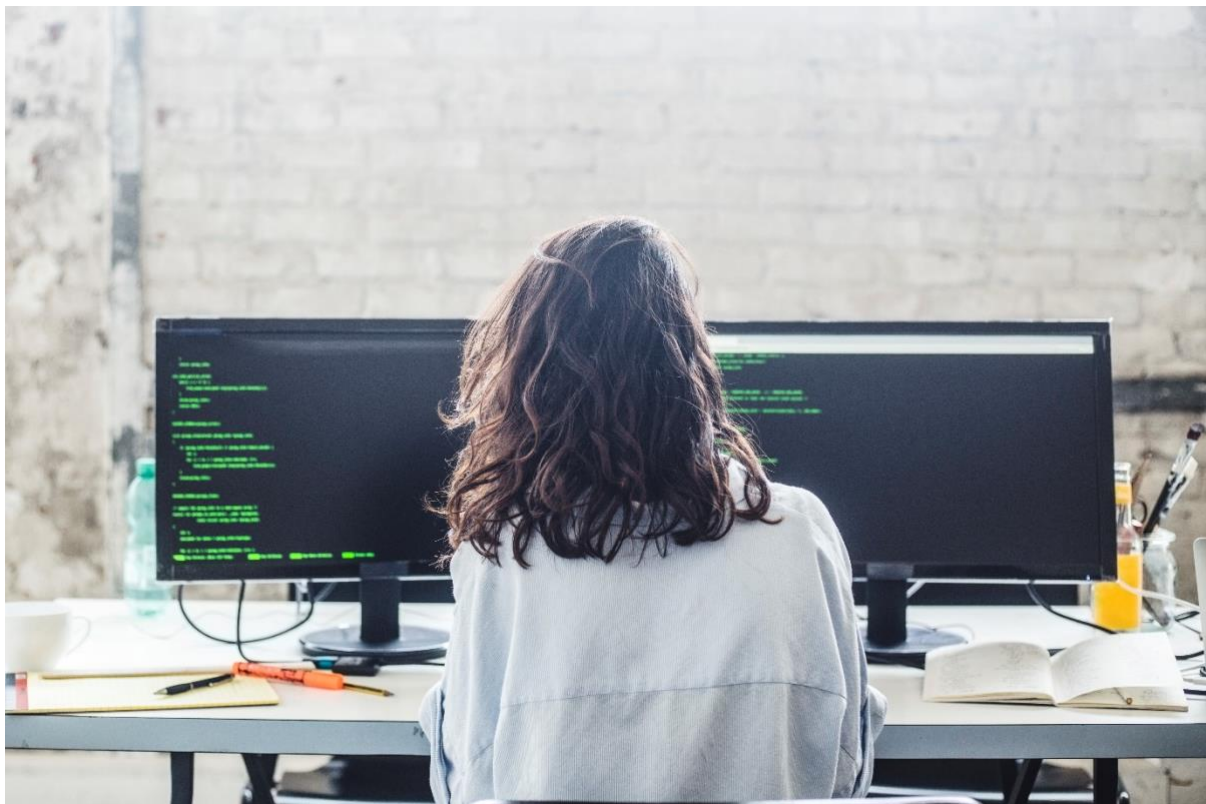


April 2023

# Labor Market Analysis

## Computer Support



Prepared by **Central Valley/Mother Lode Center of Excellence**



POWERED BY



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**COVID-19 Statement:** This report includes employment projection data by Lightcast. Lightcast’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

*If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email [seronellon@mjc.edu](mailto:seronellon@mjc.edu).*

# Summary

The Central Valley/Mother Lode Center of Excellence developed this report for Modesto Junior College to determine whether there is demand in the local labor market that is not being met by the supply from community college programs. This report summarizes labor market demand, wages, skills, and postsecondary supply for *Computer Support*, which includes:

- Computer Network Support Specialists (SOC 15-1231)
- Computer User Support Specialists (SOC 15-1232)

## Key Findings

- **Occupational Demand** — *Computer Support Occupations* have a labor market demand of 125 annual job openings in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. Between 2021 and 2026, computer user support specialists are projected to have the most demand with 92 annual job openings and a projected growth rate of 10 percent.
- **Wages** — Average entry-level earnings of \$23.55/hour for *Computer Support Occupations* are higher than the living wage in the NCV/NML subregion, which is \$12.65/hour for a single adult.<sup>1</sup> Computer network support specialists earn the highest entry-level wage, \$24.52/hour.
- **Employers and Job Titles** — Employers in the NCV/NML subregion include T-Mobile US, Robert Half, and Delicato Family Vineyards. The most common job title is desktop support technicians.
- **Skills** — The top baseline skill is troubleshooting (problem solving), the top specialized skill is help desk support, and the top software skill is operating systems.
- **Education** — Some college, no degree is typically required for computer user support specialists. An associate degree is typically required for computer network support specialists.
- **Supply and Demand Analysis** — Based on 125 annual openings (i.e., demand), and 10 postsecondary degrees awarded (i.e., supply), an analysis of supply and demand suggests there is an undersupply of 115 workers in the SCV/SML subregion.

## Recommendation

Based on a comparison of demand and supply, there is an undersupply of trained workers in the SCV/SML subregion. The Center of Excellence recommends that Modesto Junior College work with the regional directors, the college's advisory board, and local industry when discussing the expansion or modification of relevant programs.

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<sup>1</sup> The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

# Introduction

The Central Valley/Mother Lode Center of Excellence developed this report to provide Modesto Junior College with labor market information for *Computer Support*. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) subregion, but regional demand and supply data has been included for broader applicability and use. Analysis of the program and occupational data related to *Computer Support* is included in the report. The Standard Occupational Classification (SOC) System code and occupational title used in this report from the Bureau of Labor Statistics and O\*NET OnLine is shown below.

## Computer Network Support Specialists (SOC 15-1231)

- **Job Description:** 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.
- **Knowledge:** Computers and Electronics, Telecommunications, Customer and Personal Service, Engineering and Technology, English Language
- **Skills:** Critical Thinking, Active Listening, Judgment and Decision Making, Reading Comprehension, Active Learning

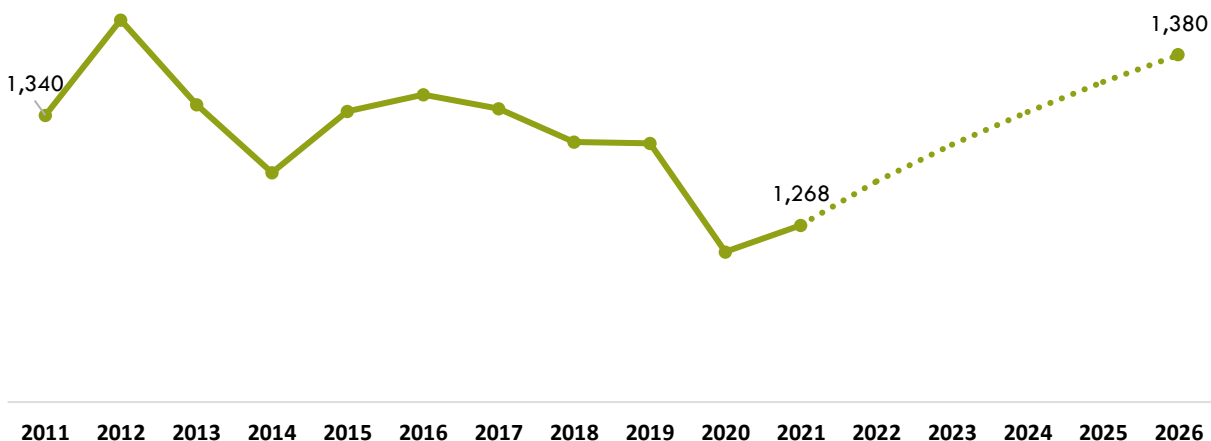
## Computer User Support Specialists (SOC 15-1232)

- **Job Description:** Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, 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.
- **Knowledge:** Computers and Electronics, Customer and Personal Service, English Language, Telecommunications, Engineering and Technology
- **Skills:** Active Listening, Reading Comprehension, Speaking, Complex Problem Solving, Critical Thinking

# Occupational Demand

Exhibit 1a shows trends for *Computer Support* in the NCV/NML subregion. Between 2021 to 2026, the number of jobs for *Computer Support* is projected to increase by 112 jobs, or nine percent.

**Exhibit 1a. Occupational projections for *Computer Support* in the NCV/NML subregion**



Between 2021 to 2026, demand for *Computer Support occupations* in the NCV/NML subregion is 125 annual openings (Exhibit 1b). Computer user support specialists are projected to grow by 10% over the next five years and have projected annual openings of 92.

**Exhibit 1b. Occupational projections for *Computer Support* in the NCV/NML subregion**

Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Computer User Support Specialists	915	1,007	92	10%	92
Computer Network Support Specialists	353	373	20	6%	33
<b>TOTAL</b>	<b>1,268</b>	<b>1,380</b>	<b>112</b>	<b>9%</b>	<b>125</b>

# Wages

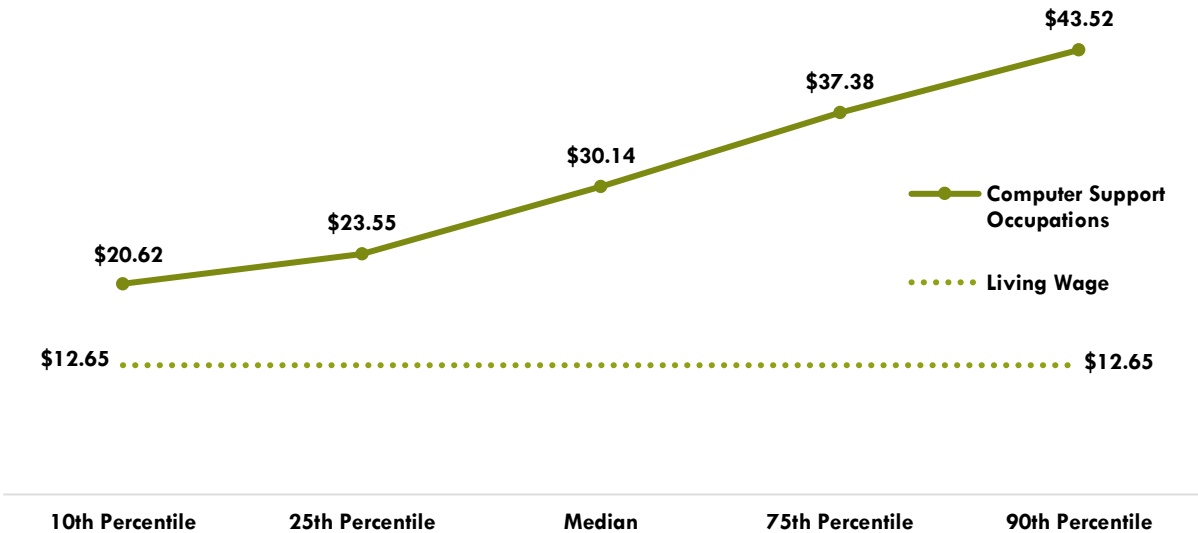
The average living wage for a single adult in the NCV/NML subregion is \$12.65/hour.<sup>2</sup> Exhibit 2a shows the entry-hourly wages for *Computer Support occupations*, which is \$23.55/hour.<sup>3</sup> Please note 10<sup>th</sup> and 25<sup>th</sup> percentiles are considered entry-level wages while 75<sup>th</sup> and 90<sup>th</sup> are considered experienced wages, either by gained by long-term employment, extra training, etc.

**Exhibit 2a. Hourly wages for Computer Support in the NCV/NML subregion**

Occupation	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings
Computer Network Support Specialists	\$24.52	\$31.99	\$41.36
Computer User Support Specialists	\$22.59	\$28.28	\$33.39

Exhibit 2b shows the average hourly wages for *Computer Support Occupations*; all five average wages are above the living wage for the NCV/NML subregion.

**Exhibit 2b. Computer Support Occupations average hourly wages in the NCV/NML subregion**



<sup>2</sup> The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

<sup>3</sup> Entry-level wages are derived from the 25<sup>th</sup> percentile.

# Job Postings

There were 486 job postings for *Computer Support occupations* in the NCV/NML subregion from October 2022 to March 2023.<sup>4</sup>

## Top Employers

The top employers with the most job postings are listed in Exhibit 3. The top employers in online job postings were T-Mobile US, Robert Half, and Delicato Family Vineyards.

### Exhibit 3. Top employers of *Computer Support* by number of job postings

Employer
T-Mobile US
Robert Half
Delicato Family Vineyards
Danaher
Best Buy
Internal Revenue Service
Cepheid
Yogurt Mill
CTG
Basic Resources

## Top Job Titles

Exhibit 4 shows the most common job titles for *Computer Support occupations* in the NCV/NML subregion. Common job titles in postings include: Desktop Support Technicians, Help Desk Specialists, and Outside Sales Representatives.

### Exhibit 4. Top titles in job postings for *Computer Support*

Job Title
Desktop Support Technicians
Help Desk Specialists
Outside Sales Representatives
Computer Specialists
Computer Network Specialists

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<sup>4</sup> Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

## Education

Of the 486 job postings, 353 listed a preferred or minimum educational requirement for the position being filled. Among those, 39% requested High school or GED, 34% requested a bachelor's degree, and 22% requested an associate degree (Exhibit 5).

**Exhibit 5. Education levels requested in job postings for Computer Support**

Education Level	Job Postings	% of Job Postings
High school or GED	136	39%
Bachelor's degree	121	34%
Associate degree	79	22%
Master's degree	11	3%
Ph.D. or professional degree	6	2%

## Baseline, Specialized, and Software Skills

Exhibit 6 depicts the top baseline, specialized, and software skills in job postings. The most common baseline skills are troubleshooting, communications, and customer service. The top specialized skills are help desk support, operating systems, and technical support. The top software is operating systems.

**Exhibit 6. In-demand baseline, specialized, and software skills for Computer Support**

Baseline Skills	Specialized Skills	Software Skills
Troubleshooting (Problem Solving)	Help Desk Support	Operating Systems
Communications	Operating Systems	Microsoft Office
Customer Service	Technical Support	Active Directory
Operations	Peripheral Devices	Microsoft Excel
Problem Solving	Computer Science	Apple IOS



# Education, Work Experience, & Training

Some college, no degree is typically required for *computer user support specialists*. An associate degree is typically required for *computer network support specialists*. (Exhibit 7).

**Exhibit 7. Education, work experience, training, and Current Population Survey results for Computer Support<sup>5</sup>**

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Computer User Support Specialists	Some college, no degree	None	None	40%
Computer Network Support Specialists	Associate degree	None	None	40%

## Supply

An analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) for the last three program years shows that, on average, 10 awards were conferred in the CVML region (Exhibit 8 and 9). The two occupations of interest have historically been classified under 0708.20 - Computer Support. Also, please note there was no supply data available for 0799.00 - Other Information Technology.

**Exhibit 8. TOP and CIP codes for Computer Support**

TOP Titles	CIP Titles
0708.20 - Computer Support	11.1003 - Computer and Information Systems Security/Information Assurance
	11.1006 - Computer Support Specialist
	11.0899 - Computer Software and Media Applications, Other
0799.00 - Other Information Technology	11.9999 - Computer and Information Sciences and Support Services, Other

<sup>5</sup> "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

**Exhibit 9. Postsecondary supply for Computer Support**

TOP/ CIP Code- Title	College	Associate Degree	Certificate 16 < 30 Semester Units	Total
0708.20 - Computer Support	Clovis		1	1
	Reedley College	5		5
11.1006 - Computer Support Specialist	San Joaquin Valley College-Visalia	4		4
<b>CVML TOTAL</b>		<b>9</b>	<b>1</b>	<b>10</b>

There is an undersupply of 115 Computer Support workers in the SCV/SML region (Exhibit 10).

**Exhibit 10. Computer Support workforce demand (annual job openings), postsecondary awards (supply), and additional students needed to fill gap in the SCV/SML subregion**



## Recommendation

This report suggests there is a shortage of 115 workers in the SCV/SML region for Computer Support. Based on these findings, it is recommended that Modesto Junior College work with the regional directors, the college’s advisory board, and local industry when discussing the expansion or modification of relevant programs.

# Appendix: Methodology & Data Sources

## Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (LIGHTCAST). LIGHTCAST occupational employment data are based on final LIGHTCAST industry data and final LIGHTCAST staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level LIGHTCAST earnings by industry: <a href="http://economicmodeling.com">economicmodeling.com</a> .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: <a href="https://www.bls.gov/emp/tables/educational-attainment.htm">https://www.bls.gov/emp/tables/educational-attainment.htm</a> .
LaunchBoard	Chancellor's LaunchBoard. <a href="https://www.calpassplus.org/LaunchBoard/SWP.aspx">https://www.calpassplus.org/LaunchBoard/SWP.aspx</a>
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: <a href="http://labormarketinfo.edd.ca.gov">labormarketinfo.edd.ca.gov</a> .
Job Posting and Skills Data	Burning Glass: <a href="http://burning-glass.com/">burning-glass.com/</a> .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: <a href="http://onetonline.org">onetonline.org</a> .

## Key Terms and Concepts

**Annual Job Openings:** Annual openings are calculated by dividing the number of years in the projection period by total job openings.

**Education Attainment Level:** The highest education attainment level of workers age 25 years or older.

**Employment Estimate:** The total number of workers currently employed.

**Employment Projections:** Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (LIGHTCAST) formula that includes historical employment and economic indicators along with national, state and local trends.

**LaunchBoard (Attained the Living Wage):** Among SWP students who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit

**LaunchBoard (Median Annual Earnings):** Among SWP students who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit.

**LaunchBoard (Median Change in Earnings):** Among SWP students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry and the second quarter after the end of the academic year of exit from the last college attended.

**LaunchBoard (Job Closely Related to Field of Study):** Among SWP students who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

**Living Wage:** The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

**Occupation:** An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

**Percent Change:** Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

**Replacements:** Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

**Total Job Openings (New + Replacements):** Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

**Typical Education Requirement:** represents the typical education level most workers need to enter an occupation.

**Typical On-The-Job Training:** indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.