



Labor Market Analysis for Program Recommendation

Cloud and Virtual Systems Analyst Occupations

Merritt College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
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Recommendation

Based on all available data, there appears to be an “undersupply” of Cloud and Virtual Systems Analyst workers compared to the demand for this cluster of occupations in the Bay region and in the East Bay sub-region (Alameda, Contra Costa counties). There is a projected annual gap of about 7,183 students in the Bay region and 998 students in the East Bay Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0702.00 Computer Information Systems programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Merritt College and in the region.

This report profiles Cloud and Virtual Systems Analyst Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Merritt College.

- **Computer Systems Analysts (15-1211):** Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.
Entry-Level Educational Requirement: Bachelor's degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 21%
- **Computer Network Support Specialists (15-1231):** 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. Excludes “Network and Computer Systems Administrators” (15-1142) and “Computer Network Architects” (15-1143).
Entry-Level Educational Requirement: Associate's degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 41%
- **Computer User Support Specialists (15-1232):** 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. Excludes “Network and Computer Systems Administrators” (15-1142).
Entry-Level Educational Requirement: Some college, no degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 41%

Occupational Demand

Table 1. Employment Outlook for Cloud and Virtual Systems Analyst Occupations in Bay Region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Computer Systems Analysts	28,583	31,974	3,391	12%	15,452	3,090	\$51	\$86
Computer Network Support Specialists	5,615	6,507	891	16%	3,496	699	\$33	\$66
Computer User Support Specialists	28,162	32,436	4,273	15%	17,236	3,447	\$29	\$61
Total	62,360	70,917	8,557	14%	36,184	7,236		

Source: EMSI 2021.3

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Cloud and Virtual Systems Analyst Occupations in East Bay Sub-region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Computer Systems Analysts	5,326	5,502	175	3%	2,257	451	\$47	\$80
Computer Network Support Specialists	1,026	1,087	60	6%	499	100	\$32	\$64
Computer User Support Specialists	5,063	5,308	244	5%	2,381	476	\$29	\$59
Total	11,415	11,897	482	4%	5,137	1,027		

Source: EMSI 2021.3

East Bay Sub-Region includes: Alameda, Contra Costa Counties

Job Postings in Bay Region and East Bay Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Jan 2021 - Dec 2021)

Occupation	Bay Region	East Bay
Computer Systems Analysts	12,275	2,314
Computer User Support Specialists	12,157	2,849
Computer Network Support Specialists	1,224	211
Informatics Nurse Specialists	24	6

Source: Burning Glass

Table 4a. Top Job Titles for Cloud and Virtual Systems Analyst Occupations for latest 12 months (Jan 2021 - Dec 2021) Bay Region

Title	Bay	Title	Bay
Business Systems Analyst	640	React Developer	118
It Support Specialist	399	Desktop Support Analyst	109
Desktop Support	236	Help Desk Technician	108
Desktop Support Technician	228	Systems Analyst	107
Technical Support Engineer	224	Aem Developer	103
Senior Business Systems Analyst	191	Field Service Technician	102
Technical Support Specialist	177	React Js Developer	101
It Support Technician	161	It Specialist	99
It Technician	151	Mulesoft Developer	89

Source: Burning Glass

Table 4b. Top Job Titles for Cloud and Virtual Systems Analyst Occupations for latest 12 months (Jan 2021 - Dec 2021) East Bay Sub-Region

Title	East Bay	Title	East Bay
Business Systems Analyst	142	Business Systems Analyst III	35
It Support Specialist	76	It Business Analyst	33
Desktop Support Technician	59	Application Support Engineer	30
Desktop Support	55	Aem Developer	27
Desktop Support Analyst	48	Field Service Technician	27
It Technician	48	Help Desk Technician	27
Senior Business Systems Analyst	41	Technical Business Analyst	27
It Support Technician	40	Computer Technician	25
Technical Support Specialist	36	Desktop Technician	25

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Cloud and Virtual Systems Analyst Workers in Bay Region

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Custom Computer Programming Services	14,704	17,679	20%	24%
Computer Systems Design Services	8,082	9,156	13%	13%

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Software Publishers	4,808	5,695	18%	8%
Data Processing, Hosting, and Related Services	3,188	3,885	22%	5%
Internet Publishing and Broadcasting and Web Search Portals	2,856	3,536	24%	5%
Other Computer Related Services	2,087	2,595	24%	3%
Corporate, Subsidiary, and Regional Managing Offices	2,190	1,994	-9%	4%
Electronic Computer Manufacturing	1,648	1,822	11%	3%
Local Government, Excluding Education and Hospitals	1,089	1,119	3%	2%
Colleges, Universities, and Professional Schools (State Government)	973	966	-1%	2%

Source: EMSI 2021.3

Table 6. Top Employers Posting Cloud and Virtual Systems Analyst Occupations in Bay Region and East Bay Sub-Region (Jan 2021 - Dec 2021)

Employer	Bay	Employer	East Bay
Accenture	316	Best Buy	65
Microsoft Corporation	266	Kaiser Permanente	64
Google Inc.	210	Lucid Motors Inc	58
Best Buy	171	Triune Infomatics Inc	56
Cynet Systems	165	Accenture	53
Anthem Blue Cross	159	Workday, Inc	52
Deloitte	146	Lawrence Livermore National Laboratory	50
Wells Fargo	136	Wells Fargo	44
University Of California	135	University Of California	44
Facebook	115	Anthem Blue Cross	42

Source: Burning Glass

Educational Supply

There are 11 community colleges in the Bay Region issuing 53 awards on average annually (last 3 years ending 2018-19) on TOP 0702.00 Computer Information Systems. In the East Bay Sub-Region, there are six (6) community colleges that issued 29 awards on average annually (last 3 years) on this TOP code.

Table 7. Community College Awards on TOP 0702.00 Computer Information Systems in Bay Region

College	Subregion	Associate	Certificate Low	Noncredit	Total
Alameda	East Bay	6	4	0	10
Berkeley City	East Bay	1	1	0	2
Chabot	East Bay	1	0	0	1
Gavilan	Silicon Valley	1	0	0	1
Las Positas	East Bay	4	0	0	4
Los Medanos	East Bay	0	1	0	1
Merritt	East Bay	5	6	0	11
Mission	Silicon Valley	9	4	0	13
Napa	North Bay	2	0	0	2
Skyline	Mid-Peninsula	5	2	0	7
West Valley	Silicon Valley	0	1	0	1
Total		34	19	0	53

Source: Data Mart

Note: The annual average for awards is 2016-17 to 2018-19.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 7,236 annual openings for the Cloud and Virtual Systems Analyst occupational cluster and 53 annual (3-year average) awards for an annual undersupply of 7,183 students. In the East Bay Sub-Region, there is also a gap with 1,027 annual openings and 29 annual (3-year average) awards for an annual undersupply of 998 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0702.00 Computer Information Systems

Metric Outcomes	Bay All CTE Programs	Merritt All CTE Programs	State 0702.00	Bay 0702.00	East Bay 0702.00	Merritt College 0702.00
Students with a Job Closely Related to Their Field of Study	73%	71%	65%	69%	69%	65%
Median Annual Earnings for SWP Exiting Students	\$44,575	\$37,353	\$31,810	\$39,144	\$40,437	\$38,448
Median Change in Earnings for SWP Exiting Students	30%	31%	18%	13%	9%	1%
Exiting Students Who Attained the Living Wage	53%	50%	49%	49%	50%	50%

Source: Launchboard Strong Workforce Program Median of 2016-18.

Skills, Certifications and Education

Table 9. Top Skills for Cloud and Virtual Systems Analyst Occupations in Bay Region (Jan 2021 - Dec 2021)

Skill	Posting	Skill	Posting
Technical Support	6,849	Printers	2,084
Customer Service	5,377	Software Development	2,057
SQL	3,487	Information Systems	2,023
Project Management	3,348	Business Analysis	1,989
Business Process	3,217	Salesforce	1,975
Repair	2,887	Systems Analysis	1,970
Business Systems Analysis	2,810	SAP	1,951
Business Systems	2,661	Hardware & Software Installation	1,921
It Support	2,515	Linux	1,818
Help Desk Support	2,319	Customer Contact	1,719
Microsoft Active Directory	2,301	Troubleshooting Technical Issues	1,709
Oracle	2,218	Microsoft Operating Systems	1,647
Python	2,166	Software as a Service (SaaS)	1,613
Java	2,141	Scheduling	1,605

Source: Burning Glass

Table 10. Certifications for Cloud and Virtual Systems Analyst Occupations in the Bay Region (Jan 2021 - Dec 2021)

Certification	Posting	Certification	Posting
Driver's License	1,124	CompTIA Security+	137
Certified A+ Technician	886	Project Management Professional (PMP)	136
IT Infrastructure Library (ITIL) Certification	874	Certified Information Systems Security Professional (CISSP)	106
CompTIA Network+	382	Certified Information Systems Auditor (CISA)	96
Project Management Certification	322	Cisco Certified Network Professional (CCNP)	86
Microsoft Certified Professional (MCP)	310	Certified Business Analysis Professional (CBAP)	71
Cisco Certified Network Associate (CCNA)	291	Certified Salesforce Administrator	67
Security Clearance	229	Certified Information Security Manager (CISM)	60

Certification	Posting	Certification	Posting
Microsoft Certified Solutions Associate (MCSA)	201	Six Sigma Certification	57
Microsoft Certified Solutions Expert (MCSE)	165	ITIL Foundation	52

Source: Burning Glass

Table 11. Education Requirements for Cloud and Virtual Systems Analyst Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	2,411	17%
Associate's degree	1,119	8%
Bachelor's degree	10,787	75%

Source: Burning Glass

Note: 44% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCCO Data Mart.

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard www.calpassplus.org/Launchboard/

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

Contacts

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