High Demand Information Technology Certifications in Missouri

December 1, 2013 – November 30, 2014
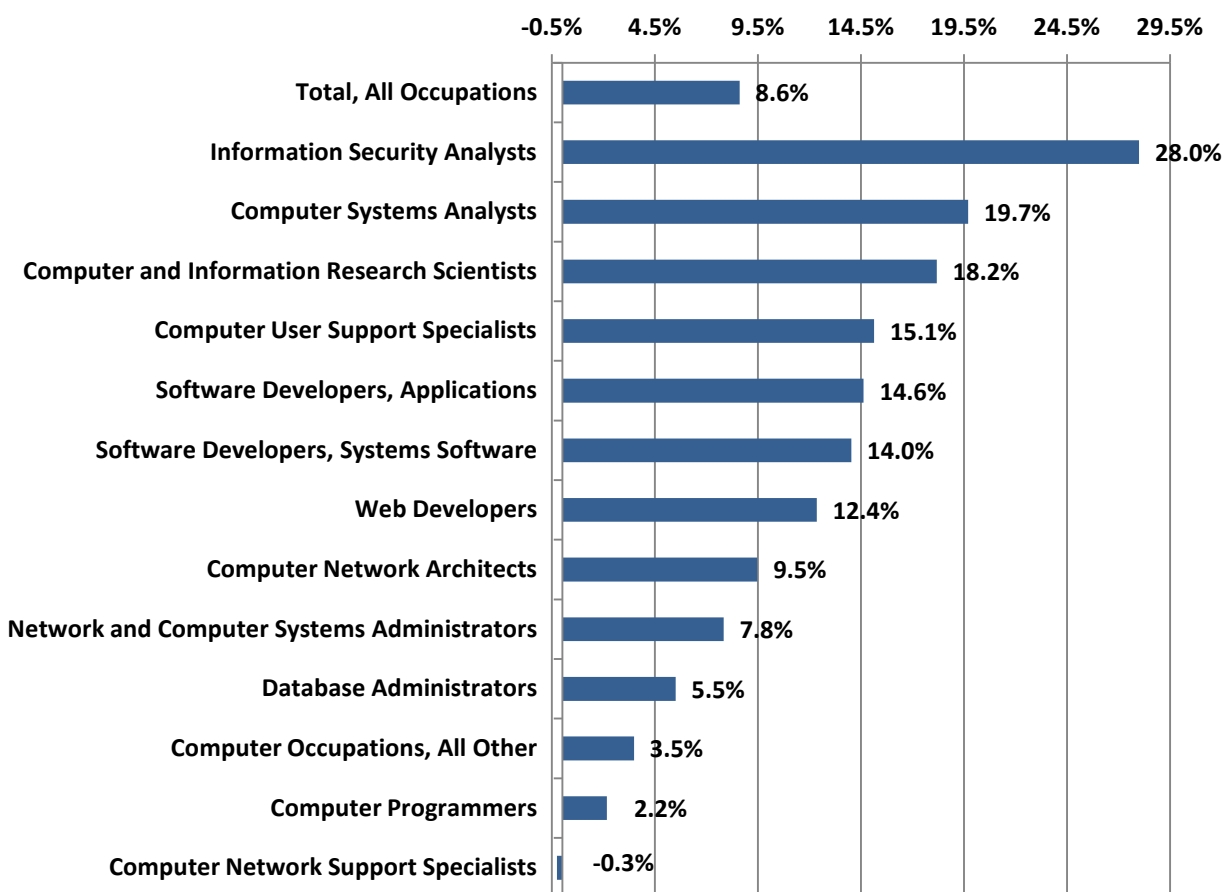

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Projected job growth in information technology and industry certifications

Information technology occupations are crucial across many sectors of Missouri employment, including health care, advanced manufacturing, energy, and biosciences. IT professionals also support ever-growing demands for comprehensive and timely data to inform accountability in K-12 and higher education.

According to the Missouri Department of Economic Development's Missouri Information Research and Information Center (MERIC), Missouri's total employment in IT is projected to grow by 11.6 percent from 2012 to 2022, compared to 8.6 percent for all occupations. Within IT, as defined in the nationally recognized Standard Occupational Classification (SOC) system, especially strong growth is projected for information security analysts (28.0 percent), computer systems analysts (19.7 percent), computer and information research scientists (18.2 percent), and computer user support specialists (15.1 percent). The latter group is projected to gain the most jobs numerically (approx. 2,200).

Estimated Change in Employment, Missouri, 2012-2022

Occupation	Percent Change
Total, All Occupations	8.6%
Information Security Analysts	28.0%
Computer Systems Analysts	19.7%
Computer and Information Research Scientists	18.2%
Computer User Support Specialists	15.1%
Software Developers, Applications	14.6%
Software Developers, Systems Software	14.0%
Web Developers	12.4%
Computer Network Architects	9.5%
Network and Computer Systems Administrators	7.8%
Database Administrators	5.5%
Computer Occupations, All Other	3.5%
Computer Programmers	2.2%
Computer Network Support Specialists	-0.3%

While many, if not most of these newly created jobs will require varying levels of higher education, many will also require specialized industry certification. These certifications are non-degree endorsements by external authorities, often major software or technology hardware vendors that validate the employee's expertise for potential employers against consistent and nationally-defined criteria. These certifications tend to be based on standardized tests or performance tasks, and may follow a short vendor-developed course or self-study. These certifications exist across a range of topical subcategories within IT, including general user support, programming and application development, database management, networking, web development, and security. The certifications may be required (or strongly recommended) for initial hires, and/or may enable or increase opportunities for advancement for experienced workers.

Certification study and methodology

Given the strong projected growth of employment in information technology over the next decade, and the importance of external certifications across this sector, there has been great interest in understanding which certifications are experiencing the greatest demand. Senate Bill 492 (2014) directed the Missouri Department of Higher Education (MDHE) to identify the certifications most requested by Missouri employers. The MDHE then approached MERIC staff, who was able to use Labor/Insight, a real-time analytic software package developed by Burning Glass Technologies, to examine and categorize requested certifications in job postings in Missouri from Dec. 1, 2013 to Nov. 30, 2014, and to share data with the MDHE for further analysis and summary. Efforts were undertaken to unduplicate counts for each position posted (and certification requested), but a few may remain. This report as follows is based data provided by MERIC.
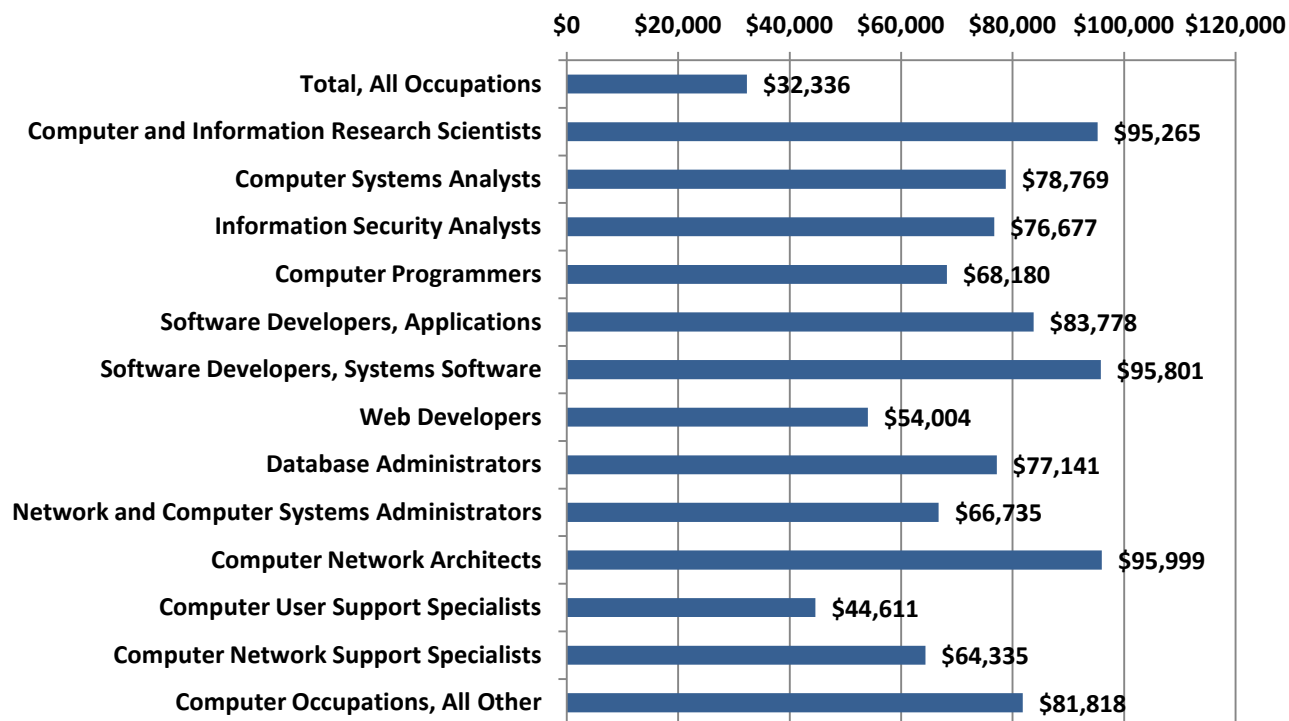
Missouri jobs and median wages

In Missouri, during the past year, analysis reveals the top jobs posted by employers. Software application developers more than double any other defined category, although computer systems analysts, computer user support specialists ("help desk" staff), and business intelligence analysts are also in great demand.

Title, Selected Occupations, Missouri Statewide	Job Postings
Software Developers, Applications	8,448
Computer Systems Analysts	3,899
Computer User Support Specialists	3,393
Business Intelligence Analysts	3,060
Network and Computer Systems Administrators	2,093
Database Administrators	2,067
Computer Systems Engineers/Architects	1,749
Computer Programmers	1,495
Software Quality Assurance Engineers / Testers	1,372
Information Technology Project Managers	1,340
Web Developers	1,261
Software Developers, Systems Software	1,160
Information Security Analysts	1,090

While there is some variance in rank order of the top requested job titles in the Kansas City and St. Louis regions, the top jobs posted in both are broadly comparable. Computer User Support Specialists were the 2nd-most posted IT job opportunity across the Kansas City metro area (1,991 jobs), but 4th in St. Louis (1,961). Computer Programmers were 8th in K.C. (802) and 10th in STL (942); Web Developers ranked 9th in K.C. (684) but 13th in STL (876). In addition, across all IT occupations as defined by SOC, median wages in IT were well above the median for all occupations:

Median Wages, Missouri, 2013

Occupation	Median Wage
Total, All Occupations	$32,336
Computer and Information Research Scientists	$95,265
Computer Systems Analysts	$78,769
Information Security Analysts	$76,677
Computer Programmers	$68,180
Software Developers, Applications	$83,778
Software Developers, Systems Software	$95,801
Web Developers	$54,004
Database Administrators	$77,141
Network and Computer Systems Administrators	$66,735
Computer Network Architects	$95,999
Computer User Support Specialists	$44,611
Computer Network Support Specialists	$64,335
Computer Occupations, All Other	$81,818

Requested certifications

Within the occupation family defined as Computer and Mathematical in Labor/Insight, MERIC staff were able to collect and rank the top certifications requested in job postings by Missouri employers from Dec. 1, 2013 to Nov. 30, 2014. Interestingly, 86 percent of relevant records did not include a reference to any required certification. Of the remainder, four of the top 10 most requested certifications in IT job postings were not specifically IT certifications:

- #1) Accredited Case Manager certification (593 postings). ACM certification reflects best practices in quality case management in a hospital setting.
- #4) Project Management certification (482).
- #8) Capability Model Maturity Integration certification (274). CMMI certification reflects expertise in process improvement.
- #9) Certified Public Accountant certification (249).

While perhaps surprising, the relatively high demand for these non-IT certifications in IT job postings is reflective of the demand for IT staff across all sectors of the economy, and their strong need for equivalent "business-side" expertise for career advancement. Excluding these, however, the top requested certifications over the past year were as follows:
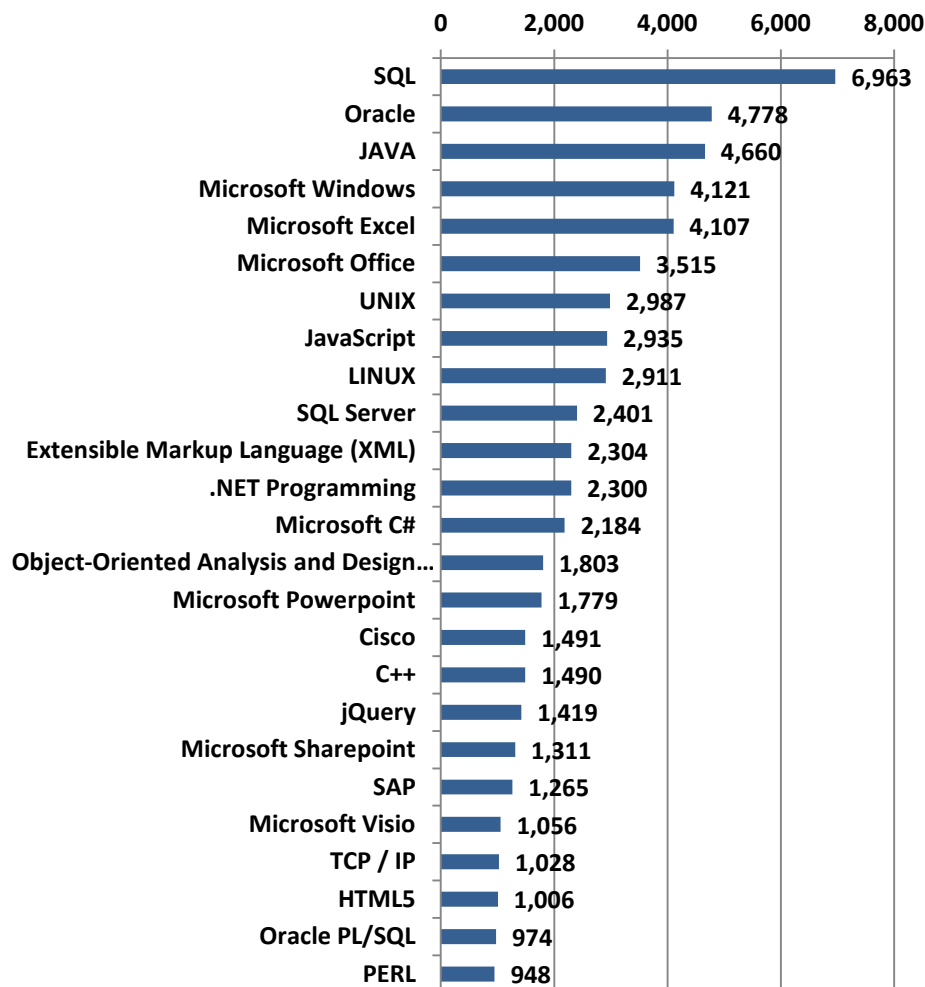
Top 15 IT Certifications Requested in Job Postings, Missouri, Dec. 2013 - Nov. 2014	
Certifications	**Job Postings**
Certified Information Systems Security Professional (CISSP)	588
Microsoft Certified Systems Engineer (MCSE)	505
Cisco Certified Network Associate	441
Cisco Certified Network Professional (CCNP)	302
Certified Information Systems Auditor (CISA)	276
Certified Information Security Manager (CISM)	239
Certified A+ Technician	212
Microsoft Certified It Professional (MCITP)	170
Cisco Certified Internetwork Expert (CCIE)	164
Microsoft Certified Professional (MCP)	163
It Infrastructure Library	160
Network+ Certified	158
Security+	125
Microsoft Certified Systems Administrator (MCSA)	116
Vmware Certified Professional	92

Several broad themes emerge, including expertise in security and network architecture, and expertise with Microsoft and Cisco technologies. As was the case with job postings overall, the rank order of requested certifications was roughly similar for the Kansas City and St. Louis metropolitan areas, although demand for Cisco Certified Network Professional, Microsoft Certified IT Professional, and Certified A+ Technician (computer service) certifications were all relatively more requested in Kansas City than across the St. Louis region over the past year.

Software expertise

While not formal IT certifications, many IT job postings over the past year requested expertise with specific software or programming languages. These varied widely by posting, but clustered in several areas, including database management (e.g. SQL, Oracle, and SQL Server), Microsoft Windows and Office, web development (Java), and server administration (UNIX and LINUX). The most commonly requested software proficiencies are charted as follows. Further information on certifications and software skills requested within functional areas is available upon request.

Top Software Proficiencies Requested in Job Postings, Missouri, Dec. 2013 - Nov. 2014

Software	Count
SQL	6,963
Oracle	4,778
JAVA	4,660
Microsoft Windows	4,121
Microsoft Excel	4,107
Microsoft Office	3,515
UNIX	2,987
JavaScript	2,935
LINUX	2,911
SQL Server	2,401
Extensible Markup Language (XML)	2,304
.NET Programming	2,300
Microsoft C#	2,184
Object-Oriented Analysis and Design…	1,803
Microsoft Powerpoint	1,779
Cisco	1,491
C++	1,490
jQuery	1,419
Microsoft Sharepoint	1,311
SAP	1,265
Microsoft Visio	1,056
TCP / IP	1,028
HTML5	1,006
Oracle PL/SQL	974
PERL	948

Conclusions

Information technology occupations will continue to be vital across the Missouri economy in the coming decade, and will be crucial to the continuing growth of industries and employers beyond traditional IT services and vendors. IT jobs are relatively high-paying with strong opportunities for advancement. Projected employment growth and current demand in IT certifications suggest that application development, information security, and systems analysis skills will continue to be in strong demand, along with growing opportunities for network services and user support ("help desk") staff. Likewise, specialized software skills will continue to be in strong demand by employers, with particular focus on database management, Microsoft Windows and Office, web development, and server administration.

Contact

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