



Labor Market Analysis for Program Recommendation Cisco Certified Network Associate Occupations West Valley College

Prepared by the Bay Region Center of Excellence for Labor Market Research

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Recommendation

Based on all available data, there appears to be an “undersupply” of Cisco Certified Network Associate workers compared to the demand for this cluster of occupations in the Bay Region and in the Silicon Valley Sub-Region (Santa Clara County). There is a projected annual gap of about 1,204 students in the Bay Region and 416 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0708.10 - Computer Networking programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at West Valley College and in the region.

This report profiles Cisco Certified Network Associate Occupations in the 12 county Bay Region and in the Silicon Valley Sub-Region for Program Recommendation at West Valley College.

- **Computer Network Support Specialists (15-1231):** Analyze, test, troubleshoot, and evaluate existing network systems, such as local area networks (LAN), wide area networks (WAN), cloud networks, servers, and other data communications networks. Perform network maintenance to ensure networks operate correctly with minimal interruption.
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 39%
- **Computer Network Architects (15-1241):** Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning, including analysis of capacity needs for network infrastructures. May also design network and computer security measures. May research and recommend network and data communications hardware and software.
Entry-Level Educational Requirement: Bachelor’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 37%
- **Network and Computer Systems Administrators (15-1244):** Install, configure, and maintain an organization’s local area network (LAN), wide area network (WAN), data communications network, operating systems, and physical and virtual servers. Perform system monitoring and verify the integrity and availability of hardware, network, and server resources and systems. Review system and application logs and verify completion of scheduled jobs, including system backups. Analyze network and server resource consumption and control user

access. Install and upgrade software and maintain software licenses. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 37%

Occupational Demand

Table 1. Employment Outlook for Cisco Certified Network Associate Occupations in the Bay Region

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Computer Network Support Specialists	3,949	4,515	566	14%	1,970	394	\$33	\$42
Computer Network Architects	7,534	8,070	536	7%	2,614	523	\$60	\$80
Network and Computer Systems Administrators	9,758	10,609	851	9%	3,676	735	\$46	\$60
Total	21,241	23,194	1,953	9%	8,260	1,652	\$49	\$64

Source: Lightcast 2024.3

The Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Cisco Certified Network Associate Occupations in the Silicon Valley Sub-Region

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Computer Network Support Specialists	1,211	1,384	173	14%	602	120	\$36	\$44
Computer Network Architects	2,888	3,042	154	5%	928	186	\$63	\$83
Network and Computer Systems Administrators	3,124	3,381	257	8%	1,155	231	\$50	\$64
Total	7,223	7,807	584	8%	2,685	537	\$53	\$68

Source: Lightcast 2024.3

Silicon Valley Sub-Region includes: Santa Clara County

Job Postings in the Bay Region and Silicon Valley Sub-Region

Table 3. Number of Job Postings by Occupation for the latest 12 months

Occupation	Bay Region	Silicon Valley
Computer Network Architects	3,840	1,878
Network and Computer Systems Administrators	1,898	897
Computer Network Support Specialists	194	98

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Table 4a. Top Job Titles in Job Postings for Cisco Certified Network Associate Occupations in the Bay Region

Title	Bay	Title	Bay
Network Engineers	492	IT Administrators	50
Systems Administrators	240	Mobile Automation Engineers	46
Automation Engineers	169	Infrastructure Software Engineers	38
Network Software Engineers	158	Lead Automation Engineers	38
Network Administrators	106	Network Infrastructure Engineers	38
Linux System Administrators	81	Linux Kernel Engineers	37
Network Architects	68	Linux Software Engineers	37
Linux Administrators	65	IT Systems Administrators	35
Hadoop Administrators	55	Network Technicians	33

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Table 4b. Top Job Titles in Job Posting for Cisco Certified Network Associate Occupations in the Silicon Valley Sub-Region

Title	Silicon Valley	Title	Silicon Valley
Network Engineers	229	Mobile Automation Engineers	34
Network Software Engineers	112	Principal Software Engineers	34
Systems Administrators	98	Infrastructure Software Engineers	30
Automation Engineers	77	Google Cloud Architects	29
Linux System Administrators	60	Linux Software Engineers	29
Linux Administrators	50	Network Test Engineers	28
Network Administrators	47	Software Automation Engineers	26
Linux Kernel Engineers	36	Lead Automation Engineers	22
Network Architects	35	Linux Systems Engineers	22

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Industry Concentration

Table 5. Industries Hiring for Cisco Certified Network Associate Occupations in the Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
Custom Computer Programming Services	4,204	4,998	19%	20%
Computer Systems Design Services	1,829	1,845	1%	9%
Data Processing, Hosting, and Related Services	1,332	1,708	28%	6%
Software Publishers	969	1,081	11%	5%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
Corporate, Subsidiary, and Regional Managing Offices	842	773	-8%	4%
Local Government, Excluding Education and Hospitals	688	707	3%	3%
Electronic Computer Manufacturing	675	747	11%	3%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	590	654	11%	3%
Wired Telecommunications Carriers	585	532	-9%	3%
Web Search Portals and All Other Information Services	467	455	-2%	2%

Source: Lightcast 2024.3

Table 6. Top Employers Posting Cisco Certified Network Associate Occupations in the Bay Region and the Silicon Valley Sub-Region

Employer	Bay	Employer	Silicon Valley
Apple	172	Apple	172
Google	124	Google	120
Meta	123	Nvidia	92
Amazon	91	Amazon	83
Nvidia	90	Tesla	37
University of California	58	Palo Alto Networks	36

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Educational Supply

There are sixteen community colleges in the Bay Region issuing 448 awards on average annually (last 3 years ending 2021-23) on TOP 0708.10 - Computer Networking. In the Silicon Valley Sub-Region, there are six community colleges that issued 121 awards on average annually (last 3 years) on this TOP code.

Table 7a. Community College Awards on TOP 0708.10 - Computer Networking in the Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	5	3	1	9
Contra Costa	East Bay	1	0	0	1
Deanza	Silicon Valley	20	0	15	35
Diablo Valley	East Bay	1	0	0	1
Evergreen Valley	Silicon Valley	0	0	1	1
Foothill	Silicon Valley	1	0	0	1
Gavilan	Silicon Valley	1	0	0	1
Las Positas	East Bay	3	0	8	11
Los Medanos	East Bay	9	0	5	14
Mission	Silicon Valley	21	0	25	46

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Monterey	SC-Monterey	3	0	9	12
Ohlone	East Bay	3	0	32	35
San Francisco	Mid-Peninsula	61	0	167	228
San Jose City	Silicon Valley	16	0	21	37
Santa Rosa	North Bay	0	0	3	3
Skyline	Mid-Peninsula	9	4	0	13
Total	-	154	7	287	448

Source: Data Mart

Note: The annual average for awards is 2020-21 to 2022-23.

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 1,652 annual openings for the Cisco Certified Network Associate occupational cluster and 448 annual (3-year average) awards for an annual undersupply of 1,204 students. In the Silicon Valley Sub-Region, there is also a gap with 537 annual openings and 121 annual (3-year average) awards for an annual undersupply of 416 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0708.10 - Computer Networking

Metric Outcomes	Bay All CTE Program	West Valley College All CTE Program	State 0708.10	Bay 0708.10	Silicon Valley 0708.10	West Valley College 0708.10
Students with a Job Closely Related to Their Field of Study	74%	67%	69%	69%	64%	NA
Median Annual Earnings for SWP Exiting Students	\$53,090	\$45,753	\$56,596	\$65,840	\$69,665	NA
Median Change in Earnings for SWP Exiting Students	24%	25%	17%	23%	27%	NA
Exiting Students Who Attained the Living Wage	54%	38%	67%	62%	65%	NA

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills, Certifications and Education

Table 9. Top Skills in Job Postings for Cisco Certified Network Associate Occupations in the Bay Region

Skill	Posting	Skill	Posting
Automation	1,757	Network Switches	705
Computer Science	1,728	TCP/IP	701
Python (Programming Language)	1,661	Software Development	672
Linux	1,375	Software Engineering	670

Skill	Posting	Skill	Posting
Scripting	1,092	Systems Engineering	669
Network Routing	1,053	Border Gateway Protocol	666
Operating Systems	1,038	Scalability	660
Network Engineering	979	Amazon Web Services	644
Firewall	877	Microsoft Azure	631
Debugging	766	Project Management	630

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Table 10. Certifications in Job Postings for Cisco Certified Network Associate Occupations in the Bay Region

Certification	Posting	Certification	Posting
ITIL Certifications	53	CompTIA Certification	43
IAT Level II Certification	48		

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Table 11. Education Requirements for Cisco Certified Network Associate Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	226	5%
Associate degree	259	6%
Bachelor's degree & higher	3,958	89%

Source: Lightcast 2024.3; "Job Posting Analytics." Nov. 2023 - Oct. 2024

Note: 46% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

Sources

O*Net Online
 Lightcast
 CTE LaunchBoard www.calpassplus.org
 Launchboard
 Statewide CTE Outcomes Survey
 Employment Development Department Unemployment Insurance Dataset
 Living Insight Center for Community Economic Development
 Chancellor's Office MIS system

Contacts

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