

# INFORMATION TECHNOLOGY PATHWAY

## What are Career Pathways?

Career Pathways are a sequence of training and education programs designed to develop a person’s academic and technical skills. By obtaining stackable credentials and developing new skills a worker can advance over time to successively higher levels of education and employment in a given industry or occupational sector.

## Understanding the Basics

Soft skills, such as interpersonal skills, professionalism, and dependability, are important in all industries and occupations. Information Technology careers often involve interactions with clients and team members so good communication skills and maintaining a professional demeanor are important. With technology constantly evolving and new innovations being discovered, a willingness to learn and apply new knowledge and skills is crucial for employment success in this industry.

Information Technology also has a set of industry-wide technical competencies that represent the knowledge and skills needed to be successful in these industries. Knowledge of databases, applications, networks, telecommunications, and software are important in this industry. IT professionals need to be able to provide assistance and technical support to customers and clients. Ensuring products and services comply with legal and regulatory requirements and applying critical and analytical thinking to address problems are some of the skills needed for success in this industry.

## STEM Career Pathways

Science, Technology, Engineering and Mathematics (STEM) pathways are usually technical in nature, and play a key role in developing new products and technological breakthroughs. STEM occupations are some of the most in-demand and highest paying jobs in Missouri.

**Science:** Diverse occupations in Physical, Life and Natural Sciences. Science workers can be involved in research, development, and design; as well as outdoor field work.

**Technology:** Data connect people and businesses on a global scale, and an unprecedented number of firms need information technology employees.

**Engineering:** Occupations, including drafters, technicians, and engineers, develop and test new products we use every day.

**Mathematics** is as part of many occupations and can be used to analyze data and help solve real-world problems in engineering, sciences, or other fields.

## WHO’S HIRING?

### Information Technology

Professional, Scientific, and Technical Services  
Insurance Carriers and Related Activities  
Credit Intermediation and Related Activities

Accenture, Jack Henry & Associates, Boeing

# INFORMATION TECHNOLOGY PATHWAYS

## NOW OCCUPATIONS

*One-Twelve months of on-the-job training*

Not Applicable

## NEXT OCCUPATIONS

*Long-term OJT, Certificate, Assoc. Degree*

Computer User Support Specialist  
Web Developer  
Comp. Network Support Specialist

## LATER OCCUPATIONS

*Bachelor's degree or Adv. Degree*

Database Administrator  
Software Developers  
Computer Systems Analyst  
Computer Programmer  
Network & Computer Systems Admin.  
Information Security Analysts  
Comp. Systems Engineers/Architects

## Specialized Skills

Occupations in this pathway require specialized training and skills. Employees in Next occupations should be knowledgeable in technical support, web development, and software installation. Knowledge of JavaScript is a useful skill for Web Developers, with nearly one-half of recent on-line job postings requiring knowledge of JavaScript. Knowledge of programming languages, such as SQL, JAVA, and Oracle, are important to workers in Later occupations.

## Certifications and Software

Certified Information Systems Security Professional (CISSP)

SQL

Microsoft Certified Systems Engineer (MCSE)

JAVA

Certified Information Systems Auditor (CISA)

Oracle

Certified A+ Technician

JavaScript

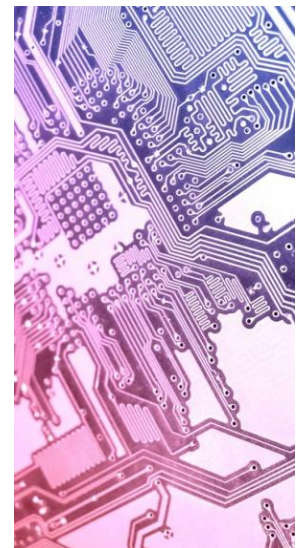
## Why consider a career in Information Technology?

There is a high demand for Information Technology (IT) occupations across the state of Missouri. IT professionals interact with every level of an organization's structure, and are drivers of innovation at most businesses. Firms of all types and sizes need help with information technology products.

Missouri employs over 80,000 people in IT occupations in a wide variety of industries. Wages for these occupations are higher than average; the mean salary for Computer and Mathematical occupations in Missouri is \$72,688 compared to a state average of \$42,004 for all occupations.

National employment projections from the Bureau of Labor Statistics show Computer and Mathematical occupations are projected to grow 13.1% from 2014-2024, more than double the 6.5% growth rate of all occupations.

High wages and projected growth make IT occupations a good career choice.



# OCCUPATION PROFILE

## Computer User Support Specialist

**Computer User Support Specialists** provide technical assistance to computer users. They answer questions or resolve computer problems for clients; and may provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Employees in this occupation use various types of hardware, software, computer and electronic equipment. Knowledge of computers, electronics, telecommunications and customer service are important in this occupation. Computer User Support Specialists should have good active listening and critical thinking skills to be able to identify and solve problems.

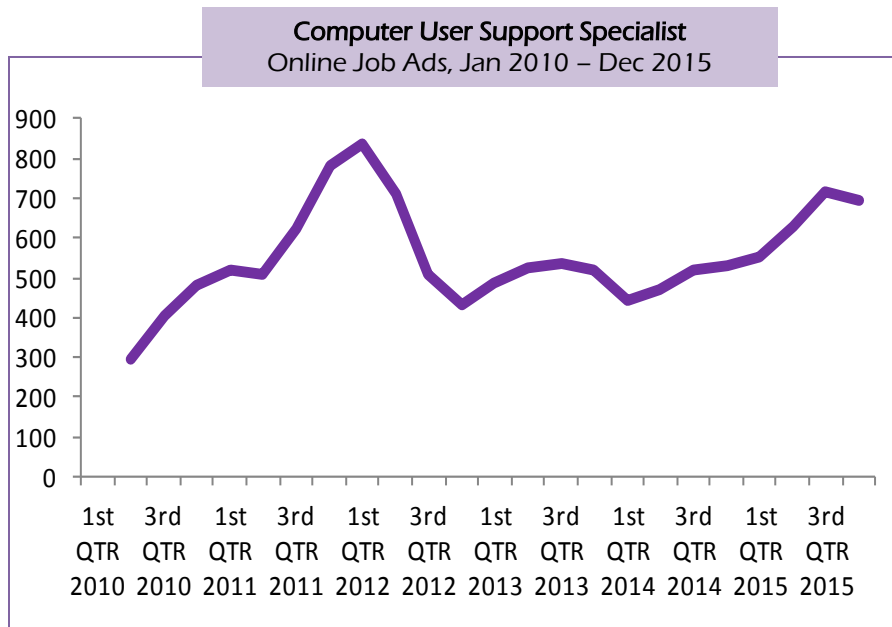


Employers may request employees in this occupation have A+, Network+, or MCSE (Microsoft Certified Systems Engineer) Certification. Knowledge of technical and help desk support, as well as hardware and software installation, is also important for Computer User Support Specialists.

*I saw the **MoSTEMWINS help desk/end-user support program** as an opportunity to get a little assistance to possibly get into a better career than I was in at the time. Information technology was always my end goal from the start, so finding a program that would help me get to where I wanted to be was icing on the cake.*

Joaquin Westfall - recent graduate and former education assistant, now employed with TriZetto, a healthcare information technology solutions company.

**Entry Wage: \$29,414 | Average Wage: \$47,667 | Experienced Wage: \$56,794**



### Who's Hiring?

Computer User Support Specialist job postings peaked in 4<sup>th</sup> QTR 2011 and have been averaging 600 online job ads per quarter in 2015. Some of the top jobs posting employers include:

**Best Buy**  
*Statewide*

**Jack Henry & Associates**  
*Springfield*

**Apple, INC**  
*Statewide*



# SKILL PROFILE

## Certified A+ Technician

The **A+** certification demonstrates competency as a computer technician. It is a vendor neutral certification that covers numerous technologies and operating systems such as Microsoft, Apple, Novell and Linux. In order to receive CompTIA A+ certification a candidate must pass two exams, the CompTIA A+ Essentials, and CompTIA A+ Practical Application. To receive the A+ Certification you must have knowledge of the fundamentals of computer technology, networking, and security, and have the skills required to identify hardware, peripheral, networking, and security components. A+ establishes best practices in troubleshooting, networking and security across a variety of devices to set the stage for IT careers. The certification also matches professional tech skills with communication skills. It validates understanding of the most common hardware and software technologies in business and certifies the skills necessary to support complex IT infrastructures.

### Who Needs A+ Certification?

Certified A+ Technician is most commonly requested in entry level IT jobs such as Computer User Support Specialist.

Job ads requiring an A+ Certification peaked in 1<sup>st</sup> QTR 2012 and have been averaging 80 job ads per quarter in 2015. Some of the top jobs posting employers include:

**Best Buy**  
Statewide

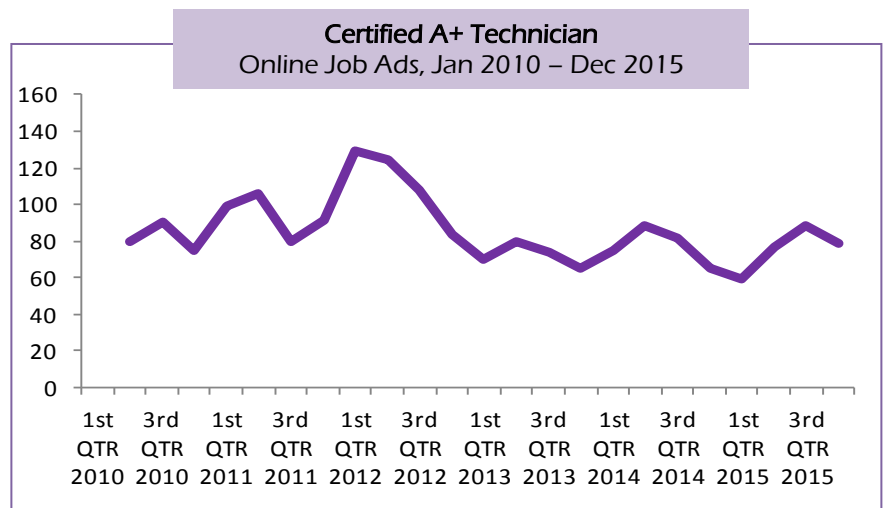
**CompuCom**  
Statewide

**Sinclair Broadcast Group**  
Statewide

**Vodastra Technologies**  
Statewide

Certified A+ Technician Top Jobs Occupation	Online Job Postings
Computer User Support Specialists	153
Network and Computer Systems Administrators	19
Computer Systems Analysts	18
Computer and Information Systems Managers	12
Computer Network Support Specialists	10

Source: Online Job Ads from Jan. 01, 2015 - Dec. 31, 2015.  
Burning Glass Technologies.



This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This work is licensed under the Creative Commons Attribution 4.0 Unported License

#### Sources:

Data for this analysis has been extracted using Burning Glass Technologies Labor/Insight™ tool which collects information from over 35,000 web sources, including job boards, newspapers, and employer websites. While this analysis presents a broad picture of hiring activity and serves as a measure of labor demand, it does not capture openings that are filled through other networks. Other sources include the Employment and Training Administration, Competency Model Clearinghouse for information available on selected industries in this report. Wage data is 2013 Occupational Employment Survey, Bureau of Labor Statistics.

