list of Education and Training Scholarships for New Americans. Some are specific to Maryland residents, but many are open to applicants living anywhere in the U.S.

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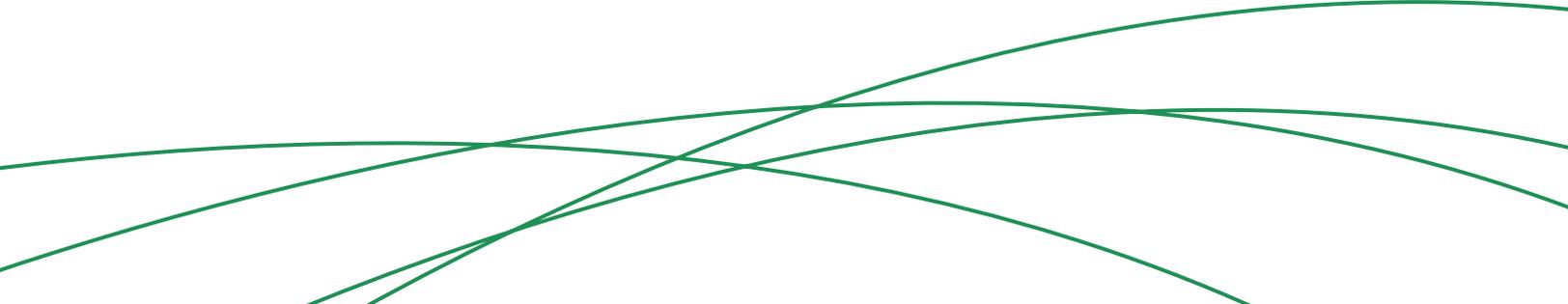
WES Global Talent Bridge is a program dedicated to helping skilled immigrants fully utilize their talents and education in the United States. Global Talent Bridge joins with institutional partners and community organizations to help skilled immigrants leverage their training, achieve their professional goals, and contribute their talents to their full potential.

Global Talent Bridge provides technical assistance, staff training and specialized resources to community organizations, adult education programs, government agencies and academic institutions so they can better support, advise and integrate highly-qualified immigrants. It also conducts research and policy advocacy efforts to advance opportunities for skilled immigrants at the local, state and national level.

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