FOOTHILL COLLEGE

Computer Enterprise Networking

Program Report
For Greater South Bay and Peninsula Region
(Santa Clara and San Mateo Counties)

November 2016

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Los Altos Hills, California 94022
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Target Occupations‡

Computer User Support Specialists (15-1151)

Computer Network Support Specialists (15-1152)

‡Based on EMSI crosswalk of the Classification of Instructional Programs (CIP) codes with Standard Occupational Classification (SOC) codes as published by the U.S. Department of Education.

In 2016, the number of Computer Systems Networking and Telecommunication jobs in the target occupations in Santa Clara and San Mateo Counties totaled 16,479. The Bureau of Labor Statistics (BLS) expects the total number of positions to increase by almost 10% over the next three years.

Occupation Summary for Computer Enterprise Networking

16,479	9.7%	$37.26/hr
Jobs (2016)[1]	**% Change (2016-2019)[3]**	**Median Hourly Earnings**
86% above National average[2]	Nation: 5.3%	Nation: $25.40/hr

[1]Based on total number of jobs for target occupations in Santa Clara and San Mateo Counties.
[2]Represents occupation density as compared to national average (national average=1).
[3]Based on turnover and new jobs.

Target occupations that are mapped to the Computer Systems Networking and Telecommunication program are disaggregated to see which occupations are projected to see the highest number of annual openings (Computer User Support Specialist), highest percentage rate of growth over the next three years (Computer User Support Specialist), and the highest median hourly earnings (Computer Network Support Specialists). While both Computer User Support Specialists and Computer Network Support Specialists are expected to experience job growth, these occupations are highly represented and concentrated in our region (Santa Clara and San Mateo Counties) compared to the national average.

Target Occupations

| Occupation	2016 Jobs	Annual Openings	Median Hourly Earnings	Growth (2016 - 2019)	Location Quotient (2016)
Computer User Support Specialists	12,101	595	$35.51/hr	10.55%	1.79
Computer Network Support Specialists	4,378	165	$42.02/hr	7.22%	2.10

Growth in the Computer Networking and Telecommunication occupations show how each occupation is projected to increase in jobs over the next three years. A growth of about 10% is expected in the next three years for Computer Networking and Telecommunication.

Growth for **Computer Networking and Telecommunication**

16,479	18,072	1,593	9.7%
2016 Jobs	**2019 Jobs**	**Change (2016-2019)**	**% Change (2016-2019)**

| Occupation	2016 Jobs	2019 Jobs	Change	% Change
Computer User Support Specialists (15-1151)	12,101	13,378	1,277	11%
Computer Network Support Specialists (15-1152)	4,378	4,694	316	7%

Regional Trends
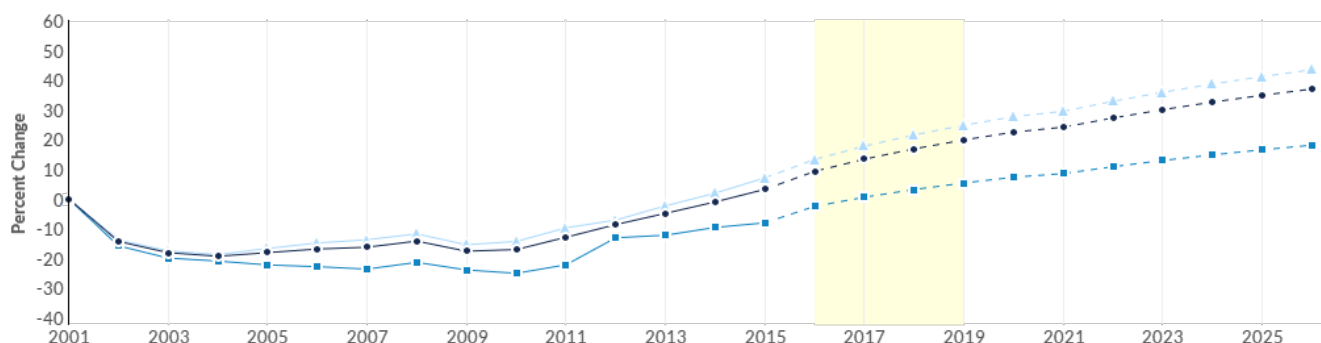
	Region	2016 Jobs	2019 Jobs	Change	% Change
●	Region	16,479	18,072	1,593	9.7%
●	San Mateo County, CA	3,751	4,052	301	8.0%
●	Santa Clara County, CA	12,728	14,020	1,292	10.2%

The percentile earnings table shows the range the Computer Networking and Telecommunication occupations earn in the region. While the median earnings are around $37/hour, wages can range from below $27/hour to above $49/hour. Each of the target occupations' range in wages is also displayed.

Percentile Earnings for Computer Networking and Telecommunication

$27.88/hr	$37.26/hr	$49.13/hr
25th Percentile Earnings	**Median Earnings**	**75th Percentile Earnings**
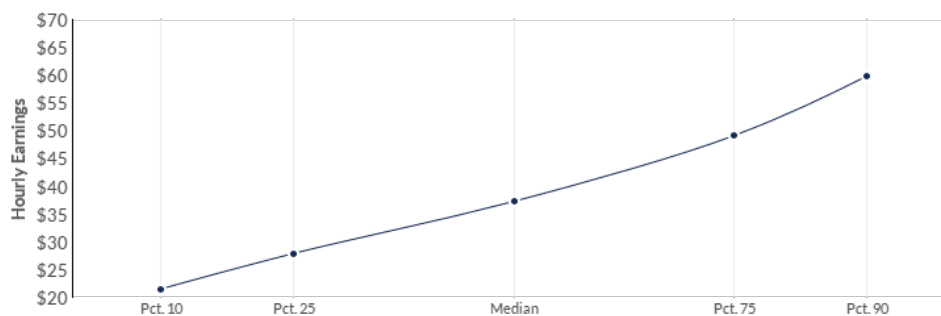
Occupation	25th Percentile Earnings	Median Earnings	75th Percentile Earnings
Computer User Support Specialists (15-1151)	$26.08	$35.51	$47.44
Computer Network Support Specialists (15-1152)	$32.79	$42.02	$53.73

Program Completion Data

Program data reviews completion information about awards by institution and types of awards conferred in the region (Santa Clara and San Mateo Counties). Foothill College is one of the ten regional institutions that is supporting and preparing for Computer Networking and Telecommunication occupations.

Program Summary for Computer Systems Networking and Telecommunications

10	92	1,123
Regional Institutions	**Regional Program Completions (2015)**	**Annual Openings (2015)**
had Completions in the last 13 years	Foothill College Completions: 1	

Regional Completions by Institution

Institution	Certificates (2015)	Degrees (2015)	Total Completions (2015)
Mission College	32	15	47
De Anza College	11	9	20
San Jose City College	10	5	15
Skyline College	2	3	5
Gavilan College	2	2	4
Foothill College	0	1	1
Canada College	0	0	0
College of San Mateo	0	0	0
University of Phoenix-Bay Area Campus	0	0	0
Brooks College	0	0	0

Regional Completions by Award Level

Award Level	Completions (2015)	Percent	
Award of less than 1 academic year	53	57.6%	
Award of at least 1 but less than 2 academic years	4	4.3%	
Associates degree	35	38.0%	

Target Occupations Demographics

The demographics among those employed in Computer Networking and Telecommunication occupations in Santa Clara and San Mateo Counties for 2016 show that a majority are males (72%) and almost a third are between the ages of 35-44 (30%) and more than half are White (53%).

Occupation Gender Breakdown

Gender	2016 Jobs	2016 Percent	
Males	11,926	72.4%	
Females	4,553	27.6%	

Occupation Age Breakdown

Age	2016 Jobs	2016 Percent	
14-18	103	0.6%	
19-24	1,265	7.7%	
25-34	4,328	26.3%	
35-44	4,927	29.9%	
45-54	3,769	22.9%	
55-64	1,780	10.8%	
65+	307	1.9%	

Occupation Race/Ethnicity Breakdown

Race/Ethnicity	2016 Jobs	2016 Percent	
White	8,753	53.1%	
Asian	4,527	27.5%	
Hispanic or Latino	1,923	11.7%	
Black or African American	787	4.8%	
Two or More Races	363	2.2%	
Native Hawaiian or Other Pacific Islander	85	0.5%	
American Indian or Alaska Native	40	0.2%	

Industries Employing Computer Networking and Telecommunication Occupations

A number of industries in Santa Clara and San Mateo Counties employ those trained in Computer Networking and Telecommunication and its related occupations. The following table represents a regional industry breakdown of the number of Computer Networking and Telecommunication positions employed, the percentage of Computer Networking and Telecommunication employed by industry and the Computer Networking and Telecommunication jobs represent within all jobs by each industry. While Custom Computer Programming Services employed only 19% of all regional Computer Science positions in 2016, Computer Networking and Telecommunication occupations composed minority of jobs in that industry (6%).

Industries Employing Computer Networking and Telecommunication Occupations

Industry	Occupation Group Jobs in Industry (2016)	% of Occupation Group in Industry (2016)	% of Total Jobs in Industry (2016)
Custom Computer Programming Services	3,117	18.9%	5.8%
Computer Systems Design Services	2,015	12.2%	5.6%
Electronic Computer Manufacturing	1,715	10.4%	3.5%
Software Publishers	1,384	8.4%	4.7%
Internet Publishing and Broadcasting and Web Search Portals	1,235	7.5%	2.3%

In an average month, there were 1,090 unique (internet) job postings for Computer Networking and Telecommunication jobs, and 608 actually hired from January 2016 to September 2016. This means there was approximately 1 hire for every 2 unique (internet) job postings for occupations in Computer Networking and Telecommunications. In cases where there were more hires compared to job postings, it suggests that the internet may not be the primary way that job openings for these occupations are advertised.

Job Postings vs. Hires

1,090	608
Avg. Monthly Postings (Jan 2016 - Sep 2016)	**Avg. Monthly Hires (Jan 2016 - Sep 2016)**
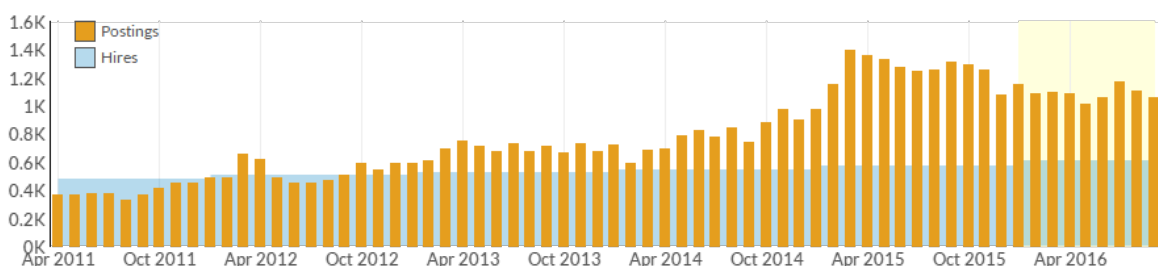
Occupation	Avg Monthly Postings (Jan 2016 - Sep 2016)	Avg Monthly Hires (Jan 2016 - Sep 2016)
Computer User Support Specialists	1,066	455
Computer Network Support Specialists	24	153

The top five relevant hard and soft skills employers list in Computer Networking and Telecommunication job posting descriptions are listed below. The "Postings with Skill" column is the total amount of (internet) job postings that mention the skills listed below. These numbers may be higher than the average monthly postings from above, because this number includes duplicated (internet) job postings. The "Relevance Score" gauge relevance of the skill by indicating the frequency in which this skill is being mentioned in (internet) job postings for Computer Networking and Telecommunication compared to all other (internet) job postings.

Most Relevant Hard Skills

Skill	Relevance Score	Postings with Skill
Desktop Support	10.08	1,424
Supplementary Service Codes	8.41	8
Help Desk	4.97	1,940
Macintosh Computers	4.59	1,438
Apple OS X	4.30	642

Most Relevant Soft Skills

Skill	Relevance Score	Postings with Skill
Memory	0.14	129
Self-Sufficiency	0.06	38
Politeness	0.05	8
Persistence	0.03	76
Nonverbal Communications	0.02	4

Appendix A - Data Sources and Calculations

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data

Emsi occupation employment data are based on final Emsi industry data and final Emsi 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 Emsi earnings by industry.

Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

CareerBuilder/Emsi Job Postings

Job postings are collected from various sources and processed/enriched by Careerbuilder to provide information such as standardized company name, occupation, skills, and geography. Emsi performs additional filtering and processing to improve compatibility with Emsi data.

State Data Sources

This report uses state data from the following agencies: California Labor Market Information Department