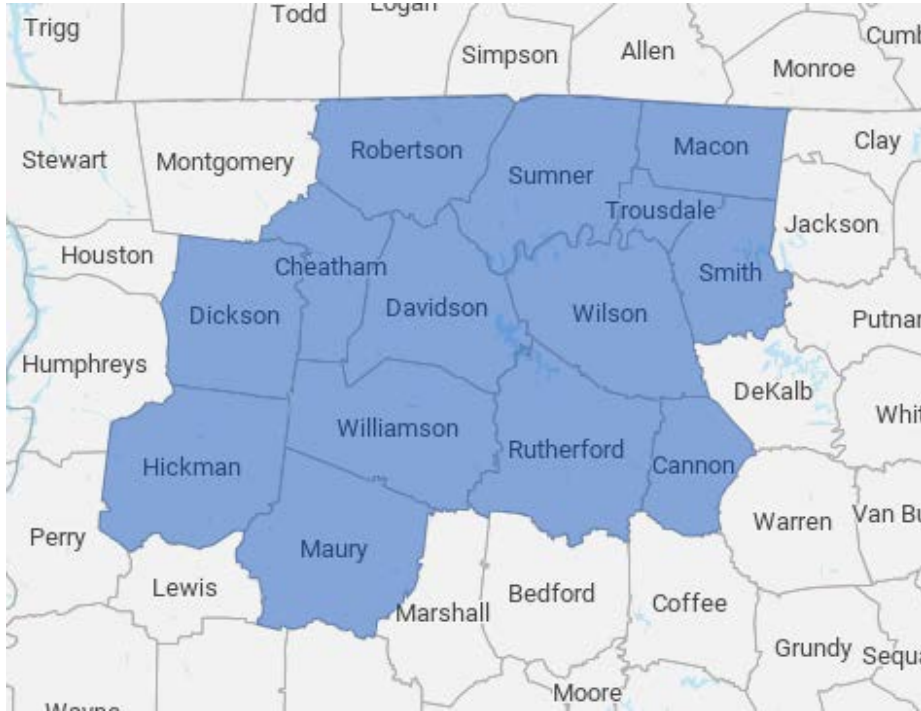


# NASHVILLE IT LABOR STUDY

## NASHVILLE REGIONAL WORKFORCE OVERVIEW

The regional workforce overview provides information on several different sources of workforce talent—including population growth, in-migration and commuting patterns.



The Nashville metropolitan statistical area (MSA) is home to 1.89 million people, which is the 36<sup>th</sup> largest metropolitan area in the nation and 6<sup>th</sup> largest in the Southeast.<sup>1</sup> Nashville’s population has increased by 10 percent (or 168,000 people) in the last five years, while nationally the population has grown by 4 percent. The Nashville area’s population grew by 36,337 during 2016, which is approximately 100 people per day over the year.

Four counties within the Nashville metropolitan area were named among the top 100 fastest-growing counties during 2016 by the U.S. Census Bureau. These included Williamson County (3.5 percent growth), Rutherford County (3.3 percent growth), Wilson County (3.1 percent growth) and Maury County (2.6 percent growth).

**Millennial Workforce.** Nashville attracts a young, educated population. More than 414,300 millennials between the ages of 20 and 34 are living within the Nashville metropolitan area, representing 22 percent of the region’s population. Nashville’s millennial population has grown 10.3 percent in the last five years, while growing only 3.6 percent nationally. Nashville was named the No.

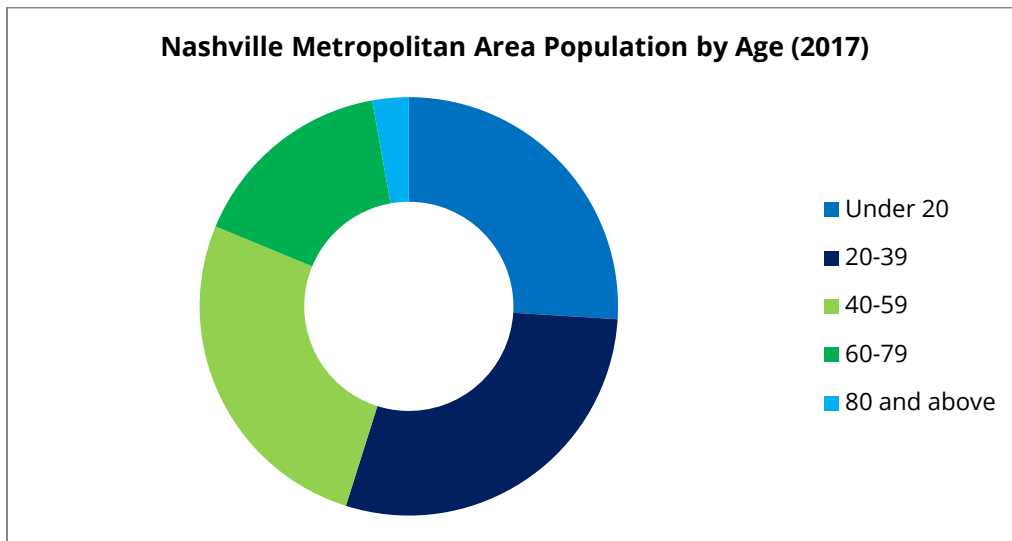
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<sup>1</sup> The Southeast is defined as a 12 state region including Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia.

7 Top City for Recent College Graduates<sup>2</sup>, and ranks 27<sup>th</sup> out of 288 metro areas for growth in its college-educated population.<sup>3</sup>

More than half (55 percent) of Tennessee’s population is between the ages of 20 and 60—the population of typical working age (compared to 52.9 percent nationally).

**In-Migration.** Nashville has experienced a net gain of 104,331 people as a result of domestic migration over the last six years, meaning that the number of people moving to Nashville exceed the population leaving.<sup>4</sup> This was the 12<sup>th</sup> largest gain of all MSAs in the nation. This trend has sustained, with Nashville’s net influx of U.S. population during 2016 (20,769 people) ranking 13<sup>th</sup> largest of all MSAs in the nation.



**Employment Growth.** A sustained growth in high-skilled workforce has accompanied Nashville’s population growth. Nashville was named the No. 7 Best-Performing City in 2016 for creating and sustaining jobs and economic growth.<sup>5</sup> Nashville’s employment has increased 3.1 percent on average each year for the past five years, while the nation’s employment has grown at an average annual rate of 1.8 percent.

Williamson County had the highest rate of job growth in the nation during 2016, with a job growth rate of 5.1 percent.<sup>6</sup> The professional and business services industry led growth Williamson County’s growth, with a gain of 6.0 percent or 1,995 jobs last year. Nationally, employment grew 1.2 percent.

**Unemployment.** As of July 2017, 3.3 percent of Nashville’s resident population engaged in the workforce was unemployed—or 32,900 people. An estimated 1,600 unemployed people in Nashville have previous work experience in Professional, Scientific and Technical Services.<sup>7</sup> The number of Nashville residents engaged in the labor force has increased significantly in recent years (due in part

<sup>2</sup> Source: Trulia

<sup>3</sup> Source: U.S. Census Bureau, 2009-2015

<sup>4</sup> Source: U.S. Census Bureau

<sup>5</sup> Source: The Milken Institute, January 2017

<sup>6</sup> Economic News Release, U.S. Bureau of Labor Statistics: <https://www.bls.gov/news.release/cewqtr.nr0.htm>

<sup>7</sup> Source: Economic Modeling Specialists Intl. (January 2017)

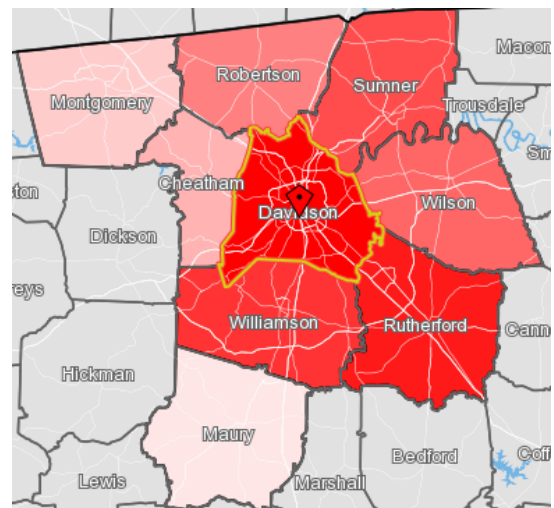
to population growth and in-migration), and the state’s low unemployment indicates residents are successful in finding positions to fill. Furthermore, the region’s employment growth demonstrates employers are successful in filling open positions from both the resident population as well as commuters.

Characteristic	Nashville MSA
<b>Population, 2017</b>	1,895,156
Under 20	492,357
20 to 39	547,403
40 to 59	499,917
60 to 79	302,337
80 and over	53,142
Millennial population (ages 20 to 34)	414,323
Ages 20 to 59	1,047,320
<b>Median Age, 2015</b>	36.2
<b>Estimated Population by Sex, 2017</b>	
Males	48.8%
Females	51.2%
<b>5-Year Employment Growth, 2012-2017</b>	16.0%
<b>Average Annual Wage</b>	\$52,510
<b>Labor Force, July 2017</b>	1,012,303
Employed	979,403
Unemployed	32,900
Unemployment Rate	3.3%

Sources: Economic Modeling Specialists Intl. and the U.S. Bureau of Labor Statistics

**Commuting Patterns.** Residents from across the state commute to the greater Nashville area for work. Approximately 56 percent of Davidson County’s workforce commutes to the county for work. Places where Davidson County workers live include Rutherford County, which is home to 8.3 percent of Davidson County’s workforce, followed by Williamson County (7.8 percent), Sumner County (6.6 percent) and Wilson County (5.2 percent).

Top Counties by # of Commuters to Davidson Co.		
Place of Residence	Residents Commuting to Davidson Co.	% of Davidson Co.’s Workforce
Rutherford County	39,614	8.3%
Williamson County	37,228	7.8%
Sumner County	31,500	6.6%
Wilson County	24,819	5.2%
Robertson County	12,409	2.6%
Shelby County	10,977	2.3%
Cheatham County	10,023	2.1%
Montgomery County	7,636	1.6%
Maury County	7,636	1.6%



**Local Momentum and Support.** The Nashville Technology Council (NTC)<sup>8</sup> is a nonprofit association that was founded in 1999 for the advancement of the region's technology industry. NTC was the recipient of a multi-year Labor and Education Alignment Program (LEAP) grant from the State of Tennessee, to fund the IT Pathway Collaborative. This collaborative addresses the information technology skills gap by promoting technology career opportunities. The project spurred the creation of NTC's We Build Tech<sup>9</sup> platform: a network of training and employment tools that create a pipeline of talent in Nashville.

Tech Hill Commons is a recently-opened gigabit-powered technology hub located in the Nolensville Corridor. Tech Hill Commons is home to Technology Advice, the Nashville Software School, and the Nashville Technology Council. It is an ideal space for professional development and student tech-enrichment programming.

## TECH SERVICES INDUSTRY IN NASHVILLE

The tech services industry<sup>10</sup> cluster employs 27,269 people in the Nashville metropolitan area across 2,364 business locations. More broadly, the cluster employs 73,718 people across the state of Tennessee.

Nashville's top tech industries by employment are Computer Systems Design Services (5,792 jobs), Engineering Services (4,564 jobs), Wired Telecommunications Carriers (3,689 jobs), Data Processing and Hosting Services (3,568 jobs), Custom Computer Programming Services (3,360 jobs) and Software Publishers (1,778 jobs).

Over the last 10 years, Nashville has seen 40 percent job growth in the tech services industry cluster. This percent growth ranks 9<sup>th</sup> largest among the 100 largest metros in the United States. Nashville's rate of job growth in the last five years (27 percent) ranks 11<sup>th</sup> highest, indicating the growth trajectory has sustained momentum.

Nashville's top tech industries by percent job growth over the last five years are Computer Training (176 percent), Software Publishers (106 percent), Computer Systems Design Services (86 percent) and Custom Computer Programming Services (42 percent).

Nashville's average annual wages for the industry (\$86,560) are 21 percent below the national average (\$110,020), while also 65 percent above the metro area's average wage for all industries (\$52,510).

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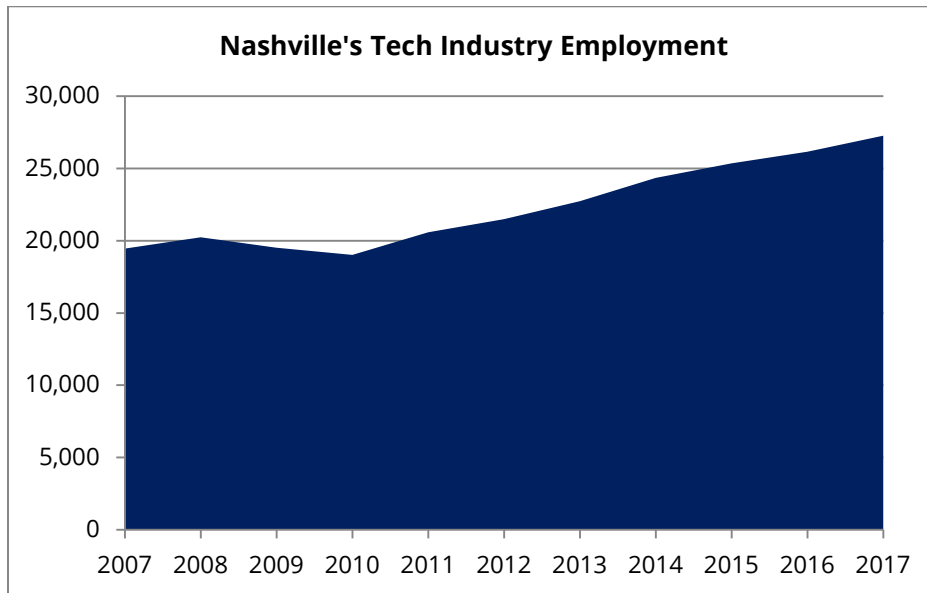
<sup>8</sup> Nashville Technology Council: <https://technologycouncil.com/>

<sup>9</sup> We Build Tech: <https://technologycouncil.com/2016/02/leap-day-the-launch-of-we-build-tech/>

<sup>10</sup> CompTIA's definition of Tech Services includes 22 industries across four sub-components: The Tech Services industry cluster includes a wide variety of business activities: IT Services; Engineering Services, R&D and Testing Labs; Software Publishers; and Telecommunications and Internet Services. The list of industries can be found in Appendix C.2 of CompTIA's *Cyberstates 2017* report: <http://www.cyberstates.org/pdf/CompTIA%20Cyberstates%202017.pdf>

Tech Services Industry Cluster					
Location	Employment (2017)	5-Year Job Growth (2012-2017)	Average Annual Wages (2016)	Average Annual Supplements (2016)	Average Annual Total Earnings (2016) <sup>11</sup>
Nashville MSA	27,269	27%	\$86,560	\$15,392	\$101,953
Tennessee	73,718	16%	\$83,082	\$14,318	\$97,401
United States	5,817,166	14%	\$110,020	\$17,945	\$127,965

Source: Economic Modeling Specialists Intl.



IT services represent one segment of the tech cluster. There are approximately 1,300 business locations operating in IT Services in Nashville, which employ 11,582 people. Over the last five years, Nashville’s IT services employment increased by 44 percent or by 3,527 jobs. This rate of job growth ranked No. 11 among the nation’s 100 largest MSAs. Nashville’s growth in IT Services employment over this time period exceeded forecasts by 101 percent.<sup>12</sup>

Average annual earnings for IT services in Nashville (\$89,697) are 17 percent below the national average IT Services wage (\$108,279), yet highly competitive relative to Nashville’s average wage for all industries (\$52,510).

<sup>11</sup> Total earnings include (a) wages, salaries, proprietor earnings, and (b) supplements. Supplements include benefits and other compensation. This includes employer contributions to 401(k) plans, pensions, insurance funds, and government social insurance (FIA/FUTA).

<sup>12</sup> Source: EMSI. Employment forecasts are based on IT Services growth nationally, as well as the Nashville MSA’s economic trends across all industries. Projections indicated Nashville’s employment in these IT Services industries would grow by 1,754 jobs from 2012 to 2017.

IT Services					
Location	Employment (2017)	5-Year Job Growth (2012-2017)	Average Annual Wages (2016)	Average Annual Supplements (2016)	Average Annual Total Earnings <sup>13</sup> (2016)
Nashville MSA	11,582	44%	\$89,697	\$13,233	\$102,930
Tennessee	25,396	31%	\$85,362	\$12,615	\$97,977
United States	2,390,578	22%	\$108,279	\$16,616	\$124,895

Source: Economic Modeling Specialists Intl.

## IT OCCUPATIONS IN NASHVILLE

**#1**

Big U.S. City Creating the Most White-Collar Jobs in 2016 (Forbes.com)

**#2**

Market for Growth of Highly Skilled Tech Workers (CBRE Group, Inc.)

**#6**

Top City for Employee Engagement (Quantum Workplace)

**#4**

Hottest Cities for Tech Jobs (Forbes, August 2016)

**#3**

Best City for Job Seekers (Nerdwallet, December 2016)

**#1**

Advanced Industry Job Growth (Brookings, August 2016)

There are more than 26,400 IT jobs in the Nashville metropolitan area, and 59,770 in Tennessee.

Over the last five years, Nashville’s employment in IT occupations has grown by 27.1 percent—an increase of 5,630 jobs. Nashville’s rate of growth ranked 9<sup>th</sup> highest among the nation’s top 100 MSAs, and outpaced forecasts by 90 percent.<sup>14</sup> Nashville’s IT employment is projected to continue to outpace national growth through 2027.

For each IT occupation (listed on the next page), Nashville’s employment growth exceeded the national and Southeast average.

Median earnings for IT occupations in Nashville are \$35.25 per hour (or \$73,320 per year). This wage is \$5.78 below the national median of \$41.03 per hour (or \$85,350 per year).

<sup>13</sup> Total earnings include (a) wages, salaries, proprietor earnings, and (b) supplements. Supplements include benefits and other compensation. This includes employer contributions to 401(k) plans, pensions, insurance funds, and government social insurance (FIA/FUTA).

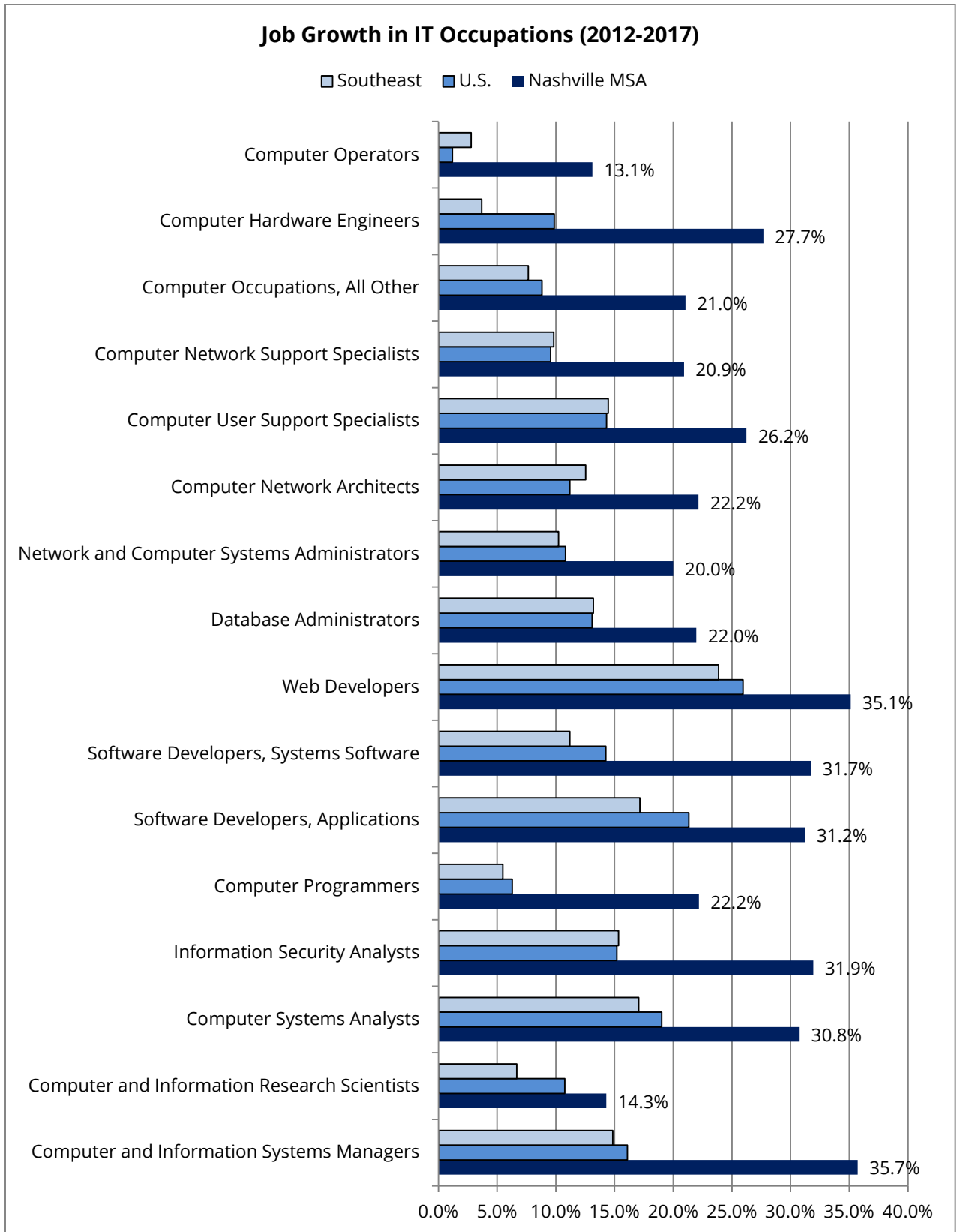
<sup>14</sup> Source: EMSI. Employment forecasts are based on IT occupational growth nationally, as well as the Nashville MSA’s economic trends across all occupations. Projections indicated Nashville’s employment in these occupations would grow by 2,949 jobs from 2012 to 2017.

Nashville IT Labor Study

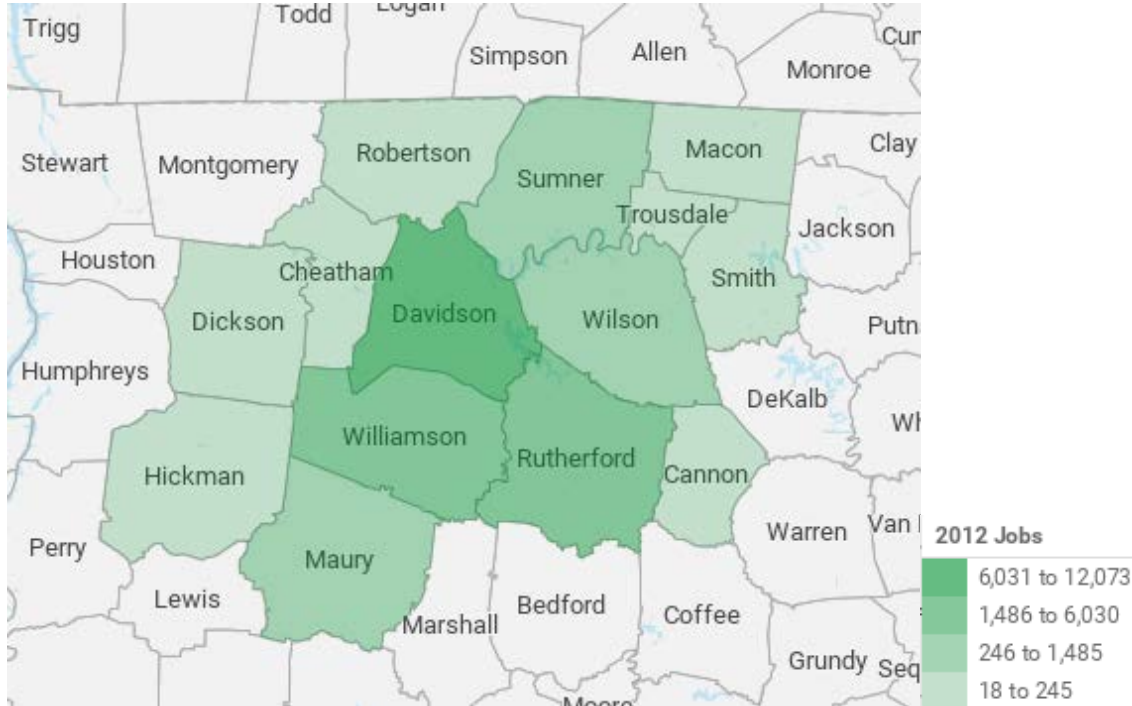
SOC Code	Occupation	Nashville MSA		
		Employment (2017)	5-Year Job Growth (2012-2017)	Median Hourly Earnings
11-3021	Computer and Information Systems Managers	3,021	35.7%	\$48.91
15-1111	Computer and Information Research Scientists	48	14.3%	\$48.47
15-1121	Computer Systems Analysts	3,536	30.8%	\$33.87
15-1122	Information Security Analysts	471	31.9%	\$36.47
15-1131	Computer Programmers	1,548	22.2%	\$34.02
15-1132	Software Developers, Applications	3,084	31.2%	\$41.94
15-1133	Software Developers, Systems Software	2,022	31.7%	\$40.42
15-1134	Web Developers	754	35.1%	\$27.55
15-1141	Database Administrators	644	22.0%	\$41.15
15-1142	Network and Computer Systems Administrators	2,076	20.0%	\$38.39
15-1143	Computer Network Architects	998	22.2%	\$47.99
15-1151	Computer User Support Specialists	3,964	26.2%	\$23.55
15-1152	Computer Network Support Specialists	1,457	20.9%	\$30.40
15-1199	Computer Occupations, All Other	1,536	21.0%	\$33.46
17-2061	Computer Hardware Engineers	512	27.7%	\$42.88
43-9011	Computer Operators	759	13.1%	\$21.19
<b>All IT Occupations</b>		<b>26,432</b>	<b>27.1%</b>	<b>\$35.25</b>

Source: Economic Modeling Specialists Intl.





IT employment is highest in Davidson County, where employment has risen by 17 percent over the last five years to 14,088. In Williamson County, IT employment has increased 73 percent over the last five years to a current employment level of 7,027. Rutherford County has the third highest number of IT workers, with 2,179 jobs and 11 percent IT job growth over the last five years.



## HIGHER EDUCATION: NASHVILLE’S IT-RELATED PROGRAM OFFERINGS

Nashville-area colleges and universities have had 3,284 students graduate from IT-related programs in the last five years. This includes 639 completions in 2016.

There are 25 programs offered at Nashville-area colleges and universities which may provide training for careers in the IT occupations analyzed in the previous section. These include programs in Computer Science, Management Information Systems, Information Technology, Computer Systems Networking and Telecommunications, Computer Engineering and many others.

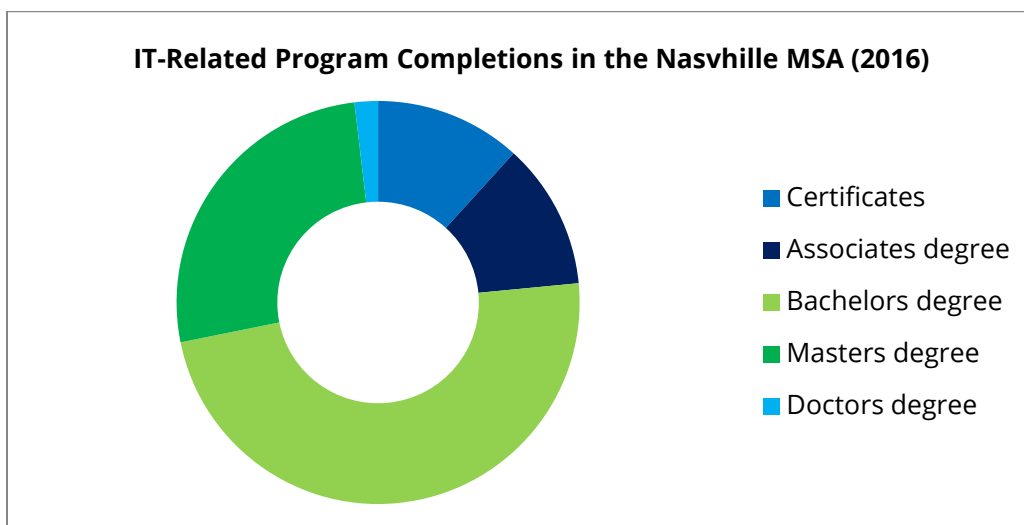
The 25 programs are listed in the table below, followed by a listing of 18 Nashville-area institutions where these programs are offered.

Related Completions by Program			
CIP Code	Program	2016	Last 5 Years (2012 to 2016)
11.0101	Computer and Information Sciences, General	38	217
11.0103	Information Technology	80	340
11.0104	Informatics	10	12
11.0201	Computer Programming/Programmer, General	7	61

Related Completions by Program			
CIP Code	Program	2016	Last 5 Years (2012 to 2016)
11.0301	Data Processing and Data Processing Technology/Technician	0	4
11.0501	Computer Systems Analysis/Analyst	8	28
11.0701	Computer Science	156	673
11.0801	Web Page, Digital/Multimedia and Information Resources Design	37	182
11.0802	Data Modeling/Warehousing and Database Administration	3	5
11.0803	Computer Graphics	0	43
11.0899	Computer Software and Media Applications, Other	0	21
11.0901	Computer Systems Networking and Telecommunications	29	360
11.1001	Network and System Administration/Administrator	2	74
11.1002	System, Networking, and LAN/WAN Management/Manager	0	110
11.1003	Computer and Information Systems Security/Information Assurance	33	192
11.1004	Web/Multimedia Management and Webmaster	1	8
11.1006	Computer Support Specialist	0	4
11.9999	Computer and Information Sciences and Support Services, Other	8	19
14.0901	Computer Engineering, General	35	106
14.0903	Computer Software Engineering	6	15
26.1103	Bioinformatics	10	35
51.2706	Medical Informatics	12	69
52.0205	Operations Management and Supervision	28	165
52.1201	Management Information Systems, General	130	505
52.1206	Information Resources Management	6	36
<b>Total</b>		<b>639</b>	<b>3,284</b>

Source: Economic Modeling Specialists Intl.

In 2016, nearly half of Nashville’s IT-related completions were bachelor’s degrees (48.4 percent), and over a quarter were Master’s degrees (26.3 percent). The remaining completions were comprised of associate’s degrees (11.7 percent), certificates (11.7 percent) and doctor’s degrees (1.8 percent).



Nashville IT Labor Study

Middle Tennessee State University, located in Murfreesboro, had the highest number of completions from IT-related programs in 2016—awarding 126 bachelor’s degrees and 60 master’s degrees in these 25 programs of study. Other leading institutions in the Nashville area, by number of 2016 graduates from IT-related programs, were Vanderbilt University (139 degrees awarded), Nashville State Community College (54 certificates and degrees awarded), Tennessee State University (39 degrees awarded) and Lipscomb University (38 degrees awarded).

<b>Related Completions by Institution (2016)</b>						
<b>Institution</b>	<b>Certificates</b>	<b>Associates degree</b>	<b>Bachelor's degree</b>	<b>Master's degree</b>	<b>Doctors degree</b>	<b>All Completions</b>
Middle Tennessee State University	0	0	126	60	0	186
Vanderbilt University	0	0	77	52	10	139
Nashville State Community College	22	32	0	0	0	54
Tennessee State University	0	0	19	18	2	39
Lipscomb University	0	0	11	27	0	38
Volunteer State Community College	23	9	0	0	0	32
Tennessee College of Applied Technology Nashville	30	0	0	0	0	30
University of Phoenix-Tennessee*	0	0	27	0	0	27
Trevecca Nazarene University	0	0	15	7	0	22
Columbia State Community College	0	19	0	0	0	19
Belmont University	0	0	17	0	0	17
The Art Institute of Tennessee-Nashville	0	4	7	0	0	11
DeVry University-Tennessee	0	1	3	4	0	8
Fisk University	0	0	7	0	0	7
National College-Nashville	0	7	0	0	0	7
Argosy University-Nashville	0	1	0	0	0	1
Daymar College-Nashville	0	1	0	0	0	1
Daymar College-Murfreesboro	0	1	0	0	0	1
<b>Nashville MSA Total</b>	<b>75</b>	<b>75</b>	<b>309</b>	<b>168</b>	<b>12</b>	<b>639</b>

\*School has recently announced closure of its campus, however still offers online courses.

Source: Economic Modeling Specialists Intl.