

**Labor Market Information Report**

**Computer Networking Occupations**

**Mission College**

## Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

## March 2024

## Recommendation

Based on all available data, there appears to be an “undersupply” of Computer Networking 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 4,804 students in the Bay region and 1,743 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 Mission College and in the region.

This report profiles Computer Networking Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a CIT Cisco Certified Network Administration (CCNA) program review at Mission College.

* **Computer Systems Analysts (15-1211):** Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.
  Entry-Level Educational Requirement: Bachelor’s degree
  Training Requirement: None
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 21%
* **Computer Network Support Specialists (15-1231):** 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 degree
  Training Requirement: None
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 41%
* **Computer User Support Specialists (15-1232):** Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Excludes “Network and Computer Systems Administrators” (15-1142).
  Entry-Level Educational Requirement: Some college, no degree
  Training Requirement: None
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 41%

## Occupational Demand

**Table 1. Employment Outlook for Computer Networking** **Occupations in Bay Region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Computer Systems Analysts | 24,103 | 26,895 | 2,792 | 12% | 11,654 | 2,331 | $47 | $61 |
| Computer Network Support Specialists | 4,134 | 4,914 | 780 | 19% | 2,510 | 502 | $28 | $37 |
| Computer User Support Specialists | 19,978 | 23,222 | 3,244 | 16% | 11,492 | 2,298 | $27 | $35 |
| **Total** | **48,215** | **55,030** | **6,815** | **14%** | **25,656** | **5,131** |  |  |
| Source: Lightcast 2022.3 |
| **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 Computer Networking** **Occupations in Silicon Valley Sub-region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Computer Systems Analysts | 9,732 | 10,644 | 912 | 9% | 4,435 | 887 | $48 | $62 |
| Computer Network Support Specialists | 1,433 | 1,687 | 254 | 18% | 844 | 169 | $28 | $38 |
| Computer User Support Specialists | 7,074 | 8,131 | 1,057 | 15% | 3,939 | 788 | $26 | $34 |
| **Total** | **18,240** | **20,462** | **2,222** | **12%** | **9,218** | **1,844** |  |  |
| Source: Lightcast 2022.3 |
| **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 (Feb. 2023 - Jan. 2024)**

| **Occupation** | **Bay Region** | **Silicon Valley** |
| --- | --- | --- |
| Computer User Support Specialists | 7,798 | 2,408 |
| Computer Systems Analysts | 7,000 | 2,660 |
| Computer Network Support Specialists | 656 | 218 |
| Source: Lightcast |

**Table 4a. Top Job Titles for Computer Networking** **Occupations for latest 12 months (Feb. 2023 - Jan. 2024)**

**Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Business Systems Analysts | 839 | Technical Support Specialists | 135 |
| Desktop Support Technicians | 332 | Systems Analysts | 134 |
| IT Support Specialists | 298 | Desktop Support Analysts | 129 |
| IT Specialists | 294 | Help Desk Specialists | 117 |
| Desktop Support Managers | 228 | Desktop Support Specialists | 116 |
| IT Support Technicians | 175 | Help Desk Technicians | 114 |
| Technical Support Engineers | 175 | Help Desk Analysts | 110 |
| IT Technicians | 170 | IT Business Analysts | 103 |
| Field Service Technicians | 160 | Golang Developers | 97 |
| Source: Lightcast |

**Table 4b. Top Job Titles for Computer Networking** **Occupations for latest 12 months (Feb. 2023 - Jan. 2024) Silicon Valley Sub-Region**

| **Title** | **Silicon Valley** | **Title** | **Silicon Valley** |
| --- | --- | --- | --- |
| Business Systems Analysts | 293 | React.js Developers | 44 |
| Desktop Support Technicians | 135 | IT Technicians | 40 |
| Technical Support Engineers | 113 | Desktop Support Analysts | 39 |
| Golang Developers | 90 | Node.js Developers | 39 |
| Desktop Support Managers | 84 | IT Support Technicians | 38 |
| IT Support Specialists | 78 | Help Desk Technicians | 37 |
| Systems Analysts | 66 | Technical Leads | 36 |
| IT Specialists | 58 | Desktop Support Engineers | 30 |
| React Developers | 46 | Hardware Technicians | 30 |
| Source: Lightcast |

## Industry Concentration

**Table 5. Industries hiring Computer Networking** **Workers in Bay Region**

| **Industry - 6 Digit NAICS (No. American Industry Classification) Codes** | **Jobs in Industry (2021)** | **Jobs in Industry (2026)** | **% Change (2021-26)** | **% Occupation Group in Industry (2022)** |
| --- | --- | --- | --- | --- |
| Custom Computer Programming Services | 11,525 | 13,953 | 21% | 24% |
| Computer Systems Design Services | 6,183 | 5,755 | -7% | 11% |
| Software Publishers | 3,625 | 3,970 | 10% | 7% |
| Data Processing, Hosting, and Related Services | 2,360 | 4,265 | 81% | 7% |
| Corporate, Subsidiary, and Regional Managing Offices | 1,956 | 1,922 | -2% | 4% |
| Electronic Computer Manufacturing | 1,606 | 1,796 | 12% | 3% |
| Web Search Portals and All Other Information Services | 1,485 | 1,321 | -11% | 3% |
| Local Government, Excluding Education and Hospitals | 1,086 | 1,225 | 13% | 2% |
| Other Computer Related Services | 1,585 | 982 | -38% | 2% |
| Temporary Help Services | 1,049 | 935 | -11% | 2% |
| Source: Lightcast 2022.3 |

**Table 6. Top Employers Posting Computer Networking** **Occupations in Bay Region and Silicon Valley Sub-Region (Feb. 2023 - Jan. 2024)**

| **Employer** | **Bay** | **Employer** | **Silicon Valley** |
| --- | --- | --- | --- |
| Robert Half | 223 | Diverse Lynx | 88 |
| Randstad | 141 | Apple | 56 |
| Deloitte | 134 | Nvidia | 48 |
| Diverse Lynx | 128 | Tiktok | 48 |
| University of California | 128 | Google | 47 |
| Best Buy | 116 | Randstad | 45 |
| Source: Lightcast |

## Educational Supply

There are 15 community colleges in the Bay Region issuing 327 awards on average annually (last 3 years ending 2021-22) on TOP 0708.10 - Computer Networking. In the Silicon Valley Sub-Region, there are five (5) community colleges that issued 101 awards on average annually (last 3 years) on this TOP code.

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

| **College** | **Subregion** | **Associate Degree** | **High unit Certificate** | **Low unit Certificate** | **Total** |
| --- | --- | --- | --- | --- | --- |
| Cabrillo | SC-Monterey | 5 | 3 | 0 | 8 |
| Contra Costa | East Bay | 1 | 0 | 1 | 2 |
| De Anza | Silicon Valley | 12 | 0 | 12 | 24 |
| Diablo Valley | East Bay | 2 | 1 | 0 | 3 |
| Foothill | Silicon Valley | 1 | 0 | 0 | 1 |
| Gavilan | Silicon Valley | 2 | 0 | 0 | 2 |
| Las Positas | East Bay | 3 | 0 | 6 | 9 |
| Los Medanos | East Bay | 6 | 0 | 6 | 12 |
| Mission | Silicon Valley | 18 | 0 | 21 | 39 |
| Monterey | SC-Monterey | 2 | 2 | 7 | 11 |
| Ohlone | East Bay | 2 | 0 | 29 | 31 |
| San Francisco | Mid-Peninsula | 40 | 0 | 92 | 132 |
| San Jose City | Silicon Valley | 14 | 0 | 21 | 35 |
| Santa Rosa | North Bay | 0 | 0 | 8 | 8 |
| Skyline | Mid-Peninsula | 7 | 3 | 0 | 10 |
| **Total** |  | **115** | **9** | **203** | **327** |
| Source: Data Mart |
| Note: The annual average for awards is 2019-20 to 2021-22. |

## Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 5,131 annual openings for the Computer Networking occupational cluster and 327 annual (3-year average) awards for an annual undersupply of 4,804 students. In the Silicon Valley Sub-Region, there is also a gap with 1,844 annual openings and 101 annual (3-year average) awards for an annual undersupply of 1,743 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 Programs** | **Mission All CTE Programs** | **State 0708.10** | **Bay 0708.10** | **Silicon Valley 0708.10** | **Mission 0708.10** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 74% | 75% | 69% | 69% | 64% | 75% |
| Median Annual Earnings for SWP Exiting Students | $53,090 | $59,106 | $56,596 | $65,840 | $69,665 | $68,740 |
| Median Change in Earnings for SWP Exiting Students | 24% | 22% | 17% | 23% | 27% | 27% |
| Exiting Students Who Attained the Living Wage | 54% | 52% | 67% | 62% | 65% | 65% |
| Source: Launchboard Strong Workforce Program Median of 2018 to 2021. |

## Skills, Certifications and Education

**Table 9. Top Skills for Computer Networking** **Occupations in Bay Region (Feb. 2023 - Jan. 2024)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Computer Science | 2,312 | Business Systems Analysis | 1,323 |
| Technical Support | 2,307 | SAP Applications | 1,097 |
| Project Management | 1,932 | Agile Methodology | 1,038 |
| Business Process | 1,755 | Information Systems | 1,017 |
| Help Desk Support | 1,704 | Peripheral Devices | 1,015 |
| Operating Systems | 1,600 | Finance | 1,013 |
| Business Requirements | 1,569 | Active Directory | 1,011 |
| Desktop Support | 1,471 | Automation | 991 |
| SQL (Programming Language) | 1,369 | Customer Support | 896 |
| Workflow Management | 1,335 | Computer Hardware | 888 |
| Source: Lightcast |

**Table 10. Certifications for Computer Networking** **Occupations in Bay Region (Feb. 2023 - Jan. 2024)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Valid Driver's License | 730 | ITIL Certifications | 92 |
| CompTIA A+ | 612 | Project Management Professional Certification | 84 |
| Microsoft Certified Professional | 272 | ITIL Foundation Certification | 72 |
| CompTIA Network+ | 264 | Functional Skills Qualification | 65 |
| Security Clearance | 184 | Secret Clearance | 64 |
| Microsoft Certified Systems Engineer | 181 | Certified Internal Auditor | 55 |
| Master of Business Administration (MBA) | 157 | Microsoft Certified IT Professional | 43 |
| Cisco Certified Network Associate | 144 | Cisco Certified Network Professional | 42 |
| CompTIA Security+ | 139 | Top Secret-Sensitive Compartmented Information (TS/SCI Clearance) | 41 |
| CompTIA Certification | 105 |  |  |
| Source: Lightcast |

**Table 11. Education Requirements for Computer Networking** **Occupations in Bay Region**

| **Education Level** | **Job Postings** | **% of Total** |
| --- | --- | --- |
| High school or GED | 1,376 | 13% |
| Associate degree | 1,256 | 12% |
| Bachelor's degree & higher | 7,889 | 75% |
| Source: Lightcast |
| Note: 47% 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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