

# Cyberstates 2019

The definitive guide to  
the U.S. tech industry  
and tech workforce

Nationwide | State | Metro Area



# COPYRIGHT PAGE

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## CYBERSTATES 2019™

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The Computing Technology Industry Association (CompTIA)

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Cyberstates can be accessed online at [Cyberstates.org](http://Cyberstates.org).

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# ABOUT

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## ABOUT THIS REPORT

The Computing Technology Industry Association (CompTIA) presents its 19<sup>th</sup> annual edition of *Cyberstates*. CompTIA designed this report to serve as a reference tool, making national, state, and metropolitan area-level data accessible to a wide range of users. *Cyberstates* quantifies the size and scope of the tech industry and the tech workforce across multiple vectors. To provide additional context, *Cyberstates* includes time-series trending, average wages, business establishments, job postings, gender ratios, innovation and emerging tech metrics, and more. For the interactive, online version of *Cyberstates*, visit [www.cyberstates.org](http://www.cyberstates.org).

As with any sector-level report, there are varying interpretations of what constitutes the tech sector and the tech workforce. Some of this variance may be attributed to the objectives of the author. Is the goal to depict the broadest possible representation of STEM and digital economy fields, or a more narrowly defined technology subset? Is the goal to capture all possible knowledge workers, or a more narrowly defined technology subset? For the purposes of this report, CompTIA focuses on the more narrowly defined technology subset. See the methodology section for details of the specific NAICS codes and SOC codes CompTIA uses in its definitions of the tech sector and the tech workforce.

Due to periodic updates to industry and occupation categories by the U.S. Bureau of Labor Statistics, as well as occasional revisions of historical data, direct comparisons to previous publications of *Cyberstates* is not always possible. Additionally, CompTIA adjusts its methodology at times to best reflect available data and the needs of users. For example, for the 2019 release, CompTIA included a segment of self-employed workers in the calculations for industry and occupation employment that was previously excluded. For these reasons, it is best to view the most recent release as the best representation of the state of the tech industry and workforce. If historical comparison data is required, requests can be submitted to [research@comptia.org](mailto:research@comptia.org).

## ABOUT COMPTIA

The Computing Technology Industry Association (CompTIA) is a leading voice and advocate for the \$5 trillion global information technology ecosystem; and the more than 50 million industry and tech professionals who design, implement, manage, and safeguard the technology that powers the world's economy. Through education, training, certifications, advocacy, philanthropy, and market research, CompTIA is the hub for advancing the tech industry and its workforce.

Through our Public Sector and Advocacy arm, CompTIA champions industry innovation, a skilled workforce and solutions that drive business. We advocate on behalf of a diverse technology sector through public affairs efforts at the federal, state, local and international levels and through exclusive public sector councils. We bridge the tech ecosystem and government impacting all technology companies – from small solution providers and software developers to the world's largest manufacturers and communications service providers. CompTIA gives eyes, ears and a voice to technology companies, informing them of policy developments – and providing the means to do something about it. Visit [www.comptia.org](http://www.comptia.org) to learn more.



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# BACKGROUND – KEY FORCES SHAPING THE TECH LANDSCAPE

Increasingly, the world is defined less as one ‘next big thing,’ and rather, the iterative fusion of technology building blocks coupled with a generous helping of people and process. This may entail the stacking of foundational infrastructure and enabling components with emerging general-purpose technologies, such as AI, and then rounded out with data, an ‘as-a-service’ user experience, and business process optimization. The implications are both exciting – the ingredients of innovation have never been more accessible, and trying, as users and technology providers work to understand an ever-growing set of building blocks and how the pieces fit to drive digital transformation. Against this backdrop, CompTIA’s *IT Industry Outlook* explores the forces shaping the information technology industry, its workforce, and its business models in the year ahead. See [www.comptia.org](http://www.comptia.org) for full report.



## Cloud, Edge and 5G Form the Modern Economic Infrastructure

The most recent waves of technological innovation – sometimes referred to as the “Fourth Industrial Revolution,” are redefining business and society. This suggests not only a drastic change in the way work is done, but a new foundational infrastructure, starting with a holistic transition to cloud computing. Advances in edge computing and 5G networking will further extend computing, intelligence, and connectivity, rounding out the modern economic infrastructure.



## Digital-Human Models Begin to Shape the Workplace of Tomorrow

While the dire warnings of “the robots are coming for our jobs” tend to draw the headlines, the reality of the situation is far more nuanced. Beyond the extreme positions, there is a hybrid model whereby humans leverage and act on technology; and intelligent technology proactively does the same to workers. The impact of digital-human models will likely be far-reaching and require ongoing investments in people and process.



## IoT and AI Open New Possibilities in Ambient Computing

As the Internet of Things continues to grow, every imaginable object will have the potential to be a computing device, collecting data and providing new capabilities. With the wide spread of computing power, artificial intelligence will automate tasks to reduce complexity and scan the environment to understand context. The net result will be ambient computing, with activity that was once confined to a device now taking place seamlessly with minimal user interaction.



## Global Tech Hubs Put Spotlight on the Ingredients for Innovation

The ingredients of innovation have never been more accessible. With little more than a broadband connection and a credit card, a startup can spin up powerful, scalable compute and storage capacity with minimal investment. Add in open source code, stackable technologies, talent marketplaces, and creative financing and the ingredients are all there for innovation to flourish. The data bear this out as tech hubs have sprouted up across the globe



## Hyper-personalization Takes Customer Experience to Next Level

Today’s customers are more tech-savvy, more diverse, and more finicky than ever. From desiring seamless customer service to demanding myriad digital options for commerce, many buyers are no longer just looking for the right product, but also seeking a satisfying experience in attaining it. The catch word is “hyper-personalization.” This model takes the time-honored concept of customer segmentation to the extreme.



## Technology Professionals Take the Lead in Anticipating Unintended Consequences

From the global economy to everyday activities, technology continues to change the world in profound ways. However, for those working in technology, this is not a chance to simply claim victory and reap rewards. Changes at the scale made possible by technology will inevitably cause ripple effects. Those effects have been coming to light over the past year, from security and privacy incidents to AI bias to technology that is not quite ready for prime time.



## Distributed Technology Models Challenge Existing Structures

The past year has not been especially kind to blockchain and other distributed ledger technologies (DLT). Cryptocurrency values have fallen precipitously, and killer apps have not yet emerged. Other types of distributed technology, such as distributed databases or the Tor browser, leverage distributed networks to extend established architectural concepts. DLT takes things a step further, introducing an entirely new architectural approach made possible by distributed networks and cryptography. In theory, DLT provides an improved method for recording many types of digital transactions.



## Persistent Tech-Worker Shortages Fuel New, Creative Solutions

The demand for tech talent routinely exceeds supply in many markets. Consequently, employers can no longer fall back on status quo approaches to developing, recruiting, and retaining talent. From rethinking screening criteria, such as eliminating the 4-year degree threshold, to further leveraging apprenticeships, partnerships, flexible training and work arrangements, and performance-based certifications, employers increasingly recognize the need for creative problem solving.

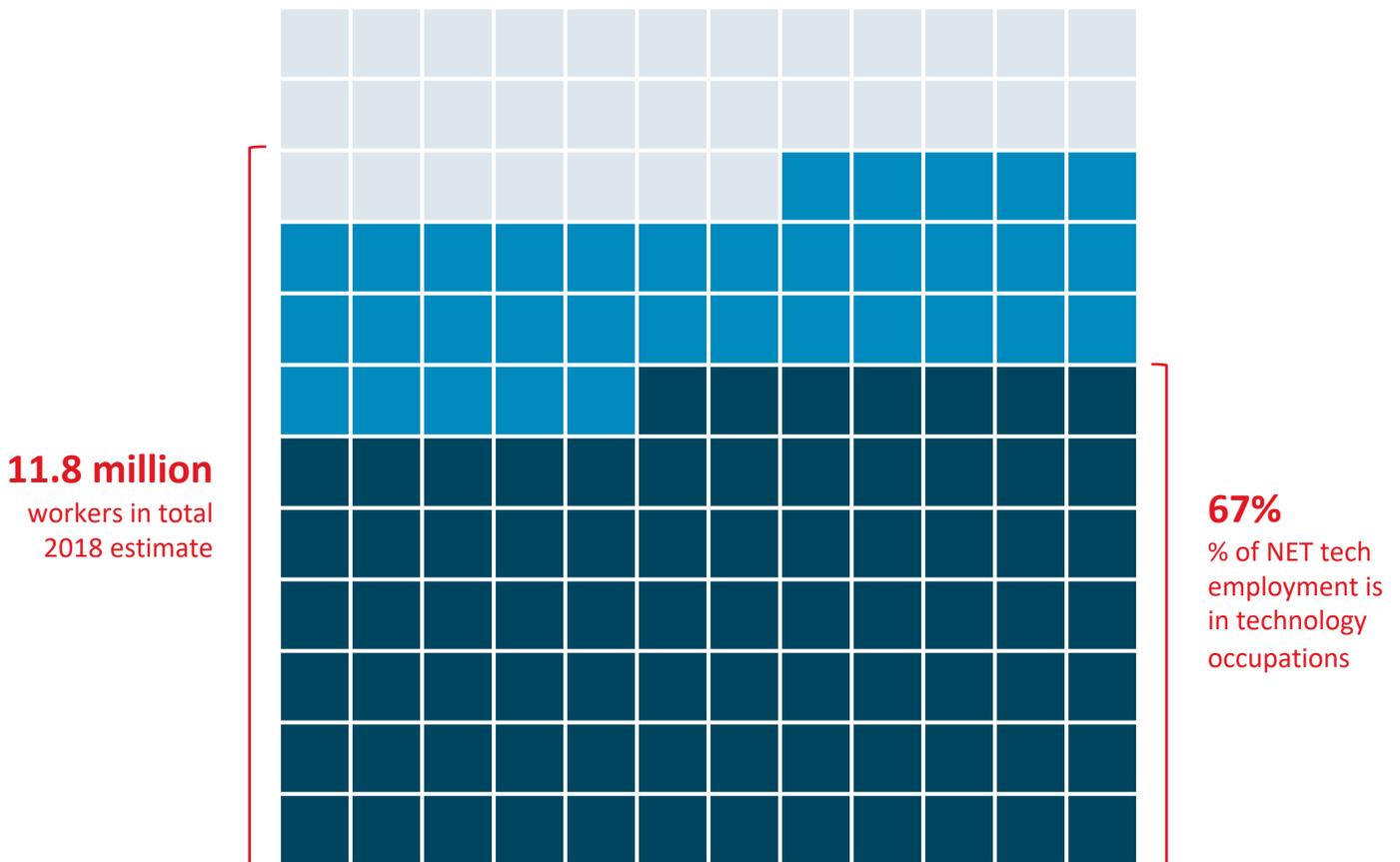
# BACKGROUND – DEFINING NET TECH EMPLOYMENT

The tech workforce consists of two primary components, represented as a single figure by the ‘net tech employment’ designation. The foundation is the set of technology professionals working in technical positions, such as IT support, network engineering, software development and related roles. Many of these professionals work for technology companies (46 percent), but many others are employed by organizations across every industry sector in the U.S. economy (54 percent).

The second component consists of the business professionals employed by technology companies. These professionals – encompassing sales, marketing, finance, HR, operations and management, play an important role in supporting the development and delivery of the technology products and services used throughout the economy. Thirty-four percent of the net tech employment total consists of tech industry business professionals.

One final segment involves workers classified as self-employed. For the purposes of this report, only dedicated, full-time self-employed technology workers are counted towards net tech employment. Workers that are characterized as “gig” workers, which may entail working on the side for supplementary income, are excluded from this analysis due to a number of uncertainties with the data and to minimize the possibility of double counting.

-  **N = Technology professionals employed by organizations across the economy**  
(e.g. software developers, network architects, database admins, etc.)
-  **N = Support/business professionals employed by tech companies**  
(e.g. sales, marketing, finance, HR, etc.)



 = 100,000 workers

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA  
Some numeric changes affected by rounding

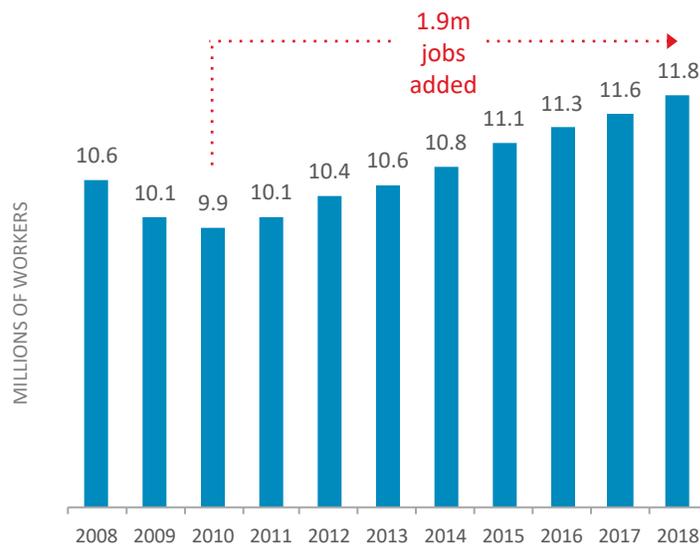
# BACKGROUND – HISTORICAL TRENDING AND OUTLOOK

## KEY POINTS

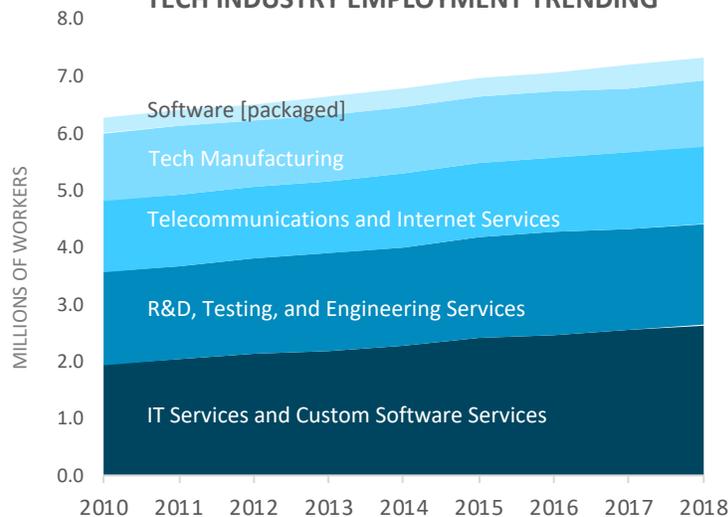
- Net tech employment in the United States – as described on the previous page, reached an estimated 11,812,147 workers in 2018, an increase of 2.3 percent or 260,865 new jobs.
- Since the employment low point following the Great Recession, net tech employment increased by an estimated 1.9 million new jobs. Net tech employment growth has been steady during this span, averaging approximately 200,000 new jobs per year.
- As the largest component of net tech employment, technology occupations are the primary driver of job growth. Software occupations played an especially important role, accounting for approximately 1 in 3 new technology occupation jobs during the 2010-2018 time period.
- Within the technology industry category, which encompasses technology occupations and supporting business occupations, growth has varied. Since 2010, the IT services and custom software services category powered job growth, accounting for 66 percent of job gains. At the other end of the spectrum, tech manufacturing shed nearly 45,000 jobs. Although, this trend has reversed slightly over the past two years with growth of about 1 percent in tech manufacturing employment.
- Looking ahead, the outlook for technology employment points to a continuation of the growth trend. By 2026, projections from the U.S. Bureau of Labor Statistics and EMSI indicate the base of tech occupation employment will grow to 8.6 million (note: this covers occupations only and represents a subset of the net tech employment figure presented above).
- Calculating the workforce need during this period is a function of several variables. First, there is a growth component, which may entail organizations adding headcount due to expansion or possibly to support new emerging technologies. Secondly, there is a retirement factor, with a portion of the workforce stepping away. And lastly, there is a segment leaving, also referred to as separating, from a given occupation due to a lifestyle change, to return to school, or to pursue a different career path.
- The average replacement rate for tech occupations during 2018-2026 is projected to reach approximately 7.5 percent annually, or nearly 600,000 workers on average each year, totaling several million through 2026.
- For context, national employment during the 2016-2026 period is projected to grow by +10.7 percent versus +13.1 percent for tech occupations (inclusive of all 50 categories used in Cyberstates). Looking beyond the overall average reveals occupations within technology growing many times faster than these average rates:
  - Software developers, applications: +38%
  - Cybersecurity analysts: +37%
  - Data research scientists: +26%
  - CIOs, CTOs, and IT managers: +19%
  - IT support specialists: +16%

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA

## NET TECH EMPLOYMENT TRENDING

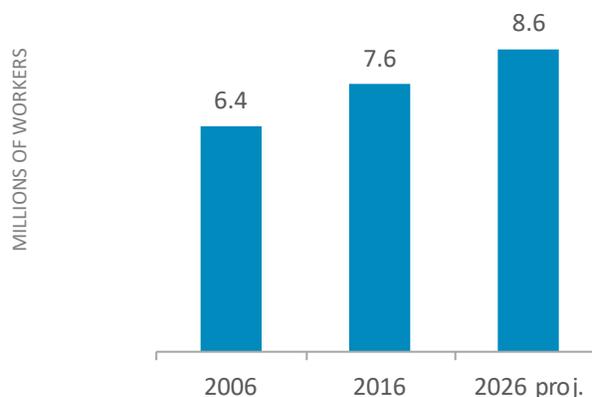


## TECH INDUSTRY EMPLOYMENT TRENDING



## TECH OCCUPATION EMPLOYMENT OUTLOOK

Workforce need = annual replacement rate + growth rate

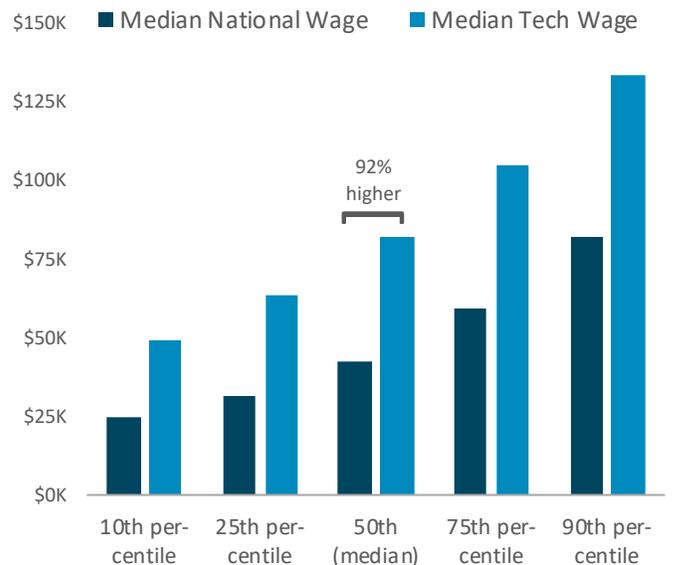


# BACKGROUND – THE MANY FACETS OF WAGE DATA

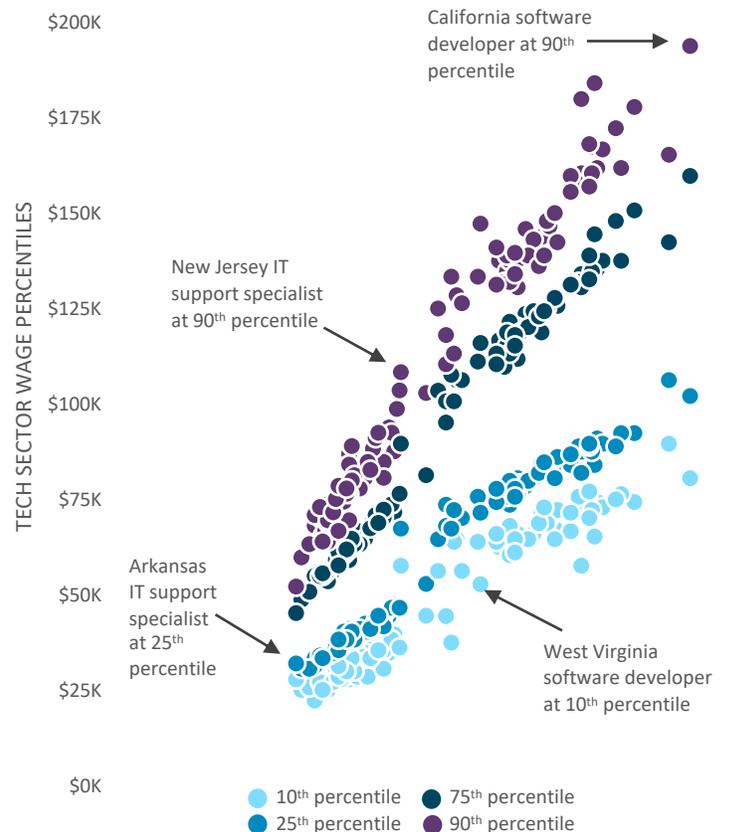
## KEY POINTS

- There are many nuances to the tech wage discussion. At the industry level – meaning the universe of technology companies in the sector, wages encompass all staff positions, from the CEO down to entry-level helpdesk workers. Both technical and non-technical positions factor into the industry wage calculation. Because of the diversity of positions covered, interpreting summary industry wage data can be problematic.
- In comparison, tech occupation wages cover only technical positions. This is the primary focus of the wage data of this report.
- Cost of living differences mean the wages in one location are not directly comparable to another. For example, the buying power of a salary in San Francisco will not go nearly as far as in Des Moines. According to the National Association of Realtors, the median price for a home in Silicon Valley topped \$1 million last year. See CompTIA's *Tech Town Index* for guidance on tech wages relative to cost of living.
- Beyond location, the other important variables to consider when reviewing wage data are job role, areas of expertise, job experience, industry sector, and company size. A skilled employee in a hot field such as artificial intelligence, working for a Fortune 500 company, will earn on average far more than a tech worker in an established field, working for a small business in a rural area.
- Percentiles help provide insight into wage ranges. This approach minimizes the impact of outlier data points, such as workers receiving massive stock payouts. It is also useful in depicting wages along common career paths, with workers just starting out earning wages at the 10<sup>th</sup> percentile, and then with experience and additional training and certification, moving up through the higher wage levels.
- Across all tech occupation categories covered by Cyberstates, the median wage, also referred to as the 50<sup>th</sup> percentile or midpoint, was an estimated \$81,900 in 2018. This figure is nearly double the \$42,700 median wage of the U.S. labor force.
- At the 10<sup>th</sup> percentile, tech occupation wages are over \$49,400, while at the 90<sup>th</sup> percentile wages exceed \$133,400, or 170 percent higher. Again, the higher wage may reflect greater levels of expertise, experience, the industry sector where employed, or geographic location.
- The scatterplot graph to the right illustrates the degree to which wages will differ across states. The data presents wages for software developers and IT support specialists at the 10<sup>th</sup>, 25<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> percentiles. California and Washington have the highest 90<sup>th</sup> percentile wages for software developers, New Jersey and the District of Columbia have the highest 90<sup>th</sup> percentile rates for IT support specialists.
- When drilling down to the metro area level, wage differences may become even more pronounced. Top tier wages in locations such as San Jose or New York City may run into hundreds of thousands, if not millions, of dollars in annual compensation.

## MEDIAN ANNUAL OCCUPATIONAL WAGE COMPARISON



## TECH WAGES CAN VARY SIGNIFICANTLY BASED ON OCCUPATION, LOCATION, AND PERCENTILE

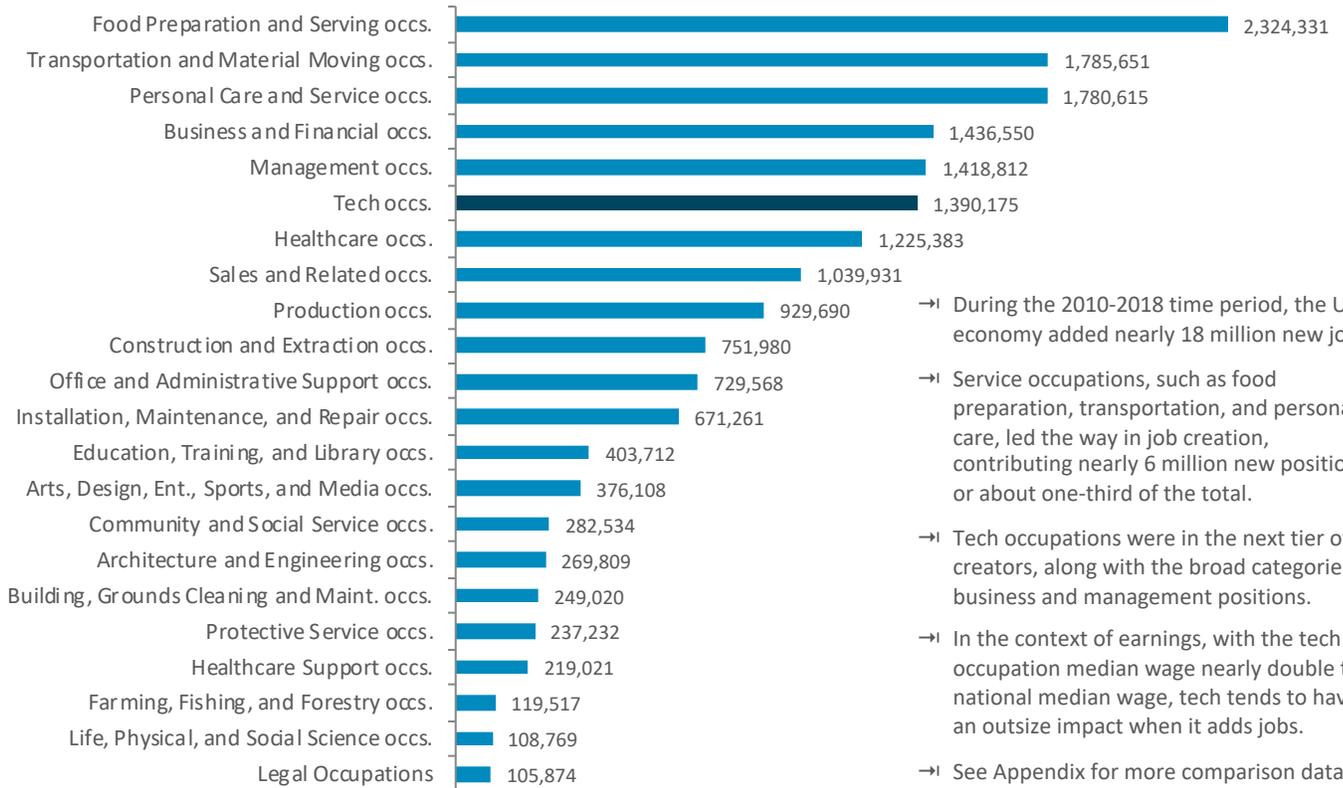


Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA

# BACKGROUND – INDUSTRY SECTOR AND OCCUPATION COMPARISONS

## RANKING OF OCCUPATION JOBS ADDED DURING 2010-2018

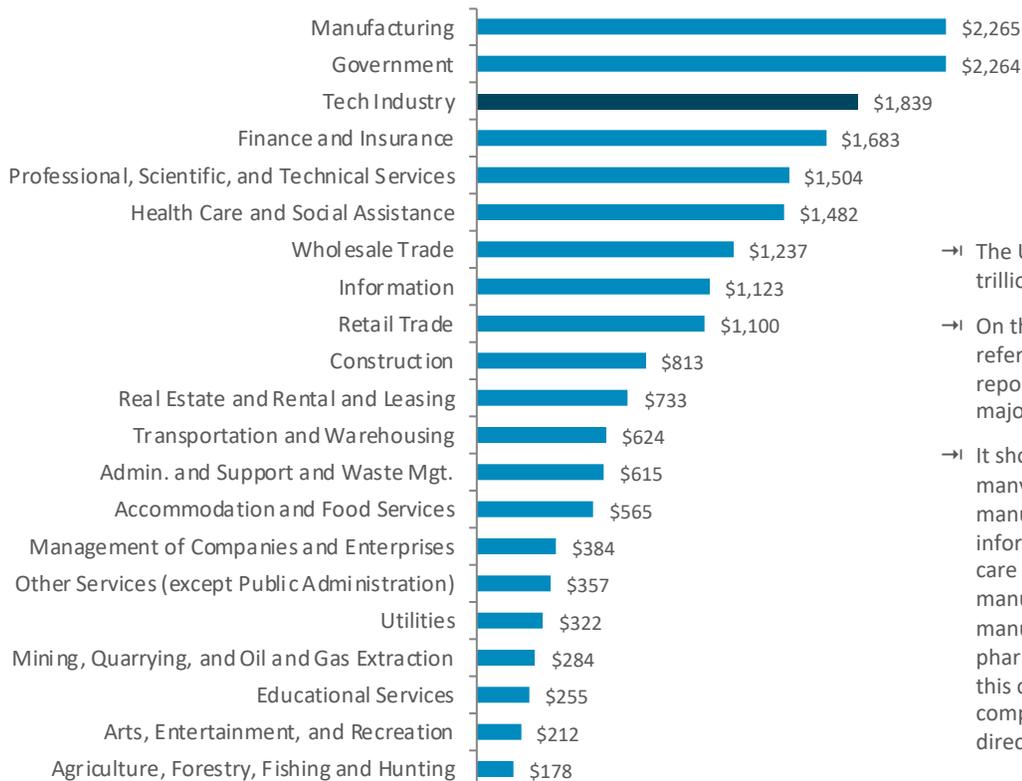
2-digit SOCs | QCEW + self-employed



- During the 2010-2018 time period, the U.S. economy added nearly 18 million new jobs.
- Service occupations, such as food preparation, transportation, and personal care, led the way in job creation, contributing nearly 6 million new positions or about one-third of the total.
- Tech occupations were in the next tier of job creators, along with the broad categories of business and management positions.
- In the context of earnings, with the tech occupation median wage nearly double the national median wage, tech tends to have an outsize impact when it adds jobs.
- See Appendix for more comparison data.

## RANKING OF INDUSTRY SECTORS GROSS PRODUCT (ECONOMIC IMPACT), 2018 est.

\$ billions | 2-digit NAICS | 2018 estimate



- The U.S. economy generated about \$18 trillion in economic activity in 2018.
- On the measure of gross product, also referred to as economic impact in this report, tech ranks 3<sup>rd</sup> compared to the other major industry sectors.
- It should be noted that overlap exists with many industries. For example, tech spans manufacturing, professional services, and information. A broader definition of health care encompasses pharmaceutical manufacturing, medical device manufacturing, health insurance, and retail pharmacies. Not all of the comparisons in this chart are direct apples-to-apples comparisons, so the data should be used for directional guidance only.

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA

# KEY FINDINGS – NATIONAL

## U.S. NET TECH EMPLOYMENT

- U.S. net tech employment totaled an estimated 11.8 million in 2018, an increase of more than 260,000 workers over the 2017 base of 11.5 million. Net tech employment grew an estimated 2.3 percent year-over-year.
- Net tech employment accounted for approximately 7.6 percent of the overall U.S. workforce in 2018. As noted previously, because of the blurring of lines across industries, there is a degree of undercounting in tech sector employment.

## U.S. TECH INDUSTRY EMPLOYMENT

- U.S. tech industry employment totaled an estimated 7.3 million in 2018, an increase of 146,383 workers from 7.2 million in 2017. Tech industry employment grew an estimated 2.0 percent year-over-year. As noted, tech industry employment is a subset of net tech employment.
- Tech manufacturing employment totaled an estimated 1.15 million in 2018, an increase of approximately 7,800 jobs from the previous year.
- Among the seven major tech manufacturing subsectors, two experienced employment gains, while the remaining categories experienced job losses. The space and defense system manufacturing had the highest rate of employment growth at +2.6 percent. Semiconductors, the largest component of tech manufacturing by employment, was flat in the aggregate, although 23 states experienced positive job gains in this category.
- Employment in the telecommunications and Internet services sector totaled an estimated 1.36 million in 2018, up by 20,105 jobs from 2017. These employment gains were driven by growth in the data processing, hosting, and search portal services categories, where employment increased by 33,706 jobs. Wired and wireless telecommunications services shed 13,645 jobs, a loss of 1.9 percent.
- The software category, consisting of published or packaged software products, rather than custom developed software, employed an estimated 397,414 workers in 2018, adding more than 20,000 net-new jobs. On a percent change basis, software led the tech sector with a 5.3 percent year-over-year growth rate.
- The IT services and custom software services subsector generated the largest numerical gain in employment, adding nearly 81,000 net-new jobs in 2018. This gain of 3.2 percent increased the employment base to 2.6 million. This growth reflects the ongoing digital transformations occurring across the economy and the corresponding need for expertise in areas such as cloud computing migration, application integration, process automation, data analytics, and security.

## U.S. TECH OCCUPATION EMPLOYMENT

- Tech occupation jobs reached an estimated 7.89 million workers in 2018, an increase of 167,295 workers. On a percent change basis, the rate is on par with the annual growth rates experienced over the past several years, with the exception of the 2015 rate, which exceeded 3 percent.
- Since 2012, nearly 1.2 million new tech occupation jobs were added, a function of the demand for tech talent across every industry sector in the economy.
- The IT occupations segment of tech occupations accounts for 63 percent of the total. IT occupations added over 132,000 net-new jobs in 2018, a year-over-year growth rate of 2.7 percent. On a numeric basis, software developers, systems analysts and cybersecurity analysts, and IT support specialists recorded the largest gains in employment. The U.S. Bureau of Labor Statistics does not yet break out many emerging tech roles, other data sources indicate these new specialties are starting to make meaningful contributions to the growth of the tech workforce.

## U.S. NET TECH EMPLOYMENT

	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change</u>
Tech employment net of industry, occupation, and self-employed	11.5m	11.8m	+260,865
<b>Total</b>	11.5m	11.8m	+260,865

## U.S. TECH INDUSTRY EMPLOYMENT

	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change</u>
Tech Manufacturing	1.1m	1.2m	+7,893
Telecommunications and Internet Services	1.3m	1.4m	+20,105
Software [packaged]	0.4m	0.4m	+20,116
IT Services & Custom Software services	2.5m	2.6m	+80,793
Engineering Services, R&D, and Testing	1.8m	1.8m	+17,476
<b>Total</b>	7.2m	7.3m	+146,383

## U.S. TECH OCCUPATION EMPLOYMENT

	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change</u>
IT Occupations	4.9m	5.0m	+132,255
Engineering and Technician Occupations	2.9m	2.9m	+35,040
<b>Total</b>	7.7m	7.9m	+167,295

## TOP TECH OCCUPATION CATEGORIES

	<u>2018 est.</u>	<u>% Change</u>
Software and Web Developers	1,504,895	+3.9%
Computer System and Cybersecurity Analysts	739,632	+3.2%
Computer Support Specialists	647,993	+3.1%

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA  
Some numeric changes affected by rounding

# KEY FINDINGS – STATES

## STATE NET TECH EMPLOYMENT

- Forty-three states generated positive tech employment job growth in 2018. While the largest job gains are associated with the states with a significant tech presence, the fact that most states experienced tech employment job gains speaks to the broad-based impact of technology across the nation.
- Job gains in tech employment have grown steadily over time. Since 2010, 46 states experienced positive tech employment gains. Twenty-three states generated gains of more than 25,000 net new tech jobs during this stretch, while five states topped the 100,000 mark for tech job additions.
- On an industry sector basis, the IT services and custom software services has been the growth engine for the greatest number of states over the past few years. This is both in response to as well as an enabler of the ongoing digital business transformation trend. Summary distribution of top categories by state:
  - IT services/custom software services: 39 states
  - R&D, Testing, and Engineering Services: 8 states
  - Tech manufacturing: 3 states
  - Telecommunications and Internet Services: 1 state
- The metrics used to provide context and insight into the data tend to be based on absolute size or are relative, which may involve percent change or account for factors such as population or economic size differences. Absolute measures tend to be highly correlated with the size of the state or metro area. For example, California is the largest state in the nation by a wide margin. Its population is 40 percent larger and its economy is 54 percent larger than second place Texas. California's economy is equal to the combined total of the bottom 25 states. Not surprisingly, California is the leader in many Cyberstates categories.
- California net tech employment was an estimated 1,782,499 workers in 2018, a gain of 51,567 net new jobs year-over-year. Other states that experienced notable tech employment gains include Florida, Texas, North Carolina, New York, and Washington.
- On a percent change basis, the top five states for job growth in 2018 were Utah (+4.3 percent), New Hampshire (+4.2 percent), North Carolina (+4.0 percent), Nevada (+4.0 percent), and Washington (+3.5 percent).
- Employment concentration is a relative metric that compares tech employment to the overall base of employment within a state. Eighteen states are at or higher than the national average of 7.6 percent.
- Massachusetts has the highest concentration (11.3 percent) of tech workers relative to its overall employment base, which means citizens of the state are more likely to hold a tech job relative to other industry sectors. Top ten states for net tech employment concentration:
  - Massachusetts: 11.3%
  - Virginia: 10.7%
  - Washington: 10.6%
  - District of Columbia: 10.3%
  - Colorado: 10.3%
  - Maryland: 10.2%
  - New Hampshire: 9.8%
  - California: 9.4%
  - Utah: 9.3%
  - Michigan: 8.9%
- Conversely, the states with the lowest concentration of tech workers are: Wyoming, Mississippi, Louisiana, West Virginia, and Hawaii.

## TOP CYBERSTATES BY NET TECH EMPLOYMENT

1.	California	1,782,499
2.	Texas	982,988
3.	New York	663,295
4.	Florida	567,862
5.	Illinois	439,541
6.	Virginia	436,545
7.	Pennsylvania	435,170
8.	Massachusetts	428,788
9.	Michigan	409,406
10.	Ohio	396,795

## TOP CYBERSTATES BY NET TECH EMPLOYMENT JOB GAINS

1.	California	+51,567
2.	Florida	+18,147
3.	Texas	+17,855
4.	North Carolina	+13,773
5.	New York	+13,732
6.	Washington	+12,864
7.	Michigan	+12,354
8.	Georgia	+11,302
9.	Massachusetts	+11,175
10.	Ohio	+9,248

## LAGGING CYBERSTATES BY NET TECH EMPLOYMENT JOB GAINS

1.	Oklahoma	-264
2.	Kansas	-220
3.	Alaska	-212
4.	Vermont	-56
5.	West Virginia	-30
6.	Wyoming	-29
7.	Delaware	-26
8.	New Mexico	-3
9.	North Dakota	+36
10.	Hawaii	+114

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA  
Some numeric changes affected by rounding

# KEY FINDINGS – STATES AND METROPOLITAN AREAS

## STATE INNOVATION

- According to data from PwC/CBInsights MoneyTree™, venture capital flowing to tech investments increased 36 percent in 2018 over the previous year. The number of investment deals fell slightly (-4 percent) to 3,715. Software remains the largest sector for venture funding.
- The top five states garnered nearly 85 percent of venture capital investments in 2018, up from 81 percent during the prior year. It's important to remember that venture capital is only one source of financing for startups and/or expanding firms. Self-funding, traditional bank loans, SBA loans, low dollar equity placements, and crowdfunding may all come into play.
  - California: \$37.2 billion
  - New York: \$9.5 billion
  - Massachusetts: \$3.5 billion
  - North Carolina: \$1.7 billion
  - Texas: \$1.5 billion
- On a percent change basis, tech startups and new tech business formations were down in 2018 compared to 2017, according to data from D&B Hoovers. Across the economy, startups as a share of all businesses have been in slow decline since the late 1970s, a trend that is concerning and not easily explained.
- Job postings among U.S. employers for emerging tech roles increased 74 percent in 2018 compared to the previous year, according to data from Burning Glass Technologies Labor Insights. Eleven states experienced increases of 100 percent or more.

## STATE TECH BUSINESS ESTABLISHMENTS

- Forty-six states added to their base of tech business establishments. On a numeric basis, California had the largest year-over-year increase of net-new tech business establishments (+2,348). Rounding out the top five for net-new tech business establishments were Arizona, Wisconsin, Texas, and Minnesota.

## STATE TECH ECONOMIC IMPACT

- Economic impact is an assessment of output – the dollar value of goods and services produced during a given year. As a percentage of the overall U.S. economy, the tech industry accounts for about 10.2 percent of direct economic value, which translates to over \$1.8 trillion.
- In addition to the direct economic impact, there are downstream, indirect benefits of the technology industry. One way to assess this impact is through the use of job multiplier metrics, also referred to as input-output modeling. For example, the IT services and custom software development services category has an estimated jobs multiplier of 4.8. For every one job in this tech subsector, an estimated 4.8 additional jobs are created or supported through direct, indirect, or induced means.

## STATE EMPLOYMENT CHARACTERISTICS

- Nationally, the composition of the tech sector workforce in 2018 consisted of 4.9 million men and 2.4 million women, translating to 68 percent and 32 percent, respectively.
- The District of Columbia again had the highest representation of women in the tech sector workforce at 39.3 percent. Rounding out the top five were South Dakota, Missouri, North Carolina, and New York.
- The tech occupation categories with the highest percentage of women include: assemblers, computer operators, database administrators, systems analysts, web developers, information systems managers, and computer network support specialists.

## TOP CYBERSTATES BY INNOVATION RANK

1.	California	1 <sup>st</sup>
2.	New York	2 <sup>nd</sup>
3.	Texas	3 <sup>rd</sup>
4.	Florida	4 <sup>th</sup>
5.	Colorado	5 <sup>th</sup>

## TOP CYBERSTATES BY NUMBER OF TECH BUSINESS ESTABLISHMENTS

1.	California	57,015
2.	Texas	39,488
3.	Florida	32,794
4.	New York	26,312
5.	Virginia	22,152

## TOP CYBERSTATES BY TECH ECONOMIC IMPACT AS A PERCENT OF STATE ECONOMY

1.	Washington	20.1%
2.	California	18.9%
3.	Massachusetts	17.3%
4.	Colorado	14.5%
5.	New Hampshire	13.8%

## TOP CYBERSTATES BY PERCENT OF WOMEN EMPLOYED IN TECH SECTOR

1.	District of Columbia	39.3%
2.	South Dakota	36.5%
3.	Missouri	35.2%
4.	North Carolina	35.1%
5.	New York	34.7%

Source: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | U.S. Patent & Trademark Office | Hoovers  
Some numeric changes affected by rounding

# KEY FINDINGS – METROPOLITAN STATISTICAL AREA (MSA)

## METROPOLITAN AREA NET TECH EMPLOYMENT

- The top ten metropolitan areas employ nearly 4 million tech industry and tech occupation workers, or about 1 in 3 tech workers in the nation.
- New York City is the largest metropolitan area in the country by a wide margin. It follows that it also has the largest base of tech employment.
- Silicon Valley continues to be a critically important hub for innovation. Between San Francisco and San Jose, nearly 34,000 net tech employment jobs were added over the past year. The discussion doesn't end there, however, as technology increasingly has a significant presence across the nation. Cities such as Boston, Seattle, New York, Dallas, Atlanta, Los Angeles, Chicago and more, boast sizable tech workforces and notable job gain rates.
- As noted throughout this report, there are many nuances to assessing the tech landscape and a single figure rarely tells the whole story. For example, metro areas that may appear to be lagging based on overall tech job gains, typically also have pockets of growth. In the case of Oklahoma City and New Orleans, which had slight declines in tech employment, the software category increased by 5 percent and 7 percent respectively. Job growth is also relative, as in the case of Cincinnati, where tech industry employment gains outperformed many other sectors in the local economy, including health care services, retail, and construction.

## METROPOLITAN AREA EMPLOYMENT CONCENTRATION

- Employment concentration provides a measure of tech employment relative to employment across all the other industry sectors in a local economy. Along with economic impact as a percentage of a local economy, these metrics help to put tech into context.
- At 32 percent, San Jose has the highest concentration of net tech employment as a percentage of its overall employment base. Similarly, San Jose is an outlier in the economic impact of tech to the local economy at nearly 60 percent, about twice the rate as the next highest metro area.
- Compared to the national tech employment concentration benchmark of 7.6 percent, 26 metro areas had a higher rate, confirming the importance of technology to a far-reaching set of cities across the country.

## METROPOLITAN AREA TECH BUSINESS ESTABLISHMENTS

- A large, dynamic base of business establishments, also referred to as company locations, is another measure of a healthy tech sector. The New York City metro area is home to 24,123 tech business establishments.
- The vast majority of tech business establishments are categorized as small businesses under the Small Business Administration's definition of 1-500 employees.
- Outside of the top five, the next largest metropolitan areas for the number of tech sector business establishments include Dallas, San Francisco, Atlanta, Seattle, and Denver.

## METROPOLITAN AREA TECH OCCUPATION CHARACTERISTICS

- The national average for the percent of women in the tech sector workforce was 32.4 percent in 2018. Among metropolitan areas, Trenton had the most balanced gender ratio with women representing 37 percent of its tech sector workforce. When drilling-down to specific occupations, approximately 50 percent of assemblers, 48 percent of computer operators, 36 percent of database administrators, and 34 percent computer systems analysts in Trenton are women.

### TOP CYBERCITIES BY NET TECH EMPLOYMENT

1.	New York City	659,260
2.	Los Angeles	503,971
3.	Washington DC	437,454
4.	San Francisco	385,019
5.	Boston	373,415
6.	San Jose	371,640
7.	Dallas	349,639
8.	Chicago	344,146
9.	Seattle	298,555
10.	Atlanta	261,084

### TOP CYBERCITIES BY NET TECH EMPLOYMENT JOB GAINS

1.	San Francisco	+20,566
2.	San Jose	+13,140
3.	Boston	+11,579
4.	Seattle	+11,550
5.	New York City	+10,440
6.	Dallas	+9,324
7.	Atlanta	+8,090
8.	Los Angeles	+7,632
9.	Detroit	+6,295
10.	Chicago	+5,971

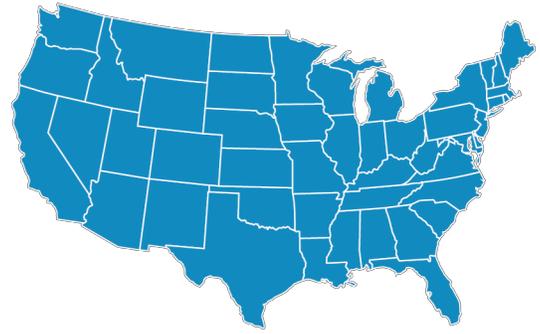
### TOP CYBERCITIES BY TECH ECONOMIC IMPACT AS A PERCENT OF LOCAL ECONOMY

1.	San Jose	60.0%
2.	San Francisco	28.0%
3.	Seattle	26.2%
4.	Austin	23.5%
5.	Raleigh	21.8%
6.	Boston	19.7%
7.	Portland	16.2%
8.	Washington DC	15.6%
9.	San Diego	15.4%
10.	Denver	15.4%

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA  
Some numeric changes affected by rounding

# NATIONAL SNAPSHOT

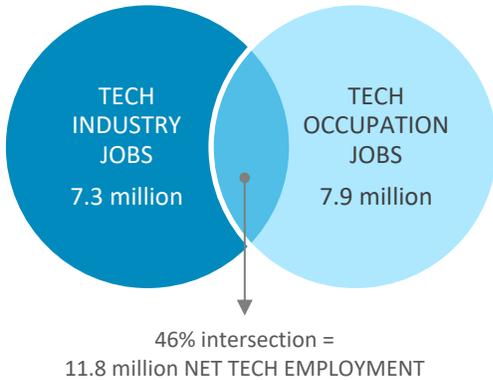
# United States



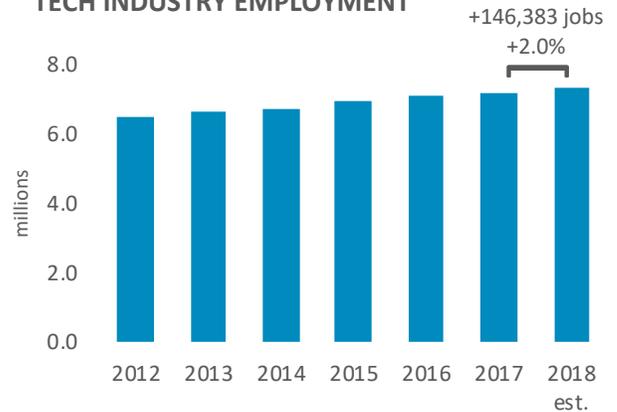
## STATE OF TECHNOLOGY SUMMARY

- 11,812,147 NET TECH EMPLOYMENT<sup>1</sup>
- 260,865 NET TECH JOB GAINS [2018 vs. 2017]
- 2.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 524,912 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 3,714,898 TECH OCCUPATION JOB POSTINGS [2018 total]
- 74.0% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

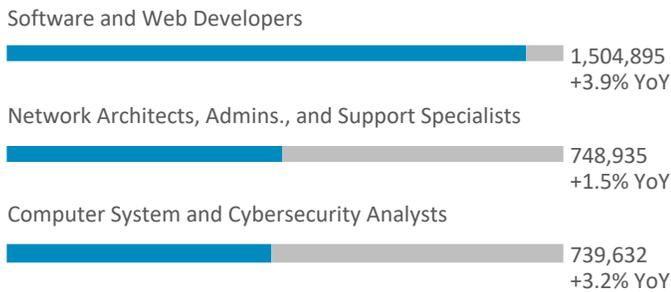
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	2,621,179	3.2%
R&D, Testing, and Engineering Services	1,777,233	1.0%
Telecommunications and Internet Services	1,369,680	1.5%
Tech Manufacturing	1,150,405	0.7%
Software [packaged]	397,414	5.3%

## ECONOMIC IMPACT



# 10.2%

Estimated direct contribution of the tech sector to the U.S. economy: \$1.8 trillion

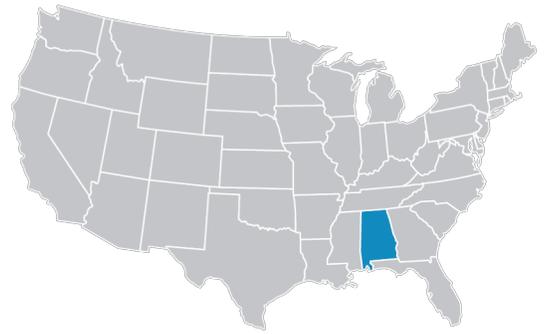
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# STATE SNAPSHOTS

# Alabama

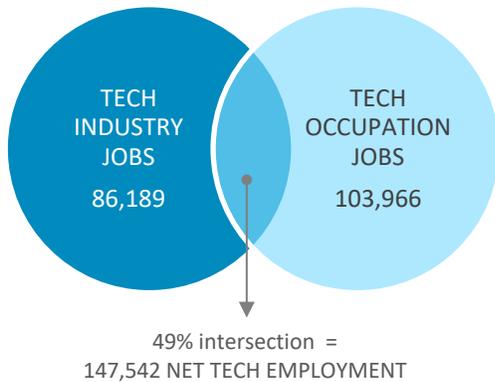


## STATE OF TECHNOLOGY SUMMARY

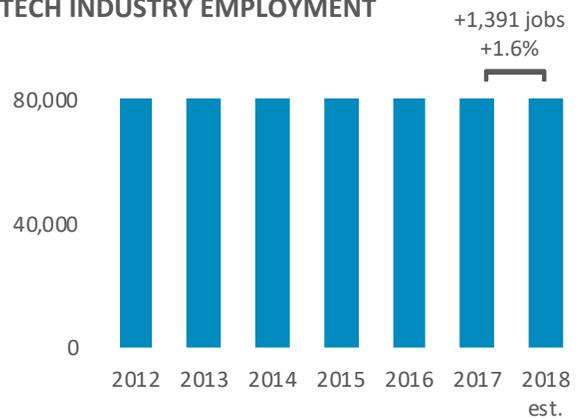
- 147,542 NET TECH EMPLOYMENT<sup>1</sup>
- 1,888 NET TECH JOB GAINS [2018 vs. 2017]
- 1.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 6,411 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 37,427 TECH OCCUPATION JOB POSTINGS [2018 total]
- 57% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 24<sup>th</sup> NET TECH EMPLOYMENT RANK
- 27<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 39<sup>th</sup> INNOVATION SCORE RANK

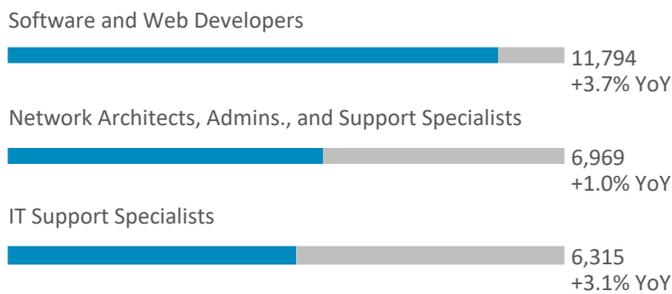
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	30,175	2.2%
IT Services + Custom Software Services	29,558	2.0%
Tech Manufacturing	13,244	0.3%
Telecommunications and Internet Services	11,903	-0.1%
Software [packaged]	1,309	10.2%

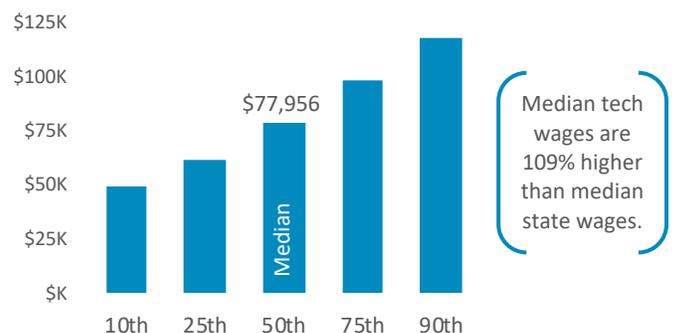
## ECONOMIC IMPACT



# 6.8%

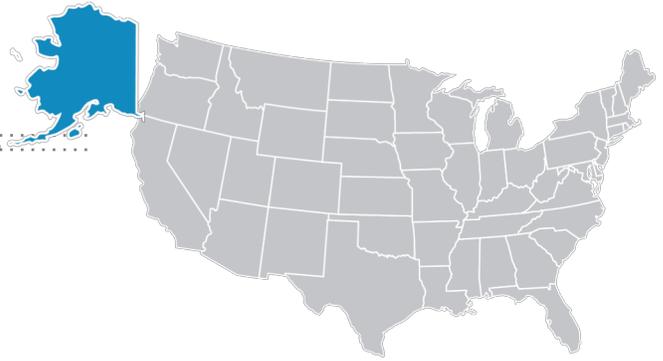
Estimated direct contribution of the tech sector to the Alabama economy: \$13.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Alaska

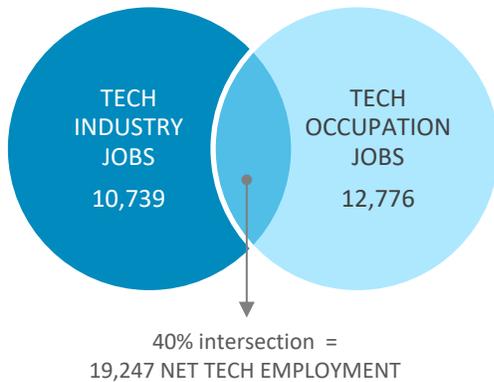


## STATE OF TECHNOLOGY SUMMARY

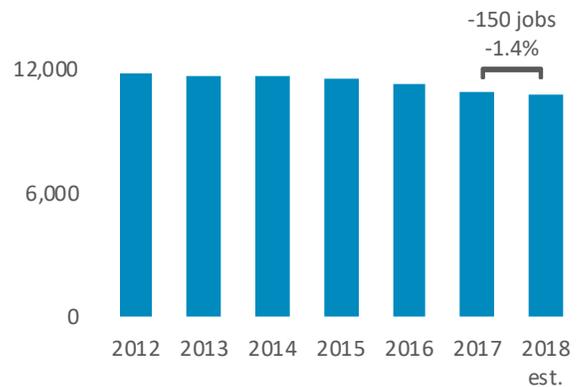
- 19,247 NET TECH EMPLOYMENT<sup>1</sup>
- 212 NET TECH JOB GAINS [2018 vs. 2017]
- 1.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 927 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 4,373 TECH OCCUPATION JOB POSTINGS [2018 total]
- 204% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 50<sup>th</sup> NET TECH EMPLOYMENT RANK
- 49<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 51<sup>st</sup> INNOVATION SCORE RANK

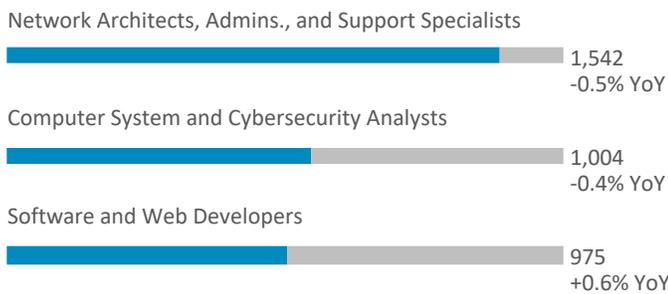
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	4,634	-2.2%
Telecommunications and Internet Services	4,157	-1.3%
IT Services + Custom Software Services	1,843	0.8%
Tech Manufacturing	89	-2.3%
Software [packaged]	16	-16.0%

## ECONOMIC IMPACT



# 4.5%

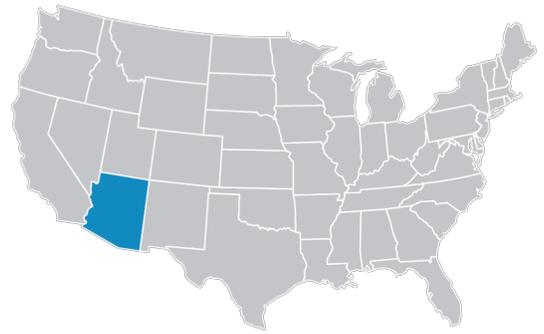
Estimated direct contribution of the tech sector to the Alaska economy: \$2.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Arizona

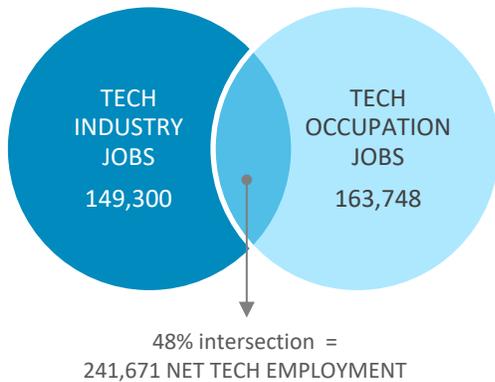


## STATE OF TECHNOLOGY SUMMARY

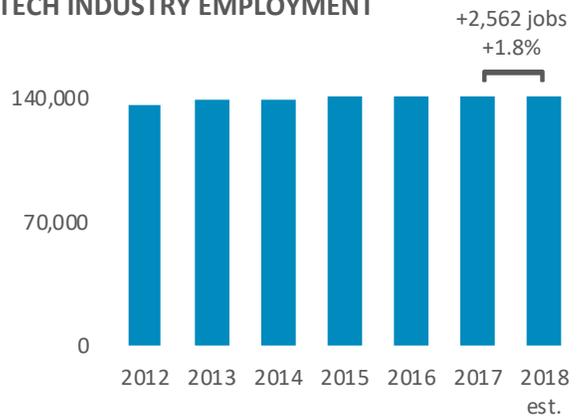
- 241,671 NET TECH EMPLOYMENT<sup>1</sup>
- 5,127 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 9,805 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 90,262 TECH OCCUPATION JOB POSTINGS [2018 total]
- 174% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 18<sup>th</sup> NET TECH EMPLOYMENT RANK
- 17<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 20<sup>th</sup> INNOVATION SCORE RANK

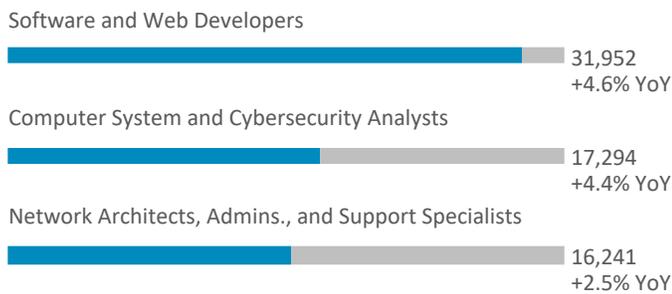
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	45,760	3.6%
Tech Manufacturing	45,341	0.0%
Telecommunications and Internet Services	28,867	3.1%
R&D, Testing, and Engineering Services	25,245	0.2%
Software [packaged]	4,087	4.6%

## ECONOMIC IMPACT



**10.5%**

Estimated direct contribution of the tech sector to the Arizona economy: \$31.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Arkansas

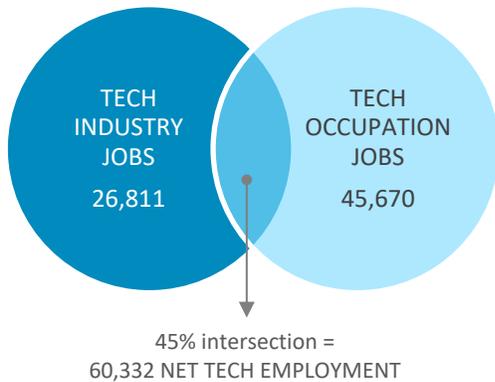


## STATE OF TECHNOLOGY SUMMARY

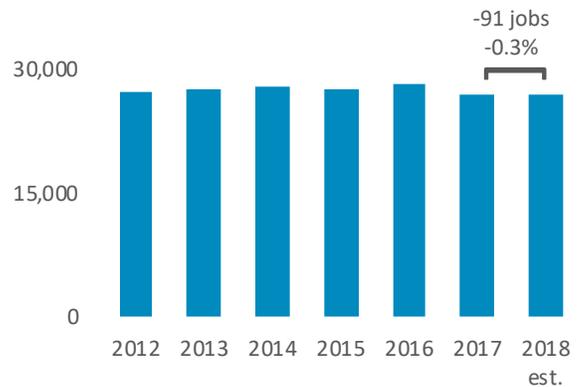
- 60,332 NET TECH EMPLOYMENT<sup>1</sup>
- 660 NET TECH JOB GAINS [2018 vs. 2017]
- 1.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,469 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 11,677 TECH OCCUPATION JOB POSTINGS [2018 total]
- 84% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 38<sup>th</sup> NET TECH EMPLOYMENT RANK
- 35<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 36<sup>th</sup> INNOVATION SCORE RANK

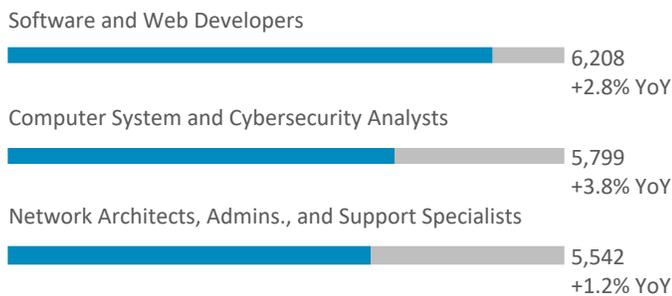
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	Employment	YoY % Change 2018
IT Services + Custom Software Services	11,647	-0.5%
Telecommunications and Internet Services	6,904	-2.0%
R&D, Testing, and Engineering Services	5,501	2.2%
Tech Manufacturing	2,364	-1.5%
Software [packaged]	396	5.2%

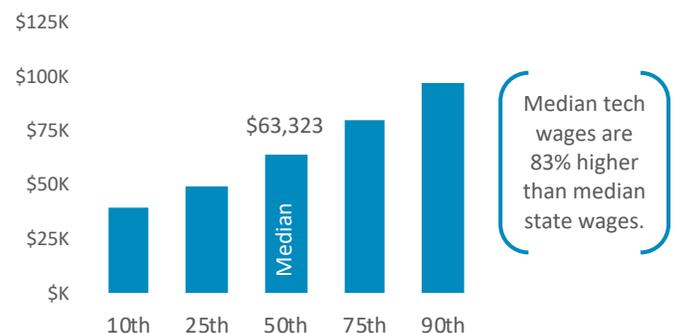
## ECONOMIC IMPACT



# 3.8%

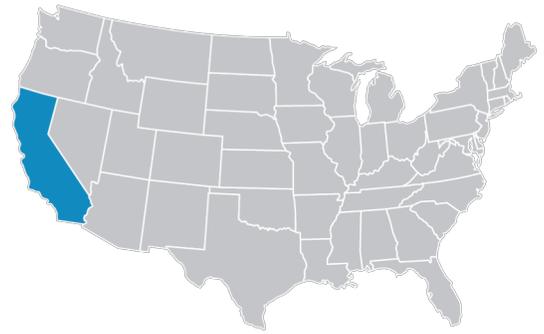
Estimated direct contribution of the tech sector to the Arkansas economy: \$4.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# California

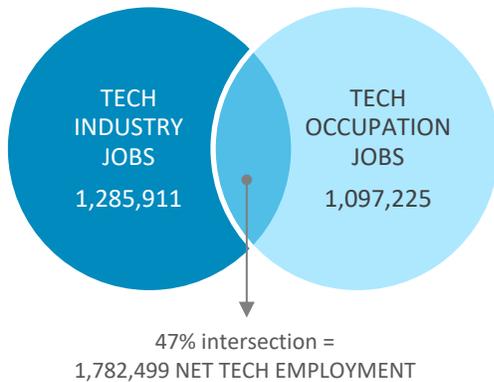


## STATE OF TECHNOLOGY SUMMARY

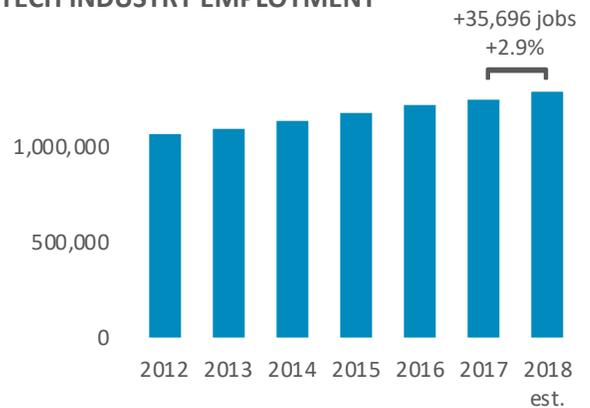
- 1,782,499 NET TECH EMPLOYMENT<sup>1</sup>
- 51,567 NET TECH JOB GAINS [2018 vs. 2017]
- 3.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 57,015 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 610,627 TECH OCCUPATION JOB POSTINGS [2018 total]
- 86% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 1<sup>st</sup> NET TECH EMPLOYMENT RANK
- 1<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 1<sup>st</sup> INNOVATION SCORE RANK

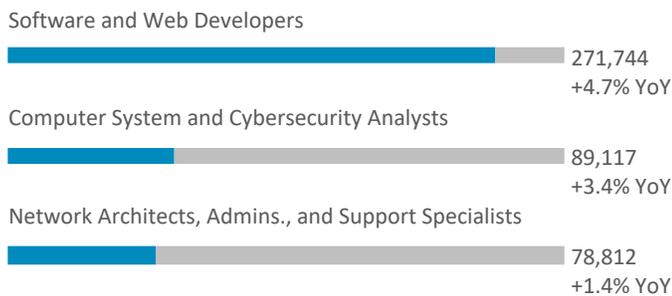
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	400,617	3.9%
Tech Manufacturing	311,002	1.2%
R&D, Testing, and Engineering Services	260,869	-0.3%
Telecommunications and Internet Services	235,340	5.6%
Software [packaged]	78,083	7.1%

## ECONOMIC IMPACT



# 18.9%

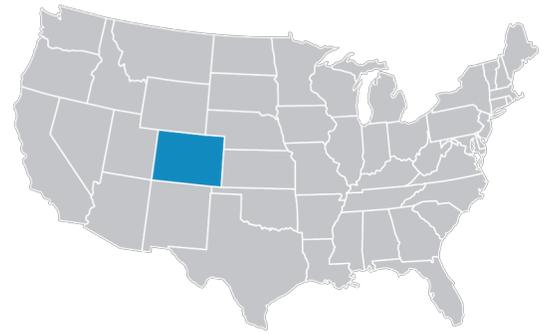
Estimated direct contribution of the tech sector to the California economy: \$481.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Colorado

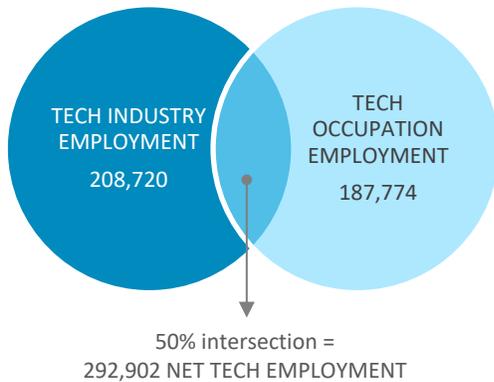


## STATE OF TECHNOLOGY SUMMARY

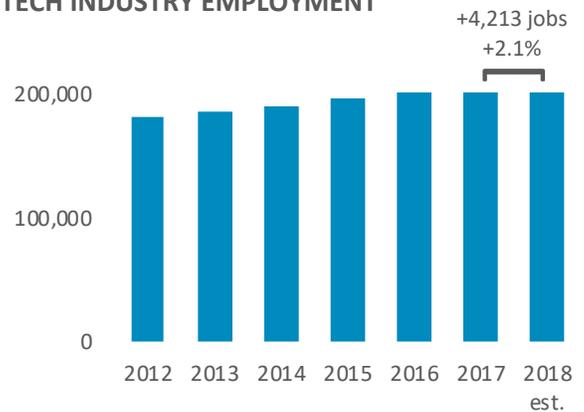
- 292,902 NET TECH EMPLOYMENT<sup>1</sup>
- 7,175 NET TECH JOB GAINS [2018 vs. 2017]
- 2.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 17,416 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 108,111 TECH OCCUPATION JOB POSTINGS [2018 total]
- 111% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 15<sup>th</sup> NET TECH EMPLOYMENT RANK
- 11<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 5<sup>th</sup> INNOVATION SCORE RANK

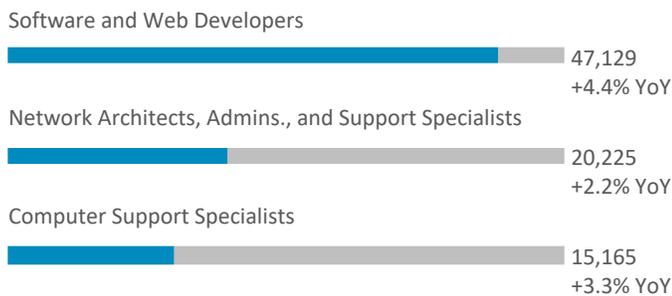
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	75,117	4.0%
R&D, Testing, and Engineering Services	49,796	0.4%
Telecommunications and Internet Services	40,604	0.6%
Tech Manufacturing	28,996	1.3%
Software [packaged]	14,207	3.9%

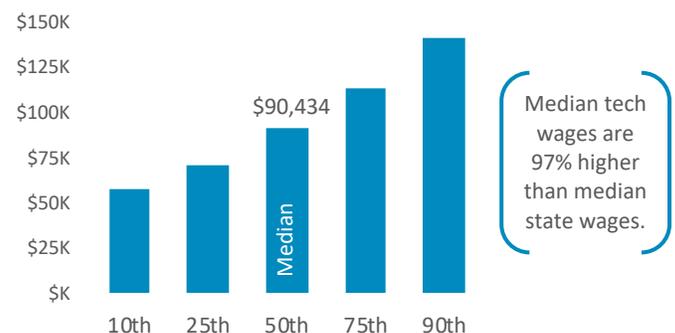
## ECONOMIC IMPACT



# 14.5%

Estimated direct contribution of the tech sector to the Colorado economy: \$47.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Connecticut

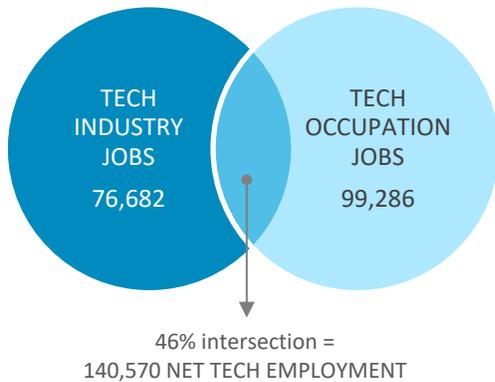


## STATE OF TECHNOLOGY SUMMARY

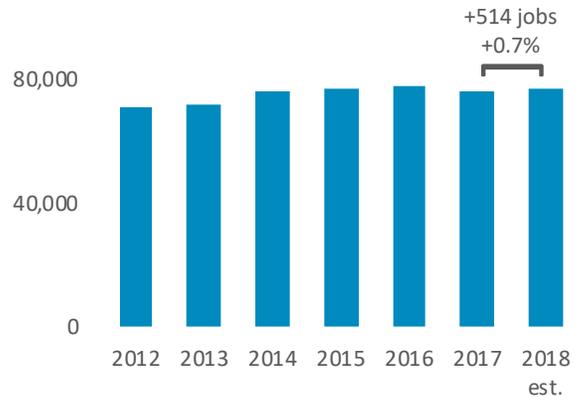
- 140,570 NET TECH EMPLOYMENT<sup>1</sup>
- 1,076 NET TECH JOB GAINS [2018 vs. 2017]
- 0.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 7,170 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 43,352 TECH OCCUPATION JOB POSTINGS [2018 total]
- 39% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 26<sup>th</sup> NET TECH EMPLOYMENT RANK
- 30<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 26<sup>th</sup> INNOVATION SCORE RANK

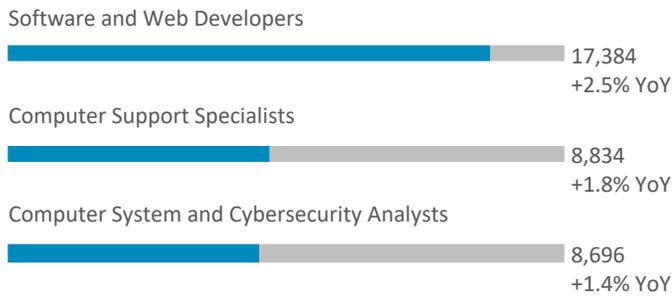
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	30,718	0.4%
R&D, Testing, and Engineering Services	18,489	4.7%
Tech Manufacturing	12,027	-2.3%
Telecommunications and Internet Services	10,285	-5.9%
Software [packaged]	5,163	10.4%

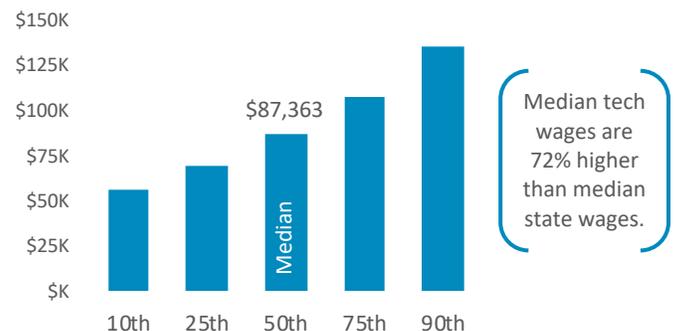
## ECONOMIC IMPACT



# 7.1%

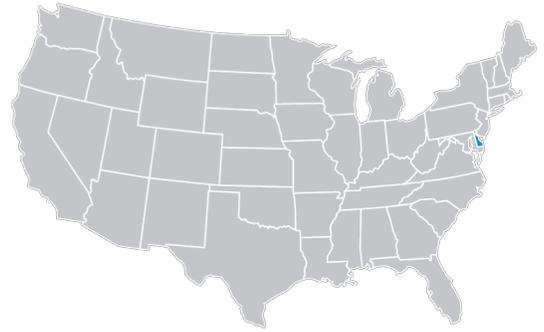
Estimated direct contribution of the tech sector to the Connecticut economy: \$17.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Delaware

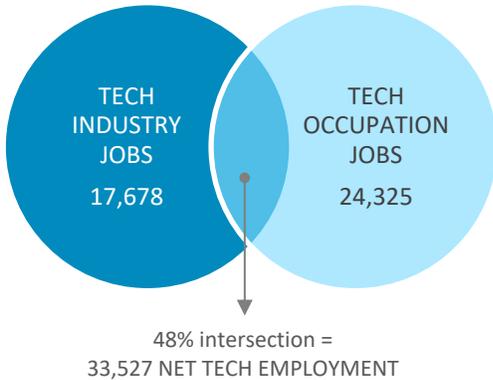


## STATE OF TECHNOLOGY SUMMARY

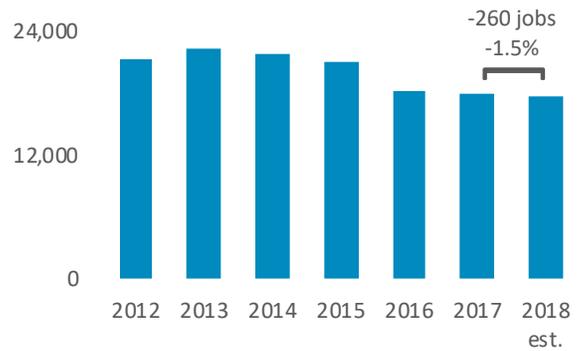
- 33,527 NET TECH EMPLOYMENT<sup>1</sup>
- 26 NET TECH JOB GAINS [2018 vs. 2017]
- 0.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,704 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 13,938 TECH OCCUPATION JOB POSTINGS [2018 total]
- 40% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 43<sup>rd</sup> NET TECH EMPLOYMENT RANK
- 45<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 37<sup>th</sup> INNOVATION SCORE RANK

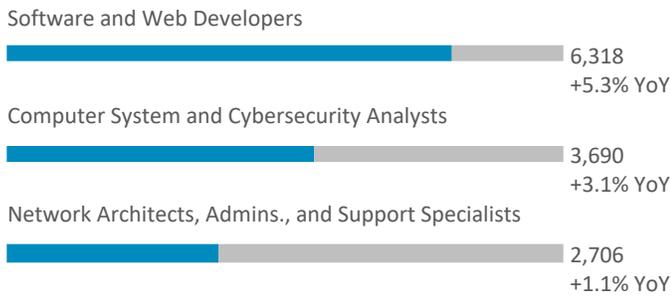
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	6,052	1.8%
R&D, Testing, and Engineering Services	5,574	-6.2%
Telecommunications and Internet Services	2,914	-1.9%
Tech Manufacturing	2,899	0.9%
Software [packaged]	240	13.5%

## ECONOMIC IMPACT



# 8.0%

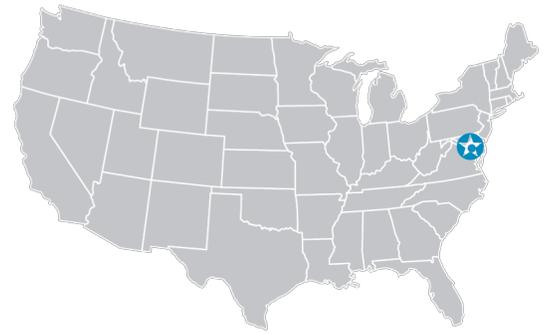
Estimated direct contribution of the tech sector to the Delaware economy: \$5.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# District of Columbia

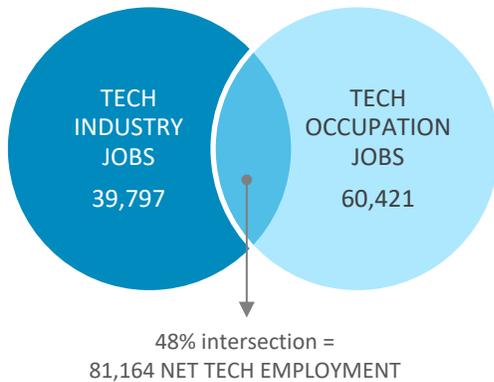


## STATE OF TECHNOLOGY SUMMARY

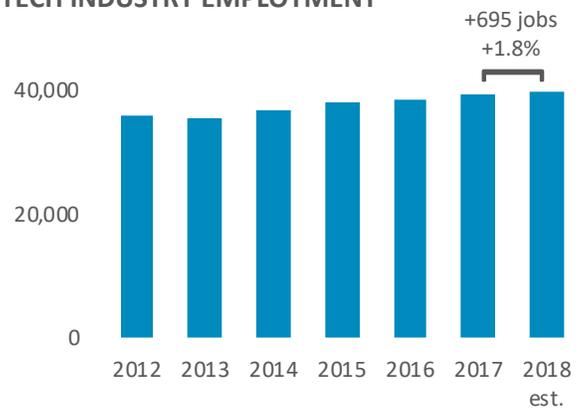
- 81,164 NET TECH EMPLOYMENT<sup>1</sup>
- 955 NET TECH JOB GAINS [2018 vs. 2017]
- 1.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,029 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 57,194 TECH OCCUPATION JOB POSTINGS [2018 total]
- 84% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 33<sup>rd</sup> NET TECH EMPLOYMENT RANK
- 33<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 47<sup>th</sup> INNOVATION SCORE RANK

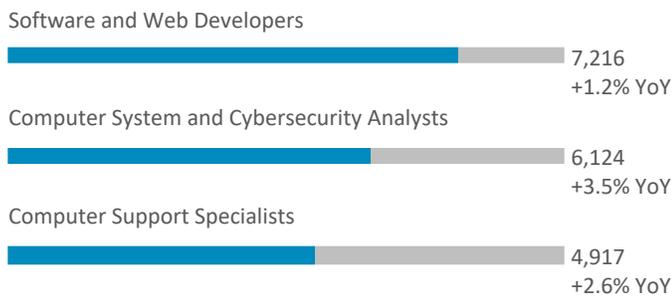
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	25,784	2.5%
R&D, Testing, and Engineering Services	8,834	-2.9%
Telecommunications and Internet Services	3,836	3.2%
Software [packaged]	1,250	19.9%
Tech Manufacturing	93	15.4%

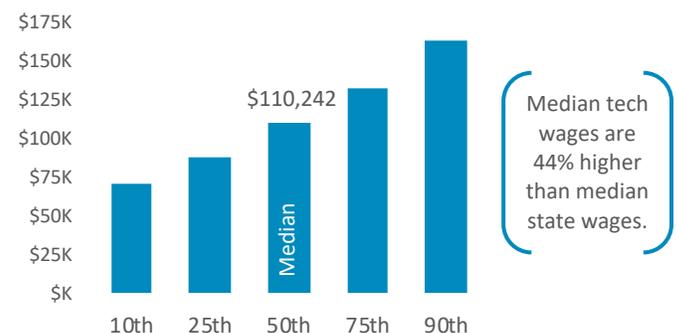
## ECONOMIC IMPACT



# 6.2%

Estimated direct contribution of the tech sector to the District of Columbia economy: \$8.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Florida

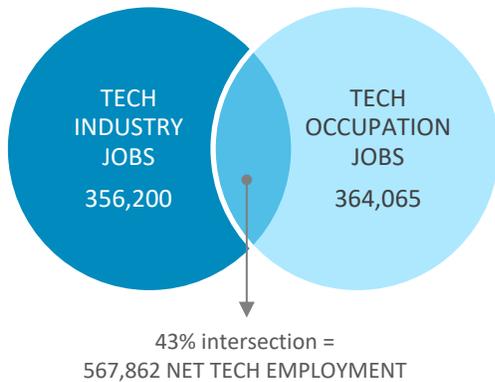


## STATE OF TECHNOLOGY SUMMARY

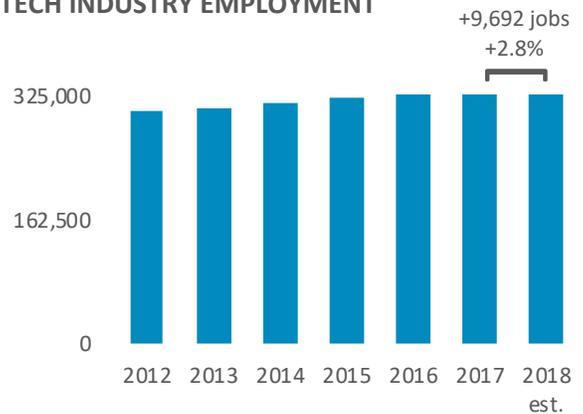
- 567,862 NET TECH EMPLOYMENT<sup>1</sup>
- 18,147 NET TECH JOB GAINS [2018 vs. 2017]
- 3.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 32,794 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 159,191 TECH OCCUPATION JOB POSTINGS [2018 total]
- 81% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 4<sup>th</sup> NET TECH EMPLOYMENT RANK
- 2<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 4<sup>th</sup> INNOVATION SCORE RANK

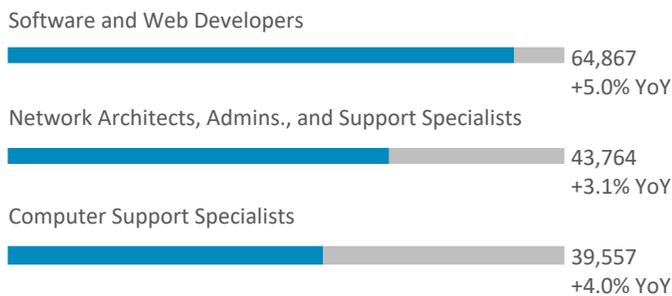
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	130,855	4.3%
R&D, Testing, and Engineering Services	83,399	3.2%
Telecommunications and Internet Services	75,815	0.1%
Tech Manufacturing	50,294	1.4%
Software [packaged]	15,835	7.2%

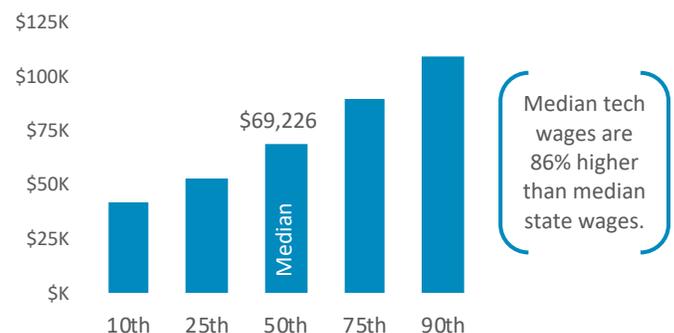
## ECONOMIC IMPACT



# 7.9%

Estimated direct contribution of the tech sector to the Florida economy: \$71.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Georgia

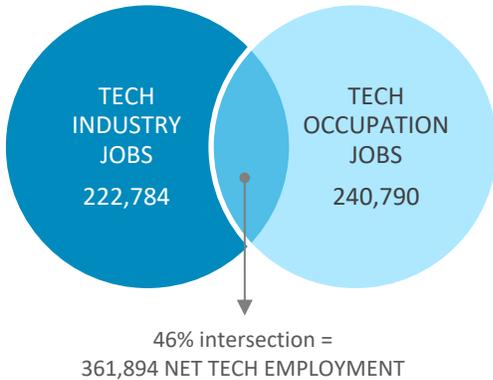


## STATE OF TECHNOLOGY SUMMARY

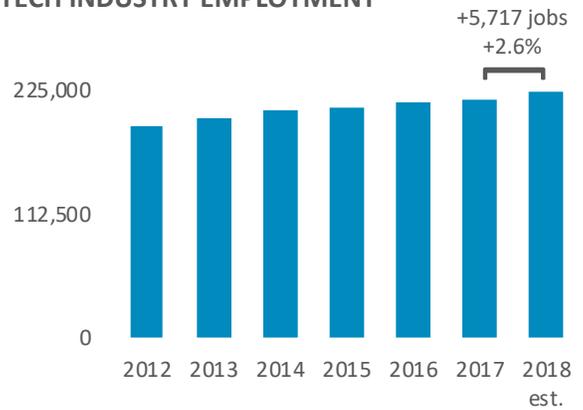
- 361,894 NET TECH EMPLOYMENT<sup>1</sup>
- 11,302 NET TECH JOB GAINS [2018 vs. 2017]
- 3.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 16,705 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 119,808 TECH OCCUPATION JOB POSTINGS [2018 total]
- 75% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 12<sup>th</sup> NET TECH EMPLOYMENT RANK
- 8<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 9<sup>th</sup> INNOVATION SCORE RANK

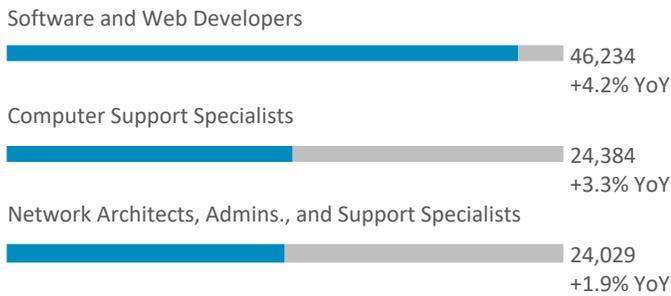
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	90,793	2.4%
Telecommunications and Internet Services	60,843	1.6%
R&D, Testing, and Engineering Services	43,852	4.5%
Software [packaged]	16,801	3.7%
Tech Manufacturing	10,494	1.1%

## ECONOMIC IMPACT



# 10.2%

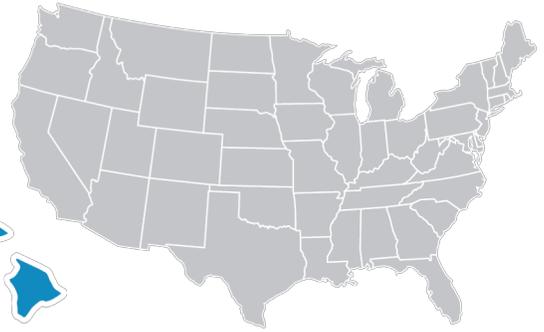
Estimated direct contribution of the tech sector to the Georgia economy: \$52.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Hawaii

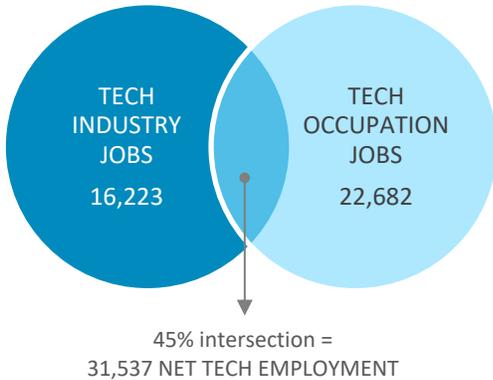


## STATE OF TECHNOLOGY SUMMARY

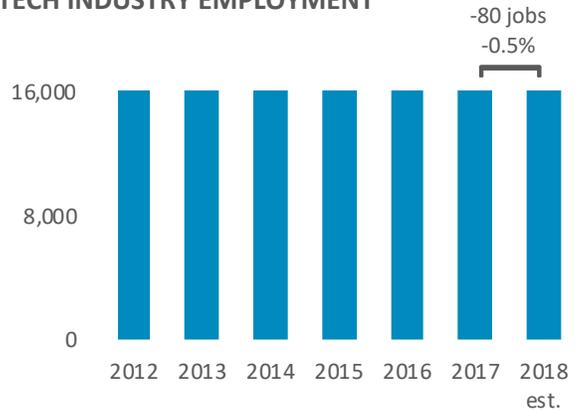
- 31,537 NET TECH EMPLOYMENT<sup>1</sup>
- 114 NET TECH JOB GAINS [2018 vs. 2017]
- 0.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,064 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 8,223 TECH OCCUPATION JOB POSTINGS [2018 total]
- 52% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 44<sup>th</sup> NET TECH EMPLOYMENT RANK
- 42<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 45<sup>th</sup> INNOVATION SCORE RANK

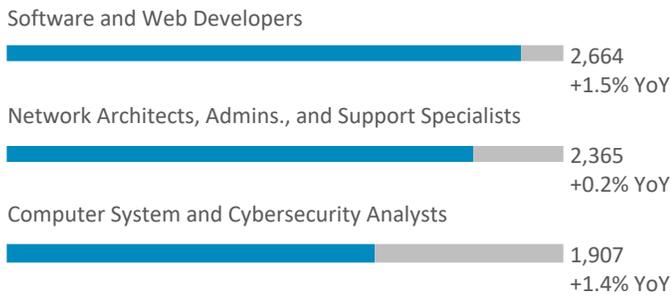
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	6,223	1.2%
R&D, Testing, and Engineering Services	5,118	-2.5%
Telecommunications and Internet Services	4,553	-0.9%
Tech Manufacturing	199	6.1%
Software [packaged]	129	9.5%

## ECONOMIC IMPACT



# 3.9%

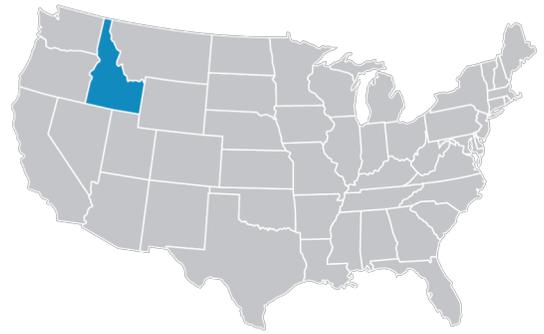
Estimated direct contribution of the tech sector to the Hawaii economy: \$3.2 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Idaho

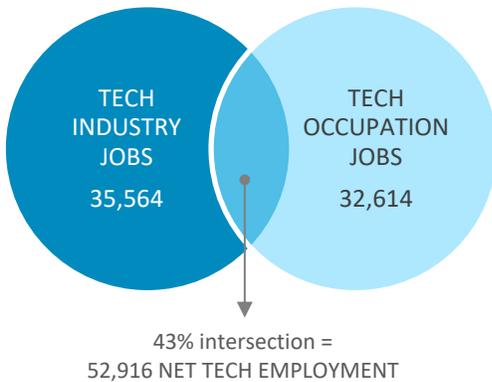


## STATE OF TECHNOLOGY SUMMARY

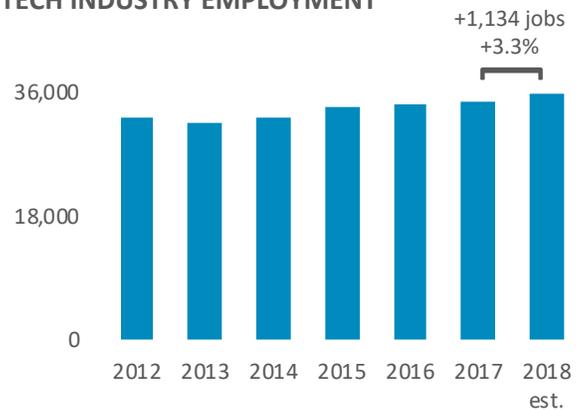
- 52,916 NET TECH EMPLOYMENT<sup>1</sup>
- 1,530 NET TECH JOB GAINS [2018 vs. 2017]
- 3.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,458 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 9,105 TECH OCCUPATION JOB POSTINGS [2018 total]
- 5% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 39<sup>th</sup> NET TECH EMPLOYMENT RANK
- 28<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 35<sup>th</sup> INNOVATION SCORE RANK

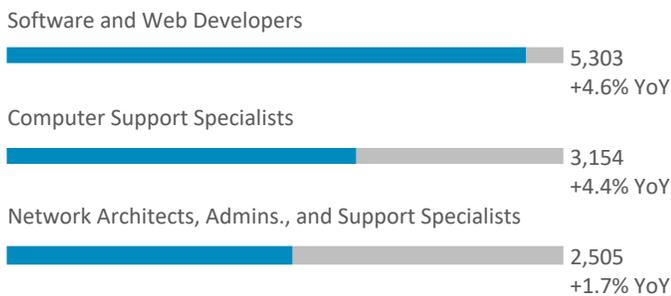
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
Tech Manufacturing	13,143	5.5%
IT Services + Custom Software Services	6,828	5.5%
Software [packaged]	306	1.3%
Telecommunications and Internet Services	4,049	0.1%
R&D, Testing, and Engineering Services	11,239	0.7%

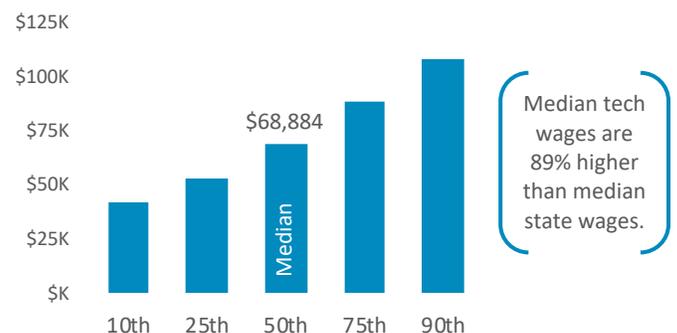
## ECONOMIC IMPACT



# 10.1%

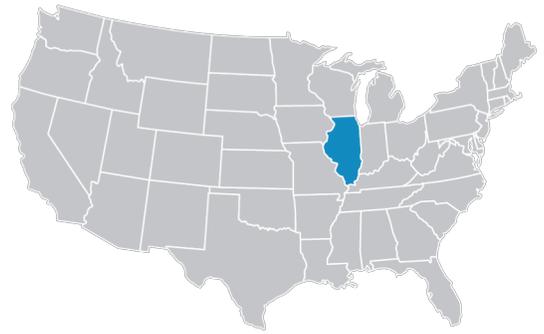
Estimated direct contribution of the tech sector to the Idaho economy: \$6.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Illinois

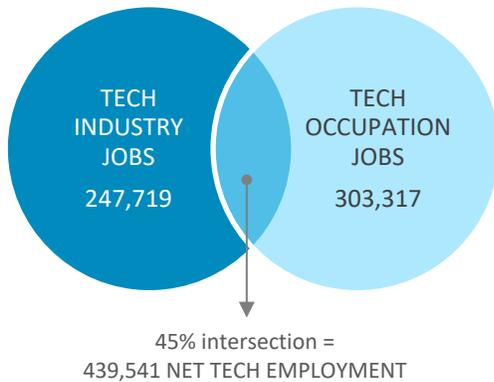


## STATE OF TECHNOLOGY SUMMARY

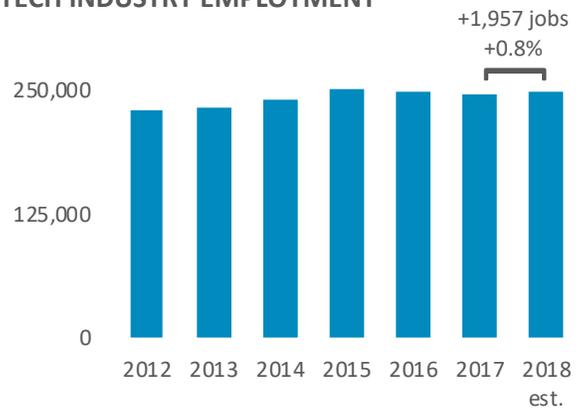
- 439,541 NET TECH EMPLOYMENT<sup>1</sup>
- 5,873 NET TECH JOB GAINS [2018 vs. 2017]
- 1.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 21,868 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 145,577 TECH OCCUPATION JOB POSTINGS [2018 total]
- 69% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 5<sup>th</sup> NET TECH EMPLOYMENT RANK
- 15<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 7<sup>th</sup> INNOVATION SCORE RANK

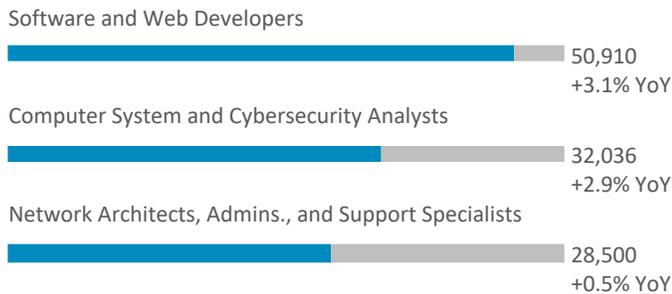
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	107,203	3.1%
R&D, Testing, and Engineering Services	51,930	-2.5%
Telecommunications and Internet Services	51,163	-0.4%
Tech Manufacturing	30,497	-0.6%
Software [packaged]	6,926	6.4%

## ECONOMIC IMPACT



# 7.3%

Estimated direct contribution of the tech sector to the Illinois economy: \$55.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Indiana

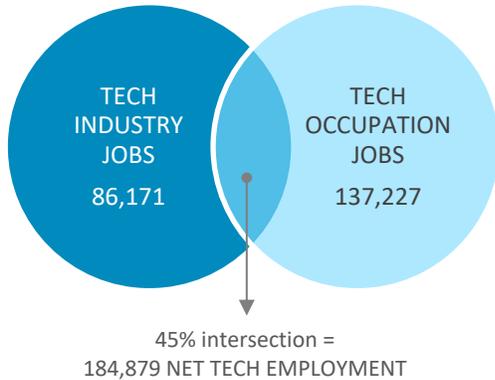


## STATE OF TECHNOLOGY SUMMARY

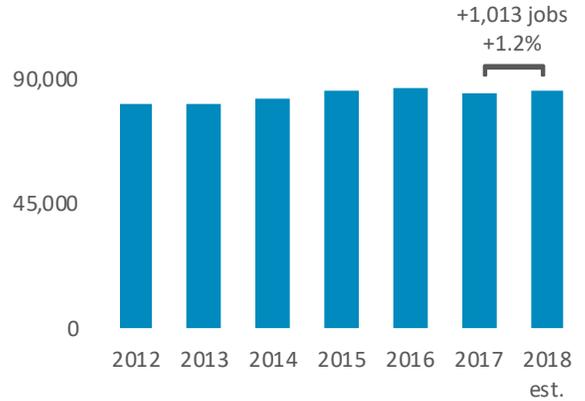
- 184,879 NET TECH EMPLOYMENT<sup>1</sup>
- 3,412 NET TECH JOB GAINS [2018 vs. 2017]
- 1.9% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,471 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 43,698 TECH OCCUPATION JOB POSTINGS [2018 total]
- 85% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 21<sup>st</sup> NET TECH EMPLOYMENT RANK
- 24<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 23<sup>rd</sup> INNOVATION SCORE RANK

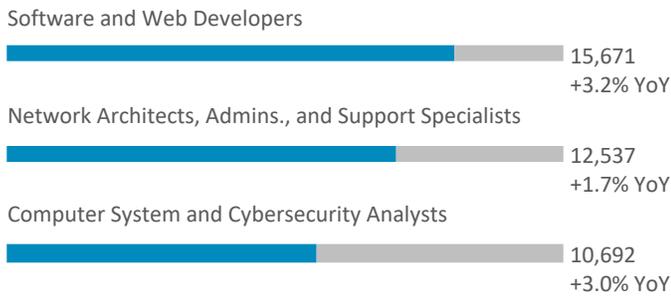
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	33,892	3.2%
R&D, Testing, and Engineering Services	20,658	1.4%
Telecommunications and Internet Services	15,328	-0.9%
Tech Manufacturing	13,943	-1.8%
Software [packaged]	2,350	4.3%

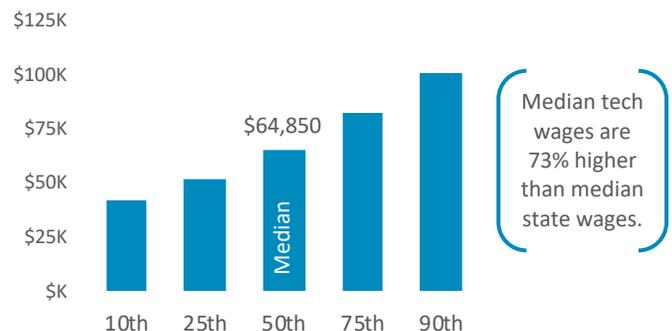
## ECONOMIC IMPACT



# 4.9%

Estimated direct contribution of the tech sector to the Indiana economy: \$16.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Iowa

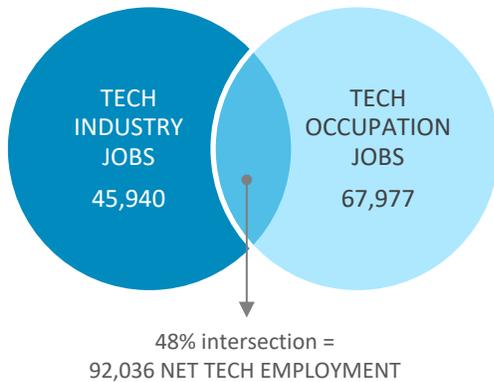


## STATE OF TECHNOLOGY SUMMARY

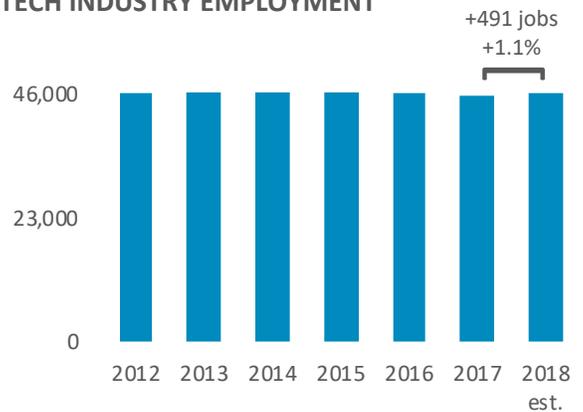
- 92,036 NET TECH EMPLOYMENT<sup>1</sup>
- 1,014 NET TECH JOB GAINS [2018 vs. 2017]
- 1.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,554 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 34,174 TECH OCCUPATION JOB POSTINGS [2018 total]
- 64% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 30<sup>th</sup> NET TECH EMPLOYMENT RANK
- 32<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 30<sup>th</sup> INNOVATION SCORE RANK

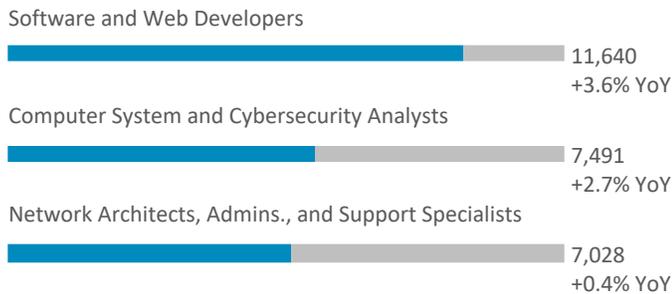
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	14,043	3.1%
Tech Manufacturing	11,690	-0.7%
Telecommunications and Internet Services	10,363	-1.5%
R&D, Testing, and Engineering Services	8,873	3.3%
Software [packaged]	971	2.8%

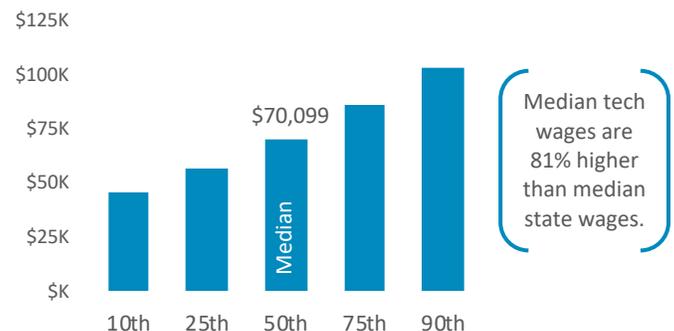
## ECONOMIC IMPACT



# 5.9%

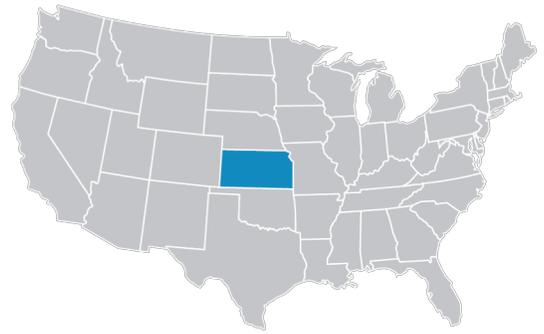
Estimated direct contribution of the tech sector to the Iowa economy: \$10.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Kansas

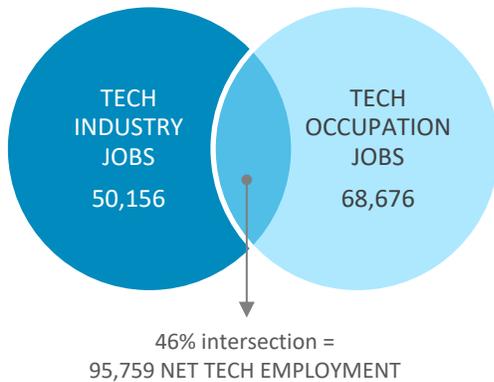


## STATE OF TECHNOLOGY SUMMARY

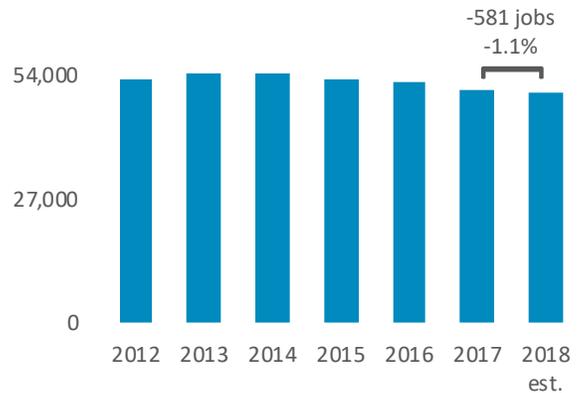
- 95,759 NET TECH EMPLOYMENT<sup>1</sup>
- 220 NET TECH JOB GAINS [2018 vs. 2017]
- 0.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,792 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 21,767 TECH OCCUPATION JOB POSTINGS [2018 total]
- 56% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 29<sup>th</sup> NET TECH EMPLOYMENT RANK
- 50<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 28<sup>th</sup> INNOVATION SCORE RANK

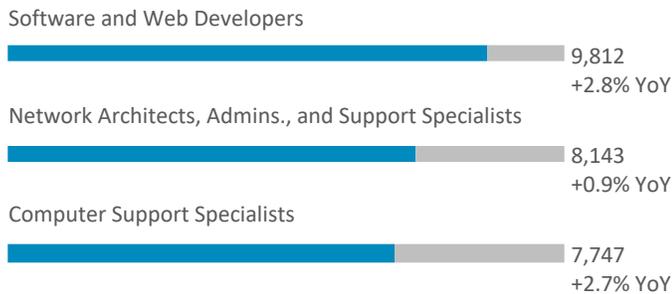
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	21,790	5.4%
R&D, Testing, and Engineering Services	14,294	-0.6%
Telecommunications and Internet Services	9,396	-11.4%
Tech Manufacturing	3,618	-8.0%
Software [packaged]	1,058	-6.7%

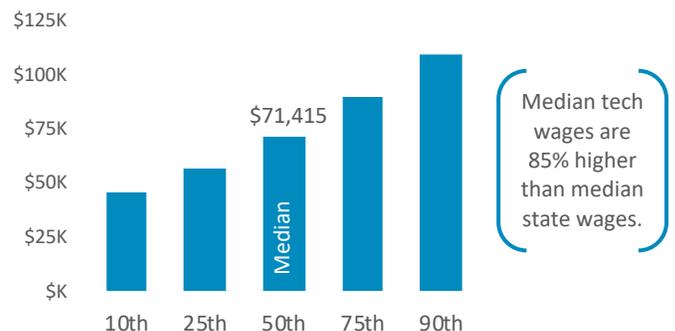
## ECONOMIC IMPACT



# 6.0%

Estimated direct contribution of the tech sector to the Kansas economy: \$9.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Kentucky

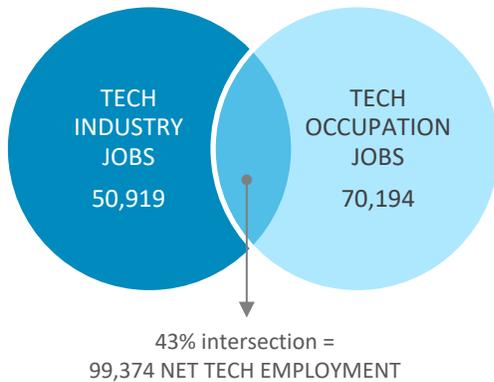


## STATE OF TECHNOLOGY SUMMARY

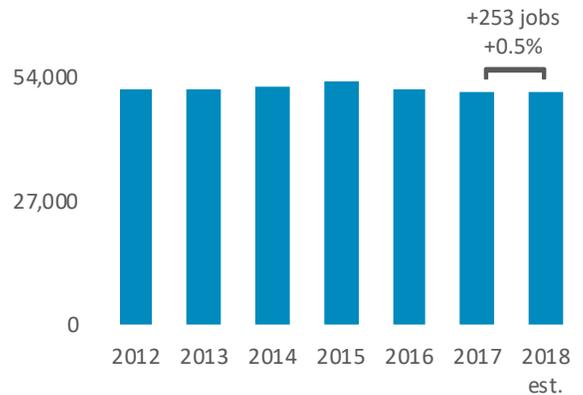
- 99,374 NET TECH EMPLOYMENT<sup>1</sup>
- 939 NET TECH JOB GAINS [2018 vs. 2017]
- 1.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,898 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 24,634 TECH OCCUPATION JOB POSTINGS [2018 total]
- 47% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 28<sup>th</sup> NET TECH EMPLOYMENT RANK
- 34<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 29<sup>th</sup> INNOVATION SCORE RANK

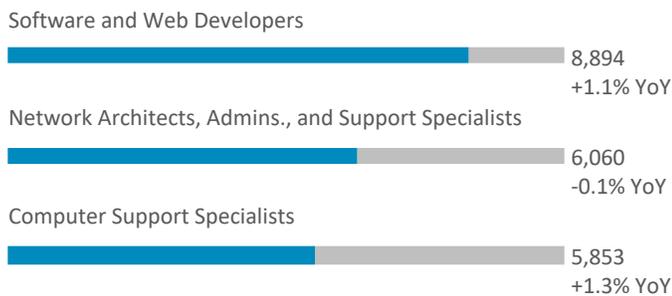
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	20,506	2.3%
Telecommunications and Internet Services	14,076	-0.9%
R&D, Testing, and Engineering Services	11,274	0.1%
Tech Manufacturing	4,660	-2.1%
Software [packaged]	402	4.9%

## ECONOMIC IMPACT



# 4.1%

Estimated direct contribution of the tech sector to the Kentucky economy: \$7.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Louisiana

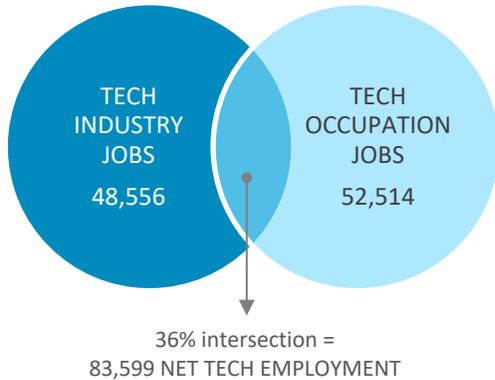


## STATE OF TECHNOLOGY SUMMARY

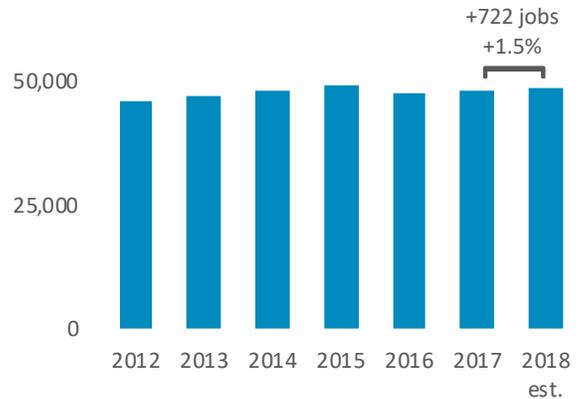
- 83,599 NET TECH EMPLOYMENT<sup>1</sup>
- 128 NET TECH JOB GAINS [2018 vs. 2017]
- 0.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,361 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 19,141 TECH OCCUPATION JOB POSTINGS [2018 total]
- 73% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 32<sup>nd</sup> NET TECH EMPLOYMENT RANK
- 40<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 32<sup>nd</sup> INNOVATION SCORE RANK

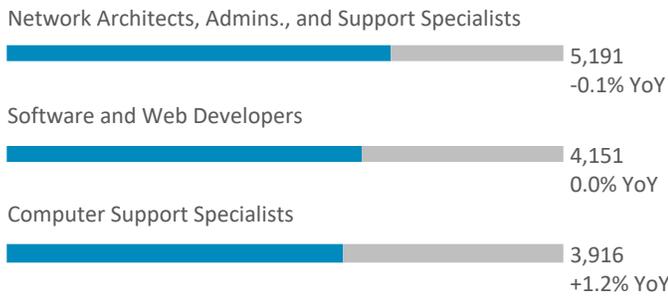
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	19,707	-1.7%
IT Services + Custom Software Services	13,714	4.8%
Telecommunications and Internet Services	12,228	3.0%
Tech Manufacturing	2,271	0.8%
Software [packaged]	637	7.5%

## ECONOMIC IMPACT



# 3.6%

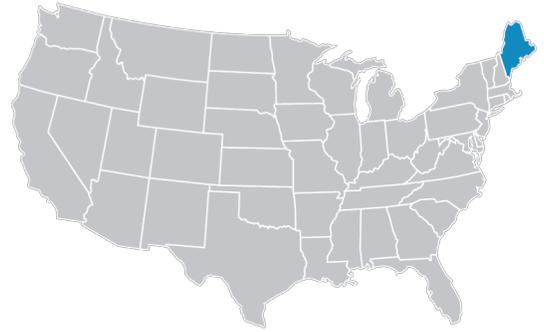
Estimated direct contribution of the tech sector to the Louisiana economy: \$8.2 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Maine

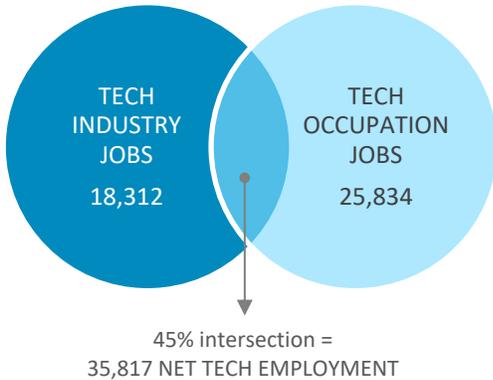


## STATE OF TECHNOLOGY SUMMARY

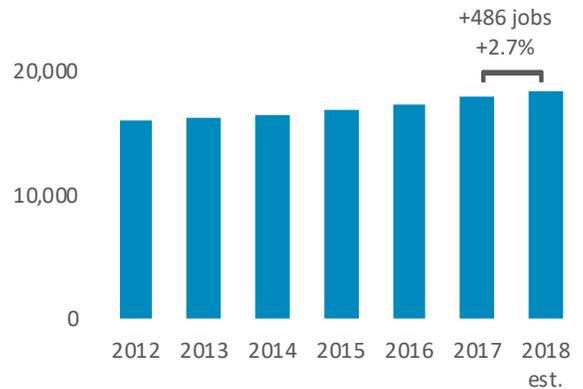
- 35,817 NET TECH EMPLOYMENT<sup>1</sup>
- 588 NET TECH JOB GAINS [2018 vs. 2017]
- 1.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,752 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 6,272 TECH OCCUPATION JOB POSTINGS [2018 total]
- 56% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 41<sup>st</sup> NET TECH EMPLOYMENT RANK
- 36<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 43<sup>rd</sup> INNOVATION SCORE RANK

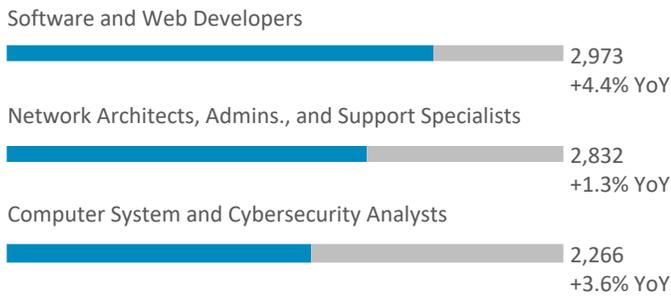
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	6,617	4.4%
R&D, Testing, and Engineering Services	6,258	3.6%
Telecommunications and Internet Services	2,767	-2.7%
Tech Manufacturing	2,316	0.9%
Software [packaged]	354	15.0%

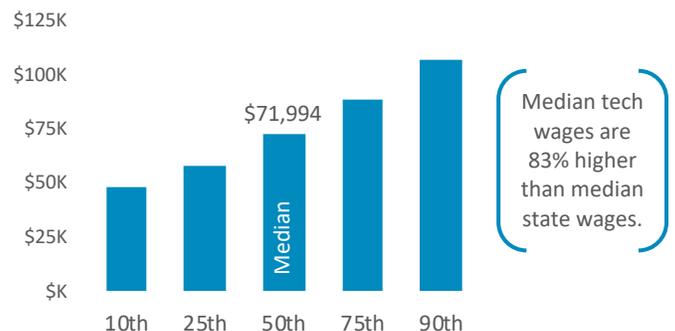
## ECONOMIC IMPACT



# 5.0%

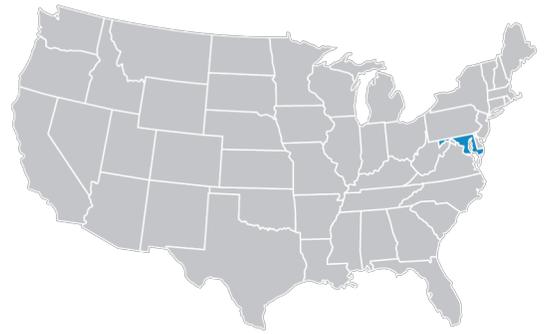
Estimated direct contribution of the tech sector to the Maine economy: \$2.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Maryland

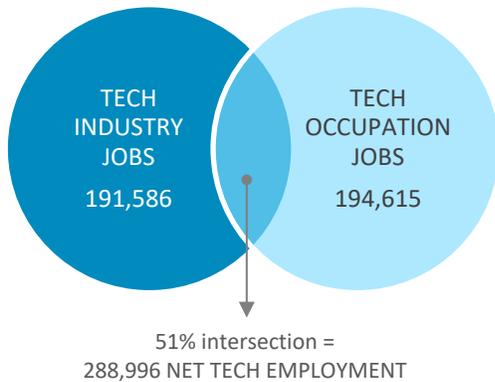


## STATE OF TECHNOLOGY SUMMARY

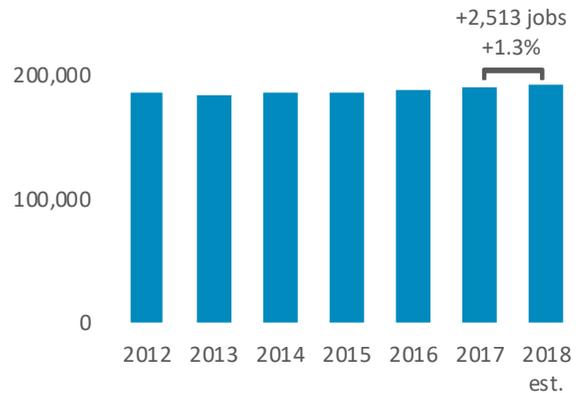
- 288,996 NET TECH EMPLOYMENT<sup>1</sup>
- 3,725 NET TECH JOB GAINS [2018 vs. 2017]
- 1.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 15,279 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 96,279 TECH OCCUPATION JOB POSTINGS [2018 total]
- 53% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 16<sup>th</sup> NET TECH EMPLOYMENT RANK
- 23<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 14<sup>th</sup> INNOVATION SCORE RANK

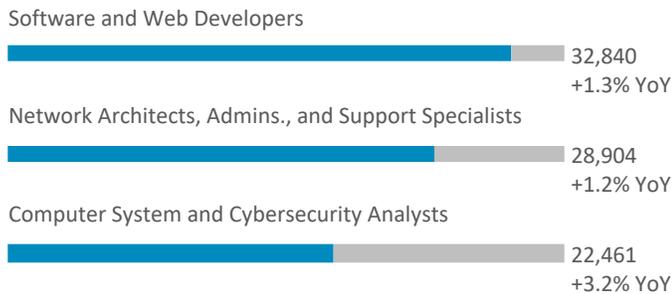
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	83,745	1.8%
R&D, Testing, and Engineering Services	63,903	1.3%
Tech Manufacturing	20,191	2.4%
Telecommunications and Internet Services	19,172	-2.5%
Software [packaged]	4,575	5.2%

## ECONOMIC IMPACT



# 11.7%

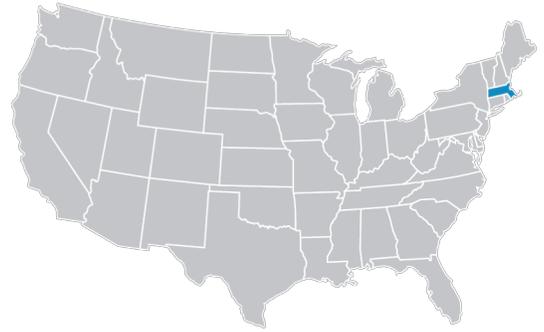
Estimated direct contribution of the tech sector to the Maryland economy: \$41.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Massachusetts

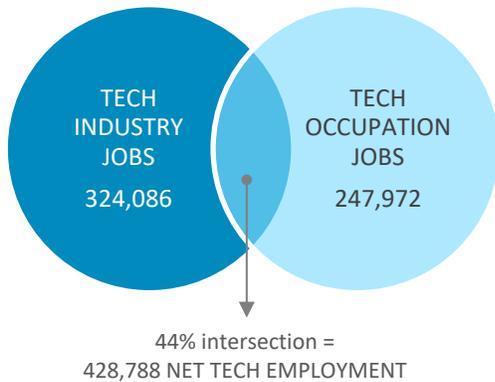


## STATE OF TECHNOLOGY SUMMARY

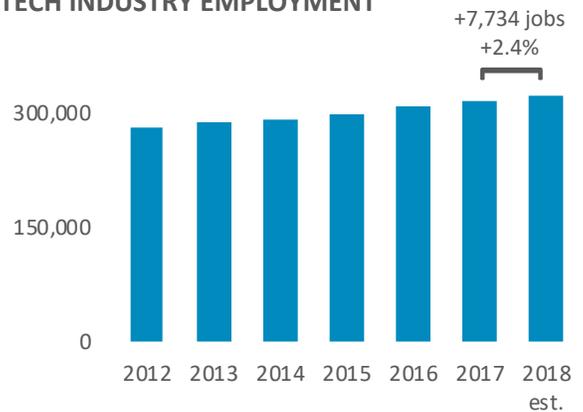
- 428,788 NET TECH EMPLOYMENT<sup>1</sup>
- 11,175 NET TECH JOB GAINS [2018 vs. 2017]
- 2.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 11.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 17,381 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 129,762 TECH OCCUPATION JOB POSTINGS [2018 total]
- 80% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 8<sup>th</sup> NET TECH EMPLOYMENT RANK
- 9<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 8<sup>th</sup> INNOVATION SCORE RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	98,237	2.7%
R&D, Testing, and Engineering Services	95,586	4.6%
Tech Manufacturing	62,081	-1.4%
Telecommunications and Internet Services	36,122	1.7%
Software [packaged]	32,059	3.8%

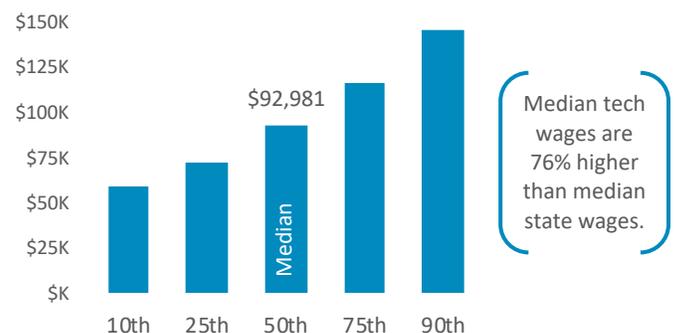
## ECONOMIC IMPACT



# 17.3%

Estimated direct contribution of the tech sector to the Massachusetts economy: \$87.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Michigan

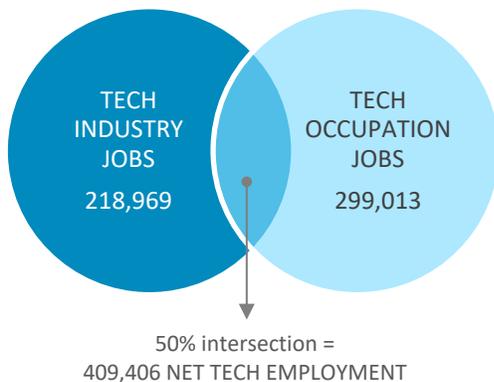


## STATE OF TECHNOLOGY SUMMARY

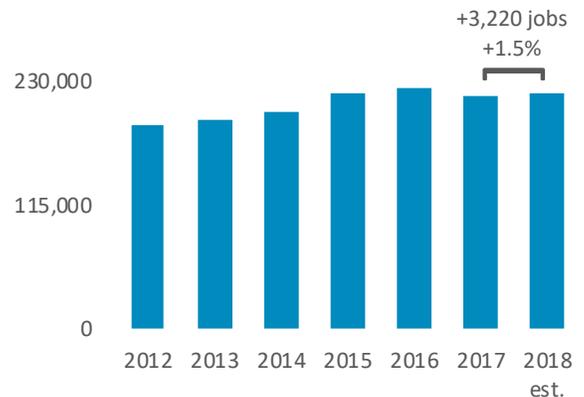
- 409,406 NET TECH EMPLOYMENT<sup>1</sup>
- 12,354 NET TECH JOB GAINS [2018 vs. 2017]
- 3.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 11,587 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 121,498 TECH OCCUPATION JOB POSTINGS [2018 total]
- 33% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 9<sup>th</sup> NET TECH EMPLOYMENT RANK
- 7<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 21<sup>st</sup> INNOVATION SCORE RANK

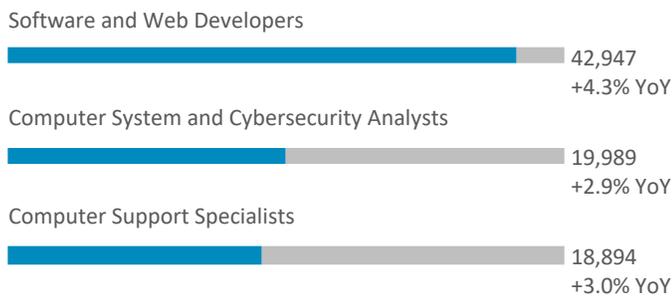
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	99,696	0.6%
IT Services + Custom Software Services	63,998	2.8%
Telecommunications and Internet Services	27,048	0.2%
Tech Manufacturing	21,808	3.8%
Software [packaged]	6,420	1.4%

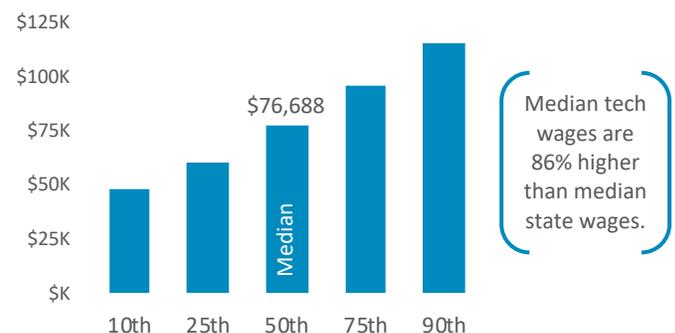
## ECONOMIC IMPACT



# 7.8%

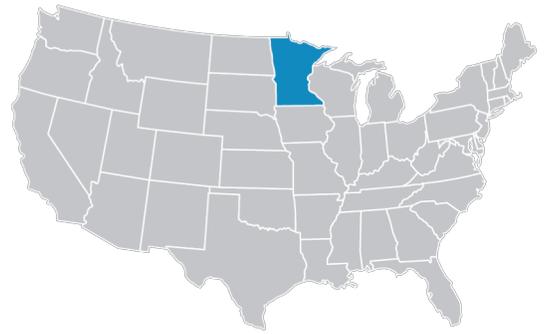
Estimated direct contribution of the tech sector to the Michigan economy: \$37.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Minnesota

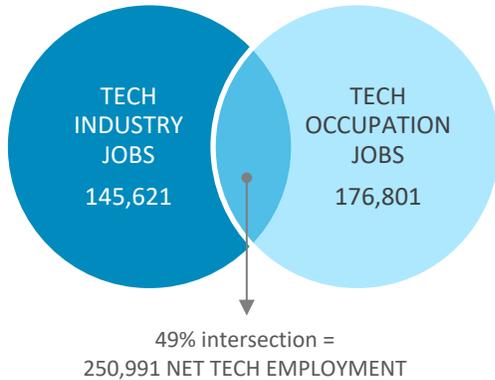


## STATE OF TECHNOLOGY SUMMARY

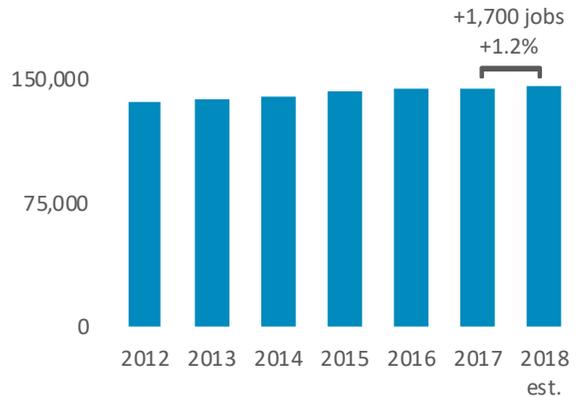
- 250,991 NET TECH EMPLOYMENT<sup>1</sup>
- 4,856 NET TECH JOB GAINS [2018 vs. 2017]
- 2.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 10,446 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 80,882 TECH OCCUPATION JOB POSTINGS [2018 total]
- 73% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 17<sup>th</sup> NET TECH EMPLOYMENT RANK
- 18<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 22<sup>nd</sup> INNOVATION SCORE RANK

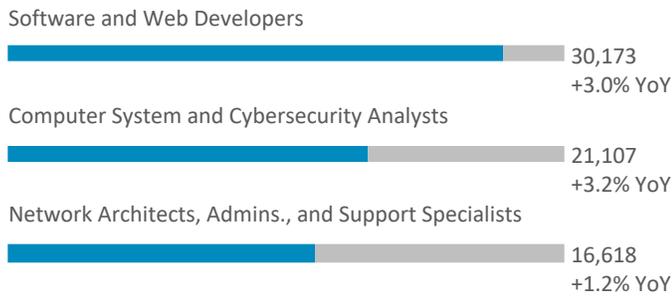
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
Tech Manufacturing	45,273	-0.2%
IT Services + Custom Software Services	45,051	1.2%
R&D, Testing, and Engineering Services	25,700	2.3%
Telecommunications and Internet Services	22,434	2.0%
Software [packaged]	7,164	3.5%

## ECONOMIC IMPACT



# 9.3%

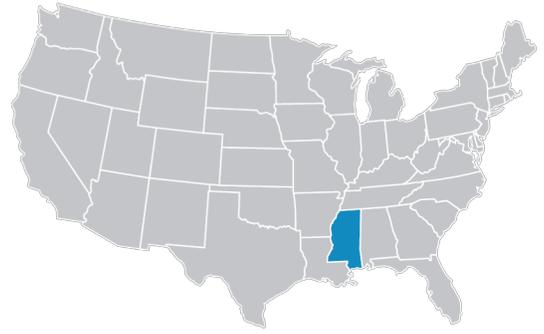
Estimated direct contribution of the tech sector to the Minnesota economy: \$31.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Mississippi

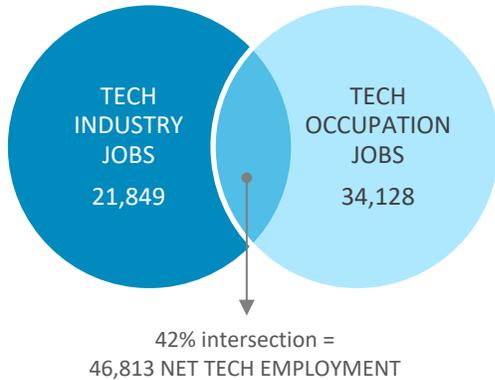


## STATE OF TECHNOLOGY SUMMARY

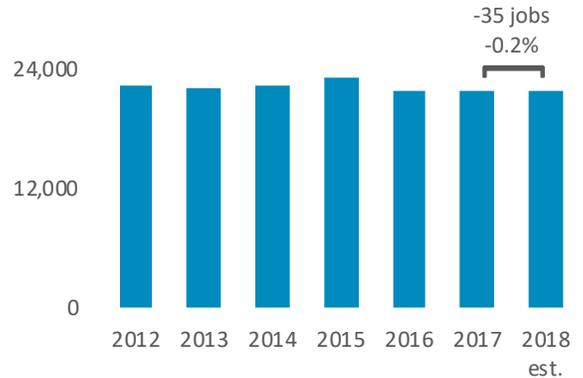
- 46,813 NET TECH EMPLOYMENT<sup>1</sup>
- 283 NET TECH JOB GAINS [2018 vs. 2017]
- 0.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 3.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,130 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 7,295 TECH OCCUPATION JOB POSTINGS [2018 total]
- 59% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 40<sup>th</sup> NET TECH EMPLOYMENT RANK
- 39<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 41<sup>st</sup> INNOVATION SCORE RANK

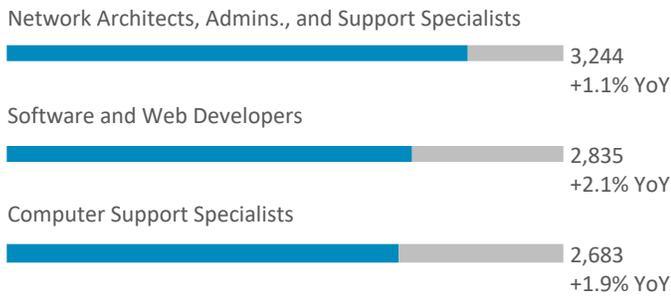
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	7,153	6.4%
Telecommunications and Internet Services	6,716	-4.1%
R&D, Testing, and Engineering Services	5,352	-3.5%
Tech Manufacturing	2,352	0.5%
Software [packaged]	276	3.7%

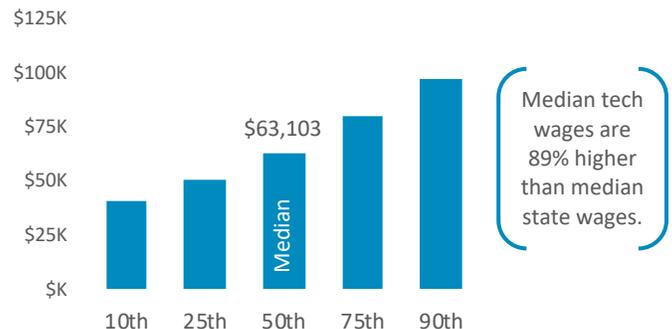
## ECONOMIC IMPACT



# 3.7%

Estimated direct contribution of the tech sector to the Mississippi economy: \$3.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Missouri

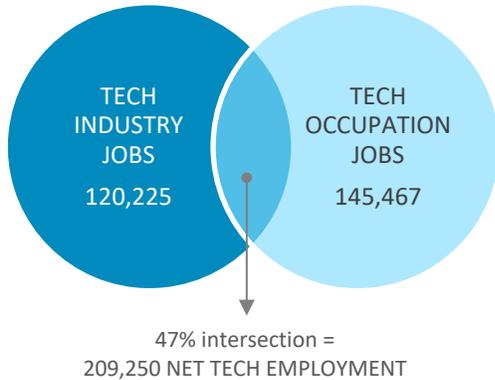


## STATE OF TECHNOLOGY SUMMARY

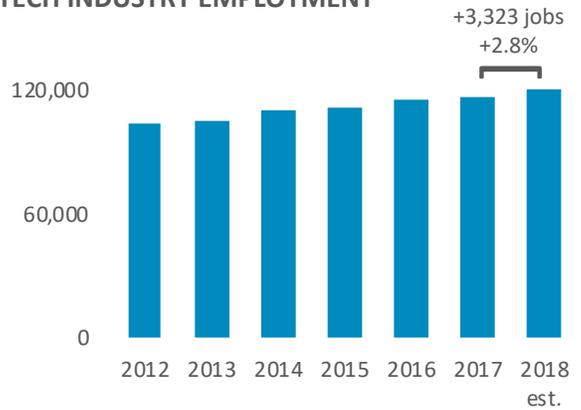
- 209,250 NET TECH EMPLOYMENT<sup>1</sup>
- 5,736 NET TECH JOB GAINS [2018 vs. 2017]
- 2.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,995 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 62,728 TECH OCCUPATION JOB POSTINGS [2018 total]
- 70% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 20<sup>th</sup> NET TECH EMPLOYMENT RANK
- 16<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 18<sup>th</sup> INNOVATION SCORE RANK

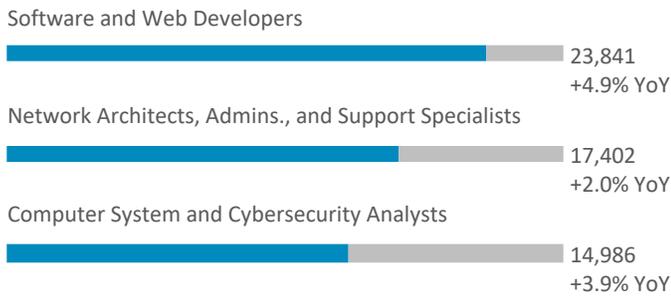
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	49,755	5.4%
Telecommunications and Internet Services	29,353	-1.0%
R&D, Testing, and Engineering Services	26,285	1.1%
Tech Manufacturing	12,071	5.7%
Software [packaged]	2,762	5.5%

## ECONOMIC IMPACT



# 7.6%

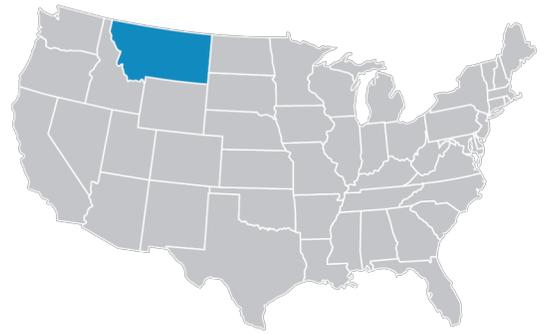
Estimated direct contribution of the tech sector to the Missouri economy: \$22.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Montana

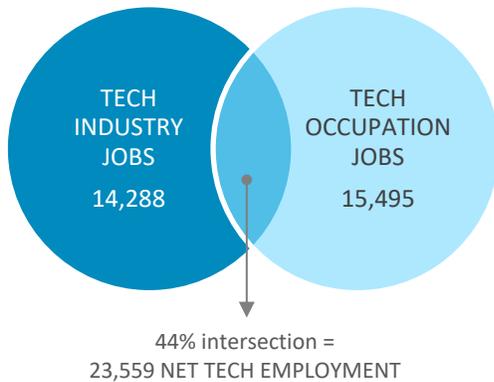


## STATE OF TECHNOLOGY SUMMARY

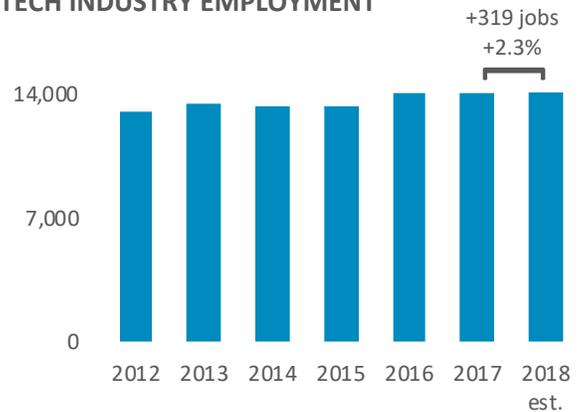
- 23,559 NET TECH EMPLOYMENT<sup>1</sup>
- 501 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,341 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 3,291 TECH OCCUPATION JOB POSTINGS [2018 total]
- 85% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 46<sup>th</sup> NET TECH EMPLOYMENT RANK
- 38<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 38<sup>th</sup> INNOVATION SCORE RANK

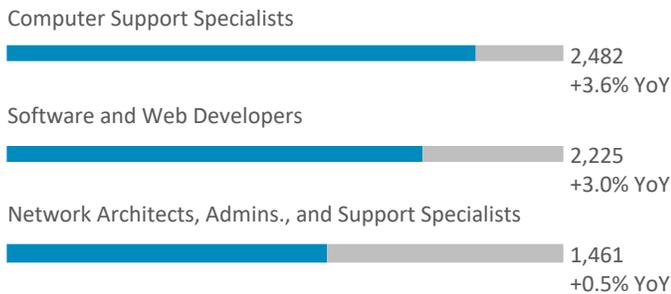
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	5,540	4.1%
R&D, Testing, and Engineering Services	4,383	1.2%
Telecommunications and Internet Services	2,876	-1.8%
Tech Manufacturing	1,132	4.4%
Software [packaged]	355	16.6%

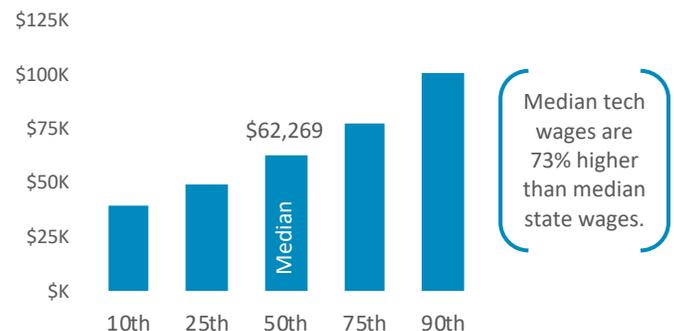
## ECONOMIC IMPACT



# 4.5%

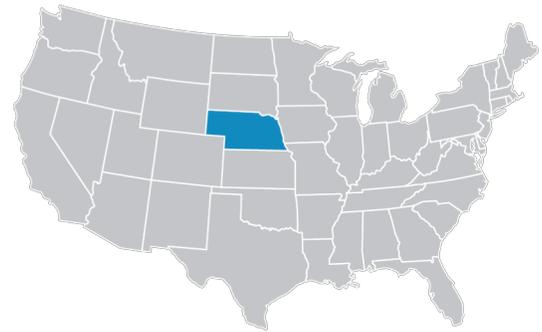
Estimated direct contribution of the tech sector to the Montana economy: \$2.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Nebraska

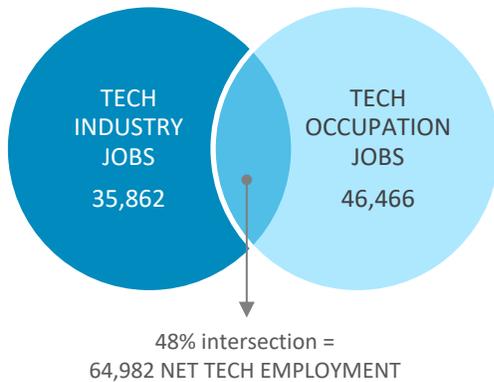


## STATE OF TECHNOLOGY SUMMARY

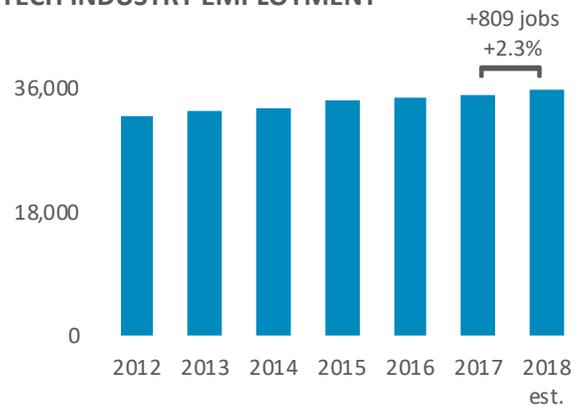
- 64,982 NET TECH EMPLOYMENT<sup>1</sup>
- 1,391 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,353 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 21,824 TECH OCCUPATION JOB POSTINGS [2018 total]
- 126% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 37<sup>th</sup> NET TECH EMPLOYMENT RANK
- 29<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 40<sup>th</sup> INNOVATION SCORE RANK

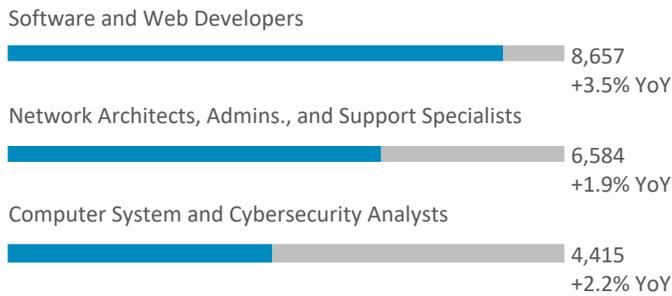
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	14,257	2.0%
Telecommunications and Internet Services	9,474	2.4%
R&D, Testing, and Engineering Services	6,562	3.1%
Tech Manufacturing	4,194	-0.2%
Software [packaged]	1,376	9.6%

## ECONOMIC IMPACT



# 6.4%

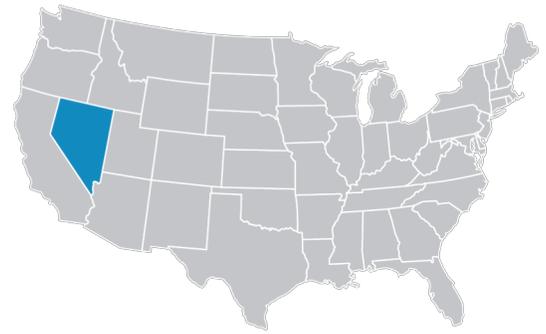
Estimated direct contribution of the tech sector to the Nebraska economy: \$7.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Nevada

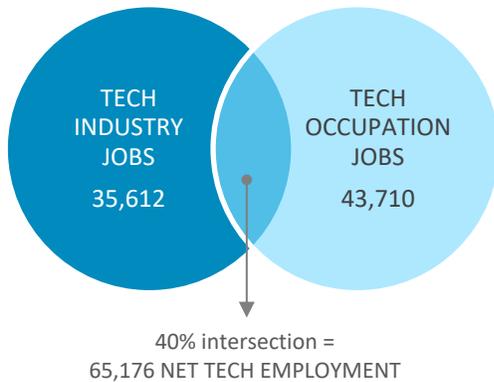


## STATE OF TECHNOLOGY SUMMARY

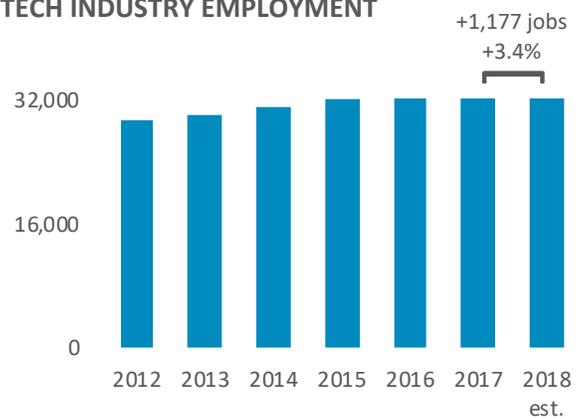
- 65,176 NET TECH EMPLOYMENT<sup>1</sup>
- 2,489 NET TECH JOB GAINS [2018 vs. 2017]
- 4.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,827 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 22,672 TECH OCCUPATION JOB POSTINGS [2018 total]
- 122% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 36<sup>th</sup> NET TECH EMPLOYMENT RANK
- 26<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 27<sup>th</sup> INNOVATION SCORE RANK

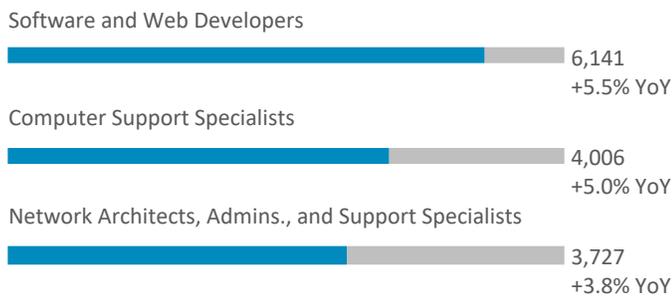
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	12,840	2.0%
IT Services + Custom Software Services	10,809	3.7%
Telecommunications and Internet Services	7,531	4.2%
Tech Manufacturing	3,155	4.6%
Software [packaged]	1,277	9.0%

## ECONOMIC IMPACT



# 4.8%

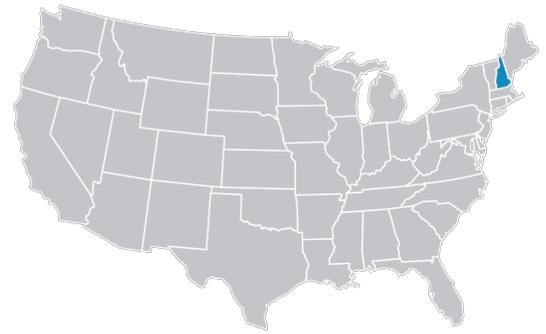
Estimated direct contribution of the tech sector to the Nevada economy: \$7.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New Hampshire

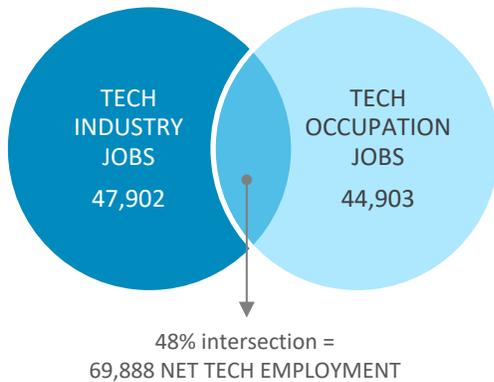


## STATE OF TECHNOLOGY SUMMARY

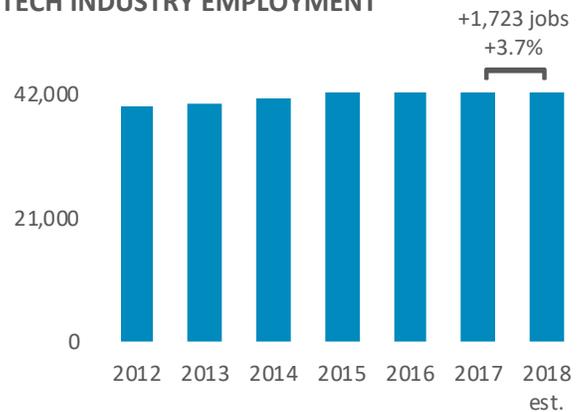
- 69,888 NET TECH EMPLOYMENT<sup>1</sup>
- 2,819 NET TECH JOB GAINS [2018 vs. 2017]
- 4.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,269 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 12,135 TECH OCCUPATION JOB POSTINGS [2018 total]
- 15% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 34<sup>th</sup> NET TECH EMPLOYMENT RANK
- 25<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 31<sup>st</sup> INNOVATION SCORE RANK

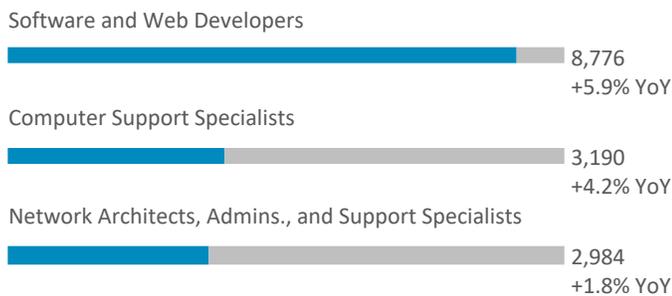
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	15,921	8.0%
Tech Manufacturing	15,473	1.2%
R&D, Testing, and Engineering Services	6,955	2.8%
Telecommunications and Internet Services	6,148	1.6%
Software [packaged]	3,404	2.3%

## ECONOMIC IMPACT



# 13.8%

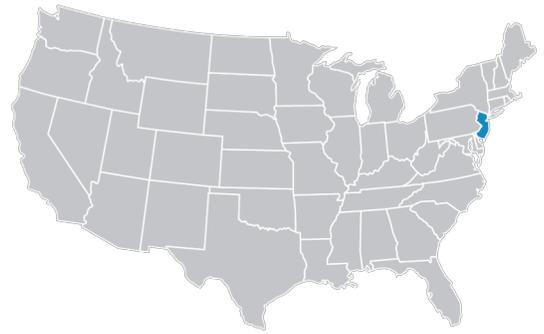
Estimated direct contribution of the tech sector to the New Hampshire economy: \$10.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New Jersey

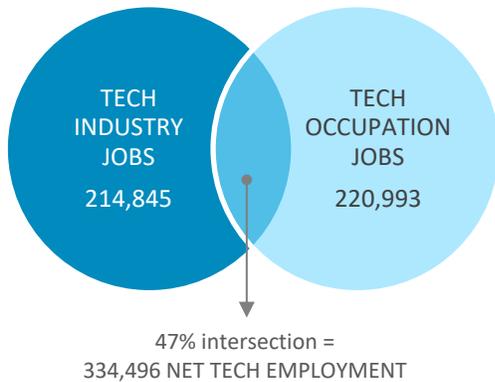


## STATE OF TECHNOLOGY SUMMARY

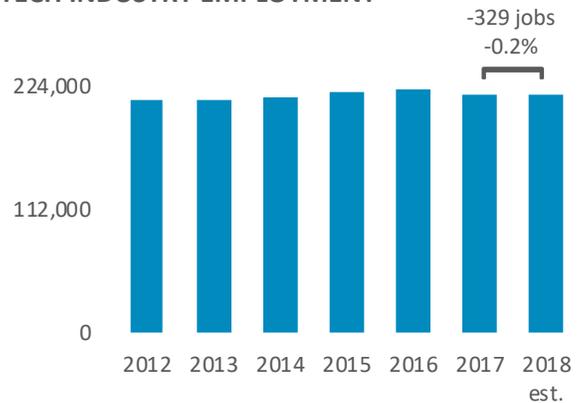
- 334,496 NET TECH EMPLOYMENT<sup>1</sup>
- 1,069 NET TECH JOB GAINS [2018 vs. 2017]
- 0.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 15,594 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 122,218 TECH OCCUPATION JOB POSTINGS [2018 total]
- 38% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 14<sup>th</sup> NET TECH EMPLOYMENT RANK
- 31<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 19<sup>th</sup> INNOVATION SCORE RANK

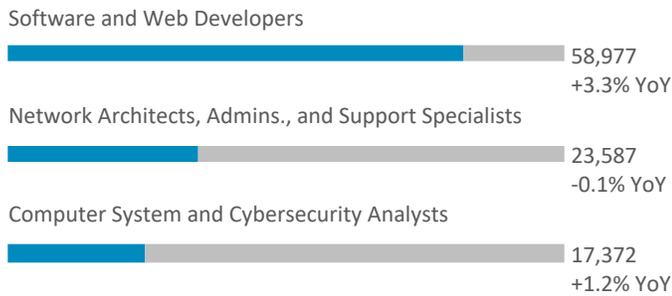
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	86,776	0.0%
R&D, Testing, and Engineering Services	59,212	0.1%
Telecommunications and Internet Services	38,751	-2.3%
Tech Manufacturing	23,348	0.5%
Software [packaged]	6,758	5.6%

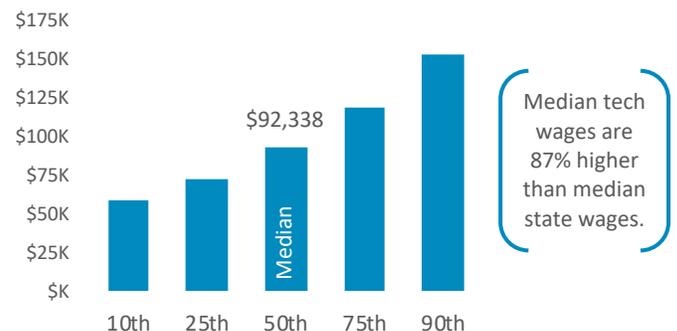
## ECONOMIC IMPACT



# 10.0%

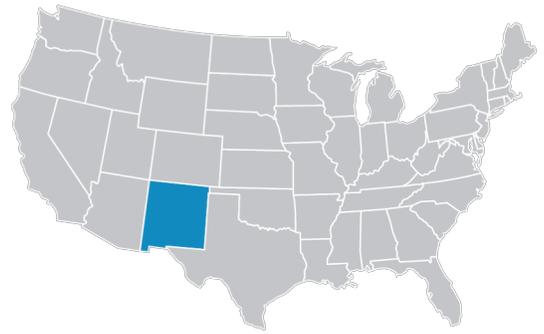
Estimated direct contribution of the tech sector to the New Jersey economy: \$56.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New Mexico

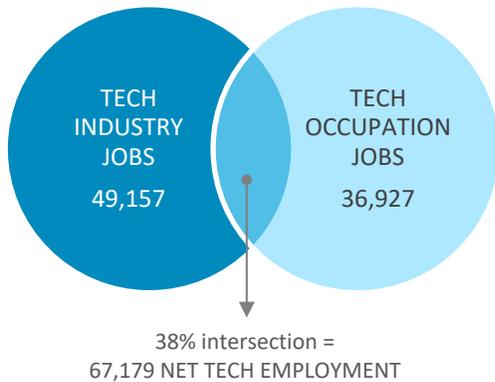


## STATE OF TECHNOLOGY SUMMARY

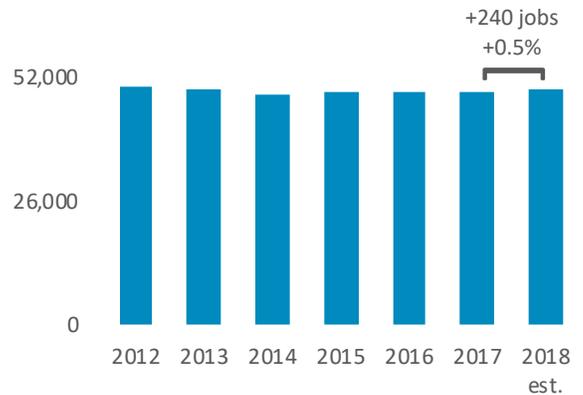
- 67,179 NET TECH EMPLOYMENT<sup>1</sup>
- 3 NET TECH JOB GAINS [2018 vs. 2017]
- 0.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,048 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 13,527 TECH OCCUPATION JOB POSTINGS [2018 total]
- 51% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 35<sup>th</sup> NET TECH EMPLOYMENT RANK
- 44<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 33<sup>rd</sup> INNOVATION SCORE RANK

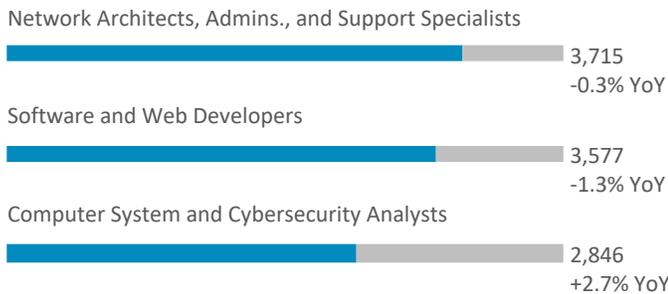
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	31,158	1.7%
IT Services + Custom Software Services	6,952	2.0%
Telecommunications and Internet Services	6,184	-0.8%
Tech Manufacturing	4,573	-8.1%
Software [packaged]	290	7.4%

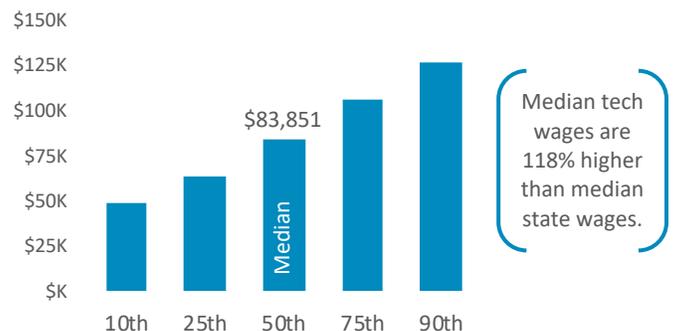
## ECONOMIC IMPACT



# 10.4%

Estimated direct contribution of the tech sector to the New Mexico economy: \$9.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New York

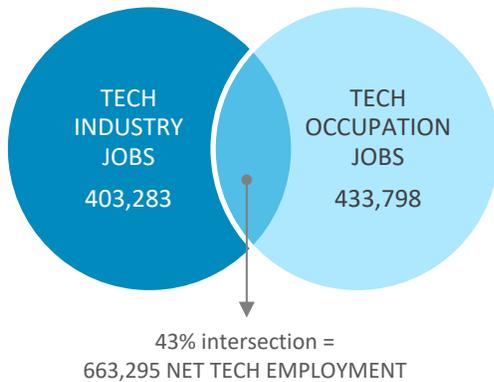


## STATE OF TECHNOLOGY SUMMARY

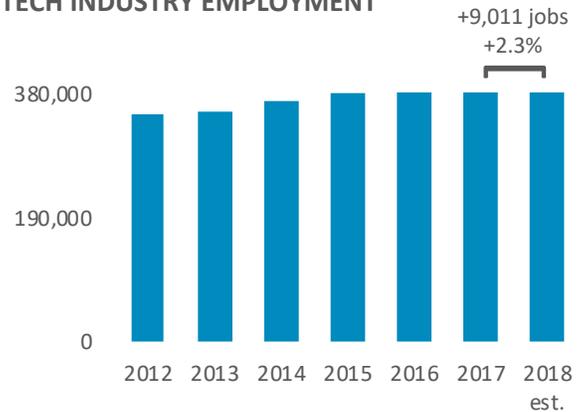
- 663,295 NET TECH EMPLOYMENT<sup>1</sup>
- 13,732 NET TECH JOB GAINS [2018 vs. 2017]
- 2.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 26,312 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 204,000 TECH OCCUPATION JOB POSTINGS [2018 total]
- 51% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 3<sup>rd</sup> NET TECH EMPLOYMENT RANK
- 5<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 2<sup>nd</sup> INNOVATION SCORE RANK

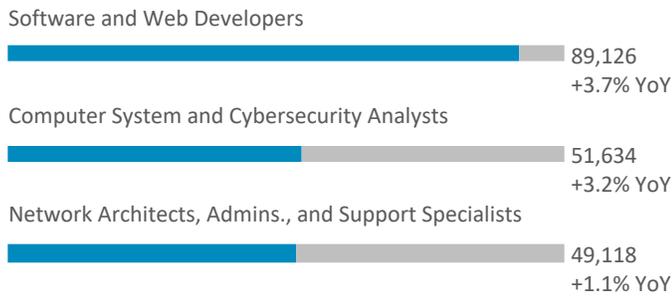
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	139,808	2.2%
Telecommunications and Internet Services	103,464	3.1%
R&D, Testing, and Engineering Services	87,828	1.4%
Tech Manufacturing	58,791	0.2%
Software [packaged]	13,392	13.6%

## ECONOMIC IMPACT



# 8.1%

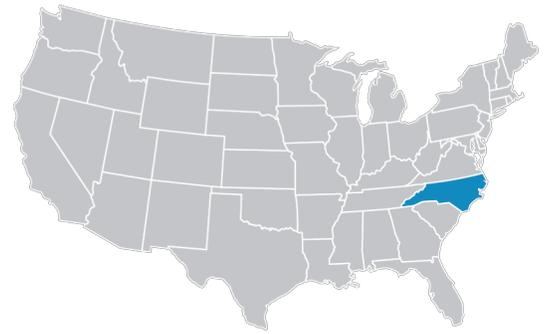
Estimated direct contribution of the tech sector to the New York economy: \$118.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# North Carolina

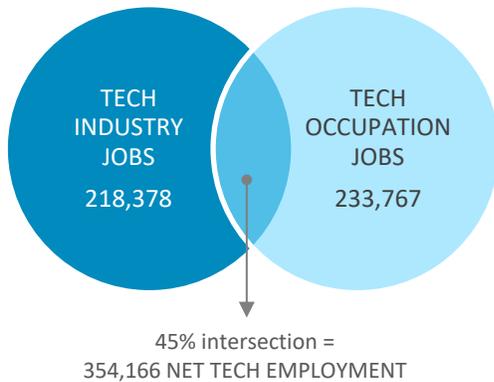


## STATE OF TECHNOLOGY SUMMARY

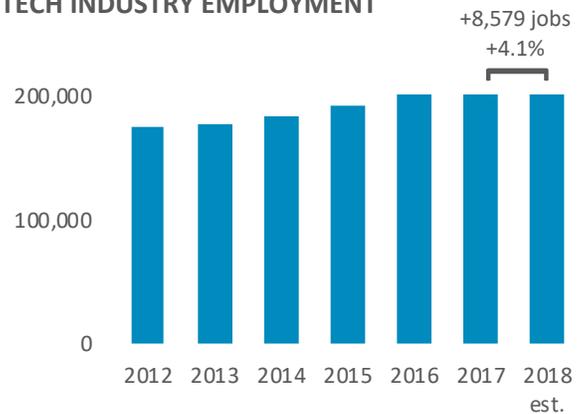
- 354,166 NET TECH EMPLOYMENT<sup>1</sup>
- 13,773 NET TECH JOB GAINS [2018 vs. 2017]
- 4.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 17,938 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 138,802 TECH OCCUPATION JOB POSTINGS [2018 total]
- 117% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 13<sup>th</sup> NET TECH EMPLOYMENT RANK
- 4<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 6<sup>th</sup> INNOVATION SCORE RANK

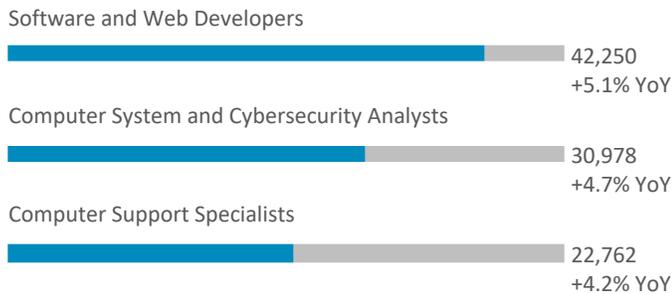
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	72,241	5.0%
R&D, Testing, and Engineering Services	51,748	4.9%
Telecommunications and Internet Services	44,234	2.1%
Tech Manufacturing	33,147	1.7%
Software [packaged]	17,008	8.0%

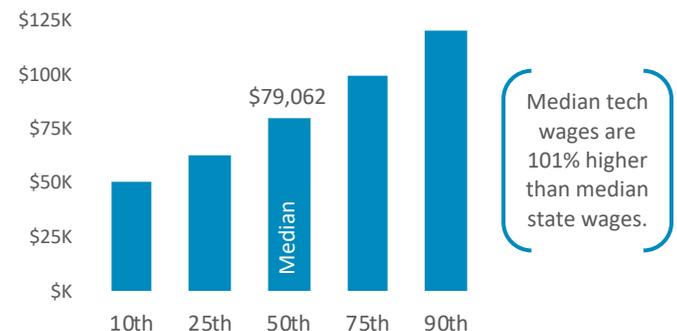
## ECONOMIC IMPACT



# 9.3%

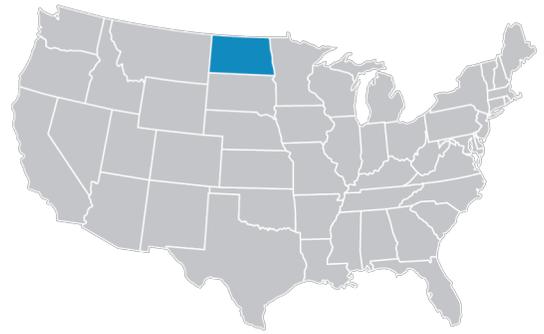
Estimated direct contribution of the tech sector to the North Carolina economy: \$46.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# North Dakota

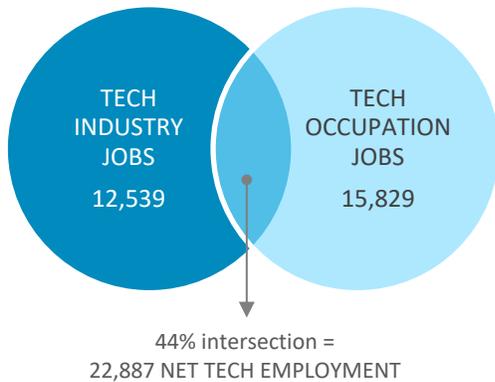


## STATE OF TECHNOLOGY SUMMARY

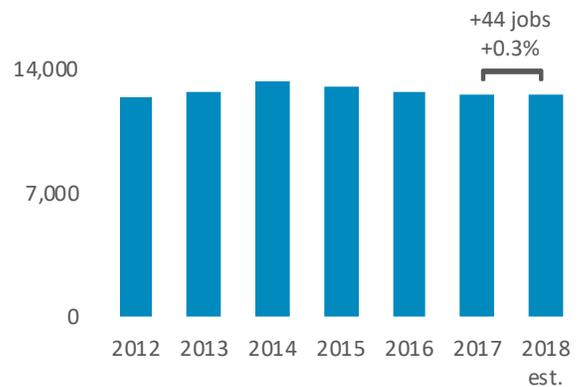
- 22,887 NET TECH EMPLOYMENT<sup>1</sup>
- 36 NET TECH JOB GAINS [2018 vs. 2017]
- 0.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,279 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 4,012 TECH OCCUPATION JOB POSTINGS [2018 total]
- 95% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 47<sup>th</sup> NET TECH EMPLOYMENT RANK
- 43<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 46<sup>th</sup> INNOVATION SCORE RANK

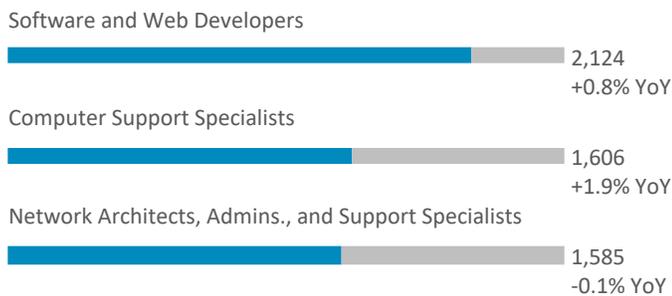
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	4,144	-0.8%
IT Services + Custom Software Services	3,387	2.4%
Telecommunications and Internet Services	2,316	-1.6%
Software [packaged]	1,466	3.4%
Tech Manufacturing	1,225	-1.1%

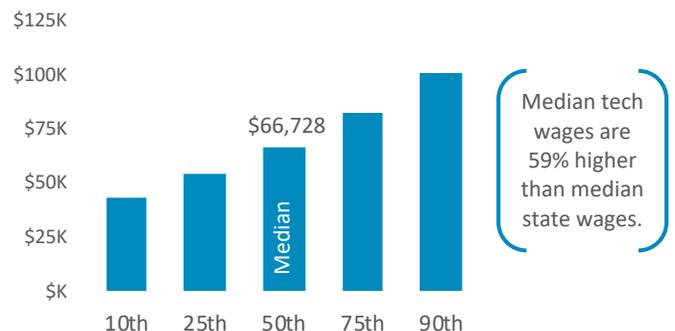
## ECONOMIC IMPACT



# 4.3%

Estimated direct contribution of the tech sector to the North Dakota economy: \$2.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Ohio

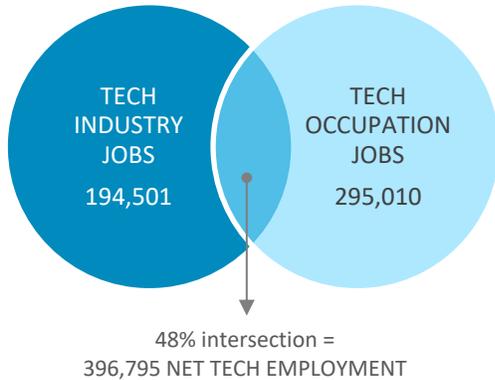


## STATE OF TECHNOLOGY SUMMARY

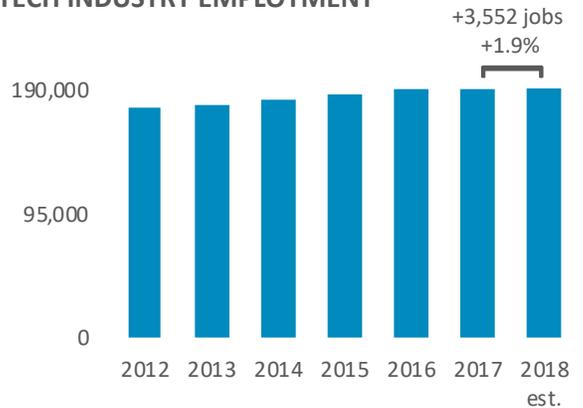
- 396,795 NET TECH EMPLOYMENT<sup>1</sup>
- 9,248 NET TECH JOB GAINS [2018 vs. 2017]
- 2.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 16,440 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 122,469 TECH OCCUPATION JOB POSTINGS [2018 total]
- 103% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 10<sup>th</sup> NET TECH EMPLOYMENT RANK
- 10<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 13<sup>th</sup> INNOVATION SCORE RANK

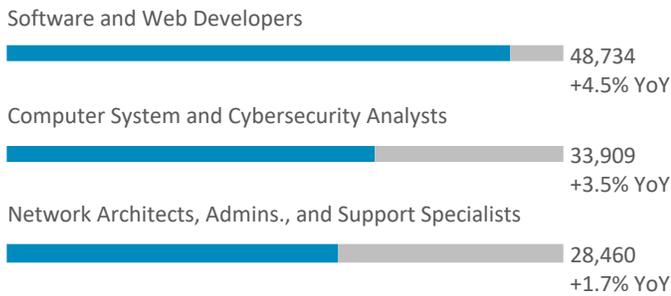
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	76,406	2.2%
R&D, Testing, and Engineering Services	52,606	1.6%
Telecommunications and Internet Services	37,371	0.6%
Tech Manufacturing	21,233	2.9%
Software [packaged]	6,884	4.2%

## ECONOMIC IMPACT



# 5.8%

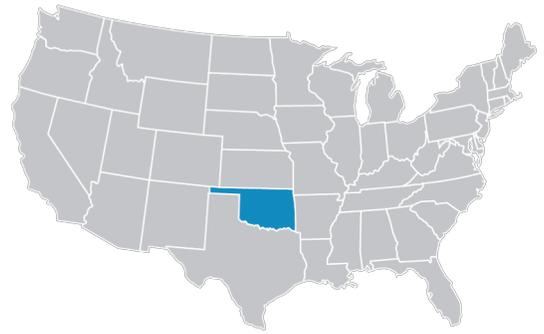
Estimated direct contribution of the tech sector to the Ohio economy: \$34.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Oklahoma

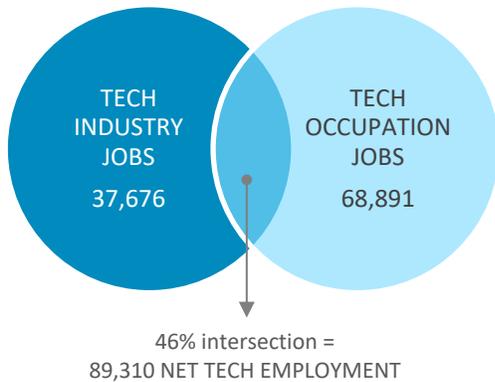


## STATE OF TECHNOLOGY SUMMARY

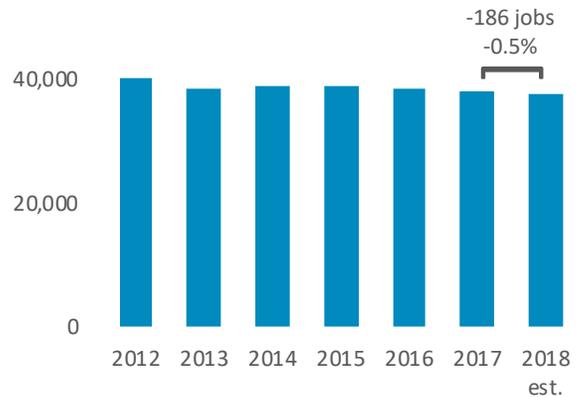
- 89,310 NET TECH EMPLOYMENT<sup>1</sup>
- 264 NET TECH JOB GAINS [2018 vs. 2017]
- 0.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,186 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 26,115 TECH OCCUPATION JOB POSTINGS [2018 total]
- 149% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 31<sup>st</sup> NET TECH EMPLOYMENT RANK
- 51<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 34<sup>th</sup> INNOVATION SCORE RANK

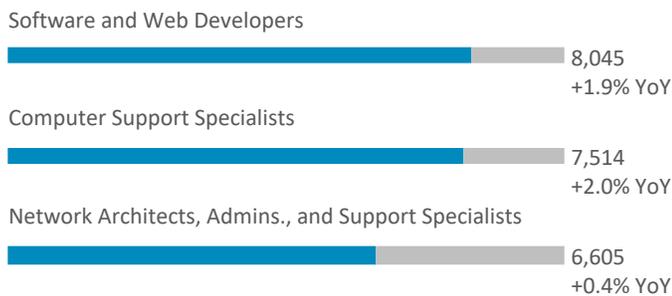
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	12,063	1.8%
Telecommunications and Internet Services	10,712	-2.4%
R&D, Testing, and Engineering Services	9,857	-1.0%
Tech Manufacturing	4,283	-1.0%
Software [packaged]	761	0.8%

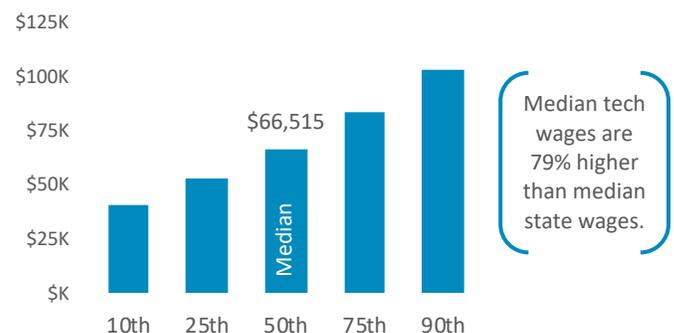
## ECONOMIC IMPACT



# 3.7%

Estimated direct contribution of the tech sector to the Oklahoma economy: \$6.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Oregon

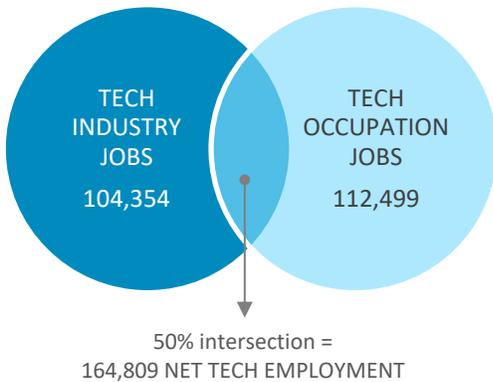


## STATE OF TECHNOLOGY SUMMARY

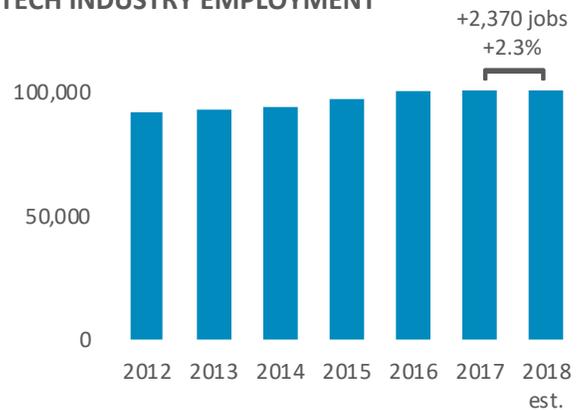
- 164,809 NET TECH EMPLOYMENT<sup>1</sup>
- 4,801 NET TECH JOB GAINS [2018 vs. 2017]
- 3.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 7,509 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 48,384 TECH OCCUPATION JOB POSTINGS [2018 total]
- 61% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 23<sup>rd</sup> NET TECH EMPLOYMENT RANK
- 19<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 16<sup>th</sup> INNOVATION SCORE RANK

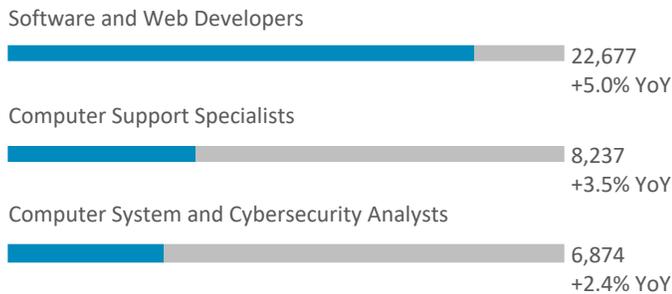
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
Tech Manufacturing	39,747	0.2%
IT Services + Custom Software Services	23,847	3.9%
R&D, Testing, and Engineering Services	16,854	4.6%
Telecommunications and Internet Services	12,360	2.2%
Software [packaged]	11,546	3.5%

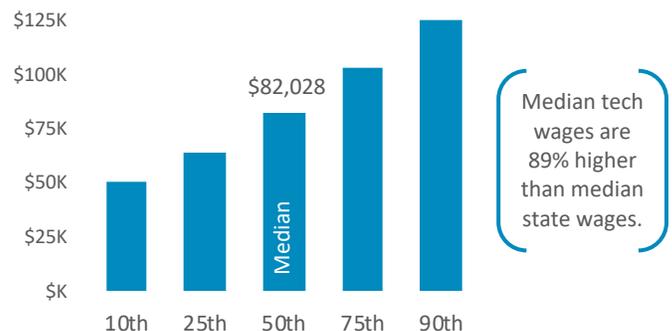
## ECONOMIC IMPACT



# 12.4%

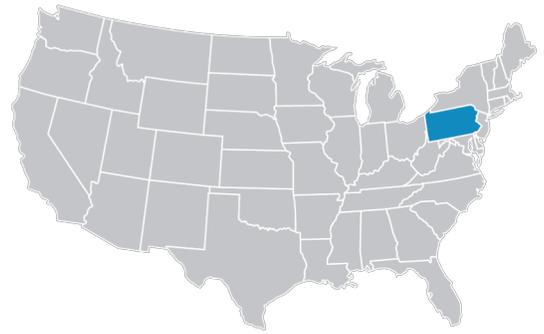
Estimated direct contribution of the tech sector to the Oregon economy: \$27.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Pennsylvania

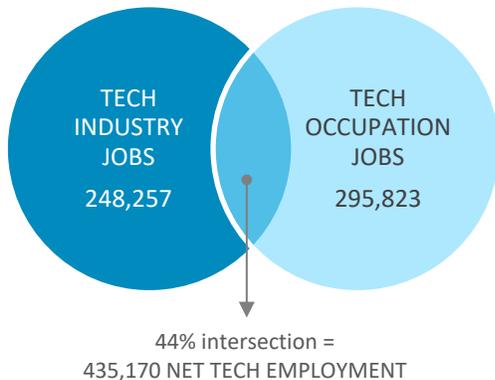


## STATE OF TECHNOLOGY SUMMARY

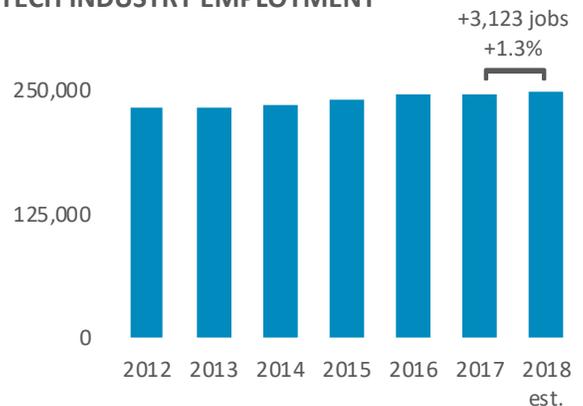
- 435,170 NET TECH EMPLOYMENT<sup>1</sup>
- 6,215 NET TECH JOB GAINS [2018 vs. 2017]
- 1.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 17,021 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 116,630 TECH OCCUPATION JOB POSTINGS [2018 total]
- 70% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 7<sup>th</sup> NET TECH EMPLOYMENT RANK
- 13<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 12<sup>th</sup> INNOVATION SCORE RANK

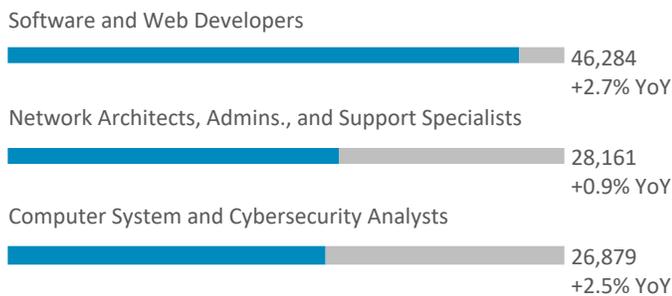
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	87,276	1.8%
R&D, Testing, and Engineering Services	81,877	1.6%
Telecommunications and Internet Services	40,763	0.1%
Tech Manufacturing	31,460	-0.2%
Software [packaged]	6,881	5.3%

## ECONOMIC IMPACT



# 7.7%

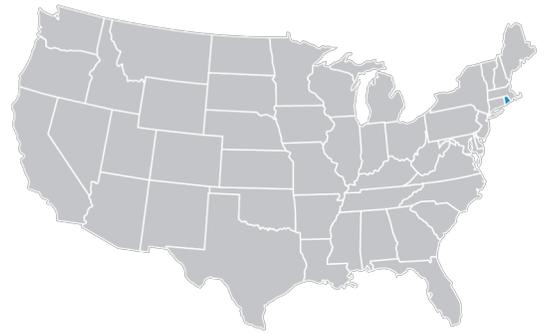
Estimated direct contribution of the tech sector to the Pennsylvania economy: \$53.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Rhode Island

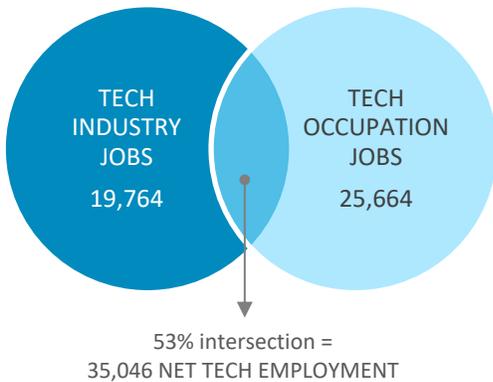


## STATE OF TECHNOLOGY SUMMARY

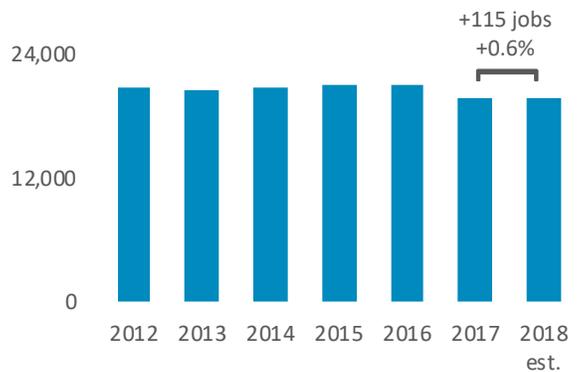
- 35,046 NET TECH EMPLOYMENT<sup>1</sup>
- 115 NET TECH JOB GAINS [2018 vs. 2017]
- 0.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,695 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 9,981 TECH OCCUPATION JOB POSTINGS [2018 total]
- 53% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 42<sup>nd</sup> NET TECH EMPLOYMENT RANK
- 41<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 42<sup>nd</sup> INNOVATION SCORE RANK

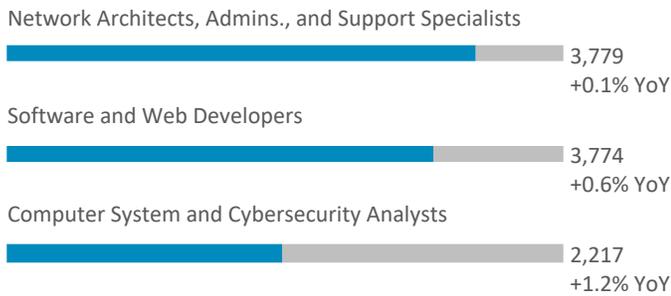
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	8,592	3.5%
R&D, Testing, and Engineering Services	4,616	4.5%
Tech Manufacturing	3,503	3.5%
Telecommunications and Internet Services	2,338	-15.7%
Software [packaged]	714	-6.8%

## ECONOMIC IMPACT



# 6.8%

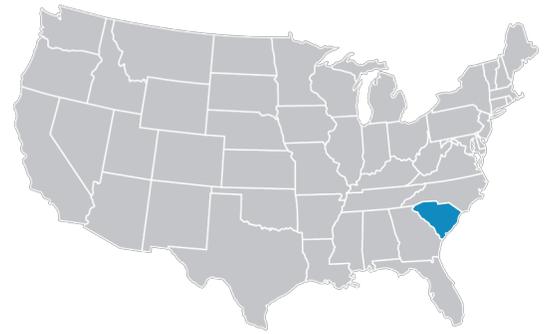
Estimated direct contribution of the tech sector to the Rhode Island economy: \$3.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# South Carolina

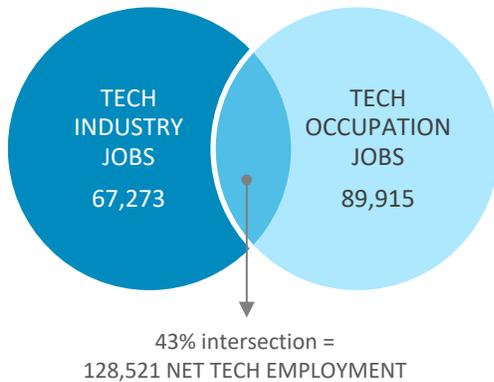


## STATE OF TECHNOLOGY SUMMARY

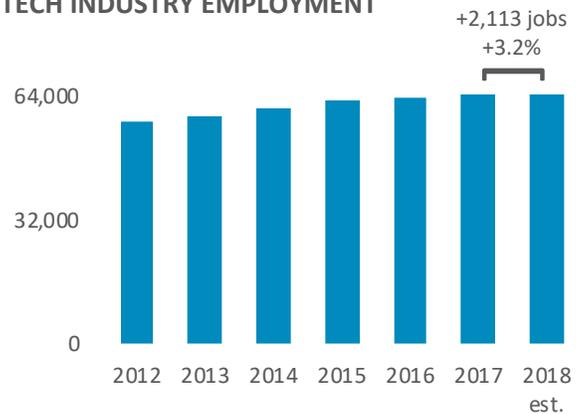
- 128,521 NET TECH EMPLOYMENT<sup>1</sup>
- 4,028 NET TECH JOB GAINS [2018 vs. 2017]
- 3.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 7,423 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 27,843 TECH OCCUPATION JOB POSTINGS [2018 total]
- 48% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 27<sup>th</sup> NET TECH EMPLOYMENT RANK
- 21<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 24<sup>th</sup> INNOVATION SCORE RANK

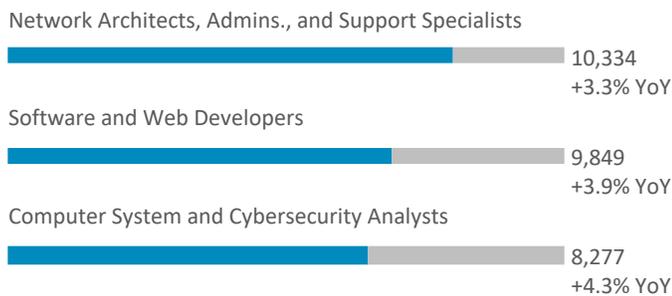
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	21,143	5.9%
R&D, Testing, and Engineering Services	20,215	1.1%
Telecommunications and Internet Services	16,357	1.0%
Tech Manufacturing	6,854	7.1%
Software [packaged]	2,704	4.0%

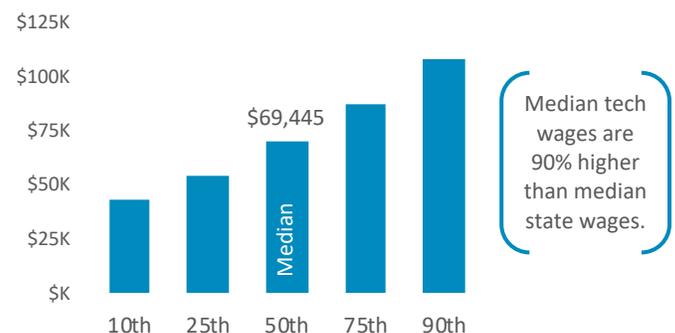
## ECONOMIC IMPACT



# 6.3%

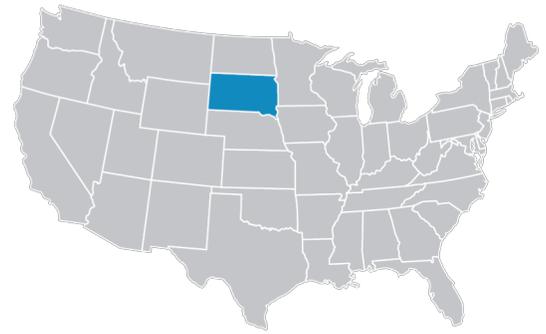
Estimated direct contribution of the tech sector to the South Carolina economy: \$12.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# South Dakota

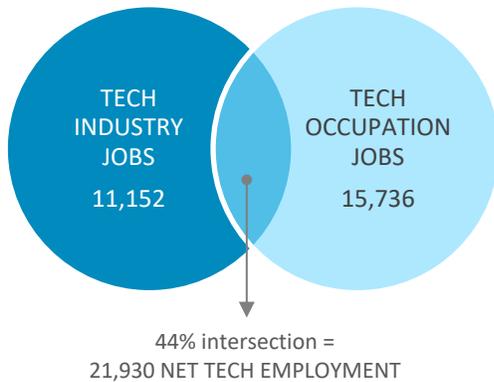


## STATE OF TECHNOLOGY SUMMARY

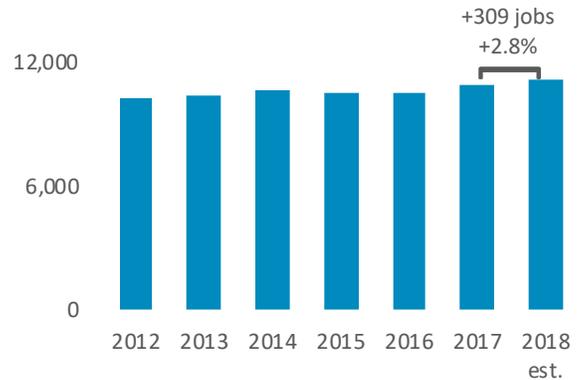
- 21,930 NET TECH EMPLOYMENT<sup>1</sup>
- 518 NET TECH JOB GAINS [2018 vs. 2017]
- 2.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,406 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 4,268 TECH OCCUPATION JOB POSTINGS [2018 total]
- 18% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 49<sup>th</sup> NET TECH EMPLOYMENT RANK
- 37<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 48<sup>th</sup> INNOVATION SCORE RANK

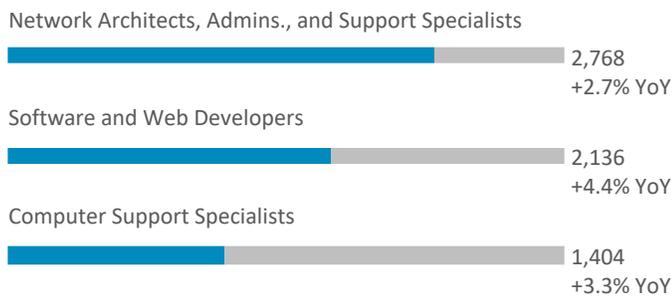
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
R&D, Testing, and Engineering Services	3,110	3.1%
IT Services + Custom Software Services	3,091	5.7%
Telecommunications and Internet Services	2,828	1.3%
Tech Manufacturing	1,984	1.5%
Software [packaged]	139	-10.5%

## ECONOMIC IMPACT



# 4.5%

Estimated direct contribution of the tech sector to the South Dakota economy: \$2.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Tennessee

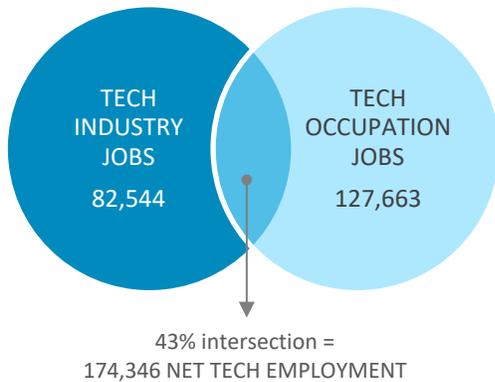


## STATE OF TECHNOLOGY SUMMARY

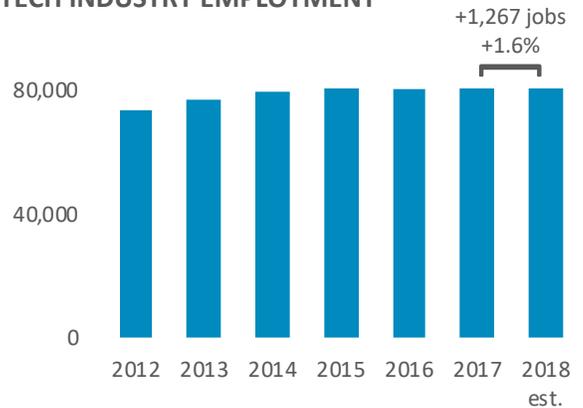
- 174,346 NET TECH EMPLOYMENT<sup>1</sup>
- 3,797 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,650 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 50,049 TECH OCCUPATION JOB POSTINGS [2018 total]
- 110% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 22<sup>nd</sup> NET TECH EMPLOYMENT RANK
- 22<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 15<sup>th</sup> INNOVATION SCORE RANK

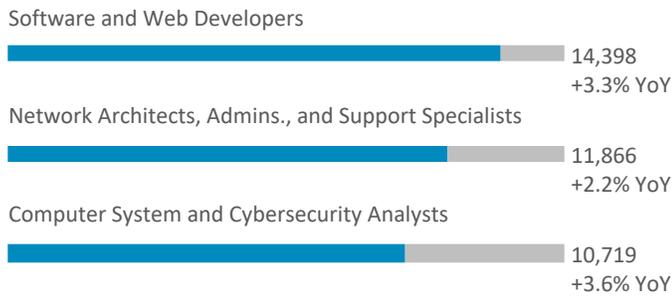
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	28,782	3.1%
R&D, Testing, and Engineering Services	24,938	-0.9%
Telecommunications and Internet Services	20,648	1.5%
Tech Manufacturing	5,014	2.0%
Software [packaged]	3,161	7.0%

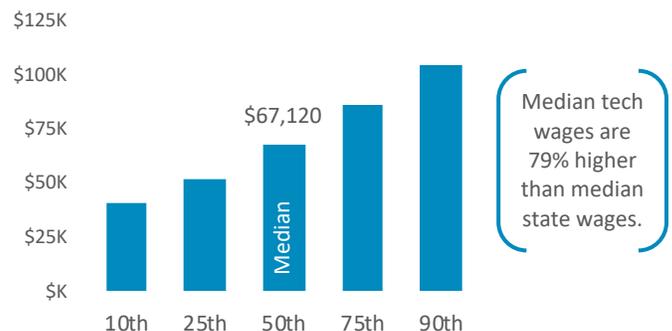
## ECONOMIC IMPACT



# 5.2%

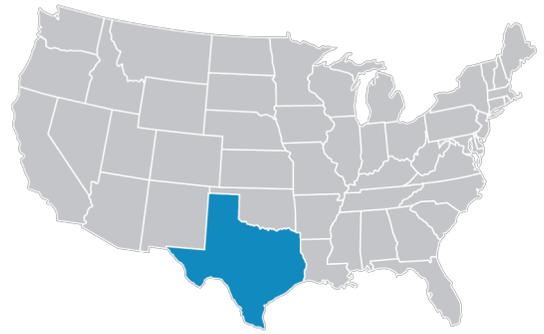
Estimated direct contribution of the tech sector to the Tennessee economy: \$17.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Texas

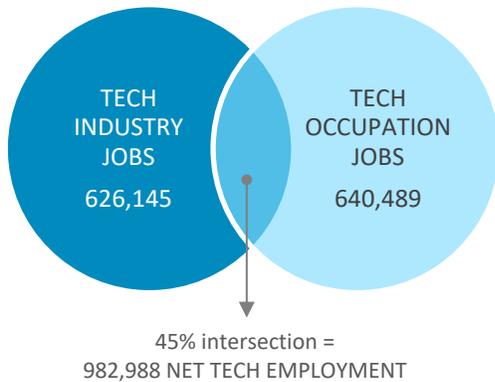


## STATE OF TECHNOLOGY SUMMARY

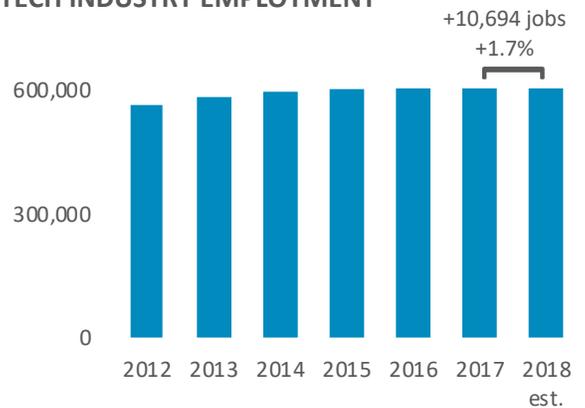
- 982,988 NET TECH EMPLOYMENT<sup>1</sup>
- 17,855 NET TECH JOB GAINS [2018 vs. 2017]
- 1.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 39,488 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 321,474 TECH OCCUPATION JOB POSTINGS [2018 total]
- 112% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 2<sup>nd</sup> NET TECH EMPLOYMENT RANK
- 3<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 3<sup>rd</sup> INNOVATION SCORE RANK

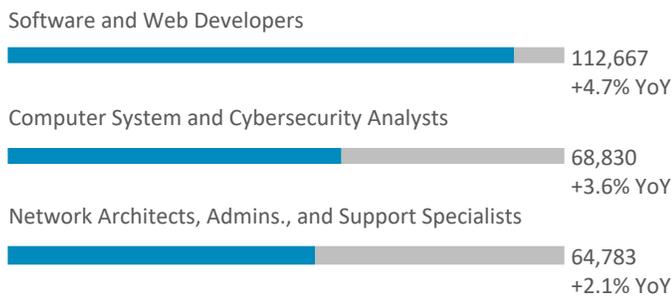
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	250,347	4.0%
R&D, Testing, and Engineering Services	137,674	-0.3%
Telecommunications and Internet Services	123,638	0.4%
Tech Manufacturing	93,092	0.1%
Software [packaged]	21,393	4.2%

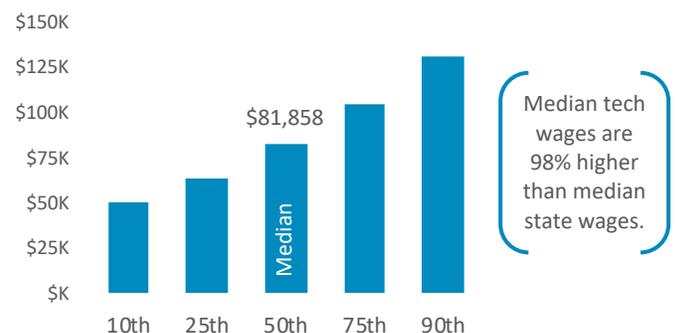
## ECONOMIC IMPACT



# 8.7%

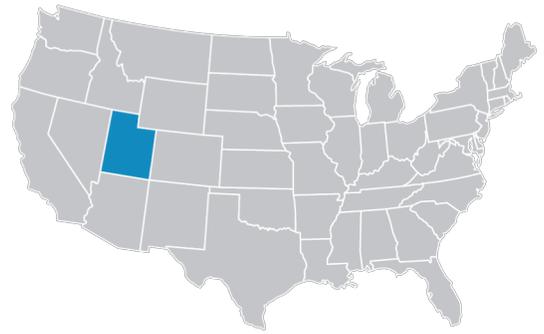
Estimated direct contribution of the tech sector to the Texas economy: \$141.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Utah

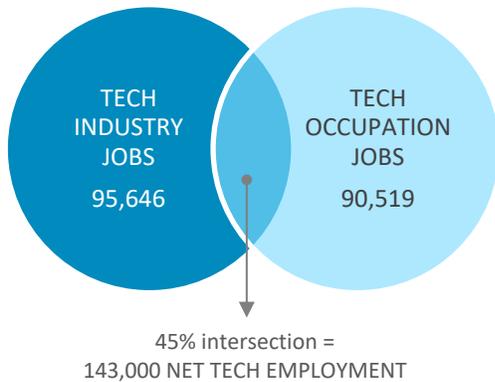


## STATE OF TECHNOLOGY SUMMARY

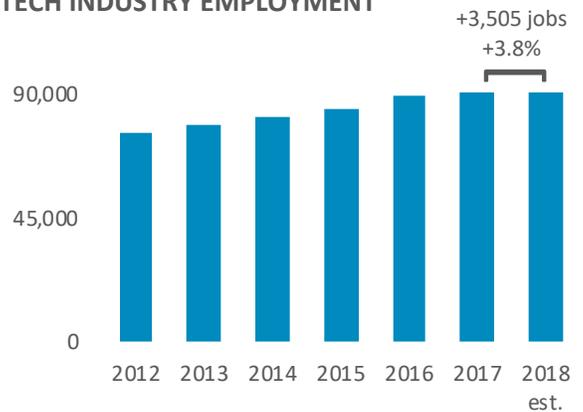
- 143,000 NET TECH EMPLOYMENT<sup>1</sup>
- 5,914 NET TECH JOB GAINS [2018 vs. 2017]
- 4.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 6,996 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 29,499 TECH OCCUPATION JOB POSTINGS [2018 total]
- 111% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 25<sup>th</sup> NET TECH EMPLOYMENT RANK
- 14<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 17<sup>th</sup> INNOVATION SCORE RANK

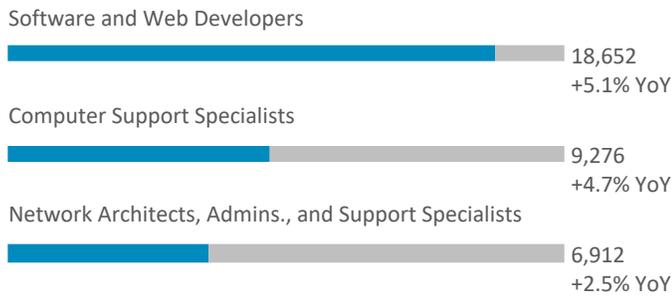
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	32,858	4.9%
R&D, Testing, and Engineering Services	18,164	3.3%
Telecommunications and Internet Services	17,025	3.0%
Tech Manufacturing	16,833	1.2%
Software [packaged]	10,766	6.6%

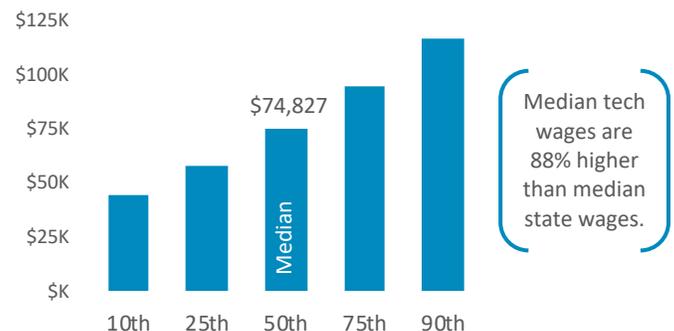
## ECONOMIC IMPACT



# 11.4%

Estimated direct contribution of the tech sector to the Utah economy: \$17.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Vermont

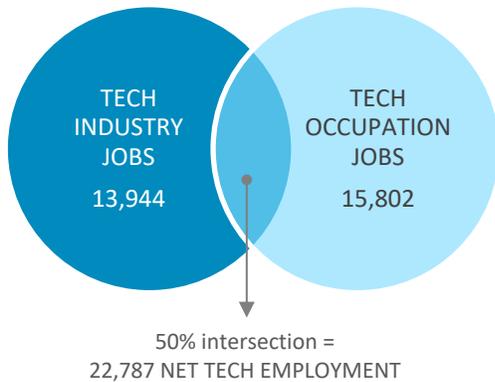


## STATE OF TECHNOLOGY SUMMARY

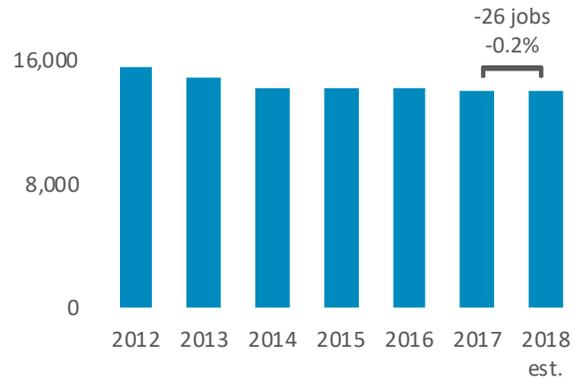
- 22,787 NET TECH EMPLOYMENT<sup>1</sup>
- 56 NET TECH JOB GAINS [2018 vs. 2017]
- 0.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,718 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 3,543 TECH OCCUPATION JOB POSTINGS [2018 total]
- 16% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 48<sup>th</sup> NET TECH EMPLOYMENT RANK
- 48<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 49<sup>th</sup> INNOVATION SCORE RANK

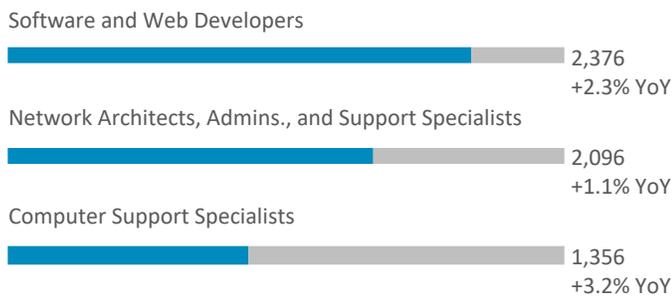
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

	2018	YoY % Change
IT Services + Custom Software Services	5,097	3.2%
Tech Manufacturing	4,582	-3.8%
R&D, Testing, and Engineering Services	2,024	0.2%
Telecommunications and Internet Services	1,364	-5.6%
Software [packaged]	878	8.9%

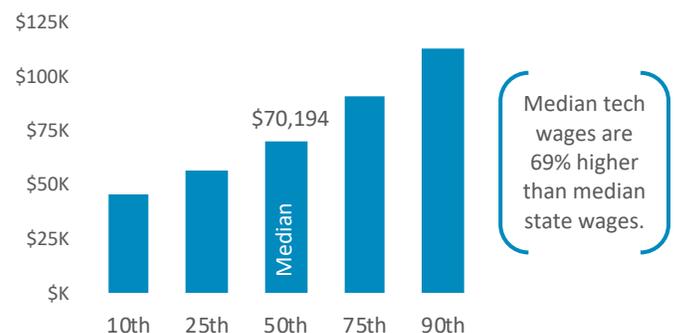
## ECONOMIC IMPACT



# 7.9%

Estimated direct contribution of the tech sector to the Vermont economy: \$2.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Virginia

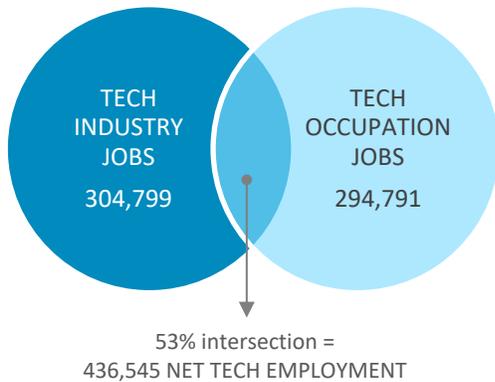


## STATE OF TECHNOLOGY SUMMARY

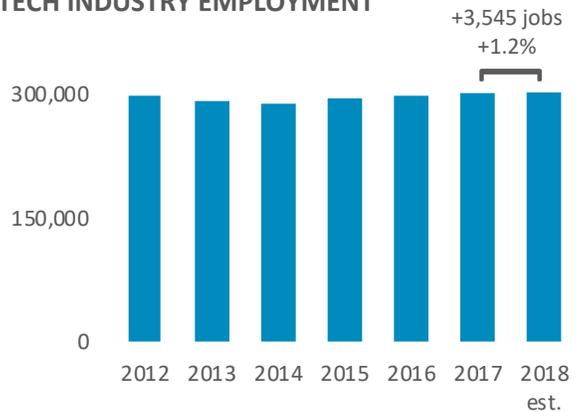
- 436,545 NET TECH EMPLOYMENT<sup>1</sup>
- 6,412 NET TECH JOB GAINS [2018 vs. 2017]
- 1.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 22,152 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 176,051 TECH OCCUPATION JOB POSTINGS [2018 total]
- 32% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 6<sup>th</sup> NET TECH EMPLOYMENT RANK
- 12<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 10<sup>th</sup> INNOVATION SCORE RANK

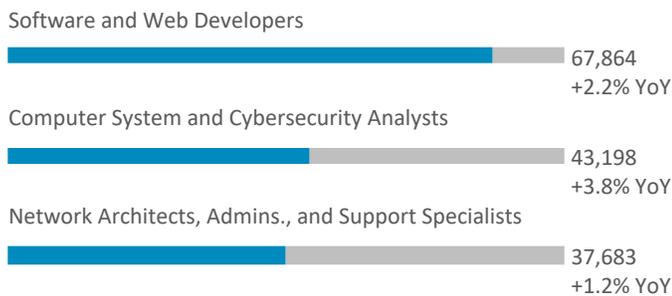
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	181,046	2.2%
R&D, Testing, and Engineering Services	66,916	-0.8%
Telecommunications and Internet Services	39,118	-0.9%
Tech Manufacturing	12,520	3.2%
Software [packaged]	5,198	1.8%

## ECONOMIC IMPACT



# 13.5%

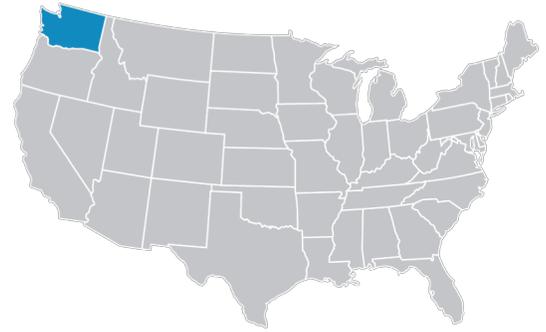
Estimated direct contribution of the tech sector to the Virginia economy: \$62.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Washington

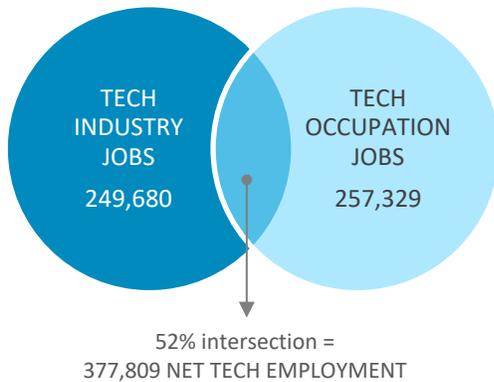


## STATE OF TECHNOLOGY SUMMARY

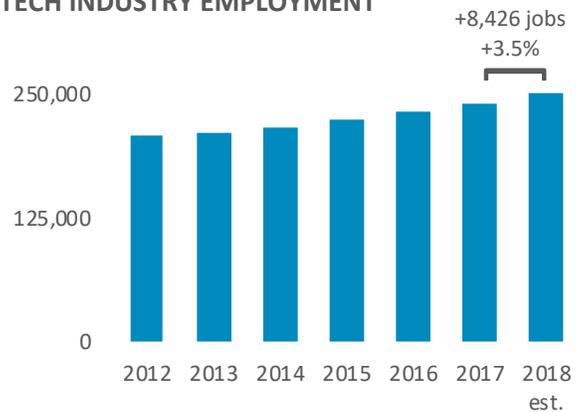
- 377,809 NET TECH EMPLOYMENT<sup>1</sup>
- 12,864 NET TECH JOB GAINS [2018 vs. 2017]
- 3.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 14,982 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 105,057 TECH OCCUPATION JOB POSTINGS [2018 total]
- 61% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 11<sup>th</sup> NET TECH EMPLOYMENT RANK
- 6<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 11<sup>th</sup> INNOVATION SCORE RANK

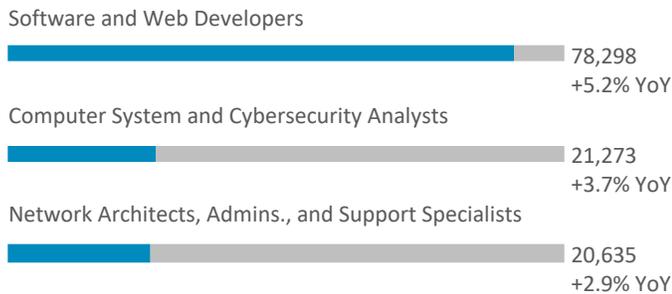
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	69,593	4.8%
Software [packaged]	63,191	3.3%
Telecommunications and Internet Services	52,971	7.0%
R&D, Testing, and Engineering Services	43,304	-1.0%
Tech Manufacturing	20,620	1.0%

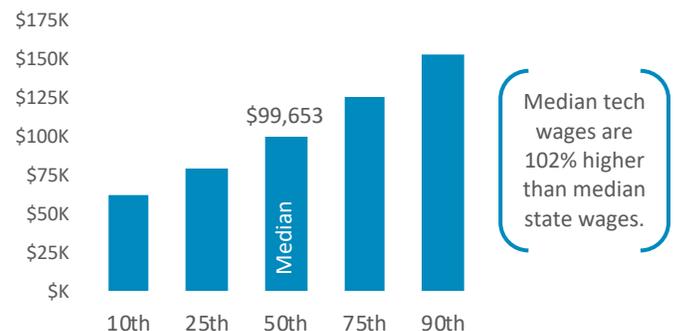
## ECONOMIC IMPACT



# 20.1%

Estimated direct contribution of the tech sector to the Washington economy: \$94.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# West Virginia

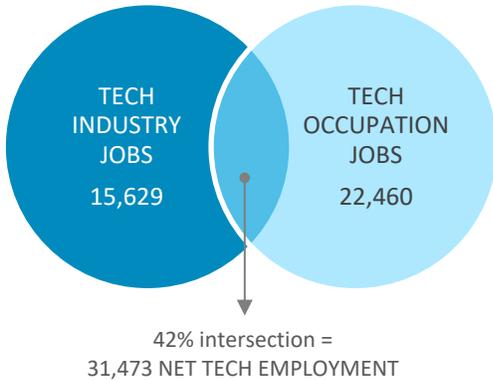


## STATE OF TECHNOLOGY SUMMARY

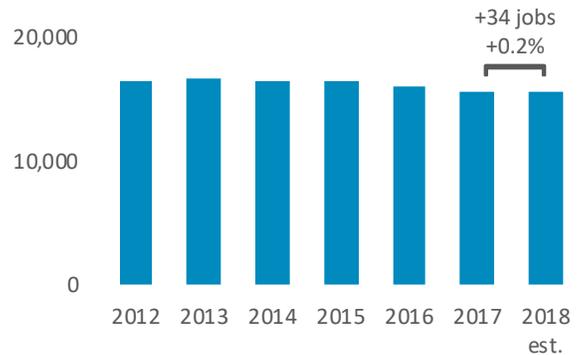
- 31,473 NET TECH EMPLOYMENT<sup>1</sup>
- 30 NET TECH JOB GAINS [2018 vs. 2017]
- 0.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,208 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 5,059 TECH OCCUPATION JOB POSTINGS [2018 total]
- 26% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 45<sup>th</sup> NET TECH EMPLOYMENT RANK
- 47<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 50<sup>th</sup> INNOVATION SCORE RANK

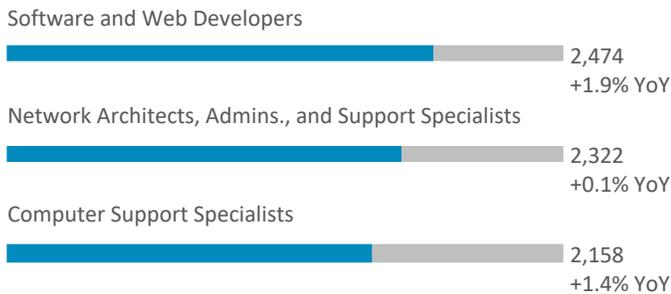
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	5,216	5.3%
R&D, Testing, and Engineering Services	4,348	-2.1%
Telecommunications and Internet Services	3,992	-3.4%
Tech Manufacturing	1,940	-0.8%
Software [packaged]	133	20.7%

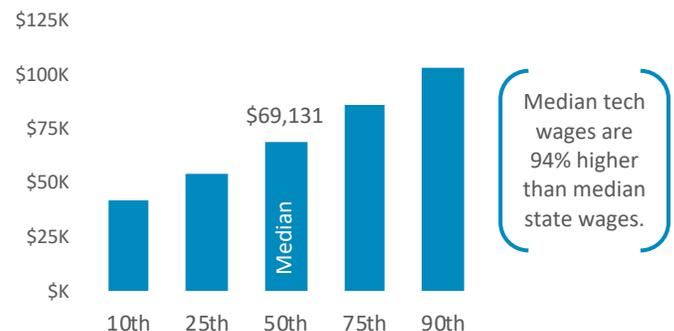
## ECONOMIC IMPACT



# 3.5%

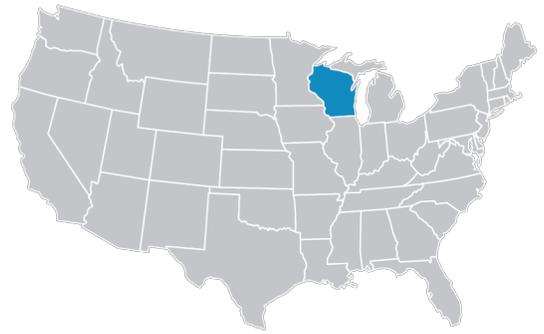
Estimated direct contribution of the tech sector to the West Virginia economy: \$2.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Wisconsin

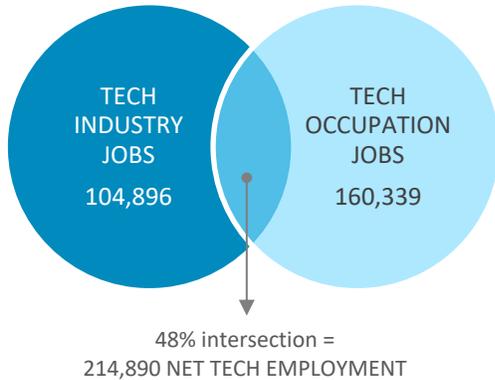


## STATE OF TECHNOLOGY SUMMARY

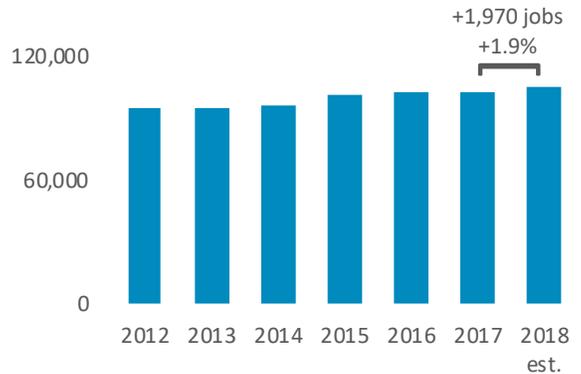
- 214,890 NET TECH EMPLOYMENT<sup>1</sup>
- 4,546 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 7,592 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 56,825 TECH OCCUPATION JOB POSTINGS [2018 total]
- 92% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 19<sup>th</sup> NET TECH EMPLOYMENT RANK
- 20<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 25<sup>th</sup> INNOVATION SCORE RANK

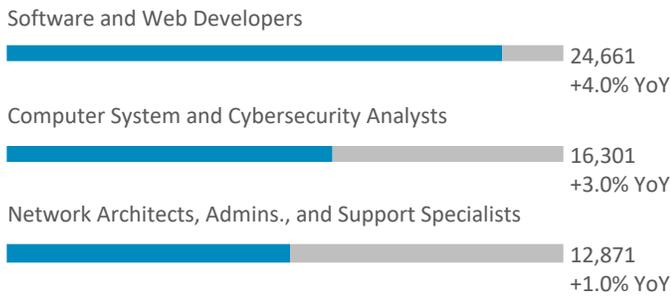
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
IT Services + Custom Software Services	31,496	3.7%
R&D, Testing, and Engineering Services	21,897	1.9%
Telecommunications and Internet Services	19,022	-0.7%
Tech Manufacturing	18,537	-0.2%
Software [packaged]	13,944	4.6%

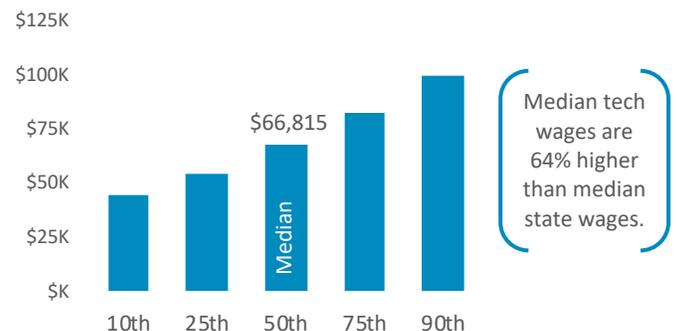
## ECONOMIC IMPACT



# 7.2%

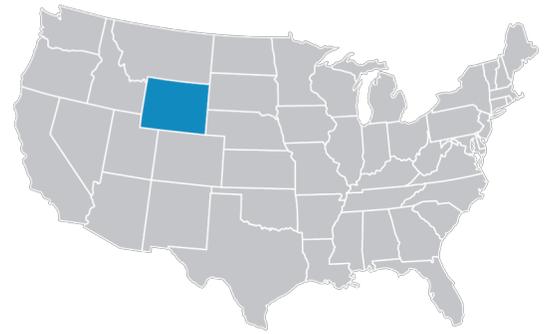
Estimated direct contribution of the tech sector to the Wisconsin economy: \$21.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Wyoming

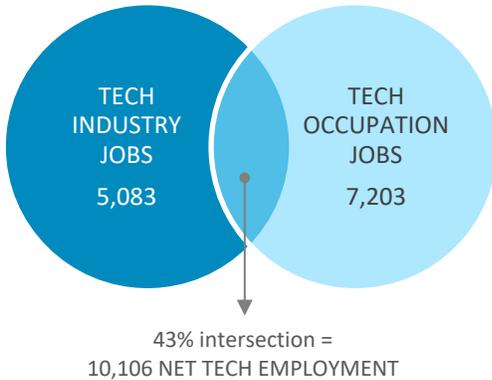


## STATE OF TECHNOLOGY SUMMARY

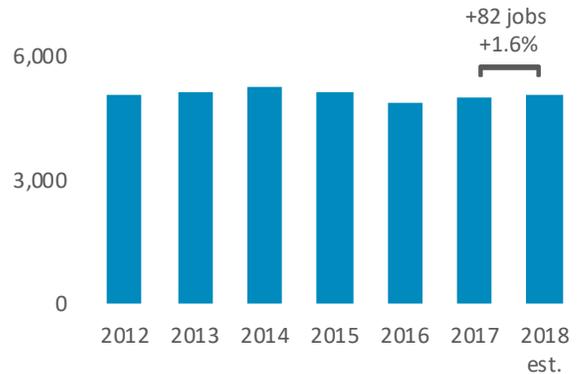
- 10,106 NET TECH EMPLOYMENT<sup>1</sup>
- 29 NET TECH JOB GAINS [2018 vs. 2017]
- 0.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 3.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,009 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 2,175 TECH OCCUPATION JOB POSTINGS [2018 total]
- 37% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

- 51<sup>st</sup> NET TECH EMPLOYMENT RANK
- 46<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 44<sup>th</sup> INNOVATION SCORE RANK

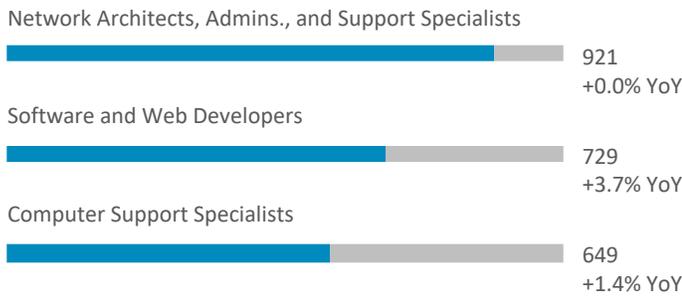
<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATION CATEGORIES



## LEADING TECH INDUSTRY SECTORS [by employment]

Sector	2018 Employment	YoY % Change
Telecommunications and Internet Services	1,954	3.6%
R&D, Testing, and Engineering Services	1,763	-4.2%
IT Services + Custom Software Services	1,139	7.8%
Tech Manufacturing	208	4.3%
Software [packaged]	19	4.3%

## ECONOMIC IMPACT



# 2.9%

Estimated direct contribution of the tech sector to the Wyoming economy: \$1.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# METRO AREA SNAPSHOTS

# Albuquerque

Full MSA name: Albuquerque, NM



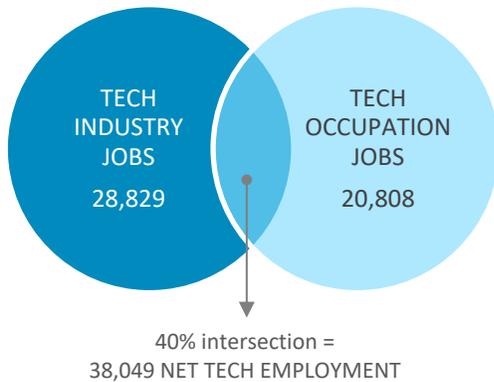
## STATE OF TECHNOLOGY SUMMARY

- 38,049 NET TECH EMPLOYMENT<sup>1</sup>
- 253 NET TECH JOB GAINS [2018 vs. 2017]
- 0.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,221 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 9,568 TECH OCCUPATION JOB POSTINGS [2018 total]
- 80% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

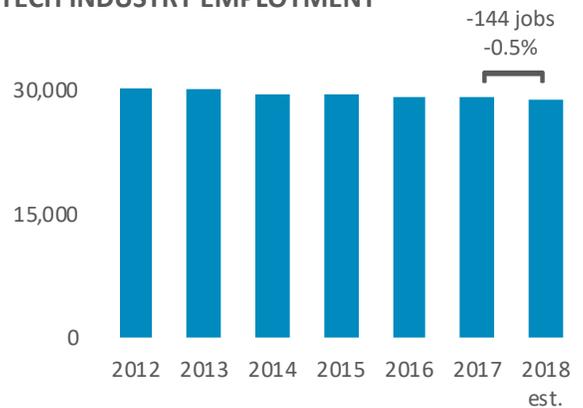
- 39<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 45<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 11<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

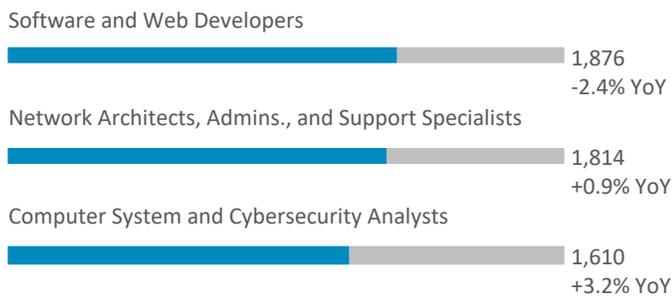
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	16,457	1.7%
Telecommunications and Internet Services	4,587	0.4%
IT Services + Custom Software Services	4,076	2.7%
Tech Manufacturing	3,588	-13.2%
Software [packaged]	123	1.0%

## ECONOMIC IMPACT



# 15.2%

Estimated direct contribution of the tech sector to the Albuquerque economy: \$6.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Atlanta

Full MSA name: Atlanta-Sandy Springs-Roswell, GA



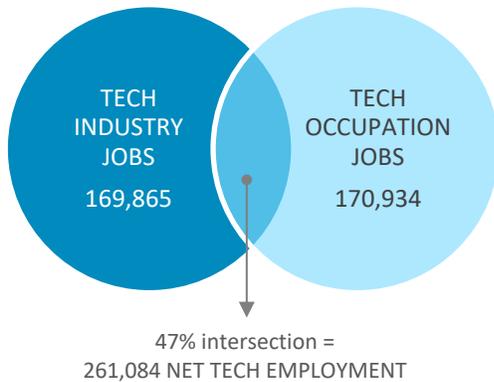
## STATE OF TECHNOLOGY SUMMARY

- 261,084 NET TECH EMPLOYMENT<sup>1</sup>
- 8,090 NET TECH JOB GAINS [2018 vs. 2017]
- 3.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 10,400 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 97,681 TECH OCCUPATION JOB POSTINGS [2018 total]
- 67% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

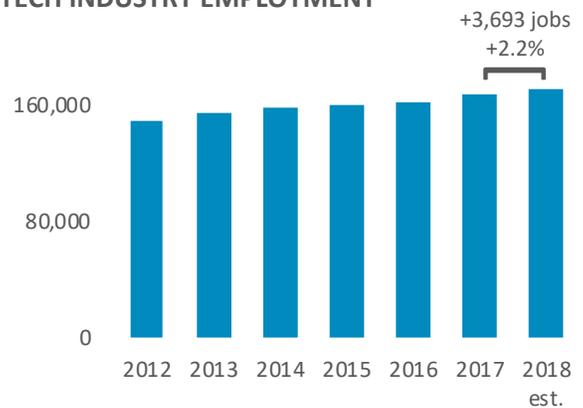
- 10<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 7<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 13<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

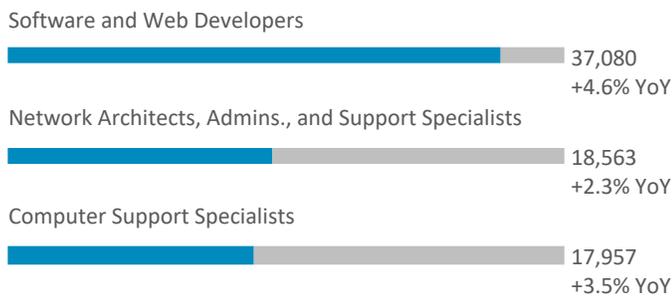
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

Sector	2018	YoY % Change
IT Services + Custom Software Services	69,058	2.1%
Telecommunications and Internet Services	50,012	1.3%
R&D, Testing, and Engineering Services	27,951	3.8%
Software [packaged]	14,184	3.9%
Tech Manufacturing	8,659	0.5%

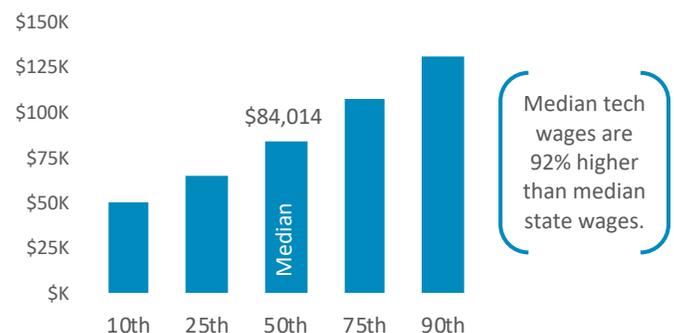
## ECONOMIC IMPACT



# 13.6%

Estimated direct contribution of the tech sector to the Atlanta economy: \$47.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Austin

Full MSA name: Austin-Round Rock, TX



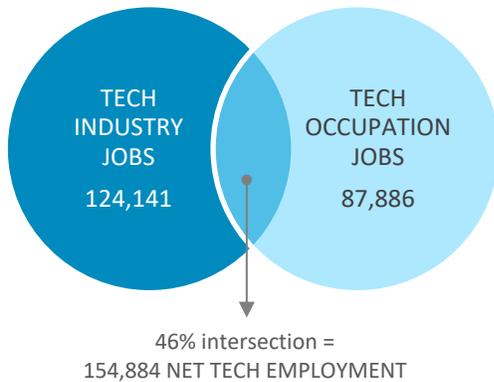
## STATE OF TECHNOLOGY SUMMARY

- 154,884 NET TECH EMPLOYMENT<sup>1</sup>
- 5,206 NET TECH JOB GAINS [2018 vs. 2017]
- 3.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 14.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,582 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 52,373 TECH OCCUPATION JOB POSTINGS [2018 total]
- 76% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

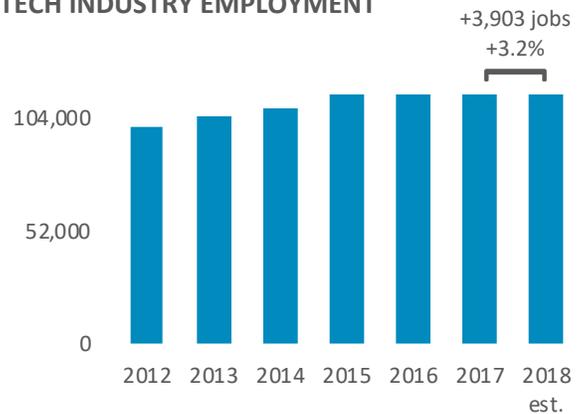
- 18<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 13<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 4<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

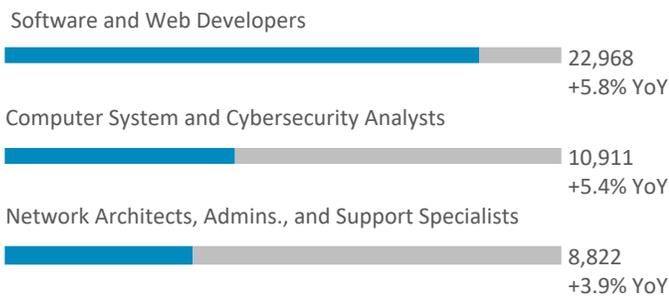
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	61,548	5.2%
Tech Manufacturing	26,293	-0.6%
Telecommunications and Internet Services	16,722	6.4%
R&D, Testing, and Engineering Services	13,647	-1.7%
Software [packaged]	5,930	4.3%

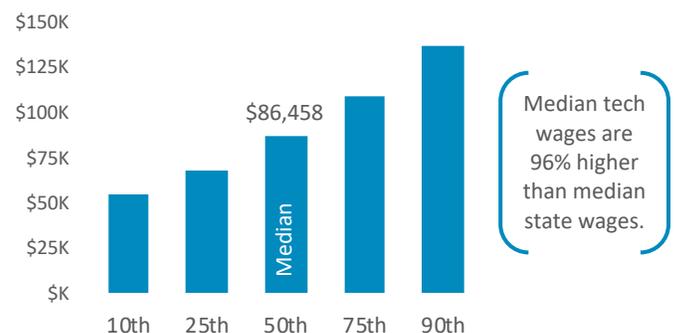
## ECONOMIC IMPACT



# 23.5%

Estimated direct contribution of the tech sector to the Austin economy: \$31.3 billion

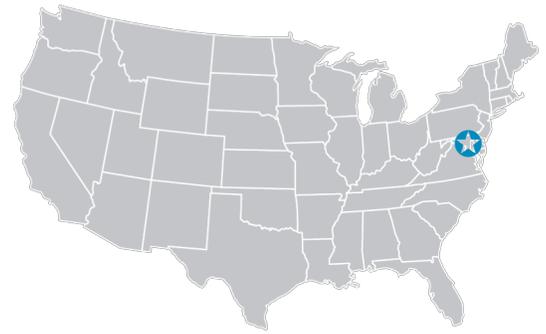
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Baltimore

Full MSA name: Baltimore-Columbia-Towson, MD



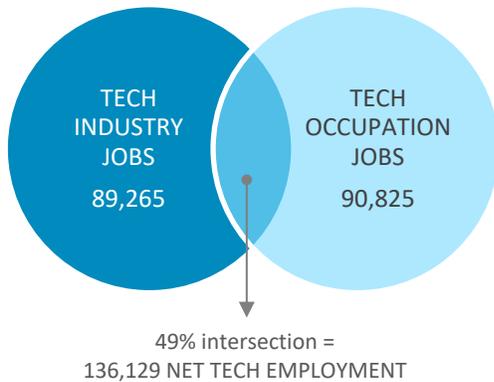
## STATE OF TECHNOLOGY SUMMARY

- 136,129 NET TECH EMPLOYMENT<sup>1</sup>
- 2,626 NET TECH JOB GAINS [2018 vs. 2017]
- 2.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,886 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 57,589 TECH OCCUPATION JOB POSTINGS [2018 total]
- 34% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

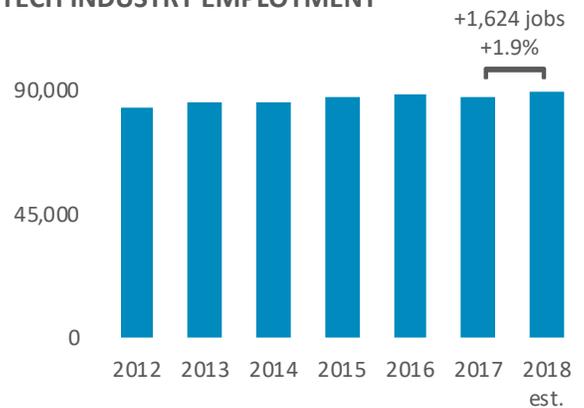
- 21<sup>st</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 22<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 15<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

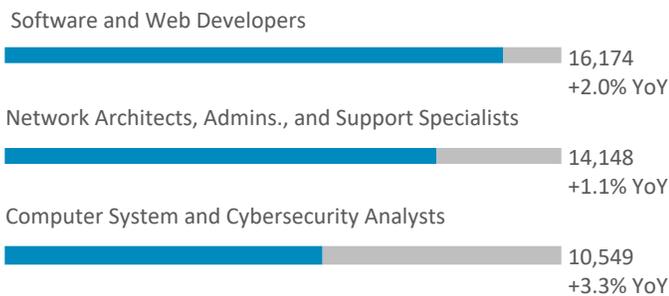
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	36,011	1.5%
R&D, Testing, and Engineering Services	30,229	1.6%
Tech Manufacturing	12,644	4.6%
Telecommunications and Internet Services	7,787	-4.1%
Software [packaged]	2,594	17.9%

## ECONOMIC IMPACT



# 11.9%

Estimated direct contribution of the tech sector to the Baltimore economy: \$21.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Birmingham

Full MSA name: Birmingham-Hoover, AL



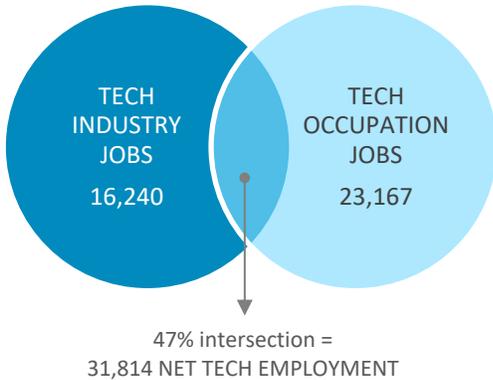
## STATE OF TECHNOLOGY SUMMARY

- 31,814 NET TECH EMPLOYMENT<sup>1</sup>
- 52 NET TECH JOB GAINS [2018 vs. 2017]
- 0.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,145 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 7,788 TECH OCCUPATION JOB POSTINGS [2018 total]
- 74% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

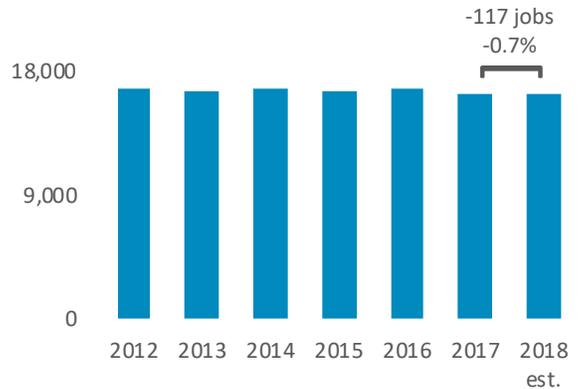
- 41<sup>st</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 42<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 42<sup>nd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

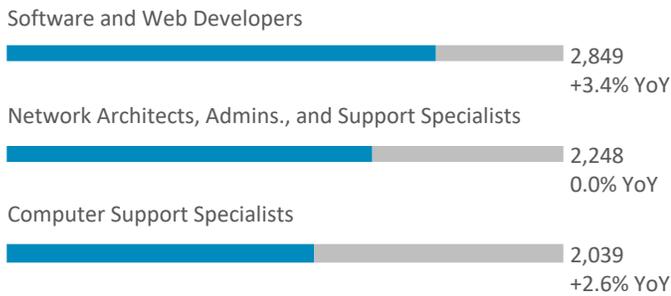
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	7,250	0.5%
R&D, Testing, and Engineering Services	3,996	1.8%
Telecommunications and Internet Services	3,946	-6.4%
Tech Manufacturing	571	6.0%
Software [packaged]	478	2.6%

## ECONOMIC IMPACT



# 5.5%

Estimated direct contribution of the tech sector to the Birmingham economy: \$3.2 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Boise

Full MSA name: Boise, ID



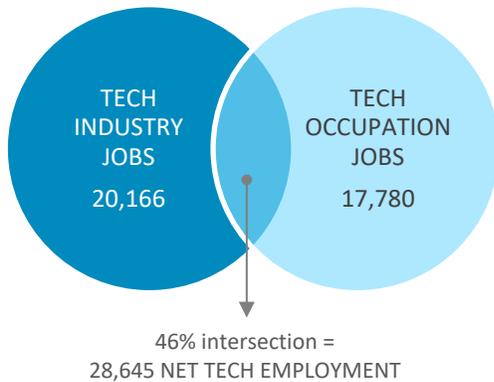
## STATE OF TECHNOLOGY SUMMARY

- 28,645 NET TECH EMPLOYMENT<sup>1</sup>
- 1,127 NET TECH JOB GAINS [2018 vs. 2017]
- 4.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,131 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 5,806 TECH OCCUPATION JOB POSTINGS [2018 total]
- 0% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

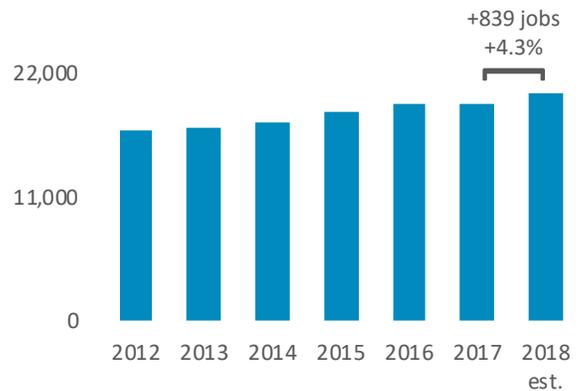
- 43<sup>rd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 33<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 12<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

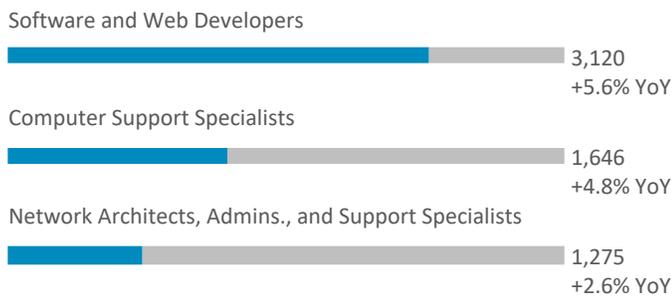
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Tech Manufacturing	11,152	5.3%
IT Services + Custom Software Services	3,981	6.4%
R&D, Testing, and Engineering Services	2,960	3.3%
Telecommunications and Internet Services	1,972	-2.2%
Software [packaged]	100	-6.4%

## ECONOMIC IMPACT



# 14.9%

Estimated direct contribution of the tech sector to the Boise economy: \$4.7 billion

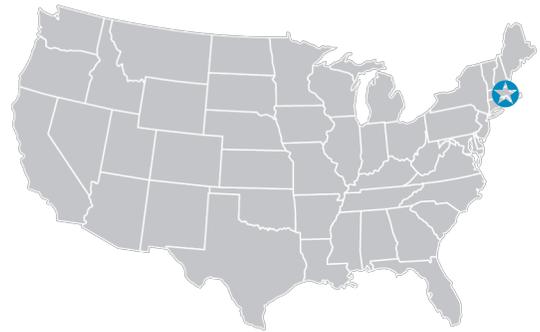
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Boston

Full MSA name: Boston-Cambridge-Newton, MA-NH



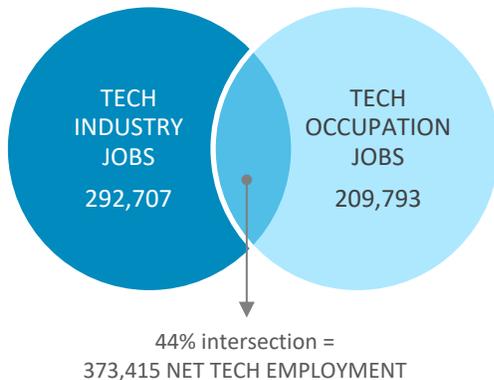
## STATE OF TECHNOLOGY SUMMARY

- 373,415 NET TECH EMPLOYMENT<sup>1</sup>
- 11,579 NET TECH JOB GAINS [2018 vs. 2017]
- 3.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 13.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 11,911 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 117,511 TECH OCCUPATION JOB POSTINGS [2018 total]
- 76% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

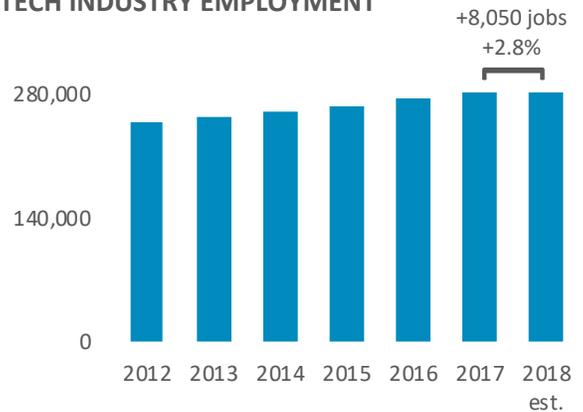
- 5<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 3<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 6<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	89,644	3.9%
R&D, Testing, and Engineering Services	85,661	5.0%
Tech Manufacturing	54,860	-1.7%
Telecommunications and Internet Services	31,283	1.5%
Software [packaged]	31,259	3.9%

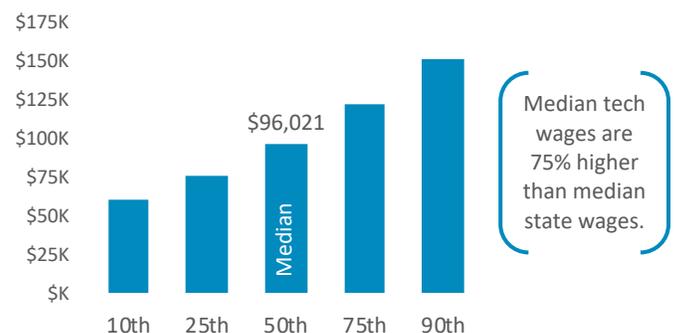
## ECONOMIC IMPACT



# 19.7%

Estimated direct contribution of the tech sector to the Boston economy: \$81.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Charlotte

Full MSA name: Charlotte-Concord-Gastonia, NC-SC



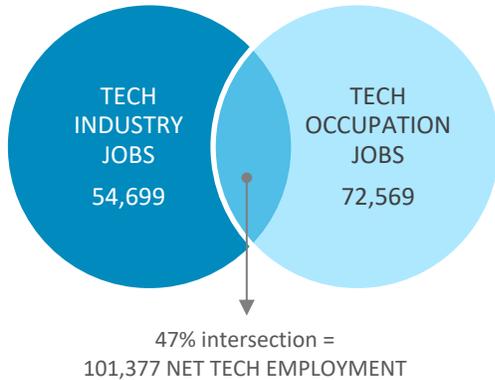
## STATE OF TECHNOLOGY SUMMARY

- 101,377 NET TECH EMPLOYMENT<sup>1</sup>
- 5,367 NET TECH JOB GAINS [2018 vs. 2017]
- 5.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,228 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 59,748 TECH OCCUPATION JOB POSTINGS [2018 total]
- 122% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

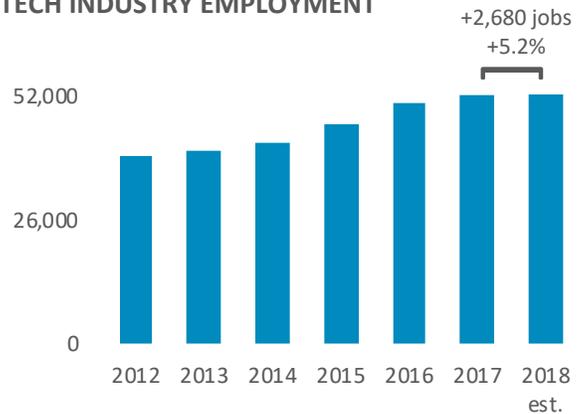
- 23<sup>rd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 11<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 27<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

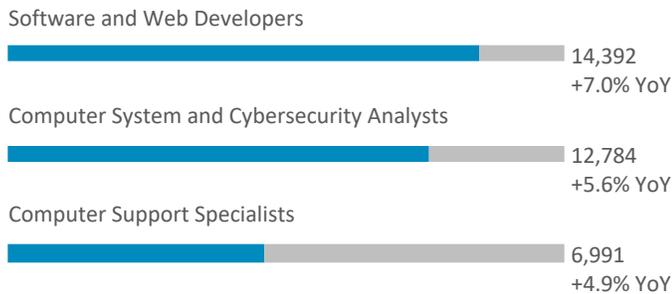
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	20,529	7.3%
Telecommunications and Internet Services	17,496	2.4%
R&D, Testing, and Engineering Services	9,464	4.9%
Software [packaged]	4,067	14.1%
Tech Manufacturing	3,143	-2.1%

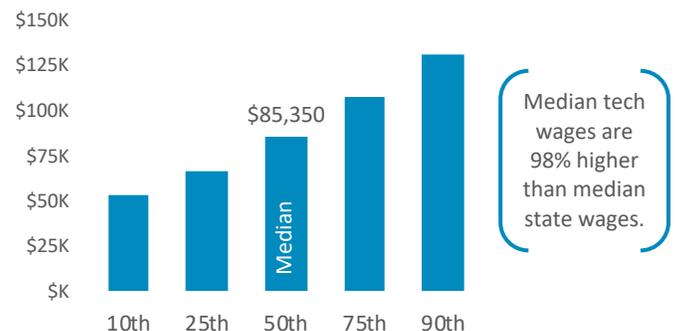
## ECONOMIC IMPACT



# 9.0%

Estimated direct contribution of the tech sector to the Charlotte economy: \$13.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Chicago

Full MSA name: Chicago-Naperville-Elgin, IL-IN-WI



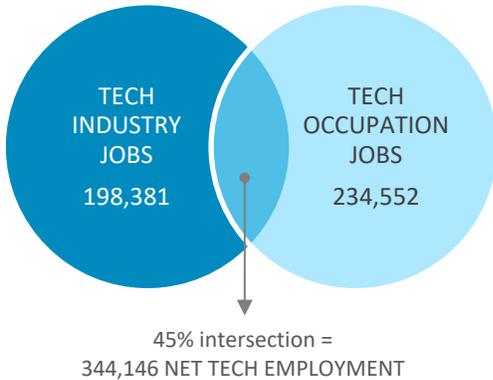
## STATE OF TECHNOLOGY SUMMARY

- 344,146 NET TECH EMPLOYMENT<sup>1</sup>
- 5,971 NET TECH JOB GAINS [2018 vs. 2017]
- 1.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 12,264 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 130,259 TECH OCCUPATION JOB POSTINGS [2018 total]
- 73% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

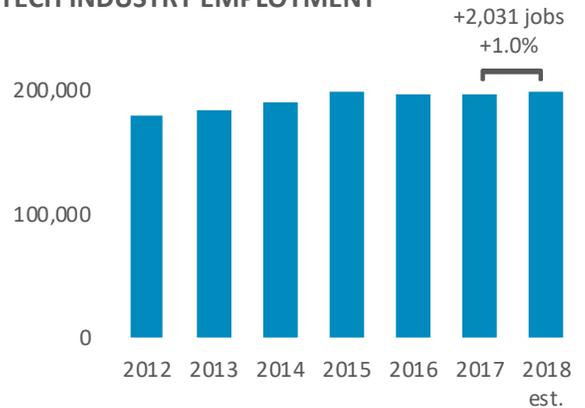
- 8<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 10<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 30<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

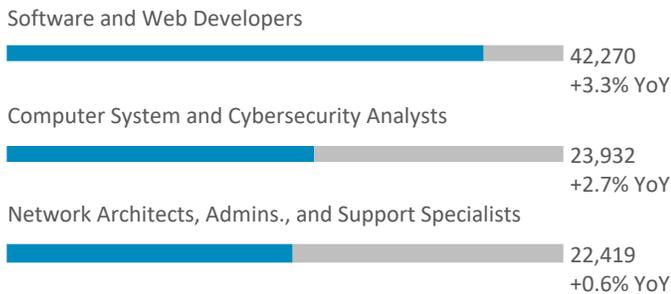
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	85,528	3.0%
Telecommunications and Internet Services	42,688	0.3%
R&D, Testing, and Engineering Services	41,583	-1.3%
Tech Manufacturing	24,608	-0.8%
Software [packaged]	3,975	4.5%

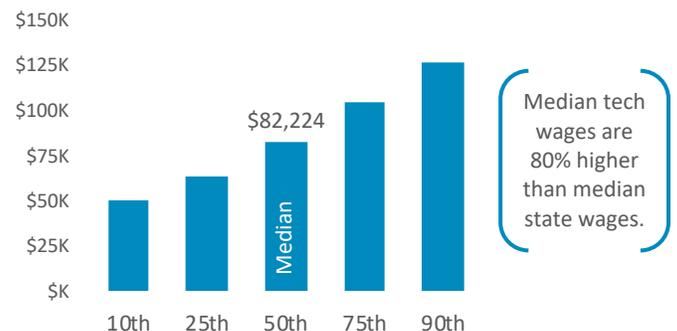
## ECONOMIC IMPACT



# 8.1%

Estimated direct contribution of the tech sector to the Chicago economy: \$50.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Cincinnati

Full MSA name: Cincinnati, OH-KY-IN



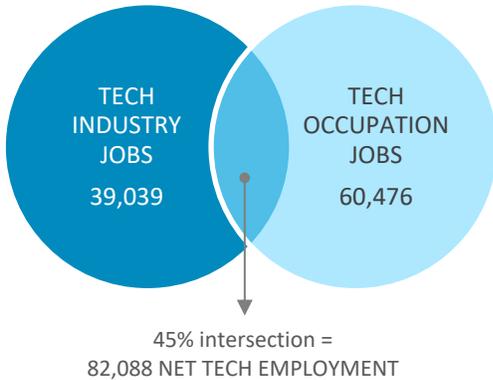
## STATE OF TECHNOLOGY SUMMARY

- 82,088 NET TECH EMPLOYMENT<sup>1</sup>
- 2,316 NET TECH JOB GAINS [2018 vs. 2017]
- 2.9% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,142 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 27,991 TECH OCCUPATION JOB POSTINGS [2018 total]
- 41% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

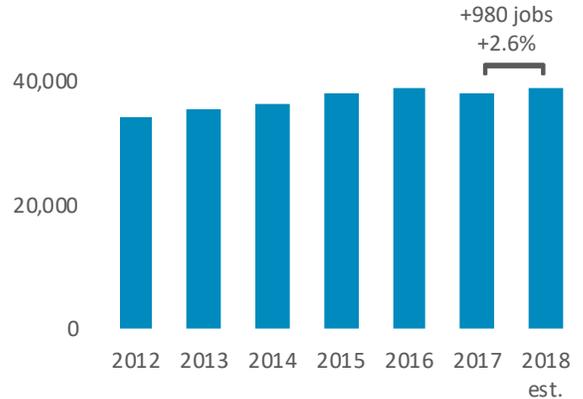
- 28<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 25<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 39<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

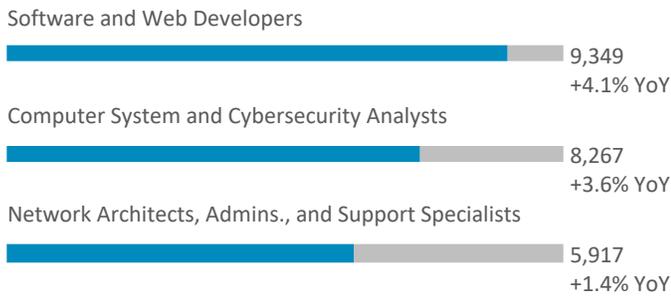
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	15,870	3.2%
R&D, Testing, and Engineering Services	11,400	2.7%
Telecommunications and Internet Services	6,344	1.4%
Tech Manufacturing	3,606	2.7%
Software [packaged]	1,818	0.2%

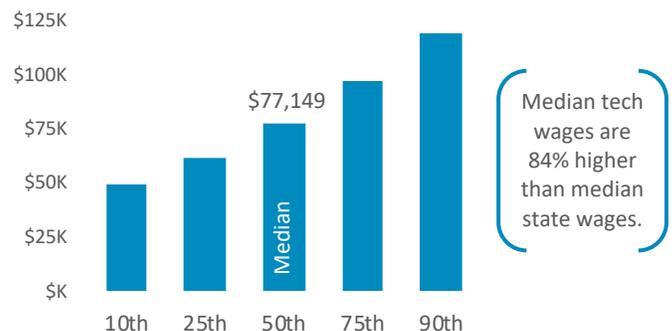
## ECONOMIC IMPACT



# 5.9%

Estimated direct contribution of the tech sector to the Cincinnati economy: \$7.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Cleveland

Full MSA name: Cleveland-Elyria, OH



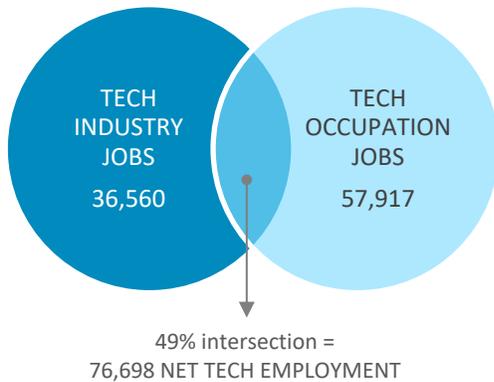
## STATE OF TECHNOLOGY SUMMARY

- 76,698 NET TECH EMPLOYMENT<sup>1</sup>
- 1,477 NET TECH JOB GAINS [2018 vs. 2017]
- 2.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,812 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 24,461 TECH OCCUPATION JOB POSTINGS [2018 total]
- 93% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

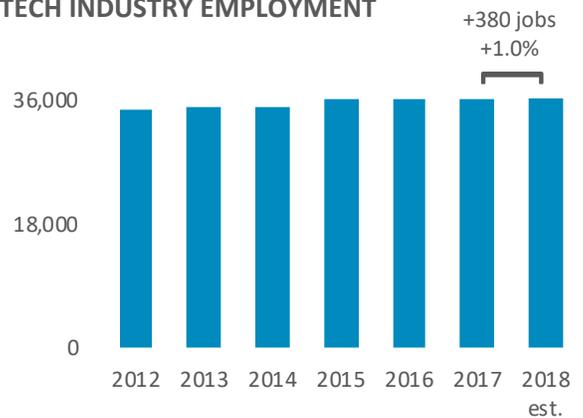
- 29<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 30<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 37<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

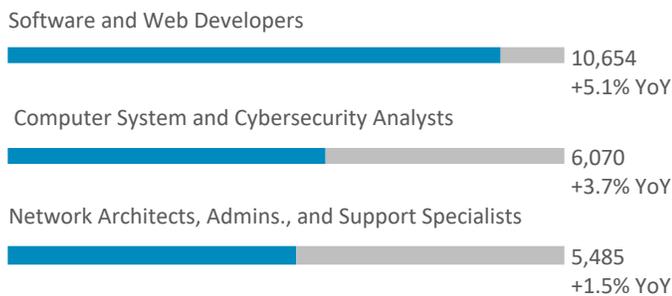
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	15,815	2.6%
R&D, Testing, and Engineering Services	8,011	-2.2%
Tech Manufacturing	6,166	3.2%
Telecommunications and Internet Services	5,311	-2.4%
Software [packaged]	1,255	8.3%

## ECONOMIC IMPACT



# 6.0%

Estimated direct contribution of the tech sector to the Cleveland economy: \$7.2 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Dallas

Full MSA name: Dallas-Fort Worth-Arlington, TX



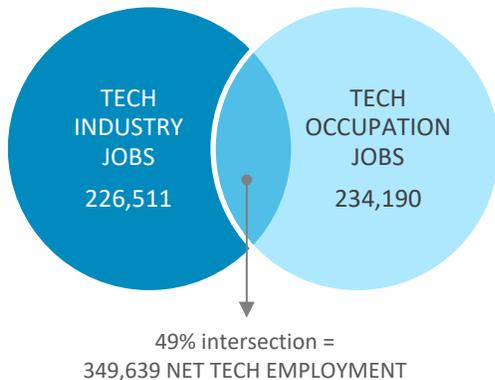
## STATE OF TECHNOLOGY SUMMARY

- 349,639 NET TECH EMPLOYMENT<sup>1</sup>
- 9,324 NET TECH JOB GAINS [2018 vs. 2017]
- 2.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 11,655 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 157,145 TECH OCCUPATION JOB POSTINGS [2018 total]
- 123% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

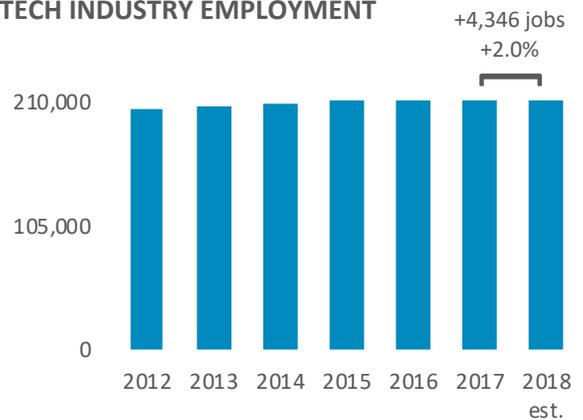
- 7<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 6<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 14<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

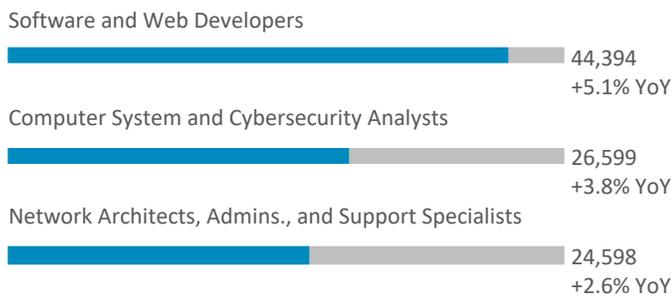
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	92,623	3.2%
Telecommunications and Internet Services	53,413	0.5%
Tech Manufacturing	42,620	1.8%
R&D, Testing, and Engineering Services	27,970	0.7%
Software [packaged]	9,884	3.1%

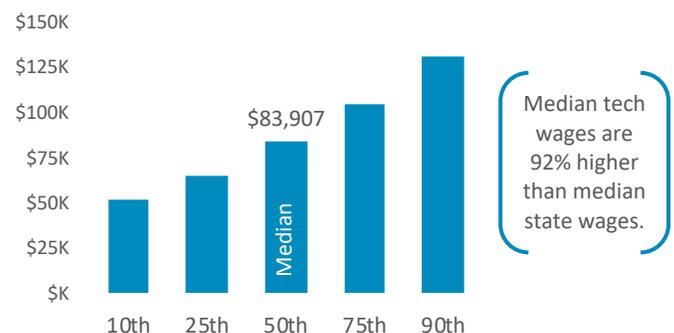
## ECONOMIC IMPACT



# 13.1%

Estimated direct contribution of the tech sector to the Dallas economy: \$64.0 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Denver

Full MSA name: Denver-Aurora-Lakewood, CO



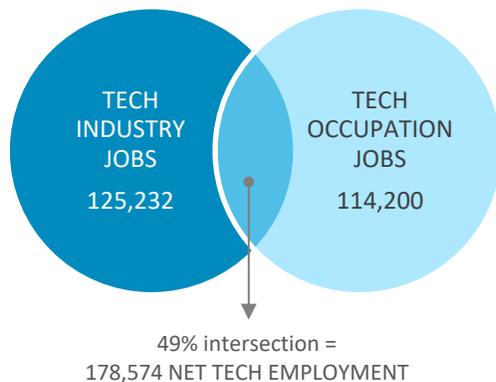
## STATE OF TECHNOLOGY SUMMARY

- 178,574 NET TECH EMPLOYMENT<sup>1</sup>
- 5,291 NET TECH JOB GAINS [2018 vs. 2017]
- 3.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 11.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 10,151 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 73,098 TECH OCCUPATION JOB POSTINGS [2018 total]
- 112% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

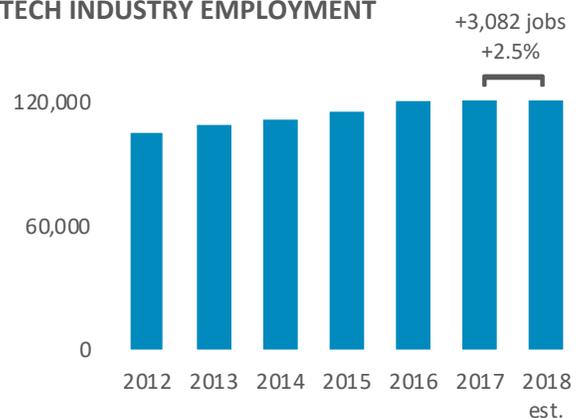
- 16<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 12<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 10<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

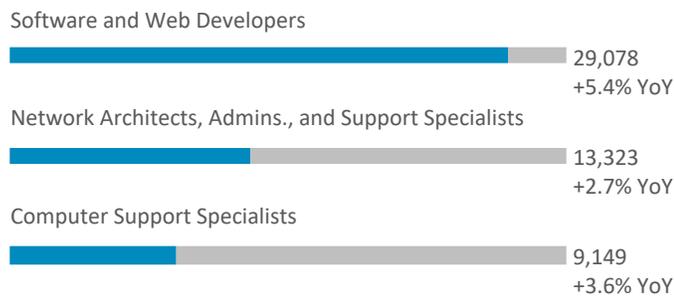
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	46,134	4.5%
Telecommunications and Internet Services	29,490	0.9%
R&D, Testing, and Engineering Services	28,524	0.3%
Tech Manufacturing	12,681	1.8%
Software [packaged]	8,402	6.8%

## ECONOMIC IMPACT



# 15.4%

Estimated direct contribution of the tech sector to the Denver economy: \$30.6 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Des Moines

Full MSA name: Des Moines, IA



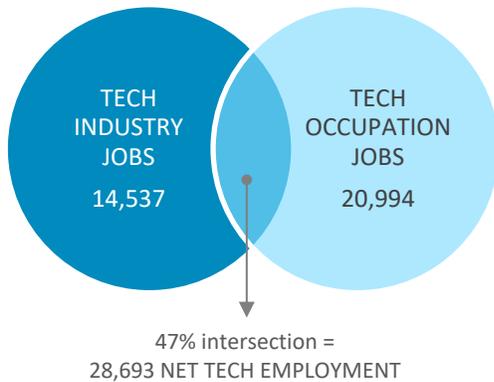
## STATE OF TECHNOLOGY SUMMARY

- 28,693 NET TECH EMPLOYMENT<sup>1</sup>
- 805 NET TECH JOB GAINS [2018 vs. 2017]
- 2.9% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,715 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 14,307 TECH OCCUPATION JOB POSTINGS [2018 total]
- 47% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

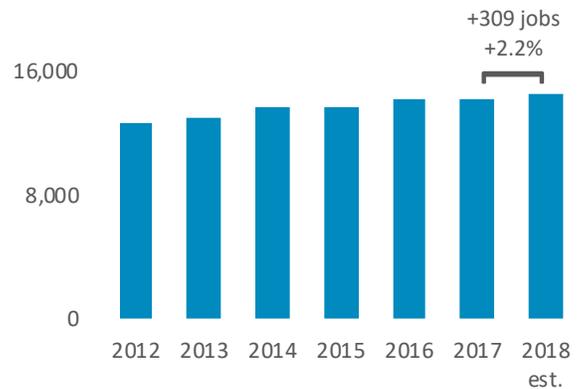
- 42<sup>nd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 35<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 38<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

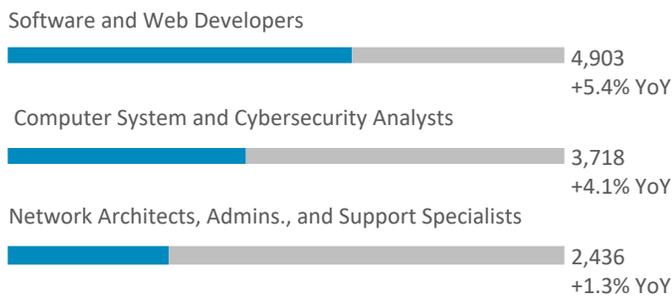
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	6,069	4.0%
R&D, Testing, and Engineering Services	3,914	5.7%
Telecommunications and Internet Services	3,484	-4.3%
Tech Manufacturing	893	1.3%
Software [packaged]	176	6.5%

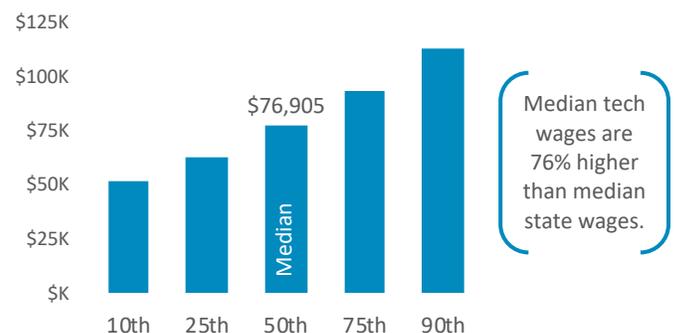
## ECONOMIC IMPACT



# 5.9%

Estimated direct contribution of the tech sector to the Des Moines economy: \$2.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Detroit

Full MSA name: Detroit-Warren-Dearborn, MI



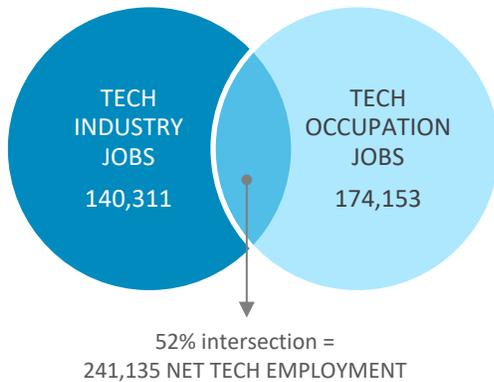
## STATE OF TECHNOLOGY SUMMARY

- 241,135 NET TECH EMPLOYMENT<sup>1</sup>
- 6,295 NET TECH JOB GAINS [2018 vs. 2017]
- 2.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 11.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,112 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 82,627 TECH OCCUPATION JOB POSTINGS [2018 total]
- 41% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

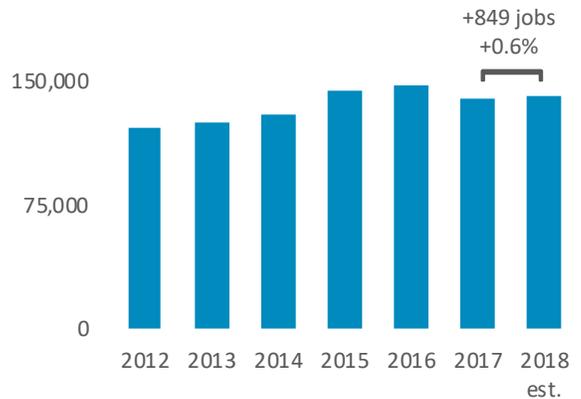
- 11<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 9<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 22<sup>nd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

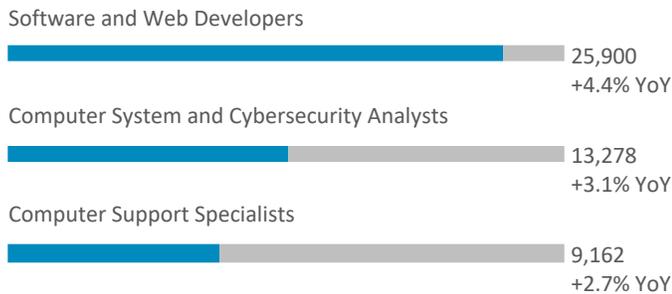
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	76,282	-0.5%
IT Services + Custom Software Services	42,524	2.7%
Telecommunications and Internet Services	11,404	-2.0%
Tech Manufacturing	6,508	2.8%
Software [packaged]	3,594	5.1%

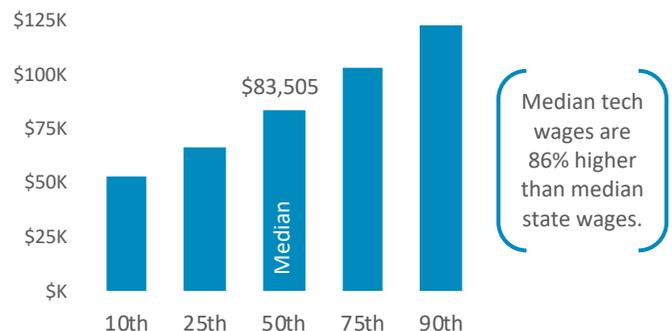
## ECONOMIC IMPACT



# 10.2%

Estimated direct contribution of the tech sector to the Detroit economy: \$24.8 billion

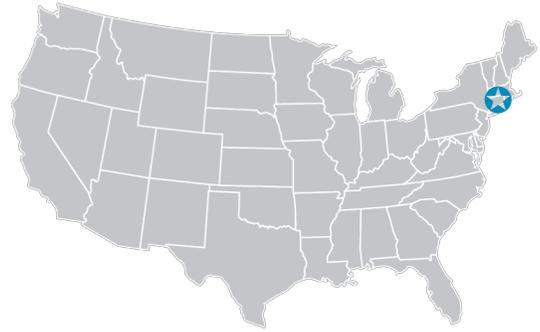
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Hartford

Full MSA name: Hartford-West Hartford-East Hartford, CT



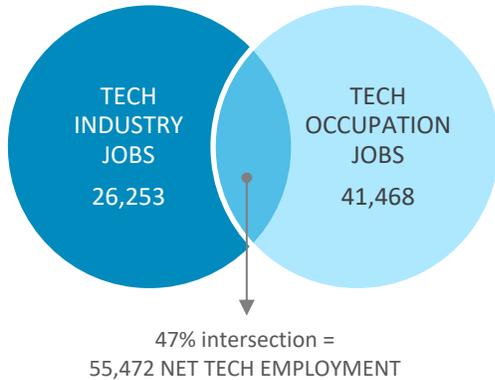
## STATE OF TECHNOLOGY SUMMARY

- 55,472 NET TECH EMPLOYMENT<sup>1</sup>
- 806 NET TECH JOB GAINS [2018 vs. 2017]
- 1.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,050 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 19,904 TECH OCCUPATION JOB POSTINGS [2018 total]
- 31% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

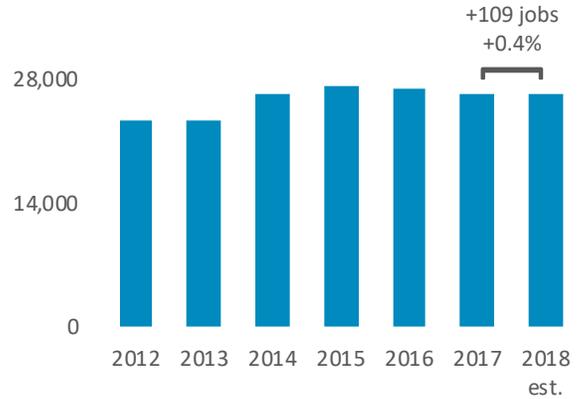
- 35<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 34<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 40<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

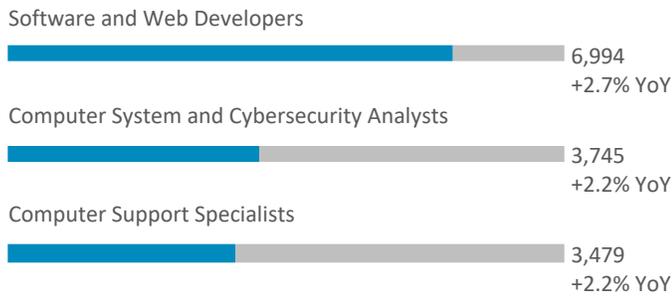
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	11,747	1.0%
R&D, Testing, and Engineering Services	6,839	3.2%
Tech Manufacturing	3,554	-0.1%
Telecommunications and Internet Services	2,303	-13.1%
Software [packaged]	1,810	8.3%

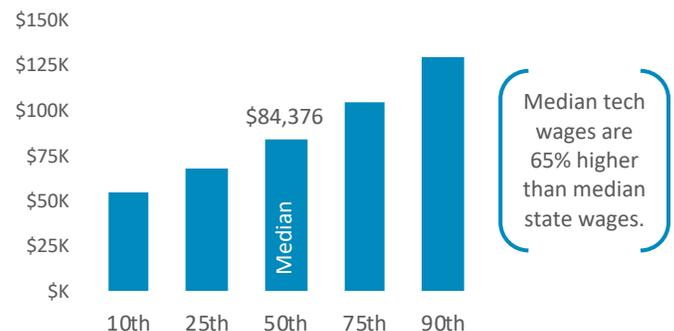
## ECONOMIC IMPACT



# 5.9%

Estimated direct contribution of the tech sector to the Hartford economy: \$5.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Houston

Full MSA name: Houston-The Woodlands-Sugar Land, TX



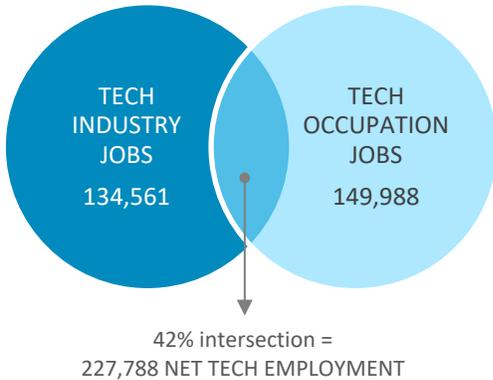
## STATE OF TECHNOLOGY SUMMARY

- 227,788 NET TECH EMPLOYMENT<sup>1</sup>
- 2,326 NET TECH JOB GAINS [2018 vs. 2017]
- 1.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,506 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 62,008 TECH OCCUPATION JOB POSTINGS [2018 total]
- 140% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

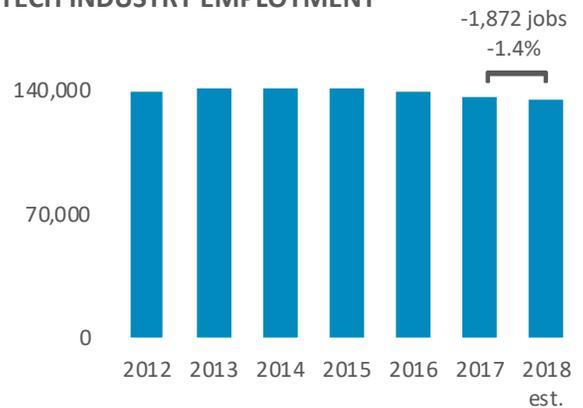
- 12<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 46<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 41<sup>st</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

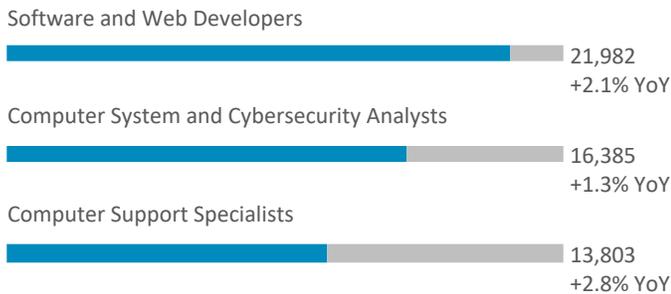
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	60,916	-1.1%
IT Services + Custom Software Services	38,570	-0.1%
Telecommunications and Internet Services	17,532	-2.7%
Tech Manufacturing	15,105	-4.6%
Software [packaged]	2,438	2.4%

## ECONOMIC IMPACT



# 5.8%

Estimated direct contribution of the tech sector to the Houston economy: \$28.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Indianapolis

Full MSA name: Indianapolis-Carmel-Anderson, IN



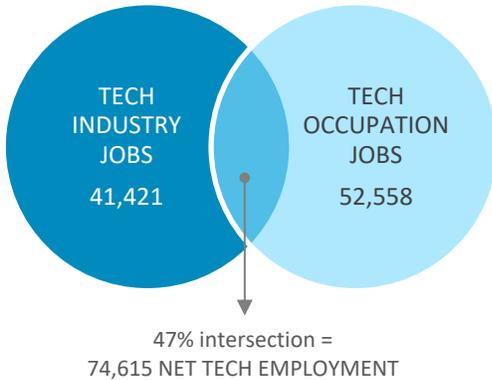
## STATE OF TECHNOLOGY SUMMARY

- 74,615 NET TECH EMPLOYMENT<sup>1</sup>
- 1,610 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,666 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 23,032 TECH OCCUPATION JOB POSTINGS [2018 total]
- 121% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

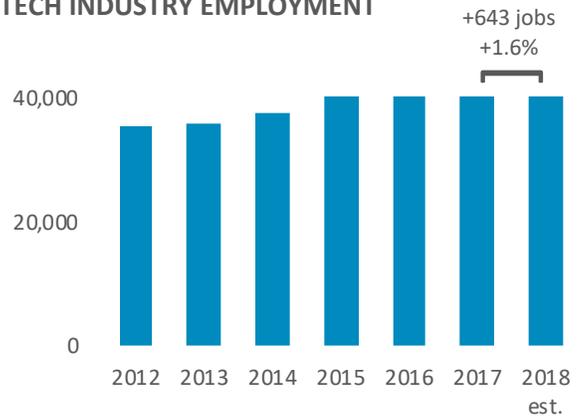
- 31<sup>st</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 28<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 32<sup>nd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

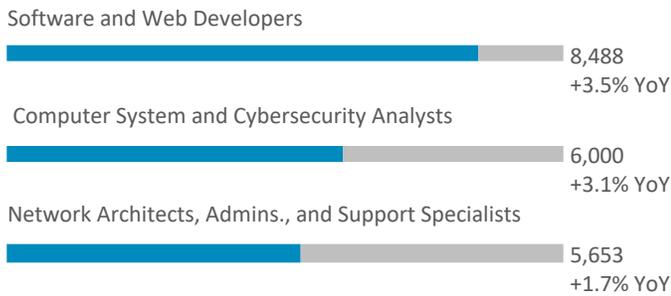
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	18,678	3.1%
R&D, Testing, and Engineering Services	9,453	1.2%
Telecommunications and Internet Services	7,640	-1.4%
Tech Manufacturing	3,841	0.4%
Software [packaged]	1,810	4.0%

## ECONOMIC IMPACT



# 7.7%

Estimated direct contribution of the tech sector to the Indianapolis economy: \$9.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Kansas City

Full MSA name: Kansas City, MO-KS



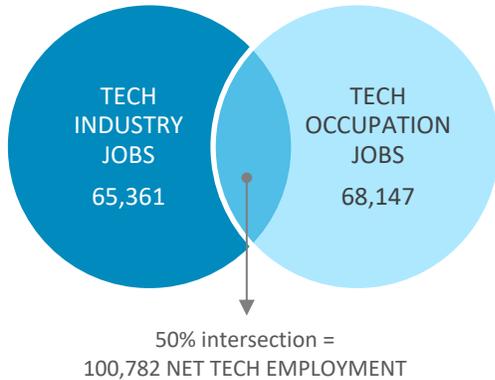
## STATE OF TECHNOLOGY SUMMARY

- 100,782 NET TECH EMPLOYMENT<sup>1</sup>
- 1,703 NET TECH JOB GAINS [2018 vs. 2017]
- 1.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,918 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 27,305 TECH OCCUPATION JOB POSTINGS [2018 total]
- 82% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

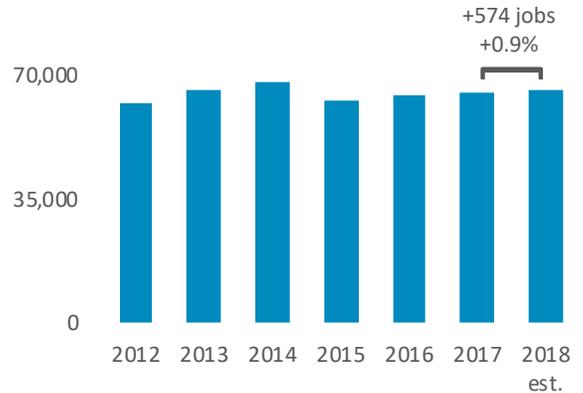
- 24<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 27<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 23<sup>rd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

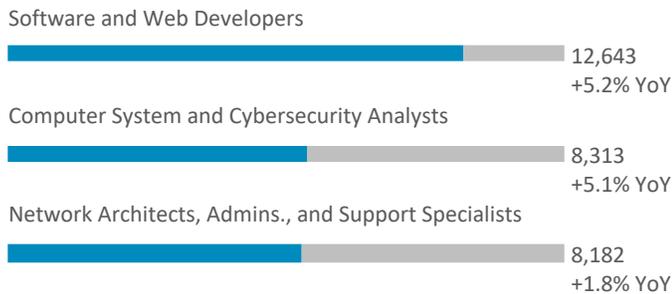
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	31,567	6.9%
R&D, Testing, and Engineering Services	18,242	0.4%
Telecommunications and Internet Services	8,928	-14.6%
Tech Manufacturing	5,459	0.7%
Software [packaged]	1,166	-3.7%

## ECONOMIC IMPACT



# 9.9%

Estimated direct contribution of the tech sector to the Kansas City economy: \$11.9 billion

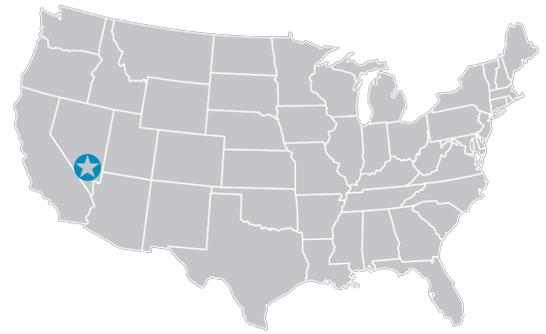
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Las Vegas

Full MSA name: Las Vegas-Henderson-Paradise, NV



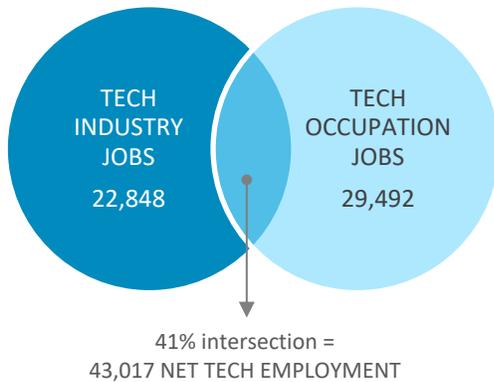
## STATE OF TECHNOLOGY SUMMARY

- 43,017 NET TECH EMPLOYMENT<sup>1</sup>
- 1,563 NET TECH JOB GAINS [2018 vs. 2017]
- 3.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,295 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 17,083 TECH OCCUPATION JOB POSTINGS [2018 total]
- 130% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

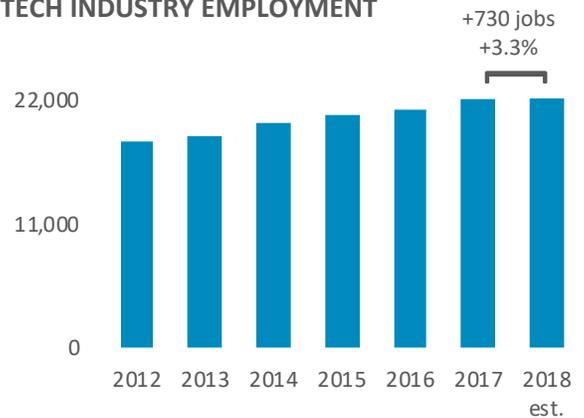
- 37<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 29<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 43<sup>rd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

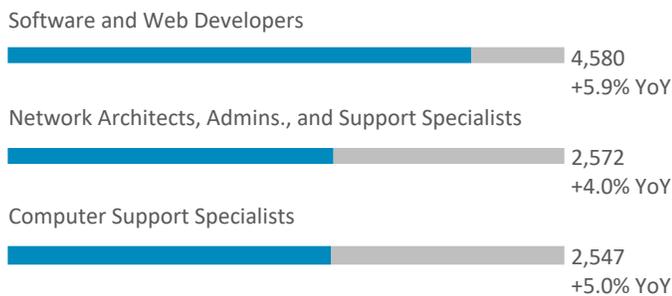
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	7,942	1.3%
IT Services + Custom Software Services	7,604	4.5%
Telecommunications and Internet Services	5,661	3.5%
Software [packaged]	994	9.5%
Tech Manufacturing	647	3.5%

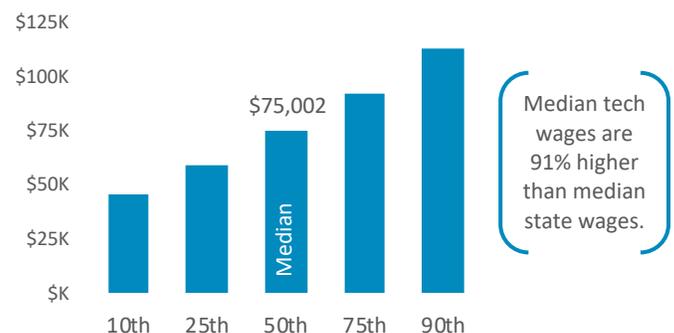
## ECONOMIC IMPACT



# 4.6%

Estimated direct contribution of the tech sector to the Las Vegas economy: \$4.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Los Angeles

Full MSA name: Los Angeles-Long Beach-Anaheim, CA



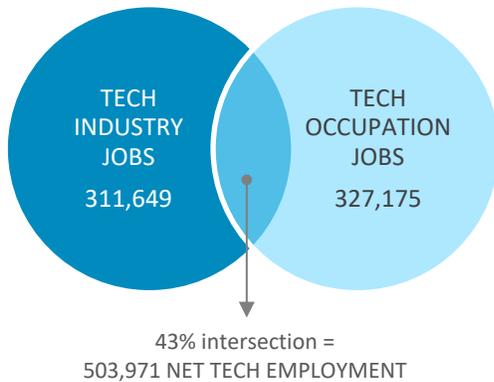
## STATE OF TECHNOLOGY SUMMARY

- 503,971 NET TECH EMPLOYMENT<sup>1</sup>
- 7,632 NET TECH JOB GAINS [2018 vs. 2017]
- 1.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 15,901 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 171,822 TECH OCCUPATION JOB POSTINGS [2018 total]
- 94% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

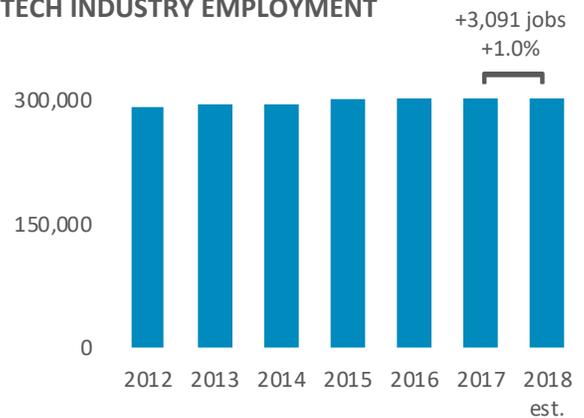
- 2<sup>nd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 8<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 21<sup>st</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

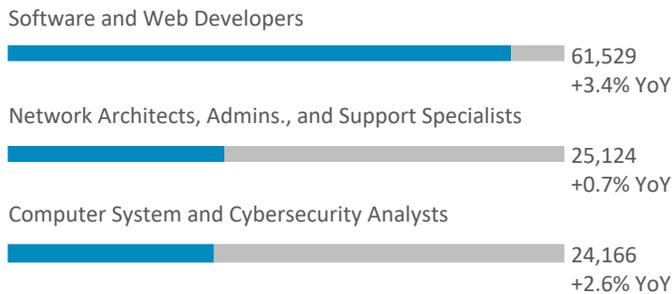
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Tech Manufacturing	92,087	0.9%
IT Services + Custom Software Services	83,079	2.8%
R&D, Testing, and Engineering Services	64,408	-2.3%
Telecommunications and Internet Services	55,179	0.7%
Software [packaged]	16,896	6.9%

## ECONOMIC IMPACT



# 10.3%

Estimated direct contribution of the tech sector to the Los Angeles economy: \$91.4 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Memphis

Full MSA name: Memphis, TN-MS-AR



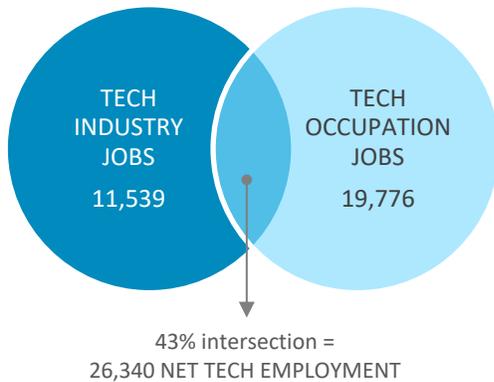
## STATE OF TECHNOLOGY SUMMARY

- 26,340 NET TECH EMPLOYMENT<sup>1</sup>
- 214 NET TECH JOB GAINS [2018 vs. 2017]
- 0.8% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,017 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 12,378 TECH OCCUPATION JOB POSTINGS [2018 total]
- 259% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

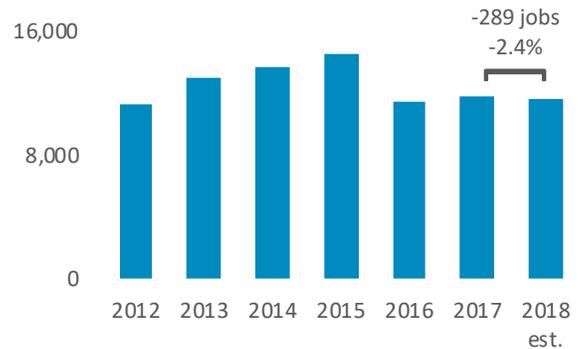
- 45<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 44<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 45<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

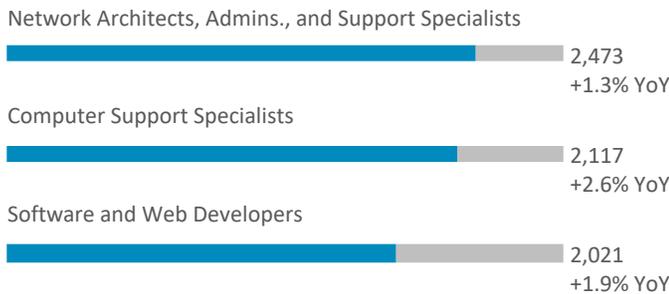
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	5,336	4.1%
Telecommunications and Internet Services	2,876	-1.2%
R&D, Testing, and Engineering Services	2,292	-16.5%
Tech Manufacturing	632	-5.9%
Software [packaged]	404	7.3%

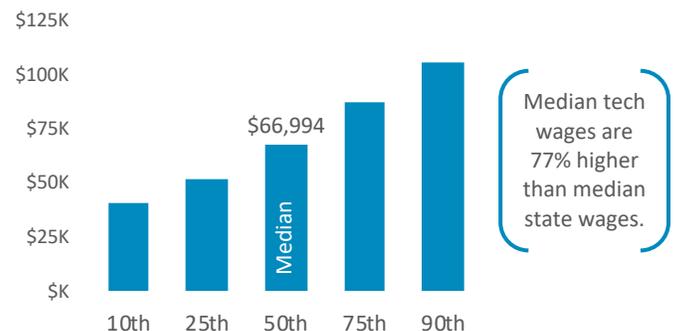
## ECONOMIC IMPACT



# 3.6%

Estimated direct contribution of the tech sector to the Memphis economy: \$2.5 billion

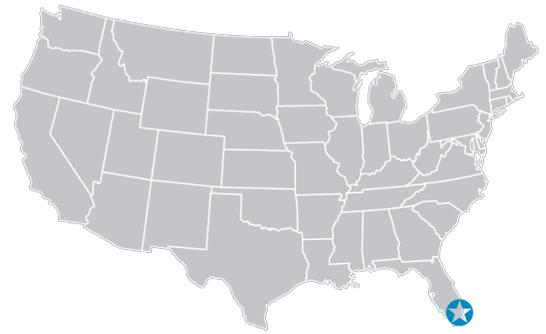
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Miami

Full MSA name: Miami-Fort Lauderdale-West Palm Beach, FL



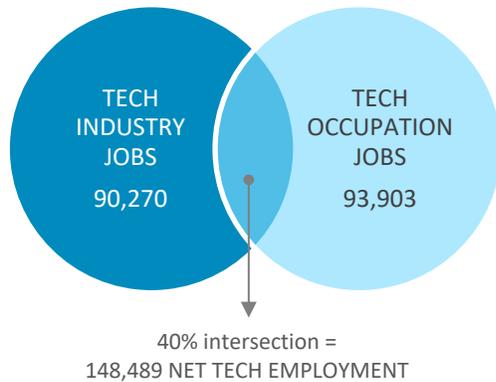
## STATE OF TECHNOLOGY SUMMARY

- 148,489 NET TECH EMPLOYMENT<sup>1</sup>
- 4,262 NET TECH JOB GAINS [2018 vs. 2017]
- 3.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 5.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,737 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 43,608 TECH OCCUPATION JOB POSTINGS [2018 total]
- 130% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

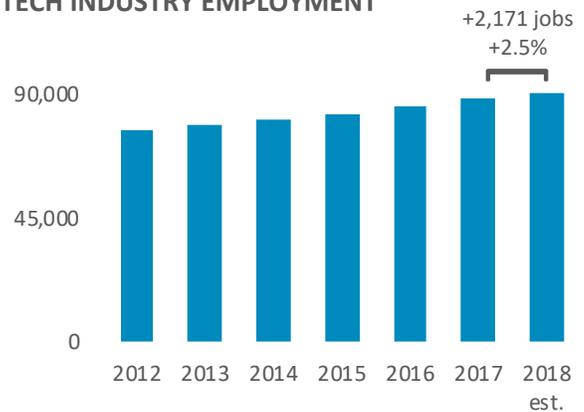
- 19<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 15<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 33<sup>rd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

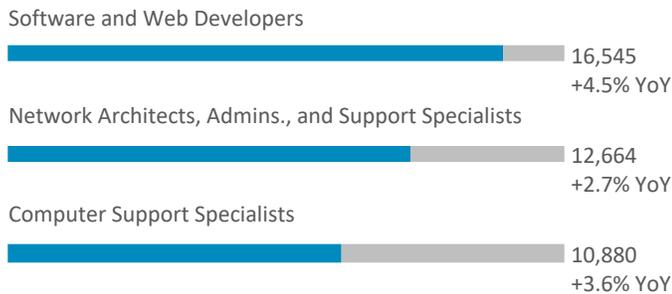
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	32,898	2.4%
Telecommunications and Internet Services	24,616	2.0%
R&D, Testing, and Engineering Services	20,785	4.3%
Tech Manufacturing	7,136	-2.3%
Software [packaged]	4,836	5.3%

## ECONOMIC IMPACT



# 7.2%

Estimated direct contribution of the tech sector to the Miami economy: \$22.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Milwaukee

Full MSA name: Milwaukee-Waukesha-West Allis, WI



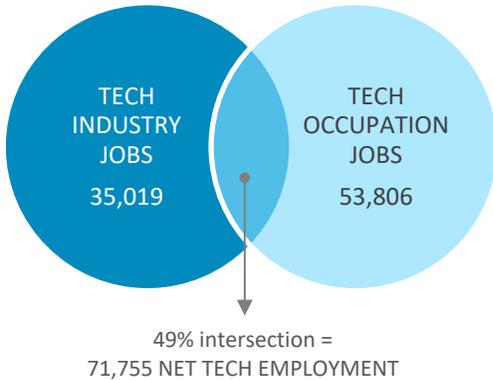
## STATE OF TECHNOLOGY SUMMARY

- 71,755 NET TECH EMPLOYMENT<sup>1</sup>
- 478 NET TECH JOB GAINS [2018 vs. 2017]
- 0.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,798 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 27,214 TECH OCCUPATION JOB POSTINGS [2018 total]
- 137% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

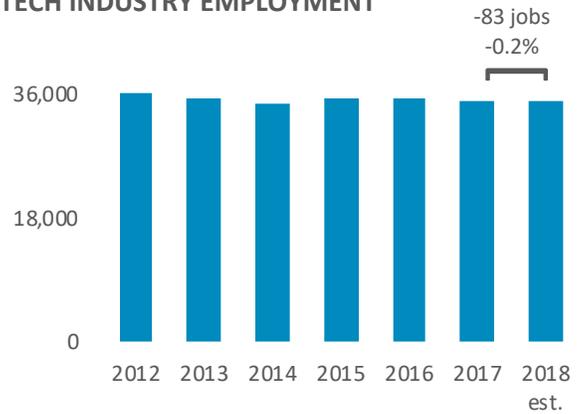
- 32<sup>nd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 39<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 24<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

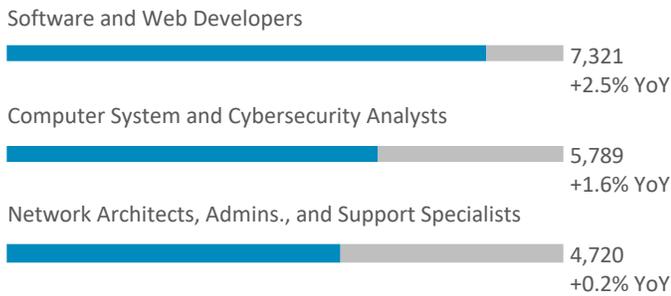
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	11,830	1.4%
Tech Manufacturing	9,074	-1.3%
Telecommunications and Internet Services	7,154	-4.3%
R&D, Testing, and Engineering Services	5,672	3.3%
Software [packaged]	1,289	1.3%

## ECONOMIC IMPACT



# 9.7%

Estimated direct contribution of the tech sector to the Milwaukee economy: \$9.1 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Minneapolis

Full MSA name: Minneapolis-St. Paul-Bloomington, MN-WI



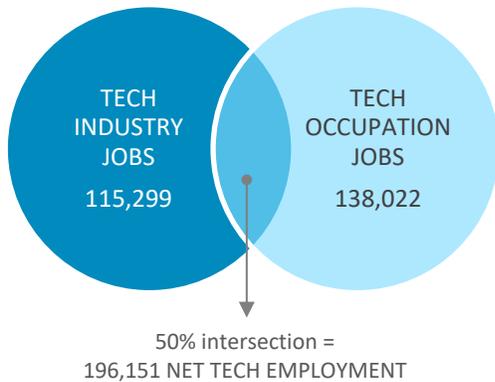
## STATE OF TECHNOLOGY SUMMARY

- 196,151 NET TECH EMPLOYMENT<sup>1</sup>
- 3,239 NET TECH JOB GAINS [2018 vs. 2017]
- 1.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 9.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,879 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 71,378 TECH OCCUPATION JOB POSTINGS [2018 total]
- 76% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

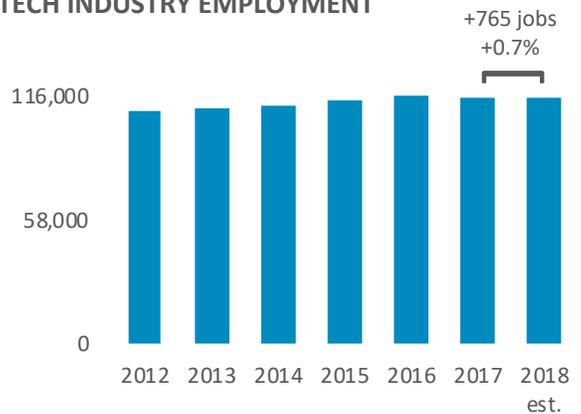
- 14<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 19<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 18<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

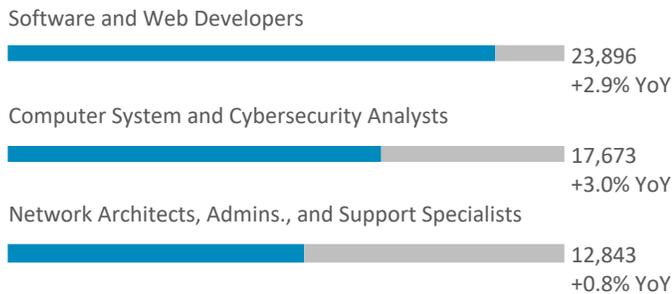
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Tech Manufacturing	37,291	0.4%
IT Services + Custom Software Services	35,634	0.3%
R&D, Testing, and Engineering Services	20,813	2.2%
Telecommunications and Internet Services	15,843	-0.3%
Software [packaged]	5,718	2.4%

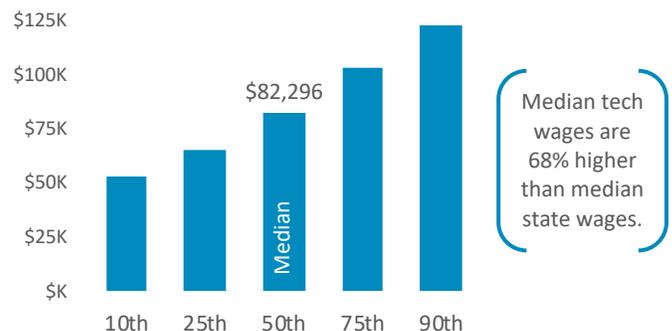
## ECONOMIC IMPACT



# 11.1%

Estimated direct contribution of the tech sector to the Minneapolis economy: \$27.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Nashville

Full MSA name: Nashville-Davidson--Murfreesboro--Franklin, TN



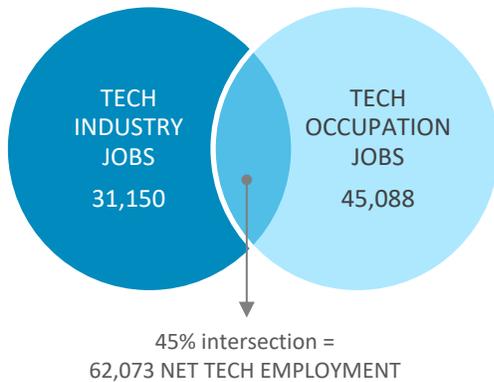
## STATE OF TECHNOLOGY SUMMARY

- 62,073 NET TECH EMPLOYMENT<sup>1</sup>
- 2,522 NET TECH JOB GAINS [2018 vs. 2017]
- 4.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,049 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 24,511 TECH OCCUPATION JOB POSTINGS [2018 total]
- 118% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

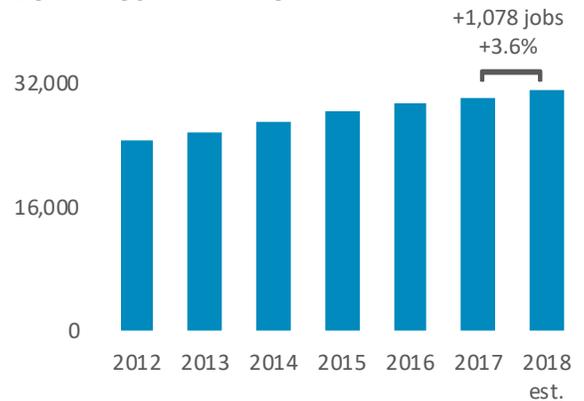
- 34<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 23<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 36<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

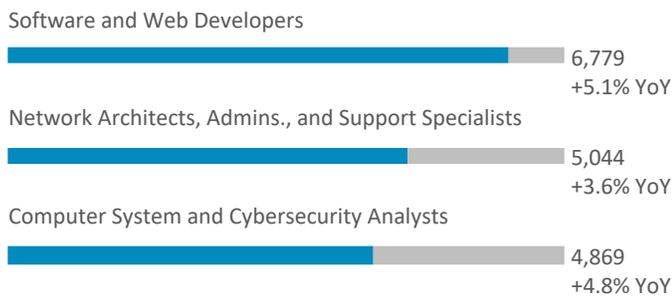
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	12,645	3.4%
Telecommunications and Internet Services	9,010	2.8%
R&D, Testing, and Engineering Services	6,399	4.3%
Software [packaged]	1,733	4.5%
Tech Manufacturing	1,363	6.4%

## ECONOMIC IMPACT



# 6.2%

Estimated direct contribution of the tech sector to the Nashville economy: \$7.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New Orleans

Full MSA name: New Orleans-Metairie, LA



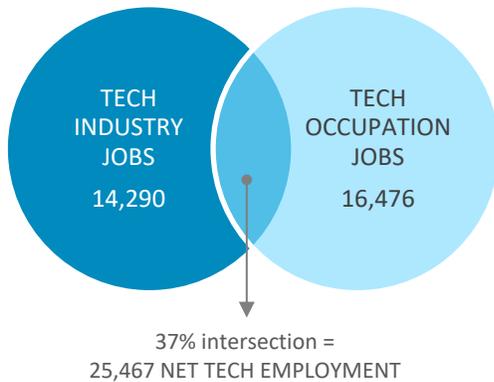
## STATE OF TECHNOLOGY SUMMARY

- 25,467 NET TECH EMPLOYMENT<sup>1</sup>
- 185 NET TECH JOB GAINS [2018 vs. 2017]
- 0.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 4.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,921 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 8,213 TECH OCCUPATION JOB POSTINGS [2018 total]
- 213% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

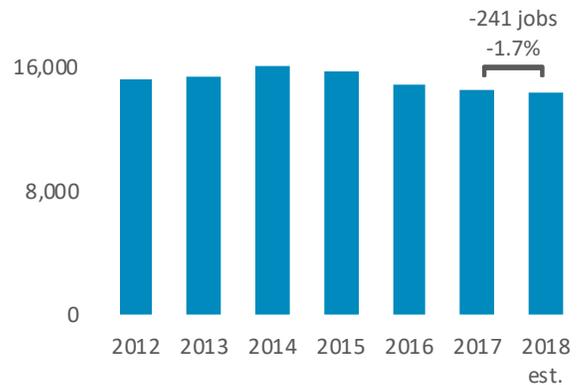
- 46<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 43<sup>rd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 46<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

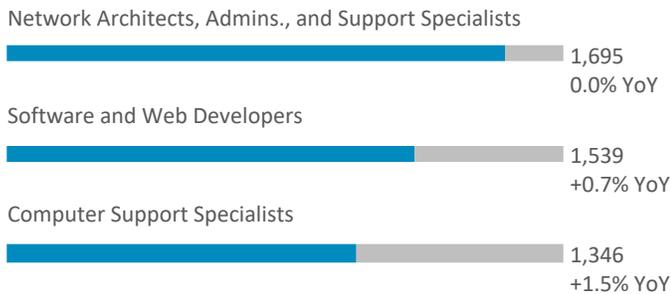
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

Sector	Count	YoY % Change
R&D, Testing, and Engineering Services	5,751	-6.1%
IT Services + Custom Software Services	4,791	3.0%
Telecommunications and Internet Services	2,462	-1.6%
Tech Manufacturing	1,086	2.0%
Software [packaged]	200	6.8%

## ECONOMIC IMPACT



# 3.6%

Estimated direct contribution of the tech sector to the New Orleans economy: \$2.6 billion

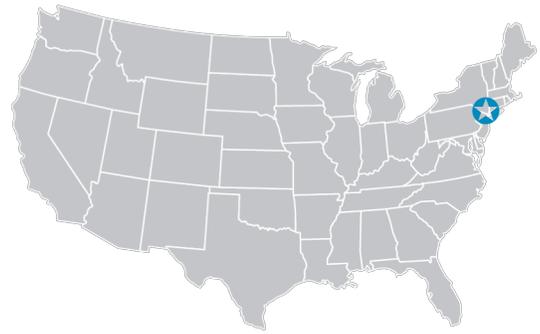
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# New York City

Full MSA name: New York-Newark-Jersey City, NY-NJ-PA



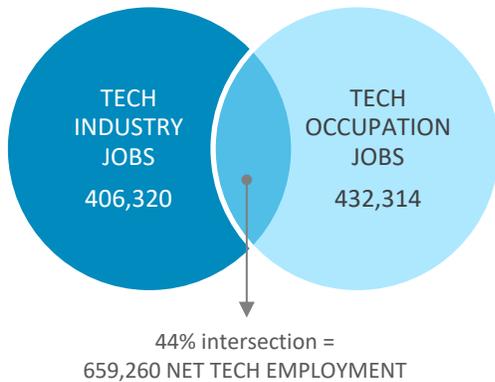
## STATE OF TECHNOLOGY SUMMARY

- 659,260 NET TECH EMPLOYMENT<sup>1</sup>
- 10,440 NET TECH JOB GAINS [2018 vs. 2017]
- 1.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 24,123 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 265,882 TECH OCCUPATION JOB POSTINGS [2018 total]
- 47% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

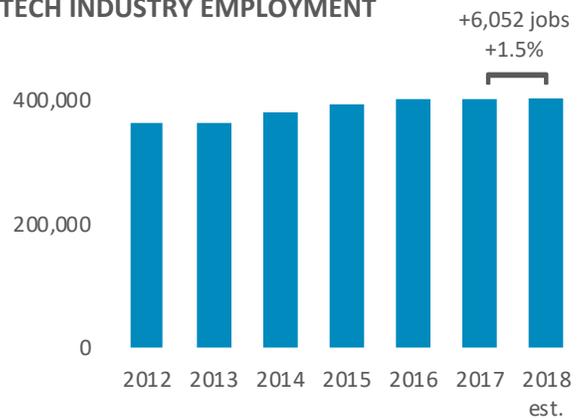
- 1<sup>st</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 5<sup>th</sup> NET TECH EMPLOYMENT GROWTH RANK
- 29<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

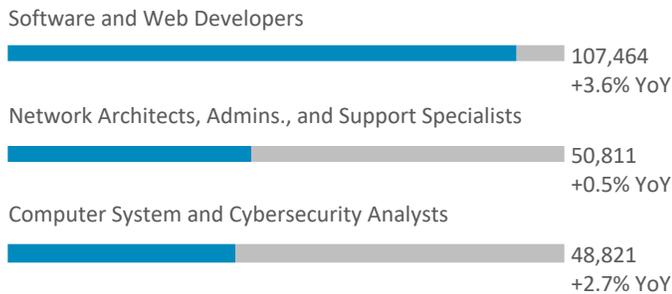
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	157,707	0.8%
Telecommunications and Internet Services	107,659	2.3%
R&D, Testing, and Engineering Services	92,524	1.0%
Tech Manufacturing	34,403	0.1%
Software [packaged]	14,027	11.6%

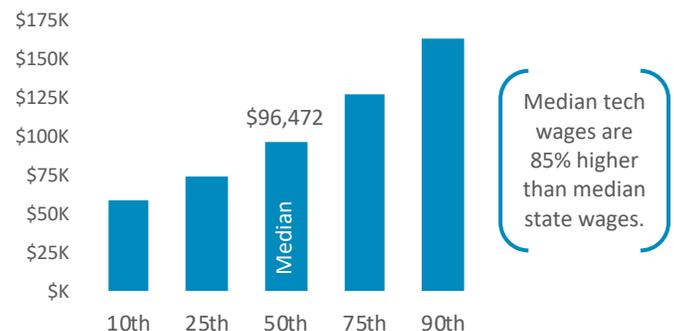
## ECONOMIC IMPACT



# 8.8%

Estimated direct contribution of the tech sector to the New York economy: \$136.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Oklahoma City

Full MSA name: Oklahoma City, OK



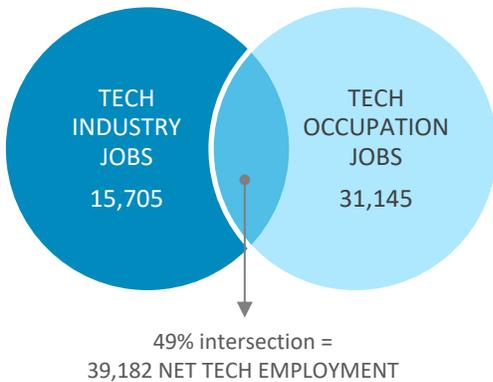
## STATE OF TECHNOLOGY SUMMARY

- 39,182 NET TECH EMPLOYMENT<sup>1</sup>
- 37 NET TECH JOB GAINS [2018 vs. 2017]
- 0.1% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,728 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 13,042 TECH OCCUPATION JOB POSTINGS [2018 total]
- 160% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

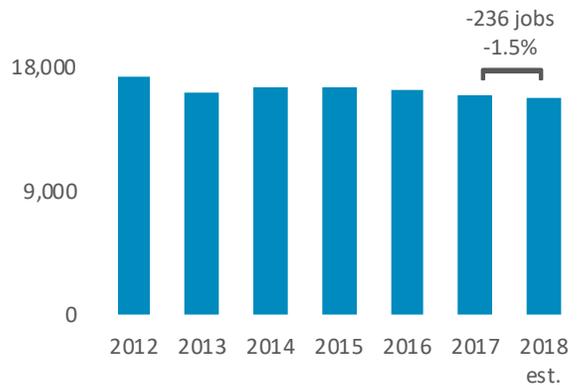
- 38<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 41<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 44<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

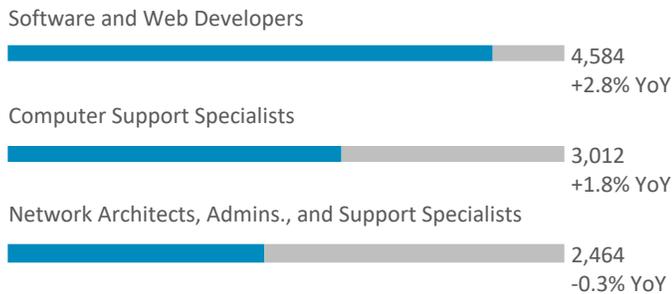
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	5,886	0.7%
R&D, Testing, and Engineering Services	3,997	-0.8%
Telecommunications and Internet Services	3,600	-5.9%
Tech Manufacturing	1,779	-2.0%
Software [packaged]	443	4.8%

## ECONOMIC IMPACT



# 3.7%

Estimated direct contribution of the tech sector to the Oklahoma City economy: \$2.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Omaha

Full MSA name: Omaha-Council Bluffs, NE-IA



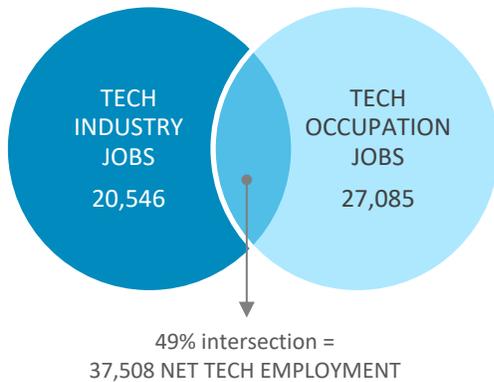
## STATE OF TECHNOLOGY SUMMARY

- 37,508 NET TECH EMPLOYMENT<sup>1</sup>
- 516 NET TECH JOB GAINS [2018 vs. 2017]
- 1.4% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,317 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 16,062 TECH OCCUPATION JOB POSTINGS [2018 total]
- 137% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

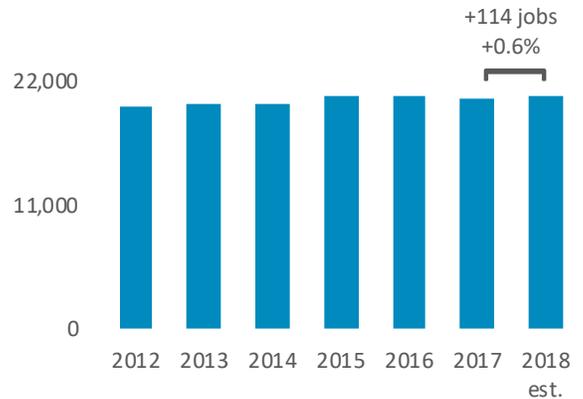
- 40<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 38<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 31<sup>st</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

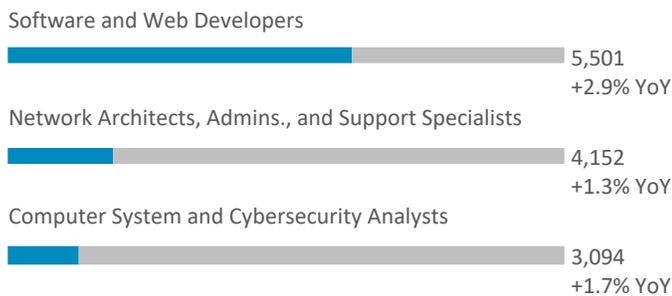
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	9,148	0.3%
Telecommunications and Internet Services	6,680	0.8%
R&D, Testing, and Engineering Services	3,776	0.7%
Tech Manufacturing	695	0.1%
Software [packaged]	247	4.7%

## ECONOMIC IMPACT



# 8.1%

Estimated direct contribution of the tech sector to the Omaha economy: \$4.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Orlando

Full MSA name: Orlando-Kissimmee-Sanford, FL



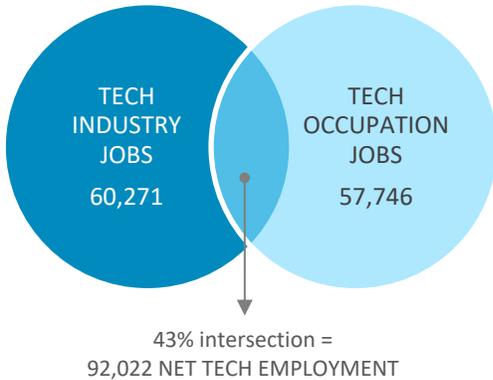
## STATE OF TECHNOLOGY SUMMARY

- 92,022 NET TECH EMPLOYMENT<sup>1</sup>
- 3,952 NET TECH JOB GAINS [2018 vs. 2017]
- 4.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,466 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 24,701 TECH OCCUPATION JOB POSTINGS [2018 total]
- 50% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

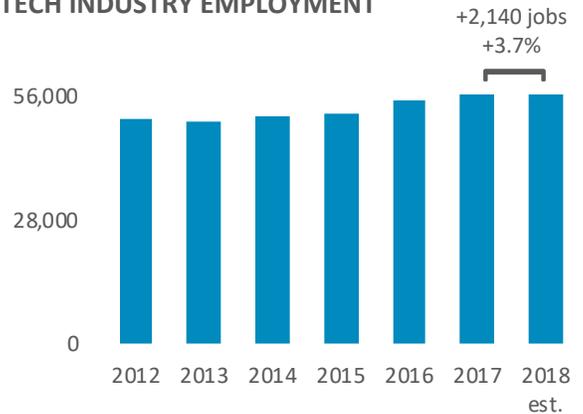
- 26<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 17<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 20<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

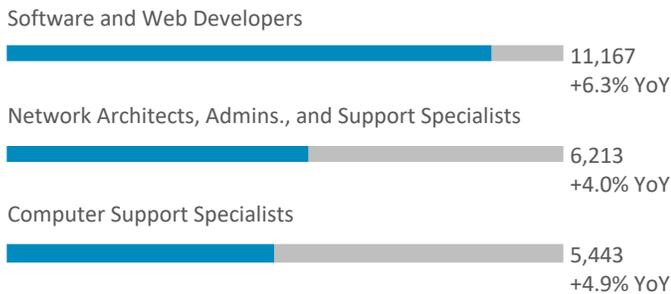
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	20,262	7.2%
R&D, Testing, and Engineering Services	16,045	4.3%
Telecommunications and Internet Services	12,321	-1.3%
Tech Manufacturing	8,517	1.6%
Software [packaged]	3,126	5.2%

## ECONOMIC IMPACT



# 10.4%

Estimated direct contribution of the tech sector to the Orlando economy: \$12.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Philadelphia

Full MSA name: Philadelphia-Camden-Wilmington, PA-NJ-DE-MD



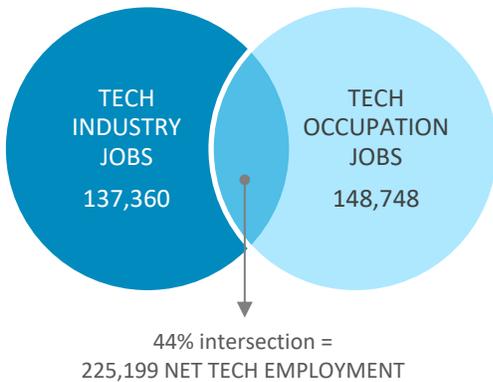
## STATE OF TECHNOLOGY SUMMARY

- 225,199 NET TECH EMPLOYMENT<sup>1</sup>
- 715 NET TECH JOB GAINS [2018 vs. 2017]
- 0.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 8,370 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 82,946 TECH OCCUPATION JOB POSTINGS [2018 total]
- 67% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

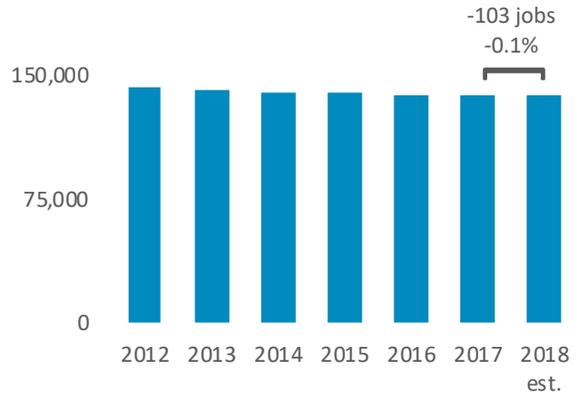
- 13<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 36<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 26<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

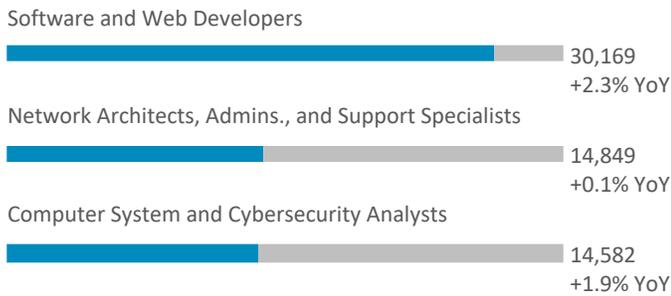
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	46,935	1.4%
IT Services + Custom Software Services	42,816	-1.7%
Telecommunications and Internet Services	23,987	-0.5%
Tech Manufacturing	20,043	-0.3%
Software [packaged]	3,580	5.3%

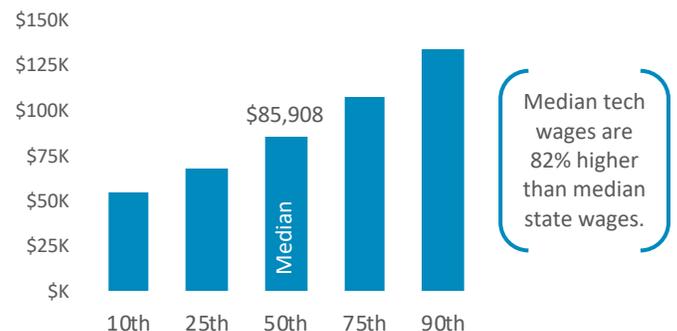
## ECONOMIC IMPACT



# 9.6%

Estimated direct contribution of the tech sector to the Philadelphia economy: \$37.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Phoenix

Full MSA name: Phoenix-Mesa-Scottsdale, AZ



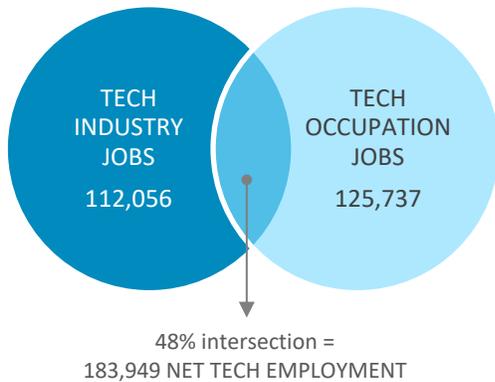
## STATE OF TECHNOLOGY SUMMARY

- 183,949 NET TECH EMPLOYMENT<sup>1</sup>
- 4,044 NET TECH JOB GAINS [2018 vs. 2017]
- 2.2% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,987 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 74,708 TECH OCCUPATION JOB POSTINGS [2018 total]
- 184% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

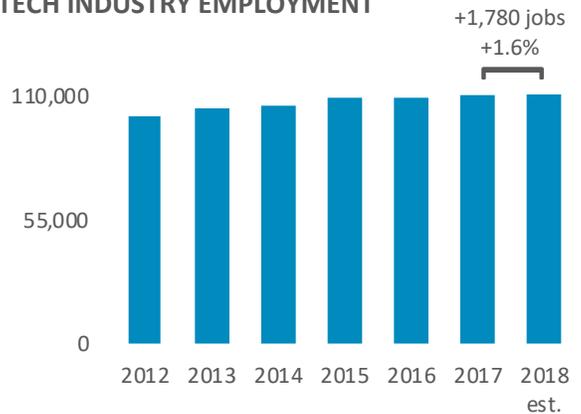
- 15<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 16<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 19<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

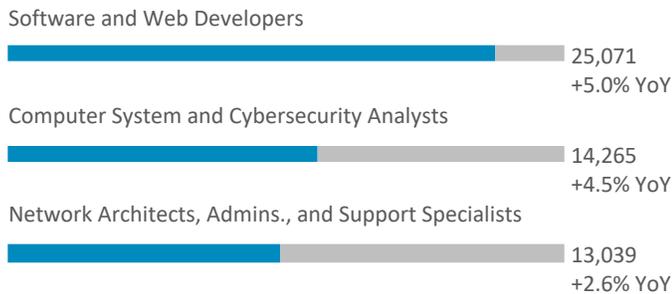
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	37,122	3.9%
Tech Manufacturing	30,576	-1.3%
Telecommunications and Internet Services	24,771	2.8%
R&D, Testing, and Engineering Services	17,344	0.4%
Software [packaged]	2,243	3.4%

## ECONOMIC IMPACT



# 11.1%

Estimated direct contribution of the tech sector to the Phoenix economy: \$25.3 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Pittsburgh

Full MSA name: Pittsburgh, PA



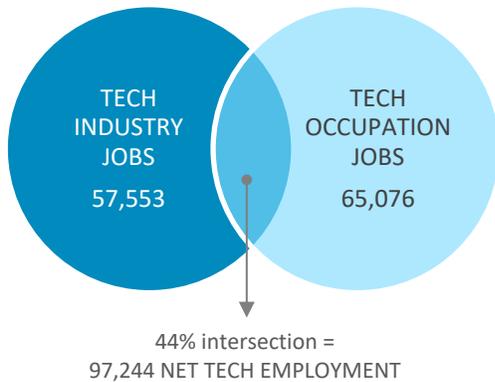
## STATE OF TECHNOLOGY SUMMARY

- 97,244 NET TECH EMPLOYMENT<sup>1</sup>
- 1,239 NET TECH JOB GAINS [2018 vs. 2017]
- 1.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 8.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,392 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 31,657 TECH OCCUPATION JOB POSTINGS [2018 total]
- 92% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

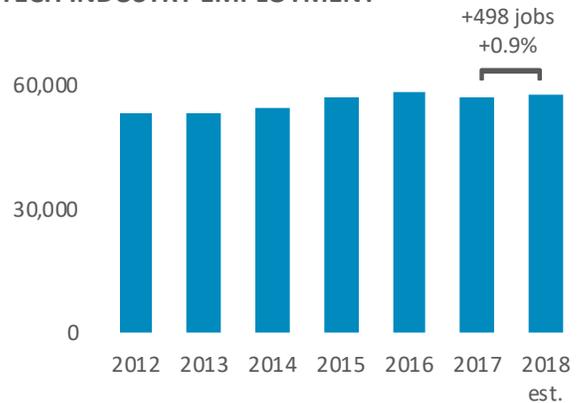
- 25<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 32<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 25<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

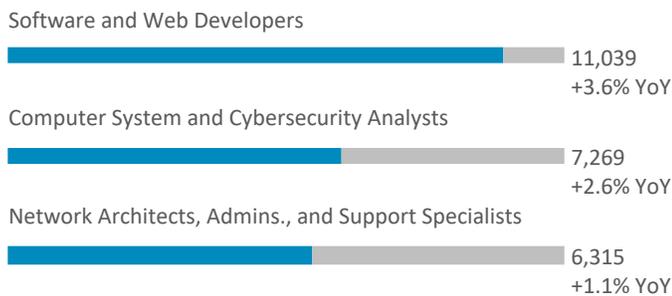
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	21,877	-0.9%
IT Services + Custom Software Services	16,809	2.1%
Telecommunications and Internet Services	8,475	2.4%
Tech Manufacturing	8,326	0.9%
Software [packaged]	2,066	4.0%

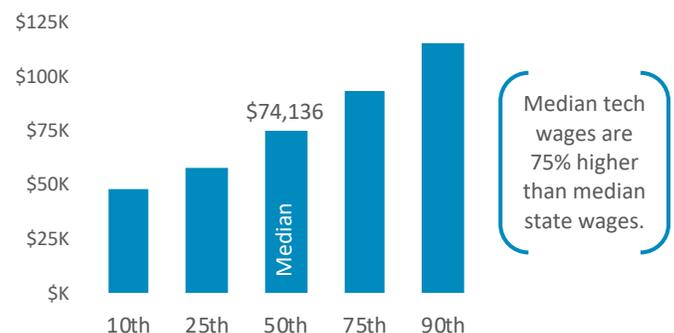
## ECONOMIC IMPACT



# 9.7%

Estimated direct contribution of the tech sector to the Pittsburgh economy: \$13.4 billion

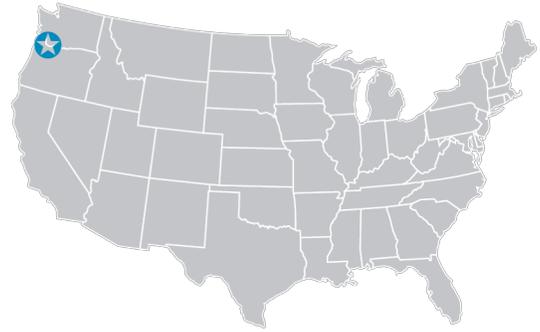
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Portland

Full MSA name: Portland-Vancouver-Hillsboro, OR-WA



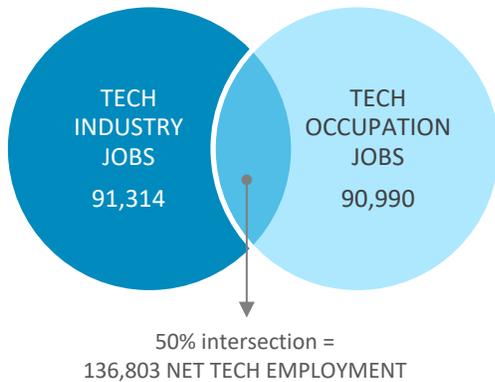
## STATE OF TECHNOLOGY SUMMARY

- 136,803 NET TECH EMPLOYMENT<sup>1</sup>
- 3,895 NET TECH JOB GAINS [2018 vs. 2017]
- 2.9% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,522 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 43,581 TECH OCCUPATION JOB POSTINGS [2018 total]
- 62% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

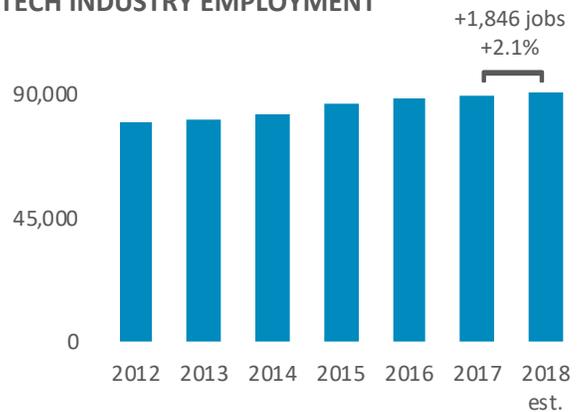
- 20<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 18<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 7<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

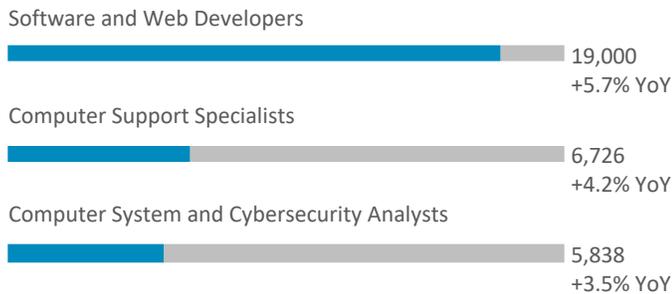
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Tech Manufacturing	38,427	0.3%
IT Services + Custom Software Services	20,754	4.3%
R&D, Testing, and Engineering Services	13,177	2.5%
Telecommunications and Internet Services	10,386	1.8%
Software [packaged]	8,569	4.4%

## ECONOMIC IMPACT



# 16.2%

Estimated direct contribution of the tech sector to the Portland economy: \$24.4 billion

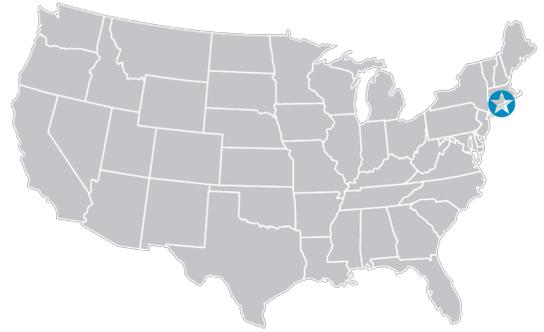
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Providence

Full MSA name: Providence-Warwick, RI



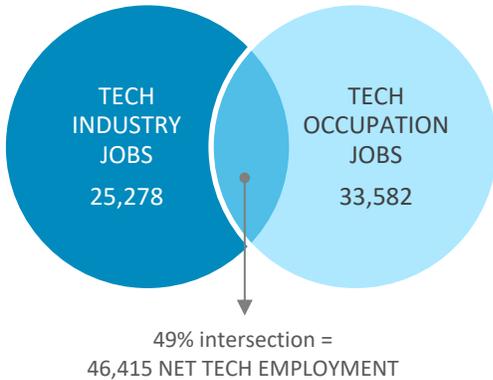
## STATE OF TECHNOLOGY SUMMARY

- 46,415 NET TECH EMPLOYMENT<sup>1</sup>
- 315 NET TECH JOB GAINS [2018 vs. 2017]
- 0.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,490 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 9,499 TECH OCCUPATION JOB POSTINGS [2018 total]
- 45% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

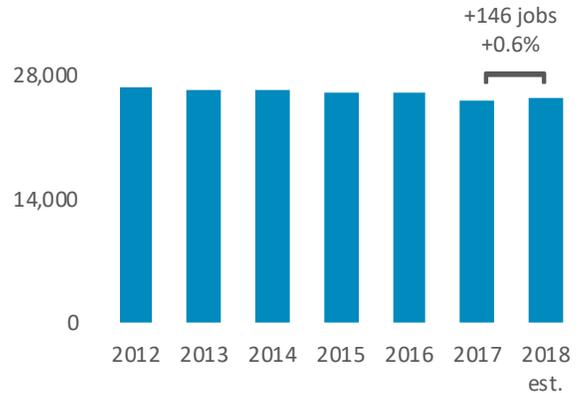
- 36<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 40<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 35<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

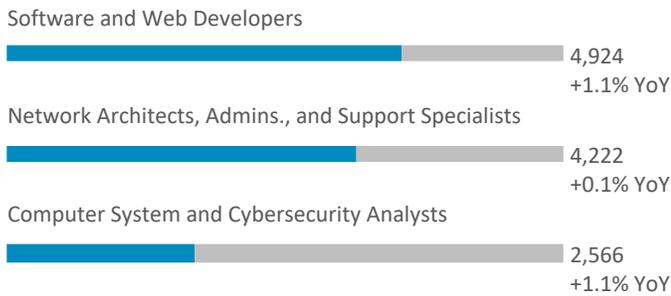
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	8,521	3.1%
R&D, Testing, and Engineering Services	6,719	4.8%
Tech Manufacturing	5,189	1.3%
Telecommunications and Internet Services	3,731	-10.2%
Software [packaged]	1,118	-5.0%

## ECONOMIC IMPACT



# 6.7%

Estimated direct contribution of the tech sector to the Providence economy: \$5.1 billion

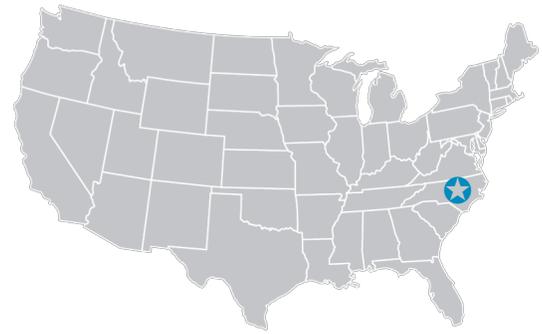
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Raleigh

Full MSA name: Raleigh, NC



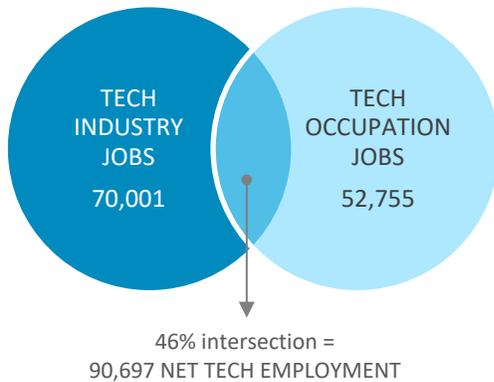
## STATE OF TECHNOLOGY SUMMARY

- 90,697 NET TECH EMPLOYMENT<sup>1</sup>
- 4,755 NET TECH JOB GAINS [2018 vs. 2017]
- 5.5% YOY % CHANGE IN NET TECH EMPLOYMENT
- 13.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,064 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 36,615 TECH OCCUPATION JOB POSTINGS [2018 total]
- 93% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

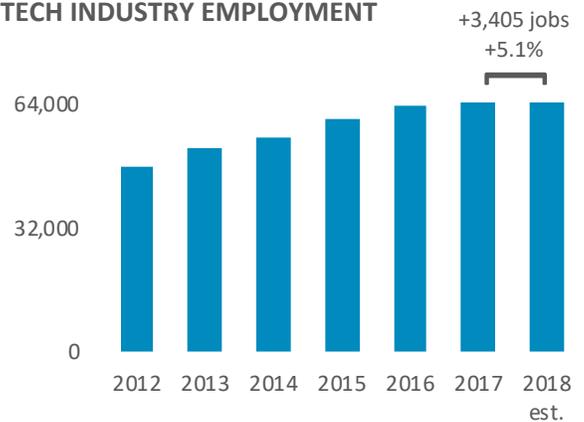
- 27<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 14<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 5<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

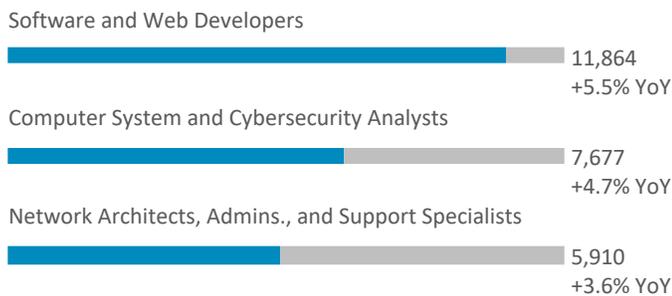
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	22,714	4.4%
R&D, Testing, and Engineering Services	14,135	5.2%
Tech Manufacturing	13,322	7.1%
Telecommunications and Internet Services	10,062	3.5%
Software [packaged]	9,767	5.6%

## ECONOMIC IMPACT



# 21.8%

Estimated direct contribution of the tech sector to the Raleigh economy: \$16.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Salt Lake City

Full MSA name: Salt Lake City, UT



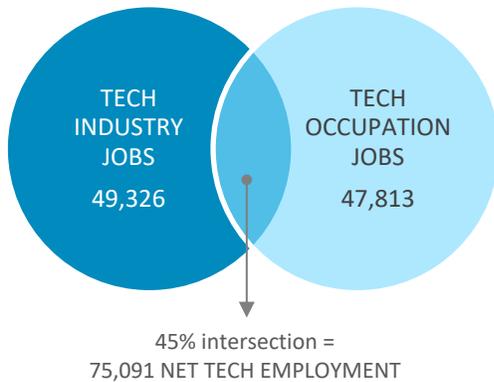
## STATE OF TECHNOLOGY SUMMARY

- 75,091 NET TECH EMPLOYMENT<sup>1</sup>
- 2,371 NET TECH JOB GAINS [2018 vs. 2017]
- 3.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,157 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 16,962 TECH OCCUPATION JOB POSTINGS [2018 total]
- 120% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

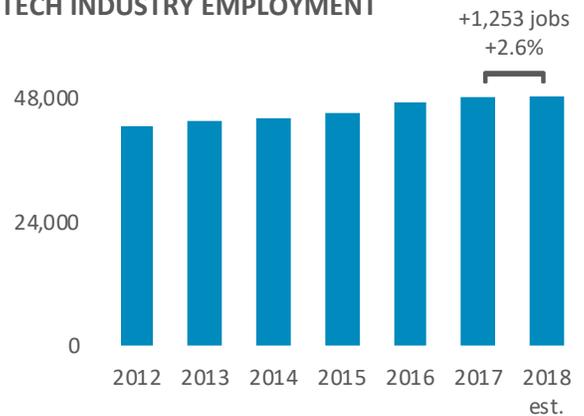
- 30<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 24<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 16<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

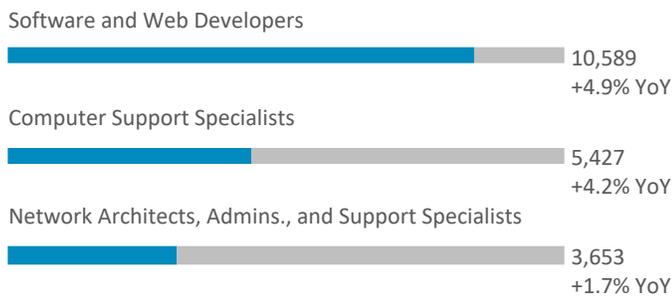
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	17,449	3.8%
R&D, Testing, and Engineering Services	10,315	2.2%
Telecommunications and Internet Services	8,260	1.2%
Tech Manufacturing	8,158	-1.1%
Software [packaged]	5,144	7.9%

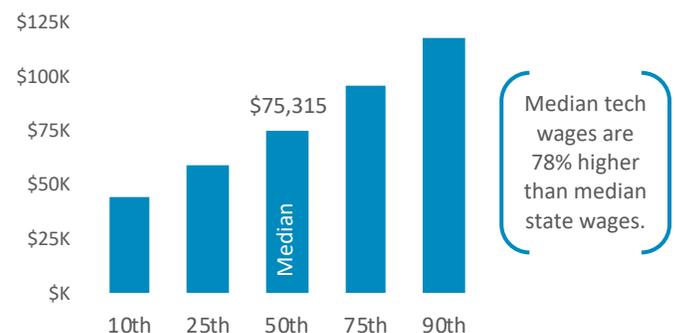
## ECONOMIC IMPACT



# 11.5%

Estimated direct contribution of the tech sector to the Salt Lake City economy: \$9.5 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# San Antonio

Full MSA name: San Antonio-New Braunfels, TX



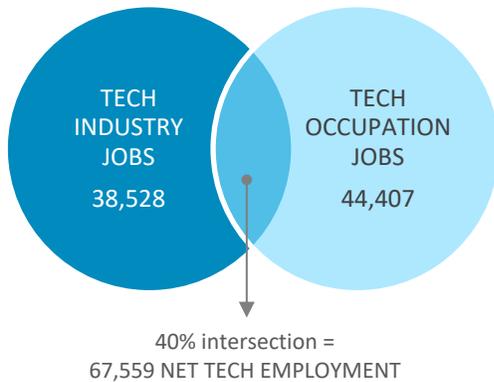
## STATE OF TECHNOLOGY SUMMARY

- 67,559 NET TECH EMPLOYMENT<sup>1</sup>
- 1,735 NET TECH JOB GAINS [2018 vs. 2017]
- 2.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 6.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,122 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 24,518 TECH OCCUPATION JOB POSTINGS [2018 total]
- 97% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

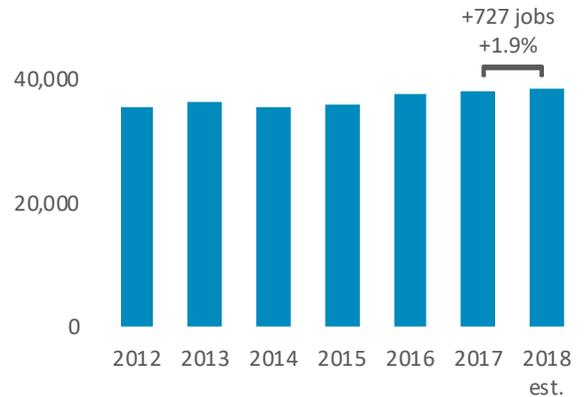
- 33<sup>rd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 26<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 34<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

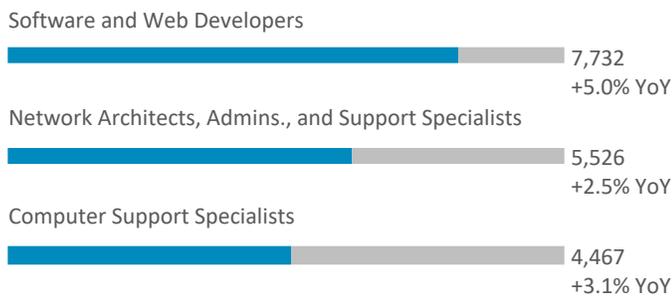
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Telecommunications and Internet Services	14,296	2.2%
R&D, Testing, and Engineering Services	10,956	-1.5%
IT Services + Custom Software Services	10,486	5.1%
Tech Manufacturing	2,121	3.0%
Software [packaged]	670	1.4%

## ECONOMIC IMPACT



# 6.7%

Estimated direct contribution of the tech sector to the San Antonio economy: \$7.9 billion

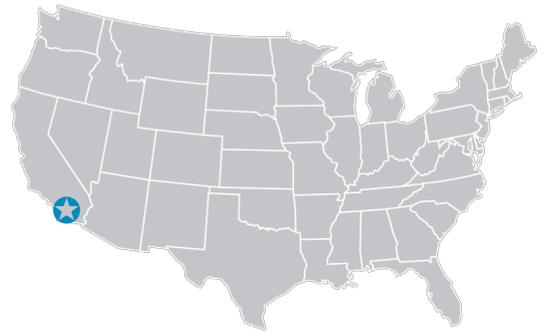
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# San Diego

Full MSA name: San Diego-Carlsbad, CA



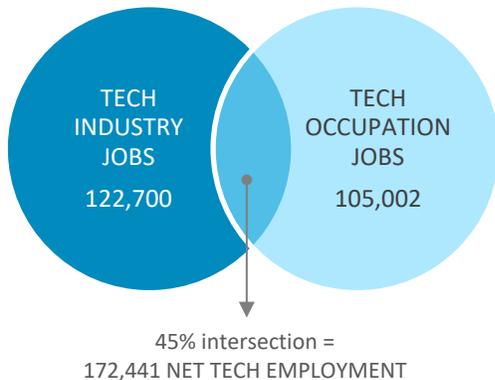
## STATE OF TECHNOLOGY SUMMARY

- 172,441 NET TECH EMPLOYMENT<sup>1</sup>
- 2,681 NET TECH JOB GAINS [2018 vs. 2017]
- 1.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.8% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,522 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 57,359 TECH OCCUPATION JOB POSTINGS [2018 total]
- 47% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

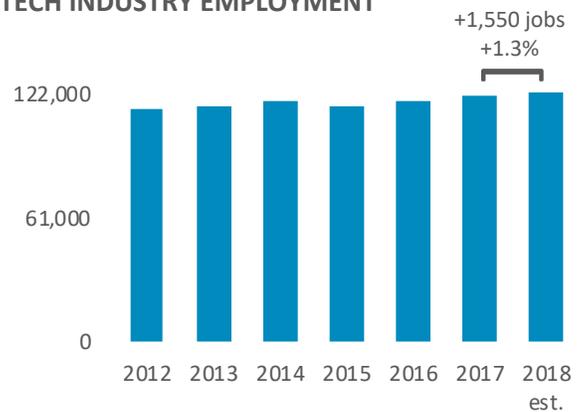
- 17<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 21<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 9<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

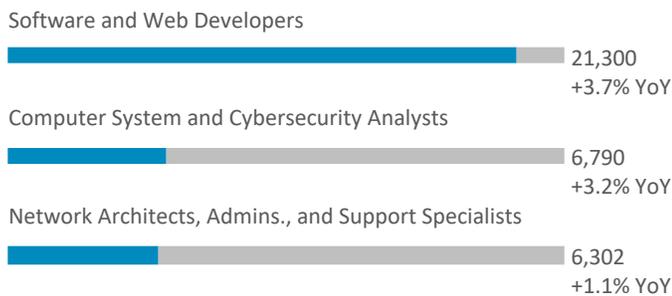
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	49,296	-1.0%
Tech Manufacturing	28,880	2.7%
IT Services + Custom Software Services	27,013	3.3%
Telecommunications and Internet Services	12,745	1.8%
Software [packaged]	4,765	4.1%

## ECONOMIC IMPACT



# 15.4%

Estimated direct contribution of the tech sector to the San Diego economy: \$32.9 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# San Francisco

Full MSA name: San Francisco-Oakland-Hayward, CA



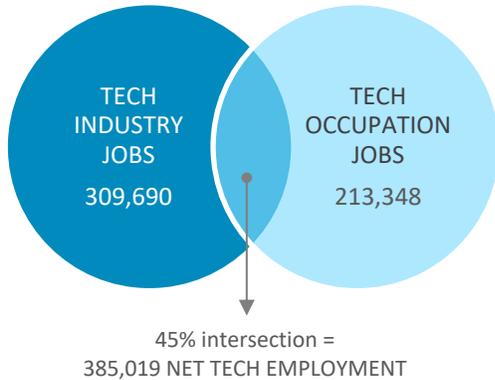
## STATE OF TECHNOLOGY SUMMARY

- 385,019 NET TECH EMPLOYMENT<sup>1</sup>
- 20,566 NET TECH JOB GAINS [2018 vs. 2017]
- 5.6% YOY % CHANGE IN NET TECH EMPLOYMENT
- 14.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 10,869 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 166,102 TECH OCCUPATION JOB POSTINGS [2018 total]
- 90% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

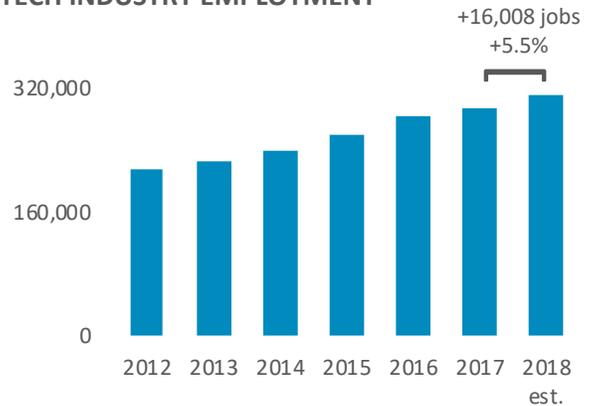
- 4<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 1<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 2<sup>nd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	115,004	3.6%
Telecommunications and Internet Services	69,595	10.7%
R&D, Testing, and Engineering Services	65,313	3.7%
Tech Manufacturing	33,955	4.0%
Software [packaged]	25,822	6.9%

## ECONOMIC IMPACT



# 28.0%

Estimated direct contribution of the tech sector to the San Francisco economy: \$141.3 billion

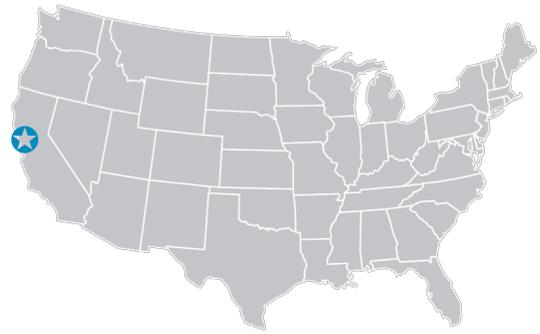
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# San Jose

Full MSA name: San Jose-Sunnyvale-Santa Clara, CA



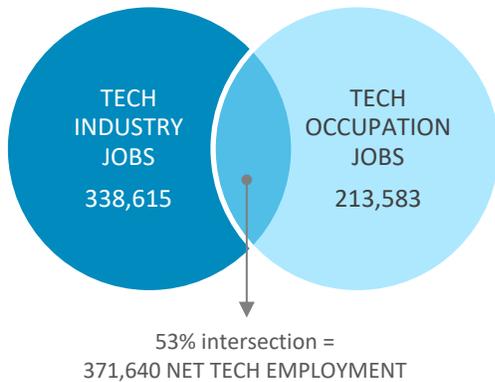
## STATE OF TECHNOLOGY SUMMARY

- 371,640 NET TECH EMPLOYMENT<sup>1</sup>
- 13,140 NET TECH JOB GAINS [2018 vs. 2017]
- 3.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 31.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 6,883 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 143,295 TECH OCCUPATION JOB POSTINGS [2018 total]
- 89% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

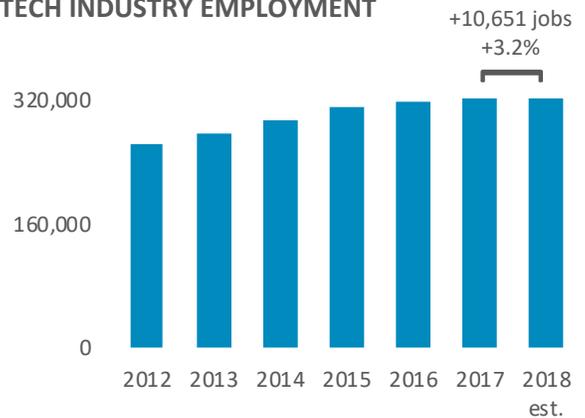
- 6<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 2<sup>nd</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 1<sup>st</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Tech Manufacturing	124,701	0.7%
IT Services + Custom Software Services	94,456	4.7%
Telecommunications and Internet Services	63,678	7.9%
R&D, Testing, and Engineering Services	32,956	-2.6%
Software [packaged]	22,824	8.2%

## ECONOMIC IMPACT



# 60.0%

Estimated direct contribution of the tech sector to the San Jose economy: \$185.3 billion

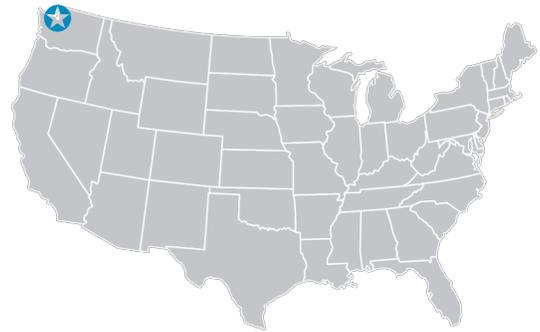
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Seattle

Full MSA name: Seattle-Tacoma-Bellevue, WA



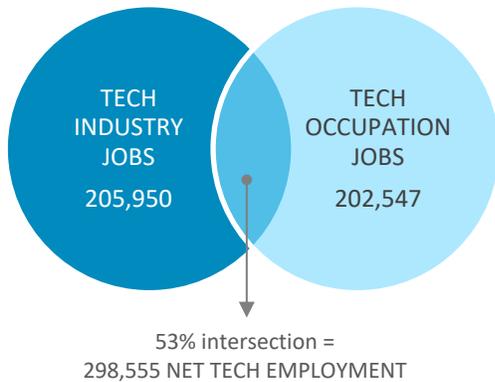
## STATE OF TECHNOLOGY SUMMARY

- 298,555 NET TECH EMPLOYMENT<sup>1</sup>
- 11,550 NET TECH JOB GAINS [2018 vs. 2017]
- 4.0% YOY % CHANGE IN NET TECH EMPLOYMENT
- 14.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 10,346 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 93,303 TECH OCCUPATION JOB POSTINGS [2018 total]
- 66% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

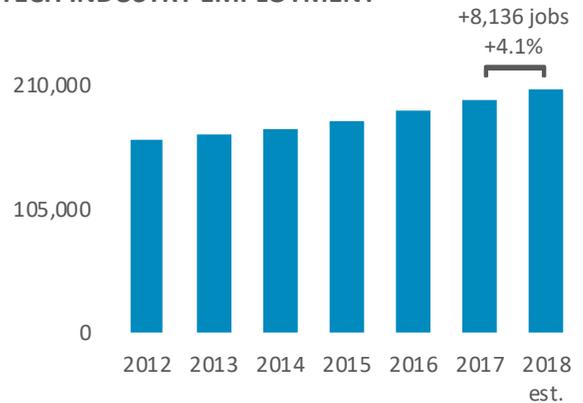
- 9<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 4<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 3<sup>rd</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

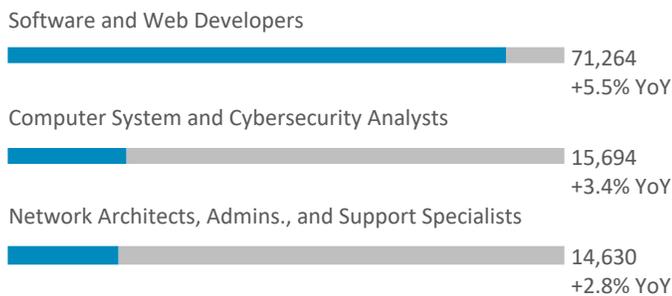
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
Software [packaged]	61,738	3.5%
IT Services + Custom Software Services	55,998	4.8%
Telecommunications and Internet Services	45,952	8.2%
R&D, Testing, and Engineering Services	27,671	-0.3%
Tech Manufacturing	14,592	0.7%

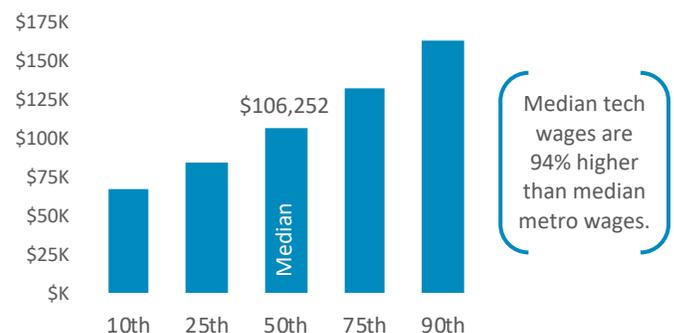
## ECONOMIC IMPACT



# 26.2%

Estimated direct contribution of the tech sector to the Seattle economy: \$87.7 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# St. Louis

Full MSA name: St. Louis, MO-IL



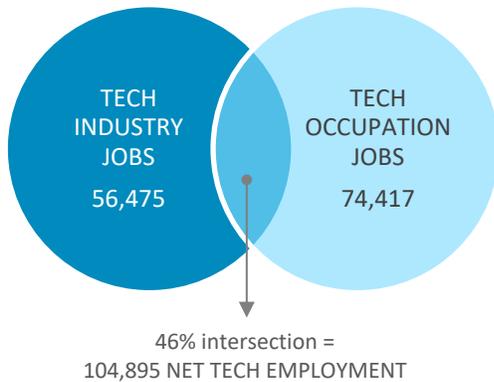
## STATE OF TECHNOLOGY SUMMARY

- 104,895 NET TECH EMPLOYMENT<sup>1</sup>
- 1,335 NET TECH JOB GAINS [2018 vs. 2017]
- 1.3% YOY % CHANGE IN NET TECH EMPLOYMENT
- 7.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 3,084 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 44,869 TECH OCCUPATION JOB POSTINGS [2018 total]
- 96% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

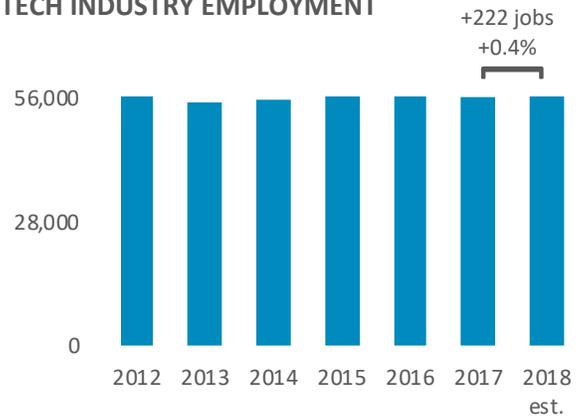
- 22<sup>nd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 31<sup>st</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 28<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

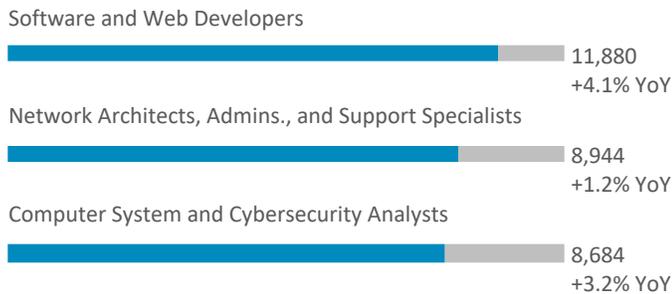
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	20,436	2.8%
Telecommunications and Internet Services	16,342	-2.0%
R&D, Testing, and Engineering Services	13,530	-1.0%
Tech Manufacturing	4,550	1.0%
Software [packaged]	1,617	5.8%

## ECONOMIC IMPACT



# 8.8%

Estimated direct contribution of the tech sector to the St. Louis economy: \$13.7 billion

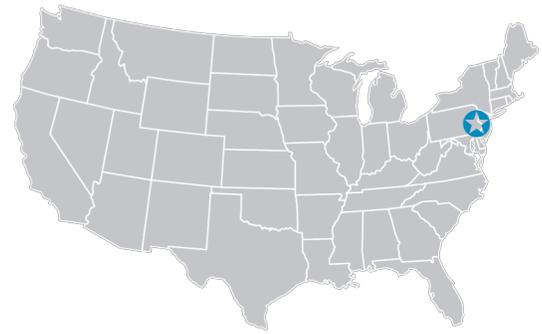
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Trenton

Full MSA name: Trenton, NJ



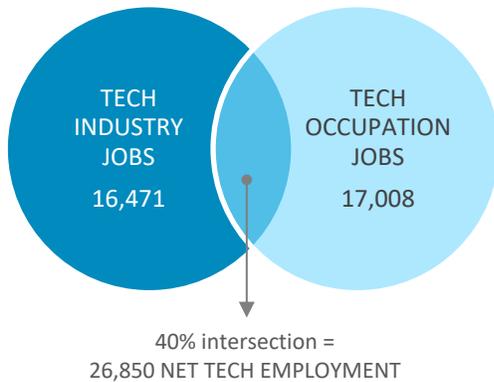
## STATE OF TECHNOLOGY SUMMARY

- 26,850 NET TECH EMPLOYMENT<sup>1</sup>
- 695 NET TECH JOB GAINS [2018 vs. 2017]
- 2.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 10.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 885 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 10,995 TECH OCCUPATION JOB POSTINGS [2018 total]
- 41% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

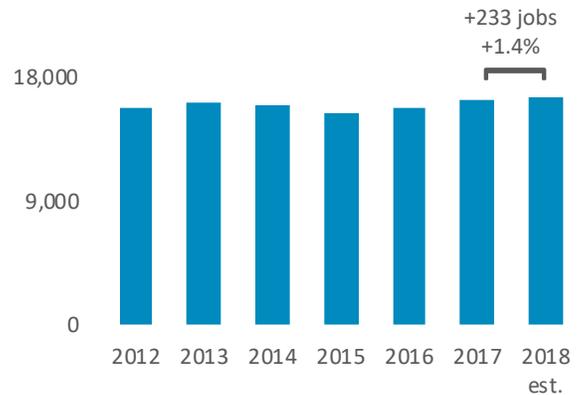
- 44<sup>th</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 37<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 17<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

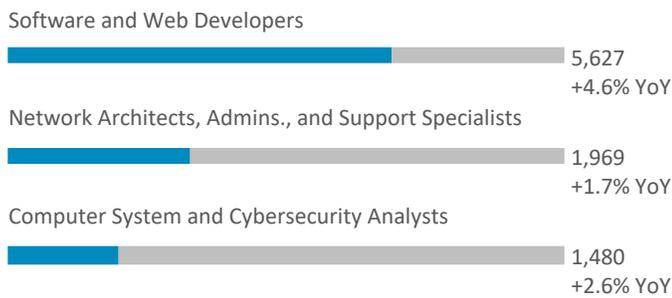
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
R&D, Testing, and Engineering Services	7,485	-0.4%
IT Services + Custom Software Services	5,208	3.8%
Telecommunications and Internet Services	2,030	2.7%
Software [packaged]	913	4.6%
Tech Manufacturing	836	-2.5%

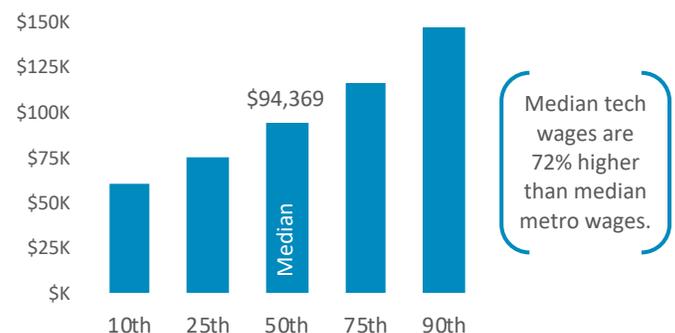
## ECONOMIC IMPACT



# 11.3%

Estimated direct contribution of the tech sector to the Trenton economy: \$4.0 billion

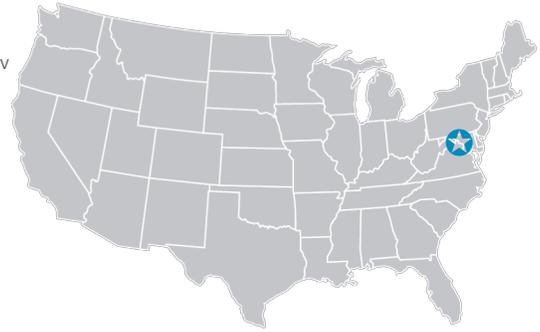
## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

# Washington D.C.

Full MSA name:  
Washington-Arlington-Alexandria, DC-VA-MD-WV



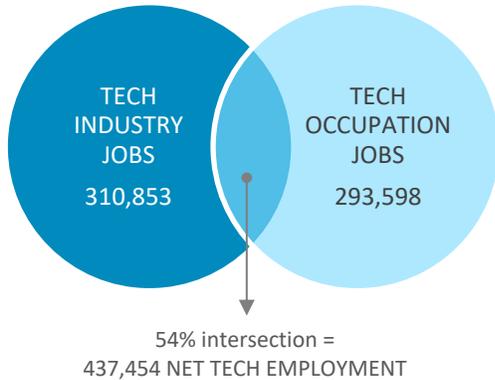
## STATE OF TECHNOLOGY SUMMARY

- 437,454 NET TECH EMPLOYMENT<sup>1</sup>
- 3,226 NET TECH JOB GAINS [2018 vs. 2017]
- 0.7% YOY % CHANGE IN NET TECH EMPLOYMENT
- 13.1% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 20,962 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 207,252 TECH OCCUPATION JOB POSTINGS [2018 total]
- 41% EMERGING TECH JOB POSTINGS % CHANGE [2018 vs. 2017]

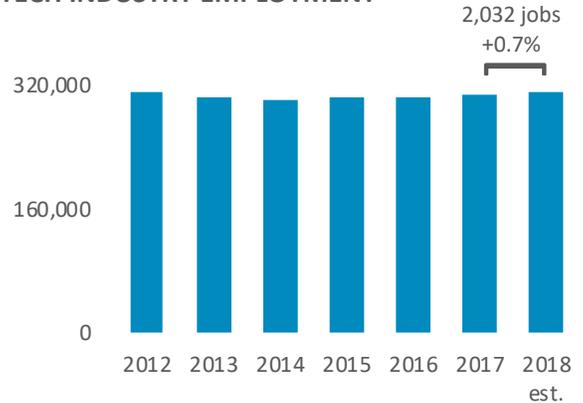
- 3<sup>rd</sup> NET TECH EMPLOYMENT RANK<sup>2</sup>
- 20<sup>th</sup> NET TECH EMPLOYMENT JOBS ADDED RANK
- 8<sup>th</sup> ECONOMIC IMPACT RANK

<sup>1</sup>net of tech industry + tech occupation + self-employed [see methodology for details]

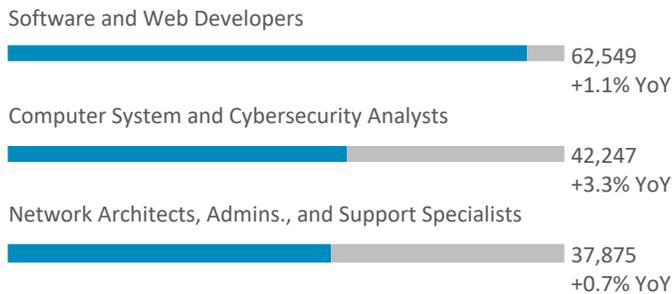
<sup>2</sup>among subset of MSAs covered in this report



## TECH INDUSTRY EMPLOYMENT



## LEADING TECH OCCUPATIONS



## LEADING TECH INDUSTRY SECTORS

	2018	YoY % Change
IT Services + Custom Software Services	185,234	1.9%
R&D, Testing, and Engineering Services	68,791	-1.3%
Telecommunications and Internet Services	37,190	-1.5%
Tech Manufacturing	13,845	1.6%
Software [packaged]	5,792	-1.5%

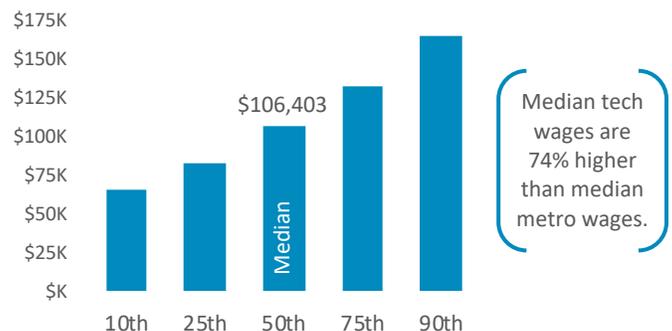
## ECONOMIC IMPACT



# 15.6%

Estimated direct contribution of the tech sector to the Washington D.C. economy: \$75.8 billion

## TECH OCCUPATION WAGES [by percentile]



Primary data sources: EMSI | U.S. Bureau of Labor Statistics | U.S. Bureau of Economic Analysis | Burning Glass Technologies Labor Insights. All data are estimates covering the 2018 time period, unless specified as earlier | See Appendix for full methodology and data tables

APPENDIX TABLES – A  
NET TECH EMPLOYMENT

# NET TECH EMPLOYMENT 2010-2018

For an explanation of the net tech employment calculation, see page 6

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018 est.</u>
United States	9,941,276	10,105,646	10,399,392	10,551,208	10,805,003	11,145,017	11,349,654	11,551,282	11,812,147
Alabama	137,425	136,296	137,591	138,293	139,016	140,700	142,609	145,654	147,542
Alaska	19,802	20,152	20,768	20,629	20,700	20,660	19,894	19,459	19,247
Arizona	202,269	204,021	210,434	215,545	218,106	225,095	231,079	236,545	241,672
Arkansas	57,038	57,765	57,754	57,979	58,752	59,611	60,545	59,672	60,332
California	1,420,930	1,438,911	1,488,253	1,517,090	1,567,889	1,635,684	1,688,694	1,730,932	1,782,499
Colorado	237,906	243,108	249,412	256,570	264,021	274,441	280,510	285,727	292,902
Connecticut	131,499	132,219	133,488	133,161	137,169	139,237	140,017	139,494	140,570
Delaware	31,470	33,754	34,738	35,726	35,470	35,281	33,117	33,553	33,527
District of Columbia	72,845	74,942	75,033	74,984	76,244	80,025	79,982	80,209	81,164
Florida	463,458	465,099	472,884	480,287	492,311	510,621	530,768	549,714	567,862
Georgia	293,761	292,552	302,004	310,701	322,122	331,294	341,951	350,591	361,894
Hawaii	30,031	30,240	30,870	31,136	31,502	32,025	31,534	31,422	31,537
Idaho	45,425	45,508	45,889	46,030	46,984	49,117	50,291	51,386	52,916
Illinois	382,689	388,204	401,669	406,315	416,400	429,444	431,775	433,668	439,541
Indiana	157,838	160,188	165,629	166,728	171,570	177,837	180,250	181,467	184,879
Iowa	82,677	84,550	87,382	88,419	91,023	91,512	90,735	91,022	92,036
Kansas	93,584	92,443	93,931	97,118	99,461	97,343	97,119	95,979	95,759
Kentucky	90,365	91,386	94,402	94,656	96,420	99,411	98,625	98,435	99,374
Louisiana	82,583	80,189	81,875	82,964	84,577	85,114	83,093	83,472	83,599
Maine	31,804	31,050	31,927	32,070	32,467	33,470	34,480	35,229	35,817
Maryland	268,804	272,806	275,302	274,592	275,743	279,765	282,428	285,272	288,996
Massachusetts	356,976	359,183	369,583	375,719	383,642	393,766	406,288	417,613	428,788
Michigan	300,072	317,814	337,341	348,919	364,424	387,427	394,998	397,051	409,406
Minnesota	213,655	217,633	223,851	227,854	232,182	238,062	243,051	246,135	250,991
Mississippi	45,112	45,007	46,030	45,783	46,557	47,758	46,414	46,530	46,813
Missouri	171,568	172,284	180,309	183,763	189,823	194,445	199,638	203,514	209,250
Montana	21,107	21,077	21,723	22,204	22,111	22,431	22,987	23,058	23,559
Nebraska	56,473	56,829	58,441	59,487	60,439	62,549	62,631	63,591	64,982
Nevada	50,683	50,097	51,925	52,928	54,745	56,665	59,068	62,687	65,176
New Hampshire	56,886	57,892	58,780	59,552	60,956	62,990	63,618	67,069	69,888
New Jersey	316,327	314,313	318,229	317,831	321,816	329,369	334,546	333,427	334,496
New Mexico	70,186	67,874	67,455	66,155	65,383	66,095	67,002	67,182	67,179
New York	555,887	569,241	587,259	591,205	610,750	632,346	641,334	649,564	663,295
North Carolina	264,583	278,106	287,599	291,901	302,407	317,484	329,355	340,394	354,166
North Dakota	20,584	21,176	22,633	23,226	24,401	23,987	23,018	22,852	22,887
Ohio	334,996	344,009	347,772	353,326	363,004	373,807	380,600	387,548	396,795
Oklahoma	87,402	88,275	90,765	89,849	91,789	91,847	89,597	89,574	89,310
Oregon	129,580	133,268	139,273	142,514	145,304	152,004	156,113	160,007	164,809
Pennsylvania	389,466	393,038	403,301	403,787	407,342	416,730	423,522	428,955	435,170
Rhode Island	33,330	34,151	34,481	34,390	35,156	35,934	35,798	34,930	35,046
South Carolina	101,315	106,817	108,669	111,164	114,789	119,219	121,056	124,492	128,521
South Dakota	18,538	18,630	19,531	19,968	20,547	20,848	20,941	21,412	21,930
Tennessee	143,684	145,499	150,000	154,437	159,611	166,327	166,629	170,549	174,346
Texas	812,760	836,680	875,247	896,659	920,745	941,132	946,623	965,134	982,988
Utah	102,612	105,698	112,134	116,972	121,133	126,601	132,195	137,086	143,000
Vermont	23,340	23,571	24,492	23,858	23,255	23,225	23,016	22,843	22,787
Virginia	408,785	415,284	417,948	413,184	407,984	418,784	422,419	430,134	436,545
Washington	297,929	305,295	315,283	323,478	331,756	343,269	356,006	364,945	377,809
West Virginia	32,305	32,312	32,103	32,197	32,190	32,619	31,758	31,502	31,473
Wisconsin	179,254	185,091	191,390	192,833	197,425	203,977	207,974	210,344	214,890
Wyoming	10,530	10,318	10,620	10,655	10,791	10,611	10,081	10,135	10,106

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

# NET TECH EMPLOYMENT BY STATE

For an explanation of the net tech employment calculation, see page 6

	<u>2010</u>	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change 2017-18</u>	<u>Percent Change 2017-18</u>	<u>Numeric Change 2010-18</u>	<u>Percent Change 2010-18</u>
United States	9,941,276	11,551,282	11,812,147	260,865	2.3%	1,870,871	18.8%
Alabama	137,425	145,654	147,542	1,888	1.3%	10,117	7.4%
Alaska	19,802	19,459	19,247	-212	-1.1%	-554	-2.8%
Arizona	202,269	236,545	241,672	5,127	2.2%	39,402	19.5%
Arkansas	57,038	59,672	60,332	660	1.1%	3,294	5.8%
California	1,420,930	1,730,932	1,782,499	51,567	3.0%	361,569	25.4%
Colorado	237,906	285,727	292,902	7,175	2.5%	54,996	23.1%
Connecticut	131,499	139,494	140,570	1,076	0.8%	9,071	6.9%
Delaware	31,470	33,553	33,527	-26	-0.1%	2,058	6.5%
District of Columbia	72,845	80,209	81,164	955	1.2%	8,319	11.4%
Florida	463,458	549,714	567,862	18,147	3.3%	104,403	22.5%
Georgia	293,761	350,591	361,894	11,302	3.2%	68,133	23.2%
Hawaii	30,031	31,422	31,537	114	0.4%	1,505	5.0%
Idaho	45,425	51,386	52,916	1,530	3.0%	7,491	16.5%
Illinois	382,689	433,668	439,541	5,873	1.4%	56,852	14.9%
Indiana	157,838	181,467	184,879	3,412	1.9%	27,040	17.1%
Iowa	82,677	91,022	92,036	1,014	1.1%	9,360	11.3%
Kansas	93,584	95,979	95,759	-220	-0.2%	2,176	2.3%
Kentucky	90,365	98,435	99,374	939	1.0%	9,009	10.0%
Louisiana	82,583	83,472	83,599	128	0.2%	1,016	1.2%
Maine	31,804	35,229	35,817	588	1.7%	4,013	12.6%
Maryland	268,804	285,272	288,996	3,725	1.3%	20,192	7.5%
Massachusetts	356,976	417,613	428,788	11,175	2.7%	71,812	20.1%
Michigan	300,072	397,051	409,406	12,354	3.1%	109,334	36.4%
Minnesota	213,655	246,135	250,991	4,856	2.0%	37,336	17.5%
Mississippi	45,112	46,530	46,813	283	0.6%	1,701	3.8%
Missouri	171,568	203,514	209,250	5,736	2.8%	37,683	22.0%
Montana	21,107	23,058	23,559	501	2.2%	2,452	11.6%
Nebraska	56,473	63,591	64,982	1,391	2.2%	8,509	15.1%
Nevada	50,683	62,687	65,176	2,489	4.0%	14,493	28.6%
New Hampshire	56,886	67,069	69,888	2,819	4.2%	13,002	22.9%
New Jersey	316,327	333,427	334,496	1,069	0.3%	18,169	5.7%
New Mexico	70,186	67,182	67,179	-3	0.0%	-3,007	-4.3%
New York	555,887	649,564	663,295	13,732	2.1%	107,409	19.3%
North Carolina	264,583	340,394	354,166	13,773	4.0%	89,584	33.9%
North Dakota	20,584	22,852	22,887	36	0.2%	2,304	11.2%
Ohio	334,996	387,548	396,795	9,248	2.4%	61,799	18.4%
Oklahoma	87,402	89,574	89,310	-264	-0.3%	1,908	2.2%
Oregon	129,580	160,007	164,809	4,801	3.0%	35,229	27.2%
Pennsylvania	389,466	428,955	435,170	6,215	1.4%	45,704	11.7%
Rhode Island	33,330	34,930	35,046	115	0.3%	1,716	5.1%
South Carolina	101,315	124,492	128,521	4,028	3.2%	27,206	26.9%
South Dakota	18,538	21,412	21,930	518	2.4%	3,392	18.3%
Tennessee	143,684	170,549	174,346	3,797	2.2%	30,662	21.3%
Texas	812,760	965,134	982,988	17,855	1.8%	170,228	20.9%
Utah	102,612	137,086	143,000	5,914	4.3%	40,388	39.4%
Vermont	23,340	22,843	22,787	-56	-0.2%	-553	-2.4%
Virginia	408,785	430,134	436,545	6,412	1.5%	27,761	6.8%
Washington	297,929	364,945	377,809	12,864	3.5%	79,880	26.8%
West Virginia	32,305	31,502	31,473	-30	-0.1%	-832	-2.6%
Wisconsin	179,254	210,344	214,890	4,546	2.2%	35,636	19.9%
Wyoming	10,530	10,135	10,106	-29	-0.3%	-424	-4.0%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

## NET TECH EMPLOYMENT 2018

Rank	State	Employment
	United States	11,812,147
1.	California	1,782,499
2.	Texas	982,988
3.	New York	663,295
4.	Florida	567,862
5.	Illinois	439,541
6.	Virginia	436,545
7.	Pennsylvania	435,170
8.	Massachusetts	428,788
9.	Michigan	409,406
10.	Ohio	396,795
11.	Washington	377,809
12.	Georgia	361,894
13.	North Carolina	354,166
14.	New Jersey	334,496
15.	Colorado	292,902
16.	Maryland	288,996
17.	Minnesota	250,991
18.	Arizona	241,672
19.	Wisconsin	214,890
20.	Missouri	209,250
21.	Indiana	184,879
22.	Tennessee	174,346
23.	Oregon	164,809
24.	Alabama	147,542
25.	Utah	143,000
26.	Connecticut	140,570
27.	South Carolina	128,521
28.	Kentucky	99,374
29.	Kansas	95,759
30.	Iowa	92,036
31.	Oklahoma	89,310
32.	Louisiana	83,599
33.	District of Columbia	81,164
34.	New Hampshire	69,888
35.	New Mexico	67,179
36.	Nevada	65,176
37.	Nebraska	64,982
38.	Arkansas	60,332
39.	Idaho	52,916
40.	Mississippi	46,813
41.	Maine	35,817
42.	Rhode Island	35,046
43.	Delaware	33,527
44.	Hawaii	31,537
45.	West Virginia	31,473
46.	Montana	23,559
47.	North Dakota	22,887
48.	Vermont	22,787
49.	South Dakota	21,930
50.	Alaska	19,247
51.	Wyoming	10,106

## NET TECH EMPLOYMENT JOBS ADDED 2018

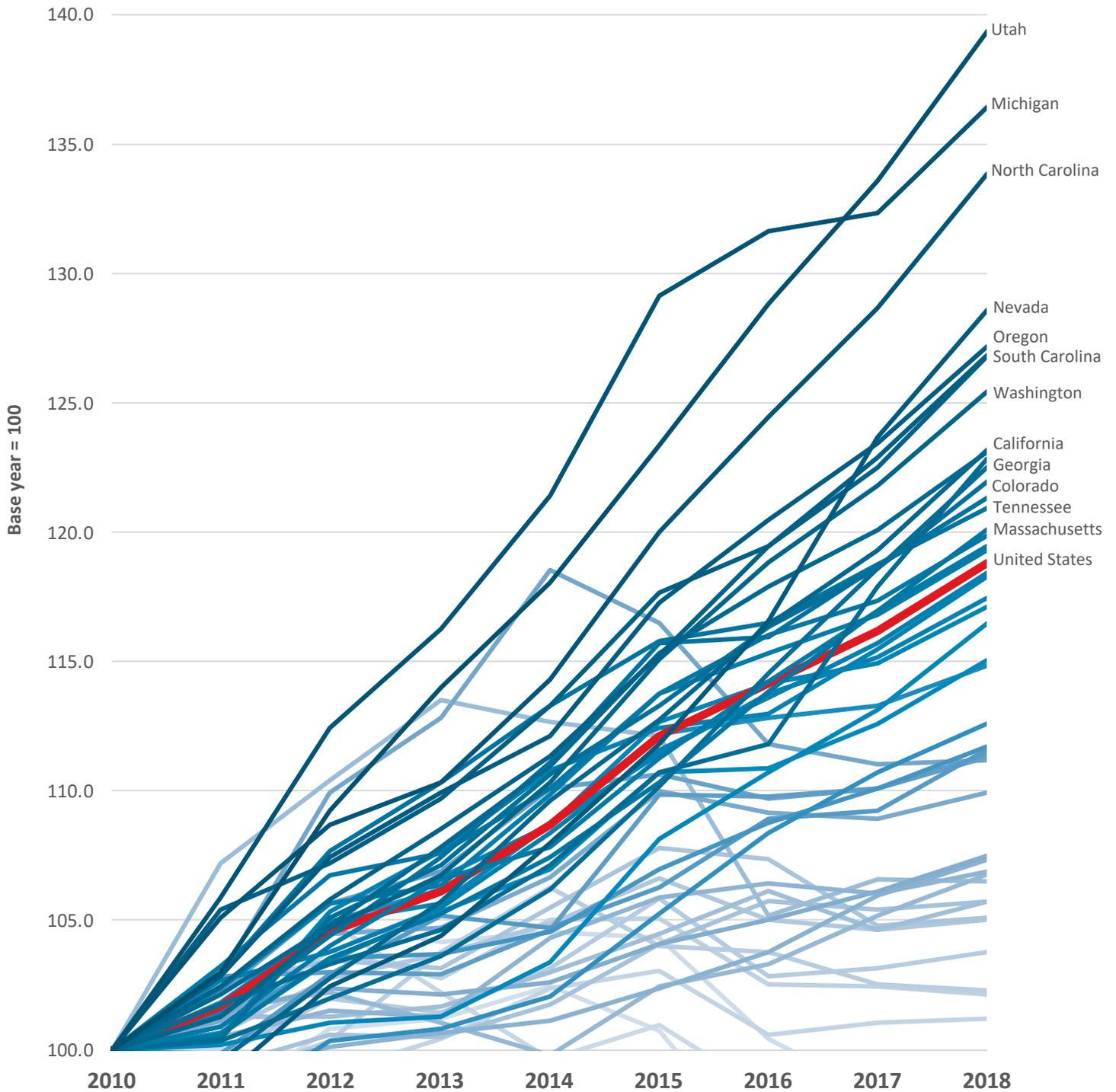
Rank	State	Jobs Added
	United States	260,865
1.	California	51,567
2.	Florida	18,147
3.	Texas	17,855
4.	North Carolina	13,773
5.	New York	13,732
6.	Washington	12,864
7.	Michigan	12,354
8.	Georgia	11,302
9.	Massachusetts	11,175
10.	Ohio	9,248
11.	Colorado	7,175
12.	Virginia	6,412
13.	Pennsylvania	6,215
14.	Utah	5,914
15.	Illinois	5,873
16.	Missouri	5,736
17.	Arizona	5,127
18.	Minnesota	4,856
19.	Oregon	4,801
20.	Wisconsin	4,546
21.	South Carolina	4,028
22.	Tennessee	3,797
23.	Maryland	3,725
24.	Indiana	3,412
25.	New Hampshire	2,819
26.	Nevada	2,489
27.	Alabama	1,888
28.	Idaho	1,530
29.	Nebraska	1,391
30.	Connecticut	1,076
31.	New Jersey	1,069
32.	Iowa	1,014
33.	District of Columbia	955
34.	Kentucky	939
35.	Arkansas	660
36.	Maine	588
37.	South Dakota	518
38.	Montana	501
39.	Mississippi	283
40.	Louisiana	128
41.	Rhode Island	115
42.	Hawaii	114
43.	North Dakota	36
44.	New Mexico	-3
45.	Delaware	-26
46.	Wyoming	-29
47.	West Virginia	-30
48.	Vermont	-56
49.	Alaska	-212
50.	Kansas	-220
51.	Oklahoma	-264

## NET TECH EMPLOYMENT YOY % CHANGE 2018

Rank	State	YoY % Change
	United States	2.3%
1.	Utah	4.3%
2.	New Hampshire	4.2%
3.	North Carolina	4.0%
4.	Nevada	4.0%
5.	Washington	3.5%
6.	Florida	3.3%
7.	South Carolina	3.2%
8.	Georgia	3.2%
9.	Michigan	3.1%
10.	Oregon	3.0%
11.	California	3.0%
12.	Idaho	3.0%
13.	Missouri	2.8%
14.	Massachusetts	2.7%
15.	Colorado	2.5%
16.	South Dakota	2.4%
17.	Ohio	2.4%
18.	Tennessee	2.2%
19.	Nebraska	2.2%
20.	Montana	2.2%
21.	Arizona	2.2%
22.	Wisconsin	2.2%
23.	New York	2.1%
24.	Minnesota	2.0%
25.	Indiana	1.9%
26.	Texas	1.8%
27.	Maine	1.7%
28.	Virginia	1.5%
29.	Pennsylvania	1.4%
30.	Illinois	1.4%
31.	Maryland	1.3%
32.	Alabama	1.3%
33.	District of Columbia	1.2%
34.	Iowa	1.1%
35.	Arkansas	1.1%
36.	Kentucky	1.0%
37.	Connecticut	0.8%
38.	Mississippi	0.6%
39.	Hawaii	0.4%
40.	Rhode Island	0.3%
41.	New Jersey	0.3%
42.	North Dakota	0.2%
43.	Louisiana	0.2%
44.	New Mexico	0.0%
45.	Delaware	-0.1%
46.	West Virginia	-0.1%
47.	Kansas	-0.2%
48.	Vermont	-0.2%
49.	Wyoming	-0.3%
50.	Oklahoma	-0.3%
51.	Alaska	-1.1%

Sources: EMSI | U.S. Bureau of Labor Statistics

Since 2010, 34 states have grown their base of net tech employment by 10 percent or more



Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

Annual ranking by net tech employment

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
California	1.	1.	1.	1.	1.	1.	1.	1.	1.
Texas	2.	2.	2.	2.	2.	2.	2.	2.	2.
New York	3.	3.	3.	3.	3.	3.	3.	3.	3.
Florida	4.	4.	4.	4.	4.	4.	4.	4.	4.
Illinois	7.	7.	7.	6.	5.	5.	5.	5.	5.
Virginia	5.	5.	5.	5.	6.	6.	7.	6.	6.
Pennsylvania	6.	6.	6.	7.	7.	7.	6.	7.	7.
Massachusetts	8.	8.	8.	8.	8.	8.	8.	8.	8.
Michigan	11.	10.	10.	10.	9.	9.	9.	9.	9.
Ohio	9.	9.	9.	9.	10.	10.	10.	10.	10.
Washington	12.	12.	12.	11.	11.	11.	11.	11.	11.
Georgia	13.	13.	13.	13.	12.	12.	12.	12.	12.
North Carolina	15.	14.	14.	14.	14.	14.	14.	13.	13.
New Jersey	10.	11.	11.	12.	13.	13.	13.	14.	14.
Colorado	16.	16.	16.	16.	16.	16.	16.	15.	15.
Maryland	14.	15.	15.	15.	15.	15.	15.	16.	16.
Minnesota	17.	17.	17.	17.	17.	17.	17.	17.	17.
Arizona	18.	18.	18.	18.	18.	18.	18.	18.	18.
Wisconsin	19.	19.	19.	19.	19.	19.	19.	19.	19.
Missouri	20.	20.	20.	20.	20.	20.	20.	20.	20.
Indiana	21.	21.	21.	21.	21.	21.	21.	21.	21.
Tennessee	22.	22.	22.	22.	22.	22.	22.	22.	22.
Oregon	25.	24.	23.	23.	23.	23.	23.	23.	23.
Alabama	23.	23.	24.	24.	24.	24.	24.	24.	24.
Utah	26.	27.	26.	26.	26.	26.	26.	26.	25.
Connecticut	24.	25.	25.	25.	25.	25.	25.	25.	26.
South Carolina	27.	26.	27.	27.	27.	27.	27.	27.	27.
Kentucky	29.	29.	28.	29.	29.	28.	28.	28.	28.
Kansas	28.	28.	29.	28.	28.	29.	29.	29.	29.
Iowa	31.	31.	31.	31.	31.	31.	30.	30.	30.
Oklahoma	30.	30.	30.	30.	30.	30.	31.	31.	31.
Louisiana	32.	32.	32.	32.	32.	32.	32.	32.	32.
District of Columbia	33.	33.	33.	33.	33.	33.	33.	33.	33.
New Hampshire	36.	35.	35.	35.	35.	35.	35.	35.	34.
New Mexico	34.	34.	34.	34.	34.	34.	34.	34.	35.
Nevada	38.	38.	38.	38.	38.	38.	38.	37.	36.
Nebraska	37.	37.	36.	36.	36.	36.	36.	36.	37.
Arkansas	35.	36.	37.	37.	37.	37.	37.	38.	38.
Idaho	39.	39.	40.	39.	39.	39.	39.	39.	39.
Mississippi	40.	40.	39.	40.	40.	40.	40.	40.	40.
Maine	43.	44.	44.	44.	43.	43.	42.	41.	41.
Rhode Island	41.	41.	42.	42.	42.	41.	41.	42.	42.
Delaware	44.	42.	41.	41.	41.	42.	43.	43.	43.
Hawaii	45.	45.	45.	45.	45.	45.	45.	45.	44.
West Virginia	42.	43.	43.	43.	44.	44.	44.	44.	45.
Montana	47.	48.	48.	48.	48.	48.	48.	46.	46.
North Dakota	48.	47.	47.	47.	46.	46.	46.	47.	47.
Vermont	46.	46.	46.	46.	47.	47.	47.	48.	48.
South Dakota	50.	50.	50.	50.	50.	49.	49.	49.	49.
Alaska	49.	49.	49.	49.	49.	50.	50.	50.	50.
Wyoming	51.	51.	51.	51.	51.	51.	51.	51.	51.

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

# NET TECH EMPLOYMENT BY METRO AREA (MSA)

For an explanation of the net tech employment calculation, see page 6

	<u>2010</u>	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change 2017-18</u>	<u>Percent Change 2017-18</u>	<u>Numeric Change 2010-18</u>	<u>Percent Change 2010-18</u>
United States	9,941,276	11,551,282	11,812,147	260,865	2.3%	1,870,871	18.8%
Albuquerque	40,780	38,302	38,049	-253	-0.7%	-2,731	-6.7%
Atlanta	208,186	252,994	261,084	8,090	3.2%	52,898	25.4%
Austin	110,376	149,677	154,884	5,206	3.5%	44,508	40.3%
Baltimore	122,964	133,503	136,129	2,626	2.0%	13,164	10.7%
Birmingham	30,533	31,866	31,814	-52	-0.2%	1,281	4.2%
Boise	22,692	27,518	28,645	1,127	4.1%	5,952	26.2%
Boston	305,915	361,836	373,415	11,579	3.2%	67,500	22.1%
Charlotte	68,382	96,010	101,377	5,367	5.6%	32,994	48.2%
Chicago	291,939	338,175	344,146	5,971	1.8%	52,207	17.9%
Cincinnati	66,244	79,772	82,088	2,316	2.9%	15,843	23.9%
Cleveland	65,961	75,221	76,698	1,477	2.0%	10,737	16.3%
Dallas	283,689	340,315	349,639	9,324	2.7%	65,950	23.2%
Denver	138,860	173,284	178,574	5,291	3.1%	39,714	28.6%
Des Moines	22,604	27,888	28,693	805	2.9%	6,089	26.9%
Detroit	175,807	234,840	241,135	6,295	2.7%	65,328	37.2%
Hartford	49,709	54,666	55,472	806	1.5%	5,763	11.6%
Houston	210,949	230,115	227,788	-2,326	-1.0%	16,839	8.0%
Indianapolis	60,072	73,005	74,615	1,610	2.2%	14,542	24.2%
Kansas City	85,908	99,079	100,782	1,703	1.7%	14,874	17.3%
Las Vegas	32,920	41,454	43,017	1,563	3.8%	10,097	30.7%
Los Angeles	450,815	496,339	503,971	7,632	1.5%	53,156	11.8%
Memphis	24,345	26,554	26,340	-214	-0.8%	1,994	8.2%
Miami	123,336	144,227	148,489	4,262	3.0%	25,153	20.4%
Milwaukee	65,735	71,277	71,755	478	0.7%	6,020	9.2%
Minneapolis	167,672	192,913	196,151	3,239	1.7%	28,479	17.0%
Nashville	45,237	59,551	62,073	2,522	4.2%	16,836	37.2%
New Orleans	27,047	25,652	25,467	-185	-0.7%	-1,580	-5.8%
New York City	563,852	648,820	659,260	10,440	1.6%	95,407	16.9%
Oklahoma City	38,038	39,220	39,182	-37	-0.1%	1,144	3.0%
Omaha	33,885	36,992	37,508	516	1.4%	3,623	10.7%
Orlando	72,895	88,070	92,022	3,952	4.5%	19,128	26.2%
Philadelphia	219,522	224,484	225,199	715	0.3%	5,677	2.6%
Phoenix	149,998	179,905	183,949	4,044	2.2%	33,951	22.6%
Pittsburgh	84,878	96,005	97,244	1,239	1.3%	12,366	14.6%
Portland	106,337	132,908	136,803	3,895	2.9%	30,466	28.7%
Providence	44,604	46,100	46,415	315	0.7%	1,812	4.1%
Raleigh	56,633	85,941	90,697	4,755	5.5%	34,063	60.1%
Salt Lake City	56,927	72,720	75,091	2,371	3.3%	18,163	31.9%
San Antonio	55,601	65,824	67,559	1,735	2.6%	11,959	21.5%
San Diego	154,706	169,760	172,441	2,681	1.6%	17,735	11.5%
San Francisco	237,072	364,452	385,019	20,566	5.6%	147,946	62.4%
San Jose	269,105	358,500	371,640	13,140	3.7%	102,535	38.1%
Seattle	226,978	287,005	298,555	11,550	4.0%	71,577	31.5%
St. Louis	97,323	103,560	104,895	1,335	1.3%	7,572	7.8%
Trenton	23,137	26,155	26,850	695	2.7%	3,713	16.0%
Washington DC	423,977	434,229	437,454	3,226	0.7%	13,478	3.2%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

## NET TECH EMPLOYMENT 2018

Rank	State	Employment
	United States	11,812,147
1.	New York City	659,260
2.	Los Angeles	503,971
3.	Washington DC	437,454
4.	San Francisco	385,019
5.	Boston	373,415
6.	San Jose	371,640
7.	Dallas	349,639
8.	Chicago	344,146
9.	Seattle	298,555
10.	Atlanta	261,084
11.	Detroit	241,135
12.	Houston	227,788
13.	Philadelphia	225,199
14.	Minneapolis	196,151
15.	Phoenix	183,949
16.	Denver	178,574
17.	San Diego	172,441
18.	Austin	154,884
19.	Miami	148,489
20.	Portland	136,803
21.	Baltimore	136,129
22.	St. Louis	104,895
23.	Charlotte	101,377
24.	Kansas City	100,782
25.	Pittsburgh	97,244
26.	Orlando	92,022
27.	Raleigh	90,697
28.	Cincinnati	82,088
29.	Cleveland	76,698
30.	Salt Lake City	75,091
31.	Indianapolis	74,615
32.	Milwaukee	71,755
33.	San Antonio	67,559
34.	Nashville	62,073
35.	Hartford	55,472
36.	Providence	46,415
37.	Las Vegas	43,017
38.	Oklahoma City	39,182
39.	Albuquerque	38,049
40.	Omaha	37,508
41.	Birmingham	31,814
42.	Des Moines	28,693
43.	Boise	28,645
44.	Trenton	26,850
45.	Memphis	26,340
46.	New Orleans	25,467

## NET TECH EMPLOYMENT JOBS ADDED 2018

Rank	State	Jobs Added
	United States	260,865
1.	San Francisco	20,566
2.	San Jose	13,140
3.	Boston	11,579
4.	Seattle	11,550
5.	New York City	10,440
6.	Dallas	9,324
7.	Atlanta	8,090
8.	Los Angeles	7,632
9.	Detroit	6,295
10.	Chicago	5,971
11.	Charlotte	5,367
12.	Denver	5,291
13.	Austin	5,206
14.	Raleigh	4,755
15.	Miami	4,262
16.	Phoenix	4,044
17.	Orlando	3,952
18.	Portland	3,895
19.	Minneapolis	3,239
20.	Washington DC	3,226
21.	San Diego	2,681
22.	Baltimore	2,626
23.	Nashville	2,522
24.	Salt Lake City	2,371
25.	Cincinnati	2,316
26.	San Antonio	1,735
27.	Kansas City	1,703
28.	Indianapolis	1,610
29.	Las Vegas	1,563
30.	Cleveland	1,477
31.	St. Louis	1,335
32.	Pittsburgh	1,239
33.	Boise	1,127
34.	Hartford	806
35.	Des Moines	805
36.	Philadelphia	715
37.	Trenton	695
38.	Omaha	516
39.	Milwaukee	478
40.	Providence	315
41.	Oklahoma City	-37
42.	Birmingham	-52
43.	New Orleans	-185
44.	Memphis	-214
45.	Albuquerque	-253
46.	Houston	-2,326

## NET TECH EMPLOYMENT YOY % CHANGE 2018

Rank	State	YoY % Change
	United States	2.3%
1.	San Francisco	5.6%
2.	Charlotte	5.6%
3.	Raleigh	5.5%
4.	Orlando	4.5%
5.	Nashville	4.2%
6.	Boise	4.1%
7.	Seattle	4.0%
8.	Las Vegas	3.8%
9.	San Jose	3.7%
10.	Austin	3.5%
11.	Salt Lake City	3.3%
12.	Boston	3.2%
13.	Atlanta	3.2%
14.	Denver	3.1%
15.	Miami	3.0%
16.	Portland	2.9%
17.	Cincinnati	2.9%
18.	Des Moines	2.9%
19.	Dallas	2.7%
20.	Detroit	2.7%
21.	Trenton	2.7%
22.	San Antonio	2.6%
23.	Phoenix	2.2%
24.	Indianapolis	2.2%
25.	Baltimore	2.0%
26.	Cleveland	2.0%
27.	Chicago	1.8%
28.	Kansas City	1.7%
29.	Minneapolis	1.7%
30.	New York City	1.6%
31.	San Diego	1.6%
32.	Los Angeles	1.5%
33.	Hartford	1.5%
34.	Omaha	1.4%
35.	Pittsburgh	1.3%
36.	St. Louis	1.3%
37.	Washington DC	0.7%
38.	Providence	0.7%
39.	Milwaukee	0.7%
40.	Philadelphia	0.3%
41.	Oklahoma City	-0.1%
42.	Birmingham	-0.2%
43.	Albuquerque	-0.7%
44.	New Orleans	-0.7%
45.	Memphis	-0.8%
46.	Houston	-1.0%

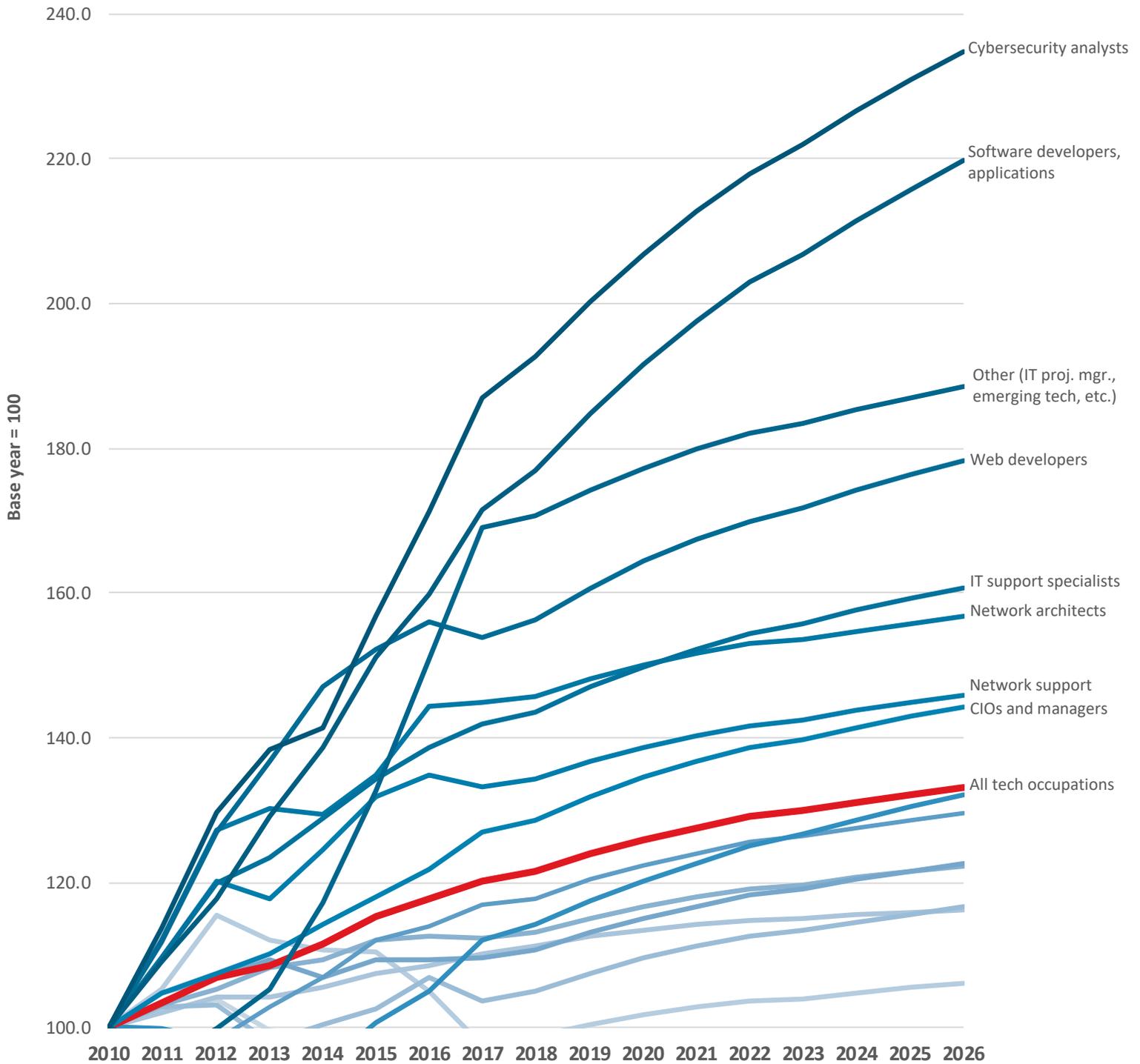
Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

APPENDIX TABLES – B  
TECH OCCUPATION CHARACTERISTICS

	<u>2010</u>	<u>2017</u>	<u>2018 est.</u>	<u>Numeric Change 2017-18</u>	<u>Percent Change 2017-18</u>	<u>Numeric Change 2010-18</u>	<u>Percent Change 2010-18</u>
CIOs, IT directors, and managers	299,017	379,668	392,342	12,674	3.3%	93,325	31.2%
Information and data research scientists	28,700	32,136	33,364	1,228	3.8%	4,664	16.2%
Systems engineers and analysts	517,816	605,062	620,257	15,195	2.5%	102,441	19.8%
Cybersecurity analysts	59,544	111,334	119,374	8,040	7.2%	59,830	100.5%
Computer programmers	359,244	270,209	253,310	-16,900	-6.3%	-105,934	-29.5%
Software developers, applications	510,138	874,813	927,973	53,160	6.1%	417,835	81.9%
Software developers, systems	396,028	410,343	410,888	545	0.1%	14,860	3.8%
Web developers	105,830	162,717	166,034	3,317	2.0%	60,204	56.9%
Database administrators	108,635	119,014	119,524	510	0.4%	10,889	10.0%
Network and systems administrators	337,599	379,591	382,606	3,014	0.8%	45,007	13.3%
Network architects	113,411	164,392	169,201	4,809	2.9%	55,790	49.2%
IT user support specialists	443,017	628,567	647,993	19,426	3.1%	204,976	46.3%
Network support specialists	145,493	193,811	197,128	3,317	1.7%	51,635	35.5%
Computer occupations, other	201,432	340,613	370,983	30,370	8.9%	169,551	84.2%
Computer hardware engineers	71,519	69,762	66,786	-2,976	-4.3%	-4,733	-6.6%
Computer, ATM, and office machine repairers	136,434	120,556	117,082	-3,474	-2.9%	-19,352	-14.2%
Subtotal	3,833,857	4,862,589	4,994,844	132,255	2.7%	1,160,987	30.3%
Other engineering, technician, repair, and assembly	2,597,078	2,861,213	2,896,253	35,040	1.2%	299,175	11.5%
Subtotal	2,597,078	2,861,213	2,896,253	35,040	1.2%	299,175	11.5%
TOTAL	6,430,935	7,723,802	7,891,097	167,295	2.2%	1,460,162	22.7%

	<u>2018 est.</u>	<u>2026 proj.</u>	<u>Numeric Change 2018-26</u>	<u>Percent Change 2018-26</u>	<u>Annual Replacement Count 2018-26</u>	<u>Annual Replacement Percent 2018-26</u>
CIOs, IT directors, and managers	392,342	431,373	39,032	9.9%	29,461	7.2%
Information and data research scientists	33,364	37,922	4,558	13.7%	2,333	6.6%
Systems engineers and analysts	620,257	671,090	50,832	8.2%	40,487	6.3%
Cybersecurity analysts	119,374	139,837	20,463	17.1%	8,401	6.6%
Computer programmers	253,310	265,741	12,431	4.9%	16,653	6.2%
Software developers, applications	927,973	1,121,405	193,432	20.8%	63,795	6.3%
Software developers, systems	410,888	462,069	51,181	12.5%	27,742	6.3%
Web developers	166,034	188,700	22,666	13.7%	12,241	6.9%
Database administrators	119,524	133,221	13,697	11.5%	7,995	6.3%
Network and systems administrators	382,606	412,782	30,176	7.9%	24,293	6.1%
Network architects	169,201	177,837	8,635	5.1%	10,830	6.3%
IT user support specialists	647,993	712,015	64,022	9.9%	48,633	7.2%
Network support specialists	197,128	212,253	15,125	7.7%	14,699	7.2%
Computer occupations, other	370,983	379,811	8,828	2.4%	23,927	6.6%
Computer hardware engineers	66,786	75,820	9,034	13.5%	4,552	6.2%
Computer, ATM, and office machine repairers	117,082	121,815	4,733	4.0%	11,682	9.6%
SUBTOTAL	4,994,844	5,543,690	548,846	11.0%	347,722	6.7%
Other engineering, technician, repair, and assembly	2,896,253	3,018,472	122,218	4.2%	240,938	8.6%
SUBTOTAL	2,896,253	3,018,472	122,218	4.2%	240,938	8.6%
TOTAL	7,891,097	8,562,162	671,065	8.5%	588,660	7.5%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA



Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

	<u>2018 est.</u>	<u>2026 proj.</u>	<u>Numeric Change 2018-26</u>	<u>Percent Change 2018-26</u>	<u>Annual Replacement Count 2018-26</u>	<u>Annual Replacement Percent 2018-26</u>
Alabama	103,966	111,079	7,113	6.8%	7,782	7.6%
Alaska	12,776	12,895	119	0.9%	931	7.5%
Arizona	163,748	181,489	17,741	10.8%	12,168	7.3%
Arkansas	45,670	48,210	2,540	5.6%	3,420	7.6%
California	1,097,225	1,189,088	91,863	8.4%	80,986	7.4%
Colorado	187,774	213,047	25,273	13.5%	13,917	7.2%
Connecticut	99,286	101,898	2,612	2.6%	7,207	7.5%
Delaware	24,325	24,900	575	2.4%	1,679	7.0%
District of Columbia	60,421	64,257	3,836	6.3%	4,199	6.8%
Florida	364,065	403,174	39,109	10.7%	27,859	7.6%
Georgia	240,790	264,535	23,745	9.9%	17,865	7.3%
Hawaii	22,682	23,360	678	3.0%	1,676	7.6%
Idaho	32,614	36,873	4,259	13.1%	2,535	7.6%
Illinois	303,317	318,834	15,517	5.1%	22,161	7.4%
Indiana	137,227	147,640	10,413	7.6%	10,550	7.8%
Iowa	67,977	74,389	6,412	9.4%	5,263	7.7%
Kansas	68,676	73,843	5,167	7.5%	5,100	7.4%
Kentucky	70,194	76,434	6,240	8.9%	5,461	7.8%
Louisiana	52,514	58,420	5,906	11.2%	4,116	7.7%
Maine	25,834	27,298	1,464	5.7%	1,953	7.6%
Maryland	194,615	206,597	11,982	6.2%	13,838	7.1%
Massachusetts	247,972	261,731	13,759	5.5%	17,809	7.2%
Michigan	299,013	315,694	16,681	5.6%	21,670	7.4%
Minnesota	176,801	180,899	4,098	2.3%	12,935	7.6%
Mississippi	34,128	35,746	1,618	4.7%	2,680	8.1%
Missouri	145,467	158,456	12,989	8.9%	11,005	7.6%
Montana	15,495	17,244	1,749	11.3%	1,183	7.5%
Nebraska	46,466	49,935	3,469	7.5%	3,428	7.4%
Nevada	43,710	52,627	8,917	20.4%	3,646	7.9%
New Hampshire	44,903	48,207	3,304	7.4%	3,471	7.9%
New Jersey	220,993	231,438	10,445	4.7%	15,927	7.3%
New Mexico	36,927	39,578	2,651	7.2%	2,728	7.3%
New York	433,798	471,894	38,096	8.8%	32,377	7.4%
North Carolina	233,767	262,272	28,505	12.2%	17,818	7.5%
North Dakota	15,829	17,582	1,753	11.1%	1,247	7.8%
Ohio	295,010	308,563	13,553	4.6%	21,777	7.6%
Oklahoma	68,891	74,849	5,958	8.6%	5,442	7.8%
Oregon	112,499	118,922	6,423	5.7%	8,276	7.5%
Pennsylvania	295,823	309,215	13,392	4.5%	22,024	7.6%
Rhode Island	25,664	27,711	2,047	8.0%	1,904	7.4%
South Carolina	89,915	102,724	12,809	14.2%	7,024	7.6%
South Dakota	15,736	17,120	1,384	8.8%	1,234	7.9%
Tennessee	127,663	141,669	14,006	11.0%	10,118	7.9%
Texas	640,489	725,458	84,969	13.3%	49,474	7.5%
Utah	90,519	110,244	19,725	21.8%	7,122	7.4%
Vermont	15,802	15,976	174	1.1%	1,176	7.6%
Virginia	294,791	320,809	26,018	8.8%	21,335	7.1%
Washington	257,329	286,882	29,553	11.5%	18,632	7.1%
West Virginia	22,460	24,578	2,118	9.4%	1,728	7.6%
Wisconsin	160,339	167,731	7,392	4.6%	12,224	7.9%
Wyoming	7,203	8,150	947	13.2%	576	7.7%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

	<u>2018 est.</u>	<u>2026 proj.</u>	<u>Numeric Change 2018-26</u>	<u>Percent Change 2018-26</u>	<u>Annual Replacement Count 2018-26</u>	<u>Annual Replacement Percent 2018-26</u>
Albuquerque	20,808	21,492	684	3.3%	1,499	7.3%
Atlanta	170,934	185,812	14,878	8.7%	12,421	7.2%
Austin	87,886	105,655	17,769	20.2%	6,731	7.2%
Baltimore	90,825	96,456	5,631	6.2%	6,494	7.2%
Birmingham	23,167	22,932	-235	-1.0%	1,691	7.6%
Boise	17,780	19,768	1,988	11.2%	1,360	7.5%
Boston	209,793	224,148	14,355	6.8%	15,093	7.2%
Charlotte	72,569	81,408	8,839	12.2%	5,384	7.3%
Chicago	234,552	242,065	7,513	3.2%	16,866	7.4%
Cincinnati	60,476	63,755	3,279	5.4%	4,452	7.5%
Cleveland	57,917	58,699	782	1.4%	4,232	7.6%
Dallas	234,190	257,999	23,809	10.2%	17,747	7.6%
Denver	114,200	131,321	17,121	15.0%	8,456	7.2%
Des Moines	20,994	23,303	2,309	11.0%	1,552	7.3%
Detroit	174,153	179,588	5,435	3.1%	12,086	7.1%
Hartford	41,468	42,960	1,492	3.6%	3,003	7.4%
Houston	149,988	158,877	8,889	5.9%	11,266	7.6%
Indianapolis	52,558	56,649	4,091	7.8%	3,891	7.5%
Kansas City	68,147	75,459	7,312	10.7%	4,988	7.2%
Las Vegas	29,492	34,487	4,995	16.9%	2,346	7.7%
Los Angeles	327,175	329,962	2,787	0.9%	23,938	7.6%
Memphis	19,776	21,290	1,514	7.7%	1,516	7.6%
Miami	93,903	101,128	7,225	7.7%	7,099	7.6%
Milwaukee	53,806	52,549	-1,257	-2.3%	3,983	7.9%
Minneapolis	138,022	140,327	2,305	1.7%	10,065	7.6%
Nashville	45,088	51,787	6,699	14.9%	3,481	7.5%
New Orleans	16,476	16,986	510	3.1%	1,208	7.5%
New York City	432,314	466,855	34,541	8.0%	31,734	7.3%
Oklahoma City	31,145	33,014	1,869	6.0%	2,342	7.6%
Omaha	27,085	27,990	905	3.3%	1,923	7.2%
Orlando	57,746	65,481	7,735	13.4%	4,478	7.6%
Philadelphia	148,748	150,608	1,860	1.3%	10,535	7.3%
Phoenix	125,737	139,184	13,447	10.7%	9,348	7.4%
Pittsburgh	65,076	67,667	2,591	4.0%	4,798	7.6%
Portland	90,990	96,715	5,725	6.3%	6,681	7.4%
Providence	33,582	34,848	1,266	3.8%	2,464	7.5%
Raleigh	52,755	60,216	7,461	14.1%	3,967	7.3%
Salt Lake City	47,813	56,689	8,876	18.6%	3,706	7.4%
San Antonio	44,407	50,154	5,747	12.9%	3,410	7.5%
San Diego	105,002	113,026	8,024	7.6%	7,701	7.3%
San Francisco	213,348	247,550	34,202	16.0%	15,781	7.1%
San Jose	213,583	236,857	23,274	10.9%	15,365	7.0%
Seattle	202,547	224,867	22,320	11.0%	14,447	7.0%
St. Louis	74,417	76,698	2,281	3.1%	5,417	7.5%
Trenton	17,008	18,244	1,236	7.3%	1,197	7.0%
Washington DC	293,598	310,607	17,009	5.8%	20,468	6.9%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

	Count of Tech Sector <u>Male Workers</u>	Count of Tech Sector <u>Female Workers</u>	<u>% of Tech Sector Male Workers</u>	<u>% of Tech Sector Female Workers</u>
<b>TECHNOLOGY MANUFACTURING</b>				
Computer and Peripheral Equipment Manufacturing	110,436	47,270	70%	30%
Communications Equipment Consumer Electronics Manufacturing	75,630	30,885	71%	29%
Electronic Components Manufacturing	114,885	71,468	62%	38%
Semiconductor Manufacturing	146,822	57,705	72%	28%
Measuring and Control Instruments Manufacturing	271,457	132,998	67%	33%
Reproducing Magnetic and Optical Media Manufacturing	9,924	4,703	68%	32%
Space and Defense Systems Manufacturing	58,450	18,323	76%	24%
<b>SUBTOTAL</b>	<b>787,605</b>	<b>363,353</b>	<b>68%</b>	<b>32%</b>
<b>TELECOMMUNICATIONS AND INTERNET SERVICES</b>				
<b>Telecommunications</b>				
Wired Telecommunication Carriers	390,697	178,244	69%	31%
Wireless Telecomm. Carriers (except Satellite)	81,809	39,596	67%	33%
Satellite Telecommunications	6,396	2,518	72%	28%
Telecommunication Resellers	33,902	18,140	65%	35%
All Other Telecommunications	22,209	10,206	69%	31%
<b>SUBTOTAL</b>	<b>535,013</b>	<b>248,703</b>	<b>68%</b>	<b>32%</b>
<b>Internet Hosting, Web Search, and Related Services</b>				
Data Processing, Hosting, and Related Services	191,051	138,806	58%	42%
Internet Publishing and Web Search Portals	149,197	97,284	61%	39%
<b>SUBTOTAL</b>	<b>340,248</b>	<b>236,090</b>	<b>59%</b>	<b>41%</b>
<b>SOFTWARE</b>				
Software Publishers	264,655	126,467	68%	32%
<b>SUBTOTAL</b>	<b>264,655</b>	<b>126,467</b>	<b>68%</b>	<b>32%</b>
<b>IT SERVICES</b>				
<b>Computer Systems Design and Related Services</b>				
Custom Computer Programming Services	674,774	295,596	70%	30%
Computer Systems Design Services	719,430	321,635	69%	31%
Computer Facilities Management Services	52,104	25,733	67%	33%
Other Computer Related Services	87,380	37,661	70%	30%
<b>SUBTOTAL</b>	<b>1,533,688</b>	<b>680,626</b>	<b>69%</b>	<b>31%</b>
<b>Computer and Electronic Repair and Maintenance</b>				
Consumer Electronics Repair and Maintenance	13,470	3,927	77%	23%
Computer and Office Machine Repair and Maintenance	40,375	10,825	79%	21%
Communication Equipment Repair and Maintenance	14,238	3,989	78%	22%
Other Electronic and Precision Equipment	32,257	8,891	78%	22%
<b>SUBTOTAL</b>	<b>100,340</b>	<b>27,631</b>	<b>78%</b>	<b>22%</b>
<b>Other</b>				
Computer Training	7,990	9,351	46%	54%
Computer & Peripheral Equip. & Software Wholesalers	144,221	75,023	66%	34%
<b>SUBTOTAL</b>	<b>152,211</b>	<b>84,374</b>	<b>64%</b>	<b>36%</b>
<b>ENGINEERING SERVICES, R&amp;D, AND TESTING SERVICES</b>				
Engineering Services	725,224	273,994	73%	27%
<b>SUBTOTAL</b>	<b>725,224</b>	<b>273,994</b>	<b>73%</b>	<b>27%</b>
<b>R&amp;D and Testing Labs</b>				
Testing Laboratories	123,168	46,792	72%	28%
	11,731	9,332	56%	44%
R&D in Biotechnology	98,776	88,697	53%	47%
R&D in the Physical, Eng., and Life Sciences	241,532	167,815	59%	41%
<b>SUBTOTAL</b>	<b>475,208</b>	<b>312,636</b>	<b>60%</b>	<b>40%</b>
<b>TOTAL TECH MANUFACTURING</b>	<b>787,605</b>	<b>363,353</b>	<b>68%</b>	<b>32%</b>
<b>TOTAL TELECOMMUNICATIONS &amp; INTERNET SERVICES</b>	<b>875,261</b>	<b>484,793</b>	<b>64%</b>	<b>36%</b>
<b>TOTAL SOFTWARE</b>	<b>264,655</b>	<b>126,467</b>	<b>68%</b>	<b>32%</b>
<b>TOTAL IT SERVICES</b>	<b>1,786,239</b>	<b>792,631</b>	<b>69%</b>	<b>31%</b>
<b>TOTAL ENGINEERING SERVICES, R&amp;D, AND TESTING SERVICES</b>	<b>1,200,431</b>	<b>586,630</b>	<b>67%</b>	<b>33%</b>
<b>TOTAL TECH EMPLOYMENT BY GENDER</b>	<b>4,914,191</b>	<b>2,353,874</b>	<b>68%</b>	<b>32%</b>

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA  
 Minor differences may exist between the totals on this page and industry totals presented throughout this report

## TECH INDUSTRY GENDER DISTRIBUTION, 2018

## TECH INDUSTRY GENDER RATIOS, 2018

Rank	State	Number of Tech Sector		Rank	State	Percent of Tech Sector	
		Male Workers	Female Workers			Male Workers	Female Workers
	United States	4,914,191	2,353,874		United States	68.0%	32.0%
1.	California	862,098	412,461	1.	District of Columbia	60.7%	39.3%
2.	Texas	433,462	192,738	2.	South Dakota	63.5%	36.5%
3.	New York	260,752	138,369	3.	Missouri	64.8%	35.2%
4.	Florida	238,383	113,572	4.	North Carolina	64.9%	35.1%
5.	Massachusetts	211,767	108,812	5.	New York	65.3%	34.7%
6.	Virginia	205,129	99,169	6.	South Carolina	65.5%	34.5%
7.	Pennsylvania	165,921	82,042	7.	Wisconsin	65.5%	34.5%
8.	Illinois	167,708	78,760	8.	Iowa	65.7%	34.3%
9.	Washington	169,680	76,609	9.	Georgia	65.9%	34.1%
10.	North Carolina	139,131	75,228	10.	Massachusetts	66.1%	33.9%
11.	Georgia	143,117	74,107	11.	Mississippi	66.4%	33.6%
12.	New Jersey	144,371	72,871	12.	Maryland	66.4%	33.6%
13.	Maryland	127,356	64,361	13.	New Jersey	66.5%	33.5%
14.	Colorado	144,505	64,330	14.	Minnesota	66.6%	33.4%
15.	Michigan	153,783	63,149	15.	Montana	66.8%	33.2%
16.	Ohio	133,035	59,789	16.	Kansas	66.8%	33.2%
17.	Minnesota	96,116	48,266	17.	Hawaii	66.8%	33.2%
18.	Arizona	105,015	45,473	18.	Connecticut	66.8%	33.2%
19.	Missouri	76,576	41,681	19.	Nebraska	66.9%	33.1%
20.	Wisconsin	68,197	35,887	20.	Pennsylvania	66.9%	33.1%
21.	Oregon	73,251	30,390	21.	New Hampshire	67.1%	32.9%
22.	Alabama	58,799	27,952	22.	Indiana	67.2%	32.8%
23.	Indiana	57,204	27,915	23.	Kentucky	67.2%	32.8%
24.	Tennessee	55,765	26,565	24.	Maine	67.3%	32.7%
25.	Utah	67,980	25,848	25.	Virginia	67.4%	32.6%
26.	Connecticut	50,836	25,231	26.	Delaware	67.5%	32.5%
27.	South Carolina	43,409	22,859	27.	California	67.6%	32.4%
28.	Kansas	33,949	16,878	28.	Florida	67.7%	32.3%
29.	Kentucky	34,012	16,575	29.	Tennessee	67.7%	32.3%
30.	Iowa	30,219	15,809	30.	Alabama	67.8%	32.2%
31.	New Mexico	33,714	15,774	31.	Illinois	68.0%	32.0%
32.	District of Columbia	24,195	15,669	32.	Alaska	68.1%	31.9%
33.	New Hampshire	31,272	15,321	33.	New Mexico	68.1%	31.9%
34.	Louisiana	34,143	14,455	34.	North Dakota	68.2%	31.8%
35.	Oklahoma	26,554	11,750	35.	Arkansas	68.6%	31.4%
36.	Nebraska	23,589	11,670	36.	Washington	68.9%	31.1%
37.	Nevada	24,810	10,736	37.	Ohio	69.0%	31.0%
38.	Idaho	25,513	9,845	38.	Colorado	69.2%	30.8%
39.	Arkansas	17,892	8,181	39.	Texas	69.2%	30.8%
40.	Mississippi	14,332	7,246	40.	Oklahoma	69.3%	30.7%
41.	Maine	12,510	6,082	41.	Arizona	69.8%	30.2%
42.	Rhode Island	13,962	5,990	42.	Nevada	69.8%	30.2%
43.	Delaware	12,242	5,886	43.	Rhode Island	70.0%	30.0%
44.	Hawaii	10,902	5,412	44.	Louisiana	70.3%	29.7%
45.	Montana	9,382	4,668	45.	Oregon	70.7%	29.3%
46.	West Virginia	11,305	4,631	46.	Michigan	70.9%	29.1%
47.	South Dakota	6,996	4,022	47.	West Virginia	70.9%	29.1%
48.	Vermont	9,966	4,008	48.	Vermont	71.3%	28.7%
49.	North Dakota	8,464	3,952	49.	Wyoming	71.3%	28.7%
50.	Alaska	7,275	3,413	50.	Idaho	72.2%	27.8%
51.	Wyoming	3,647	1,465	51.	Utah	72.5%	27.5%

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA

Minor differences may exist between the totals on this page and industry totals presented throughout this report

## TECH OCCUPATION GENDER DISTRIBUTION, 2018

## TECH OCCUPATION GENDER RATIOS, 2018

Rank	State	Count of Tech Occupation		Rank	State	% of Tech Occupation	
		Male Workers	Female Workers			Male Workers	Female Workers
	United States	6,153,992	1,667,122		United States	79.0%	21.0%
1.	California	859,828	225,965	1.	District of Columbia	73.1%	26.9%
2.	Texas	510,000	129,645	2.	South Dakota	75.5%	24.5%
3.	New York	339,289	91,791	3.	Wisconsin	76.5%	23.5%
4.	Florida	283,264	75,871	4.	Mississippi	76.5%	23.5%
5.	Illinois	236,141	64,539	5.	Maryland	76.6%	23.4%
6.	Michigan	235,097	57,296	6.	Delaware	76.8%	23.2%
7.	Pennsylvania	232,354	61,482	7.	Georgia	76.9%	23.1%
8.	Ohio	229,422	61,254	8.	Montana	77.0%	23.0%
9.	Virginia	227,367	65,888	9.	Iowa	77.0%	23.0%
10.	Washington	201,410	51,859	10.	North Carolina	77.1%	22.9%
11.	Massachusetts	192,769	52,763	11.	Nebraska	77.1%	22.9%
12.	Georgia	182,175	54,824	12.	Minnesota	77.1%	22.9%
13.	North Carolina	177,552	52,765	13.	South Carolina	77.2%	22.8%
14.	New Jersey	172,789	47,266	14.	Arkansas	77.3%	22.7%
15.	Maryland	148,215	45,246	15.	Missouri	77.4%	22.6%
16.	Colorado	147,262	38,423	16.	Virginia	77.5%	22.5%
17.	Minnesota	134,523	39,875	17.	New Hampshire	77.9%	22.1%
18.	Arizona	127,691	33,839	18.	Tennessee	77.9%	22.1%
19.	Wisconsin	121,417	37,219	19.	Rhode Island	78.0%	21.9%
20.	Missouri	111,155	32,507	20.	Indiana	78.2%	21.8%
21.	Indiana	106,365	29,639	21.	Massachusetts	78.5%	21.5%
22.	Tennessee	98,422	27,843	22.	New Jersey	78.5%	21.5%
23.	Oregon	87,599	22,557	23.	Illinois	78.5%	21.5%
24.	Alabama	81,826	21,835	24.	North Dakota	78.6%	21.4%
25.	Connecticut	78,210	20,976	25.	New York	78.7%	21.3%
26.	Utah	73,323	15,590	26.	Connecticut	78.9%	21.1%
27.	South Carolina	68,780	20,334	27.	Florida	78.9%	21.1%
28.	Oklahoma	56,593	13,920	28.	Ohio	78.9%	21.1%
29.	Kansas	55,524	13,472	29.	Alabama	78.9%	21.1%
30.	Kentucky	55,379	14,608	30.	Arizona	79.1%	20.9%
31.	Iowa	52,350	15,601	31.	Pennsylvania	79.1%	20.9%
32.	District of Columbia	43,979	16,172	32.	Maine	79.1%	20.9%
33.	Louisiana	43,567	9,889	33.	Kentucky	79.1%	20.9%
34.	Nebraska	35,528	10,548	34.	California	79.2%	20.8%
35.	Nevada	35,064	8,653	35.	Hawaii	79.2%	20.8%
36.	Arkansas	34,945	10,241	36.	Colorado	79.3%	20.7%
37.	New Hampshire	34,242	9,703	37.	Oregon	79.5%	20.5%
38.	New Mexico	30,179	7,105	38.	Washington	79.5%	20.5%
39.	Idaho	26,110	6,418	39.	Vermont	79.6%	20.4%
40.	Mississippi	26,049	7,983	40.	Texas	79.7%	20.3%
41.	Maine	20,484	5,404	41.	West Virginia	80.1%	19.9%
42.	Rhode Island	20,113	5,656	42.	Nevada	80.2%	19.8%
43.	Delaware	18,511	5,607	43.	Oklahoma	80.3%	19.7%
44.	West Virginia	18,160	4,501	44.	Idaho	80.3%	19.7%
45.	Hawaii	17,859	4,693	45.	Wyoming	80.4%	19.6%
46.	Vermont	12,634	3,229	46.	Michigan	80.4%	19.6%
47.	North Dakota	12,493	3,403	47.	Kansas	80.5%	19.5%
48.	Montana	11,840	3,539	48.	New Mexico	80.9%	19.1%
49.	South Dakota	11,804	3,835	49.	Alaska	81.2%	18.8%
50.	Alaska	10,400	2,402	50.	Louisiana	81.5%	18.5%
51.	Wyoming	5,939	1,448	51.	Utah	82.5%	17.5%

Source: EMSI | U.S. Bureau of Labor Statistics | CompTIA

Minor differences may exist between the totals on this page and industry totals presented throughout this report

APPENDIX TABLES – C  
WAGES & ECONOMIC IMPACT

# STATE TECH OCCUPATION WAGE PERCENTILES

2018 estimates

	<u>10<sup>th</sup> Percentile</u>	<u>25<sup>th</sup> Percentile</u>	<u>50<sup>th</sup> (median) Percentile</u>	<u>75<sup>th</sup> Percentile</u>	<u>90<sup>th</sup> Percentile</u>	<b>Percent Greater Than Median National Wage</b>
United States	\$49,409	\$63,054	\$81,907	\$104,558	\$133,443	92%
Alabama	\$48,946	\$61,370	\$77,956	\$97,514	\$117,866	109%
Alaska	\$53,479	\$66,339	\$82,158	\$100,639	\$121,072	61%
Arizona	\$47,952	\$60,897	\$79,096	\$100,135	\$122,647	94%
Arkansas	\$39,616	\$49,459	\$63,323	\$79,436	\$96,376	83%
California	\$56,825	\$73,533	\$96,237	\$122,958	\$157,967	101%
Colorado	\$56,713	\$71,246	\$90,434	\$112,965	\$140,987	97%
Connecticut	\$55,770	\$68,980	\$87,363	\$107,791	\$134,503	72%
Delaware	\$58,950	\$71,587	\$89,405	\$110,887	\$136,515	98%
District of Columbia	\$69,775	\$88,183	\$110,242	\$132,701	\$162,008	44%
Florida	\$41,651	\$52,903	\$69,226	\$89,104	\$109,520	86%
Georgia	\$48,525	\$62,051	\$80,260	\$101,171	\$124,166	99%
Hawaii	\$50,324	\$62,058	\$77,000	\$92,770	\$109,694	71%
Idaho	\$41,820	\$52,641	\$68,884	\$87,713	\$107,733	89%
Illinois	\$48,833	\$62,514	\$80,769	\$101,686	\$123,428	83%
Indiana	\$41,710	\$51,350	\$64,850	\$82,033	\$100,034	73%
Iowa	\$45,159	\$56,463	\$70,099	\$85,393	\$102,236	81%
Kansas	\$45,317	\$56,362	\$71,415	\$89,627	\$108,696	85%
Kentucky	\$40,161	\$50,387	\$64,923	\$82,599	\$101,860	77%
Louisiana	\$39,922	\$50,705	\$65,947	\$85,188	\$107,451	82%
Maine	\$47,471	\$57,608	\$71,994	\$88,242	\$106,663	83%
Maryland	\$57,197	\$74,082	\$95,921	\$118,968	\$149,263	93%
Massachusetts	\$58,668	\$72,766	\$92,981	\$116,399	\$145,420	76%
Michigan	\$47,836	\$60,194	\$76,688	\$95,469	\$114,697	86%
Minnesota	\$51,188	\$63,224	\$79,924	\$99,224	\$119,348	75%
Mississippi	\$40,221	\$50,168	\$63,103	\$79,571	\$96,723	89%
Missouri	\$45,663	\$57,731	\$73,534	\$92,506	\$110,908	89%
Montana	\$38,963	\$49,608	\$62,269	\$77,347	\$100,916	73%
Nebraska	\$44,804	\$56,455	\$71,877	\$89,085	\$106,564	83%
Nevada	\$43,875	\$55,933	\$71,771	\$88,493	\$108,727	81%
New Hampshire	\$51,100	\$62,326	\$78,768	\$97,724	\$118,911	80%
New Jersey	\$57,988	\$71,748	\$92,338	\$118,644	\$152,056	87%
New Mexico	\$48,620	\$63,598	\$83,851	\$105,089	\$126,030	118%
New York	\$51,916	\$66,406	\$87,138	\$114,348	\$147,549	78%
North Carolina	\$49,754	\$62,101	\$79,062	\$98,772	\$120,424	101%
North Dakota	\$42,822	\$53,885	\$66,728	\$82,144	\$100,884	59%
Ohio	\$46,545	\$58,596	\$74,116	\$92,523	\$112,522	83%
Oklahoma	\$40,991	\$52,227	\$66,515	\$83,190	\$102,887	79%
Oregon	\$50,651	\$63,988	\$82,028	\$102,746	\$124,989	89%
Pennsylvania	\$47,672	\$59,190	\$75,588	\$94,824	\$119,266	79%
Rhode Island	\$53,545	\$67,195	\$83,808	\$102,359	\$120,981	81%
South Carolina	\$43,117	\$54,406	\$69,445	\$87,570	\$107,292	90%
South Dakota	\$42,802	\$50,004	\$60,114	\$72,473	\$84,855	71%
Tennessee	\$40,954	\$52,111	\$67,120	\$85,249	\$103,985	79%
Texas	\$49,986	\$63,217	\$81,858	\$103,624	\$131,115	98%
Utah	\$44,003	\$57,221	\$74,827	\$94,724	\$115,905	88%
Vermont	\$45,607	\$55,936	\$70,194	\$90,779	\$112,061	69%
Virginia	\$58,278	\$72,949	\$94,493	\$120,085	\$149,775	103%
Washington	\$61,332	\$78,973	\$99,653	\$124,409	\$152,227	102%
West Virginia	\$41,591	\$53,979	\$69,131	\$85,847	\$102,356	94%
Wisconsin	\$43,699	\$53,790	\$66,815	\$82,488	\$99,573	64%
Wyoming	\$44,439	\$53,605	\$66,504	\$82,172	\$97,850	59%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

# METRO AREA TECH OCCUPATION WAGE PERCENTILES

2018 estimates

	<u>10<sup>th</sup> Percentile</u>	<u>25<sup>th</sup> Percentile</u>	<u>50<sup>th</sup> (median) Percentile</u>	<u>75<sup>th</sup> Percentile</u>	<u>90<sup>th</sup> Percentile</u>	<b>Percent Greater Than Median National Wage</b>
United States	\$49,409	\$63,054	\$81,907	\$104,558	\$133,443	92%
Albuquerque	\$51,374	\$66,254	\$87,352	\$108,137	\$129,665	118%
Atlanta	\$50,673	\$64,220	\$84,014	\$107,113	\$131,087	92%
Austin	\$54,272	\$67,053	\$86,458	\$108,205	\$136,221	96%
Baltimore	\$55,194	\$72,265	\$94,255	\$119,060	\$146,126	93%
Birmingham	\$47,600	\$58,503	\$73,511	\$90,698	\$109,438	82%
Boise	\$43,864	\$54,896	\$71,924	\$91,502	\$111,740	90%
Boston	\$60,502	\$74,838	\$96,021	\$120,913	\$150,694	75%
Charlotte	\$53,638	\$66,775	\$85,350	\$107,005	\$130,127	98%
Chicago	\$49,846	\$63,277	\$82,224	\$103,942	\$126,287	80%
Cincinnati	\$48,960	\$60,810	\$77,149	\$96,832	\$118,178	84%
Cleveland	\$44,551	\$56,556	\$71,708	\$89,983	\$108,691	69%
Dallas	\$51,706	\$65,143	\$83,907	\$104,954	\$130,802	92%
Denver	\$58,610	\$72,403	\$91,277	\$113,989	\$142,940	87%
Des Moines	\$51,132	\$62,862	\$76,905	\$93,386	\$112,955	76%
Detroit	\$53,079	\$65,714	\$83,505	\$103,183	\$122,014	86%
Hartford	\$54,243	\$66,981	\$84,376	\$103,800	\$129,128	65%
Houston	\$52,656	\$66,409	\$86,716	\$111,594	\$144,128	93%
Indianapolis	\$46,096	\$56,728	\$71,440	\$90,331	\$109,860	76%
Kansas City	\$49,733	\$61,647	\$78,276	\$97,821	\$117,417	82%
Las Vegas	\$45,393	\$58,303	\$75,002	\$91,441	\$112,834	91%
Los Angeles	\$51,339	\$65,884	\$86,349	\$110,959	\$140,899	88%
Memphis	\$39,966	\$51,382	\$66,994	\$86,456	\$104,742	77%
Miami	\$41,999	\$52,329	\$67,820	\$87,768	\$107,638	79%
Milwaukee	\$44,906	\$55,185	\$68,969	\$85,847	\$102,937	59%
Minneapolis	\$52,835	\$64,988	\$82,296	\$102,396	\$122,794	68%
Nashville	\$46,114	\$57,024	\$72,645	\$91,981	\$112,005	79%
New Orleans	\$41,859	\$53,100	\$70,077	\$88,914	\$111,988	87%
New York City	\$58,286	\$73,077	\$96,472	\$126,798	\$163,425	85%
Oklahoma City	\$44,751	\$55,634	\$70,019	\$86,769	\$104,895	76%
Omaha	\$48,243	\$60,099	\$76,253	\$93,831	\$111,268	83%
Orlando	\$44,094	\$55,265	\$71,579	\$91,959	\$113,095	94%
Philadelphia	\$54,959	\$67,518	\$85,908	\$107,481	\$133,077	82%
Phoenix	\$47,631	\$61,071	\$79,417	\$100,299	\$122,481	89%
Pittsburgh	\$47,891	\$58,125	\$74,136	\$92,851	\$115,506	75%
Portland	\$53,454	\$67,454	\$86,553	\$108,590	\$132,424	82%
Providence	\$52,210	\$64,957	\$81,799	\$100,771	\$119,964	80%
Raleigh	\$54,476	\$67,155	\$84,980	\$106,379	\$129,806	94%
Salt Lake City	\$44,785	\$58,268	\$75,315	\$95,802	\$117,091	78%
San Antonio	\$49,810	\$61,188	\$76,721	\$97,412	\$122,853	92%
San Diego	\$55,315	\$71,053	\$91,714	\$114,090	\$143,092	91%
San Francisco	\$66,775	\$85,408	\$110,807	\$138,827	\$176,095	89%
San Jose	\$72,236	\$91,695	\$118,276	\$147,688	\$187,690	75%
Seattle	\$66,631	\$84,458	\$106,252	\$131,944	\$162,855	94%
St. Louis	\$49,647	\$62,113	\$79,146	\$99,537	\$120,247	86%
Trenton	\$60,769	\$75,262	\$94,369	\$116,551	\$147,448	72%
Washington DC	\$65,492	\$82,739	\$106,403	\$132,754	\$163,812	74%

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

2018 estimates

## IT SUPPORT SPECIALISTS

## CYBERSECURITY ANALYSTS

	IT SUPPORT SPECIALISTS					CYBERSECURITY ANALYSTS				
	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	50 <sup>th</sup> (median) Percentile	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	50 <sup>th</sup> (median) Percentile	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
United States	\$30,685	\$38,955	\$50,390	\$64,210	\$82,423	\$55,552	\$72,131	\$95,511	\$123,176	\$153,086
Alabama	\$29,715	\$36,585	\$46,651	\$59,327	\$73,520	\$54,367	\$66,786	\$87,670	\$111,299	\$128,730
Alaska	\$39,252	\$47,020	\$58,152	\$71,168	\$87,035	\$49,957	\$80,757	\$94,303	\$108,403	\$150,646
Arizona	\$29,208	\$36,726	\$47,140	\$60,172	\$77,373	\$54,430	\$67,203	\$83,718	\$107,992	\$129,042
Arkansas	\$25,193	\$30,507	\$38,662	\$48,410	\$59,925	\$50,439	\$68,535	\$83,075	\$97,885	\$107,286
California	\$35,926	\$46,418	\$59,222	\$76,482	\$98,164	\$58,411	\$83,168	\$108,384	\$131,015	\$159,303
Colorado	\$34,531	\$44,010	\$57,125	\$73,425	\$93,503	\$60,024	\$76,145	\$98,465	\$123,654	\$151,859
Connecticut	\$34,996	\$44,582	\$56,306	\$70,179	\$84,251	\$71,784	\$87,898	\$111,188	\$136,607	\$165,154
Delaware	\$35,684	\$43,243	\$53,673	\$68,965	\$88,318	\$67,702	\$79,850	\$100,942	\$122,740	\$145,350
District of Columbia	\$44,069	\$52,570	\$65,004	\$81,106	\$102,660	\$68,618	\$87,796	\$118,247	\$151,195	\$184,995
Florida	\$26,917	\$34,250	\$44,437	\$57,415	\$73,676	\$49,874	\$63,062	\$83,572	\$106,764	\$128,521
Georgia	\$27,611	\$37,455	\$49,084	\$63,696	\$86,731	\$55,137	\$66,828	\$86,235	\$112,423	\$132,661
Hawaii	\$31,228	\$36,636	\$45,607	\$57,160	\$69,635	\$54,032	\$63,058	\$94,072	\$116,540	\$127,044
Idaho	\$21,928	\$31,378	\$41,210	\$55,705	\$67,673	\$43,488	\$59,171	\$81,928	\$106,369	\$129,249
Illinois	\$28,625	\$38,335	\$50,383	\$66,303	\$81,108	\$58,549	\$72,860	\$94,139	\$120,389	\$146,701
Indiana	\$27,790	\$34,506	\$43,093	\$54,986	\$69,119	\$46,089	\$59,589	\$74,670	\$93,536	\$114,295
Iowa	\$28,230	\$36,270	\$45,237	\$56,124	\$67,820	\$46,423	\$58,300	\$77,062	\$99,485	\$119,869
Kansas	\$27,142	\$34,096	\$44,337	\$53,361	\$63,918	\$45,030	\$54,765	\$77,437	\$98,258	\$116,770
Kentucky	\$26,598	\$33,003	\$41,739	\$55,047	\$70,576	\$36,854	\$49,647	\$75,356	\$105,745	\$148,301
Louisiana	\$27,918	\$34,313	\$43,435	\$54,758	\$65,018	\$45,902	\$56,761	\$69,949	\$86,880	\$116,145
Maine	\$34,155	\$40,891	\$48,641	\$58,579	\$69,547	\$51,890	\$60,898	\$82,425	\$113,954	\$207,987
Maryland	\$28,536	\$39,873	\$52,790	\$65,373	\$84,513	\$60,046	\$82,490	\$107,992	\$131,746	\$159,701
Massachusetts	\$37,891	\$46,231	\$58,040	\$73,778	\$92,207	\$60,794	\$78,205	\$103,832	\$129,520	\$158,557
Michigan	\$27,989	\$36,130	\$46,904	\$60,800	\$77,737	\$56,029	\$69,405	\$92,182	\$116,894	\$138,588
Minnesota	\$34,778	\$42,003	\$52,413	\$64,729	\$80,589	\$58,509	\$72,611	\$94,951	\$117,457	\$131,331
Mississippi	\$24,661	\$33,790	\$43,861	\$55,199	\$66,469	\$43,262	\$51,915	\$65,851	\$83,302	\$112,547
Missouri	\$27,585	\$34,524	\$44,502	\$56,780	\$68,911	\$50,355	\$64,062	\$83,282	\$108,305	\$140,066
Montana	\$25,178	\$34,125	\$44,107	\$56,123	\$69,404	\$27,747	\$31,408	\$53,470	\$75,479	\$112,045
Nebraska	\$29,195	\$35,558	\$45,624	\$57,851	\$72,254	\$51,104	\$65,123	\$80,828	\$97,822	\$115,169
Nevada	\$33,207	\$39,897	\$47,955	\$60,375	\$74,377	\$53,847	\$64,246	\$81,532	\$107,989	\$141,976
New Hampshire	\$33,721	\$40,920	\$50,981	\$63,052	\$77,885	\$65,702	\$75,958	\$94,304	\$119,389	\$147,386
New Jersey	\$35,641	\$46,194	\$59,522	\$76,216	\$103,082	\$64,911	\$89,415	\$116,540	\$146,514	\$170,267
New Mexico	\$25,588	\$30,340	\$40,586	\$50,557	\$63,048	\$67,493	\$81,097	\$105,496	\$127,669	\$157,392
New York	\$33,671	\$42,797	\$54,350	\$70,697	\$90,858	\$60,107	\$77,517	\$109,675	\$147,511	\$187,863
North Carolina	\$30,871	\$38,211	\$48,844	\$62,815	\$83,679	\$61,211	\$77,561	\$98,507	\$122,636	\$147,221
North Dakota	\$32,686	\$39,666	\$49,293	\$63,545	\$88,769	\$47,130	\$63,646	\$77,209	\$90,667	\$101,067
Ohio	\$28,568	\$35,841	\$45,459	\$57,811	\$71,580	\$53,474	\$67,993	\$88,648	\$112,485	\$134,138
Oklahoma	\$26,889	\$33,770	\$42,342	\$54,895	\$72,611	\$48,648	\$58,342	\$72,528	\$90,936	\$106,724
Oregon	\$32,380	\$39,469	\$49,089	\$61,741	\$76,358	\$57,310	\$82,649	\$97,902	\$118,639	\$147,135
Pennsylvania	\$31,315	\$38,278	\$48,206	\$60,633	\$76,193	\$58,715	\$72,714	\$91,476	\$114,170	\$139,442
Rhode Island	\$30,624	\$41,197	\$56,379	\$72,319	\$80,619	\$68,241	\$82,490	\$104,518	\$135,885	\$156,103
South Carolina	\$26,787	\$34,779	\$45,516	\$57,624	\$71,614	\$46,236	\$58,903	\$74,400	\$93,786	\$117,935
South Dakota	\$27,360	\$32,147	\$37,329	\$44,943	\$51,777	\$60,048	\$71,509	\$87,921	\$104,811	\$124,779
Tennessee	\$30,198	\$36,222	\$46,016	\$58,839	\$74,807	\$43,179	\$58,236	\$81,035	\$100,878	\$126,878
Texas	\$29,797	\$38,282	\$49,773	\$63,213	\$81,404	\$50,726	\$69,967	\$92,620	\$119,785	\$146,846
Utah	\$28,052	\$35,567	\$46,588	\$61,211	\$78,621	\$48,855	\$58,402	\$79,578	\$100,815	\$128,209
Vermont	\$33,554	\$40,489	\$49,179	\$64,276	\$79,948	\$47,797	\$58,070	\$77,225	\$109,155	\$129,186
Virginia	\$32,933	\$41,186	\$53,202	\$67,243	\$82,525	\$66,933	\$83,948	\$105,539	\$137,862	\$163,072
Washington	\$35,033	\$44,020	\$55,075	\$68,262	\$91,953	\$59,690	\$78,744	\$105,412	\$126,088	\$151,297
West Virginia	\$25,007	\$32,930	\$43,284	\$55,088	\$63,975	\$50,543	\$62,460	\$77,354	\$93,869	\$106,266
Wisconsin	\$29,778	\$38,208	\$48,386	\$61,932	\$77,508	\$41,203	\$50,376	\$73,942	\$97,884	\$119,641
Wyoming	\$30,844	\$38,406	\$46,783	\$57,197	\$66,661	\$41,370	\$47,130	\$74,064	\$92,683	\$105,912

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

2018 estimates

## SOFTWARE DEVELOPERS, APPLICATIONS

## NETWORK ARCHITECTS

	SOFTWARE DEVELOPERS, APPLICATIONS					NETWORK ARCHITECTS				
	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	50 <sup>th</sup> (median) Percentile	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	50 <sup>th</sup> (median) Percentile	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
United States	\$59,351	\$76,301	\$100,880	\$128,185	\$159,350	\$58,296	\$77,083	\$104,123	\$132,051	\$162,001
Alabama	\$52,566	\$67,428	\$88,015	\$113,927	\$137,020	\$65,710	\$79,337	\$99,538	\$122,534	\$144,962
Alaska	\$60,224	\$73,787	\$91,067	\$109,127	\$135,029	\$38,172	\$85,789	\$100,634	\$121,288	\$156,643
Arizona	\$55,796	\$71,737	\$93,778	\$117,744	\$141,390	\$62,915	\$77,798	\$98,695	\$122,893	\$149,677
Arkansas	\$50,531	\$64,209	\$83,093	\$107,224	\$128,320	\$50,142	\$59,502	\$79,655	\$110,806	\$132,997
California	\$69,170	\$91,999	\$119,970	\$151,745	\$186,708	\$65,691	\$90,890	\$124,025	\$158,389	\$193,898
Colorado	\$62,726	\$80,267	\$101,759	\$126,042	\$153,619	\$66,276	\$85,269	\$109,948	\$133,160	\$157,524
Connecticut	\$63,020	\$76,570	\$98,694	\$124,889	\$152,634	\$69,193	\$96,777	\$118,878	\$144,147	\$173,378
Delaware	\$64,539	\$78,080	\$98,543	\$122,917	\$149,197	\$74,910	\$99,135	\$129,869	\$151,598	\$164,472
District of Columbia	\$78,797	\$96,442	\$115,832	\$133,921	\$157,126	\$75,012	\$89,679	\$108,628	\$139,153	\$159,804
Florida	\$52,188	\$65,401	\$86,697	\$110,544	\$129,987	\$44,252	\$56,535	\$77,016	\$102,485	\$130,639
Georgia	\$55,278	\$72,887	\$97,011	\$122,986	\$151,942	\$70,710	\$89,474	\$112,524	\$133,520	\$160,140
Hawaii	\$52,742	\$60,953	\$74,722	\$96,324	\$119,331	\$56,327	\$70,930	\$94,231	\$119,951	\$163,618
Idaho	\$52,865	\$65,260	\$84,393	\$105,731	\$125,961	\$49,756	\$58,385	\$69,446	\$91,496	\$131,827
Illinois	\$58,702	\$73,299	\$92,812	\$115,572	\$137,730	\$65,099	\$87,372	\$112,545	\$134,106	\$160,250
Indiana	\$52,448	\$64,765	\$79,034	\$101,498	\$124,047	\$53,656	\$65,136	\$81,021	\$102,568	\$127,535
Iowa	\$54,551	\$69,283	\$86,484	\$102,191	\$121,635	\$58,275	\$75,941	\$98,671	\$119,409	\$141,280
Kansas	\$48,499	\$62,531	\$85,182	\$111,852	\$128,505	\$58,978	\$70,860	\$90,049	\$116,169	\$139,383
Kentucky	\$44,548	\$58,622	\$75,596	\$96,085	\$116,751	\$45,796	\$55,951	\$71,942	\$93,040	\$117,472
Louisiana	\$44,276	\$52,750	\$71,353	\$93,458	\$115,818	\$37,350	\$53,208	\$70,307	\$108,970	\$131,211
Maine	\$53,712	\$66,048	\$84,151	\$99,918	\$122,452	\$59,216	\$70,329	\$86,774	\$104,301	\$129,587
Maryland	\$53,945	\$73,380	\$101,650	\$135,733	\$176,983	\$52,538	\$76,197	\$112,808	\$144,446	\$163,627
Massachusetts	\$61,658	\$79,003	\$102,939	\$128,666	\$158,697	\$69,325	\$88,961	\$114,822	\$139,817	\$164,620
Michigan	\$52,563	\$68,261	\$87,234	\$109,294	\$129,416	\$54,796	\$72,675	\$101,946	\$124,852	\$148,037
Minnesota	\$54,394	\$69,287	\$89,655	\$114,527	\$134,404	\$71,211	\$87,053	\$105,672	\$127,815	\$152,466
Mississippi	\$53,382	\$64,229	\$84,472	\$109,001	\$130,220	\$39,624	\$55,992	\$70,458	\$87,517	\$112,041
Missouri	\$60,512	\$75,376	\$94,251	\$116,432	\$133,714	\$60,969	\$77,165	\$95,470	\$117,303	\$138,421
Montana	\$31,933	\$56,627	\$72,872	\$90,553	\$108,464	\$46,454	\$57,299	\$70,560	\$86,999	\$99,936
Nebraska	\$56,596	\$68,947	\$85,117	\$103,125	\$122,599	\$50,451	\$71,827	\$95,728	\$118,336	\$137,125
Nevada	\$45,685	\$70,778	\$98,807	\$121,093	\$172,176	\$68,615	\$81,814	\$103,791	\$124,532	\$145,923
New Hampshire	\$61,100	\$76,494	\$100,789	\$125,368	\$152,259	\$66,746	\$77,270	\$105,937	\$135,655	\$167,995
New Jersey	\$65,604	\$77,798	\$100,356	\$130,078	\$160,036	\$63,261	\$94,741	\$125,986	\$162,258	\$194,962
New Mexico	\$25,064	\$55,749	\$73,764	\$97,767	\$124,050	\$70,866	\$89,239	\$111,687	\$132,504	\$155,217
New York	\$63,259	\$82,044	\$108,965	\$142,037	\$170,189	\$48,831	\$73,248	\$102,500	\$139,801	\$174,543
North Carolina	\$60,413	\$76,341	\$96,943	\$121,849	\$147,480	\$64,722	\$81,576	\$105,198	\$128,472	\$155,372
North Dakota	\$52,928	\$62,077	\$72,600	\$84,802	\$100,187	\$49,892	\$72,069	\$89,520	\$101,626	\$122,744
Ohio	\$53,192	\$68,826	\$88,824	\$110,310	\$130,354	\$55,897	\$73,358	\$94,942	\$117,821	\$133,497
Oklahoma	\$51,969	\$62,944	\$82,646	\$103,349	\$132,345	\$43,967	\$60,586	\$81,451	\$104,852	\$126,701
Oregon	\$58,386	\$78,959	\$100,536	\$123,288	\$148,598	\$71,875	\$90,217	\$112,286	\$138,741	\$172,569
Pennsylvania	\$57,237	\$71,116	\$91,997	\$115,443	\$139,184	\$59,293	\$76,308	\$100,628	\$124,913	\$155,680
Rhode Island	\$57,185	\$71,103	\$90,762	\$113,121	\$126,846	\$68,745	\$98,511	\$117,818	\$132,214	\$154,838
South Carolina	\$52,806	\$66,878	\$85,908	\$108,157	\$130,672	\$46,307	\$59,455	\$78,130	\$103,764	\$130,042
South Dakota	\$52,435	\$61,170	\$74,132	\$90,116	\$103,625	\$61,072	\$77,833	\$95,463	\$117,795	\$142,322
Tennessee	\$49,545	\$64,721	\$86,127	\$105,493	\$124,641	\$55,350	\$74,497	\$95,933	\$119,984	\$152,351
Texas	\$64,989	\$81,813	\$106,877	\$128,287	\$153,684	\$67,904	\$87,721	\$115,724	\$141,957	\$164,169
Utah	\$53,272	\$69,635	\$93,663	\$118,225	\$141,403	\$57,003	\$75,938	\$100,280	\$122,941	\$157,682
Vermont	\$61,893	\$73,667	\$91,759	\$114,865	\$130,341	\$54,056	\$59,333	\$73,809	\$107,812	\$133,782
Virginia	\$64,079	\$78,385	\$105,812	\$139,059	\$164,775	\$67,055	\$86,898	\$116,142	\$146,005	\$168,044
Washington	\$78,382	\$104,411	\$127,385	\$156,515	\$188,785	\$71,374	\$81,968	\$92,601	\$126,866	\$157,406
West Virginia	\$40,691	\$60,266	\$79,187	\$106,450	\$138,938	\$63,058	\$81,647	\$106,999	\$139,987	\$174,783
Wisconsin	\$54,127	\$66,916	\$82,461	\$100,268	\$122,215	\$58,186	\$74,540	\$94,670	\$114,445	\$128,992
Wyoming	\$46,042	\$55,847	\$63,748	\$78,646	\$98,223	\$86,414	\$106,602	\$134,500	\$160,804	\$194,470

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

2018 estimates

### IT SUPPORT SPECIALISTS

### CYBERSECURITY ANALYSTS

	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>
	Percentile	Percentile	(median) Percentile	Percentile	Percentile	Percentile	Percentile	(median) Percentile	Percentile	Percentile
United States	\$30,685	\$38,955	\$50,390	\$64,210	\$82,423	\$55,552	\$72,131	\$95,511	\$123,176	\$153,086
Albuquerque	\$25,972	\$30,460	\$42,407	\$51,463	\$64,999	\$67,606	\$82,796	\$104,972	\$126,629	\$152,029
Atlanta	\$27,744	\$38,256	\$50,861	\$67,640	\$91,045	\$56,432	\$68,165	\$88,628	\$114,751	\$138,370
Austin	\$30,677	\$36,519	\$47,324	\$60,557	\$79,061	\$71,198	\$87,806	\$108,715	\$143,784	\$165,241
Baltimore	\$28,875	\$40,868	\$52,074	\$66,542	\$84,373	\$60,346	\$86,659	\$114,467	\$139,020	\$162,003
Birmingham	\$33,026	\$38,473	\$48,315	\$61,766	\$78,317	\$56,335	\$68,439	\$92,415	\$115,265	\$132,524
Boise	\$21,336	\$31,007	\$40,056	\$54,651	\$66,952	\$52,702	\$67,643	\$86,465	\$104,838	\$124,486
Boston	\$38,912	\$47,244	\$59,585	\$76,251	\$95,250	\$63,441	\$80,802	\$107,147	\$134,899	\$164,797
Charlotte	\$33,433	\$41,386	\$53,602	\$71,066	\$99,036	\$62,045	\$80,005	\$105,375	\$130,116	\$155,637
Chicago	\$28,797	\$38,730	\$51,439	\$68,135	\$83,240	\$60,063	\$74,381	\$96,449	\$123,599	\$150,238
Cincinnati	\$31,411	\$38,611	\$48,525	\$61,476	\$75,467	\$52,204	\$65,497	\$86,635	\$112,904	\$140,943
Cleveland	\$28,816	\$35,686	\$45,200	\$56,951	\$68,068	\$51,325	\$66,430	\$88,417	\$113,147	\$138,385
Dallas	\$30,337	\$39,455	\$51,462	\$63,526	\$79,216	\$42,086	\$68,016	\$91,837	\$120,313	\$147,887
Denver	\$36,411	\$45,716	\$58,875	\$75,595	\$95,746	\$55,892	\$71,028	\$92,492	\$119,474	\$149,565
Des Moines	\$33,513	\$41,210	\$48,627	\$59,865	\$77,595	\$45,289	\$56,337	\$75,604	\$94,434	\$107,467
Detroit	\$29,750	\$36,822	\$48,555	\$62,623	\$81,469	\$59,606	\$71,078	\$94,169	\$118,135	\$137,969
Hartford	\$32,896	\$42,159	\$53,166	\$66,211	\$79,531	\$68,090	\$83,343	\$105,437	\$129,574	\$156,584
Houston	\$34,548	\$43,419	\$55,960	\$74,778	\$102,966	\$55,515	\$75,352	\$99,280	\$122,265	\$142,408
Indianapolis	\$31,601	\$36,690	\$46,276	\$60,016	\$75,504	\$49,332	\$63,005	\$78,527	\$98,652	\$119,360
Kansas City	\$30,334	\$38,293	\$48,866	\$60,223	\$72,404	\$49,432	\$62,110	\$82,391	\$104,648	\$127,435
Las Vegas	\$33,261	\$39,540	\$46,865	\$57,417	\$69,385	\$53,307	\$64,517	\$84,277	\$113,252	\$144,473
Los Angeles	\$33,838	\$43,377	\$55,469	\$70,065	\$89,285	\$55,997	\$78,555	\$102,339	\$123,470	\$146,160
Memphis	\$28,413	\$35,198	\$45,174	\$57,531	\$72,704	\$45,030	\$64,393	\$77,839	\$111,729	\$150,714
Miami	\$27,412	\$34,094	\$44,423	\$57,687	\$73,507	\$50,259	\$60,632	\$80,840	\$102,363	\$125,133
Milwaukee	\$28,794	\$39,651	\$50,596	\$66,474	\$79,243	\$41,534	\$53,415	\$78,401	\$102,007	\$125,724
Minneapolis	\$36,009	\$43,468	\$54,491	\$67,851	\$83,879	\$60,229	\$74,819	\$98,048	\$121,297	\$136,940
Nashville	\$33,085	\$38,953	\$48,914	\$61,925	\$76,854	\$43,771	\$56,640	\$78,759	\$98,946	\$118,869
New Orleans	\$29,188	\$34,078	\$41,742	\$51,839	\$61,705	\$52,607	\$60,027	\$73,866	\$97,275	\$154,550
New York City	\$36,655	\$45,847	\$59,016	\$77,344	\$100,695	\$64,993	\$87,224	\$120,009	\$156,374	\$192,357
Oklahoma City	\$28,626	\$34,701	\$42,670	\$53,889	\$68,791	\$48,098	\$57,455	\$70,945	\$87,841	\$103,975
Omaha	\$31,964	\$39,009	\$48,473	\$60,266	\$74,504	\$52,663	\$66,940	\$84,664	\$100,504	\$117,359
Orlando	\$26,661	\$33,953	\$43,278	\$57,900	\$78,005	\$57,324	\$70,827	\$91,349	\$116,536	\$137,214
Philadelphia	\$33,452	\$40,787	\$51,880	\$65,319	\$79,552	\$62,150	\$76,233	\$96,314	\$119,950	\$144,106
Phoenix	\$29,421	\$36,800	\$47,265	\$60,673	\$78,448	\$55,055	\$68,430	\$85,422	\$110,316	\$130,166
Pittsburgh	\$31,304	\$37,830	\$46,759	\$57,969	\$71,653	\$60,448	\$72,800	\$89,964	\$108,495	\$131,498
Portland	\$34,924	\$42,233	\$52,435	\$66,388	\$82,761	\$56,638	\$82,909	\$98,699	\$120,226	\$148,797
Providence	\$31,831	\$41,045	\$54,431	\$69,958	\$80,685	\$65,366	\$79,447	\$101,644	\$131,154	\$153,782
Raleigh	\$33,463	\$42,758	\$54,408	\$72,407	\$91,783	\$67,112	\$79,673	\$96,391	\$116,253	\$130,813
Salt Lake City	\$29,256	\$37,201	\$47,791	\$62,083	\$79,431	\$49,026	\$59,350	\$78,996	\$104,475	\$132,708
San Antonio	\$32,385	\$39,686	\$50,004	\$62,680	\$78,723	\$58,004	\$69,947	\$86,941	\$110,523	\$136,603
San Diego	\$37,872	\$46,992	\$57,039	\$68,333	\$84,333	\$64,178	\$77,284	\$96,964	\$120,843	\$146,261
San Francisco	\$41,266	\$53,372	\$66,255	\$84,758	\$101,794	\$63,782	\$90,351	\$117,030	\$141,468	\$166,573
San Jose	\$43,512	\$55,804	\$72,808	\$97,895	\$132,833	\$57,806	\$86,503	\$116,462	\$148,375	\$184,522
Seattle	\$36,596	\$45,901	\$57,127	\$72,760	\$98,884	\$63,290	\$80,623	\$106,133	\$125,853	\$146,299
St. Louis	\$30,309	\$37,633	\$48,932	\$62,751	\$76,969	\$50,680	\$65,066	\$86,318	\$113,130	\$145,374
Trenton	\$42,637	\$53,073	\$64,497	\$74,489	\$84,981	\$66,826	\$85,316	\$113,337	\$141,730	\$163,820
Washington DC	\$38,808	\$48,128	\$60,788	\$76,699	\$97,585	\$70,247	\$87,919	\$111,954	\$144,637	\$171,991

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

2018 estimates

## SOFTWARE DEVELOPERS, APPLICATIONS

## NETWORK ARCHITECTS

	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>
	<u>Percentile</u>	<u>Percentile</u>	<u>(median) Percentile</u>	<u>Percentile</u>	<u>Percentile</u>	<u>Percentile</u>	<u>Percentile</u>	<u>(median) Percentile</u>	<u>Percentile</u>	<u>Percentile</u>
United States	\$59,351	\$76,301	\$100,880	\$128,185	\$159,350	\$58,296	\$77,083	\$104,123	\$132,051	\$162,001
Albuquerque	\$51,819	\$62,909	\$82,483	\$112,306	\$129,117	\$81,641	\$93,606	\$111,801	\$128,770	\$151,030
Atlanta	\$56,820	\$73,853	\$98,745	\$126,588	\$155,376	\$73,783	\$91,074	\$114,117	\$138,615	\$163,305
Austin	\$65,184	\$81,081	\$106,771	\$127,670	\$151,617	\$72,623	\$93,869	\$122,473	\$148,825	\$167,721
Baltimore	\$41,309	\$66,622	\$97,428	\$135,793	\$185,305	\$53,866	\$78,496	\$114,550	\$145,370	\$166,729
Birmingham	\$53,478	\$66,842	\$83,534	\$103,566	\$126,092	\$71,720	\$86,400	\$105,648	\$127,334	\$153,572
Boise	\$52,966	\$65,531	\$83,895	\$103,460	\$123,678	\$49,801	\$58,250	\$69,504	\$88,503	\$127,903
Boston	\$63,298	\$80,812	\$105,621	\$132,811	\$163,226	\$71,546	\$92,003	\$119,224	\$146,107	\$172,312
Charlotte	\$64,081	\$80,601	\$102,125	\$128,169	\$154,949	\$68,922	\$86,674	\$111,143	\$134,668	\$160,333
Chicago	\$59,783	\$73,871	\$93,706	\$117,270	\$140,954	\$64,748	\$88,132	\$113,726	\$137,127	\$163,908
Cincinnati	\$55,668	\$70,660	\$90,928	\$113,089	\$132,553	\$52,049	\$70,928	\$91,374	\$113,182	\$134,535
Cleveland	\$39,375	\$58,590	\$78,323	\$98,787	\$119,288	\$53,375	\$69,937	\$92,505	\$115,195	\$129,645
Dallas	\$67,055	\$85,751	\$109,615	\$130,060	\$154,983	\$72,482	\$91,567	\$117,502	\$143,320	\$165,284
Denver	\$63,637	\$79,703	\$100,910	\$124,498	\$149,175	\$70,948	\$89,015	\$112,920	\$136,088	\$157,551
Des Moines	\$59,976	\$74,070	\$89,316	\$103,529	\$121,280	\$70,106	\$89,789	\$114,729	\$133,842	\$156,575
Detroit	\$56,952	\$72,004	\$91,336	\$113,467	\$132,530	\$63,038	\$86,605	\$110,631	\$130,228	\$153,247
Hartford	\$58,678	\$70,964	\$91,302	\$115,490	\$141,133	\$66,132	\$90,850	\$111,051	\$134,658	\$161,929
Houston	\$66,348	\$82,093	\$108,431	\$132,804	\$158,119	\$62,338	\$84,413	\$111,931	\$134,551	\$159,335
Indianapolis	\$54,902	\$66,341	\$80,399	\$104,013	\$125,966	\$56,706	\$68,160	\$87,605	\$108,636	\$131,106
Kansas City	\$56,379	\$70,943	\$91,897	\$114,787	\$132,930	\$61,862	\$75,147	\$95,156	\$119,282	\$142,474
Las Vegas	\$42,218	\$74,907	\$104,678	\$122,585	\$177,606	\$70,723	\$86,386	\$107,305	\$123,248	\$139,905
Los Angeles	\$63,189	\$82,722	\$110,260	\$136,428	\$164,969	\$61,875	\$81,785	\$110,531	\$142,257	\$176,473
Memphis	\$38,945	\$60,784	\$82,562	\$101,750	\$120,808	\$60,578	\$78,355	\$105,989	\$156,842	\$191,233
Miami	\$53,131	\$65,316	\$85,335	\$110,799	\$128,541	\$45,529	\$59,047	\$78,640	\$103,169	\$130,947
Milwaukee	\$53,899	\$65,147	\$84,600	\$108,511	\$133,645	\$61,395	\$78,742	\$96,802	\$116,391	\$130,310
Minneapolis	\$55,087	\$69,993	\$90,972	\$116,119	\$137,011	\$72,068	\$86,873	\$105,071	\$129,139	\$154,320
Nashville	\$57,644	\$71,022	\$91,280	\$112,409	\$129,413	\$60,071	\$81,674	\$99,395	\$122,072	\$148,149
New Orleans	\$44,495	\$51,327	\$71,441	\$92,915	\$110,064	\$33,520	\$38,227	\$53,954	\$85,001	\$120,827
New York City	\$68,821	\$84,799	\$113,017	\$147,240	\$178,294	\$58,240	\$86,043	\$120,596	\$159,606	\$196,840
Oklahoma City	\$53,658	\$65,805	\$86,112	\$107,195	\$133,809	\$57,315	\$70,922	\$86,807	\$109,896	\$127,648
Omaha	\$56,205	\$70,235	\$87,958	\$108,097	\$125,786	\$53,410	\$74,215	\$98,440	\$120,791	\$140,944
Orlando	\$55,772	\$68,023	\$87,538	\$109,037	\$128,897	\$49,376	\$63,280	\$85,492	\$114,515	\$142,781
Philadelphia	\$62,487	\$77,826	\$99,736	\$123,375	\$149,219	\$66,694	\$84,685	\$110,660	\$139,999	\$169,119
Phoenix	\$56,726	\$74,057	\$96,065	\$120,010	\$144,320	\$64,879	\$80,746	\$101,161	\$124,871	\$152,177
Pittsburgh	\$54,459	\$64,222	\$84,729	\$102,516	\$125,949	\$61,461	\$74,181	\$95,644	\$117,734	\$133,092
Portland	\$62,845	\$83,689	\$106,134	\$129,380	\$155,800	\$76,836	\$93,770	\$117,181	\$146,550	\$181,765
Providence	\$56,322	\$70,186	\$90,205	\$112,328	\$128,869	\$66,163	\$91,218	\$112,926	\$130,997	\$151,598
Raleigh	\$64,167	\$78,081	\$98,129	\$122,354	\$146,335	\$67,481	\$84,174	\$101,993	\$123,194	\$148,802
Salt Lake City	\$55,244	\$72,392	\$94,867	\$117,694	\$137,682	\$59,217	\$78,812	\$103,116	\$123,399	\$153,291
San Antonio	\$62,723	\$75,877	\$98,399	\$123,413	\$151,403	\$72,005	\$90,512	\$118,012	\$150,840	\$178,794
San Diego	\$55,881	\$79,302	\$105,152	\$127,801	\$155,943	\$63,155	\$91,501	\$118,154	\$155,687	\$203,800
San Francisco	\$78,666	\$103,509	\$132,631	\$161,883	\$199,200	\$71,026	\$102,178	\$130,245	\$160,185	\$192,385
San Jose	\$82,077	\$99,923	\$126,876	\$159,277	\$193,515	\$68,349	\$111,222	\$146,560	\$179,223	\$204,195
Seattle	\$82,115	\$106,601	\$129,563	\$158,400	\$191,116	\$70,538	\$80,432	\$110,040	\$140,406	\$165,181
St. Louis	\$64,313	\$79,395	\$99,082	\$122,665	\$143,998	\$63,713	\$80,079	\$98,923	\$121,404	\$143,863
Trenton	\$65,652	\$83,627	\$100,277	\$123,702	\$154,571	\$73,483	\$94,404	\$124,233	\$158,480	\$189,680
Washington DC	\$67,934	\$84,272	\$113,500	\$144,712	\$170,609	\$70,147	\$90,845	\$121,094	\$152,742	\$175,512

Sources: EMSI | U.S. Bureau of Labor Statistics | CompTIA

## TECH GROSS STATE PRODUCT *(in billions)*

Rank	State	2018 est.
	United States	\$1,838.5
1.	California	\$481.7
2.	Texas	\$141.8
3.	New York	\$118.9
4.	Washington	\$94.5
5.	Massachusetts	\$87.1
6.	Florida	\$71.0
7.	Virginia	\$62.7
8.	New Jersey	\$56.0
9.	Illinois	\$55.5
10.	Pennsylvania	\$53.7
11.	Georgia	\$52.6
12.	Colorado	\$47.5
13.	North Carolina	\$46.4
14.	Maryland	\$41.7
15.	Michigan	\$37.4
16.	Ohio	\$34.5
17.	Arizona	\$31.3
18.	Minnesota	\$31.1
19.	Oregon	\$27.1
20.	Missouri	\$22.0
21.	Wisconsin	\$21.5
22.	Utah	\$17.7
23.	Connecticut	\$17.7
24.	Tennessee	\$17.0
25.	Indiana	\$16.0
26.	Alabama	\$13.4
27.	South Carolina	\$12.6
28.	New Hampshire	\$10.6
29.	Iowa	\$10.4
30.	Kansas	\$9.0
31.	New Mexico	\$9.0
32.	Louisiana	\$8.2
33.	District of Columbia	\$8.0
34.	Kentucky	\$7.8
35.	Nevada	\$7.1
36.	Nebraska	\$7.0
37.	Idaho	\$6.9
38.	Oklahoma	\$6.6
39.	Delaware	\$5.3
40.	Arkansas	\$4.4
41.	Mississippi	\$3.8
42.	Rhode Island	\$3.7
43.	Hawaii	\$3.2
44.	Maine	\$2.9
45.	Vermont	\$2.5
46.	West Virginia	\$2.5
47.	North Dakota	\$2.3
48.	Alaska	\$2.1
49.	Montana	\$2.1
50.	South Dakota	\$2.1
51.	Wyoming	\$1.1

## TECH GSP AS A PERCENT OF TOTAL STATE PRODUCT *(in billions)*

Rank	State	Total Tech GSP	Total GDP/GSP	Tech as a Percent
	United States	\$1,838.50	\$17,997.4	10.2%
1.	Washington	\$94.5	\$470.5	20.1%
2.	California	\$481.7	\$2,553.7	18.9%
3.	Massachusetts	\$87.1	\$503.2	17.3%
4.	Colorado	\$47.5	\$326.9	14.5%
5.	New Hampshire	\$10.6	\$76.7	13.8%
6.	Virginia	\$62.7	\$464.5	13.5%
7.	Oregon	\$27.1	\$218.6	12.4%
8.	Maryland	\$41.7	\$355.7	11.7%
9.	Utah	\$17.7	\$155.7	11.4%
10.	Arizona	\$31.3	\$299.2	10.5%
11.	New Mexico	\$9.0	\$86.2	10.4%
12.	Georgia	\$52.6	\$514.3	10.2%
13.	Idaho	\$6.9	\$67.9	10.1%
14.	New Jersey	\$56.0	\$562.5	10.0%
15.	North Carolina	\$46.4	\$497.0	9.3%
16.	Minnesota	\$31.1	\$334.5	9.3%
17.	Texas	\$141.8	\$1,623.6	8.7%
18.	New York	\$118.9	\$1,461.5	8.1%
19.	Delaware	\$5.3	\$66.0	8.0%
20.	Vermont	\$2.5	\$31.1	7.9%
21.	Florida	\$71.0	\$898.2	7.9%
22.	Michigan	\$37.4	\$479.5	7.8%
23.	Pennsylvania	\$53.7	\$694.8	7.7%
24.	Missouri	\$22.0	\$288.3	7.6%
25.	Illinois	\$55.5	\$760.6	7.3%
26.	Wisconsin	\$21.5	\$298.1	7.2%
27.	Connecticut	\$17.7	\$248.8	7.1%
28.	Alabama	\$13.4	\$198.1	6.8%
29.	Rhode Island	\$3.7	\$54.0	6.8%
30.	Nebraska	\$7.0	\$109.5	6.4%
31.	South Carolina	\$12.6	\$200.7	6.3%
32.	District of Columbia	\$8.0	\$128.4	6.2%
33.	Kansas	\$9.0	\$148.9	6.0%
34.	Iowa	\$10.4	\$175.7	5.9%
35.	Ohio	\$34.5	\$590.3	5.8%
36.	Tennessee	\$17.0	\$326.6	5.2%
37.	Maine	\$2.9	\$57.5	5.0%
38.	Indiana	\$16.0	\$325.5	4.9%
39.	Nevada	\$7.1	\$147.4	4.8%
40.	Alaska	\$2.1	\$46.2	4.5%
41.	Montana	\$2.1	\$46.5	4.5%
42.	South Dakota	\$2.1	\$46.5	4.5%
43.	North Dakota	\$2.3	\$52.5	4.3%
44.	Kentucky	\$7.8	\$191.3	4.1%
45.	Hawaii	\$3.2	\$81.4	3.9%
46.	Arkansas	\$4.4	\$114.8	3.8%
47.	Oklahoma	\$6.6	\$179.3	3.7%
48.	Mississippi	\$3.8	\$104.5	3.7%
49.	Louisiana	\$8.2	\$228.1	3.6%
50.	West Virginia	\$2.5	\$69.4	3.5%
51.	Wyoming	\$1.1	\$36.4	2.9%

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

## TECH GROSS REGIONAL PRODUCT *(in billions)*

Rank	Metro Area	2018 est.
	United States	\$1,838.5
1.	San Jose	\$185.3
2.	San Francisco	\$141.3
3.	New York City	\$136.9
4.	Los Angeles	\$91.4
5.	Seattle	\$87.7
6.	Boston	\$81.8
7.	Washington DC	\$75.8
8.	Dallas	\$64.0
9.	Chicago	\$50.5
10.	Atlanta	\$47.5
11.	Philadelphia	\$37.9
12.	San Diego	\$32.9
13.	Austin	\$31.3
14.	Denver	\$30.6
15.	Houston	\$28.1
16.	Minneapolis	\$27.5
17.	Phoenix	\$25.3
18.	Detroit	\$24.8
19.	Portland	\$24.4
20.	Miami	\$22.3
21.	Baltimore	\$21.6
22.	Raleigh	\$16.7
23.	St. Louis	\$13.7
24.	Charlotte	\$13.7
25.	Pittsburgh	\$13.4
26.	Orlando	\$12.5
27.	Kansas City	\$11.9
28.	Salt Lake City	\$9.5
29.	Indianapolis	\$9.3
30.	Milwaukee	\$9.1
31.	San Antonio	\$7.9
32.	Nashville	\$7.5
33.	Cincinnati	\$7.4
34.	Cleveland	\$7.2
35.	Albuquerque	\$6.1
36.	Hartford	\$5.4
37.	Providence	\$5.1
38.	Las Vegas	\$4.7
39.	Boise City	\$4.7
40.	Omaha	\$4.7

## TECH GRP AS A PERCENT OF TOTAL MSA PRODUCT *(in billions)*

Rank	Metro Area	Total Tech GSP	Total GDP/GSP	Tech as a Percent
	United States	\$1,838.5	\$17,997.4	10.2%
1.	San Jose	\$185.3	\$308.9	60.0%
2.	San Francisco	\$141.3	\$504.1	28.0%
3.	Seattle	\$87.7	\$334.9	26.2%
4.	Austin	\$31.3	\$132.9	23.5%
5.	Raleigh	\$16.7	\$76.4	21.8%
6.	Boston	\$81.8	\$415.3	19.7%
7.	Portland	\$24.4	\$150.9	16.2%
8.	Washington DC	\$75.8	\$485.5	15.6%
9.	San Diego	\$32.9	\$213.3	15.4%
10.	Denver	\$30.6	\$198.7	15.4%
11.	Albuquerque	\$6.1	\$40.0	15.2%
12.	Boise City	\$4.7	\$31.7	14.9%
13.	Atlanta	\$47.5	\$349.3	13.6%
14.	Dallas	\$64.0	\$489.1	13.1%
15.	Baltimore	\$21.6	\$181.2	11.9%
16.	Salt Lake City	\$9.5	\$82.7	11.5%
17.	Trenton	\$4.0	\$35.3	11.3%
18.	Minneapolis	\$27.5	\$247.5	11.1%
19.	Phoenix	\$25.3	\$228.3	11.1%
20.	Orlando	\$12.5	\$120.8	10.4%
21.	Los Angeles	\$91.4	\$888.2	10.3%
22.	Detroit	\$24.8	\$241.9	10.2%
23.	Kansas City	\$11.9	\$119.6	9.9%
24.	Milwaukee	\$9.1	\$93.8	9.7%
25.	Pittsburgh	\$13.4	\$139.0	9.7%
26.	Philadelphia	\$37.9	\$396.2	9.6%
27.	Charlotte	\$13.7	\$151.9	9.0%
28.	St. Louis	\$13.7	\$155.5	8.8%
29.	New York City	\$136.9	\$1,560.0	8.8%
30.	Chicago	\$50.5	\$623.8	8.1%
31.	Omaha	\$4.7	\$58.3	8.1%
32.	Indianapolis	\$9.3	\$119.9	7.7%
33.	Miami	\$22.3	\$311.7	7.2%
34.	San Antonio	\$7.9	\$116.9	6.7%
35.	Providence	\$5.1	\$77.1	6.7%
36.	Nashville	\$7.5	\$120.2	6.2%
37.	Cleveland	\$7.2	\$119.1	6.0%
38.	Des Moines	\$2.8	\$48.2	5.9%
39.	Cincinnati	\$7.4	\$125.8	5.9%
40.	Hartford	\$5.4	\$92.3	5.9%

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

APPENDIX TABLES – D  
COMPARISONS TO OTHER INDUSTRIES

# COMPARISONS OF TECH TO OTHER INDUSTRY SECTORS

Comparison of tech sector, tech occupations, and tech economic impact vs. 21 other top-level industry sectors; or, in the case of occupations, 19 top-level occupation categories. For example, a tech sector ranking of 10 means tech ranked 10<sup>th</sup> among the state's industries in job gains during the 2012-2018 or 2017-2018 period.

State	Tech Sector Jobs Change	Tech Sector Jobs Change	Tech Sector Economic Impact Rank	Metro Area	Tech Sector Jobs Change	Tech Sector Jobs Change	Tech Sector Economic Impact Rank
	Rank 2012-18	Rank 2017-18	Rank 2018		Rank 2012-18	Rank 2017-18	Rank 2018
Alabama	10.	4.	5.	Albuquerque	22.	20.	2.
Alaska	19.	16.	7.	Atlanta	8.	5.	1.
Arizona	9.	9.	3.	Austin	3.	2.	1.
Arkansas	18.	17.	11.	Baltimore	8.	3.	2.
California	4.	1.	1.	Birmingham	18.	20.	9.
Colorado	7.	3.	1.	Boise	9.	4.	2.
Connecticut	8.	5.	6.	Boston	3.	1.	1.
Delaware	22.	20.	5.	Charlotte	5.	1.	3.
District of Columbia	7.	7.	4.	Chicago	7.	7.	6.
Florida	9.	4.	6.	Cincinnati	8.	3.	7.
Georgia	9.	4.	3.	Cleveland	8.	5.	7.
Hawaii	20.	19.	12.	Dallas	10.	4.	1.
Idaho	11.	5.	3.	Denver	5.	3.	1.
Illinois	7.	9.	7.	Des Moines	10.	6.	7.
Indiana	12.	7.	7.	Detroit	3.	7.	3.
Iowa	17.	4.	7.	Hartford	7.	6.	6.
Kansas	19.	19.	6.	Houston	20.	22.	9.
Kentucky	17.	8.	10.	Indianapolis	8.	6.	6.
Louisiana	9.	6.	12.	Kansas City	9.	4.	5.
Maine	6.	3.	9.	Las Vegas	13.	8.	10.
Maryland	9.	4.	2.	Los Angeles	11.	9.	3.
Massachusetts	3.	1.	1.	Memphis	15.	20.	11.
Michigan	6.	3.	5.	Miami	10.	5.	7.
Minnesota	9.	3.	5.	Milwaukee	17.	17.	4.
Mississippi	15.	16.	11.	Minneapolis	10.	9.	3.
Missouri	6.	1.	5.	Nashville	12.	8.	9.
Montana	10.	5.	10.	New Orleans	17.	17.	13.
Nebraska	7.	2.	7.	New York City	7.	5.	5.
Nevada	13.	8.	10.	Oklahoma City	22.	21.	11.
New Hampshire	1.	1.	2.	Omaha	11.	6.	5.
New Jersey	15.	16.	5.	Orlando	11.	5.	1.
New Mexico	17.	9.	2.	Philadelphia	22.	17.	5.
New York	6.	3.	6.	Phoenix	9.	11.	2.
North Carolina	4.	1.	4.	Pittsburgh	4.	6.	4.
North Dakota	12.	9.	10.	Portland	8.	4.	1.
Ohio	8.	3.	8.	Providence	20.	11.	7.
Oklahoma	19.	16.	11.	Raleigh	1.	1.	1.
Oregon	8.	5.	3.	Salt Lake City	10.	3.	5.
Pennsylvania	7.	4.	6.	San Antonio	16.	9.	3.
Rhode Island	20.	11.	6.	San Diego	10.	6.	4.
South Carolina	11.	7.	6.	San Francisco	1.	1.	2.
South Dakota	11.	4.	8.	San Jose	1.	1.	1.
Tennessee	13.	8.	8.	Seattle	3.	1.	1.
Texas	9.	8.	4.	St. Louis	18.	8.	1.
Utah	6.	3.	3.	Trenton	11.	5.	4.
Vermont	21.	16.	5.	Washington DC	17.	4.	3.
Virginia	13.	4.	3.				
Washington	5.	1.	1.				
West Virginia	15.	12.	12.				
Wisconsin	9.	5.	6.				
Wyoming	9.	9.	14.				

The comparisons for industry and economic impact are made to the 21 top-level industry sectors based on 2-digit NAICS: Agriculture, Forestry, Fishing | Mining, Oil and Gas Extraction | Utilities | Construction | Manufacturing | Wholesale | Retail | Transportation | Information | Finance and Insurance | Real Estate and Rental and Leasing | Professional, Scientific, and Technical Services | Management of Companies | Administrative and Support and Waste Mgt. and Remediation Services | Educational Services | Health Care and Social Assistance | Arts, Entertainment, and Recreation | Accommodation and Food | Other Services | Government | Unclassified Industry

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<u>State</u>	<u>Rank #1</u>	<u>Rank #2</u>	<u>Rank #3</u>	<u>Rank #4</u>
United States	Health care services	Professional services	Tech	Transportation / related services
Alabama	Professional services	Manufacturing	Health care services	Tech
Alaska	Health care services	Transportation / related services	Construction	Agriculture, Forestry, Fishing
Arizona	Construction	Transportation / related services	Health care services	Hotels / restaurants
Arkansas	Manufacturing	Temporary / admin services	Health care services	Transportation / related services
California	Tech	Health care services	Construction	Professional services
Colorado	Construction	Professional services	Tech	Transportation / related services
Connecticut	Household services / auto repair, etc.	Transportation / related services	Manufacturing	Consulting
Delaware	Hotels / restaurants	Health care services	Manufacturing	Professional services
District of Columbia	Hotels / restaurants	Professional services	Household services / auto repair, etc.	Health care services
Florida	Construction	Professional services	Health care services	Tech
Georgia	Manufacturing	Transportation / related services	Temporary / admin services	Tech
Hawaii	Health care services	Unclassified Industry	Transportation / related services	Hotels / restaurants
Idaho	Construction	Health care services	Hotels / restaurants	Manufacturing
Illinois	Transportation / related services	Manufacturing	Health care services	Temporary / admin services
Indiana	Manufacturing	Transportation / related services	Health care services	Temporary / admin services
Iowa	Manufacturing	Professional services	Health care services	Tech
Kansas	Transportation / related services	Manufacturing	Professional services	Health care services
Kentucky	Transportation / related services	Health care services	Professional services	Manufacturing
Louisiana	Hotels / restaurants	Construction	Temporary / admin services	Transportation / related services
Maine	Unclassified Industry	Professional services	Tech	Manufacturing
Maryland	Transportation / related services	Health care services	Professional services	Tech
Massachusetts	Tech	Professional services	Consulting	Construction
Michigan	Manufacturing	Professional services	Tech	Health care services
Minnesota	Health care services	Professional services	Tech	Manufacturing
Mississippi	Transportation / related services	Health care services	Manufacturing	Temporary / admin services
Missouri	Tech	Manufacturing	Health care services	Professional services
Montana	Construction	Temporary / admin services	Household services / auto repair, etc.	Manufacturing
Nebraska	Manufacturing	Tech	Transportation / related services	Temporary / admin services
Nevada	Manufacturing	Health care services	Construction	Transportation / related services
New Hampshire	Tech	Manufacturing	Hotels / restaurants	Health care services
New Jersey	Health care services	Transportation / related services	Hotels / restaurants	Professional services
New Mexico	Mining, Oil and Gas	Construction	Professional services	Hotels / restaurants
New York	Health care services	Temporary / admin services	Tech	Government
North Carolina	Tech	Professional services	Health care services	Construction
North Dakota	Mining, Oil and Gas	Manufacturing	Arts, Entertainment, and Recreation	Temporary / admin services
Ohio	Manufacturing	Transportation / related services	Tech	Health care services
Oklahoma	Manufacturing	Mining, Oil and Gas	Hotels / restaurants	Temporary / admin services
Oregon	Health care services	Construction	Manufacturing	Hotels / restaurants
Pennsylvania	Health care services	Transportation / related services	Manufacturing	Tech
Rhode Island	Temporary / admin services	Construction	Hotels / restaurants	Government
South Carolina	Hotels / restaurants	Manufacturing	Temporary / admin services	Health care services
South Dakota	Manufacturing	Health care services	Professional services	Tech
Tennessee	Professional services	Hotels / restaurants	Consulting	Transportation / related services
Texas	Professional services	Construction	Hotels / restaurants	Manufacturing
Utah	Professional services	Construction	Tech	Health care services
Vermont	Health care services	Professional services	Manufacturing	Transportation / related services
Virginia	Professional services	Health care services	Temporary / admin services	Tech
Washington	Tech	Construction	Health care services	Hotels / restaurants
West Virginia	Construction	Professional services	Mining, Oil and Gas	Transportation / related services
Wisconsin	Manufacturing	Health care services	Construction	Professional services
Wyoming	Mining, Oil and Gas	Health care services	Hotels / restaurants	Transportation / related services

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

# TOP INDUSTRIES FOR JOB GAINS, 2012-2018

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<u>State</u>	<u>Rank #1</u>	<u>Rank #2</u>	<u>Rank #3</u>	<u>Rank #4</u>
United States	Health care services	Hotels / restaurants	Construction	Professional services
Alabama	Hotels / restaurants	Manufacturing	Health care services	Temporary / admin services
Alaska	Health care services	Hotels / restaurants	Consulting	Educational Services
Arizona	Health care services	Hotels / restaurants	Temporary / admin services	Construction
Arkansas	Health care services	Temporary / admin services	Hotels / restaurants	Retail
California	Health care services	Hotels / restaurants	Construction	Tech
Colorado	Construction	Professional services	Health care services	Hotels / restaurants
Connecticut	Health care services	Hotels / restaurants	Household services / auto repair, etc.	Transportation / related services
Delaware	Health care services	Hotels / restaurants	Temporary / admin services	Finance and Insurance
District of Columbia	Professional services	Hotels / restaurants	Household services / auto repair, etc.	Health care services
Florida	Construction	Hotels / restaurants	Health care services	Retail
Georgia	Hotels / restaurants	Health care services	Temporary / admin services	Retail
Hawaii	Hotels / restaurants	Health care services	Construction	Temporary / admin services
Idaho	Construction	Hotels / restaurants	Health care services	Temporary / admin services
Illinois	Hotels / restaurants	Health care services	Professional services	Transportation / related services
Indiana	Manufacturing	Health care services	Hotels / restaurants	Temporary / admin services
Iowa	Health care services	Construction	Manufacturing	Professional services
Kansas	Professional services	Consulting	Transportation / related services	Health care services
Kentucky	Manufacturing	Transportation / related services	Hotels / restaurants	Health care services
Louisiana	Hotels / restaurants	Health care services	Construction	Temporary / admin services
Maine	Hotels / restaurants	Health care services	Consulting	Temporary / admin services
Maryland	Health care services	Hotels / restaurants	Transportation / related services	Temporary / admin services
Massachusetts	Health care services	Professional services	Tech	Construction
Michigan	Manufacturing	Professional services	Health care services	Hotels / restaurants
Minnesota	Health care services	Professional services	Construction	Hotels / restaurants
Mississippi	Hotels / restaurants	Temporary / admin services	Health care services	Transportation / related services
Missouri	Health care services	Professional services	Hotels / restaurants	Manufacturing
Montana	Construction	Health care services	Hotels / restaurants	Retail
Nebraska	Health care services	Construction	Temporary / admin services	Hotels / restaurants
Nevada	Construction	Hotels / restaurants	Health care services	Temporary / admin services
New Hampshire	Tech	Hotels / restaurants	Temporary / admin services	Health care services
New Jersey	Health care services	Transportation / related services	Temporary / admin services	Professional services
New Mexico	Health care services	Hotels / restaurants	Professional services	Construction
New York	Health care services	Hotels / restaurants	Professional services	Temporary / admin services
North Carolina	Hotels / restaurants	Professional services	Retail	Tech
North Dakota	Health care services	Government	Professional services	Finance and Insurance
Ohio	Health care services	Hotels / restaurants	Manufacturing	Construction
Oklahoma	Hotels / restaurants	Transportation / related services	Health care services	Construction
Oregon	Health care services	Hotels / restaurants	Construction	Retail
Pennsylvania	Health care services	Transportation / related services	Hotels / restaurants	Professional services
Rhode Island	Temporary / admin services	Hotels / restaurants	Professional services	Construction
South Carolina	Hotels / restaurants	Temporary / admin services	Health care services	Manufacturing
South Dakota	Health care services	Professional services	Manufacturing	Government
Tennessee	Hotels / restaurants	Manufacturing	Health care services	Professional services
Texas	Hotels / restaurants	Health care services	Construction	Professional services
Utah	Construction	Professional services	Health care services	Retail
Vermont	Health care services	Hotels / restaurants	Temporary / admin services	Construction
Virginia	Health care services	Hotels / restaurants	Temporary / admin services	Professional services
Washington	Health care services	Construction	Retail	Hotels / restaurants
West Virginia	Health care services	Transportation / related services	Temporary / admin services	Hotels / restaurants
Wisconsin	Health care services	Construction	Hotels / restaurants	Manufacturing
Wyoming	Hotels / restaurants	Health care services	Temporary / admin services	Arts, Entertainment, and Recreation

# TOP INDUSTRIES FOR JOB GAINS, 2017-2018

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<b>Metro</b>	<b>Rank #1</b>	<b>Rank #2</b>	<b>Rank #3</b>	<b>Rank #4</b>
United States	Health care services	Professional services	Tech	Transportation / related services
Albuquerque	Construction	Hotels / restaurants	Professional services	Manufacturing
Atlanta	Health care services	Professional services	Temporary / admin services	Transportation / related services
Austin	Professional services	Tech	Hotels / restaurants	Construction
Baltimore	Transportation / related services	Health care services	Tech	Construction
Birmingham	Construction	Health care services	Temporary / admin services	Manufacturing
Boise	Construction	Health care services	Manufacturing	Tech
Boston	Tech	Professional services	Consulting	Construction
Charlotte	Tech	Hotels / restaurants	Transportation / related services	Manufacturing
Chicago	Transportation / related services	Health care services	Manufacturing	Professional services
Cincinnati	Transportation / related services	Hotels / restaurants	Tech	Manufacturing
Cleveland	Manufacturing	Temporary / admin services	Health care services	Construction
Dallas	Transportation / related services	Professional services	Hotels / restaurants	Tech
Denver	Construction	Professional services	Tech	Transportation / related services
Des Moines	Health care services	Professional services	Hotels / restaurants	Temporary / admin services
Detroit	Manufacturing	Transportation / related services	Professional services	Health care services
Hartford	Transportation / related services	Household services / auto repair, etc.	Manufacturing	Consulting
Houston	Construction	Manufacturing	Health care services	Hotels / restaurants
Indianapolis	Transportation / related services	Health care services	Professional services	Temporary / admin services
Kansas City	Transportation / related services	Professional services	Health care services	Tech
Las Vegas	Transportation / related services	Health care services	Construction	Professional services
Los Angeles	Health care services	Transportation / related services	Construction	Hotels / restaurants
Memphis	Transportation / related services	Consulting	Household services / auto repair, etc.	Government
Miami	Construction	Transportation / related services	Health care services	Professional services
Milwaukee	Transportation / related services	Health care services	Temporary / admin services	Construction
Minneapolis	Health care services	Finance and Insurance	Professional services	Government
Nashville	Transportation / related services	Hotels / restaurants	Professional services	Health care services
New Orleans	Hotels / restaurants	Temporary / admin services	Transportation / related services	Mining, Oil and Gas
New York City	Health care services	Transportation / related services	Temporary / admin services	Hotels / restaurants
Oklahoma City	Mining, Oil and Gas	Temporary / admin services	Hotels / restaurants	Transportation / related services
Omaha	Finance and Insurance	Manufacturing	Construction	Health care services
Orlando	Construction	Temporary / admin services	Hotels / restaurants	Professional services
Philadelphia	Health care services	Hotels / restaurants	Transportation / related services	Educational Services
Phoenix	Transportation / related services	Health care services	Construction	Manufacturing
Pittsburgh	Health care services	Construction	Transportation / related services	Educational Services
Portland	Health care services	Construction	Manufacturing	Tech
Providence	Wholesale Trade	Transportation / related services	Temporary / Admin services	Hotels / Restaurants
Raleigh	Tech	Professional services	Construction	Health care services
Salt Lake City	Professional services	Construction	Tech	Hotels / Restaurants
San Antonio	Temporary / Admin services	Health care services	Mining, and Oil and Gas	Construction
San Diego	Professional services	Construction	Health care services	Temporary / Admin services
San Francisco	Tech	Professional services	Information	Construction
San Jose	Tech	Information	Professional services	Manufacturing
Seattle	Tech	Transportation / related services	Health care services	Professional services
St. Louis	Transportation / related services	Manufacturing	Health care services	Hotels / Restaurants
Trenton	Government	Temporary / Admin services	Finance and Insurance	Transportation / related services
Washington DC	Professional services	Health care services	Hotels / Restaurants	Tech

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

# TOP INDUSTRIES FOR JOB GAINS, 2012-2018

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<u>Metro</u>	<u>Rank #1</u>	<u>Rank #2</u>	<u>Rank #3</u>	<u>Rank #4</u>
United States	Health care services	Hotels / restaurants	Construction	Professional services
Albuquerque	Health care services	Hotels / restaurants	Construction	Professional services
Atlanta	Health care services	Hotels / restaurants	Temporary / admin services	Professional services
Austin	Professional services	Hotels / restaurants	Tech	Construction
Baltimore	Health care services	Temporary / admin services	Transportation / related services	Hotels / restaurants
Birmingham	Hotels / restaurants	Health care services	Temporary / admin services	Transportation / related services
Boise	Construction	Hotels / restaurants	Health care services	Retail
Boston	Health care services	Professional services	Tech	Hotels / restaurants
Charlotte	Hotels / restaurants	Professional services	Transportation / related services	Construction
Chicago	Hotels / restaurants	Health care services	Transportation / related services	Professional services
Cincinnati	Hotels / restaurants	Health care services	Manufacturing	Transportation / related services
Cleveland	Hotels / restaurants	Health care services	Temporary / admin services	Construction
Dallas	Health care services	Hotels / restaurants	Transportation / related services	Retail
Denver	Construction	Professional services	Health care services	Hotels / restaurants
Des Moines	Health care services	Construction	Professional services	Hotels / restaurants
Detroit	Manufacturing	Professional services	Tech	Hotels / restaurants
Hartford	Health care services	Transportation / related services	Professional services	Household services / auto repair, etc.
Houston	Hotels / restaurants	Health care services	Construction	Government
Indianapolis	Health care services	Transportation / related services	Temporary / admin services	Professional services
Kansas City	Professional services	Health care services	Transportation / related services	Hotels / restaurants
Las Vegas	Construction	Hotels / restaurants	Health care services	Temporary / admin services
Los Angeles	Health care services	Hotels / restaurants	Construction	Transportation / related services
Memphis	Health care services	Transportation / related services	Professional services	Retail
Miami	Construction	Temporary / admin services	Health care services	Hotels / restaurants
Milwaukee	Health care services	Construction	Hotels / restaurants	Temporary / admin services
Minneapolis	Health care services	Professional services	Construction	Hotels / restaurants
Nashville	Hotels / restaurants	Professional services	Temporary / admin services	Health care services
New Orleans	Health care services	Hotels / restaurants	Educational Services	Arts, Entertainment, and Recreation
New York City	Health care services	Hotels / restaurants	Professional services	Construction
Oklahoma City	Hotels / restaurants	Transportation / related services	Health care services	Retail
Omaha	Health care services	Construction	Hotels / restaurants	Consulting
Orlando	Hotels / restaurants	Construction	Temporary / admin services	Retail
Philadelphia	Health care services	Hotels / restaurants	Transportation / related services	Construction
Phoenix	Health care services	Temporary / admin services	Hotels / restaurants	Construction
Pittsburgh	Health care services	Hotels / restaurants	Professional services	Tech
Portland	Health care services	Construction	Hotels / restaurants	Professional services
Providence	Temporary / admin services	Health care services	Hotels / Restaurants	Construction
Raleigh	Tech	Professional services	Hotels / Restaurants	Retail Trade
Salt Lake City	Professional services	Government	Health care services	Finance and Insurance
San Antonio	Health care services	Hotels / Restaurants	Temporary / admin services	Retail Trade
San Diego	Health care services	Hotels / Restaurants	Construction	Government
San Francisco	Tech	Health care services	Professional services	Information
San Jose	Tech	Health care services	Information	Professional services
Seattle	Retail Trade	Health care services	Tech	Construction
St. Louis	Health care services	Hotels / Restaurants	Construction	Transportation / related services
Trenton	Transportation / related services	Government	Temporary / admin services	Hotels / Restaurants
Washington DC	Hotels / Restaurants	Health care services	Professional services	Temporary / admin services

# TOP INDUSTRIES BY ECONOMIC IMPACT, 2018

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<u>State</u>	<u>Rank #1</u>	<u>Rank #2</u>	<u>Rank #3</u>	<u>Rank #4</u>
United States	Manufacturing	Government	Tech	Finance and Insurance
Alabama	Manufacturing	Government	Finance and Insurance	Health care services
Alaska	Government	Mining, Oil and Gas	Health care services	Transportation / related services
Arizona	Government	Finance and Insurance	Tech	Health care services
Arkansas	Manufacturing	Government	Health care services	Wholesale Trade
California	Tech	Government	Information	Manufacturing
Colorado	Tech	Government	Professional services	Finance and Insurance
Connecticut	Finance and Insurance	Manufacturing	Government	Health care services
Delaware	Finance and Insurance	Manufacturing	Government	Health care services
District of Columbia	Government	Professional services	Household services / auto repair, etc.	Tech
Florida	Government	Finance and Insurance	Health care services	Professional services
Georgia	Government	Manufacturing	Tech	Finance and Insurance
Hawaii	Government	Hotels / restaurants	Health care services	Retail
Idaho	Manufacturing	Government	Tech	Health care services
Illinois	Manufacturing	Finance and Insurance	Government	Professional services
Indiana	Manufacturing	Health care services	Government	Wholesale Trade
Iowa	Manufacturing	Finance and Insurance	Government	Wholesale Trade
Kansas	Manufacturing	Government	Finance and Insurance	Wholesale Trade
Kentucky	Manufacturing	Government	Health care services	Finance and Insurance
Louisiana	Manufacturing	Government	Health care services	Construction
Maine	Government	Health care services	Manufacturing	Retail
Maryland	Government	Tech	Professional services	Health care services
Massachusetts	Tech	Professional services	Finance and Insurance	Health care services
Michigan	Manufacturing	Government	Health care services	Professional services
Minnesota	Manufacturing	Finance and Insurance	Health care services	Government
Mississippi	Manufacturing	Government	Health care services	Retail
Missouri	Manufacturing	Government	Finance and Insurance	Health care services
Montana	Government	Health care services	Manufacturing	Retail
Nebraska	Manufacturing	Government	Finance and Insurance	Health care services
Nevada	Hotels / restaurants	Government	Finance and Insurance	Retail
New Hampshire	Manufacturing	Tech	Health care services	Government
New Jersey	Finance and Insurance	Government	Professional services	Manufacturing
New Mexico	Government	Tech	Health care services	Professional services
New York	Finance and Insurance	Government	Professional services	Information
North Carolina	Manufacturing	Government	Finance and Insurance	Tech
North Dakota	Government	Wholesale Trade	Mining, Oil and Gas	Health care services
Ohio	Manufacturing	Government	Health care services	Finance and Insurance
Oklahoma	Government	Mining, Oil and Gas	Manufacturing	Health care services
Oregon	Manufacturing	Government	Tech	Health care services
Pennsylvania	Manufacturing	Health care services	Government	Finance and Insurance
Rhode Island	Government	Finance and Insurance	Health care services	Manufacturing
South Carolina	Manufacturing	Government	Retail	Health care services
South Dakota	Government	Manufacturing	Finance and Insurance	Health care services
Tennessee	Manufacturing	Government	Health care services	Finance and Insurance
Texas	Manufacturing	Government	Wholesale Trade	Tech
Utah	Manufacturing	Government	Tech	Finance and Insurance
Vermont	Government	Manufacturing	Health care services	Retail
Virginia	Government	Professional services	Tech	Manufacturing
Washington	Tech	Information	Government	Manufacturing
West Virginia	Government	Manufacturing	Health care services	Mining, Oil and Gas
Wisconsin	Manufacturing	Government	Health care services	Finance and Insurance
Wyoming	Government	Mining, Oil and Gas	Manufacturing	Retail

# TOP INDUSTRIES BY ECONOMIC IMPACT, 2018

Note: for purposes of spacing, industry labels were abbreviated. See caveats and limitations in comparing industries to one another using data at the 2-digit NAICS level.

<b>Metro</b>	<b>Rank #1</b>	<b>Rank #2</b>	<b>Rank #3</b>	<b>Rank #4</b>
United States	Health care services	Professional services	Tech	Transportation / related services
Albuquerque	Government	Tech	Professional services	Health care services
Atlanta	Tech	Information	Professional services	Finance and Insurance
Austin	Tech	Professional services	Government	Manufacturing
Baltimore	Government	Tech	Professional services	Health care services
Birmingham	Finance and Insurance	Government	Health care services	Wholesale
Boise	Manufacturing	Tech	Government	Health care services
Boston	Tech	Professional services	Finance and Insurance	Manufacturing
Charlotte	Finance and Insurance	Manufacturing	Tech	Government
Chicago	Manufacturing	Finance and Insurance	Professional services	Wholesale
Cincinnati	Manufacturing	Finance and Insurance	Wholesale	Health care services
Cleveland	Manufacturing	Health care services	Finance and Insurance	Government
Dallas	Tech	Finance and Insurance	Manufacturing	Wholesale
Denver	Tech	Professional services	Finance and Insurance	Information
Des Moines	Finance and Insurance	Government	Wholesale	Manufacturing
Detroit	Manufacturing	Professional services	Tech	Health care services
Hartford	Finance and Insurance	Manufacturing	Government	Health care services
Houston	Manufacturing	Wholesale	Mining, Oil and Gas	Professional services
Indianapolis	Manufacturing	Finance and Insurance	Health care services	Government
Kansas City	Manufacturing	Government	Finance and Insurance	Professional services
Las Vegas	Hotels / restaurants	Government	Retail	Finance and Insurance
Los Angeles	Information	Manufacturing	Tech	Government
Memphis	Manufacturing	Transportation / related services	Government	Wholesale
Miami	Finance and Insurance	Wholesale	Government	Professional services
Milwaukee	Manufacturing	Finance and Insurance	Health care services	Tech
Minneapolis	Manufacturing	Finance and Insurance	Tech	Professional services
Nashville	Manufacturing	Finance and Insurance	Health care services	Professional services
New Orleans	Manufacturing	Government	Health care services	Professional services
New York City	Finance and Insurance	Professional services	Government	Information
Oklahoma City	Mining, Oil and Gas	Government	Health care services	Finance and Insurance
Omaha	Finance and Insurance	Government	Manufacturing	Health care services
Orlando	Tech	Professional services	Health care services	Finance and Insurance
Philadelphia	Finance and Insurance	Manufacturing	Professional services	Health care services
Phoenix	Finance and Insurance	Tech	Manufacturing	Health care services
Pittsburgh	Finance and Insurance	Health care services	Manufacturing	Tech
Portland	Tech	Manufacturing	Government	Health care services
Providence	Government	Manufacturing	Health care services	Finance and Insurance
Raleigh	Tech	Professional services	Manufacturing	Government
Salt Lake City	Finance and Insurance	Manufacturing	Tech	Government
San Antonio	Government	Finance and Insurance	Health care services	Tech
San Diego	Government	Tech	Manufacturing	Professional services
San Francisco	Tech	Information	Professional services	Manufacturing
San Jose	Tech	Information	Manufacturing	Professional services
Seattle	Tech	Information	Retail	Manufacturing
St. Louis	Manufacturing	Finance and Insurance	Health care services	Government
Trenton	Government	Professional services	Finance and Insurance	Tech
Washington DC	Government	Professional services	Tech	Information

Sources: EMSI | U.S. Bureau of Economic Analysis | CompTIA

# METHODOLOGY

## CLASSIFICATION SYSTEMS

*Cyberstates* utilizes the North American Industrial Classification System (NAICS) to define the tech industry. The NAICS is a hierarchical system, with six-digit numbers assigned to the most specific industries. The NAICS is constructed around the concept of production and is able to reflect advances in technology, including many new service-oriented businesses. Economic units with similar production processes are classified in the same industry.

The original *Cyberstates* definition of technology was based on the Standard Industrial Classification (SIC) system. It has evolved as the U.S. government officially converted to the NAICS in 1997. NAICS was devised by the United States, Canada, and Mexico to allow industry analysis across all three nations. NAICS codes are revised periodically to reflect the emergence of new industry sectors or sub-sectors. Accordingly, the *Cyberstates'* NAICS definition of the tech industry has evolved over the years to reflect these changes. Consequently, the data in this report may not be entirely comparable with previous reports.

For occupation-level analysis, *Cyberstates* utilizes the Standard Occupational Classification (SOC) System, which is a standard used by federal agencies to classify workers into occupational categories.

## NET TECH EMPLOYMENT

The tech workforce consists of two primary components. Introduced to *Cyberstates* for 2018, net tech employment is a single metric that encompasses both components, making it easier to describe the tech workforce. The foundation is the set of technology occupation professionals working in technical positions, such as IT support, network engineering, software development and related roles. Many of these professionals work for technology companies (46 percent), but many others are employed by organizations across every industry sector or government entity in the U.S. economy (54 percent).

The second component of the discussion consists of the business professionals employed by technology companies. These professionals play an important role in supporting the development and delivery of the technology products and services used throughout the economy. Thirty-three percent of the net tech employment total consists of tech industry business professionals.

See page 6 of this report for more details on the concept of Net Tech Employment.

## TECH INDUSTRY DEFINITION

There are a number of considerations when developing a definition of the technology industry. In some cases, NAICS codes do not perfectly reflect industry dynamics. This can be especially challenging in times of rapid innovation, when new tech sectors emerge in a short period of time. More recently, the degree to which technology has become core to so many industry sectors poses new questions. For example, a technology platform designed to facilitate the online sale of goods may have traditionally been viewed as a retailer, although given the intense use of technology, an argument could be made to classify it as a technology firm.

Conceptually, *Cyberstates* focuses on the sectors involved in making, creating, enabling, integrating, or supporting technology, whether as a product or service. At this time, *Cyberstates* does not include industry sectors categorized primarily as users of technology.

*Cyberstates* includes 50 NAICS codes in its definition of the tech industry. Broadly these can be thought of in two broad categories: tech manufacturing and tech services. These industries sufficiently represent the technology industry within the framework provided under the NAICS system.

## TECH OCCUPATION DEFINITION

The occupations covered by *Cyberstates* are broadly categorized into core information technology (IT) positions and then engineering, repair, technician, and assembly positions. In total, 50 distinct SOCs are used to define the tech occupations found across every industry sector of the economy.

CompTIA is responsible for all content contained in this report. Any questions regarding *Cyberstates* should be directed to CompTIA Research & Market Intelligence staff at [research@comptia.org](mailto:research@comptia.org).

**TECH MANUFACTURING****Computer and Peripheral Equipment**

- 334111 Electronic Computers
- 334112 Computer Storage Devices
- 334118 Computer Peripheral Equipment

**Communications Equipment**

- 334210 Telephone Apparatus
- 334220 Radio and TV Broadcasting and Wireless Communications Equipment
- 334290 Other Communications Equipment

**Consumer Electronics**

- 334310 Audio and Video Equipment

**Electronic Components**

- 334412 Bare Printed Circuit Boards
- 334416 Capacitor, Resistor, Coil, Transformer, and Other Inductors
- 334417 Electronic Connectors
- 334418 Printed Circuit Assembly
- 334419 Other Electronic Components

**Semiconductors**

- 333242 Semiconductor Machinery
- 334413 Semiconductor and Related Devices

**Measuring and Control Instruments**

- 334510 Electromedical and Electrotherapeutic Apparatus
- 334511 Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments
- 334512 Automatic Environmental Controls
- 334513 Industrial Process Control Instruments
- 334514 Totalizing Fluid Meter and Counting Devices
- 334515 Electricity Measuring and Testing Equipment
- 334516 Analytical Laboratory Instruments
- 334517 Irradiation Apparatus
- 334519 Other Measuring and Controlling Instruments

**Reproducing Magnetic and Optical Media**

- 334613 Manufacturing and Reproducing Magnetic and Optical Media
- 334614 Software and Other Prerecorded Content Reproducing

**Space and Defense Systems**

- 336414 Guided Missile and Space Vehicles
- 336415 Guided Missile and Space Vehicle Propulsion Units and Parts
- 336419 Other Guided Missile, Space Vehicle Parts, and Auxiliary Equipment

**TECH SERVICES****TELECOMMUNICATIONS AND INTERNET SERVICES****Telecommunications**

- 517110 Wired Telecommunication Carriers
- 517210 Wireless Telecommunication Carriers (except Satellite)
- 517410 Satellite Telecommunications
- 517911 Telecommunication Resellers
- 517919 All Other Telecommunications

**Internet Services**

- 518210 Data Processing, Hosting, and Related Services
- 519130 Internet Publishing and Broadcasting, and Web Search Portals

**SOFTWARE****Software Publishers**

- 511210 Software Publishers

**IT SERVICES****Computer, Peripheral, and Software Wholesalers**

- 423430 Computer and Computer Peripheral Equipment and Software Merchant Wholesalers

**Computer Systems Design and Related Services**

- 541511 Custom Computer Programming
- 541512 Computer Systems Design
- 541513 Computer Facilities Management
- 541519 Other Computer Related Services

**Computer Training**

- 611420 Computer Training

**Computer and Electronic Repair and Maintenance**

- 811211 Consumer Electronics Repair and Maintenance
- 811212 Computer and Office Machine Repair and Maintenance
- 811213 Communication Equipment Repair and Maintenance
- 811219 Other Electronic and Precision Equipment Repair and Maintenance

**ENGINEERING SERVICES, R&D, AND TESTING LABS****Engineering Services**

- 541330 Engineering Services

**R&D and Testing Labs**

- 541380 Testing Laboratories
- 541713 Research and Development in Nanotechnology
- 541714 R&D in Biotechnology
- 541715 R&D in the Physical, Engineering, and Life Sciences

## STANDARD OCCUPATIONAL CODES INCLUDED IN COMPTIA'S DEFINITION OF TECH OCCUPATIONS

**IT OCCUPATIONS**

11-3021	Computer and Information Systems Managers
15-1111	Computer and Information Research Scientists
15-1121	Computer Systems Analysts
15-1122	Information Security Analysts
15-1131	Computer Programmers
15-1132	Software Developers, Applications
15-1133	Software Developers, Systems Software
15-1134	Web Developers
15-1141	Database Administrators
15-1142	Network and Computer Systems Administrators
15-1143	Computer Network Architects
15-1151	Computer Support Specialists
15-1152	Computer Network Support Specialists
15-1199	Computer Occupations, All Other (includes videogame designer, business intelligence analyst, and others)

**ENGINEERING OCCUPATIONS**

11-9041	Engineering Managers
17-2011	Aerospace Engineers
17-2031	Biomedical Engineers
17-2061	Computer Hardware Engineers
17-2071	Electrical Engineers
17-2072	Electronics Engineers, Except Computer
17-2112	Industrial Engineers
17-2131	Materials Engineers
17-2141	Mechanical Engineers
17-2199	Engineers, All Other

**ENGINEERING AND AUDIO/VIDEO TECHNICIANS**

17-3021	Aerospace Engineering and Operations Technicians
17-3023	Electrical and Electronics Engineering Technicians
17-3024	Electro-Mechanical Technicians
17-3026	Industrial Engineering Technicians
17-3027	Mechanical Engineering Technicians
17-3029	Engineering Technicians, Except Drafters, All Other
27-4011	Audio and Video Equipment Technicians
27-4012	Broadcast Technicians
27-4014	Sound Engineering Technicians

**COMPUTER OPERATORS**

43-9011	Computer Operators
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**ELECTRICAL, ELECTRONIC, AND COMPUTER INSTALLERS AND REPAIRERS**

49-2011	Computer, Automated Teller, and Office Machine Repairers
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers
49-2091	Avionics Technicians
49-2092	Electric Motor, Power Tool, and Related Repairers
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles
49-2097	Electronic Home Entertainment Equipment Installers and Repairers
49-2098	Security and Fire Alarm Systems Installers

**ELECTRICAL, ELECTRONICS, AND ELECTROMECHANICAL ASSEMBLERS**

51-2021	Coil Winders, Tapers, and Finishers
51-2028	Electrical and Electronic Equipment Assemblers

**COMPUTER-CONTROLLED MACHINE PROGRAMMERS AND OPERATORS**

51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic