** Network Support Specialist Occupations**

**Labor Market Information Report**

**Evergreen Valley College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

September 2019

# Recommendation

Based on all available data, there appears to be a significant undersupply of Network Support Specialist 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 3,485 students in the Bay region and 1,302 students in the Silicon Valley Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0708.10 - Computer Networking 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 Evergreen Valley College and in the region.

# Introduction

This report profiles Network Support Specialist Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new program at Evergreen Valley College. Labor market information (LMI) is not available at the eight-digit SOC Code level for Data Warehousing Specialists (15-1199.07), therefore, the data shown in Tables 1 and 2 is for Computer Occupations, All Other (at the six digit SOC level) and likely overstates demand for Data Warehousing Specialists. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Data Warehousing Specialists (15-1199.07).

|  |
| --- |
| * **Computer Network Support Specialists (SOC 15-1152):** 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. Perform network maintenance to ensure networks operate correctly with minimal interruption. Excludes “Network and Computer Systems Administrators” (15-1142) and “Computer Network Architects” (15-1143). |
| Entry-Level Educational Requirement: Associate's degree |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 41% |
|  |
| * **Computer Occupations, All Other (SOC 15-1199):** All computer occupations not listed separately. Excludes “Computer and Information Systems Managers” (11-3021), “Computer Hardware Engineers” (17-2061), “Electrical and Electronics Engineers” (17-2070), “Computer Science Teachers, Postsecondary” (25-1021), “Multimedia Artists and Animators” (27-1014), “Graphic Designers” (27-1024), “Computer Operators” (43-9011), and “Computer, Automated Teller, and Office Machine Repairs” (49-2011). |
| Entry-Level Educational Requirement: Bachelor's *degree* |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 35*%* |

# Occupational Demand

**Table 1. Employment Outlook for Network Support Specialist Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Computer Network Support Specialists | 6,622 | 7,554 | 932 | 14% | 3,488 | 698 | $22.58 | $38.93 |
| Computer Occupations, All Other | 34,129 | 37,296 | 3,168 | 9% | 14,979 | 2,996 | $30.64 | $55.84 |
| **Total** | **40,751** | **44,850** | **4,099** | **10%** | **18,467** | **3,693** | **$29.33** | **$53.10** |

*Source: EMSI 2019.2*

**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 Network Support Specialist Occupations in Silicon Valley Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Computer Network Support Specialists | 2,350 | 2,694 | 344 | 15% | 1,252 | 250 | $18.58 | $39.91 |
| Computer Occupations, All Other | 12,616 | 13,859 | 1,243 | 10% | 5,615 | 1,123 | $33.63 | $64.58 |
| **TOTAL** | **14,966** | **16,552** | **1,586** | **11%** | **6,867** | **1,373** | **$31.26** | **$60.71** |

*Source: EMSI 2019.2*

**Silicon Valley Sub-Region** includes Santa Clara County

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

**Table 3. Number of Job Postings by Occupation for latest 12 months (September 2018 - August 2019)**

| Occupation | Bay Region | Silicon Valley |
| --- | --- | --- |
| Data Warehousing Specialists | 2,175 | 949 |
| Computer Network Support Specialists | 1,258 | 515 |
| **Total** | **3,433** | **1,464** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Network Support Specialist Occupations for latest 12 months (September 2018 - August 2019) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Customer Engineer | 214 | Storage Administrative | 33 |
| Data Warehouse Developer | 90 | Systems Engineer | 32 |
| Network Specialist | 87 | Informatica Consultant | 31 |
| ETL Tester | 80 | Mdm Architect | 29 |
| Network Engineer | 71 | Information Technology Specialist | 29 |
| Storage Engineer | 58 | Customer Engineer, Information And Technology Industry | 29 |
| Network Technician | 56 | Big Data Lead | 29 |
| Data Warehouse Analyst | 56 | Systems Administrator | 28 |
| Software Development Engineer | 55 | Data Warehouse Engineer | 26 |
| Network Operations Analyst | 48 | Quality Engineer | 25 |
| Client Executive | 41 | Data Warehouse Manager | 25 |
| Operations Analyst | 37 | Technical Support Specialist | 24 |
| Systems Analyst | 35 | Operations Technician | 21 |
| Production Support | 34 | Subject Matter Expert | 20 |

**Table 4b. Top Job Titles for Network Support Specialist Occupations for latest 12 months (September 2018 - August 2019) Silicon Valley Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Silicon Valley | Common Title | Silicon Valley |
| Customer Engineer | 91 | Systems Analyst | 14 |
| Storage Engineer | 48 | Systems Administrator | 14 |
| Data Warehouse Analyst | 37 | Quality Engineer | 14 |
| Network Engineer | 35 | Etl Tester | 14 |
| Data Warehouse Developer | 33 | Data Center Manager | 14 |
| Network Technician | 25 | Engineer, Customer | 13 |
| Network Specialist | 22 | Data Operations Engineer | 13 |
| Mdm Architect | 20 | Senior Python Sdet - Networking | 12 |
| Big Data Lead | 20 | Network Consultant | 12 |
| Software Development Engineer | 19 | Client Executive | 12 |
| Systems Engineer | 16 | Operations Analyst | 11 |
| Storage Test Engineer | 16 | Data Governance Consultant | 11 |
| Operations Technician | 16 | Customer Engineer, Information And Technology Industry | 11 |
| Teradata Lead | 15 | Informatica Consultant | 10 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Network Support Specialist Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2018) | Jobs in Industry (2022) | % Change (2018-22) | % in Industry (2018) |
| Custom Computer Programming Services (541511) | 8,201 | 9,209 | 12% | 20% |
| Computer Systems Design Services (541512) | 4,876 | 5,325 | 9% | 12% |
| Software Publishers (511210) | 2,616 | 3,060 | 17% | 6% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 2,614 | 3,394 | 30% | 6% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 2,107 | 2,059 | -2% | 5% |
| Data Processing, Hosting, and Related Services (518210) | 2,013 | 2,611 | 30% | 5% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 1,582 | 1,697 | 7% | 4% |
| Other Computer Related Services (541519) | 1,189 | 1,403 | 18% | 3% |
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (541715) | 635 | 595 | -6% | 2% |
| Electronic Computer Manufacturing (334111) | 626 | 638 | 2% | 2% |
| Temporary Help Services (561320) | 571 | 607 | 6% | 1% |
| Local Government, Excluding Education and Hospitals (903999) | 528 | 556 | 5% | 1% |
| Colleges, Universities, and Professional Schools (State Government) (902612) | 519 | 543 | 5% | 1% |
| Colleges, Universities, and Professional Schools (611310) | 470 | 508 | 8% | 1% |
| Administrative Management and General Management Consulting Services (541611) | 468 | 569 | 22% | 1% |
| Wired Telecommunications Carriers (517311) | 444 | 388 | -13% | 1% |

*Source: EMSI 2019.2*

**Table 6. Top Employers Posting Network Support Specialist Occupations in Bay Region and Silicon Valley Sub-Region (September 2018 - August 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Silicon Valley |
| Cisco Systems Incorporated | 52 | Zenaide Technologies | 9 | Cisco Systems Inc | 35 |
| Scoop Technologies | 48 | Workday, Inc | 9 | Google Inc. | 27 |
| Anthem Blue Cross | 32 | Surveymonkey | 9 | IBM | 17 |
| Google Inc. | 31 | First San Francisco Partners | 9 | Anthem Blue Cross | 15 |
| NCR Corporation | 30 | Apple Inc. | 9 | SAP | 14 |
| Facebook | 24 | Adobe Systems | 9 | KLA-Tencor | 14 |
| IBM | 23 | University California | 8 | Wipro | 12 |
| Wipro | 15 | Kaiser Permanente | 8 | Vmware Incorporated | 11 |
| SAP | 15 | Centraprise | 8 | Juniper Networks Inc | 10 |
| KLA-Tencor | 14 | Applied Materials | 8 | Apple Inc. | 9 |
| Amazon | 14 | Wells Fargo | 7 | Zenaide Technologies | 8 |
| Accenture | 14 | Twitter | 7 | Applied Materials | 8 |
| Northrop Grumman | 13 | Talbridge Limited | 7 | Amazon | 8 |
| Telesolv Consulting | 12 | Pharmacyclics Incorporated | 7 | Adobe Systems | 8 |
| Vmware Incorporated | 11 | Hewlett-Packard | 7 | Pharmacyclics Inc | 7 |
| Juniper Networks Inc | 10 | Cynet Systems | 7 | Hewlett-Packard | 7 |
| Fiserv | 10 | Veeva Systems | 6 | Facebook | 7 |

*Source: Burning Glass*

# Educational Supply

There are 15 community colleges in the Bay Region issuing 208 awards on average annually (last 3 years) on TOP 0708.10 - Computer Networking. There are five colleges in the Silicon Valley Sub-Region issuing 71 awards on average annually (last 3 years) on this TOP code.

**Table 7. Awards on TOP 0708.10 - Computer Networking in Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Headcount | Associates | Certificates | Total |
| Contra Costa | East Bay | 216 | 3 | 12 | 15 |
| Deanza | Silicon Valley | 151 | 10 | 10 | 20 |
| Diablo Valley | East Bay | 167 | 5 | 1 | 6 |
| Foothill | Silicon Valley | n/a | 1 |  | 1 |
| Gavilan | Silicon Valley | 24 | 4 | 1 | 5 |
| Las Positas | East Bay | n/a | 4 | 1 | 5 |
| Los Medanos | East Bay | n/a | 7 | 8 | 15 |
| Mission | Silicon Valley | 230 | 12 | 20 | 32 |
| Monterey | Santa Cruz & Monterey | 97 |  | 1 | 1 |
| Ohlone | East Bay | 495 | 3 | 17 | 20 |
| San Francisco | Mid-Peninsula | 1,289 |  | 50 | 50 |
| San Jose City | Silicon Valley | 154 | 6 | 7 | 13 |
| San Mateo | Mid-Peninsula | 38 |  |  |  |
| Santa Rosa | North Bay | 39 |  | 20 | 20 |
| Skyline | Mid-Peninsula | n/a | 4 | 1 | 5 |
| **Total Bay Region** | | **2,900** | **59** | **149** | **208** |
| **Total Silicon Valley Sub-Region** | | **559** | **33** | **38** | **71** |

# *Source: Data Mart*

Note: The annual average for awards is 2015-16 to 2017-18.

# Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 3,693 annual openingsfor the Network Support Specialist occupational cluster and 208 annual (3-year average) awards for an annual undersupply of 3,485 students. In the Silicon Valley Sub-Region, there is also a gap with 1,373 annual openings and 71 annual (3-year average) awards for an annual undersupply of 1,302 students.

# Student Outcomes

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay  (All CTE Programs) | Evergreen Valley College (All CTE Programs) | State (0708.10) | Bay (0708.10) | Silicon Valley (0708.10) | Evergreen Valley College (0708.10) |
| % Employed Four Quarters After Exit | 74% | 76% | 73% | 74% | 77% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $8,549 | $26,672 | $28,862 | $15,412 | n/a |
| Median % Change in Earnings | 46% | 75% | 40% | 45% | 55% | n/a |
| % of Students Earning a Living Wage | 63% | 53% | 70% | 74% | 81% | n/a |

*Source: Launchboard Pipeline (version available on 9/11/19)*

# Skills, Certifications and Education

**Table 9. Top Skills for Network Support Specialist Occupations in Bay Region (September 2018 - August 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| SQL | 861 | Apache Hadoop | 286 | VMware | 173 |
| Data Warehousing | 649 | Cisco | 278 | Network Support | 168 |
| Python | 629 | UNIX | 256 | Software Engineering | 163 |
| Extraction Transformation and Loading (ETL) | 567 | Data Modeling | 242 | System/Network Configuration | 163 |
| Customer Service | 538 | Data Governance | 231 | Telecommunications | 162 |
| Technical Support | 447 | Repair | 228 | Transmission Control Protocol / Internet Protocol (TCP / IP) | 162 |
| Data Management | 411 | Scheduling | 226 | Data Transformation | 160 |
| Linux | 409 | Quality Assurance and Control | 217 | Information Systems | 160 |
| Project Management | 389 | Tableau | 198 | Data Science | 157 |
| Oracle | 331 | Change Management | 193 | System Administration | 156 |
| Data Analysis | 324 | Salesforce | 192 | SQL Server | 155 |
| Big Data | 321 | Software Development | 191 | Data Integration | 152 |
| Java | 316 | Business Process | 185 | Metadata | 151 |
| Informatica | 296 | Business Intelligence | 179 | Virtualization | 149 |
| Data Quality | 288 | Customer Contact | 174 | Data Architecture | 146 |

*Source: Burning Glass*

**Table 10. Certifications for Network Support Specialist Occupations in Bay Region (September 2018 - August 2019)**

Note: 86% of records have been excluded because they do not include a certification. As a result, the chart below may not be representative of the full sample.

|  |  |  |  |
| --- | --- | --- | --- |
| Certification | Postings | Certification | Postings |
| IT Infrastructure Library (ITIL) Certification | 106 | Microsoft Certified Professional (MCP) | 22 |
| Certified A+ Technician | 89 | Microsoft Certified Solutions Associate (MCSA) | 19 |
| Driver's License | 76 | Microsoft Certified Desktop Support Technician (Legacy) | 19 |
| Cisco Certified Network Associate (CCNA) | 64 | Certified Information Systems Security Professional (CISSP) | 19 |
| ITIL Certification | 62 | Certified Wireless Network Administrator (CWNA) | 14 |
| Cisco Certified Network Professional (CCNP) | 51 | Project Management Professional (PMP) | 13 |
| Security Clearance | 48 | Microsoft Certified Systems Engineer (Legacy) | 13 |
| CompTIA Security+ | 39 | Cisco Certified Design Professional (CCDP) | 13 |
| CompTIA Network+ | 39 | Chartered Advisor For Senior Living | 12 |
| Cisco Certified Internetwork Expert (CCIE) | 29 | Vmware Certified Professional (VCP) | 10 |
| Project Management Certification | 25 | Systems Security Certified Practitioner (SSCP) | 10 |
| Microsoft Certified Solutions Expert (MCSE) | 22 | Certified Information Systems Auditor (CISA) | 10 |

*Source: Burning Glass*

**Table 11. Education Requirements for Network Support Specialist Occupations in Bay Region**

Note: 51% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

|  |  |  |
| --- | --- | --- |
| Education (minimum advertised) | Latest 12 Mos. Postings | Percent 12 Mos. Postings |
| High school or vocational training | 122 | 7% |
| Associate Degree | 98 | 6% |
| Bachelor’s Degree or Higher | 1,304 | 87% |

*Source: Burning Glass*

# Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

# Sources

O\*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard [www.calpassplus.org/Launchboard/](http://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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