

THE SOUTH
CAROLINA
INFORMATION
TECHNOLOGY
WORKFORCE 2017
CHALLENGES &
OPPORTUNITIES

JOB DATA

Appendix B

THE HARDEST IT JOBS TO FILL- US

Network Engineer \$99,000 – \$146,250

Network engineers design, manage and secure complex infrastructures. These advanced-level practitioners often lead teams and are capable of working independently. Certifications commonly associated with this career include [CCDP](#) and [CCNP](#).

Software Developer \$93,000 – \$155,000

Software developers create web, mobile and systems applications from scratch. The demand for software development has provided excellent employment opportunities for software developers all over the world and has drawn many from overseas to fill much-needed positions. Certifications commonly associated with career include [JavaScript](#) , [C#](#) and [C++](#).

Network Security Administrator \$107,000 – \$155,250

Network Security Administrators use their vast knowledge of networks to provide entry-level security to complex infrastructures. These associate-level practitioners provide security support roles and typically work under the supervision of security experts. Certifications commonly associated with this career include [CompTIA Security+](#) and [CCNA Security](#).

Database Developer \$108,000 – \$161,500

Database developers design, manage and secure large databases. These hard-to-find IT practitioners often work closely with programmers and are experts in SQL. Certifications commonly associated with this certification include [Microsoft SQL Server 2012](#) and [Oracle Database 12c OCA](#).

Network Security Engineer \$115,500 – \$162,500

Network Security Engineers have extensive knowledge of networking protocols and provide security services for complex infrastructures. These cybersecurity professionals often lead security teams and provide advanced-level supervision over large networks. Certifications commonly associated with this certification include [CompTIA CASP](#) and [CCNP Security](#).

Data Scientist \$116,000 – \$163,000

Data Scientists interpret, analyze and clean data at an advanced level. These database experts identify patterns and trends which helps them improve systems and provide critical feedback to the business stakeholders. [EMC²](#) is a certification commonly associated with this career.

Software Engineer \$108,250 – \$164,500

Software engineers create advanced-level applications for computer systems, web applications and mobile devices. These IT professionals are experts in both code and computer science making them very hard to find in today's workforce. Certifications commonly associated with career include [MCSD Web Applications](#) and [CSSLP](#).

Data Security Analyst \$118,250 – \$169,000

Data Security Analysts are tasked with the critical role of protecting the organization's data. These cybersecurity professionals manage security software, instruct users on best practices and ensure the enterprise system is free of breaches. Certifications commonly associated with this certification include [CISSP](#) , [CISM](#) and [CISA](#).

Big Data Engineer \$135,000 – \$196,000

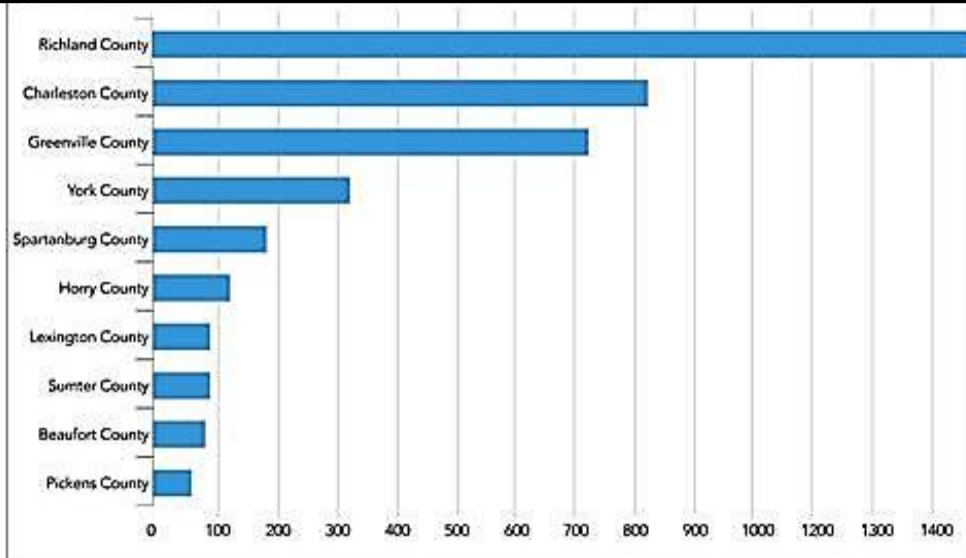
Big Data Engineers create, manage and secure big data solutions and utilize frameworks like Hadoop. These advanced-level practitioners understand software engineering, programming and database management. Certifications commonly associated with this career include [EMC²](#) and [MCSE Business Intelligence](#).

Source: <https://www.knowledgenet.com/careers/the-hardest-it-jobs-to-fill/>

SC JOB OPENINGS

SC Job Opening Distribution

The graph below shows the counties in SC with the highest job openings for computer and mathematical occupations in May 2017.

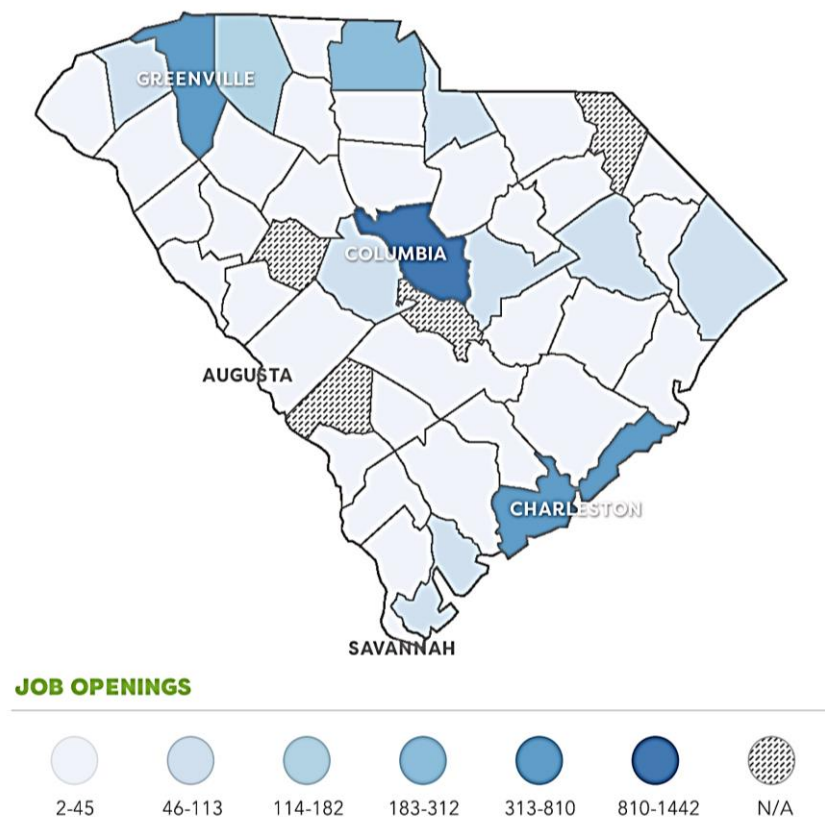


Information Technology Job Openings May 2017



Source: <https://jobs.scworks.org/vosnet/analyzer/results.aspx?session=jobocc>

COMPUTER AND MATHEMATICAL JOB OPENINGS IN MAY 2017 IN SOUTH CAROLINA HEAT MAP



Source: <https://jobs.scworks.org/vosnet/analyzer/results.aspx?session=jobdocc>

IT POSITIONS ON LIST OF THE 100 FASTEST GROWING JOBS IN SOUTH CAROLINA

Rank	Job	Growth %	Avg. Wage	Jobs in 2024
3	Computer-Controlled Machine Tool Operators, Metal and Plastics	31.54%	\$37,490	4,880
6	Web Developers	26.92%	\$58,710	1,320
12	Computer Systems Analysts	23.36%	\$74,210	7,500
16	Software Developers, Applications	21.71%	\$83,800	3,980
29	Information Security Analysts	19.05%	\$71,600	1,250
33	Software Developers, Systems Software	18.35%	\$78,530	2,580
43	Computer User Support Specialists	15.62%	\$45,360	7,700
73	Network and Computer Systems Administrators	11.89%	\$72,140	4,610
97	Computer Network Support Specialists	9.95%	\$55,520	2,320

Source: www.zippia.com/advice/fastest-growing-jobs-in-south-carolina

Salary Comparisons of Technology Generalists and Public School Educators

South Carolina Location	Information Technology Generalist Salary	Public School Educator Salary
Aiken	\$56,535	\$50,190
Anderson	\$58,872	\$52,266
Charleston	\$58,073	\$51,556
Columbia	\$57,642	\$51,174
Florence	\$55,366	\$49,153
Goose Creek	\$57,950	\$51,447
Greenville	\$59,549	\$52,867
Hilton Head Island	\$56,965	\$50,573
Mount Pleasant	\$58,073	\$51,556
Myrtle Beach	\$55,181	\$48,989
Rock Hill	\$60,349	\$53,577
Spartanburg	\$57,088	\$50,682
Summerville	\$57,765	\$51,283
Sumter	\$55,181	\$48,989

Source: www.1.salary.com/SC/Public-School-Teacher-salary
www.1.salary.com/SC/Information-Technology-Generalist-salary

TECHNOLOGY SALARIES:UNITED STATES	
ADMINISTRATION	
Chief Information Officer (CIO)	\$202,500
Chief Technology Officer (CTO)	\$175,000
Chief Security Officer	\$170,000
Vice President of Information Technology	\$163,000
Director of Technology	\$141,000

APPLICATIONS DEVELOPMENT	
Manager	\$125,000
Project Manager	\$110,000
Systems Analyst	\$91,000
Applications Architect	\$132,000
Business Systems Analyst	\$92,000
Cloud Computing Analyst	\$92,500
CRM Business Analyst	\$95,000
CRM Technical Developer	\$106,000
Developer/Programmer Analyst	\$103,000
ERP Business Analyst	\$99,000
ERP Technical/Functional Analyst	\$107,000
ERP Technical Developer	\$112,000
Lead Applications Developer	\$122,250
Mobile Applications Developer	\$141,000
Technical Writer	\$65,000
CONSULTING & SYSTEMS INTEGRATION	
Director	\$139,000
Project Manager/Senior Consultant	\$114,000
Staff Consultant	\$75,000
Senior IT Auditor	\$127,000
IT Auditor	\$109,750

TECHNOLOGY SALARIES:UNITED STATES (Cont.)	
DATA/DATABASE ADMINISTRATION	
Big Data Engineer	\$150,000
Database Manager	\$127,000
Database Developer	\$116,000
Database Administrator	\$95,000
Data Analyst/Report Writer	\$96,000
Data Architect	\$130,000
Data Modeler	\$96,250
Data Scientist	\$119,000
Data Warehouse Analyst	\$93,500
Business Intelligence Analyst	\$104,000
Data Reporting Analyst	\$73,000
QUALITY ASSURANCE (QA) & TESTING	
QA Engineer – Manual	\$69,000
QA Engineer – Automated	\$82,000
QA/Testing Manager	\$95,000
QA Associate/Analyst	\$73,000
WEB DEVELOPMENT	
Senior Web Developer	\$117,000
Web Developer	\$98,000
Front-End Web Developer	\$72,750
Web Administrator	\$80,000
Web Designer	\$86,000
E-Commerce Analyst	\$97,000
NETWORKING/TELECOMMUNICATIONS	
Network Architect	\$134,000
Network Manager	\$111,000
Network Engineer	\$107,000
Wireless Network Engineer	\$119,000
Network Administrator	\$87,000
Telecommunications Manager	\$94,000
Telecommunications Specialist	\$70,000
NOC Technician	\$59,500

TECHNOLOGY SALARIES:UNITED STATES

OPERATIONS	
Computer Operator	\$40,000
Mainframe Systems Programmer	\$65,000

SECURITY	
Data Security Analyst	\$121,000
Systems Security Administrator	\$110,000
Network Security Administrator	\$109,250
Network Security Engineer	\$115,000
Information Systems Security Manager	\$137,000

SOFTWARE DEVELOPMENT	
Product Manager	\$119,000
Software Engineer	\$121,000
Software Developer	\$115,000

TECHNICAL SERVICES, HELP DESK & TECHNICAL SUPPORT	
Manager	\$96,000
Desktop Support Analyst	\$60,000
Systems Administrator	\$80,000
Systems Engineer	\$101,000
Help Desk Tier 3	\$57,500
Help Desk Tier 2	\$45,000
Help Desk Tier 1	\$38,000
Instructor/Trainer	\$68,000
PC Technician	\$38,000
Business Continuity Analyst	\$103,000
Hardware Analyst	\$72,000
Cable Technician	\$40,500
Product Support Specialist	\$54,500
Mobile Device Support Analyst	\$67,000

Source:www.roberthalf/2018

COMPUTER AND MATHEMATICAL JOB OPENINGS IN MAY 2017 IN SOUTH CAROLINA BY COUNTY

Rank	Area	Job Openings
1	Richland County	1,442
2	Charleston County	810
3	Greenville County	739
4	York County	312
5	Spartanburg County	182
6	Horry County	113
7	Lexington County	89
8	Sumter County	85
9	Beaufort County	81
10	Pickens County	73
11	Florence County	64
12	Lancaster County	56
13	Berkeley County	45
14	Aiken County	42
15	Dorchester County	35
16	Greenwood County	34
17	Anderson County	32
18	Laurens County	32
19	Oconee County	26
20	Orangeburg County	21
21	Darlington County	21
22	Kershaw County	16
23	Georgetown County	14
24	Clarendon County	14
25	Fairfield County	10
26	Newberry County	8
27	Colleton County	8
28	Chesterfield County	8
29	Chester County	7
30	Cherokee County	6
31	Union County	5
32	Jasper County	5
33	Marion County	3
34	Dillon County	3
35	Abbeville County	2
36	Allendale County	2
37	Bamberg County	2
38	Williamsburg County	2
39	McCormick County	2
40	Lee County	2
41	Hampton County	1
42	Edgefield County	1
TOTAL		4455

South Carolina CS/IT Job Openings (2017)	
<i>Position Title</i>	<i># Current Job Openings</i>
<i>Computer/Electronic Product Manufacturing</i>	<i>367</i>
<i>Computer/Peripheral Equipment Manufacturing</i>	<i>38</i>
<i>Computer Systems Design/Related Services</i>	<i>1819</i>
<i>Computer Training</i>	<i>60</i>
<i>Information Technology</i>	<i>1025</i>
<i>Data Processing, Hosting, Related Services</i>	<i>101</i>
<i>Total Positions Open</i>	<i>3410</i>
<i>Source: https://jobs.scworks.org/vosnet/analyzer/drill/drill.aspx (2017)</i>	

TOP 10 MOST IMPORTANT TECHNICAL CERTIFICATIONS

RANK	CERTIFICATION	DESCRIPTION
#1	MCSE	<p>The Microsoft Certified Systems Engineer (MCSE) certification suffered a bad reputation several years back when numerous people were memorizing the answers to exam questions from "brain dumps" posted by test-takers on the Internet and obtaining the certification without any real understanding of the technology.</p> <p>Microsoft responded by replacing the knowledge-based multiple-choice questions with a variety of performance-related scenario questions that make it much more difficult to cheat. The difficulty level of the questions was escalated, and the number of exams required to obtain the certification was increased to seven.</p> <p>The MCSE has consequently regained respect in many corners of the IT community and is a useful certification for demonstrating your expertise in Microsoft server products.</p>
#2	MCA	<p>In addition to making the MCSE exams more difficult, Microsoft has created many new certifications. The Microsoft Certified Architect (MCA) is the premiere Microsoft certification, designed to identify top experts in the industry. To obtain the MCA, you must have at least three years of advanced IT architecture experience, and you have to pass a rigorous review board conducted by a panel of experts.</p> <p>There are a number of MCA programs. The infrastructure and solutions of MCA certifications cover broad architecture skills, but there are also more technology-specific programs for messaging and database skills. There are currently fewer than 100 MCAs in the world, making this an elite certification.</p>
#3	CCIE	<p>The Cisco Certified Internetwork Expert (CCIE) is widely recognized as one of the most difficult to obtain (and expensive) IT certifications. Like the MCSE/MCA, it's a vendor-sponsored certification, focusing on Cisco's products.</p> <p>The CCIE requires that you pass both a written exam and a hands-on lab. To sit for the written exam, you must pay \$300 and choose from one of several tracks: Routing and Switching, Security, Storage Networking, Voice, and Service Provider.</p> <p>You must pass the written exam before you're eligible to take the lab exam. This is an eight-hour hands-on test of your ability to configure and troubleshoot Cisco networking equipment and software. The lab exams cost \$1,250 each. This does not, of course, include travel expenses that may be necessary since the labs are conducted only in certain locations. As if all that weren't enough, you don't get to rest on your laurels after obtaining the certification. CCIEs must recertify every two years or the certification is suspended.</p>

#4	CCSP	<p>Another Cisco exam that's popular with employers in today's security-conscious business world is the Cisco Certified Security Professional (CCSP). It focuses on skills related to securing networks that run Cisco routers and other equipment.</p> <p>You're required to pass five written exams and must recertify every three years by passing one current exam. Before you can take the CCSP exams, you must meet the prerequisites by obtaining one of Cisco's lower-level certifications, either the Cisco Certified Network Associate (CCNA) or the Cisco Certified Internetwork Specialist (CCIP).</p>
#5	CISSP	<p>Security certifications confer some of the highest-paying jobs in IT today, and one of the most well-respected non-vendor specific security certifications is the Certified Information Systems Security Professional (CISSP). The organization that grants the CISSP is the (ISC) 2, which was founded in 1989 and has issued certifications to more than 50,000 IT professionals.</p> <p>Exam candidates must have at least four years of direct full-time work experience as a security professional. One year of experience can be waived if you have a four-year or graduate degree in information security from an approved institution. Another unique feature of the CISSP is that you must subscribe to the (ISC) 2 code of ethics to take the exam.</p> <p>Exam fees vary based on geographic region. In the United States, standard registration is \$599 (\$499 for early registration). You must recertify every three years by obtaining at least 120 hours of continuing professional education, and you must pay a yearly fee of \$85 to maintain the certification. The exam is a six-hour test consisting of 250 multiple-choice questions.</p>
#6	SSCP	<p>For those who can't meet the rigorous experience requirements to sit for the CISSP, the (ISC) 2 also offers the Systems Security Certified Practitioner (SSCP) certification. SSCP candidates need have only one year of direct full-time security work experience. The exam consists of 125 multiple-choice questions, and you have three hours to complete it. Those who pass the written exam must be endorsed by someone who holds a current (ISC) 2 certification and will attest to the candidate's professional experience or by an officer of the corporation or organization that employs you (owner, CEO, managing partner, CIO, etc.). As with the CISSP, you must recertify every three years by submitting proof of continuing education credits and paying an annual maintenance fee.</p>
#7	GSE	<p>Another popular and well-regarded security certification is the GIAC Security Expert (GSE), offered by the SANS Software Security Institute. Before you can attempt the GSE, you must complete three lower-level certifications: GIAC Security Essentials Certification (GSEC), GIAC Certified Intrusion Analyst (GCIA), and GIAC Certified Incident Handler (GCIH).</p> <p>The lower-level certifications require passing multiple-choice exams, and at least two of the three certifications must be at the "Gold" level, which requires that in addition to the written exam, you submit a technical report that's approved to be published in the SANS Reading Room. A personal interview is also part of the GSE qualification process.</p> <p>Pricing depends on whether you take the exam as part of SANS self-study or conference training programs or challenge the exam. Without the training, each lower-level exam costs \$899.</p>

#8	RHCE/RHCA	<p>Many companies are looking to save money by switching to Linux-based servers, but they need personnel who are trained to design, deploy, and administer Linux networks. There are a number of Linux certifications out there, but the Red Hat Certified Engineer (RHCE) certification has been around since 1999 and is well respected in the industry.</p> <p>The exam is performance-based. You're required to perform actual network installation, configuration, troubleshooting, and administration tasks on a live system. You have a full day (9:00 a.m. to 5:00 p.m.) to complete it. The cost is \$749.</p> <p>The Red Hat Certified Architect (RHCA) is an advanced certification that requires completion of five endorsement exams, each of which costs \$749 and range from two to eight hours. Like the RHCE exam, they are hands-on skills tests. You must have the RHCE certification to take the RHCA exams.</p>
#9	ITIL	<p>For those who aspire to management positions in IT services, the Information Technology Infrastructure Library (ITIL) certifications provide demonstration of knowledge and skills involved in that discipline. There are three certification levels: Foundation, Practitioner, and Manager. The Manager level certification requires completion of a rigorous two-week training program, and you must have the Foundation certification and five years of IT management experience. Then, you must pass two three-hour exams consisting of essay questions.</p>
#10	CERTIFICATIONS FOR SPECIAL SITUATIONS	<p>Many specialist exams are available in IT subcategories that can be helpful to those who want to specialize in those areas. Some of these include:</p> <ul style="list-style-type: none"> Health Insurance Portability and Accountability Act (HIPAA) compliance certification Sarbanes-Oxley (SOX) compliance certification Database administration certification Wireless networking certifications Voice over IP certifications <p>In addition, for those who have little or no experience in IT, entry-level certifications such as those offered by CompTIA may help you get a foot in the door as you start your IT career.</p>

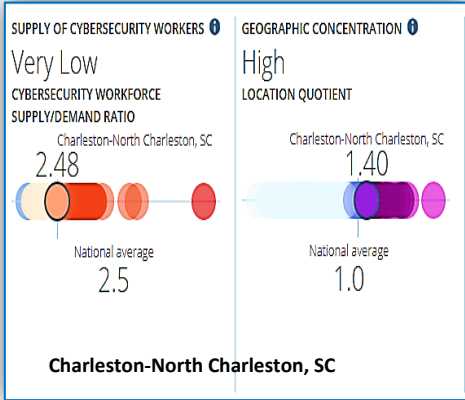
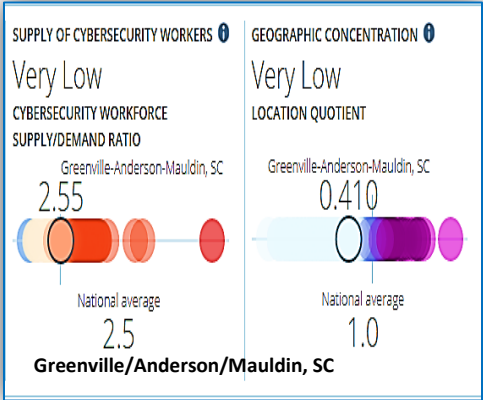
Source: www.aditsoftware.com/articles/certification-exams.php

BROADBAND INTERNET IN SOUTH CAROLINA

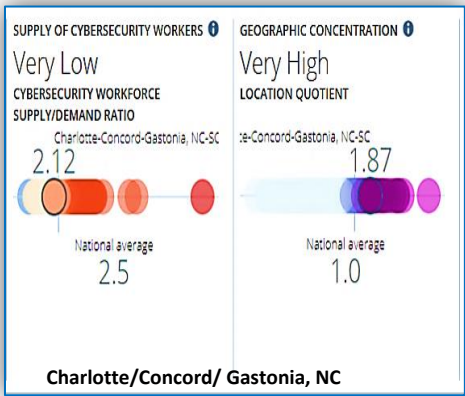
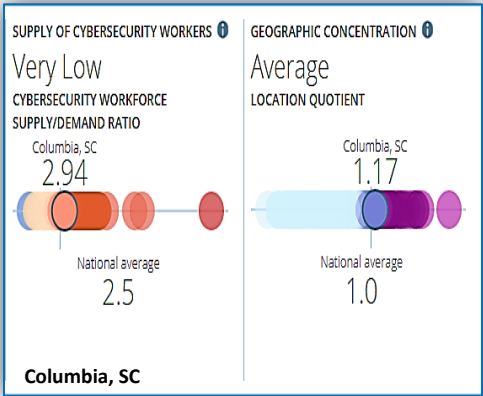
CITY	COVERAGE	NUMBER OF PROVIDERS
Aiken	94.80%	15 providers
Anderson	97.80%	17 providers
Beaufort	84.20%	17 providers
Bluffton	98.60%	19 providers
Charleston	95.60%	29 providers
Columbia	99.40%	26 providers
Conway	100.00%	13 providers
Easley	98.40%	15 providers
Florence	99.70%	16 providers
Fort Mill	99.70%	22 providers
Gaffney	93.00%	15 providers
Goose Creek	93.90%	20 providers
Greenville	99.00%	25 providers
Greenwood	65.70%	11 providers
Greer	99.70%	16 providers
Hartsville	90.20%	13 providers
Hilton Head Island	98.20%	19 providers
Irmo	99.20%	16 providers
Lancaster	89.40%	12 providers
Lexington	99.60%	22 providers
Mount Pleasant	98.30%	23 providers
Myrtle Beach	100.00%	21 providers
North Augusta	97.90%	15 providers
North Charleston	98.70%	27 providers
Orangeburg	95.50%	14 providers
Rock Hill	98.20%	16 providers
Seneca	60.90%	11 providers
Simpsonville	98.40%	17 providers
Spartanburg	98.40%	21 providers
Summerville	98.90%	26 providers
Sumter	97.90%	13 providers
Taylors	99.70%	15 providers
West Columbia	100.00%	21 providers

Source: broadbandnow.com/South-Carolina

CYBERSECURITY DEMAND COMPARISONS



- TOP SECURITY JOB TITLES**
- Cyber Security Analyst/Specialist
 - Cyber Security Engineer
 - Network Engineer/Architect
 - Software Developer/Engineer
 - Systems Administrator
 - Systems Engineer
 - Auditor
 - Information Assurance Engineer/Analyst
 - Network Administrator



Source:www.cyberseek.org

