

Information Technology Occupational Group

California and the Riverside-San Bernardino-Ontario Metropolitan Statistical Area (Riverside and San Bernardino counties combined)

Job Opportunities

In 2016, there were more than 99,000 information technology occupational jobs in California. About 5% or over 4,600 of these job opportunities were located in the Riverside-San Bernardino-Ontario MSA. Across the local region, the information technology occupational group is expected to increase 10% through 2021, slower than the state overall at 12% growth. Employers in the Riverside-San Bernardino-Ontario MSA will need to hire nearly 800 workers over the next five years to fill new jobs and to backfill jobs that workers are leaving (includes retirements). Projected job growth for each of the detailed occupations in this occupational group are found in Appendix A.

Exhibit 1: Five-year projections for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA and California

Region	2016 Jobs	2021 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Riverside-San Bernardino-Ontario MSA	4,649	5,131	482	10%	794	159
California	99,014	110,780	11,766	12%	18,493	3,699

Earnings

The combined average entry-level wage for this occupational group is \$16.62, above the MIT Living Wage estimate of \$12.10 per hour for a single adult living in the Riverside-San Bernardino-Ontario MSA. The average annual earnings for this occupational group in the region is \$55,900 per year, assuming full-time employment. The combined average entry-level hourly wage in California is \$17.69 per hour. Appendix A contains hourly wages and annual average earnings for each detailed occupation in this group.



Exhibit 2: Earnings for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA and California

Region	Entry to Experienced Hourly Earnings Range*	Avg. Annual Earnings
Riverside-San Bernardino-Ontario MSA	\$16.62 to \$38.15	\$55,900
California	\$17.69 to \$49.11	\$65,500

*Entry hourly earnings is 10th percentile wage, experienced hourly earnings is 90th percentile wage.

Job Ads, Top Employers, Work Locations, Skills, Education, and Certifications

In the last 12 months (July 2016 to June 2017), there were a total of 919 full-time job advertisements (ads) for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA. In the full-year 2016 there were 1,014 job ads; 1,038 job ads in 2015, and 759 job ads in 2014. Of the total of 919 full-time job ads during the last 12 months, 859 job ads are from the computer user support specialists and 60 job ads are from the computer network support specialists.

The top employers posting jobs for information technology occupations were Best Buy (107) and Smartech and Associates (20).

The top worksite cities in the region were Ontario, Riverside, and Corona. Exhibit 3 lists the top specialized and soft skills that employers are seeking when looking for workers to fill information technology positions.

Exhibit 3: Top skills in greatest demand for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA

Information Technology Occupations	Specialized skills	Soft skills
Computer User Support Specialists	<ul style="list-style-type: none"> • Consumer Electronics • Hardware Experience • Technical Support 	<ul style="list-style-type: none"> • Troubleshooting • Communication Skills • Writing
Computer Network Support Specialists	<ul style="list-style-type: none"> • Repair • Technical Support • Network Administration 	<ul style="list-style-type: none"> • Communication Skills • Troubleshooting • Problem Solving

Exhibit 4 displays the education level requested by employers in online job ads. The majority of employers during the past year were looking for a candidate with either a high school diploma or vocational training or an associate degree, varying by the specific occupation.

Exhibit 4: July 2016 – June 2017 online job ads with minimum advertised education requirements for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA

Information Technology Occupations	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Computer User Support Specialists	66%	11%	23%
Computer Network Support Specialists	32%	43%	25%

Exhibit 6 displays the top certifications requested by employers seeking qualified candidates for information technology occupations.



Exhibit 6: Top Certifications requested by employers for the information technology occupational group in the Riverside-San Bernardino-Ontario MSA

Information Technology Occupations	Top Certifications
Computer User Support Specialists	Certified A+ Technician
Computer Network Support Specialists	CISCO Certified Network Associate

Student Completions and Outcomes

Exhibit 7 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2013 and 2016, as well as other awards granted outside the California Community Colleges from 2012-2015, with the relevant TOP code. Please note an award is not equivalent to a single person in search of a job opening since a student may earn more than one award, such as an associate degree in addition to a certificate.

Community College student outcome information was obtained from the CTE LaunchBoard based on the selected TOP code(s) and region:

Exhibit 7: Annual average community college student completions for information technology programs in the Riverside-San Bernardino-Ontario MSA

0701.00 – Information Technology, General	Annual Avg. CC Headcount (2015-2016)	CC Annual Avg. Awards (2013-16)	Other College Annual Avg. Certificates or Other Credit Awards (2012-15)
Milan Institute-Palm Desert			
Award 1 < 2 academic yrs			1
Norco College	N/A		
Certificate 6 to < 18 semester units		0	
Riverside	34		
Certificate 6 to < 18 semester units		19	
Credit Award < 6 semester units		0	
Total headcount (2015-2016)	34		
Total annual average other awards			1
Total annual average community college awards		19	

Colleges that have headcounts but no recorded completions:

- Chaffey College, headcount 96
- Copper Mountain College, headcount 170
- Crafton Hills College, headcount 689
- Moreno Valley College, headcount 13
- Mt. San Jacinto College, headcount 199
- Palo Verde College, headcount 512
- San Bernardino Valley College, headcount 305
- Victor Valley College, headcount 702

0701.00 – Information technology program outcomes in the Riverside-San Bernardino-Ontario MSA in academic year 2014-2015 (most recent data available):

- The median annual wage after program completion is \$19,943.
- 44% of students are earning a living wage.
- Course completers reported a wage increase of 36%.
- 23% of students are employed within six months after completing a program.

0702.00 –Computer Information Systems	Annual Avg. CC Headcount (2015-2016)	CC Annual Avg. Awards (2013-16)	Other College Annual Avg. Certificates or Other Credit Awards (2012-15)
Westwood College-Inland Empire			
Associate Degree			5
Barstow	387		
Associate Degree		5	
Certificate 18 to < 30 semester units		1*	
Chaffey	1,829		
Associate Degree		18	
Certificate 30 to < 60 semester units		6	
Copper Mountain	N/A		
Associate Degree		5	
Certificate 30 to < 60 semester units		0	
Crafton Hills	N/A		
Associate Degree		6	
Certificate 18 to < 30 semester units		1*	
Certificate 6 to < 18 semester units		7	
Desert	1,033		
Associate Degree		3	
Certificate 30 to < 60 semester units		2	
Mt. San Jacinto	770		
Associate Degree		24	
Certificate 30 to < 60 semester units		2	
San Bernardino	126		
Associate Degree		3	
Certificate 30 to < 60 semester units		0	
Certificate 18 to < 30 semester units		2	
Palo Verde	N/A		
Associate Degree		1	
Certificate 6 to < 18 semester units		48	
Victor Valley	23		
Associate Degree		12	
Total headcount (2015-2016)	4,168		
Total annual average other awards			5
Total annual average community college awards		146	

*Barstow reported one completion in academic year 2013-14; Crafton Hills reported one completion in academic year 2015-16

Colleges that have headcounts but no recorded completions:

- Moreno Valley College, headcount 623
- Norco College, headcount 616
- Riverside Community College, headcount 1,444

0702.00 – Computer information systems program outcomes in the Riverside-San Bernardino-Ontario MSA in academic year 2014-2015 (most recent data available):

- The median annual wage after program completion is \$18,839.
- 40% of students are earning a living wage.
- Course completers reported a wage increase of 39%.
- 29% of students are employed within six months after completing a program.

0702.10 – Software Applications	Annual Avg. CC Headcount (2015-2016)	CC Annual Avg. Awards (2013-16)	Annual Avg. Certificates or Other Credit Awards (2012-15)
Norco College			
Associate Degree		2	
Certificate 30 to < 60 semester units		1	
Chaffey	86		
Certificate 6 to < 18 semester units		0	
Copper Mountain	207		
Certificate 30 to < 60 semester units		3	
Moreno Valley	125		
Associate Degree		1	
Certificate 30 to < 60 semester units		1	
Palo Verde	97		
Certificate 6 to < 18 semester units		1	
Riverside	59		
Associate Degree		6	
Certificate 30 to < 60 semester units		5	
Total headcount (2015-2016)			
Total annual average other awards			-
Total annual average community college awards		20	

Colleges that have headcounts but no recorded completions:

- Barstow College, headcount 141
- Crafton Hills College, headcount 28
- Mt. San Jacinto College, headcount 74
- Norco College, headcount 143

0702.10 – Software applications program outcomes in the Riverside-San Bernardino-Ontario MSA in academic year 2014-2015 (most recent data available):

- The median annual wage after program completion is \$16,704.
- 30% of students are earning a living wage.
- Course completers reported a wage increase of 24%.
- 23% of students are employed within six months after completing a program.



Summary

- Jobs in the information technology occupational group are showing positive growth in labor market over the next five years. Many more job opportunities for these occupations are available outside of the local region.
- The starting salary for information technology occupations are above the living wage in the local area.
- Many community colleges and outside educational institutions have programs related to information technology occupations, the combination of awards conferred and current program headcount may indicate that the labor market demand is being met with current programs.

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

Employment Development Department, Labor Market Information Division, OES

Employment Development Department, Unemployment Insurance Dataset

CTE LaunchBoard

Statewide CTE Outcomes Survey

Living Insight Center for Community Economic Development

California Community Colleges Chancellor's Office Management Information Systems (MIS)

Michael Goss, Director

Center of Excellence, Inland Empire/ Desert Region

michael.goss@chaffey.edu

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Appendix A: Occupation definitions, five-year projections, and earnings for the Information Technology occupational group

Occupation Definitions (SOC code), Education and Training Requirement, Community College Education Attainment

Computer User Support Specialists (15-1151)

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.

Entry-Level Educational Requirement: Some college, no degree

Training Requirement: None

Incumbent Workers with a Community College Award or Some Postsecondary Coursework: 45%

Computer Network Support Specialists (15-1152)

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.

Entry-Level Educational Requirement: Associate degree

Training Requirement: None

Incumbent Workers with a Community College Award or Some Postsecondary Coursework: 45%



Table 1. Job growth and wages for the Information Technology occupational group, Riverside-San Bernardino-Ontario MSA

Information Technology Occupations (SOC code)	2016 Jobs	5-Yr Openings to 2021 (New + Replacement Jobs)	Annual Openings to 2021	Entry to Experienced Hourly Earnings Range*	Avg. Annual Earnings
Computer User Support Specialists (15-1151)	3,713	632	126	\$15.29 to \$35.76	\$52,700
Computer Network Support Specialists (15-1152)	936	162	32	\$21.97 to \$47.76	\$68,500
Total	4,649	794	159	\$16.62 to \$38.15	\$55,900