Cisco Networking Academy: Virginia Profile

Cisco Networking Academy is playing a critical role in the U.S. economic recovery by preparing students for the sustainable jobs that government, education and industry all agree will fuel America's ability to innovate and compete, not just today but in the future. As the focus turns to infrastructure, Networking Academy provides students with critical IT and networking skills to design, build, and maintain the infrastructure highway that both the public and private sector now depend on for sustainability.

The new Obama administration clearly recognizes the importance that technology plays in preparing students to compete in a 21st century global economy. In a speech on January 8, 2009, at Virginia's George Mason University, President Obama highlighted the current science and technology skills gap in the United States and the urgent need to address it:

“To give our children the chance to live out their dreams in a world that’s never been more competitive, we will equip tens of thousands of schools, community colleges, and public universities with 21st century classrooms, labs, and libraries. We’ll provide new computers, new technology, and new training for teachers, so that students in Chicago and Boston can compete with kids in Beijing for the high-tech, high-wage jobs of the future.”

Cisco Networking Academy is a proven model for delivering 21st century learning because it delivers:

- rigorous and interactive curricula licensed at no cost to nonprofit educational institutions
- an e-learning platform that supports different learning styles
- web-based content available to students 24/7
- online assessments
- student performance tracking
- hands-on labs
- instructor training and support

Networking Academy is a unique public-private partnership between educational institutions, national, state and local government, and community-based organizations, currently educating more than 128,000 students in over 2,200 U.S. educational institutions.

As an education solution, Networking Academy encourages seamless educational pathways between secondary and post-secondary institutions by using curricula aligned to national and state education standards for math, language arts, and technology and industry certifications. These courses also help students prepare to pursue degrees related to science, technology, engineering, and math (STEM). Networking Academy courses provide instructors with tools to help students make the connection between their educational experience and their careers. In the United States, academies are located in high schools, technical schools, colleges, universities, and community-based organizations.

Cisco Networking Academy provides:

- IT and networking skills mapped to high-skill, high-demand, high-wage 21st century jobs across virtually every industry
- sustainable partnerships at all levels of education, including community colleges at the forefront of workforce development and retraining
• strong alignment with high school career and technical education programs that build technical skills and create pathways for high school graduates going either directly into the workforce or on to post-secondary education

• the skilled pipeline of talent required to design, build and maintain the infrastructure needed for economic recovery

Included in each state profile are Networking Academy statistics, IT workforce projections, and student/graduate stories. These state-by-state profiles will provide you with important information about the value Cisco brings to government, education and business through delivery of IT/networking skills and knowledge. Cisco Networking Academy educates the architects of today’s networked economy.

Profiles are updated annually with core content, and we will continue to add student/graduate profiles. For your convenience, the library of profiles for each state, plus the District of Columbia and the United States as a whole, are accessible at http://www.cisco.com/go/netacadresourcecenter.

We welcome your suggestions for future profiles. Please send any questions and feedback to our U.S. Marketing Team via Nancy Bischoff at nbischof@cisco.com.

Learn More
Table 1 lists data about academies in Virginia. Table 2 lists information about Networking Academy curricula in Virginia, and Table 3 shows information by student education level.

For additional information about Cisco Networking Academy, visit http://www.cisco.com/go/netacad

Table 1. Cisco Networking Academy in Virginia

<table>
<thead>
<tr>
<th>Networking Academy students</th>
<th>3493</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Networking Academy students</td>
<td>12% female</td>
</tr>
<tr>
<td>Distinct cumulative academy students (having successfully completed a course)</td>
<td>17,293</td>
</tr>
<tr>
<td>Academies</td>
<td>70</td>
</tr>
<tr>
<td>Academy instructors</td>
<td>127</td>
</tr>
<tr>
<td>Total estimated cumulative contribution value to Virginia academies*</td>
<td>$9,679,509</td>
</tr>
</tbody>
</table>

Off-shore DoDDS and DoDEA academies, while linked systemically to Virginia via the academy locator tool, are not included in the commonwealth data. For information on the DoDDS and DoDEA academies, please refer to the Federal profile.

Source: AME/MRE Academy Briefing Book Details_10 31 08_v2_ALL US Acads_NO Counties_v5.xls
Cumulative students are distinct; therefore, each student is only counted once.
*This estimate includes donations and discounts made to educational institutions implementing Cisco Networking Academy within Virginia.
*Source: AME/MRE report #3616 student and instructor enrollment by year 2008.11.24_JBZ_v9.xls Date: November 24, 2008

Table 2. Networking Academy Curricula in Virginia

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>All</th>
<th>ITE</th>
<th>CCNA 1, 2</th>
<th>CCNA 3, 4</th>
<th>Advanced Technologies and Other*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of academies by curriculum</td>
<td>70</td>
<td>39%</td>
<td>87%</td>
<td>57%</td>
<td>13%</td>
</tr>
</tbody>
</table>

The above curricula represent the core Networking Academy curricula.

*Includes CCNP, Security, Wireless, Java, UNIX and Panduit Network Infrastructure Essentials (PNIE)

Academies often teach multiple curricula and may be counted more than once in this table.

Source: AME/MRE rpt #3651Active Academies by Curr Course State 2008.12.08_JBZ_v4.xls
### Table 3. Virginia Academies and Students by Education Level

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Total Number</th>
<th>Secondary Schools</th>
<th>Community Colleges</th>
<th>Universities</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Students*</td>
<td>3493</td>
<td>55%</td>
<td>42%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Virginia Academies*</td>
<td>70</td>
<td>60%</td>
<td>34%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Sources: AME/MRE FULL Package_10 31 08 Quarterly Metrics Date: Nov 13, 2008 and AME/MRE rpt Template Basic_curr and course and ed level details_US Fed Acads_10.31.08_v4.xls

*For academies that self identify as more than one education level, the academies and students in this table are distributed proportionately across the education levels. Figures are rounded.

Academies represented in “Other” category include the following: community-based organizations, middle schools, the military, nontraditional educational settings, and post-graduate institutions.
Active Cisco Networking Academies in Virginia

U.S. Congressional District Database

Data for this report was gathered using the U.S. Congressional District Database. This tool was developed to communicate with congressional representatives about Cisco Networking Academy implementation in their home districts. The database maps active academies by congressional district or by all districts within a state, providing academy name, city, state, and congressional district. The listing by state is updated annually.

Table 4 lists information about academies in Virginia congressional districts.

Table 4. Networking Academies in Virginia Congressional Districts

<table>
<thead>
<tr>
<th>Number of Virginia Congressional Districts</th>
<th>Number of Virginia Congressional Districts with Networking Academies</th>
<th>Number of Virginia Congressional Districts without Networking Academies</th>
<th>% Virginia Congressional District Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>11</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

Academies listed here have taught a class with at least three students, or adopted a new curriculum, within the last twelve months

Source: MRE/Academy Connection, U.S. Congressional District Database   Date: October 31, 2008

Active Virginia Cisco Networking Academies by Congressional District

* Indicates Cisco Networking Academy Training Center

Academies listed here have taught a class with at least three students, or adopted a new curriculum, within the last twelve months

Source: MRE/Academy Connection, U.S. Congressional District Database   Date: October 31, 2008

Congressional District 1
- Brooke Point High School (Stafford)
- DODEA/USA - Quantico High School (Quantico)
- ECPI Newport News (ACC) (Newport News)
- Fredericksburg City Schools (Fredericksburg)
- *Germanna Community College (Fredericksburg)
- North Stafford High School (Stafford)
- Spotsylvania High Schools (Spotsylvania)
- *Thomas Nelson Community College (Hampton)

Congressional District 2
- *ECPI Virginia Beach (ACC) (Virginia Beach)
- Langley SOJT (Langley AFB)
- Special Sessions (Virginia Beach)
- *Tidewater Community College VB (Virginia Beach)
- VA Beach Schools (Virginia Beach)

Congressional District 3
- Aviation Academy (Newport News)
- Norfolk State University (Norfolk)
- Norfolk Technical Vocational Center (Norfolk)
- Phoebus High School (Hampton)
- TCC WFD (Norfolk)

Congressional District 4
- *Chesterfield County Public Schools - Regional (Chesterfield)
- Chesterfield Technical Center (Chesterfield)
- Matoaca High School (Chesterfield)
- Paul D. Camp Community College (Franklin)
- TCC, Chesapeake (Chesapeake)

Congressional District 5
- Bedford Science & Technology Center (Bedford)
- Campbell County Tech Center (Rustburg)
- *Danville Community College (Danville)
• Geo. Washington High School (Danville)  
**Congressional District 6**  
• *Central Virginia Community College (Lynchburg)  
• Heritage High School (Lynchburg)  
• Massanutten Technical Center (Harrisonburg)  
• Roanoke Technical Education Center (Roanoke)  
• Triplett Business and Technical Institute (Mount Jackson)  
• *Virginia Western Community College (Roanoke)  

**Congressional District 7**  
• Culpeper (Culpeper)  
• Cosby High School (Midlothian)  
• Easternview High School (Culpeper)  
• James River High School (Midlothian)  
• John Tyler Community College (Midlothian)  

**Congressional District 8**  
• Edison (Alexandria)  
• Marshall Academy (Falls Church)  
• NVCC – Alexandria Campus (Alexandria)  
• TC Williams High School (Alexandria)  

**Congressional District 9**  
• Buchanan County Technical and Career Center (Grundy)  
• Dabney S. Lancaster Community College (Clifton Forge)  
• Dickenson County Career Center (Clinchco)  
• Honaker High School (Honaker)  
• Lebanon High School (Lebanon)  
• Lee County Career and Technical School (Ben Hur)  
• Mountain Empire Community College (Big Stone Gap)  
• Neff Center For Science & Technology (Abingdon)  
• Scott County (Gate City)  
• *Southwest Virginia Community College - Regional (Richlands)  
• Virginia High School (Bristol)  
• Washington County Technical School (Abingdon)  
• Wise County Vocational Center (Wise)  
• Wytheville Community College (Wytheville)  

**Congressional District 10**  
• Chantilly Academy (Chantilly)  
• ECPI Manassas (ACC) (Manassas)  
• *Lord Fairfax Community College (Middletown)  
• Monroe Technology Center (Leesburg)  
• NVCC – Manassas Campus (Manassas)  
• Osbourn High School (Manassas)  
• Sherando High School (Stephens City)  
• Warren County High School (Front Royal)  

**Congressional District 11**  
• Battlefield High School - VA (Haymarket)  
• Forest Park High School (Woodbridge)  
• *George Mason University - Regional (Fairfax)  
• NVCC - Annandale Campus (Annandale)  
• NVCC - Woodbridge Campus (Woodbridge)
Cisco Networking Academy: Workforce Development in Virginia

Cisco Networking Academy is ready to help U.S. workers learn critical IT and networking skills through academies located in high schools, community colleges, four-year colleges, and nontraditional settings. Developing in-demand technical skills in a timely, focused program enables students to quickly find and retain sustainable, high-paying jobs. Academy courses map to industry certifications and prepare students for technical jobs in a new, improved technical infrastructure across the nation. Even students who complete introductory courses will be prepared to work for companies that depend on a technical infrastructure for business sustainability.

“Obama’s pro-tech agenda could increase the number of technology jobs in the United States by 10 percent, adding about 300,000 high-paying IT positions.” –Katherine McGuire, VP of government relations, Business Software Alliance ¹

“Even with this economic downturn, the jobs outlook in IT for 2009 is better than that of many other industries, since IT is no longer at the peripheral of industries but at the core of their competitive edge, and IT will play a critical role in the infrastructure build out.” –David Foote, CEO of Foote Partners LLC, which analyzes IT wages and hiring data ¹

As the U.S. remains focused on economic recovery throughout 2009, there is a growing emphasis on upgrading the educational infrastructure to deliver the required knowledge and skills to build the needed technical workforce to support and maintain technology infrastructure assets and requirements. Just as the interstate highway investment created millions of construction jobs, which were then followed by maintenance and automotive jobs in the long term, so technology investments will initially create jobs necessary to design and deploy technology infrastructure, and these jobs will be followed by an array of new business opportunities.

“Investments in America’s digital infrastructure will spur significant job creation in the immediate term. An investment of $40 billion in IT network infrastructure in 2009 will create more than 949,000 U.S. jobs, more than half of which will be in small businesses.” –Technology CEO Council press release ²

Cisco Networking Academy addresses the need for 21st century teaching and learning models that prepare students to move into the pipeline of talent needed to fill these high-skill, high-wage, high-demand careers.

"We will enable students of all ages to learn in 21st century classrooms, labs, and libraries, to help our students compete with any worker in the world.” –American Recovery and Reinvestment Plan press release ³

In a recent report, the Information Technology and Innovation Foundation “finds that investments in America’s digital infrastructure will spur significant job creation in the short run. Specifically, ITIF estimates that an additional investment of $30 billion in America’s IT network infrastructure in 2009 will create approximately 949,000 U.S. jobs.” ⁴

¹ Computerworld, 1/5/09, Stimulus could create thousands of IT jobs, http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=331783


### IT Occupational Data

Table 5 lists information about IT-related occupations in the United States, and Table 6 lists this information for Virginia.

**Table 5. Selected IT-Related Occupations in the United States**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employment</th>
<th>Employment Change</th>
<th>Average Annual Openings</th>
<th>Occupational Employment as of May 2007*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2016</td>
<td>Numeric</td>
<td>Percent</td>
</tr>
<tr>
<td>Computer Support Specialists</td>
<td>552,000</td>
<td>624,000</td>
<td>71,000</td>
<td>21.9</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>504,000</td>
<td>650,000</td>
<td>146,000</td>
<td>29</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>309,000</td>
<td>393,000</td>
<td>83,000</td>
<td>27</td>
</tr>
<tr>
<td>Network Systems and Data Communications Analysts</td>
<td>262,000</td>
<td>402,000</td>
<td>140,000</td>
<td>53.4</td>
</tr>
<tr>
<td>Computer and Information Systems Managers</td>
<td>264,000</td>
<td>307,000</td>
<td>43,000</td>
<td>16.4</td>
</tr>
</tbody>
</table>


**Table 6. Selected IT-Related Occupations in Virginia**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employment</th>
<th>Employment Change</th>
<th>Average Annual Openings</th>
<th>Occupational Employment as of May 2007^</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2016</td>
<td>Numeric</td>
<td>Percent</td>
</tr>
<tr>
<td>Computer Support Specialists</td>
<td>19,191</td>
<td>23,091</td>
<td>3900</td>
<td>20.3</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>33,115</td>
<td>46,838</td>
<td>13,723</td>
<td>41.4</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>17,596</td>
<td>24,344</td>
<td>6748</td>
<td>38.3</td>
</tr>
<tr>
<td>Network Systems and Data Communications Analysts</td>
<td>15,310</td>
<td>25,205</td>
<td>9895</td>
<td>64.6</td>
</tr>
<tr>
<td>Computer and Information Systems Managers</td>
<td>10,009</td>
<td>12,662</td>
<td>2653</td>
<td>26.5</td>
</tr>
</tbody>
</table>


Virginia Student and Graduate Profile

Charles Stembridge’s early interest in technology was a clear indication of things to come. “I have been fascinated with computers and networks since I was a toddler,” says Charles. “It started with electrical circuits and eventually progressed to computers and telephony by the time I was in elementary school,” he recalls. Charles’ attraction to computer networking emerged when in second grade he noticed that the Apple II computers could all share the same network. Five years later, in seventh grade, Charles built his own PC using a “bare-bones” kit his father ordered for him that included the case, motherboard, and processor. Charles ordered the memory, hard drive, floppy, and CD-ROM and then built the computer from the ground up.

Charles enrolled in Cisco® Networking Academy® as a sophomore at James River High School in Midlothian, Virginia and, within the next two years, not only earned his Cisco Certified Network Associate (CCNA®) certification but also began his own PC repair and network installation service. By the time he graduated from college, Charles had leveraged his three years of experience as an information technology (IT) business owner to land a corporate IT job where he soon earned a promotion.

Charles first heard of the Networking Academy from Linda Lester, his freshman computer instructor at James River High School. Charles notes, “Cisco seemed to be the major network vendor to know, so when there was an opportunity for me to learn it, I jumped at it.” Linda, who taught some of the Networking Academy classes, allowed Charles to enroll as a sophomore even though the school restricted the curriculum to juniors and seniors.

“The Cisco courses gave me a huge leap ahead of nearly every other student enrolled in the Information Systems program,” Charles explains. “I had already learned the basics behind the technologies, which allowed me to work on the content of various projects through my college career instead of having to first catch up to the principles.”

He continued his technical education at Virginia Commonwealth University (VCU). “The Cisco courses gave me a huge leap ahead of nearly every other student enrolled in the Information Systems program,” Charles explains. “I had already learned the basics behind the technologies, which allowed me to work on the content of various projects through my college career instead of having to first catch up to the principles. The courses gave me the background necessary to open doors to other information systems disciplines such as programming, hardware prototyping, and database design.”

Although Charles had been running his small network installation and PC repair business for three years, in his junior year of college he decided he needed more corporate experience. Charles began working as a seasonal information systems technician at Kings Dominion, a theme park in nearby Doswell, and was promoted to Information Systems engineer where he is now responsible for the network infrastructure and designing and modifying corporate and local level applications used throughout the organization. Charles also maintains back office and point-of-sale systems and administers two of the primary SQL servers.
Charles commented on his Networking Academy education: “Many of the things I learned taking the Cisco courses I still apply today, even in an environment that is not fully network based. Many of the diagnostic skills you learn in Cisco carry over with you no matter what field of IS you are working in.”

“Many of the things I learned taking the Cisco courses I still apply today, even in an environment that is not fully network based. Many of the diagnostic skills you learn in Cisco carry over with you no matter what field of IS you are working in.”

Charles graduated from VCU in October 2008 with a bachelor’s degree in information systems. He plans to earn a master’s degree in computer information systems security in the next two years.

When asked what he enjoyed most about the Networking Academy, Charles replied “I felt challenged throughout the program, more so than most of my classes at the time. I had an interest in the material and principles, and I knew it would benefit me throughout my career. Finally, the teacher, Ms. Lester is one of the best I have ever had.”

Charles remains in touch with his former instructor, serving on the advisory committee at Chesterfield Technical Center where Linda now teaches. Linda adds, “Charles has been an active member of our advisory council for the past year. He attends and participates in all activities such as speaking to the classes and working with the second year students on their gaming event and capstone project. He is a great guy and continues to work with our students.”

When Charles is not working on computers, he builds houses and enjoys fishing, going to the beach, and gaming. Looking back he says, “The Networking Academy has given me a distinct advantage throughout my career. It provides both the theoretical and practical knowledge necessary to work in the real world. It opened doors for me and gave me the confidence to walk through them.”

For more information on the Networking Academy at James River High School: http://jrhs.ccpsnet.net/ or http://jrhs.ccpsnet.net/cte_infosystech.php