

THE DICE TECH SALARY REPORT

2021 EDITION

Dice[®]

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A MESSAGE FROM ART ZEILE

At the start of 2020, the biggest challenge facing many businesses was how to effectively build out their tech teams with top candidates amidst record-low unemployment. Only months later, the onset of the global pandemic forced organizations in nearly every space to shift sights from growth to adaptation and survival. While most of us are glad to see 2020 in the rearview mirror, there are important lessons we can take from a year driven by such radical change, with a focus on the impact on salaries and how organizations dealt with compensation for technologists.

This year's Dice Tech Salary Report, created based on our survey of more than 9,000 employed technologists across the country, showed that, even in a time of significant flux, the traditional principles that drive salary growth remain firmly in place. Overall, technologist salaries in the U.S. increased 3.6 percent between 2019 and 2020, reaching an average of \$97,859, despite many businesses tightening their budgets in order to weather COVID-19. These organizations needed skilled technologists capable of everything from digital transformation (including moving on-premises tech stacks to the cloud) to ensuring that infrastructure was secure against a rising number of cyberattacks. That demand, combined with a comparatively low tech unemployment rate (standing at 3.5 percent in the third quarter of 2020* for example, far lower than the national average), led to rising salaries as companies competed for talent.

In another encouraging sign for technologists everywhere, salaries increased in well-established tech hubs like New York City and Silicon Valley, as well as in emerging areas like Charlotte. Various skills across a broad range of disciplines also enjoyed an average pay increase, particularly in highly specialized segments such as Cloud, Artificial Intelligence (A.I.), and Machine Learning. Similarly, salaries rose for professions such as Data Scientist, Cybersecurity Analyst, and DevOps Engineer, reflecting the value of these technologists both to their organizations' current operations and long-term strategy.

2020 was an extremely difficult year, as we experienced loss and worked with courage and tenacity to come to terms with an unprecedented situation worldwide. Amidst that adjustment, there were bright spots, too – we saw people access an incredible reserve of resourcefulness and perseverance, inspiring acts of kindness and support and, often through accelerated digitization, organizations adapting quickly to the changing landscape. The innovations we saw across the tech world will endure long past the end of the pandemic.

As I look forward into this year and beyond, I could not be more optimistic for the future for technologists, and for the organizations who need them to power their success for years to come.



Art Zeile, CEO, DHI Group, Inc.

KEY REPORT TAKEAWAYS



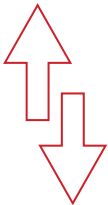
TECH SALARIES STILL GROWING

Overall, average technologist salaries in the U.S. increased 3.6 percent between 2019 and 2020, reaching \$97,859, despite the economic impact of COVID-19.



TEXAS CONTINUES TO COMPETE WITH CALIFORNIA

Texas continues its journey toward becoming a premier tech state, potentially on the scale of California. Both states' tech hubs saw high salaries and steady increases, but Texas also boasts an inflow of prestigious companies building new headquarters and factories, including Oracle and Tesla.



BETTER COMPENSATION OR LOWERED EXPECTATIONS?

Fifty-five percent of technologists said they're satisfied with their current salaries. However, given the economic uncertainty from the pandemic, technologists may have lowered their salary expectations, leading to higher levels of satisfaction even if they felt they were underpaid.



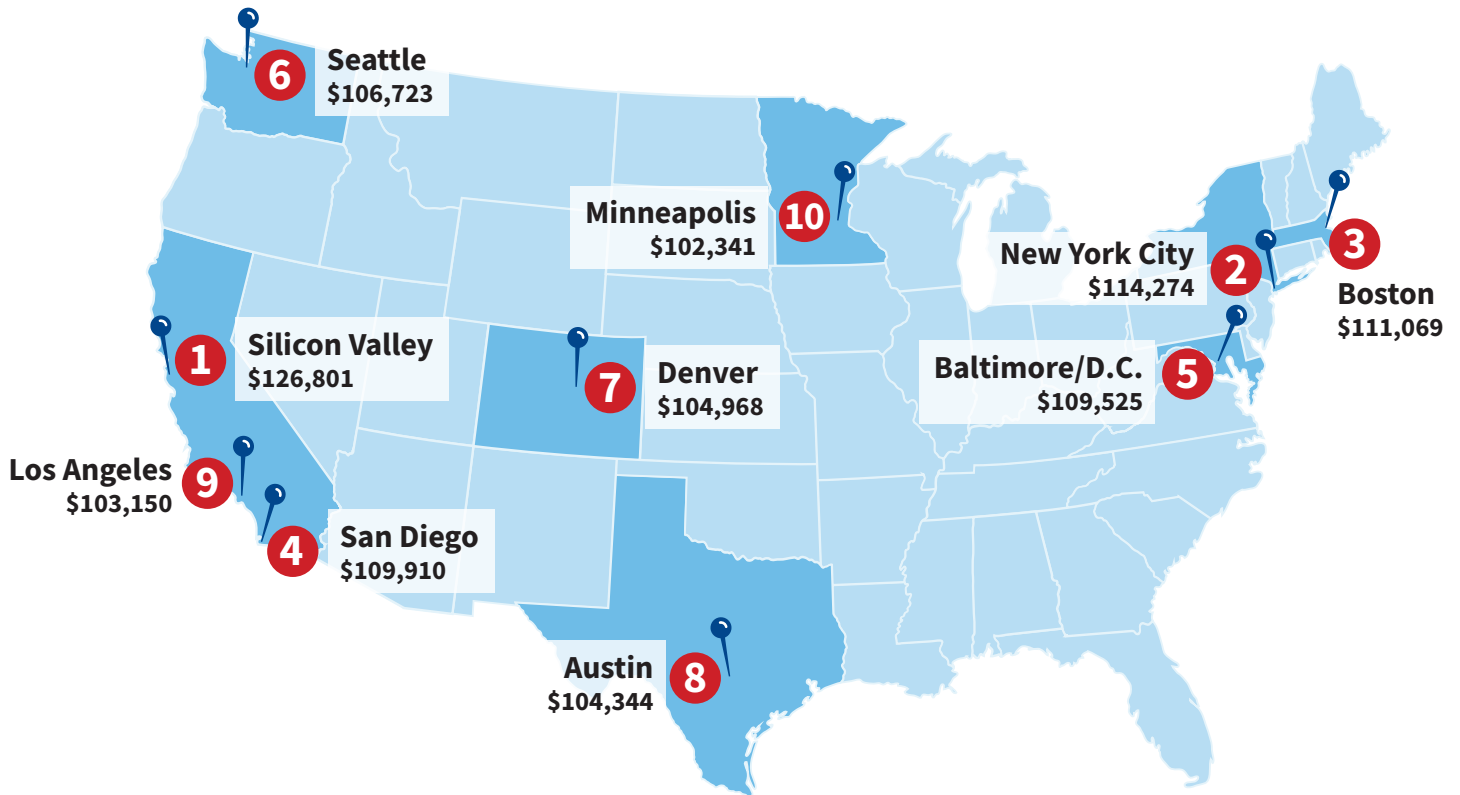
TECHNOLOGISTS EYE “STAPLE” BENEFITS

While last year's Tech Salary Report showed the rise of “emerging” benefits (wellness, volunteer opportunities), this year's report illuminates the re-embrace of “staple” benefits such as health insurance and 401(k), which is likely a collateral effect of COVID-19.



SALARIES

SALARIES BY LOCATION



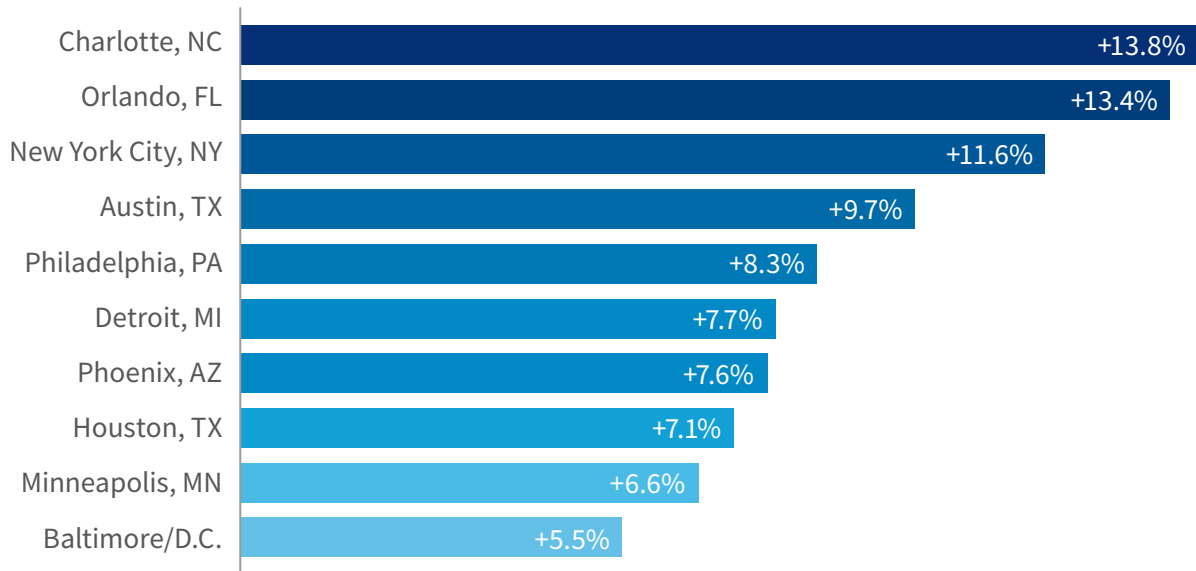
AVERAGE TECH SALARIES BY TECH HUB

	METRO AREA	2020	YEAR/YEAR CHANGE
1	Silicon Valley, CA	\$126,801	▲ 2.4%
2	New York City, NY	\$114,274	▲ 11.6%
3	Boston, MA	\$111,069	▲ 2.4%
4	San Diego, CA	\$109,910	▲ 0.4%
5	Baltimore/D.C.	\$109,525	▲ 5.5%
6	Seattle, WA	\$106,723	▼ 2.6%
7	Denver, CO	\$104,968	▲ 2.4%
8	Austin, TX	\$104,344	▲ 9.7%
9	Los Angeles, CA	\$103,150	▲ 5.4%
10	Minneapolis, MN	\$102,341	▲ 6.6%
11	Houston, TX	\$99,727	▲ 7.1%
12	Charlotte, NC	\$99,691	▲ 13.8%
13	Raleigh, NC	\$98,245	▲ 2.5%

	METRO AREA	2020	YEAR/YEAR CHANGE
14	Portland, OR	\$98,028	▼ 4.6%
15	Dallas-Ft. Worth, TX	\$97,801	▲ 2.9%
16	Philadelphia, PA	\$96,512	▲ 8.3%
17	Phoenix, AZ	\$95,514	▲ 7.6%
18	Chicago, IL	\$94,581	▼ 0.1%
19	Atlanta, GA	\$94,386	▲ 0.3%
20	Columbus, OH*	\$91,483	▼ 0.6%
21	Detroit, MI	\$90,110	▲ 7.7%
22	St. Louis, MO	\$89,795	▼ 8.3%
23	Orlando, FL	\$88,598	▲ 13.4%
24	Tampa, FL	\$87,809	▼ 1.1%
25	Cleveland, OH	\$87,622	▲ 4.5%

* Sample size less than 100 respondents, therefore not statistically valid, but presented for continuity purposes only.

FASTEST GROWING TECH SALARIES 2019–2020



NEW YORK CITY

2020 Salary: \$114,274 (+11.6%)

TOP HIRING ORGANIZATIONS

Amazon, JPMorgan Chase, Bloomberg, Goldman Sachs, Facebook

AUSTIN

2020 Salary: \$104,344 (+9.7%)

TOP HIRING ORGANIZATIONS

Charles Schwab, Amazon, Home Depot, Advanced Micro Devices, Apple

BOSTON

2020 Salary: \$111,069 (+2.4%)

TOP HIRING ORGANIZATIONS

Amazon, Humana, State Street Bank, Accenture, VMware

The COVID-19 pandemic forced many businesses across the country to suddenly embrace remote work. When the feared (and, in some cases, expected) productivity decrease did not materialize, questions arose about the future of the physical office.

Despite those questions, it seems that the nation’s most prominent tech hubs are still the place to work if you want to earn a significant salary. The average technologist salary in **New York City** rose 11.6 percent between 2019 and 2020, hitting \$114,274; in **Austin**, salaries rose 9.7 percent during the same period, to \$104,344.

Both cities enjoyed substantial tech company investment throughout 2020, and local companies are clearly having to pay more in order to draw in top talent, even if the talent in question is working from home for at least a few months longer. Amazon, Facebook, Google, and Apple have hired thousands of employees in New York City over the past few months to support East Coast operations; in Austin, 39 tech companies or venture-capital firms established a presence in 2020, including Tesla, which plans on building an expansive “Giga Texas” factory facility.

Boston and **Silicon Valley** both enjoyed salary growth of 2.4 percent, suggesting their status as well-established tech hubs is alive and well. Boston tech salaries have reached an average of \$111,069, while Silicon Valley’s average pay stands at \$126,801, making it the highest-paying tech hub.

CHARLOTTE

2020 Salary: \$99,691 (+13.8%)

TOP HIRING ORGANIZATIONS

Wells Fargo, Bank of America, Microsoft, Lowe's, Anthem Blue Cross

DETROIT

2020 Salary: \$90,110 (+7.7%)

TOP HIRING ORGANIZATIONS

Quicken Loans, General Motors, Xenith, PWC, Nikola

HOUSTON

2020 Salary: \$99,727 (+7.1%)

TOP HIRING ORGANIZATIONS

JPMorgan Chase, Baker Hughes, KBR, Capgemini, Jacobs Engineering Group

From a growth standpoint, 2020 saw significant increases in some of the nation's more nascent tech hubs, including **Charlotte** (13.8 percent, to \$99,691), **Orlando** (13.4 percent, to \$88,598), **Detroit** (7.7 percent, to \$90,110), and **Houston** (7.1 percent, to \$99,727), where local officials have spent years trying to foster a local tech scene. All four cities have attracted startups fueled by venture capital, which compete with well-established local industries (such as oil and gas in Houston, automobiles in Detroit) for the best tech talent. Incorporate a steady pipeline of young technologists thanks to regional universities, and you have a recipe for robust tech scenes.

Between the well-established tech scene in Austin and the emerging hubs in Houston and Dallas, Texas continues to jockey to become a premier tech state on the scale of California. The Texas government's aggressive pro-business stance, combined with the lack of a state income tax, explain why California-based tech companies are giving the Lone Star State a very serious look. Oracle, for example, recently announced that it would shift its headquarters from its longtime Silicon Valley home to Austin; and if a tech giant like that is willing to make a move, others may follow.

If technologists didn't have to live in a high-cost area such as Silicon Valley in order to do their jobs effectively, would they stay, or would they move somewhere with a more reasonable cost of living? The tech industry has debated that question for a long time. Given the rise of remote work and smaller tech hubs across the country, we may have a more definitive answer within a few years.



AVERAGE TECH SALARIES BY STATE

Excluding states with small sample sizes.

	STATE	2020	YEAR/YEAR CHANGE
1	New Jersey	\$111,233	▲ 8.7%
2	California	\$111,228	▲ 1.9%
3	Massachusetts	\$110,461	▲ 2.3%
4	New York	\$109,921	▲ 8.3%
5	Maryland	\$109,886	▲ 13.1%
6	Colorado	\$105,692	▲ 5.5%
7	Virginia	\$105,121	▲ 5.3%
8	Washington	\$103,905	▼ 4.4%
9	Connecticut	\$100,589	▲ 6.1%
10	Minnesota	\$98,489	▲ 4.6%
11	North Carolina	\$97,739	▲ 9.5%
12	Utah	\$97,600	▲ 4.7%
13	Wisconsin	\$97,322	▲ 9.6%

	STATE	2020	YEAR/YEAR CHANGE
14	Oregon	\$97,317	▼ 0.6%
15	Texas	\$97,224	▲ 5.6%
16	Arizona	\$93,787	▲ 3.6%
17	Illinois	\$93,385	▼ 0.5%
18	Georgia	\$90,516	▲ 0.5%
19	Pennsylvania	\$89,105	▲ 3.4%
20	Michigan	\$88,954	▲ 7.6%
21	Ohio	\$87,813	▲ 0.9%
22	Florida	\$87,570	▲ 6.7%
23	Missouri	\$87,460	▼ 1.8%
24	Indiana	\$84,681	▲ 6.9%
25	Tennessee	\$82,966	▲ 2.1%



SALARIES BY OCCUPATION

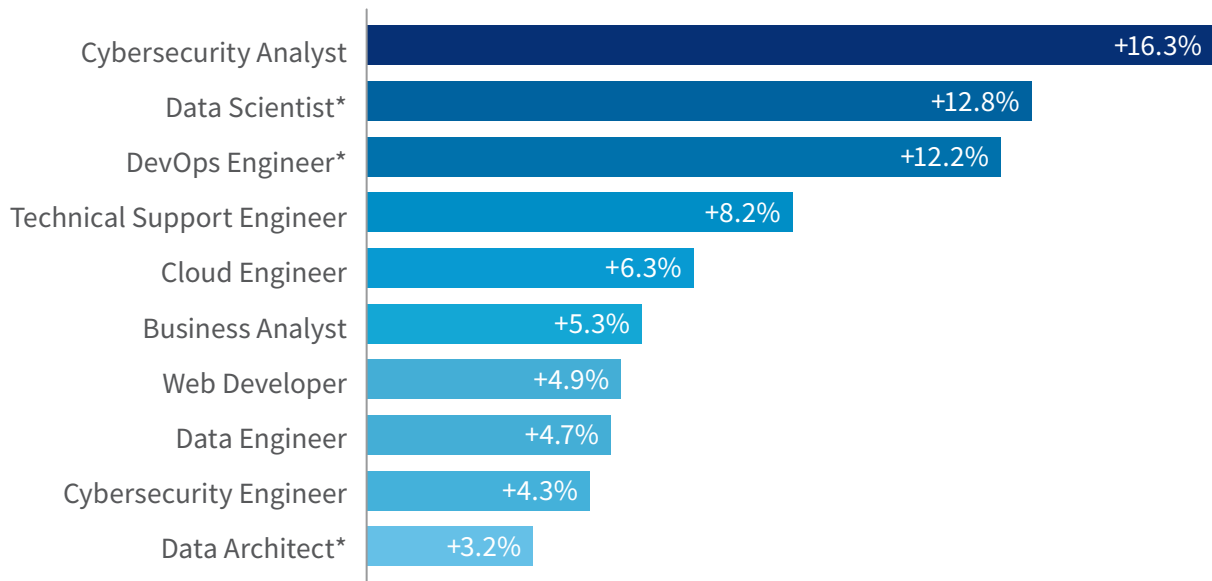
The occupations experiencing the biggest salary increases between 2019 and 2020 were those that helped organizations process and analyze data, digitize and innovate their product offerings, and ensure that their organizations remained efficient, profitable and, perhaps most importantly, safe and secure during the pandemic.

AVERAGE SALARIES BY OCCUPATION

OCCUPATION	2020	YEAR/YEAR CHANGE
IT Management CEO, CIO, CTO, VP, Dir.	\$143,416	▼ 1.7%
Systems Architect	\$140,658	▲ 1.7%
Cloud Engineer	\$136,479	▲ 6.3%
Cybersecurity Engineer	\$134,340	▲ 4.3%
Data Architect*	\$133,064	▲ 3.2%
Program Manager	\$122,818	- N/A
Management Consultant	\$121,619	- N/A
Product Manager	\$120,584	▼ 0.6%
Data Scientist*	\$119,898	▲ 12.8%
MIS Manager	\$119,877	▲ 2.5%
Data Engineer	\$118,621	▲ 4.7%
Project Manager	\$116,911	▲ 0.8%
DevOps Engineer*	\$115,125	▲ 12.2%
Systems Engineer	\$113,272	- N/A
Software Developer	\$111,297	▲ 1.9%
Cybersecurity Analyst	\$103,106	▲ 16.3%
Database Administrator	\$99,038	▼ 4.9%
Business Analyst	\$97,633	▲ 5.3%
UX/UI Designer*	\$91,941	▲ 1.8%
Network Engineer	\$91,561	▲ 1.4%
Mainframe Programmer*	\$91,386	▼ 11.2%
Application Support Engineer	\$90,039	- N/A
QA Engineer	\$89,543	▲ 1.7%
Systems Analyst	\$88,401	- N/A
Systems Administrator	\$83,490	▲ 0.6%
Web Developer	\$81,550	▲ 4.9%
Data Analyst	\$76,001	- N/A
Technical Support Engineer	\$68,651	▲ 8.2%
Help Desk Technician	\$51,553	▼ 4.0%

* Sample size less than 100 respondents, therefore not statistically valid, but presented for continuity purposes only.

FASTEST GROWING SALARIES BY OCCUPATION



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The widespread adoption of remote work resulted in widely dispersed networks and teams, with many employees working via their personal laptops and phones. This led to increased vulnerabilities, providing hackers with unprecedented opportunities to attack and breach defenses. In response, the need for skilled technologists to identify and plug these security holes saw **Cybersecurity Analyst** enjoy the largest growth in salary of any occupation (16.3 percent), rising from \$88,663 in 2019 to \$103,106 in 2020. This increase outpaces the senior-level **Cybersecurity Engineer**, which only increased by 4.3 percent, suggesting that shortages in the cybersecurity space have led employers to increase their offers to junior-level technologists.

The prevalence of remote work likely also had an impact on **Technical Support Engineer** salaries, which rose from \$63,420 in 2019 to \$68,651 in 2020 (8.2 percent). As many organizations have reacted quickly to changing circumstances, the need to develop and implement long-term strategies has profited anyone working as a **Business Analyst**, a category where salaries also rose 5.3 percent, from \$92,760 in 2019 to \$97,633 in 2020.

Cybersecurity Analyst

Distinguishing Skills:

Vulnerability Analysis, Risk Management Framework, ISO 27001, Data Loss Prevention, Nessus

Time to Hire: 46 days

Projected 10-Year Growth:

28.5%

Technical Support Engineer

Distinguishing Skills:

Macintosh OS, System/ Network Configuration, Voiceover IP, Network Support, Microsoft Exchange

Time to Hire: 46 days

Projected 10-Year Growth:

11.3%

Business Analyst

Distinguishing Skills:

Systems Development, Business Intelligence, Data Mapping, Data Warehousing, Requirements Verification and Validation

Time to Hire: 46 days

Projected 10-Year Growth:

9.1%

Across nearly every industry, COVID-19 accelerated priorities with regard to digitization and digital transformation. Whereas e-commerce portals and digital offerings may have once been an afterthought for some organizations, the need for such features quickly became vital to organizational survival, particularly for brick-and-mortar stores that had to temporarily close their doors.

Driven by the need to rapidly retool digital stacks, **Web Developer** saw an average salary increase from \$77,753 to \$81,550 year-over-year (representing 4.9 percent growth). Similarly, the ubiquitous tech role of **Software Developer** saw an increase of 1.9 percent, from \$109,198 in 2019 to \$111,297 in 2020. Salaries for **DevOps Engineer** roles also grew 12.2 percent during the same period, from \$102,606 to \$115,125; companies seeking lower costs and faster product delivery

have increasingly gravitated toward hiring DevOps specialists who can help teams innovate faster and become more efficient via DevOps best practices (such as continuous integration and delivery).

As the tech occupation with the highest salary in 2020 (aside from management positions like CIO, CTO, VP, and Director), salaries for **Systems Architect** roles increased 1.7 percent, reaching \$140,658. This comes as many businesses have increasingly relied on these technologists to reduce technical debt by designing more modern platforms that enable innovation. Not far behind, **Cloud Engineer** roles grew 6.3 percent from 2019 to an average salary of \$136,479, underscoring the increasing importance and ubiquity of the cloud.

DevOps Engineer

Distinguishing Skills:
OpenStack, OpenShift, Continuous Development, NoSQL, Zabbix

Time to Hire: 53 days

Projected 10-Year Growth:
30.7%

Software Developer

Distinguishing Skills:
Ruby, React JavaScript, Continuous Integration, JavaScript Object Notation, Software Architecture

Time to Hire: 48 days

Projected 10-Year Growth:
30.7%

Cloud Engineer

Distinguishing Skills:
Cloud Foundry, DevSecOps, Docker Software, Agile Development, AWS Elastic Compute Cloud

Time to Hire: 48 days

Projected 10-Year Growth:
9.3%

Systems Architect

Distinguishing Skills:
Systems Development, Virtualization, Solution Architecture, Scalability Design, DODAF

Time to Hire: 44 days

Projected 10-Year Growth:
9.3%



However, the growth of certain occupations cannot be entirely attributed to the pandemic, instead following strong longer-term trends. For example, as data becomes increasingly valuable to businesses across nearly every industry, the demand has significantly increased for **Data Scientists** who can successfully analyze data in ways that executives and employees can use to make their business grow. Specifically, salaries associated with Data Scientist roles grew 12.8 percent, from \$106,298 in 2019 to \$119,898 in 2020. Salaries associated

with **Data Engineers**, who are largely responsible for building out and maintaining data infrastructure (including the storage, movement, and cleaning of data), increased by 4.7 percent, from \$113,249 in 2019 to \$118,621 in 2020.

As we head into 2021, data-related professions such as Data Scientists and Data Engineers will no doubt see their worth continue to increase, as businesses bind their long-term strategies to data analytics.

Data Scientist

Distinguishing Skills:
Pipeline, Pandas, Keras, Classification Algorithms, NumPy

Time to Hire: 49 days

Projected 10-Year Growth:
19.0%

Data Engineer

Distinguishing Skills:
AWS, RDBMS, Data Warehouse Processing, PIG, Elastic MapReduce

Time to Hire: 52 days

Projected 10-Year Growth:
11.5%



SALARIES BY SKILL

When it comes to the highest-paying skills, the trends of the past few years continued to dominate in 2020. Businesses across the country continue to realize the importance of collecting, storing, cleaning, and analyzing enormous amounts of data, as the insights gleaned from that analysis can help

executives generate effective long-term strategies. In 2020, the need for fast, accurate data analysis only became more important, and those technologists well-versed in all things related to **Big Data** found their skills earning a premium salary.

HIGHEST AVERAGE SALARIES BY SKILL

	SKILL	2020	YEAR/YEAR CHANGE
1	RabbitMQ	\$136,151	▲ 10.1%
2	MapReduce	\$135,516	▲ 2.1%
3	Mockito	\$133,261	▲ 1.1%
4	Service Oriented Architecture	\$133,119	▲ 1.2%
5	PAAS	\$132,314	▲ 1.3%
6	Cloudera	\$132,045	▼ 1.2%
7	Artificial Intelligence	\$131,907	▲ 7.2%
8	Natural Language Processing	\$131,542	▲ 4.8%
9	Cassandra	\$130,491	▼ 1.5%
10	Elasticsearch	\$129,480	▼ 0.4%
11	Hadoop	\$129,438	▲ 4.4%
12	Chef	\$129,328	▼ 2.1%
13	Redis	\$129,279	▲ 1.4%
14	TensorFlow	\$129,048	— N/A
15	Neural Networks	\$129,044	— N/A
16	Apache Kafka	\$128,791	▼ 4.3%
17	Golang	\$128,001	▼ 6.1%
18	OLAP	\$127,593	— N/A

	SKILL	2020	YEAR/YEAR CHANGE
19	Containers	\$126,727	▼ 0.3%
20	Amazon Route 53	\$126,657	▼ 2.0%
21	OLTP	\$126,420	— N/A
22	DynamoDB	\$126,390	▼ 2.2%
23	Machine Learning	\$125,197	▲ 3.1%
24	Amazon Redshift	\$125,193	▼ 4.2%
25	LoadRunner	\$125,093	▲ 2.1%
26	NoSQL	\$124,998	▼ 2.1%
27	HANA	\$124,918	▼ 7.1%
28	ETL	\$124,806	▲ 2.8%
29	DOORS*	\$124,326	▲ 9.4%
30	Master Data Management	\$124,222	— N/A
31	OmniGraffle	\$124,074	▲ 4.6%
32	Scala	\$124,066	▼ 3.1%
33	Solr	\$123,901	▼ 1.5%
34	Ansible	\$123,808	▼ 1.0%
35	Vagrant	\$123,615	▲ 8.5%

* Sample size less than 100 respondents, therefore not statistically valid, but presented for continuity purposes only.



But data does more than just provide strategic insight. Companies are pouring greater resources into artificial intelligence (A.I.) and machine learning initiatives that leverage massive amounts of data to produce “smart” apps and services. From chatbots that anticipate customer questions to cybersecurity tools more capable of recognizing threats, A.I. is the future, which is why **A.I.** skills saw a year-over-year salary increase of 7.2 percent (to \$131,907) and **Machine Learning** rose 3.1 percent (to \$125,197). **Natural Language Processing**, which allows software to understand the nuances of human speech, and is vital to many emerging A.I. apps, rose 4.8 percent, to \$131,542. **MapReduce**, a programming model vital for Big Data, also increased 2.1 percent, to \$135,516.

2020 also saw a rise in interest in newer tools and frameworks, resulting in a compensation increase in these areas as well. More businesses are becoming interested in **Blockchain**, and not only because they’re interested in trading in cryptocurrencies such as Bitcoin; in theory, the technology could provide the underpinnings of ultra-secure contracts and other transactions. Accordingly, salaries for Blockchain increased 5.2 percent in 2020, reaching \$122,111. Although salaries related to **Containers** were basically flat year-over-year (down 0.3 percent, to \$126,727), the necessity of this software, which allows software engineers to isolate certain apps and processes from the rest of a system, can’t be underestimated; **Vagrant**, another tool for building and maintaining virtual development environments, also enjoyed an increase (up 8.5 percent, to \$123,615).

Machine Learning

Notable Occupations Requesting:

Data Scientist, Data Engineer,
Financial Quantitative Analyst,
Back End Developer, Python Developer

Top Hiring Organizations:

Amazon, Microsoft, Booz Allen
Hamilton, Apple, Facebook

Natural Language Processing

Notable Occupations Requesting:

Senior Data Scientist, Data Scientist,
Defense Intelligence Analyst, Senior
Product Manager, Computer Scientist

Top Hiring Organizations:

Amazon, Wells Fargo, Deloitte, IBM,
Verizon

Containers

Notable Occupations Requesting:

Validation Engineer, DevOps Engineer,
Back End Developer, QA Engineer,
Software Developer

Top Hiring Organizations:

VMware, Dell, Humana, Northrop
Grumman, Salesforce

MapReduce

Notable Occupations Requesting:

Hadoop Developer, Big Data Architect,
Data Engineer, Data Scientist,
ETL Developer

Top Hiring Organizations:

JPMorgan Chase, Capital One, Twitter,
Accenture, Google

Blockchain

Notable Occupations Requesting:

Senior Product Manager,
Technical Analyst, Software Architect,
Back End Developer, UX Designer

Top Hiring Organizations:

General Dynamics, IBM, EY, American
Express, VMware

Vagrant

Notable Occupations Requesting:

DevOps Engineer, Build & Release Engineer,
Validation Engineer, Ruby On Rails
Developer, Python Developer

Top Hiring Organizations:

SpaceX, Boeing, EY, Fannie Mae, Teradata

Companies have also turned increasingly to the cloud, accelerated in large part by the remote-work trend initiated by the pandemic. Cloud-based tools and platforms that enjoyed significantly high salaries include **Cloud Foundry** (down 1.4 percent, to \$121,944) and **PAAS** (up 1.3 percent, to \$132,314).

All are highly specialized, used by cloud architects and engineers to build out highly customized deployments; the associated salaries emphasize, yet again, that specializing in a particular set of skills can prove highly lucrative.

Cloud Foundry

Notable Occupations Requesting:

Cloud Architect, Cloud Engineer,
Software Developer,
Database Architect, QA Engineer

Top Hiring Organizations:

Charles Schwab, Comcast, T-Mobile,
Allstate, Citi

PAAS

Notable Occupations Requesting:

Cloud Architect, Cybersecurity Manager,
Infrastructure Architect, DevOps
Engineer, Performance Engineer

Top Hiring Organizations:

Oracle, PwC, Microsoft, Salesforce,
Aconex



When it comes to programming languages, tried-and-true stalwarts such as **Python** (up 0.3 percent, to \$112,388) and **JavaScript** (up 1.5 percent, to \$102,346) were either flat or saw increases. Regardless of the broader economic situation, companies need technologists who know the world's most popular programming languages, both to build new products and maintain legacy code. Knowing data-related languages such as **R** (up 0.8 percent, to \$112,958) and **Scala** (down 3.1 percent, but still sitting at \$124,066) likewise proved profitable, given the centrality of data analytics to company operations.

As companies rush to embrace digital transformation, they're also embracing newer languages such as **Kotlin** (down 6.9 percent, to \$114,531) and **Swift** (down 4.2 percent, to \$111,988) for building the next generation of mobile apps, even as they maintain the mountains of mobile-centric legacy code written in **Java** (virtually flat year-over-year, with an average salary of \$114,347) and **Objective-C** (down 5.6 percent, \$115,489). However, these newer languages have a long way to go before they can reach the pervasiveness of current incumbents.

HIGHEST AVERAGE SALARIES BY PROGRAMMING SKILL

	SKILL	2020	YEAR/YEAR CHANGE
1	TensorFlow	\$129,048	— N/A
2	Golang	\$128,001	▼ 6.1%
3	Scala	\$124,066	▼ 3.1%
4	KornShell	\$123,442	▼ 2.3%
5	Perl	\$122,511	▲ 3.9%
6	Puppet	\$121,767	▼ 2.1%
7	ABAP	\$121,723	▼ 0.4%
8	XSLT	\$121,354	▼ 2.1%
9	JDBC	\$121,228	▼ 2.1%
10	Ruby	\$116,305	▲ 1.2%
11	C	\$116,215	▼ 0.3%
12	Bash	\$115,511	▲ 0.3%
13	Objective-C	\$115,489	▼ 5.6%
14	Kotlin	\$114,531	▼ 6.9%
15	Java/J2EE	\$114,347	▼ 0.1%
16	Groovy	\$114,268	▼ 1.5%
17	R	\$112,958	▲ 0.8%
18	Transact-SQL (T-SQL)	\$112,733	▲ 3.4%
19	TypeScript	\$112,469	▲ 0.7%
20	Python	\$112,388	▲ 0.3%
21	XML	\$112,189	▲ 0.7%
22	MATLAB	\$112,085	▲ 6.2%
23	Swift	\$111,988	▼ 4.2%
24	TCL	\$111,314	▲ 7.8%
25	Fortran	\$110,919	▲ 5.2%

Python

Notable Occupations Requesting:

Python Developer, Data Scientist, Data Engineer, DevOps Engineer, Financial Quantitative Analyst

Top Hiring Organizations:

Amazon, Raytheon, Anthem Blue Cross, Qualcomm, Lockheed Martin

Scala

Notable Occupations Requesting:

Data Engineer, Data Architect, Data Warehousing Specialist, Data Mining Analyst, Business Intelligence Architect

Top Hiring Organizations:

Bayer, CrowdStrike, eBay, Goldman Sachs, Cigna

Swift

Notable Occupations Requesting:

iOS Developer, Mobile Developer, Back End Developer, UI Developer, QA Engineer

Top Hiring Organizations:

Apple, PayPal, Snap, Facebook, US Bank

TECHNICAL CERTIFICATIONS

Among technologists surveyed for the Salary Report, just less than half (45 percent) had technical certifications. That's virtually the same as 2019, when 47 percent told Dice they had at least one certification. Given how many employers request that prospective employees possess highly specialized certifications, this data might come as a surprise.

Of those who do not have technical certifications, some 51 percent said certifications weren't needed in their role, for

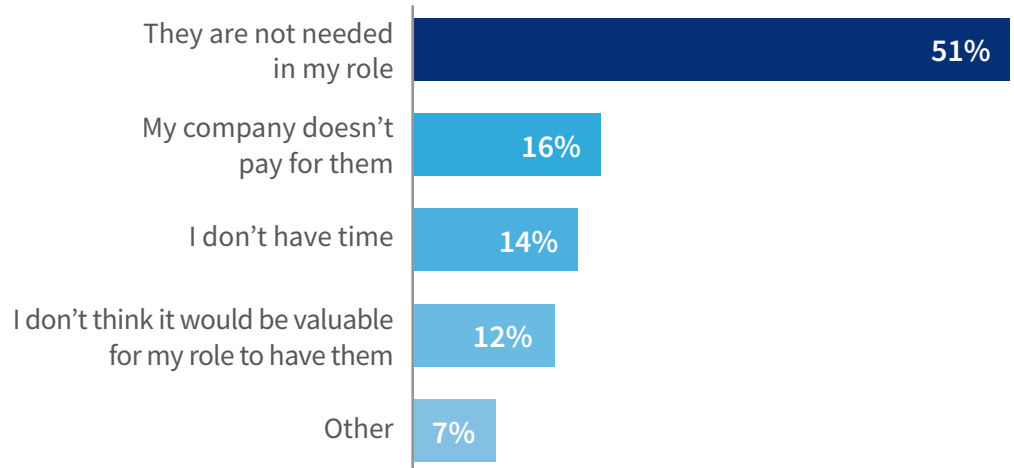
example, while 16 percent said that their employer wasn't willing to pay for the requisite training and testing, and 14 percent said they didn't have the time to earn one. In Dice's Sentiment Survey, conducted during the summer of 2020, 39 percent of technologists polled stated that their workloads had increased considerably since the pandemic began; given that squeeze, it's no wonder that many haven't been able to carve out the necessary hours for learning.

DO YOU HAVE ANY TECHNICAL CERTIFICATIONS?

YES 45%

NO 55%

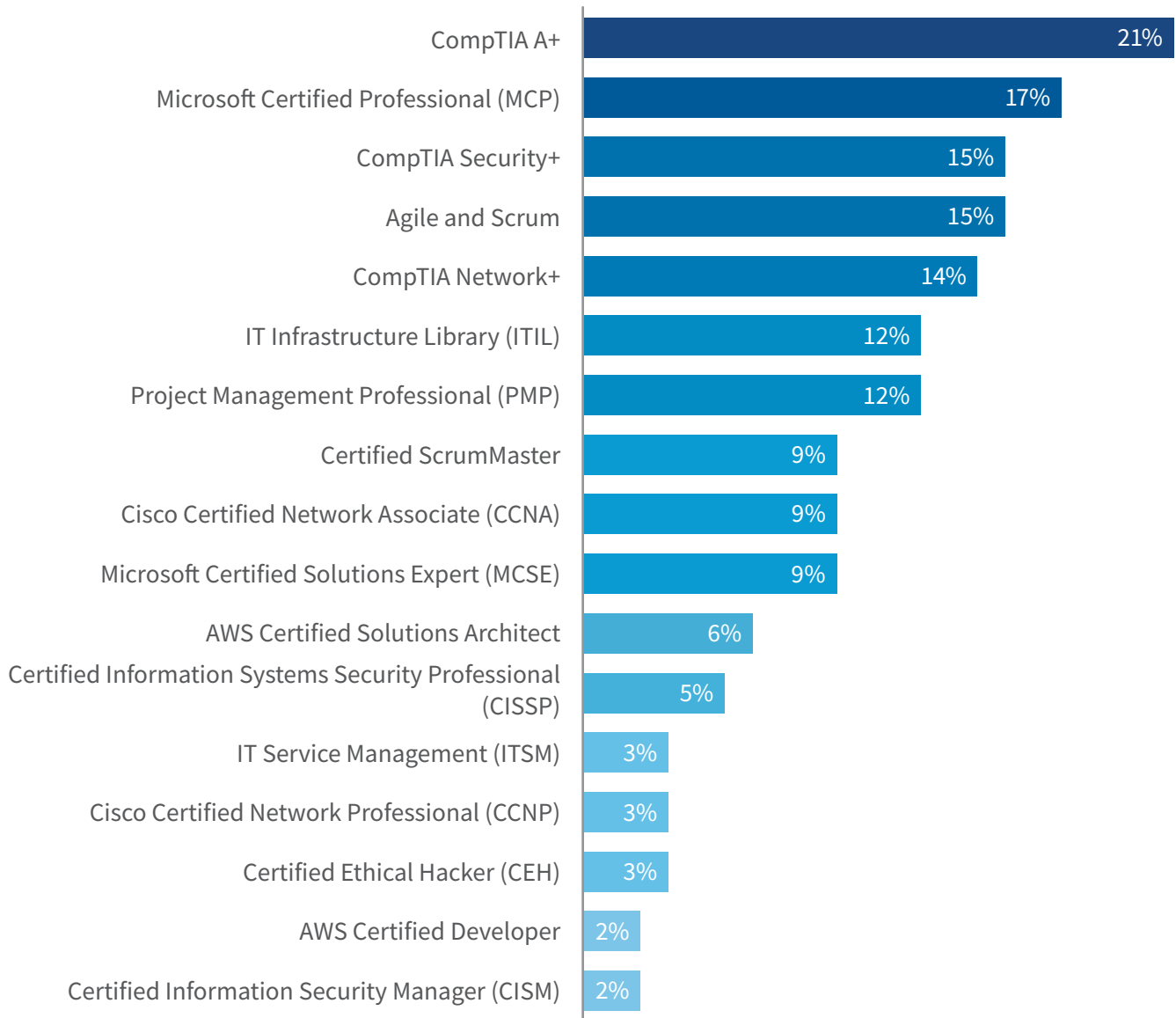
MAIN REASON FOR NOT HAVING TECHNICAL CERTIFICATIONS



Among those who possess certifications, CompTIA A+ (certifying technical support and IT operational skills) is particularly popular (21 percent), along with CompTIA Network+ (14 percent), CompTIA Security+ (15 percent), and Project Management Professional (PMP) (12 percent). This suggests that certifications are particularly valuable for technologists who work in any kind of infrastructure and/or cybersecurity capacity. Agile and Scrum certifications have also attracted technologists interested in proving to employers that they have the skills to effectively manage teams.

Many of these certifications can help technologists earn high salaries, demonstrating that, while a number of technologists might not think certifications are vital to their job, possessing one (or more) can help them stand out in a crowded market, as well as give them leverage in negotiations for better roles, salaries, and benefits.

DO YOU HAVE ANY OF THESE CERTIFICATIONS?



SALARIES BY EXPERIENCE

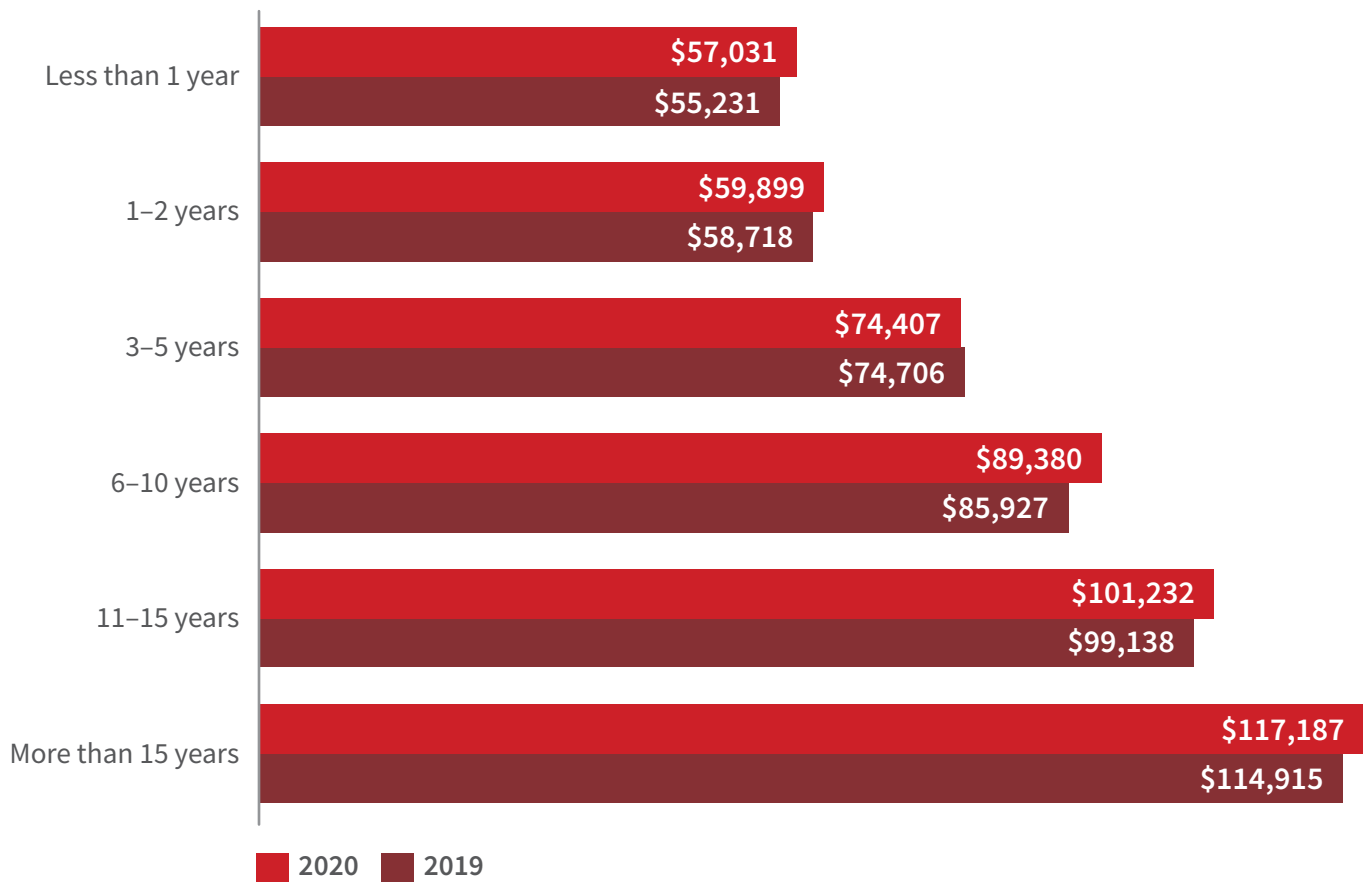
In 2020, employers rewarded well-established technologists with significant salary growth. Specifically, those technologists with 6–10 years of experience saw their salaries increase by 4 percent, to \$89,380. By contrast, those with 11–15 years of experience saw their salaries grow by 2.1 percent, slightly more than those with more than 15 years of experience (2 percent).

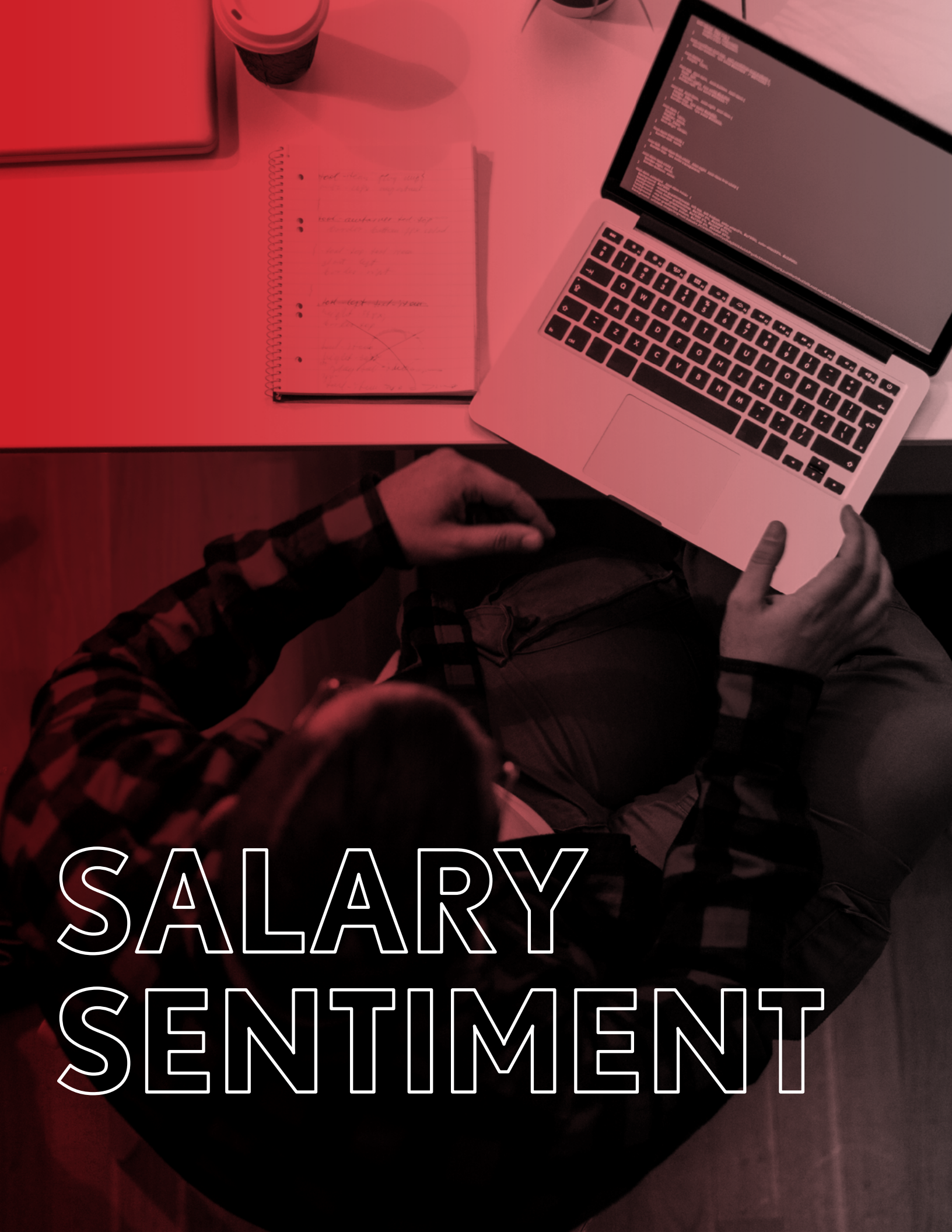
Technologists at the very beginning of their careers enjoyed average salary growth of 3.3 percent, hitting an average of \$57,031. As the COVID-19 pandemic forced businesses to adjust budgets and priorities, many focused on hiring technologists with less experience at lower salaries. This strategy allowed

those companies to build out their tech stacks, roll out new products and maintain infrastructure while also maintaining financial stability.

Only technologists with 3–5 years of experience saw a decline in salaries (by 0.4 percent, to \$74,407). This is a departure from previous years, when employers were happy to offer technologists with even a few years of experience strong salaries and regular raises. If the decline in 2020 was a result of corporate belt-tightening due to the pandemic, those technologists who fall into this experience tier may see their increases resume in coming years.

AVERAGE SALARIES BASED ON EXPERIENCE



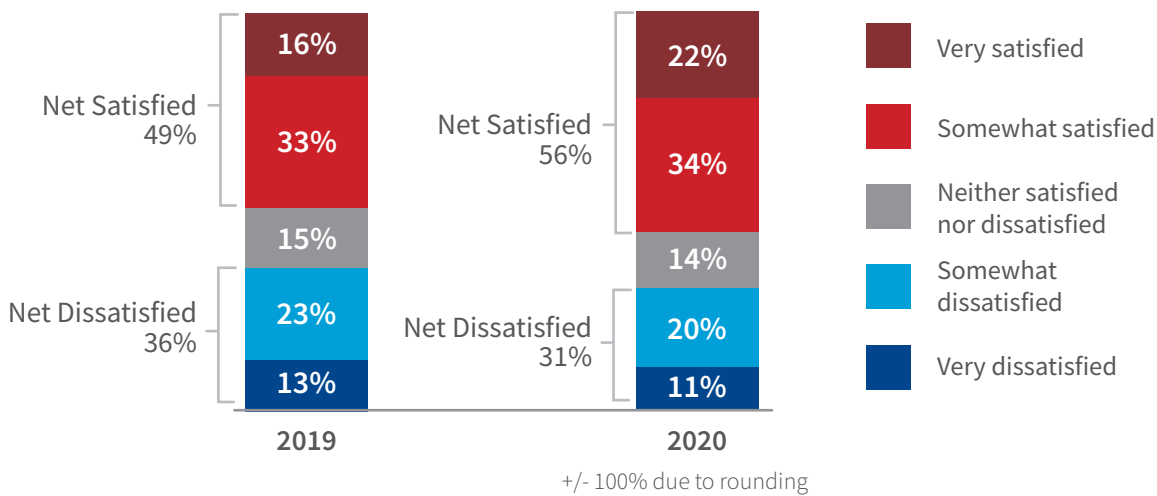


SALARY SENTIMENT

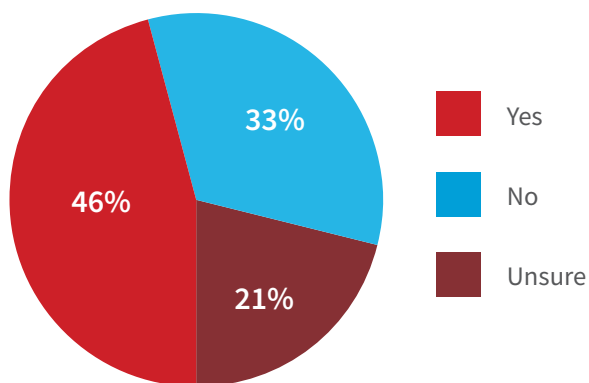
SALARY SATISFACTION

In 2020, 56 percent of technologists said they were satisfied with their current salaries, a noteworthy increase from the 49 percent who reported salary satisfaction in 2019. Those who claimed they were “very satisfied” rose from 16 percent to 22 percent year-over-year, even as the numbers of those either somewhat or very dissatisfied dropped significantly.

SALARY SATISFACTION



DO YOU THINK YOU'RE UNDERPAID?



Despite these numbers, 46 percent of technologists also believe they are underpaid relative to people who shared their occupation and skill level. A full 27 percent said they were satisfied with their compensation despite feeling they don't make enough, while 77 percent of those dissatisfied with their compensation believe they're underpaid (a natural feeling).

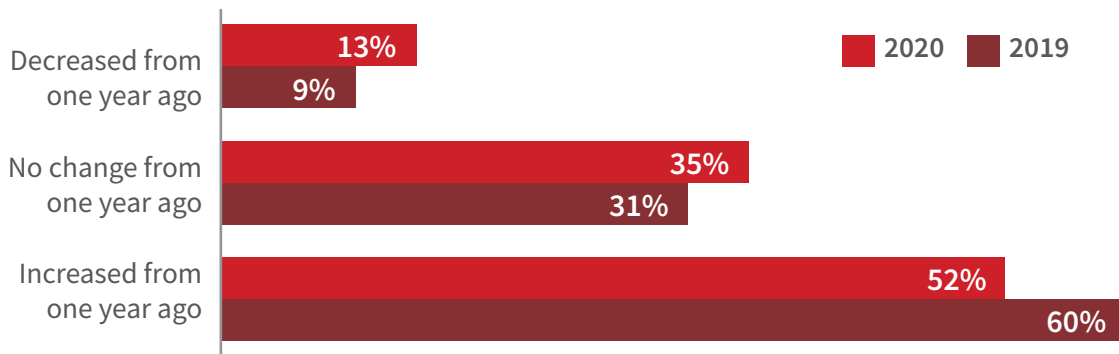
It's certainly possible that, given the economic uncertainty stemming from the pandemic, large numbers of technologists lowered their expectations when it came to salary, leading to higher levels of satisfaction even if they felt they were underpaid. If that's the case, those same technologists may become less satisfied with their compensation once they feel the broader economy has stabilized—which may, in turn, leave them hungrier for larger salaries, raises, and bonuses in 2021 and beyond.

SALARY CHANGE

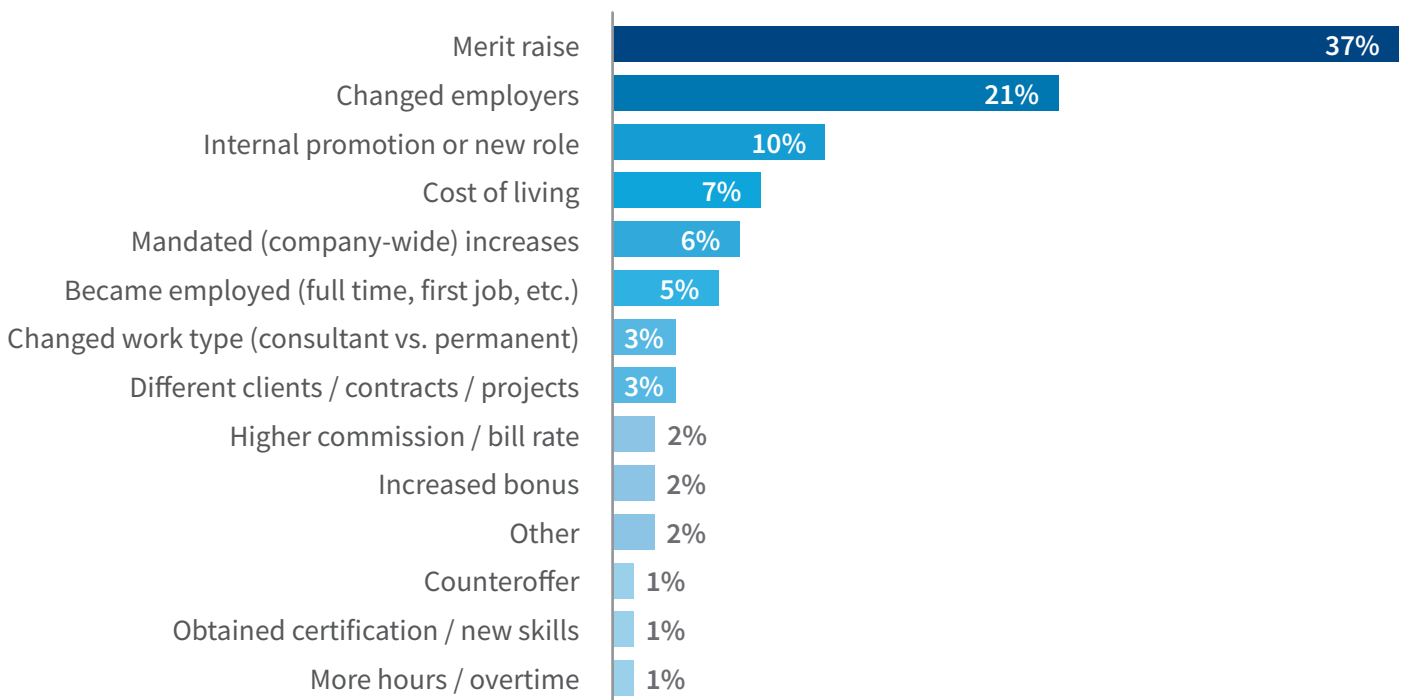
In an ideal world, all technologists would see their salaries rise consistently every year. However, 2020 was quite an unusual year, one that saw only 52 percent of technologists receive a year-over-year increase in salary. Roughly a third (35 percent) saw no year-over-year change in salary, while 13 percent endured a salary decrease—higher percentages, in both cases, than 2019. In other words, it wasn't the best time for technologists hoping for a pay jump, and no doubt a reflection of companies behaving more conservatively about compensation due to the pandemic.

The primary reasons for salary growth in 2020 included merit increases, a change in employers, internal promotions/new roles or a cost-of-living bump. Interestingly, the percentage of technologists who experienced salary increases for these reasons was not heavily impacted by COVID-19, staying relatively flat between 2019 and 2020. Naturally, 71 percent of those whose salaries increased in 2020 were content with that fact, however, 27 percent of those who didn't enjoy a year-over-year salary bump also reported satisfaction, which hints that many technologists were happy just to be employed.

INCOME CHANGE FROM ONE YEAR AGO



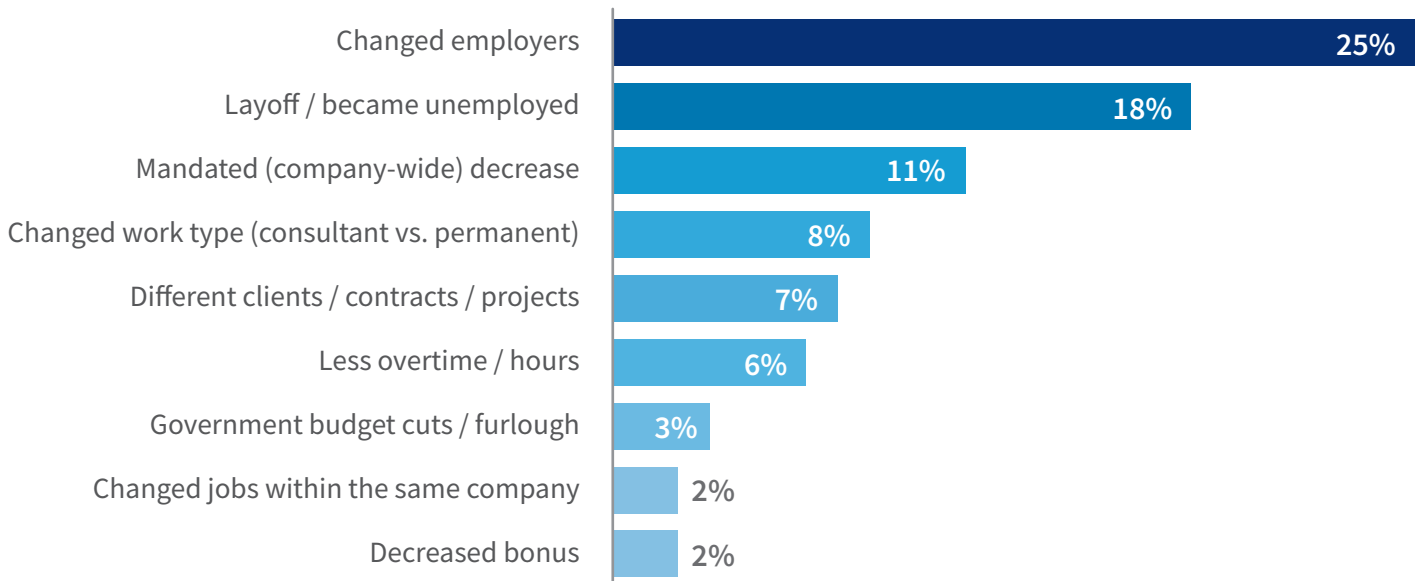
MAIN REASON FOR SALARY INCREASE



For those who saw their salaries decrease, the top reasons included changing employers, layoffs, or a company-mandated pay cut. As mentioned above, the lattermost was almost certainly due to companies temporarily tightening their budgets in order to survive the pandemic; as markets continue to stabilize, those salaries will hopefully revert to their old levels (if not increase). COVID-19 did not just result in temporary decreases, as 40 percent of technologists whose salary stayed the same between 2019 and 2020 reported that a potential salary increase was put on hold due to pandemic-related factors.

The overwhelming majority of technologists (82 percent) expect their most recent salary adjustment to be permanent. For those interested in growing their salary in 2021 and beyond, it's clear from this data that merit raises and jumping jobs are consistently excellent ways to do so. Either of those options depends heavily on skills and experience, especially if technologists specialize in a "hot" sub-industry such as machine learning or artificial intelligence. Although the data suggests to some extent that technologists were willing to take what they could get this year, that will surely change going forward, given increasing demand and optimism for an economic recovery beginning in 2021.

MAIN REASON FOR SALARY DECREASE



40% OF RESPONDENTS

said that a potential salary increase was put on hold by the COVID-19 pandemic.

SALARY NEGOTIATION

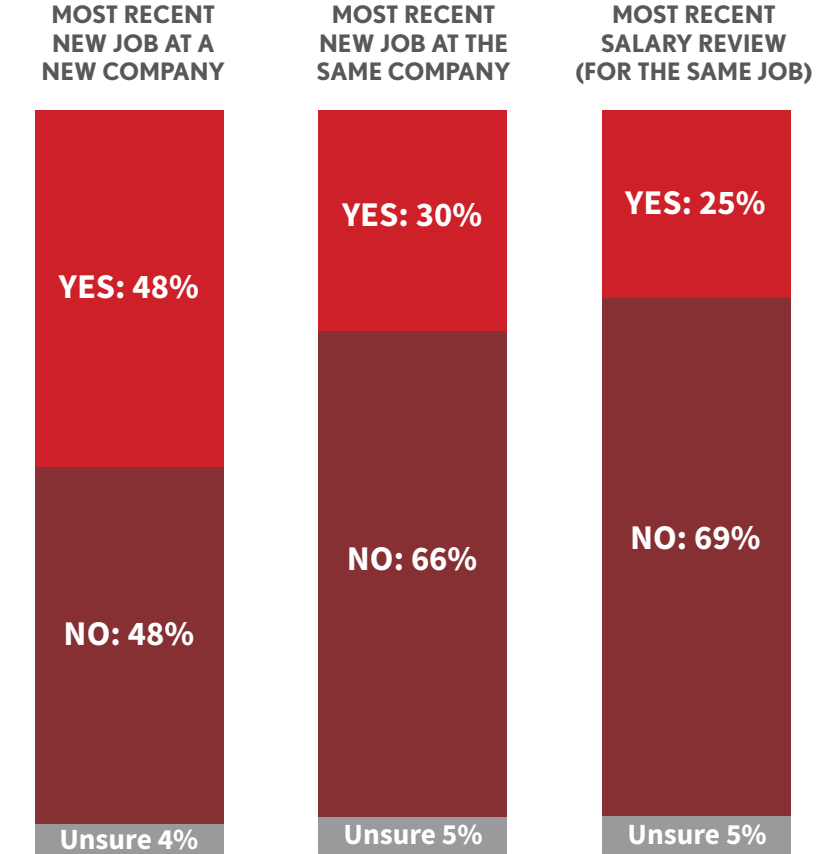
There are three ways for technologists to increase their salary: a new job with a new company, a new job with one's current company, or a salary review that leads to a merit increase or cost-of-living adjustment. All three scenarios represent an opportunity for technologists to grow their salary and benefits by negotiation. However, only 48 percent of technologists who took a job at a new company said that they'd negotiated their compensation.

Among those who took a new job at their current company, numbers were even lower: Only 30 percent reported negotiating. That's nearly the same percentage as those who negotiated during a salary review (25 percent), which is a key moment for expressing one's value to an organization.

Further, recent data from Robert Half suggests increased receptiveness to attempts at negotiation, with 36 percent of more than 2,800 senior managers surveyed during the pandemic saying that they are more likely to negotiate salaries than in the year prior (50 percent were equally likely to negotiate).

As with other data throughout this Salary Report, it's clear that 2020 was the year that technologists perhaps felt a bit unsure about their position, and less inclined to negotiate their compensation package with an existing or future employer. No matter what the rate of hiring, though, companies everywhere have a continuing need for skilled technologists who can execute complicated tasks.

DID YOU NEGOTIATE YOUR COMPENSATION?



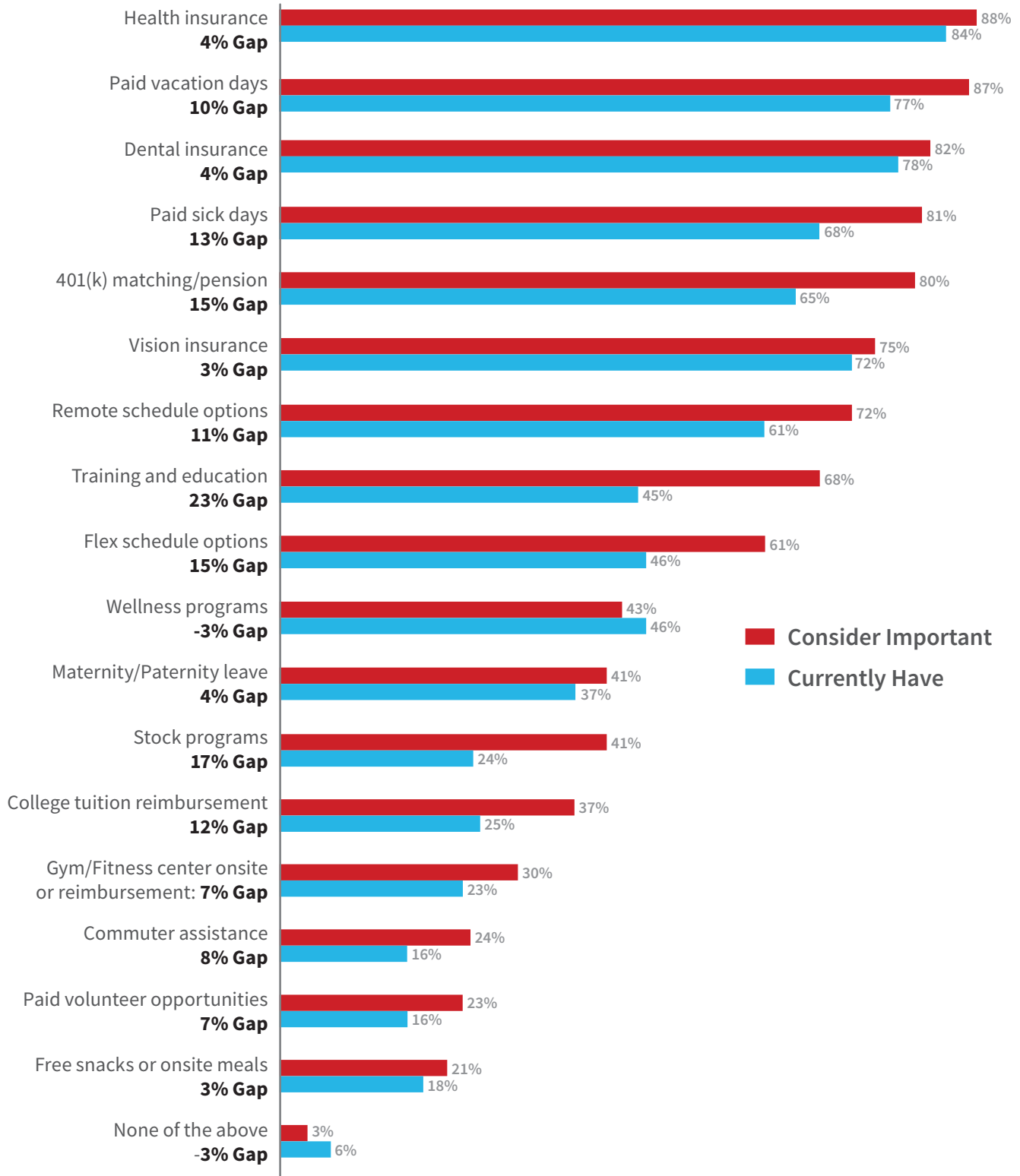
+/- 100% due to rounding

A woman with dark hair and glasses is shown in profile, looking intently at a laptop screen. The screen displays lines of code, likely HTML or CSS, with some text highlighted in red. The entire scene is bathed in a warm, reddish-orange light. The word "BENEFITS" is superimposed in the center of the image in a large, white, outlined, sans-serif font. The woman is wearing a light-colored, textured knit sweater. The background is blurred, showing what appears to be a desk with some papers and a pen.

BENEFITS

THE BENEFIT GAP

THE BENEFITS EMPLOYEES HAVE VS. THOSE THEY FIND IMPORTANT



While last year’s Tech Salary Report showed the demand for “emerging” benefits such as wellness programs, paid volunteer opportunities and college tuition reimbursement, this year’s data tells a different story. In 2020, perhaps in response to COVID-19 and the uncertain economic situation, many technologists decided to re-embrace “staple” benefits that offer health, lifestyle and financial stability.

Health insurance ranked the highest of all benefits that technologists consider important in 2020 (88 percent), which comes as no surprise amidst a global pandemic. Paid vacation days closely followed (87 percent), which hints at a greater desire for work-life balance at a time when remote work can threaten to blur the line between professional and personal life. Dental and vision insurance came in at 82 percent and 75 percent, respectively.

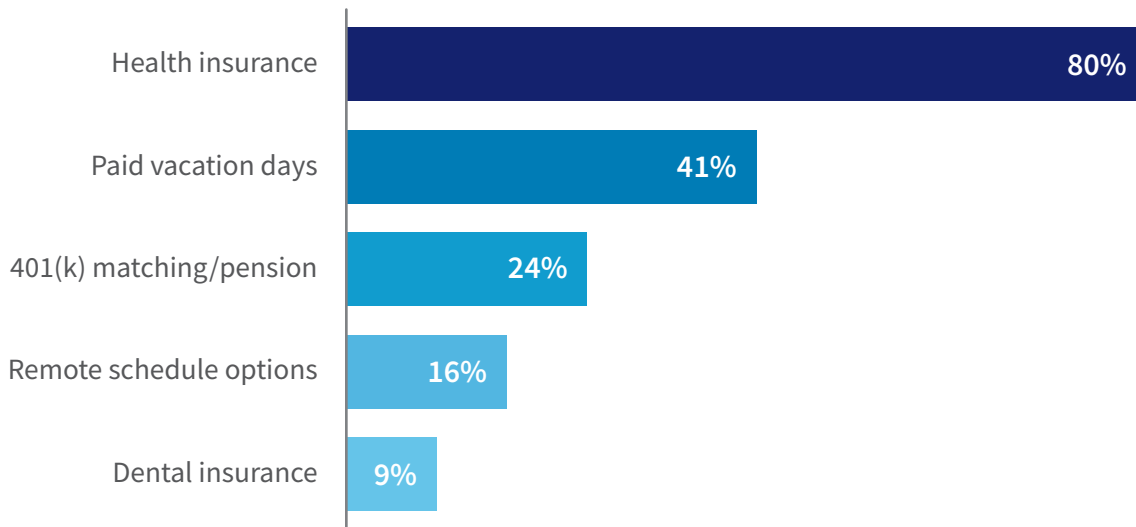
However, many technologists aren’t getting the benefits they want. For example, although 81 percent of technologists say

paid sick days are important, only 68 percent received them from their employer, a 13 percent gap. In a similar vein, 80 percent of technologists say that 401(k) matching/pension is an important benefit, yet only 65 percent have access to this benefit (representing at 15 percent gap).

The largest “benefit gap” comes with training and education: 68 percent of technologists say this is an important benefit, but only 45 percent received it from their employer (a 23 percent gap). For employers, offering training and education can lead to a more skilled, more valuable workforce; and for technologists, it offers the ability to build a more robust skill-set and, ultimately, career. For employers on the hunt for talent, recognizing these gaps and offering these benefits to skilled technologists can be an excellent way to augment their employer brand, set themselves apart and meet 2021 hiring goals.

MOST IMPORTANT BENEFITS

Of the benefits you indicated as important to you in an employer, which two would you say are most important?



When it comes to the benefits that technologists consider most important (when they can only check two), the staples once again rise to the top, with health insurance (80 percent), paid vacation days (41 percent), 401(k) matching/pension (24 percent), and remote schedule options stock options (16

percent) all leading the pack. Although some technologists are interested in emerging benefits such as gym/fitness centers onsite (or gym/fitness reimbursement), commuter assistance and free snacks or onsite meals, staple benefits remain of paramount importance to technologists.

VACATION

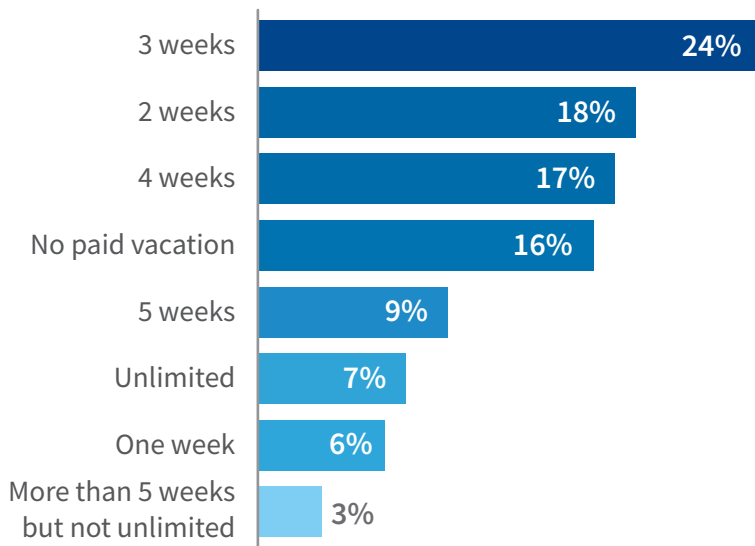
With many technologists working from home for many months, the lines between personal and professional lives have perhaps blurred a bit, making vacation more important than in previous years. When it comes to the amount of paid vacation time provided by employers, as well as the technologists using those days, the data tells an interesting story.

This year, 24 percent of technologists said they had three weeks of paid vacation time, while 17 percent had four weeks, 9 percent had five weeks and 7 percent had unlimited days. That's quite a bit of vacation time. At the same time, it's worth noting that 40 percent of technologists have two weeks or less of vacation time per year. For many employers, offering substantial vacation days can help distinguish an employer brand. When there's limited budget for salaries, additional vacation time is a particularly valuable incentive for attracting top talent, although not every company incorporates such a perk into their compensation packages.

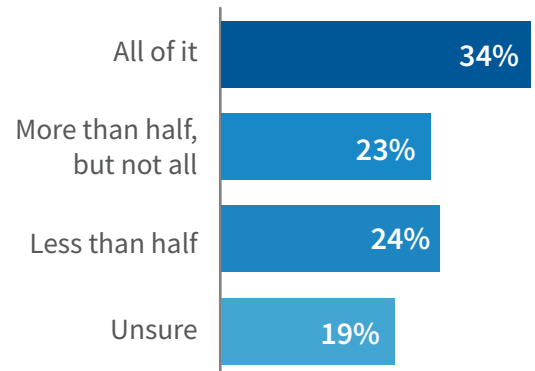
While many employers (75 percent) made no change to the vacation days offered amidst COVID-19, five percent of technologists said their company gave all employees additional unpaid time off; another 10 percent said their company offered additional paid time off. No doubt anxious to ensure that their employees unplug and recharge, employers also changed time off mandates during the year, with 9 percent of surveyed technologists stating that their company required employees to take a certain amount of time off in 2020 and 5 percent stating their company wanted them to use paid vacation days earlier than usual.

But how much of that time are technologists actually using? Thirty-four percent of technologists said they planned to use all of their time off, compared to the 23 percent who said they would use more than half, and the 24 percent who would use less than half. Despite some companies offering more hours and encouraging employees to use them, many technologists simply aren't taking full advantage of paid vacation, which can lead to burnout.

HOW MANY PAID VACATION DAYS ARE AVAILABLE TO YOU?



VACATION PLANNED TO TAKE IN 2020

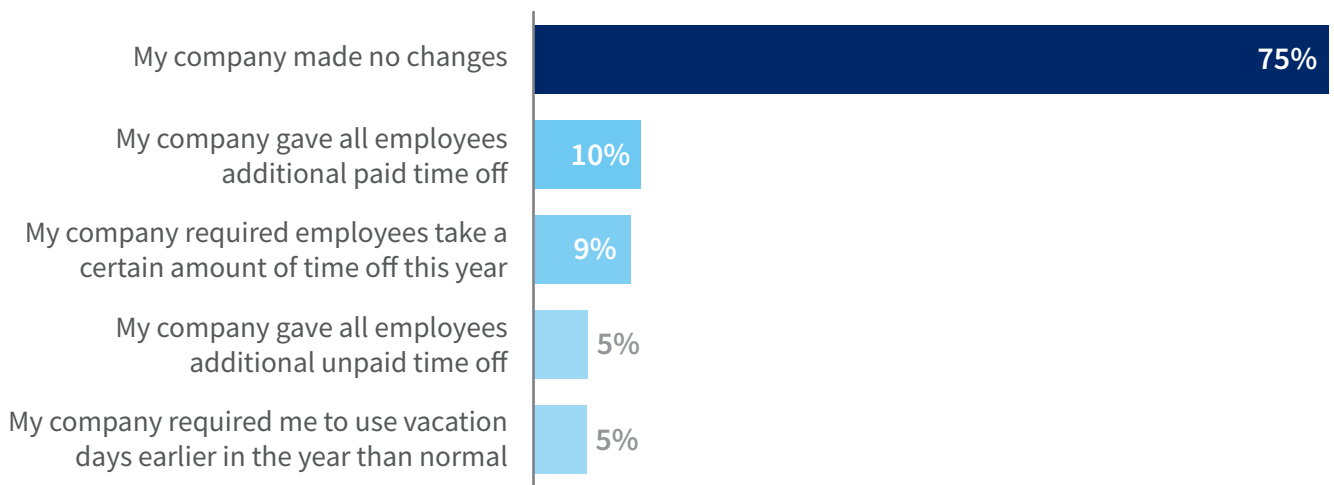


The data from technologists lines up with a strange year for time off from organizations in nearly every space. The *New York Times* reports that many employers are struggling to deal with the unused employee vacation dates that have piled up during the pandemic. Many companies have enacted policies allowing employees to roll over more unused vacation than in prior year, in some cases putting forth creative solutions like added “friend and family days,” early out Fridays and even having entire teams take time off simultaneously.

While organizations in the tech space have led the way in these innovations, the drop in vacation usage is a significant risk to teams that businesses will need to pay attention to in 2021, as remote work and lockdowns remain in place in many areas.

HOW COMPANIES CHANGED VACATION POLICIES

How did your company change time off or vacation day policies due to the COVID-19 pandemic?





METHODOLOGY

Collection of Data

The 2020 Dice Salary Survey was administered online by Dice.com among its registered Dice job seekers and site visitors between September 29, 2020 and December 9, 2020. Respondents were invited to participate in the survey in two ways: 1) via an email invitation to Dice’s registered (“searchable”) database members and 2) through a notification on Dice.com via “pop-up” (i.e., site intercept).

A total of 9,143 survey completes are represented in this report (this number excludes unemployed respondents, students, incomplete responses, and those who work outside of the US).

Data Weighting

In each year of the survey, the data are reviewed to assess the need for data weighting to ensure that the overall data properly reflect the universe of Dice.com Job Seekers. Examination of the data from 2020 showed a weighted data adjustment was needed only for one variable – years worked in a tech-related field. The impact on the mean salary results from the weighting for the 2020 data was minor (reduced the average salary by \$1,112).

COVID Impact on Survey Universe and Analysis Approach to Address

The Dice Tech Salary Survey is a longitudinal study that we have operated for 16 years. For the first time this year, we saw a large difference in the proportion of respondents who began the survey and self-reported that they were unemployed (a 41 percent increase over previous years). In order to account for this difference and maintain the continuity of the universe being sampled year-over-year, we simulated the mean salaries by accounting for the larger proportion of unemployed in the overall sample.

Job Posting Data

Job posting data was gathered by Dice’s partner, Burning Glass Technologies, which has a database of more than 1 billion current and historical job postings worldwide. Data was used from Burning Glass Technologies to complete city, occupation and skill call-outs.



MAKE THE RIGHT CONNECTIONS AND WIN THE COMPETITION FOR TOP TECH TALENT

Finding the right candidates fast means building better connections, and Dice's platform is designed to help you quickly target the right technologists to fit your open roles.

Let us show you how to increase efficiency, reduce time to hire and how we can help you beat the competition to top tech talent.

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Dice is the leading database for technology professionals, managing over 9 million profiles in the United States. The platform helps technology professionals manage their careers and employers connect with highly skilled tech talent. Dice is a [DHI Group, Inc.](#) (NYSE:DHX) service.

SKILLS APPENDIX

SKILL	2020	YR/YR CHANGE	SKILL	2020	YR/YR CHANGE	SKILL	2020	YR/YR CHANGE
.NET	\$104,799	3.4%	BMC Remedy	\$102,759	1.4%	Dropbox	\$96,532	5.8%
ABAP	\$121,723	-0.4%	Box	\$109,520	2.5%	Drupal	\$107,907	1.6%
Access	\$97,274	5.6%	Bugzilla	\$110,881	1.9%	DynamoDB	\$126,390	-2.2%
Active Directory	\$96,902	1.4%	Business Intelligence	\$115,659	3.9%	EDI	\$111,836	-2.5%
Adobe Creative Suite	\$91,863	6.6%	C	\$116,215	-0.3%	Elastic Path*	\$111,337	-2.3%
Agile Testing	\$115,624	3.0%	C#	\$109,523	2.6%	Elasticsearch	\$129,480	-0.4%
Ajax	\$110,483	-1.3%	C++	\$110,897	3.4%	Elixir*	\$98,915	-14.6%
Alcatel-Lucent	\$105,528	15.2%	Cache	\$98,697	3.1%	EMC	\$115,347	-0.7%
All Microsoft OS	\$97,410	3.9%	Camtasia	\$105,171	5.7%	EMC Documentum	\$113,674	-9.4%
Altiris	\$94,651	2.1%	Cassandra	\$130,491	-1.5%	ERP	\$114,734	1.7%
Amazon CloudFront	\$116,581	-1.4%	Chef	\$129,328	-2.1%	ETL	\$124,806	2.8%
Amazon Redshift	\$125,193	-4.2%	Cisco	\$97,503	1.4%	ETL Testing	\$121,362	4.1%
Amazon Route 53	\$126,657	-2.0%	Cisco IOS	\$98,894	0.2%	FCoE	\$123,510	4.9%
Amazon S3	\$118,978	2.9%	Citrix	\$99,715	3.0%	Fibre Channel	\$116,975	2.2%
Android	\$91,171	3.0%	Cloud Computing	\$113,901	2.2%	Figma	\$100,361	-1.9%
Angular	\$116,719	0.8%	Cloud Foundry	\$121,944	-1.4%	Firewalls	\$100,762	1.9%
Ansible	\$123,808	-1.0%	Cloudera	\$132,045	-1.2%	Fortran	\$110,919	5.2%
Apache Kafka	\$128,791	-4.3%	COBOL	\$104,746	-1.4%	Frame Relay	\$103,895	2.3%
Apache Web Server	\$109,100	0.3%	Confluence	\$119,875	1.7%	FreeBSD	\$111,900	4.3%
Apex	\$94,162	2.2%	ConnectWise	\$83,735	-3.8%	Git	\$115,602	0.3%
Apple iOS	\$98,865	4.9%	Containers	\$126,727	-0.3%	GlassFish	\$97,488	-9.7%
AppleScript	\$96,737	-1.8%	CRM	\$105,649	3.5%	Golang	\$128,001	-6.1%
Application Delivery	\$108,757	-2.1%	CSS	\$100,065	0.6%	Google Cloud Platform	\$96,253	3.4%
ArcGIS	\$101,306	11.9%	Cucumber	\$115,374	0.9%	Google Drive	\$94,856	3.0%
Arista	\$116,814	3.2%	Cybersecurity	\$105,588	4.3%	Gradle	\$115,395	-7.4%
Artificial Intelligence	\$131,907	7.2%	Data Warehouse	\$117,306	3.8%	Graph Databases	\$116,118	-
ASP.NET	\$107,241	1.1%	Database Testing	\$108,224	3.4%	Groovy	\$114,268	-1.5%
Assembler/Assembly	\$107,488	-0.2%	DB2	\$110,647	-0.1%	Hadoop	\$129,438	4.4%
Augmented Reality	\$105,709	1.8%	Deep Learning	\$113,366	-12.8%	HANA	\$124,918	-7.1%
AWS Lambda	\$119,851	-	Delphi	\$97,446	-10.1%	HBase	\$117,281	-5.3%
Axure	\$107,712	0.9%	DevOps	\$118,774	-	Heroku	\$101,321	-10.7%
Azure	\$106,470	-0.7%	DHCP	\$97,516	0.6%	Hibernate	\$113,559	-4.3%
Backbone	\$102,284	-2.5%	Digital Ocean	\$109,108	2.1%	Hitachi	\$113,463	2.9%
Balsamiq	\$119,178	2.6%	Django	\$103,044	-5.5%	Hive	\$117,329	-3.0%
Bash	\$115,511	0.3%	DNS	\$99,893	0.2%	HTML	\$97,798	1.9%
Big Data	\$121,700	3.1%	Docker	\$123,013	-1.3%	HTML5	\$101,381	0.0%
BigQuery	\$111,960	-	Document Databases	\$101,199	-	Hyper-V	\$99,704	1.9%
Blockchain	\$122,111	5.2%	DOORS*	\$124,326	9.4%	IaaS	\$122,934	0.6%

* Sample size less than 100 respondents, therefore not statistically valid, but presented for continuity purposes only.

SKILL	2020	YR/YR CHANGE	SKILL	2020	YR/YR CHANGE	SKILL	2020	YR/YR CHANGE
IBM Informix	\$101,636	-11.2%	MATLAB	\$112,085	6.2%	PBX	\$101,078	4.4%
IBM Mainframe	\$101,025	-0.5%	Metro Ethernet	\$107,618	4.7%	PeopleSoft	\$100,967	2.5%
IBM Watson	\$106,564	-	Microsoft Dynamics	\$101,061	3.8%	Perl	\$122,511	3.9%
iCloud	\$90,452	6.7%	Microsoft Office	\$96,927	4.1%	PHP	\$104,432	2.7%
IDMS	\$108,691	-3.8%	Microsoft One	\$96,730	7.0%	Pig*	\$119,269	-1.5%
IDS/IPS	\$108,178	4.1%	Microsoft SQL	\$107,208	2.4%	PL/SQL	\$105,570	-3.7%
IIS	\$106,490	-0.7%	Microsoft Team Foundation Server	\$105,031	-1.3%	Postgres	\$121,724	1.5%
Informatica	\$115,467	-1.8%	Microsoft Windows Server	\$97,301	3.0%	PowerBuilder	\$108,171	1.8%
Invision	\$110,243	2.4%	MicroStrategy	\$119,456	5.3%	PowerShell	\$100,591	4.5%
IPV6	\$100,894	2.1%	Mobile Testing	\$104,044	2.3%	Principle*	\$95,751	6.6%
iSCSI	\$112,322	4.6%	Mockito	\$133,261	1.1%	Proto.io*	\$106,021	0.3%
Java/J2EE	\$114,347	-0.1%	MongoDB	\$119,296	0.0%	Puppet	\$121,767	-2.1%
JavaScript	\$102,346	1.5%	MPLS	\$115,558	5.1%	Pure Storage	\$118,566	-0.4%
JAX-RS	\$112,321	-6.7%	MySQL	\$105,319	3.0%	Python	\$112,388	0.3%
JBoss	\$114,696	-3.7%	NAS	\$107,138	2.0%	Qlik Tech	\$112,353	-2.4%
JDBC	\$121,228	-2.1%	Natural Language Processing	\$131,542	4.8%	QTP	\$108,380	-3.3%
JDE/JD Edwards	\$112,598	-1.3%	NetApp	\$117,065	3.1%	Quality Center (ALM)	\$109,167	-1.6%
Jenkins	\$123,048	0.5%	NetSuite	\$101,755	-3.1%	R	\$112,958	0.8%
Jetty	\$118,002	-8.3%	Network/Information Security	\$99,757	2.6%	RabbitMQ	\$136,151	10.1%
Jira	\$116,566	1.5%	Neural Networks	\$129,044	-	Rackspace	\$116,945	7.2%
JMeter	\$122,507	0.0%	Nginx	\$119,300	-0.3%	Rally	\$117,221	2.0%
jQuery	\$106,853	0.2%	Nimble	\$113,126	3.7%	RDBMS	\$120,970	0.3%
JSON	\$114,911	1.3%	Node.js	\$110,659	-4.1%	RDS	\$120,463	-
JSP	\$113,171	-7.2%	NoSQL	\$124,998	-2.1%	React Native	\$113,985	-0.5%
Juniper	\$111,308	3.1%	Novell	\$95,567	-3.8%	ReactJS	\$111,456	-3.8%
JUnit	\$119,217	-2.9%	NumPy	\$115,606	1.2%	Redis	\$129,279	1.4%
KornShell	\$123,442	-2.3%	NUnit	\$115,624	-4.9%	REST	\$123,495	1.8%
Kotlin	\$114,531	-6.9%	Objective-C	\$115,489	-5.6%	Routing	\$100,684	1.8%
KVM	\$105,302	2.7%	OLAP	\$127,593	-	Ruby	\$116,305	1.2%
Lawson	\$104,153	3.1%	OLTP	\$126,420	-	SageMaker*	\$116,354	-
Linux	\$110,756	1.8%	OmniGraffle	\$124,074	4.6%	Salesforce.com	\$109,970	3.5%
Load Balancers	\$118,754	0.6%	OneDrive	\$96,951	3.8%	SAN	\$111,008	-0.8%
LoadRunner	\$125,093	2.1%	OpenStack	\$117,839	-0.7%	SAP	\$105,408	0.5%
Lucidchart	\$116,701	2.4%	Optical	\$107,107	4.1%	SAP Testing	\$101,682	-3.8%
Machine Learning	\$125,197	3.1%	Oracle Application Server	\$99,425	3.8%	SAS	\$103,034	0.0%
macOS	\$102,596	4.2%	Oracle DB	\$110,078	0.2%	Sass	\$103,847	-4.3%
Manual Testing	\$109,656	3.4%	Oracle eBusiness	\$109,067	3.6%	Scala	\$124,066	-3.1%
MapReduce	\$135,516	2.1%	PAAS	\$132,314	1.3%	SCCM	\$92,526	3.7%
MariaDB	\$114,530	-0.8%	Parallels	\$108,614	7.0%	SDN	\$122,017	5.4%
Master Data Management (MDM)	\$124,222	-				Selenium	\$113,616	0.0%

* Sample size less than 100 respondents, therefore not statistically valid, but presented for continuity purposes only.

SKILL	2020	YR/YR CHANGE
Service Oriented Architecture (SOA)	\$133,119	1.2%
ServiceNow	\$109,701	2.4%
Shell	\$117,470	1.5%
Siebel	\$111,705	0.9%
SIP	\$100,283	0.7%
Sketch	\$100,564	0.5%
SMTP	\$103,388	2.0%
Snagit	\$106,012	2.7%
SNMP	\$105,823	3.4%
SOAP	\$118,366	0.9%
SoapUI	\$113,317	-1.5%
Software as a Service (SaaS)	\$112,255	0.7%
Solaris	\$112,991	-2.7%
Solr	\$123,901	-1.5%
Spark	\$123,490	1.9%
Splunk	\$119,178	0.3%
Spring Framework	\$120,348	-5.5%
SQL	\$107,806	1.0%
SQL Server	\$105,427	3.5%
SQLite	\$108,340	0.4%
Sqoop*	\$118,064	-4.2%
SSIS	\$115,448	6.2%
Sun	\$119,167	1.9%
Swift	\$111,988	-4.2%
Switching	\$100,379	3.8%
Sybase	\$117,507	-0.4%
Synology	\$93,577	-4.9%
T1/T3	\$103,793	3.3%
Tableau	\$117,059	5.9%
TCL	\$111,314	7.8%
TCP/IP	\$100,769	1.8%
Telepresence	\$114,414	0.0%
TensorFlow	\$129,048	-
Teradata	\$119,369	2.0%
Test Management	\$112,644	4.5%
TestLink	\$96,867	-4.1%
TOAD	\$118,119	1.6%
Tomcat	\$115,832	-1.1%
Transact-SQL (T-SQL)	\$112,733	3.4%

SKILL	2020	YR/YR CHANGE
TypeScript	\$112,469	0.7%
Unix	\$110,234	-0.6%
Vagrant	\$123,615	8.5%
VBA	\$106,405	3.9%
VBScript	\$108,224	3.0%
vCloud	\$111,814	9.7%
VDP	\$105,007	5.1%
Verilog*	\$131,784	2.2%
Virtual Reality	\$96,052	0.0%
VirtualBox	\$100,339	0.3%
Virtualization	\$109,064	1.7%
Visual Basic	\$98,991	0.2%
Visual Basic .NET	\$105,170	0.8%
Visual C++	\$108,487	5.1%
VMware	\$102,746	2.0%
VMware ESXi	\$109,160	3.8%
VoIP	\$97,286	3.0%
VPN	\$99,970	1.8%
VSAM	\$106,322	1.8%
WAN Optimization	\$111,223	-2.7%
Web App Firewall	\$108,283	2.2%
WebLogic	\$111,259	-3.2%
WebSphere	\$114,223	-0.1%
Wireless	\$95,479	3.5%
WordPress	\$91,178	5.1%
Workday	\$108,643	4.9%
XAML	\$110,375	-3.3%
Xen	\$106,681	3.7%
XML	\$112,189	0.7%
XSLT	\$121,354	-2.1%
z/OS	\$110,991	2.6%
Zendesk	\$96,325	3.4%
Zeplin	\$115,249	2.8%
ZooKeeper	\$121,709	-6.3%

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A photograph of a desk setup, including a monitor, a laptop, a pair of headphones, and a water bottle. The entire image is overlaid with a red tint. A red speech bubble containing the word "Dice" is positioned in the center of the image.

Dice[®]