

CompTIA[®]

State of the Tech Workforce Canada

Nationwide | Province | Metro Area

Tech Hiring Trends | Wages | Workforce Characteristics

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STATE OF THE TECH WORKFORCE CANADA

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CompTIA is responsible for all content and analysis. Any questions regarding the report should be directed to CompTIA Research and Market Intelligence staff at research@comptia.org.

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ABOUT

ABOUT COMPTIA

The Computing Technology Industry Association (CompTIA) is the world's leading information technology (IT) certification and training body. CompTIA is a mission-driven organization committed to unlocking the potential of every student, career changer or professional seeking to begin or advance in a technology career. Each year CompTIA, directly and through its global network of partners, provides millions of learners the tools and confidence to succeed.

CompTIA's base of certified information technology professionals spans 232 countries worldwide.

CompTIA sets the standard for preparing entry-level candidates through expert-level professionals to succeed at all stages of their career in technology. Through CompTIA's philanthropic arm, CompTIA Spark develops innovative on-ramps and career pathways to expand opportunities to populations that traditionally have been under-represented in the information technology workforce.

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- [CompTIA Certifications Job Match](#)
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- [CompTIA Tech Career Academy](#)
- [CompTIA IT Salary Calculator](#)
- [CompTIA Member Communities and Councils](#)
- [CompTIA Academy and Delivery Partner Program](#)

ABOUT THE STATE OF THE TECH WORKFORCE CANADA

CompTIA's *State of the Tech Workforce Canada* provides an in-depth look at employment, economic impact, technology trends, salaries, hiring activity and more across the provinces and metropolitan areas of Canada. The report draws upon a number of data sources including Lightcast, Canadian government statistics (StatsCan), CompTIA and more.

PROVINCE COVERAGE

Alberta	Nova Scotia
British Columbia	Ontario
Manitoba	Prince Edward Island
New Brunswick	Quebec
Newfoundland and Labrador	Saskatchewan

METRO AREA COVERAGE

Montreal
Toronto
Calgary
Edmonton
Vancouver

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? CompTIA weighs a number of factors in making these decisions. See the methodology section for details of the specific NAICS codes and SOC codes CompTIA uses in its definitions.

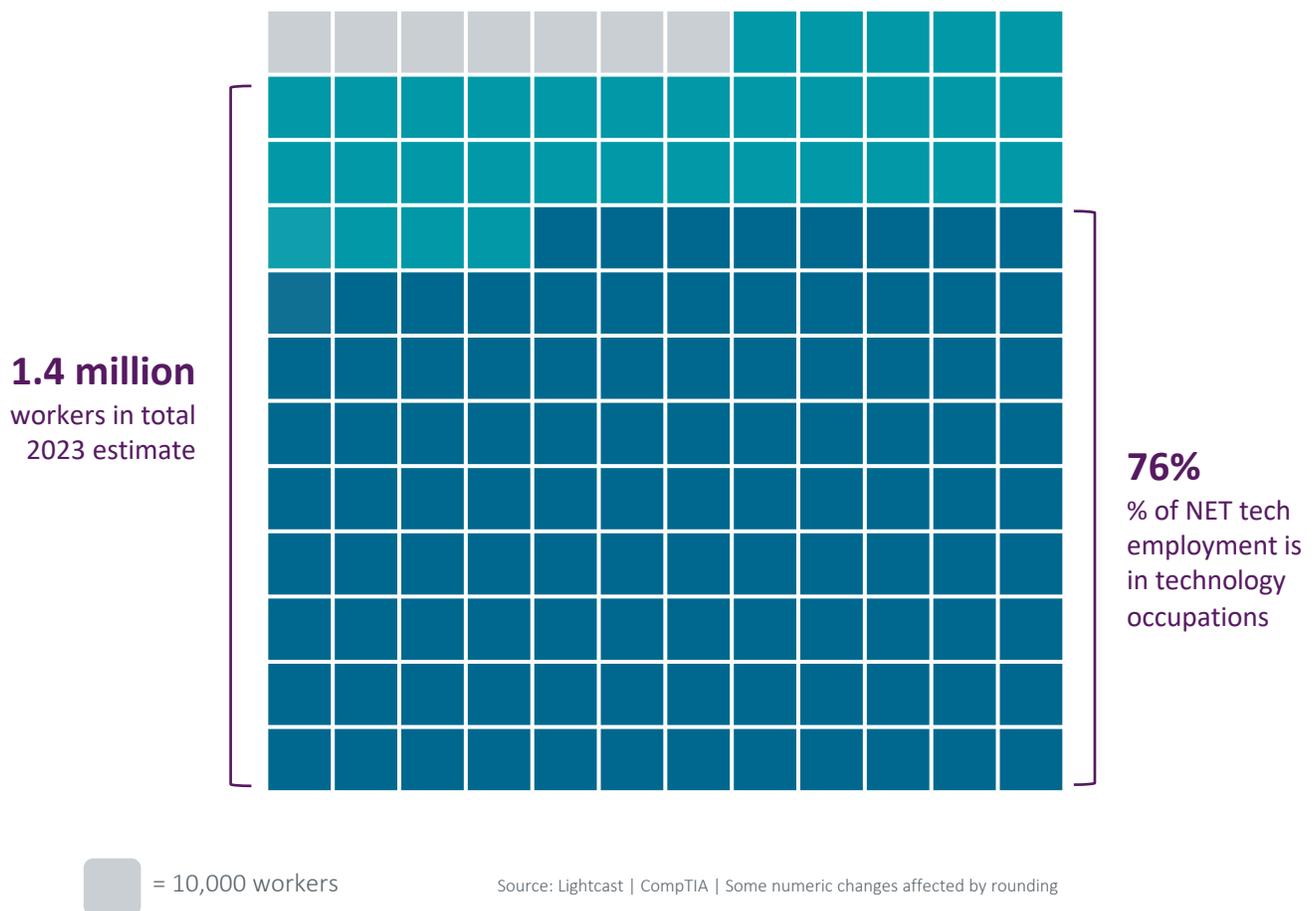
DEFINING NET TECH EMPLOYMENT

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, data scientist, and related roles. Many of these professionals work for technology companies (60%), but many others are employed by organizations across every industry sector in the Canadian economy (40%).

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. About 24% 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 several uncertainties with the data and to minimize the possibility of double counting.

-  **N = Technology professionals employed across the economy, including in the tech sector**
(e.g. software developers, network architects, database admins, etc.)
-  **N = Tech sector employment, less technology professionals**
(e.g. sales, marketing, finance, HR, etc.)

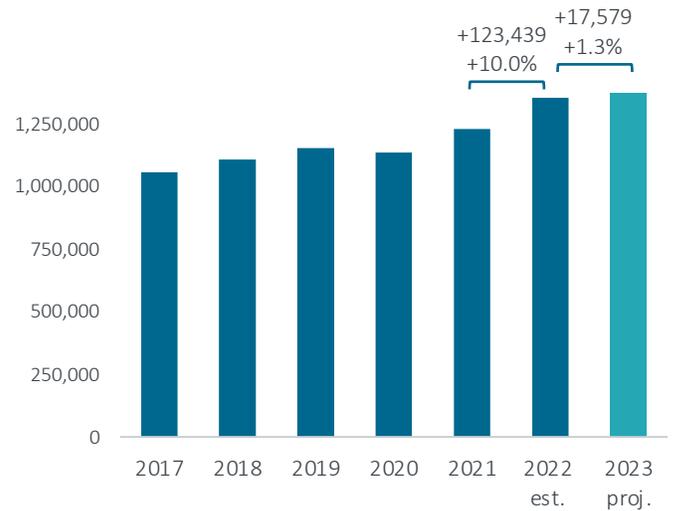


KEY FINDINGS

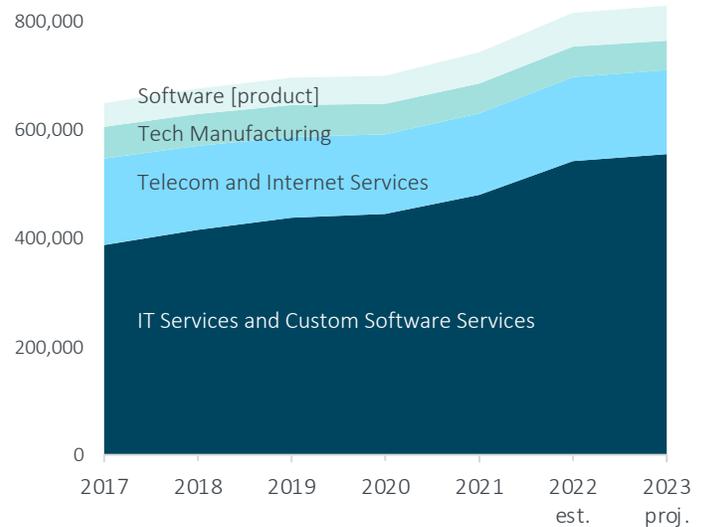
KEY POINTS

- Net tech employment in Canada – as described on the previous page, reached an estimated 1,352,210 workers in 2022, approximately a 10% increase over the previous year. It is projected to grow by 1.3% to reach 1,369,789 workers in 2023.
- Since 2017, net tech employment increased by an estimated 297,032 net new jobs. Net tech employment growth has been largely steady during this span, except for a decline in 2020.
- Net tech employment accounted for approximately 6.6% of the overall Canada workforce in 2022. Because of the blurring of lines across industries, there is likely a degree of undercounting in tech sector employment as a percentage of Canada employment.
- Among the components of net tech employment, the tech sector side of the equation experienced estimated growth of +9.8% year over year, while the occupation side across all industry sectors experienced an increase of 12.1% year over year. Looking ahead, tech sector and tech occupation gains are projected to be 1.5% and 1.4% respectively.
- Sectors of the tech industry that have seen an increase in jobs since 2017 are the IT services (+155,036) and Software (+19,114) sectors. The tech manufacturing and telecommunications sectors have seen declines in employment.
- Largest tech occupation job gains (numeric), 2017-2022
 - Information Systems Specialists: +62k
 - Software Developers and Programmers: +43.9k
 - Software Engineers and Designers: +43.8k
 - Database analysts and Data Administrators: +31.2k
 - IT Support and Network Technicians: +20.0k
- Largest tech occupation job gains (% change), 2017-2022
 - Business Systems Specialists: +147%
 - Cybersecurity specialists: +146%
 - Data Scientists: +143%
 - Database analysts and Data Administrators : +98%
 - I Software Engineers and Designers : +84%
- Economic impact is an assessment of output – the dollar value of goods and services produced during a given year (also referred to as gross domestic product). As a percentage of the overall Canadian economy, the tech industry accounts for approximately 5.5% of direct economic value, which translates to \$113.41 billion CAD.
- In addition to the direct economic impact, there are downstream indirect benefits of the technology industry, such as the employment multiplier effect of technology ecosystems.

NET TECH EMPLOYMENT TRENDING



TECH INDUSTRY EMPLOYMENT TRENDING



ECONOMIC IMPACT OF TECH INDUSTRY



Source: Lightcast | Canadian Government Statistics | CompTIA

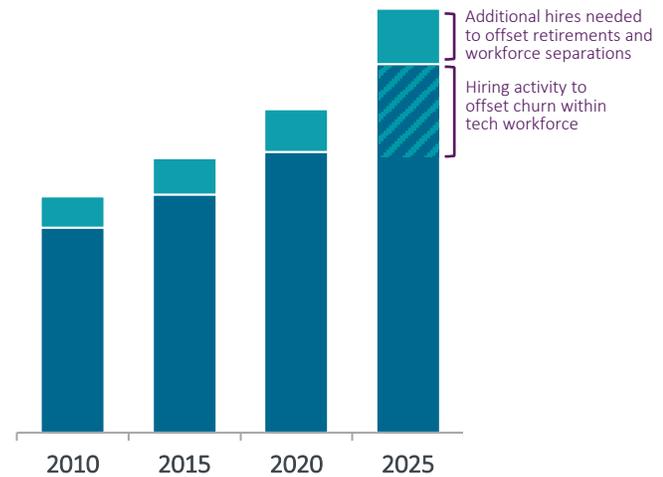
KEY FINDINGS

KEY POINTS

- By 2025, projections Lightcast put the base of tech occupation employment at nearly 1,072,247 (note: this covers occupations only and represents a subset of the net tech employment figure presented previously).
- Calculating future workforce needs over the next decade 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 emerging technologies. Secondly, there is a retirement factor, with a portion of the workforce transitioning away from the workforce permanently. And lastly, there is a segment leaving the workforce for some other reason, also referred to as separations. These may stem from a career change, a return to school, family pursuits, or other. Changes to any of these variables can boost or shrink future workforce projections.
- Job posting data provides another layer of insight into the tech job market outlook. Because Canadian government labour taxonomies, referred to as National Occupation Classification (NOCs), lag the speed with which the market changes, job posting data provides a more up-to-date look at the skills and experiences employers seek.
- Mirroring the situation with economies across the globe during the height of the pandemic, quarterly tech job postings among Canadian employers fell during 2020. Postings then rebounded with many employers resuming hiring activity in conjunction with a recovering Canadian economy. During the time period Q1-Q4 2021, employer job postings increased 51,826 year-over-year, the equivalent of a 60% increase.
- The increase in job postings continues but at a slower rate when compared to the previous year. During the Q1-Q4 period of 2022, employer job postings increased 24,845 year-over-year, the equivalent of a 18% increase. For context, overall job postings across all occupation categories in the Canadian economy increased 45% during that period.
- The top four occupation categories for job postings are software engineers and designers, IT support and network technicians, Database analysts and administrators, and Computer and Information System Managers. Combined, these categories contributed more than half of employer hiring activity during the period. See *methodology notes regarding the use of job posting data*.
- Slightly more than half of employer job postings for tech jobs during 2022 specified a required level of work experience, with the remaining 40% unspecified. Many employers continue to evaluate their recruiting practices to cast a wider net and accept more candidates for consideration, such as those with industry-recognized certification rather than traditional university degrees.

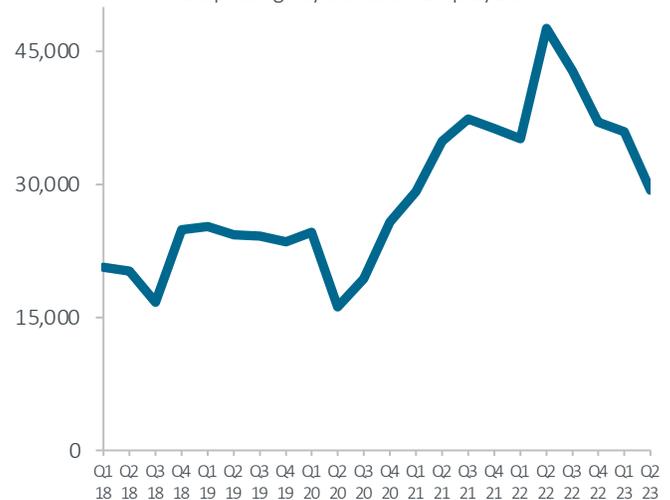
TECH OCCUPATION EMPLOYMENT OUTLOOK

Workforce need = annual replacement rate + growth rate



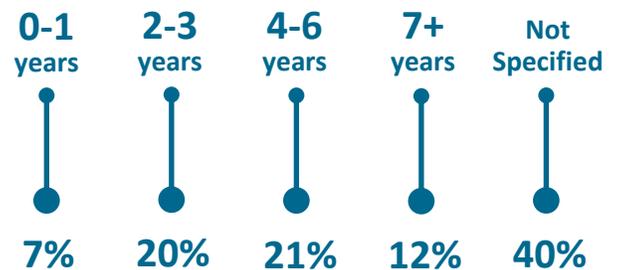
AGGREGATE QUARTERLY JOB POSTINGS FOR TECH OCCUPATIONS

Job postings by Canadian employers



TECH HIRING BY REQUESTED YEARS OF EXPERIENCE

Job postings by Canadian employers, Q1-Q4 2022



Source: Lightcast | Canadian Government Statistics | CompTIA

KEY FINDINGS

PROVINCE NET TECH EMPLOYMENT

- The top provinces when it comes to projected Net Tech Employment are Ontario and Quebec. The greatest number of jobs is projected to be added in Ontario in 2023.
- When compared to the other provinces Ontario stands apart for the number of jobs in tech with 47.1% of Canadian projected net tech employment coming from this province. This is consistent with Ontario's population ratio (about 39% of the country), and economic impact (about 38%).
- Anchored by Canada's most populous city, Toronto, the province of Ontario also accounted for a significant portion of tech employment gains during 2023.

PROVINCE HIRING ACTIVITY BY EMPLOYERS

- As measured by employer job posting volumes, every province across Canada increased its hiring activity for technology professionals.
- Employers based in Ontario increased hiring activity by +12,810 job postings during 2022, translating to a year-over-year growth rate of 18%.

PROVINCE 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 about 8%, Ontario has the highest concentration of net tech employment as a percentage of its overall employment base. Quebec and British Columbia follow in the rankings.

PROVINCE TECH BUSINESS ESTABLISHMENTS

- A large, dynamic base of business establishments, also referred to as company locations, is another measure of a healthy tech sector. Tech business establishments tend to be concentrated in population centers and in locations that are close to the customers they serve.

- Ontario: 29,195
- Quebec: 11,118
- British Columbia: 6,388
- Alberta: 5,103

- Beyond numerical measures based on size, relative measures based on the size of the province economy reveal additional insight. Overall, an estimated 6.9% of Ontario's economy is attributed to the tech sector, as defined by this report. In comparison, approximately 2.2% of Saskatchewan's economy is attributed to the tech sector.

TOP PROVINCES BY NET TECH EMPLOYMENT

[2023 projected]

1.	Ontario	646,309
2.	Quebec	307,486
3.	British Columbia	194,304
4.	Alberta	109,382
5.	Manitoba	32,305
6.	Nova Scotia	25,272
7.	Saskatchewan	19,964
8.	New Brunswick	18,803
9.	Newfoundland and Labrador	10,285
10.	Prince Edward Island	3,964

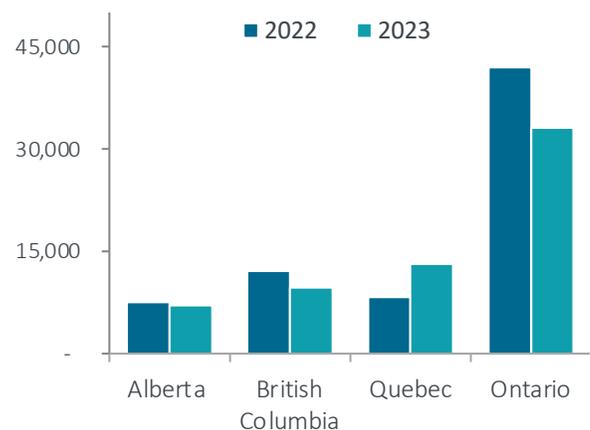
TOP PROVINCES BY NET NEW TECH EMPLOYMENT JOB GAINS

[2023 projected]

1.	Ontario	+ 6,884
2.	British Columbia	+ 4,831
3.	Quebec	+ 3,440
4.	Alberta	+ 922
5.	Manitoba	+ 636
6.	Nova Scotia	+ 303
7.	New Brunswick	+ 220
8.	Newfoundland and Labrador	+ 177
9.	Saskatchewan	+ 110
10.	Prince Edward Island	+ 81

PROVINCE EMPLOYER HIRING ACTIVITY

employer tech job postings, Q1-Q2 period YoY



Source: Lightcast | Canadian Government Statistics | CompTIA

KEY FINDINGS

METRO AREA NET TECH EMPLOYMENT

- The top three metropolitan areas are projected to employ a little more than 752,894 tech industry and tech occupation workers, or about 1 in 2 tech workers in the nation.
- Toronto is the largest metropolitan area in the country by a wide margin. It follows that it also has the largest base of tech employment.
- The Toronto metro area will also see the highest increase in net tech employment during year at a projected +4,080 new positions.

METRO HIRING ACTIVITY BY EMPLOYERS

- As the largest employment hubs in each province, hiring activity in major metropolitan areas closely tracks with province-level data. For example, the volume of employer tech job postings in British Columbia increased 26% during the Q1-Q4 2022 period when compared to 2021 and there was a 26% increase for Vancouver.

METRO 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 10.3%, Toronto has the highest concentration of net tech employment as a percentage of its overall employment.
- Compared to the national tech employment concentration benchmark of 6.6%, four of the metro areas had a higher rate, confirming the importance of technology to a far-reaching set of cities across the country.

METRO 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. Tech business establishments tend to be concentrated in population centers and in locations that are close to the customers they serve.

- Toronto: 19,757
- Montreal: 7,916
- Vancouver: 4,580
- Calgary: 2,964
- Edmonton: 1,498

TOP METROS BY NET TECH EMPLOYMENT

[2023 projected]

1.	Toronto	394,488
2.	Montreal	211,866
3.	Vancouver	146,540
4.	Calgary	61,649
5.	Edmonton	36,414

TOP METROS BY NET TECH EMPLOYMENT JOB GAINS

[2023 projected]

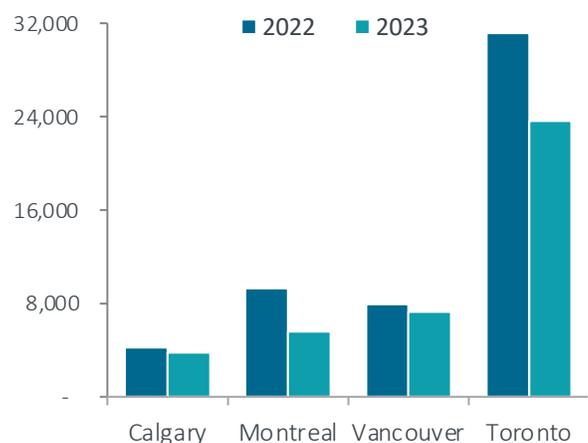
1.	Toronto	+ 4,080
2.	Vancouver	+ 3,848
3.	Montreal	+ 2,168
4.	Calgary	+574
5.	Edmonton	+279

TOP METROS BY NET TECH EMPLOYMENT AS A % OF LOCAL EMPLOYMENT

1.	Toronto	10.3%
2.	Vancouver	8.6%
3.	Montreal	8.5%
4.	Calgary	6.9%
5.	Edmonton	4.4%

METRO AREA EMPLOYER HIRING ACTIVITY

employer tech job postings, Q1-Q2 period YoY



Source: Lightcast | Canadian Government Statistics | CompTIA

NATIONAL SNAPSHOT

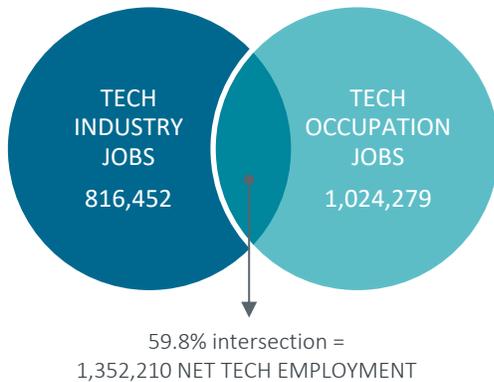
Canada



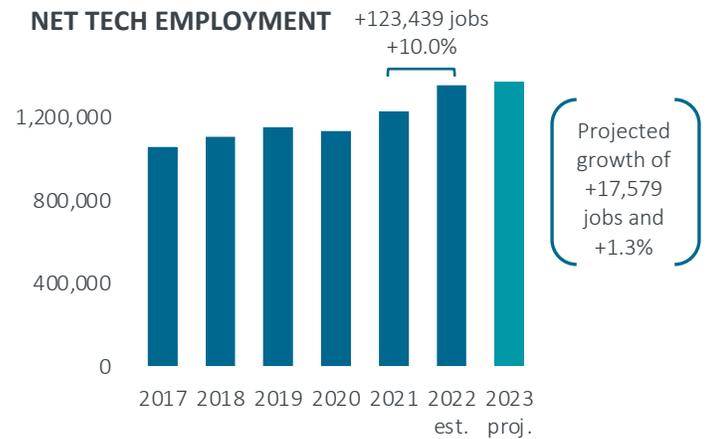
STATE OF TECHNOLOGY SUMMARY

- 1,352,210 NET TECH EMPLOYMENT¹
- 6.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 54,746 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- \$113,406B ECONOMIC IMPACT CAD
- 162,497 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 23.6% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

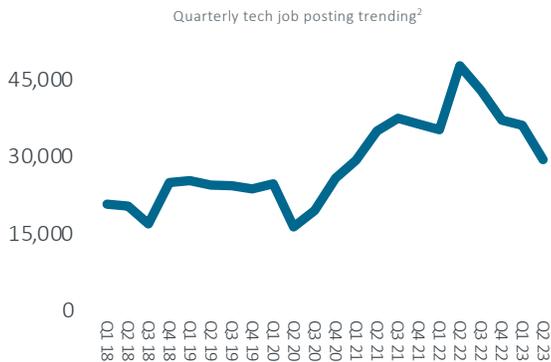
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

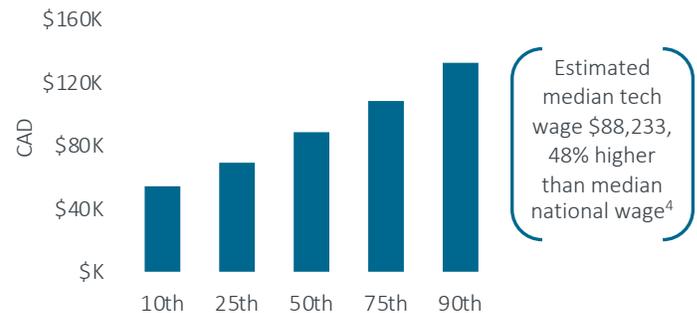
	2022	2023 % Change ³
Software and Web Developers	348,110	+1.4%
Systems Analysts and Cybersecurity ²	275,146	+2.3%
IT Support and Network Technicians	169,905	+1.6%
CIOs, IT Managers and IT Project Managers	95,508	-1.2%
Database, Data Analysts and Data Science	65,713	-0.8%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	542,715	2.3%
Telecom and Internet Services	154,822	0.3%
Software [product]	62,384	3.4%
Tech Manufacturing	56,530	-4.1%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

PROVINCE SNAPSHOTS

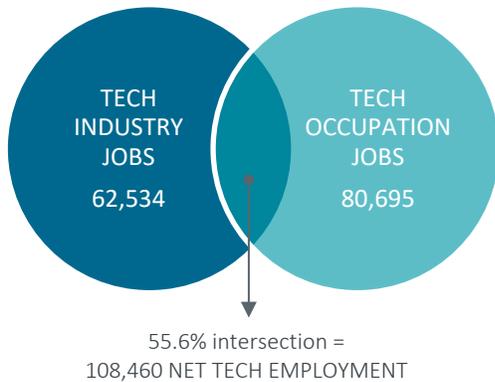
Alberta



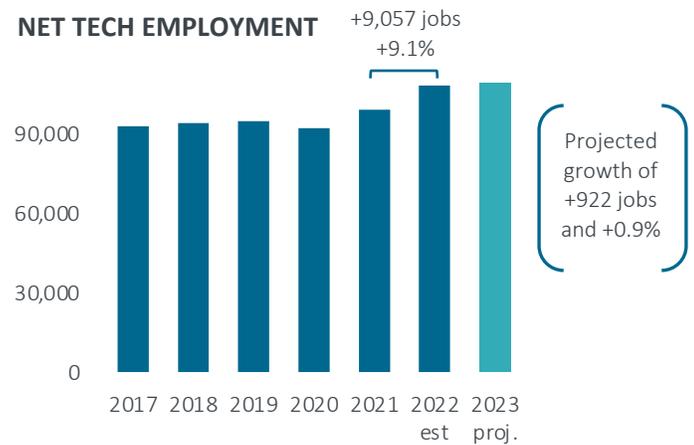
STATE OF TECHNOLOGY SUMMARY

- 108,460 NET TECH EMPLOYMENT¹
- 4.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 5,103 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 15,447 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 3,391 EMERGING TECH JOB POSTINGS [job roles + skills]
- 22.0% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

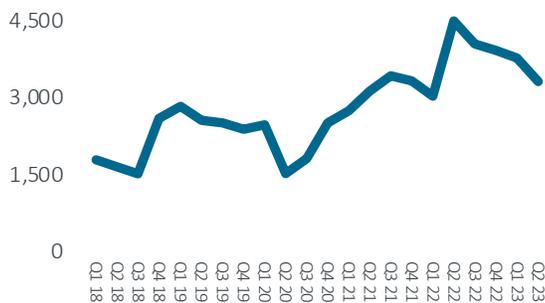


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

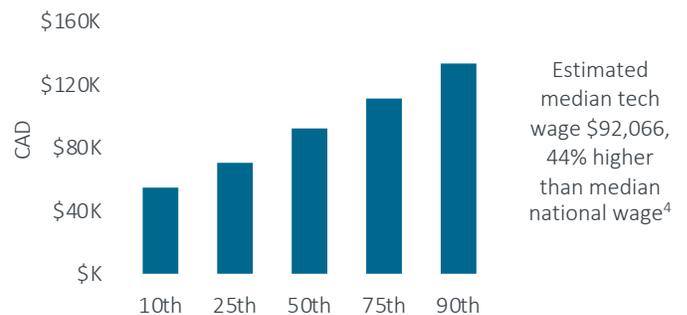
	2022	2023 % Change ³
Systems Analysts and Cybersecurity ²	25,048	+2.7%
Software and Web Developers	23,019	+0.2%
IT Support and Network Technicians	13,784	+0.6%
CIOs, IT Managers and IT Project Managers	6,888	-1.0%
Database, Data Analysts and Data Science	6,366	-0.7%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	42,472	1.0%
Telecom and Internet Services	13,617	-0.3%
Tech Manufacturing	3,619	-2.1%
Software [product]	2,825	2.8%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

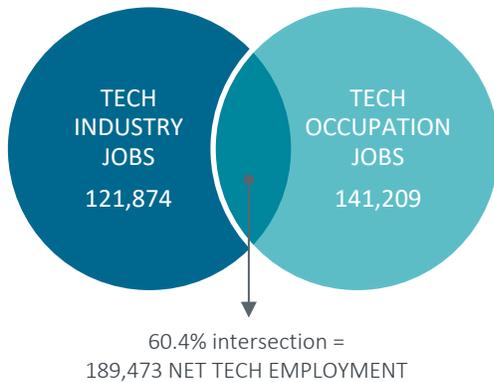
British Columbia



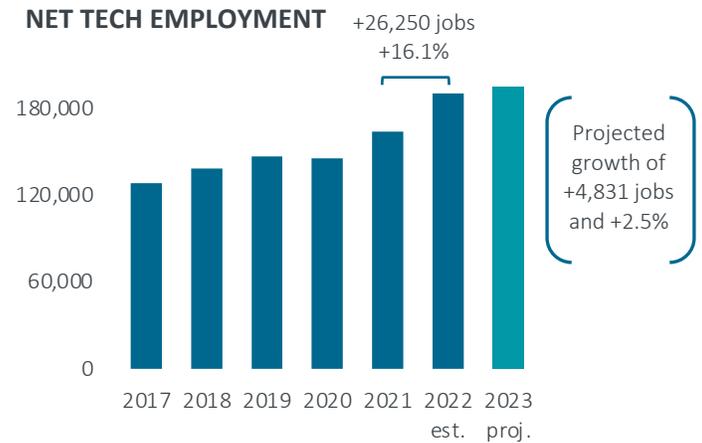
STATE OF TECHNOLOGY SUMMARY

- 189,473 NET TECH EMPLOYMENT¹
- 6.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 6,388 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 23,952 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 5,451 EMERGING TECH JOB POSTINGS [job roles + skills]
- 22.8% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

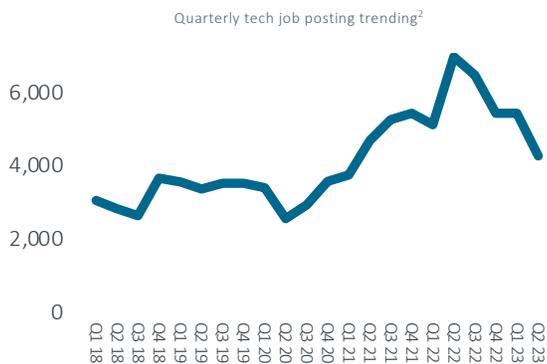
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

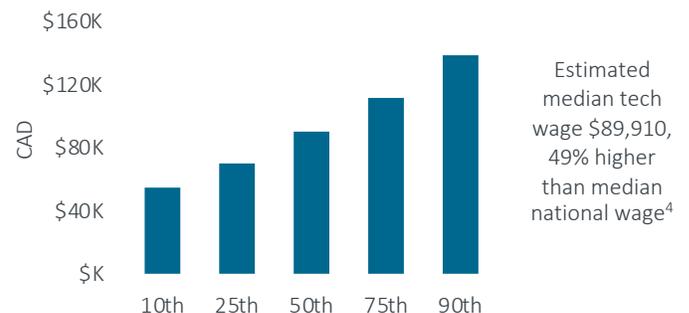
	2022	2023 % Change ³
Software and Web Developers	61,201	+3.0%
Systems Analysts and Cybersecurity ²	28,101	+3.9%
IT Support and Network Technicians	24,162	+2.2%
CIOs, IT Managers and IT Project Managers	12,135	+0.0%
Database, Data Analysts and Data Science	7,048	-1.0%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	79,904	4.7%
Telecom and Internet Services	23,864	0.6%
Software [product]	11,614	2.7%
Tech Manufacturing	6,492	-2.2%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

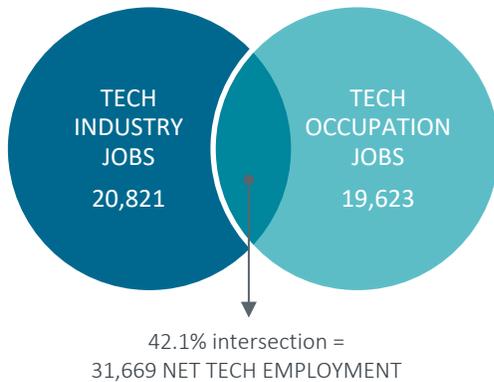
Manitoba



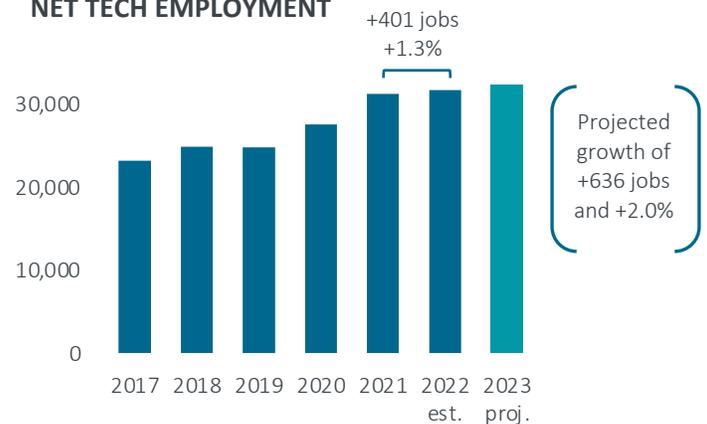
STATE OF TECHNOLOGY SUMMARY

- 31,669 NET TECH EMPLOYMENT¹
- 4.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 750 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 3,160 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 529 EMERGING TECH JOB POSTINGS [job roles + skills]
- 16.7% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

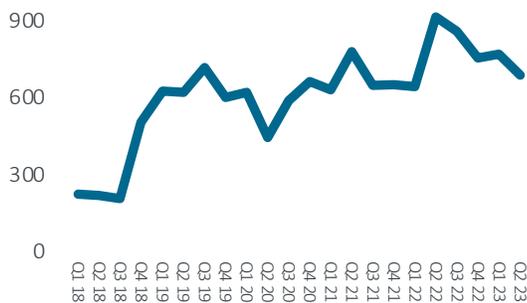


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



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LEADING TECH OCCUPATIONS

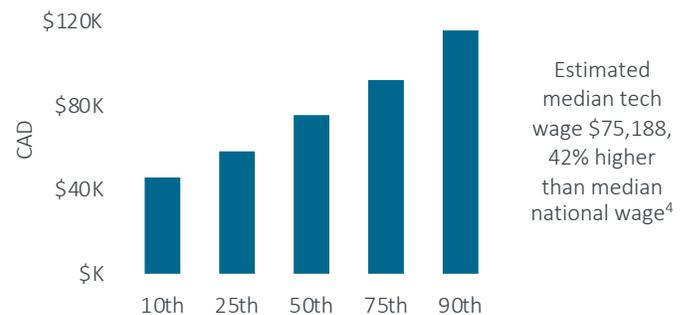
	2022	2023 % Change ³
Software and Web Developers	5,861	+0.7%
IT Support and Network Technicians	5,042	+1.0%
Systems Analysts and Cybersecurity ²	4,595	+0.8%
CIOs, IT Managers and IT Project Managers	1,512	-2.0%
Database, Data Analysts and Data Science	1,020	-4.0%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
Telecom and Internet Services	12,635	4.7%
IT Services + Custom Software Services	6,379	2.0%
Software [product]	1,321	10.0%
Tech Manufacturing	485	-3.5%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

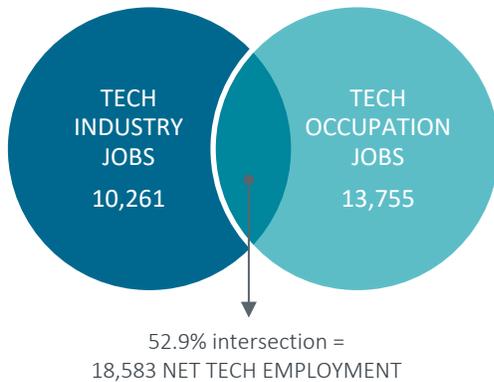
New Brunswick



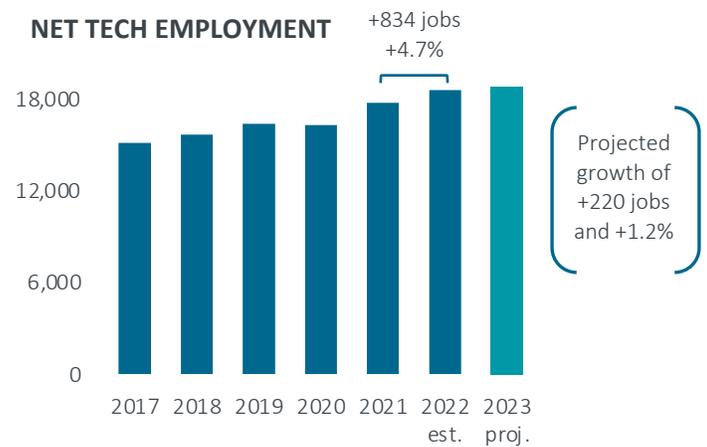
STATE OF TECHNOLOGY SUMMARY

- 18,583 NET TECH EMPLOYMENT¹
- 4.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 454 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 2,372 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 420 EMERGING TECH JOB POSTINGS [job roles + skills]
- 17.7% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

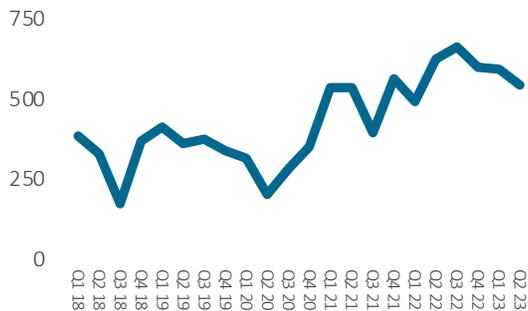


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

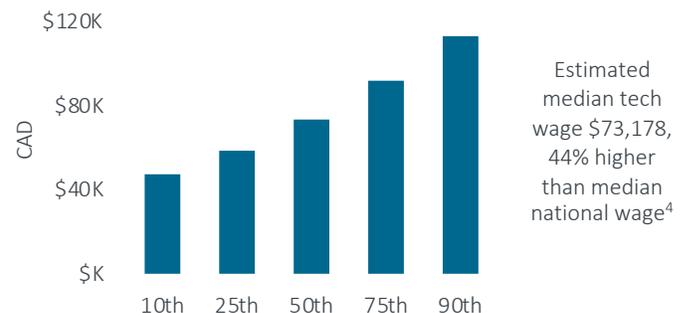
	2022	2023 % Change ³
Software Engineers and Web Developers	3,774	+0.1%
IT Support and Network Technicians	3,670	+0.4%
Systems Analysts and Cybersecurity ²	3,320	+2.9%
CIOs, IT Managers and IT Project Managers	1,400	-0.8%
Database, Data Analysts and Data Science	665	+1.1%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
Telecom and Internet Services	4,789	3.0%
IT Services + Custom Software Services	4,702	0.1%
Tech Manufacturing	455	-5.3%
Software [product]	303	-4.5%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

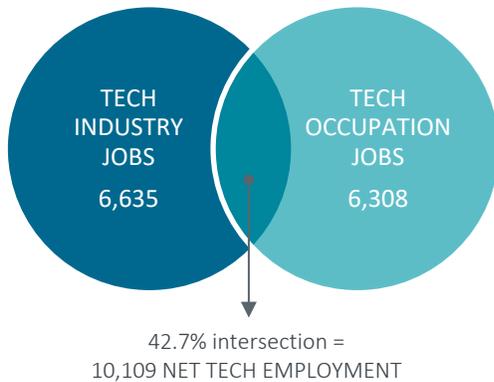
Newfoundland & Labrador



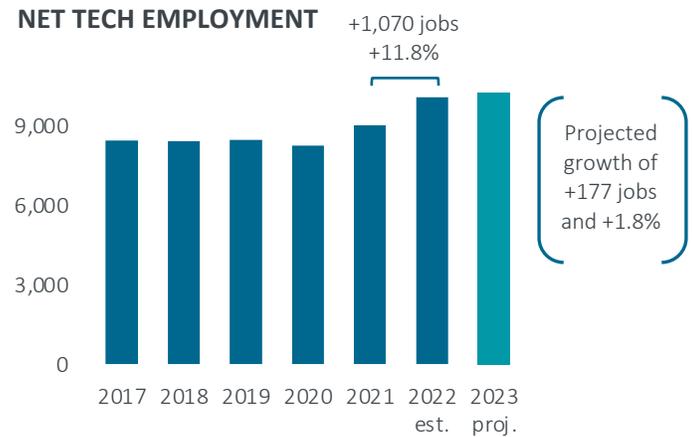
STATE OF TECHNOLOGY SUMMARY

- 10,109 NET TECH EMPLOYMENT¹
- 4.2% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 261 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 864 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 112 EMERGING TECH JOB POSTINGS [job roles + skills]
- 13.0% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

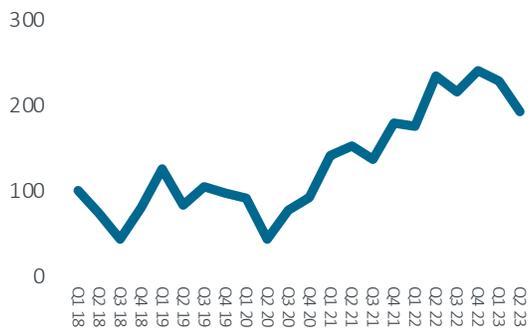


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

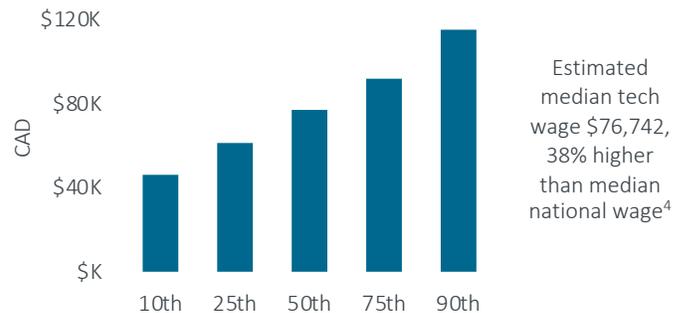
	2022	2023 % Change ³
Software and Web Developers	1,918	+3.5%
IT Support and Network Technicians	1,630	+1.2%
Systems Analysts and Cybersecurity ²	1,310	-0.1%
CIOs, IT Managers and IT Project Managers	566	-2.3%
Database, Data Analysts and Data Science	207	-5.5%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
Telecom and Internet Services	3,920	2.7%
IT Services + Custom Software Services	2,325	2.9%
Tech Manufacturing	304	3.1%
Software [product]	77	-8.0%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

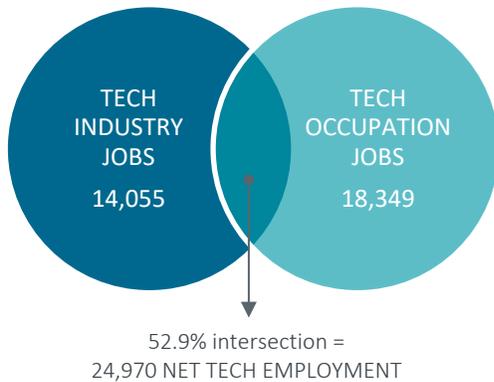
Nova Scotia



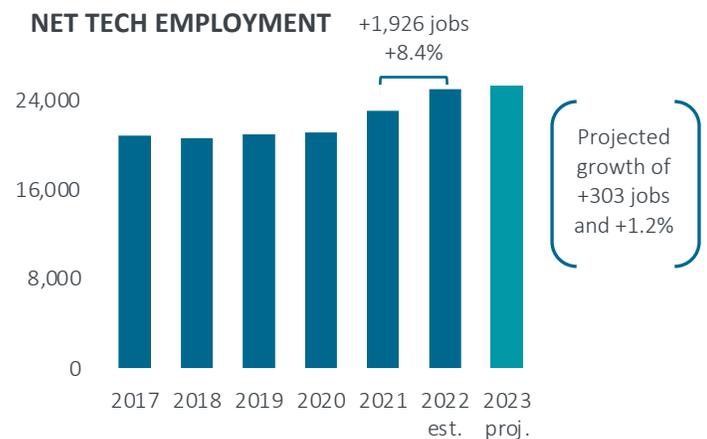
STATE OF TECHNOLOGY SUMMARY

- 24,970 NET TECH EMPLOYMENT¹
- 4.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 696 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 4,251 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 841 EMERGING TECH JOB POSTINGS [job roles + skills]
- 19.8% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

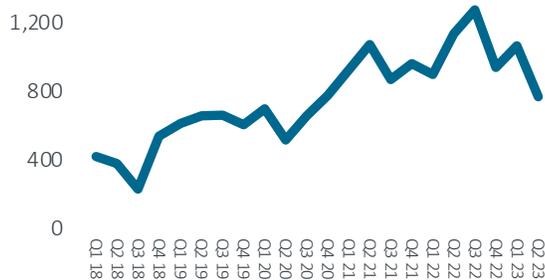


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

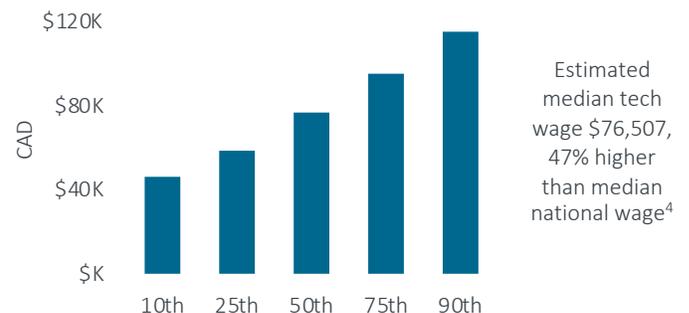
	2022	2023 % Change ³
Software and Web Developers	5,656	+0.1%
Systems Analysts and Cybersecurity ²	4,620	+3.0%
IT Support and Network Technicians	4,484	+1.8%
CIOs, IT Managers and IT Project Managers	1,436	-2.5%
Database, Data Analysts and Data Science	838	-1.3%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	7,727	1.8%
Telecom and Internet Services	4,794	1.6%
Tech Manufacturing	1,230	1.4%
Software [product]	293	-2.8%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

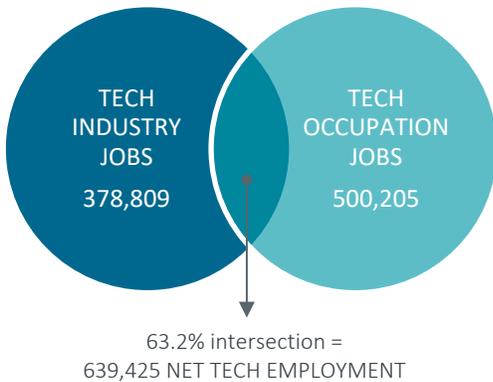
Ontario



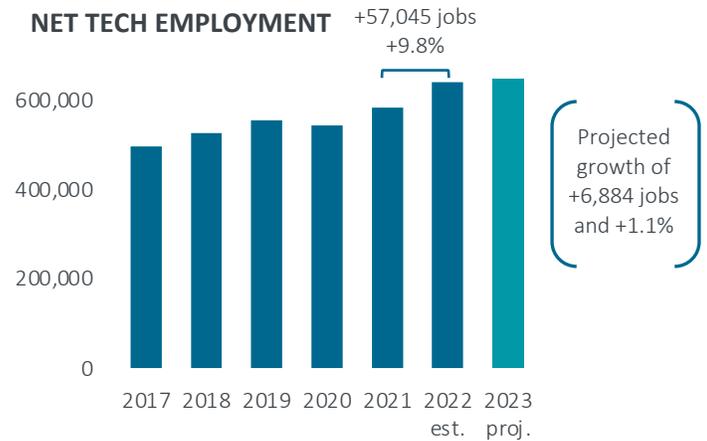
STATE OF TECHNOLOGY SUMMARY

- 639,425 NET TECH EMPLOYMENT¹
- 8.0% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 29,195 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 83,131 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 22,717 EMERGING TECH JOB POSTINGS [job roles + skills]
- 27.3% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

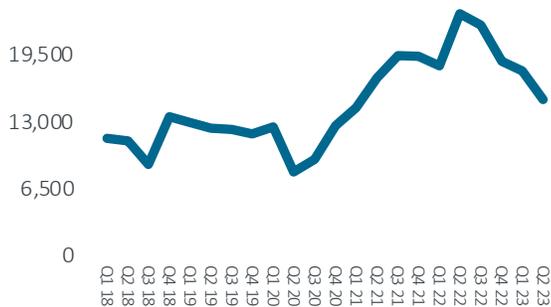


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

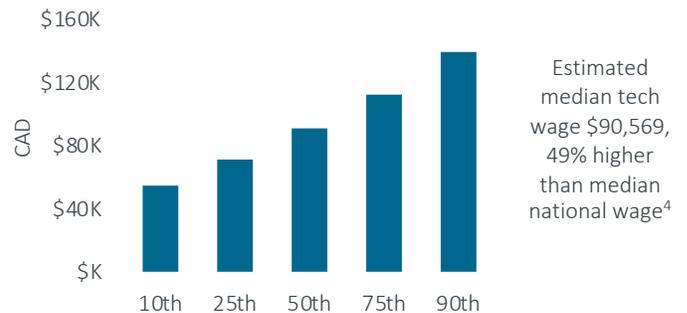
	2022	2023 % Change ³
Software Engineers and Web Developers	172,106	+1.4%
Systems Analysts and Cybersecurity ²	137,180	+2.1%
IT Support and Network Technicians	73,423	+1.6%
CIOs, IT Managers and IT Project Managers	51,772	-1.1%
Database, Data Analysts and Data Science	37,527	-0.4%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	264,230	1.9%
Telecom and Internet Services	54,323	-1.2%
Software [product]	32,428	4.1%
Tech Manufacturing	27,828	-5.4%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

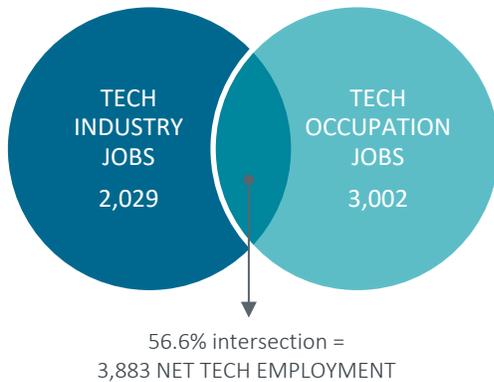
Prince Edward Island



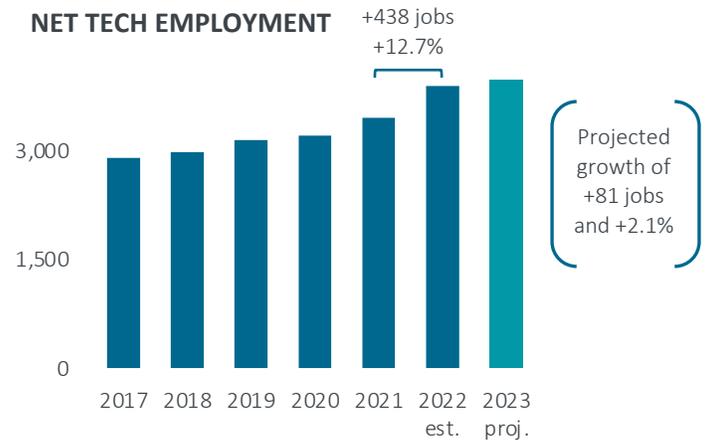
STATE OF TECHNOLOGY SUMMARY

- 3,883 NET TECH EMPLOYMENT¹
- 4.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 134 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 451 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 63 EMERGING TECH JOB POSTINGS [job roles + skills]
- 14.0% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details

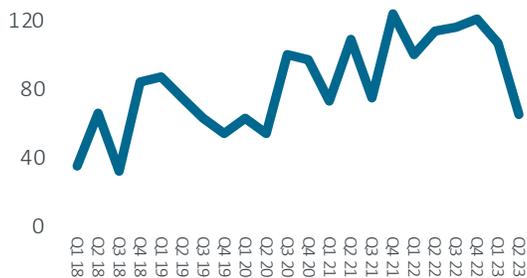


NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

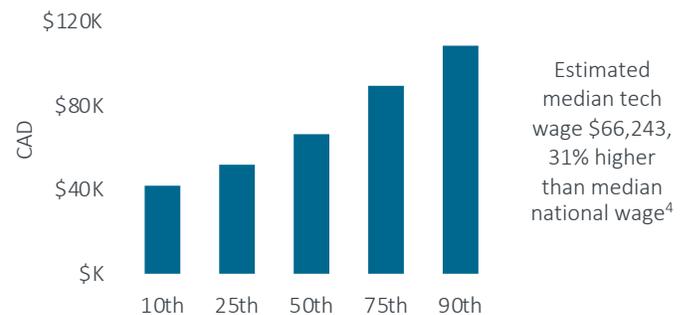
	2022	2023 % Change ³
Software and Web Developers	983	+1.0%
IT Support and Network Technicians	770	+1.3%
Systems Analysts and Cybersecurity ²	708	+3.9%
CIOs, IT Managers and IT Project Managers	224	+1.6%
Database, Data Analysts and Data Science	117	+1.0%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	1,290	1.5%
Telecom and Internet Services	596	5.8%
Tech Manufacturing	104	1.7%
Software [product]	16	-27.9%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

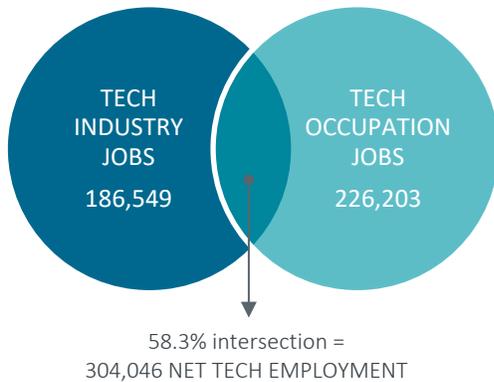
Quebec



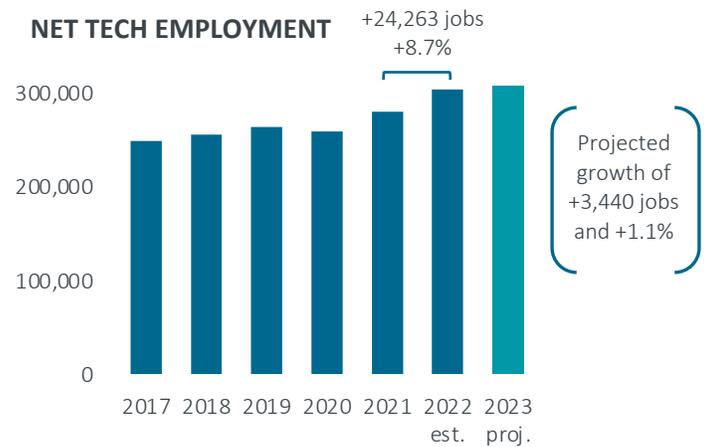
STATE OF TECHNOLOGY SUMMARY

- 304,046 NET TECH EMPLOYMENT¹
- 6.7% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 11,118 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 23,610 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 4,322 EMERGING TECH JOB POSTINGS [job roles + skills]
- 18.3% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

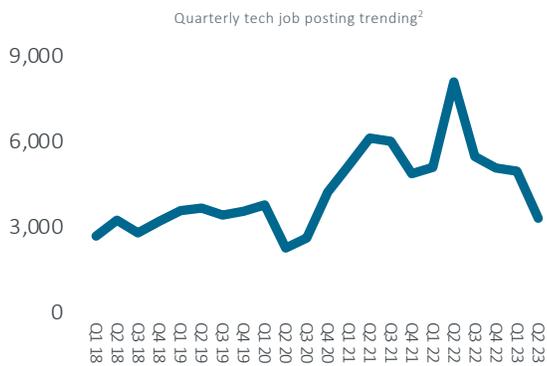
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

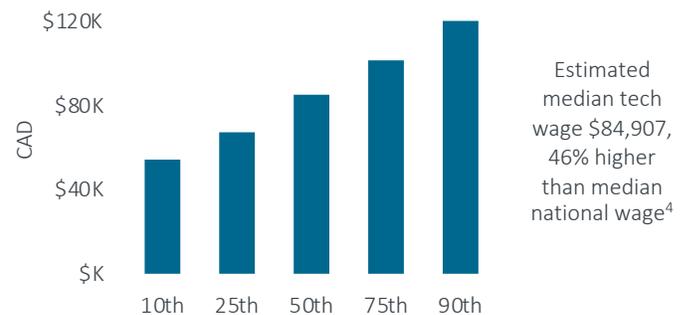
	2022	2023 % Change ³
Software and Web Developers	70,295	+0.9%
Systems Analysts and Cybersecurity ²	66,035	+1.9%
IT Support and Network Technicians	39,413	+1.6%
CIOs, IT Managers and IT Project Managers	17,919	-2.1%
Database, Data Analysts and Data Science	11,211	-1.8%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	127,841	2.0%
Telecom and Internet Services	31,013	0.5%
Tech Manufacturing	15,365	-3.7%
Software [product]	12,329	1.5%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

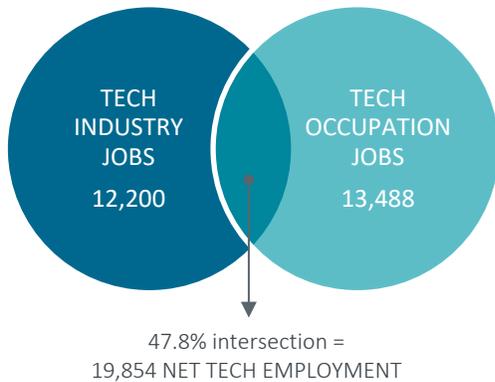
Saskatchewan



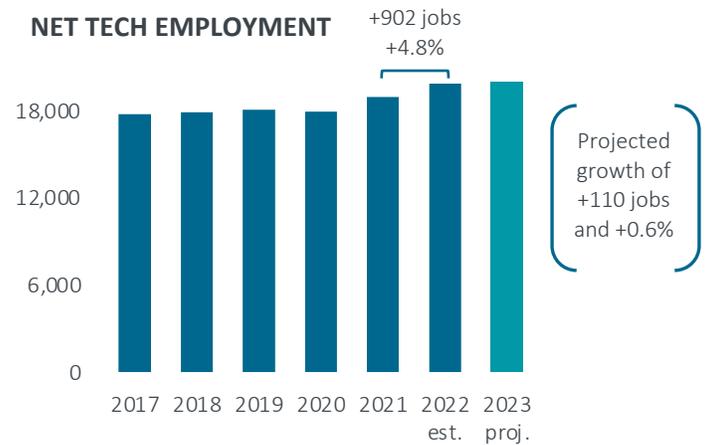
STATE OF TECHNOLOGY SUMMARY

- 19,854 NET TECH EMPLOYMENT¹
- 3.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 601 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 4,787 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 579 EMERGING TECH JOB POSTINGS [job roles + skills]
- 12.1% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

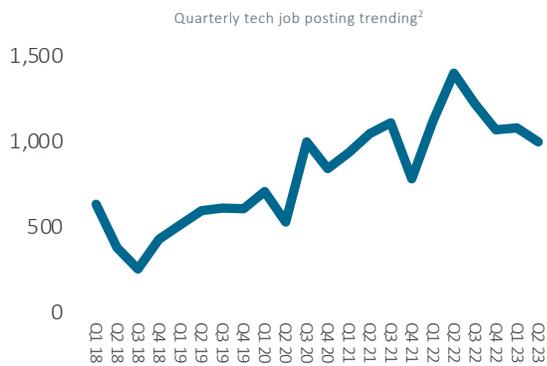
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

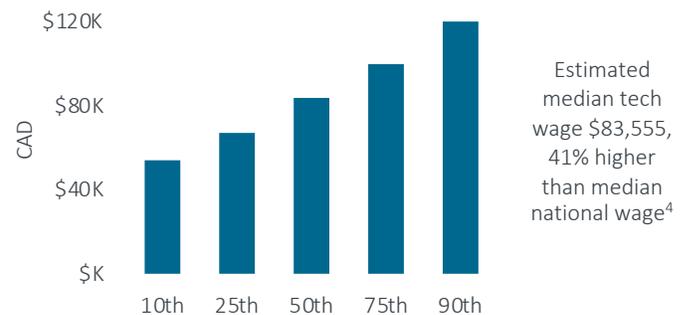
	2022	2023 % Change ³
Systems Analysts and Cybersecurity ²	3,884	+1.5%
Software Engineers and Web Developers	3,163	-0.9%
IT Support and Network Technicians	3,050	+1.6%
CIOs, IT Managers and IT Project Managers	1,416	-2.7%
Database, Data Analysts and Data Science	583	-3.0%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	5,636	2.8%
Telecom and Internet Services	4,802	-1.6%
Software [product]	1,172	9.0%
Tech Manufacturing	581	-5.9%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

METRO AREA SNAPSHOTS

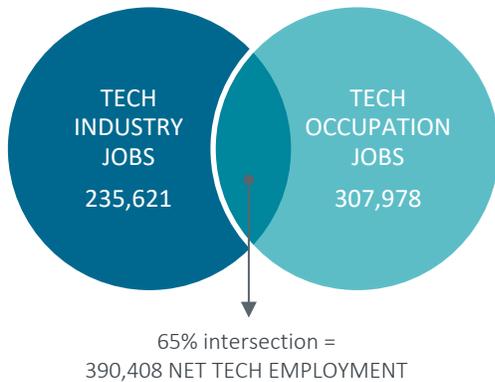
Toronto



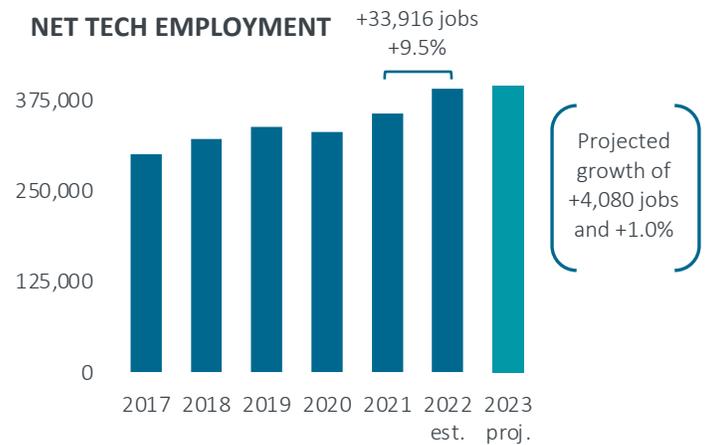
STATE OF TECHNOLOGY SUMMARY

- 390,408 NET TECH EMPLOYMENT¹
- 10.3% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 19,757 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 61,030 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 17,348 EMERGING TECH JOB POSTINGS [job roles + skills]
- 28.4% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

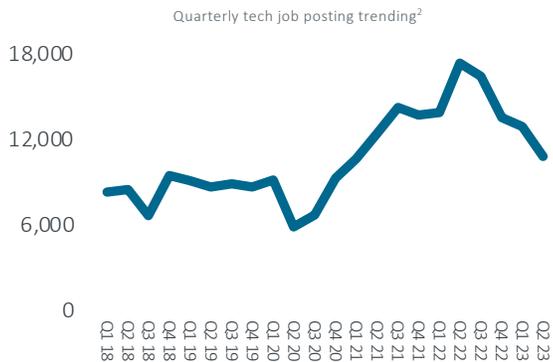
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

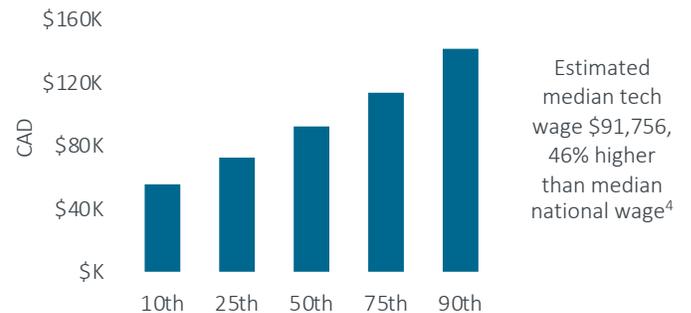
	2022	2023 % Change ³
Software Engineers and Web Developers	106,476	+1.7%
Systems Analysts and Cybersecurity ²	92,398	+2.4%
IT Support and Network Technicians	38,176	+0.8%
CIOs, IT Managers and IT Project Managers	32,038	-1.4%
Database, Data Analysts and Data Science	24,008	-0.3%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	168,545	1.7%
Telecom and Internet Services	35,484	-1.3%
Software [product]	17,505	4.7%
Tech Manufacturing	14,086	-5.8%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

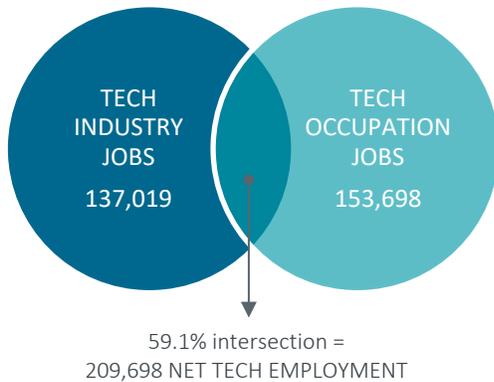
Montreal



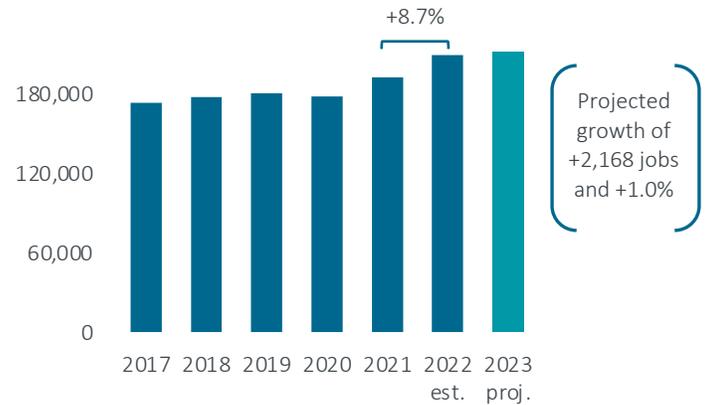
STATE OF TECHNOLOGY SUMMARY

- 209,698 NET TECH EMPLOYMENT¹
- 8.5% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 7,916 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 16,650 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 3,501 EMERGING TECH JOB POSTINGS [job roles + skills]
- 21.0% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

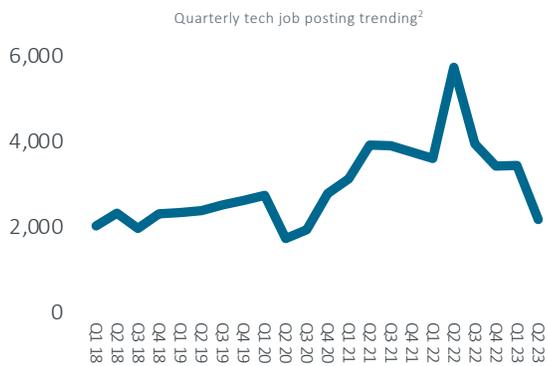
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

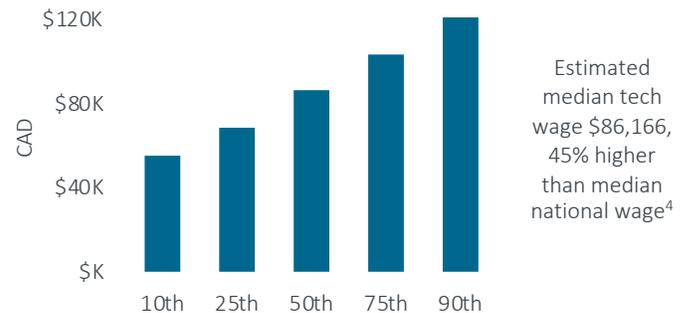
	2022	2023 % Change ³
Software and Web Developers	51,217	+1.1%
Systems Analysts and Cybersecurity ²	42,128	+1.6%
IT Support and Network Technicians	24,965	+1.4%
CIOs, IT Managers and IT Project Managers	12,586	-2.6%
Database, Data Analysts and Data Science	8,425	-1.6%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	94,405	2.0%
Telecom and Internet Services	22,346	0.0%
Tech Manufacturing	10,234	-3.6%
Software [product]	10,034	1.7%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

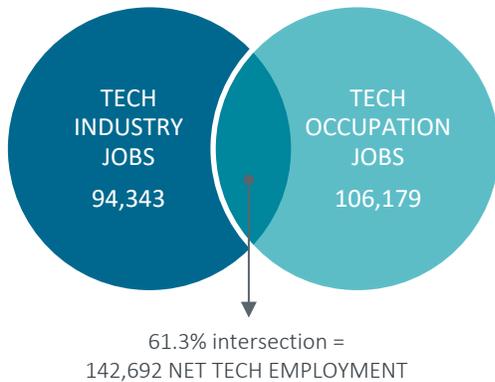
Vancouver



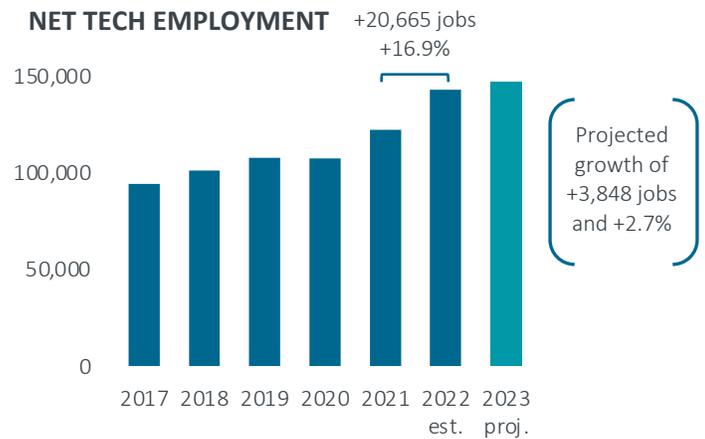
STATE OF TECHNOLOGY SUMMARY

- 142,692 NET TECH EMPLOYMENT¹
- 8.6% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 4,580 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 18,991 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 4,677 EMERGING TECH JOB POSTINGS [job roles + skills]
- 24.6% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

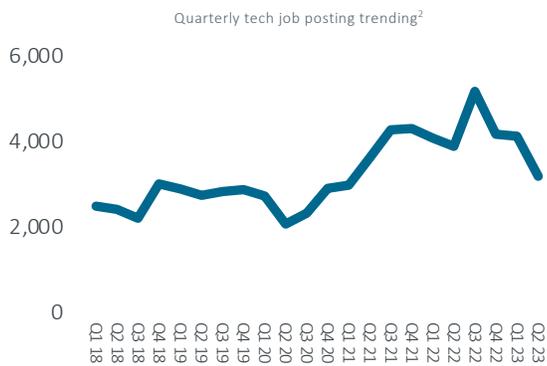
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

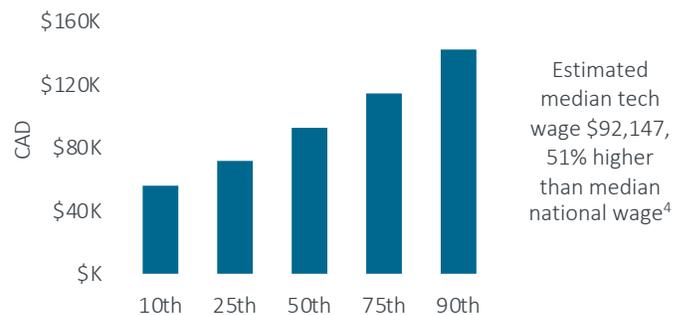
	2022	2023 % Change ³
Software Engineers and Web Developers	49,594	+3.3%
Systems Analysts and Cybersecurity ²	20,386	+4.1%
IT Support and Network Technicians	16,322	+2.0%
CIOs, IT Managers and IT Project Managers	8,788	-0.1%
Database, Data Analysts and Data Science	5,044	-0.5%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	60,975	4.8%
Telecom and Internet Services	18,454	1.0%
Software [product]	9,661	2.6%
Tech Manufacturing	5,253	-2.4%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

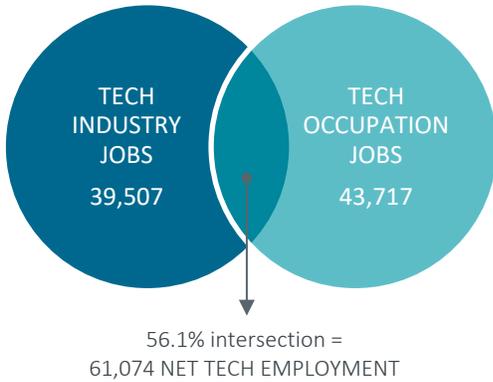
Calgary



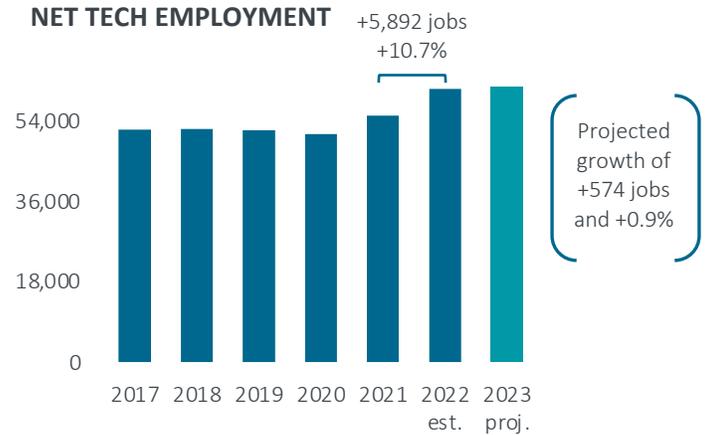
STATE OF TECHNOLOGY SUMMARY

- 61,074 NET TECH EMPLOYMENT¹
- 6.9% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 2,964 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 8,730 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 2,134 EMERGING TECH JOB POSTINGS [job roles + skills]
- 24.4% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

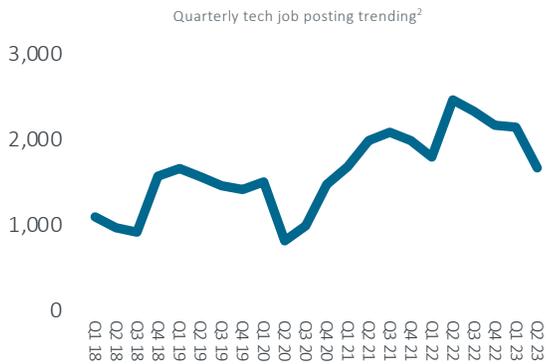
¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



NET TECH EMPLOYMENT



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS



LEADING TECH OCCUPATIONS

	2022	2023 % Change ³
Systems Analysts and Cybersecurity ²	14,500	+2.8%
Software and Web Developers	12,797	-1.0%
IT Support and Network Technicians	6,581	-0.2%
CIOs, IT Managers and IT Project Managers	3,925	-0.3%
Database, Data Analysts and Data Science	3,841	-0.8%

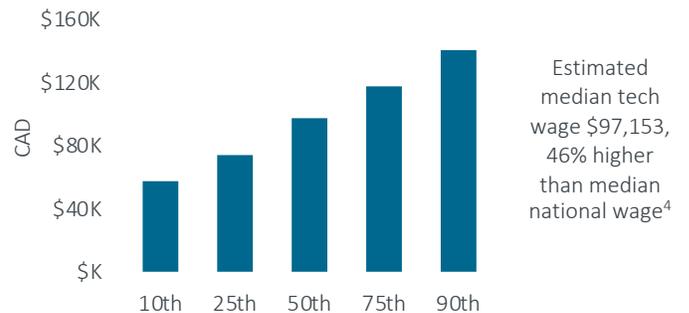
²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	27,692	2.2%
Telecom and Internet Services	8,372	0.6%
Tech Manufacturing	2,021	-2.1%
Software [product]	1,422	1.5%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

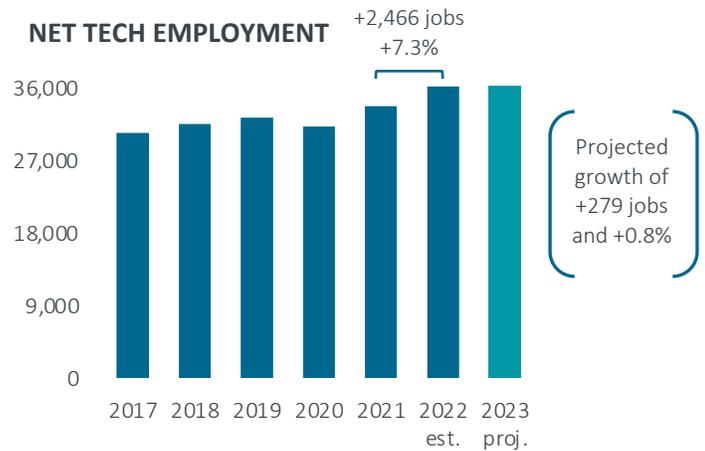
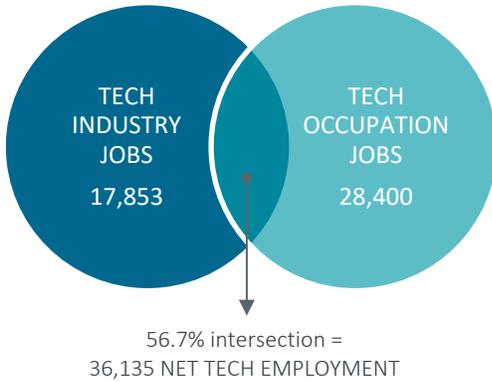
Edmonton



STATE OF TECHNOLOGY SUMMARY

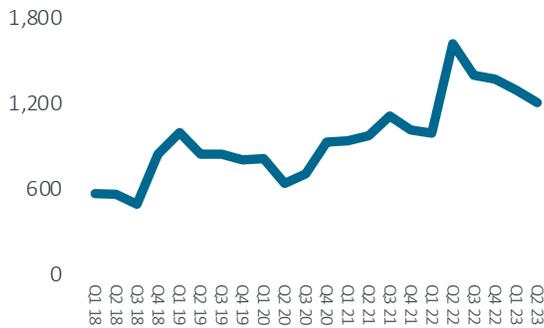
- 36,135 NET TECH EMPLOYMENT¹
- 4.4% NET EMPLOYMENT AS A % OF OVERALL WORKFORCE
- 1,498 TECH BUSINESS ESTABLISHMENTS [firms with payroll]
- 5,366 EMPLOYER JOB POSTINGS [2022 total for tech occupations]
- 960 EMERGING TECH JOB POSTINGS [job roles + skills]
- 17.9% EMERGING TECH JOB POSTINGS AS A % OF TOTAL

¹Net of tech industry + tech occupation + self-employed | Sources: CompTIA analysis of Lightcast data, Canadian Government Statistics, and others | Data estimates cover 2022-2023 time period or most recently available | See report Methodology for details



EMPLOYER HIRING ACTIVITY VIA JOB POSTINGS

Quarterly tech job posting trending²



²CompTIA analysis of Lightcast employer job posting data | core tech jobs

LEADING TECH OCCUPATIONS

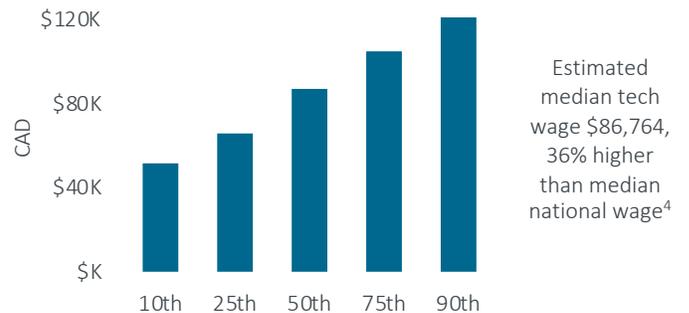
	2022	2023 % Change ³
Systems Analysts and Cybersecurity ²	8,464	+2.4%
Software Engineers and Web Developers	8,407	+2.1%
IT Support and Network Technicians	5,068	+0.9%
CIOs, IT Managers and IT Project Managers	2,159	-1.3%
Database, Data Analysts and Data Science	2,027	-0.7%

²The cybersecurity job roles does not yet have a dedicated occupation category, but rather spans several categories. For reporting purposes, it is grouped with Systems Analysts

LEADING TECH INDUSTRY SECTORS [by employment]

	2022	2023 % Change ³
IT Services + Custom Software Services	11,422	-1.5%
Telecom and Internet Services	4,004	-2.1%
Software [product]	1,274	4.2%
Tech Manufacturing	1,151	-2.8%

TECH OCCUPATION WAGES [by percentile]



³2023 projection | ⁴Wage data subject to revisions and may not be directly comparable to prior years

APPENDIX TABLES

NET TECH EMPLOYMENT	2017	2018	2019	2020	2021	2022	2023 proj.
Canada	1,055,178	1,106,066	1,152,570	1,134,263	1,228,771	1,352,210	1,369,789
Alberta	93,204	94,393	94,958	92,333	99,403	108,460	109,382
British Columbia	127,863	137,769	146,043	144,906	163,223	189,473	194,304
Manitoba	23,200	24,888	24,795	27,565	31,268	31,669	32,305
New Brunswick	15,103	15,679	16,367	16,271	17,750	18,583	18,803
Newfoundland and Labrador	8,456	8,449	8,496	8,285	9,038	10,109	10,285
Nova Scotia	20,802	20,602	20,939	21,085	23,043	24,970	25,272
Ontario	495,785	525,968	554,339	542,491	582,379	639,425	646,309
Prince Edward Island	2,892	2,975	3,141	3,200	3,445	3,883	3,964
Quebec	248,502	255,801	263,468	259,250	279,783	304,046	307,486
Saskatchewan	17,767	17,892	18,071	17,940	18,951	19,854	19,964
Montreal	173,811	177,802	180,846	178,488	192,985	209,698	211,866
Toronto	300,324	320,586	337,468	330,725	356,492	390,408	394,488
Calgary	51,986	52,158	51,826	51,085	55,182	61,074	61,649
Edmonton	30,373	31,460	32,321	31,155	33,669	36,135	36,414
Vancouver	94,016	101,012	107,538	107,251	122,027	142,692	146,540
INDUSTRY EMPLOYMENT	2017	2018	2019	2020	2021	2022	2023 proj.
Canada	648,612	675,977	695,653	699,567	743,245	816,452	829,025
Alberta	57,377	58,079	57,755	56,843	58,900	62,534	62,930
British Columbia	80,137	87,230	90,238	90,157	99,780	121,874	125,919
Manitoba	11,157	13,284	13,605	16,980	19,764	20,821	21,656
New Brunswick	8,350	9,002	9,653	9,478	10,518	10,261	10,374
Newfoundland and Labrador	5,142	5,191	5,288	5,308	5,819	6,635	6,812
Nova Scotia	11,812	11,550	11,706	12,015	13,022	14,055	14,281
Ontario	308,458	321,835	336,429	336,143	349,104	378,809	383,033
Prince Edward Island	1,315	1,367	1,591	1,758	1,871	2,029	2,080
Quebec	153,366	157,126	158,304	159,257	171,881	186,549	188,926
Saskatchewan	10,652	10,466	10,216	10,755	11,654	12,200	12,351
Montreal	114,581	116,425	115,720	116,244	125,950	137,019	138,719
Toronto	193,849	202,008	210,282	209,781	217,335	235,621	237,977
Calgary	33,858	33,930	33,253	33,915	36,291	39,507	40,141
Edmonton	17,953	18,694	19,007	17,987	17,795	17,853	17,624
Vancouver	61,131	66,106	69,053	69,447	77,289	94,343	97,551
OCCUPATION EMPLOYMENT	2017	2018	2019	2020	2021	2022	2023 proj.
Canada	754,921	796,935	839,861	817,239	913,946	1,024,279	1,038,243
Alberta	64,749	65,792	66,659	64,321	71,929	80,695	81,481
British Columbia	90,270	95,707	103,947	103,301	121,415	141,209	144,687
Manitoba	17,035	17,289	17,132	16,331	18,041	19,623	19,705
New Brunswick	10,680	10,966	11,404	11,490	12,619	13,755	13,882
Newfoundland and Labrador	5,280	5,165	5,263	4,991	5,608	6,308	6,380
Nova Scotia	14,692	14,765	15,042	14,902	16,732	18,349	18,537
Ontario	358,559	387,239	412,230	400,887	446,437	500,205	506,817
Prince Edward Island	2,278	2,338	2,420	2,362	2,639	3,002	3,058
Quebec	178,657	184,615	192,202	185,652	204,597	226,203	228,719
Saskatchewan	11,491	11,782	12,241	11,720	12,539	13,488	13,530
Montreal	122,881	126,465	130,175	126,238	139,073	153,698	155,213
Toronto	215,461	235,825	252,194	246,557	276,195	307,978	312,189
Calgary	35,641	36,217	36,272	34,749	38,354	43,717	43,959
Edmonton	21,467	21,860	22,576	22,174	25,614	28,400	28,874
Vancouver	65,463	69,407	75,740	75,653	89,994	106,179	109,013

METHODOLOGY

CLASSIFICATION SYSTEM

State of the Tech Workforce Canada 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. Because *State of the Tech Workforce Canada* analyzes the tech industry by using industry classifications, the report in general focuses on companies and sectors, not individual occupations.

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. The *State of the Tech Workforce Canada* 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 analysis, *State of the Tech Workforce Canada* utilizes National Occupational Classification (NOC) 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. The foundation is the set of technology occupation professionals working in technical positions, such as IT support, network engineering, software development and every related roles. Many of these professionals work for technology companies (60%), but many others are employed by organizations across every industry sector in the Canadian economy (40%).

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. About 24% of the net tech employment total consists of tech industry business professionals.

See page 4 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, *State of the Tech Workforce Canada* focuses on the sectors involved in making, creating, enabling, integrating, or supporting technology, whether as a product or service. At this time, *State of the Tech Workforce Canada* does not include industry sectors categorized primarily as users of technology.

State of the Tech Workforce Canada includes 14 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 *State of the Tech Workforce Canada* are broadly categorized into core information technology (IT) positions and then engineering, repair, technician, and assembly positions. In total, 17 distinct NOCs are used to define the tech occupations found across every industry sector of the economy.

TECH INDUSTRY SECTORS BY NAICS¹

TECH MANUFACTURING

3341	Computer and peripheral equipment manufacturing
3342	Communications equipment manufacturing
3343	Audio and video equipment manufacturing
3344	Semiconductor and other electronic component manufacturing
3345	Navigational, measuring, medical and control instruments manufacturing
3346	Manufacturing and reproducing magnetic and optical media

IT SERVICES

4173	Computer and communications equipment and supplies merchant wholesalers
5415	Computer systems design and related services
8112	Electronic and precision equipment repair and maintenance

TELECOMMUNICATIONS AND INTERNET SERVICES

5173	Wired and wireless telecommunications carriers (except satellite)
5174	Satellite telecommunications
5179	Other telecommunications
5182	Data processing, hosting, and related services

SOFTWARE

5112	Software publishers
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TECH OCCUPATIONS BY NOC²

CORE INFORMATION TECHNOLOGY OCCUPATIONS

10030	Telecommunication carriers managers
20012	Computer and information systems managers
21211	Data scientists
21220	Cybersecurity specialists
21221	Business systems specialists
21222	Information systems specialists
21223	Database analysts and data administrators
21230	Computer systems developers and programmers
21231	Software engineers and designers
21232	Software developers and programmers
21233	Web designers
21234	Web developers and programmers
21311	Computer engineers (except software engineers and designers)
22220	Computer network and web technicians
22221	User support technicians
22222	Information systems testing technicians
72205	Telecommunications equipment installation and cable television service technicians

¹North American Industry Classification System (NAICS)

²National Occupational Classification (NOC)



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