

# 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  
Credit Intermediation and Related Activities  
Insurance Carriers and Related Activities

Nextgen Information Services Incorporated, Deloitte, Boeing

# INFORMATION TECHNOLOGY PATHWAYS

**Want a Quick Start?** Some employers will hire an entry-level technology job applicant if the person has proven skills, such as industry-recognized certifications, but no college degree. In less than 3 months a *CompTIA* or *Microsoft Technology Associate* certification, for example, may get you on the road to a technology career.

## 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  
Computer Network Architects

## Specialized Skills

Occupations in this pathway require specialized training and skills. Employees in Next occupations should be knowledgeable in technical and help desk support. 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 LINUX, are important to workers in Later occupations.

## Certifications and Software

Certified Information Systems Security Professional (CISSP)

SQL

CompTIA Security+

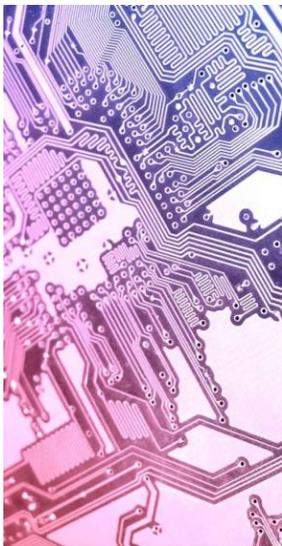
JAVA

Certified A+ Technician

Linux

IT Infrastructure Library (ITIL) Certification

JacaScript



## 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 84,000 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 \$78,690 compared to a state average of \$45,520 for all occupations (Bureau of Labor Statistics, 2017 OES).

Long-term employment projections from the Missouri Economic Research and Information Center show Computer and Mathematical occupations are projected to grow 11.2% from 2014-2024, nearly double the 6.1% growth rate of all occupations.

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



# SKILL PROFILE

## IT Infrastructure Library (ITIL)

**ITIL (Information Technology Infrastructure Library)** is a set of detailed practices for IT service management (ITSM) that focuses on aligning Information Technology (IT) services with the needs of business. ITIL consists of five broad components: Service Strategy (understanding organizational objectives and customer needs), Service Design (turns the service strategy into a plan for delivering the business objectives), Service Transition (develops and improves capabilities for introducing new services into supported environments), Service Operation (manages services in supported environments), and finally Continual Service Improvement (continually improving the effectiveness and efficiency of services and processes). ITIL has five certification levels consisting of Foundation, Practitioner, Intermediate, Expert, and Master. Training and testing for the certification can be obtained online or in person.

### Who Needs ITIL?

ITIL is most commonly requested in job ads for Computer Occupations, All Other. This can include Computer Systems Engineers, IT Project Managers, and other IT occupations not classified elsewhere.

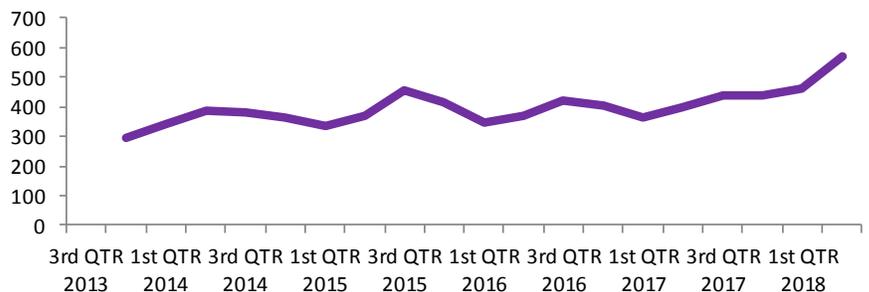
Job ads requesting **IT Infrastructure Library certification** have risen over the past year, found in over 600 job ads in the 2<sup>nd</sup> quarter of 2018. Some of the top jobs posting employers include:

**Washington University**  
*St. Louis*

**UMB Financial Corporation**  
*Kansas City*

**Centurylink**  
*St. Louis*

**IT Infrastructure Library (ITIL) Certification**  
Online Job Ads, Jul. 01, 2017 - Jun. 30, 2018



### IT Infrastructure Library (ITIL) Certification Top Jobs

Occupation	Online Job Postings
Computer Occupations, All Other	315
Software Developers, Applications	214
Computer User Support Specialists	188
Information Security Analysts	138
Network and Computer Systems Administrators	122

Source: Online Job Ads from Jul. 01, 2017 - Jun. 30, 2018. Burning Glass Technologies.



# OCCUPATION PROFILE

## Computer Network Support Specialist

Employees in this occupation analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. They backup data, identify the cause of network problems, and document network support activities. Computer Network Support Specialists also perform network maintenance to ensure networks operate correctly. Knowledge of various hardware, software and computer operating systems is necessary in this occupation. Computer Network Support Specialists must have good decision-making and critical thinking skills to identify network problems and solutions.

**Entry Wage: \$40,750 | Average Wage: \$55,100 | Experienced Wage: \$67,120**

### Who's Hiring?

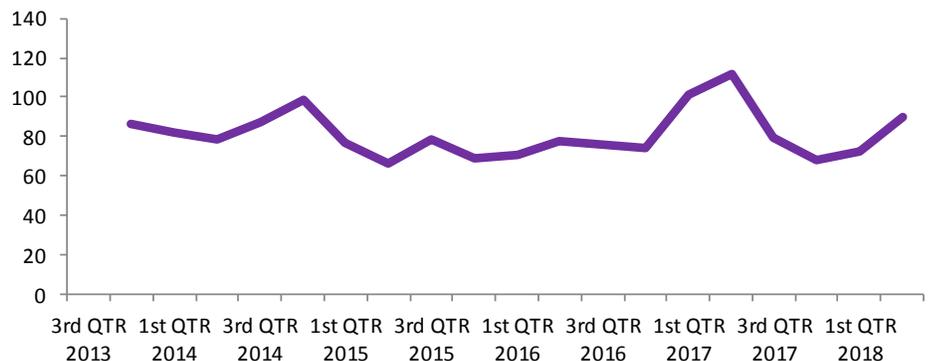
Computer Network Support Specialist job ads peaked in the first quarter of 2017, and have been rising during the first two quarters of 2018. Some of the top jobs posting employers include:

**NCR Corporation**  
*Kansas City, St. Louis*

**Charter Communications**  
*St. Louis*

**Jack Henry & Associates**  
*Springfield*

**Computer Network Support Specialist**  
Online Job Ads, Jul. 01, 2017 - Jun. 30, 2018



#### 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. Other sources are 2017 Occupational Employment Survey, Bureau of Labor Statistics and O\*Net online Resource Center.

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