

**Program Endorsement Brief: 0708.00/Computer Infrastructure and Support
PC Maintenance and Troubleshooting
Networking
Help Desk**

Orange County Center of Excellence, June 2019

Summary

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to four middle-skill computer infrastructure and support occupations: Network and Computer Systems Administrators (SOC 15-1142), Computer Network Architects (SOC 15-1143), Computer User Support Specialists (SOC 15-1151), and Computer Network Support Specialists (SOC 15-1152). This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with relevant occupations.

The following summarizes key findings from this data brief:

- The number of jobs for computer infrastructure and support occupations is projected to **increase by 4% through 2023**. More than **4,000 job openings** will be available annually due to new job growth and replacement need.
- Over the past 12 months, there were **16,989 online job postings** related to middle-skill computer infrastructure and support occupations in Los Angeles and Orange Counties.
- The typical entry-level education for the computer infrastructure and support occupations included in this report ranges from some college, no degree to bachelor's degree. The national-level educational attainment data indicates that **between 34.7% and 41.1% of workers in the field have completed some college or an associate degree**.
- There are **seven community colleges** in the region that have programs listed under the same TOP Code (0708.00). Of these, five colleges are located in Los Angeles County and two colleges are located in Orange County.
- Between 2015 and 2018, community colleges in the region **conferred an average of 103 awards annually** (associate degrees and certificates) in related training programs.
- **Seventeen related program recommendation requests under the same TOP Code** were received between January 2018 and April 2019.

Occupational Demand

Exhibit 1 shows the five year occupational demand projections for the four computer infrastructure and support occupations included in this report. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 4% through 2023. There will be 4,092 job openings per year through 2023. Occupational demand data, by SOC code and occupation, is included in Appendix A.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties¹

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	35,256	36,573	1,317	4%	2,716
Orange	17,338	18,148	810	5%	1,377
Total	52,595	54,721	2,126	4%	4,092

Wages—Entry-level wages for middle-skill computer infrastructure and support occupations in the region are between \$16.22 and \$29.75.² Entry-level wages for these four computer infrastructure and support occupations are higher than the MIT Living hourly wage for one adult in the region (\$14.36 in Los Angeles County and \$15.85 in Orange County). On average, experienced workers earn between \$42.94 and \$84.86, which is higher than the living wage estimate. Average regional wages are below the average statewide wage of \$38.90 for this occupation. Wage information, by county, is included in Appendix A.

Job Postings—There were 16,989 online job postings for middle-skill computer infrastructure and support occupations listed in the past 12 months. The majority of job postings were for systems administrator, network engineer, and help desk technician. Top specialized skills were: technical support, customer service, help desk support, and Microsoft Active Directory. The top three employers, by number of job postings, in the region were: Best Buy, Smci, the University of California, IBM, and Northrop Grumman

Educational Attainment—The Bureau of Labor Statistics (BLS) lists some college, no degree as typical entry-level education for computer user support specialists, associate degree for computer network support specialists, and a bachelor’s degree for computer network architects and network and computer systems administrators. The national-level educational attainment data indicates between 34.7% and 41.1% of workers in the field have completed some college or an associate degree. Of the 21% of job postings listing a minimum education level in Los Angeles/Orange County, 65% request a high school diploma or vocational training and 35% request an associate degree.

Community College Supply

Exhibit 2 shows the three-year average number of awards conferred by community colleges in the selected TOP code: Computer Infrastructure and Support (0708.00). From 2015-2018, Coastline had the most completions in the region. Between January 2018 and April 2019, there were 17 other related program recommendation requests under the same TOP Code from regional community colleges.

¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

² Entry-level wage is defined as the tenth percentile hourly wage. Wages for experienced workers are defined as the ninetieth percentile hourly wage.

Exhibit 2: Regional community college awards (certificates and degrees), 2015-2018

TOP Code	Program	College	2015-16 Awards	2016-17 Awards	2017-18 Awards	3-Year Award Average
0708.00	Computer Infrastructure and Support	Citrus	9	-	-	3
		Coastline	93	67	65	75
		Cypress	7	1	1	3
		LA Harbor	-	-	1	0
		LA Valley	-	6	8	5
		Long Beach	1	1	1	1
		Mt San Antonio	12	16	20	16
		Total/Average	122	91	96	103

Appendix A: Occupational demand and wage data by county

Exhibit 3. Los Angeles County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Network and Computer Systems Administrators (15-1142)	9,983	10,117	134	1%	643	\$23.90	\$42.61	\$64.09
Computer Network Architects (15-1143)	3,079	3,126	47	2%	208	\$31.27	\$54.23	\$90.33
Computer User Support Specialists (15-1151)	17,633	18,597	964	5%	1,496	\$15.45	\$26.54	\$42.30
Computer Network Support Specialists (15-1152)	4,561	4,734	173	4%	369	\$20.12	\$33.15	\$58.48
	35,256	36,573	1,317	4%	2,716			

Exhibit 4. Orange County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Network and Computer Systems Administrators (15-1142)	4,489	4,625	136	3%	307	\$23.51	\$42.51	\$63.12
Computer Network Architects (15-1143)	1,789	1,842	53	3%	127	\$25.06	\$51.61	\$76.69
Computer User Support Specialists (15-1151)	8,903	9,427	524	6%	765	\$17.42	\$26.86	\$44.04

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Computer Network Support Specialists (15-1152)	2,157	2,254	97	4%	178	\$17.58	\$34.04	\$55.11
	17,338	18,148	810	5%	1,377			

Exhibit 5. Los Angeles and Orange Counties

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Network and Computer Systems Administrators (15-1142)	14,472	14,742	270	2%	950	\$23.78	\$42.58	\$63.86
Computer Network Architects (15-1143)	4,869	4,968	99	2%	334	\$29.75	\$53.15	\$84.86
Computer User Support Specialists (15-1151)	26,536	28,024	1,488	6%	2,261	\$16.22	\$26.66	\$42.94
Computer Network Support Specialists (15-1152)	6,718	6,988	270	4%	547	\$19.51	\$33.43	\$57.53
	52,595	54,721	2,126	4%	4,092			

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (EMSI)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- MIT Living Wage
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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