



## Cybersecurity (TOP 0708.00/Computer Infrastructure and Support)

December 2024

Prepared by the South Central Coast Center of Excellence for Labor Market Research

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### Program Recommendation

This report was compiled by the South Central Coast<sup>1</sup> Center of Excellence to provide regional labor market data for the program recommendation – Cybersecurity. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study that align with the following occupations:

- Computer Network Support Specialists (SOC 15-1231)
- Computer User Support Specialists (SOC 15-1232)
- Computer Network Architects (SOC 15-1241)
- Network and Computer Systems Administrators (SOC 15-1244)

### Key Findings

- In 2023, there were 4,658 jobs for the four occupations of interest in the South Central Coast Region.
- The number of new jobs is expected to decrease by 1% through 2028.
- However, projections show approximately 308 annual openings in the region. There were 849 awards conferred in relevant programs. **It is important to note that the seven TOP highlighted in this report also provide training for nearly a dozen additional occupations, collectively contributing to over 1,000 additional annual job openings in the region.**
- According to the Bureau of Labor Statistics, *Computer Network Architects* and *Network and Computer Systems Administrators* typically require a bachelor's degree while *Computer Network Support Specialists* typically require an associate degree and *Computer User Support Specialists* typically require some college, no degree.

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<sup>1</sup> The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

## Occupation Codes and Descriptions

There are four occupations in the standard occupational classification (SOC) system that were identified for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

**Exhibit 1 – Occupations, Descriptions, and Sample Job Titles**

SOC Code	Title	Description	Sample of Reported Job Titles
15-1231	Computer Network Support Specialists	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.	Computer Network Specialist, IT Consultant (Information Technology Consultant), Network Specialist, Network Support Specialist, Network Technical Analyst, Network Technician, Personal Computer Network Analyst, Systems Specialist
15-1232	Computer User Support Specialists	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.	Computer Support Specialist, Computer Tech (Computer Technician), Desktop Support Technician (Desktop Support Tech), Help Desk Analyst, Help Desk Tech (Help Desk Technician), IS Tech (Information Systems Technician), IT Specialist (Information Technology Specialist), IT Support Specialist (Information Technology Support Specialist), IT Tech (Information Technology Technician), Technical Support Specialist
15-1241	Computer Network Architects	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.	Computer Network Technologist, Network Analyst, Network Consultant, Network Systems Consultant, Networking Systems Engineer, Solutions Architect, System Programmer, Systems Engineer, WAN Engineer (Wide Area Network Engineer), Wireless Network Engineer
15-1244	Network and Computer Systems Administrators	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.	Information Analyst, Information Technology Specialist (IT Specialist), LAN Specialist (Local Area Network Specialist), Local Area Network Administrator (LAN Administrator), Network Administrator, Network Coordinator, Network Manager, Systems Administrator

Source: O\*NET Online

## Current and Future Employment

In the South Central Coast region, the number of *new* jobs for Cybersecurity-related occupations is expected to decrease by 1% through 2028. Approximately 308 annual openings are expected through 2028.

**Exhibit 2 – Five-Year Projections for Cybersecurity-related workers  
in the South Central Coast Region**

SOC	Occupation	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
15-1231	Computer Network Support Specialists	529	529	0	0%	38
15-1232	Computer User Support Specialists	2,395	2,386	(9)	0%	171
15-1241	Computer Network Architects	549	532	(17)	(3%)	29
15-1244	Network and Computer Systems Administrators	1,185	1,178	(7)	(1%)	70
		<b>4,658</b>	<b>4,625</b>	<b>(33)</b>	<b>(1%)</b>	<b>308</b>

Source: Lightcast™ Analyst

## Earnings

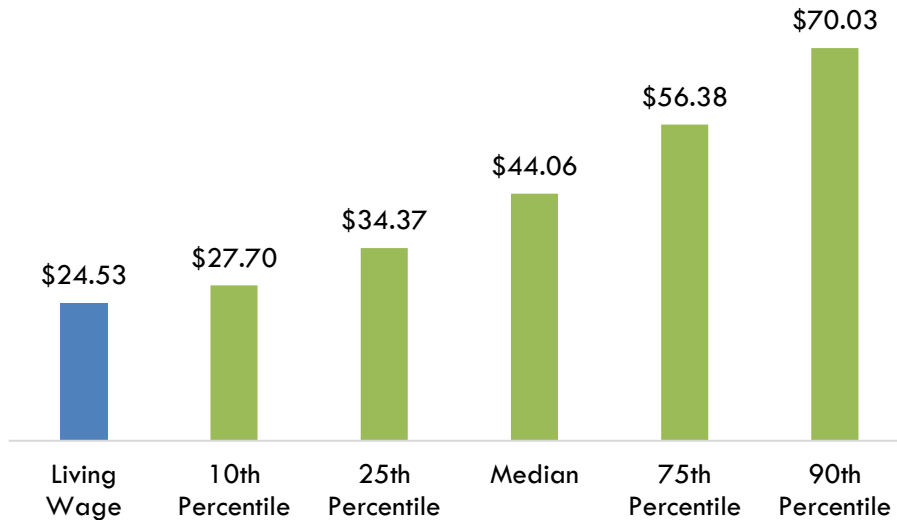
Exhibit 3 contains hourly wages for the occupations of interest. Entry-level hourly earnings are represented by the 25<sup>th</sup> percentile of wages, median hourly earnings are represented by the 50<sup>th</sup> percentile of wages, and experienced hourly earnings are represented by the 75<sup>th</sup> percentile of wages, demonstrating various levels of employment.

**Exhibit 3 – Earnings in the South Central Coast Region**

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
15-1231	Computer Network Support Specialists	\$27.43	\$34.43	\$45.46
15-1232	Computer User Support Specialists	\$25.13	\$31.71	\$40.32
15-1241	Computer Network Architects	\$47.99	\$61.58	\$77.76
15-1244	Network and Computer Systems Administrators	\$36.93	\$48.52	\$61.96

Source: Lightcast™ Analyst

**Exhibit 3b – Earnings in the South Central Coast Region**



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Lightcast™ Analyst

## Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for the occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for professionals in a given field, and what they are looking for in potential candidates. To identify relevant job postings, the following occupations were used:

15-1231	Computer Network Support Specialists
15-1232	Computer User Support Specialists
15-1241	Computer Network Architects
15-1244	Network and Computer Systems Administrators

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## Top Occupations

Over the past 12 months (December 2023 to November 2024), there have been 1,277 employer job postings for the four occupations of interest.

**Exhibit 4 – Job Postings by Occupation**

SOC Code	Occupation	Job Postings, Last 12 months
15-1232	Computer User Support Specialists	808
15-1244	Network and Computer Systems Administrators	229
15-1241	Computer Network Architects	189
15-1231	Computer Network Support Specialists	51
	<b>Total</b>	<b>1,277</b>

Source: Lightcast™ Analyst

## Top Titles

The top job titles for employers posting ads for Cybersecurity-related occupations are listed in Exhibit 5.

**Exhibit 5 – Job Titles**

Title	Job Postings, Last 12 months
Systems Administrators	68
IT Specialists	41
Desktop Support Technicians	40
Network Engineers	39
Help Desk Technicians	33
IT Support Technicians	25
IT Specialists/System Administrators	23
IT Support Specialists	21
Cyberspace Operations Officers	18
Network Administrators	17

Source: Lightcast™ Analyst

## Top Employers

Exhibit 6 lists the major employers hiring professionals in the field of interest. The top employers posting job ads were Allegis Group, Apple, and TEK Systems.

**Exhibit 6 – Top Employers**

<b>Employer</b>	<b>Job Postings, Last 12 months</b>
Allegis Group	46
Apple	44
TEK Systems	24
Robert Half	23
By Light Professional It Services	17
United States Navy	15
CACI International	14
SAIC	12
CommonSpirit Health	12
University of California	12

Source: Lightcast™ Analyst

## Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to the four occupations of interest. Technical Support is the most sought-after specialized skill for employers. Troubleshooting was the most requested baseline skill. Operating Systems was the most requested software skill.

**Exhibit 7 – Specialized Skills**

<b>Skills</b>	<b>Job Postings, Last 12 months</b>
Technical Support	296
Operating Systems	242
Computer Science	238
Peripheral Devices	213
Cyber Security	207
Network Routing	185
Help Desk Support	173
Network Switches	151
Firewall	146
Information Systems	144

Source: Lightcast™ Analyst

### Exhibit 7b – Baseline Skills

Skills	Job Postings, Last 12 months
Troubleshooting	615
Communication	523
Customer Service	445
Problem Solving	370
Management	355
Operations	294
Information Technology	260
Detail Oriented	209
Microsoft Office	191
Writing	183

Source: Lightcast™ Analyst

### Exhibit 7c – Software and Programming Skills

Skills	Job Postings, Last 12 months
Operating Systems	242
Active Directory	205
Microsoft Office	191
Firewall	147
Linux	98

Source: Lightcast™ Analyst

## Education and Training

Exhibit 8 shows the typical entry-level education requirement for the four occupations included in this report. *Computer Network Architects* and *Network and Computer Systems Administrators* typically require a bachelor's degree while *Computer Network Support Specialists* typically require an associate degree and *Computer User Support Specialists* typically require some college, no degree.

**Exhibit 8 – Education and Training Requirements**

SOC	Occupation	Typical entry-level education	Typical on-the-job training
15-1231	Computer Network Support Specialists	Associate degree	None
15-1232	Computer User Support Specialists	Some college, no degree	None
15-1241	Computer Network Architects	Bachelor's degree	None
15-1244	Network and Computer Systems Administrators	Bachelor's degree	None

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

## Regional Completions and Openings

Between 2020 and 2023, there was an average of 849 awards conferred in the South Central Coast region aligned with the programs that have historically trained for the occupations of interest.

**Exhibit 9 – Three-Year Average of Awards Conferred in the Region**

TOP/CIP Code	Program	3-Year Average (2020-2023)
0701.00	Information Technology, General	1
0702.00	Computer Information Systems	41
0707.00	Computer Software Development	1
0707.10	Computer Programming	15
0708.00	Computer Infrastructure and Support	105
0708.10	Computer Networking	58
0708.20	Computer Support	8
11.0101	Computer and Information Sciences, General	12
11.0103	Information Technology	46
11.0701	Computer Science	522
11.1001	Network and System Administration/Administrator	7
11.1003	Computer and Information Systems Security/Auditing/Information Assurance	1
11.1006	Computer Support Specialist	32
	<b>Total</b>	<b>849</b>

Source: Datamart and IPEDS

## CCC Awards

Exhibit 10 shows the average number of awards granted by community colleges within programs historically dedicated to training for the occupations included in this report.

**Exhibit 10 – CCC Awards in the South Central Coast Region, 2020-2023 Average**

CCC Programs	3-Year Average
Allan Hancock	22
Antelope Valley	42
Canyons	6
Cuesta	38
Moorpark	60
Oxnard	48
Santa Barbara	13

Source: DataMart

**Sources**

O\*Net Online, Lightcast™ Analyst, MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

**Notes**

Data included in this analysis represent the labor market demand for relevant positions most closely related to Cybersecurity. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.