

FOR IMMEDIATE RELEASE

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NOTE: This news release is a summary extract of content from the 3rd Quarter 2022 data update edition of both the Foote Partners' **2022 IT Skills Demand and Pay Trends Report** and **2022 IT Skills and Certification Pay Volatility Index**, two market intelligence trend reports updated every 3 months from data contributed by HR departments at 4,057 U.S. and Canadian employers. It contains IT jobs, skills and certifications data trends published in the firm's **IT Skills and Certifications Pay Index™** and deep-dive supply/demand benchmark analysis from Foote Partners field interviews.

Average market value for 663 non-certified tech skills showed continued strength in the third quarter of 2022 following the biggest increase in cash pay premium in 14 years in the beginning of the year. 113 skills increased in value, about the same as in Q2 2022 but only 60 lost value in the quarter compared to 90 in the same quarter.

For 585 IT certifications, the average cash premium didn't change, down a slight 0.1 percent, with 58 certifications increasing in market value compared to 67 posting losses in the quarter.

With our mid-2020 prediction coming true that the pandemic would recede into a relative state of normalcy by the final quarter of 2022, employers are now feeling a different kind of stress as the economic environment portends an uncertain 2023 for managing their tech workforces.

December 13, 2022 – Vero Beach, FL. Extra pay awarded by employers to talented tech professionals for **663 non-certified IT skills**—also known as cash pay premiums—showed a modest overall 0.3 percent growth in the third quarter of 2022, about the same as the prior quarter but following a very robust 1.6 percent overall growth in the first quarter. The current average cash pay premium bonus for a single skill is the equivalent of 9.6 percent of base salary.

Average market value for **585 tech certifications** decreased slightly in Q3, negating the slight increase the prior quarter but, similar to noncertified tech skills, again following a significant change in Q1 2022 (a 1.2 percent overall loss). The current average cash pay premium for a single IT certification is the equivalent of 6.6 percent of base salary.

This according to the latest quarterly update of Foote Partners' **IT Skills and Certifications Pay Index™** (ITSCPI) based on compensation data provided by 4,057 private and public-sector employers in 83 U.S. and Canadian cities who partner with the firm to report pay for their 372,125 technology professionals in the U.S. and Canada.

Since its launch in 1999, the **IT Skills and Certifications Pay Index™** has continuously tracked cash pay premiums paid to tech professionals by their employers for an ever-increasing number of popular tech skills and certifications. Rigorously validated data and detailed market analyses are updated and published by Foote Partners every 90 days. Currently, premiums are reported for 1,248 certifications and non-certified skills.

Pay Performance, 3/12/24/24/36 months Certified vs. Noncertified Tech Skills

(90,126 IT professionals, data through 10/1/2022)

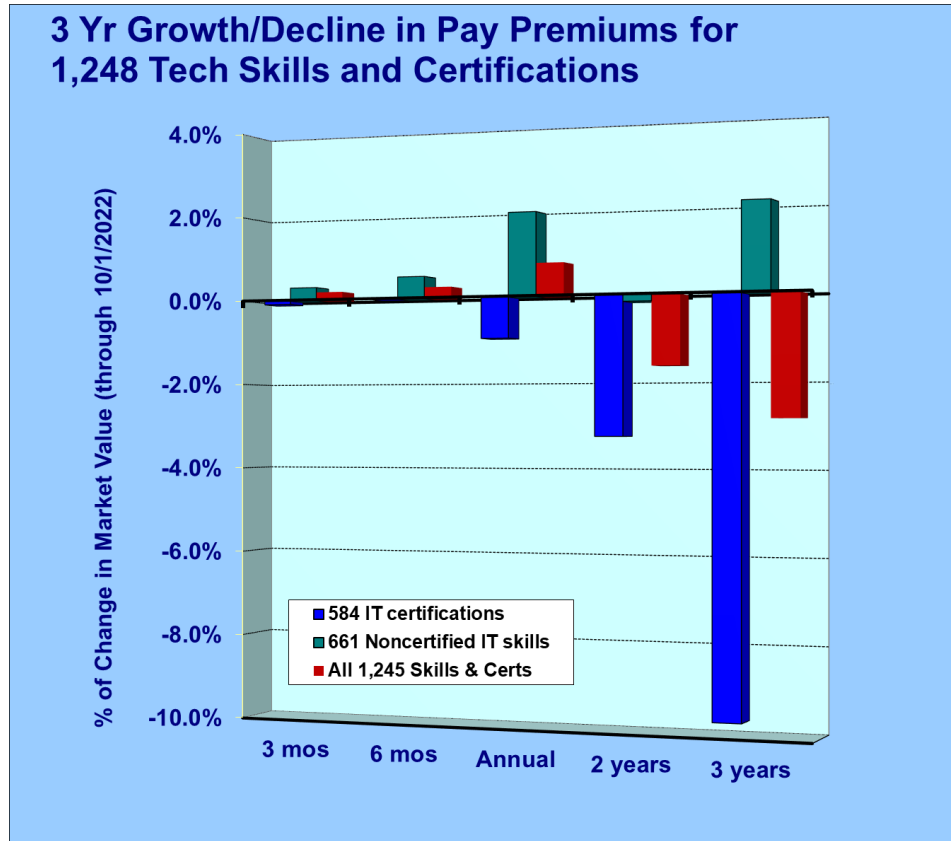


Figure 1

Source: Foote Partners, *IT Skills and Certifications Pay Index™* (3Q2019 – 3Q2022 datasets)

MULTI-YEAR PAY PREMIUM TRENDS: Certified versus Noncertified IT Skills

Average median cash pay premiums for a single certified or noncertified IT skill. N = 90,126 IT Professionals

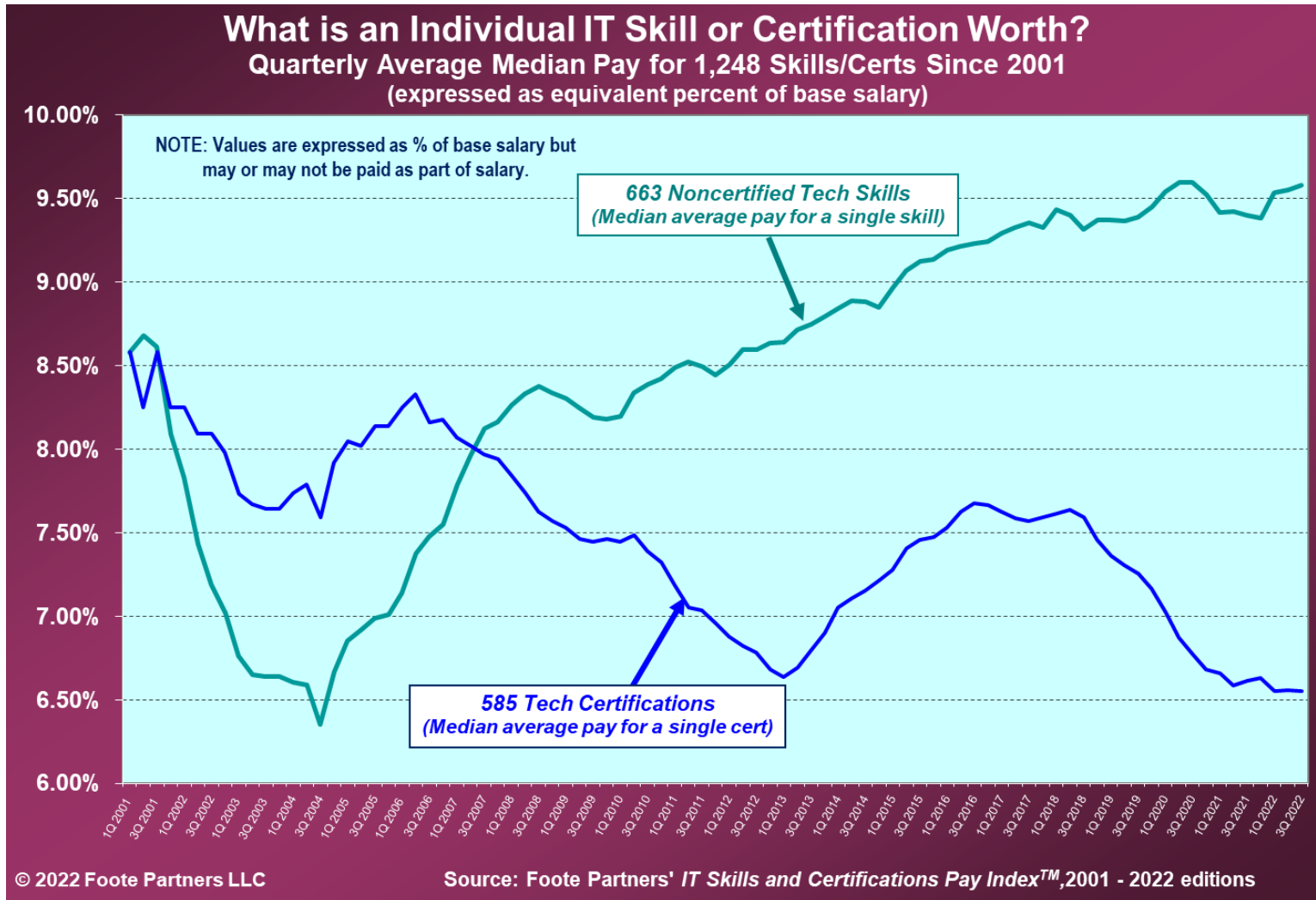


Figure 2

IT Skills & Certifications Pay Data Trend Charts & Analysis

IT Skills and Certifications Pay Index™ – 3rd Quarter 2022 data edition*

- Noncertified IT Skills (Page 6)
- IT Certifications (Page 17)

IT Skills and Certifications Pay Volatility Index™ – 3rd Quarter 2022 data edition*

- Summary (Page 32)
- IT certifications (page 34)
- Non-certified IT skills (page 35)

*All data collected through October 1, 2022

How to interpret gains and losses in IT skills and certifications pay premiums

Quarterly gains and losses in premium pay reflect a widening or narrowing, respectively, in the gap between supply and demand for skills and certifications. This may occur for any number of reasons. For example, a quarterly decline in pay for a skill may signal that the market supply of talent for that skill is catching up to demand—not necessarily that demand is starting to wane. IT professionals are often attracted to a skill or certification if they perceive that it has rising value in the marketplace and therefore can help them to achieve higher pay, greater job security, a promotion, or more flexibility in their career choices. As they pursue greater competency in that skill or as more workers attain certification, supply increases and market pricing (which is elastic to the laws of supply and demand) will be driven downward unless demand is rising at the same proportional rate. Conversely, if demand rises and supply is not increasing to match that level of demand, pay premiums for specific skills and certifications will increase.

Therefore, when interpreting gains and losses in market pay it is important to consider all factors that could be driving supply and demand and market perception. Those factors range from:

- aggressive marketing of certifications by vendors;
- changes in certification programs (e.g., certification extensions or retirement);
- new technology and evolution/maturation of current technologies;
- technology adoption rate;
- product integration strategies,
- economic conditions;
- employment opportunities;
- mergers/acquisitions;
- budget cycles and the timing of skills and talent acquisition by employers;
- changes in labor sourcing plans pursuant to company strategies.

Noncertified IT Skills Data Trend Charts & Analysis

(Data collected through October 1, 2022)

Apps Dev. Tools/Platforms

Agile software development
 Amazon Kinesis
 Amazon SageMaker (ML)
 Amazon Web Services
 Apache Airflow
 Apache Ant
 Apache Camel
 Apache Cloudstack
 Apache Cordova
 Apache Flex
 Apache Hadoop
 Apache Lucene
 Apache Maven
 Apache Pig
 Apache Spark
 Apache Struts/Struts2
 Apache Tomcat
 Apache Zookeeper
 Appium
 Automated Testing
 AWS CloudFormation
 AWS CloudFront/CloudFront Functions
 AWS Lambda
 Azure Stack
 Bamboo/BambooHR
 Behavior-Driven Development
 Bitbucket
 Boost C++
 Business Objects
 C
 C#
 C++
 C++ /CLI
 CA PPM (Clarity PPM)
 Cerner Millennium
 CircleCI
 Clojure
 Cloudera software
 Cloud Foundry PaaS
 COBOL
 Cognos
 Confluence
 Cucumber
 Datadog
 Delphi
 Drupal
 Eclipse
 Elixir
 Epic Systems applications
 Erlang
 Ethereum
 F#
 Flutter
 Full Stack Development
 Git/GitHub
 GitLab
 GitOps
 Go language (Golang)
 Gosu/Guidewire
 Gradle
 Groovy/Grails
 Grunt
 Hibernate/NHibernate
 HP ALM (App. Lifecycle Mgt)
 HP Unified Functional Testing
 Integration Testing
 iRise
 Jasmine
 Java SE/Java EE
 JBehave
 Jenkins
 JIRA
 JUnit
 Kotlin
 MapReduce
 MATLAB
 Microsoft Azure
 Microsoft Azure Stack
 Microsoft Azure Logic Apps
 Microsoft Power Platform
 Microsoft SQL Server Mgt Studio
 Microsoft Team Foundation Server
 NetWeaver
 Next.js
 NIM
 NUnit
 Objective-C
 Objective Caml (Ocaml)
 Octopus Deploy
 OpenShift
 Oracle APEX
 Oracle Apps Developer Framework
 PL/SQL
 Powerbuilder
 Progress 4GL/Development tools
 R language
 RapidMiner

Red Hat Fuse
 Rstudio
 Ruby
 Ruby on Rails
 Rust
 Saas
 SAS
 SAS Enterprise Guide
 Scala
 Scrum
 Selenium
 ServiceNow ITSM
 SpecFlow
 SPSS
 SQL
 Swift
 Tcl
 TeamCity
 TestNG
 TransacT-SQL/tSQLt
 UML (unified modeling language)
 Visual Basic 6.0
 Visual C++
 VMware Cloud Foundry PaaS
 WebSphereMQ
 Xcode

Web/e-Commerce Development

Active Server Pages
 ActiveX
 Adobe Experience Manager
 Ajax
 Amazon Cloudwatch
 AngularJS
 Apache Solr
 Apache Velocity
 Apache web server
 Apache Wicket
 Apex Code
 Backbone.js
 CGI
 Cold Fusion MX
 Content management systems
 CSS/CSS3
 Django
 Docker /Docker Swarm
 Documentum
 Elasticsearch/Elastic Stack
 Ember.js

Figma
 Front End Development
 GatsbyJS
 Google Analytics
 Google App Engine
 Google Cloud Platform
 HTML5
 JavaBeans/EJB 3.0
 JavaFX
 JavaScript
 Java Server Pages
 JBoss/Wildfly
 Jetty
 Joomla!
 jQuery
 JSON
 Julia
 KnockoutJS
 Laravel PHP
 Magento/Adobe Commerce
 Magnolia
 Microsoft .NET
 Microsoft BizTalk Server
 Microsoft Blazor
 Microsoft Commerce Server
 Microsoft Identity Integration Server
 Microsoft Internet Information Services
 Microsoft Forefront Threat Management Gateway (ISA)
 Microsoft Sharepoint/Sharepoint Server
 Microsoft Silverlight
 Microsoft Visual Studio
 Mobile applications development
 Mule/MuleESB
 Node.js
 Oracle Fusion
 Oracle WebLogic/
 Oracle Workflow
 Pandas
 Perl
 PHP (all)
 PySpark
 Python
 React
 Redux
 REST
 RESTful
 SailPoint

Scalable Vector Graphics (SVG)
 Secure coding/SW development
 Sitecore CMS
 SOAP
 Social Media/Networks
 Spring Framework
 Spring Boot
 Spring Cloud
 Spring Integration
 Spring MVC
 Spring Security
 TIBCO
 UDDI
 Umbraco
 VBScript
 Video/graphics editing
 Visual Interdev
 VoiceXML
 Web collaboration appliances
 Web Content Development
 Web Design
 WebSphere
 WebSphere Datapower
 Wikis
 WSDL
 XAML/XACML
 XHTML MP
 XML (all variants)

Operating Systems

AIX
 CoreOS
 HP-UX
 Linux
 Mac OS X
 Mobile operating systems (iOS, Android)
 OpenStack
 Red Hat Enterprise Linux
 Solaris
 SUSE
 Unix (all)
 VMware vSphere
 Windows 10/11
 Windows NT
 Windows Server
 2019/2016/2012

SAP & Enterprise Business

Applications

ABAP (all modules)
 Accelerated SAP (SLM)
 Baan (Infor LN ERP)
 Enterprise Application Integration
 IBM Sterling
 J.D. Edwards /Oracle
 Lawson
 Microsoft Dynamics/Dynamics 365
 NetWeaver
 NetWeaver Portal (SAP EP)
 Oracle BPM
 Oracle CRM
 Oracle E-Business suite
 Oracle Eloqua
 Oracle ERP
 Oracle Financials
 Oracle HFM (Hyperion Fin. Mgt)
 Oracle HRMS
 Oracle NetSuite
 Oracle Payables
 Oracle Payroll
 Oracle Retail
 Oracle SCM
 Oracle SOA Suite
 Pega
 PeopleSoft (CRM/Financials/HCM)
 Remedy ITSM
 Salesforce
 Salesforce Sales Cloud
 Salesforce Service Cloud
 SAP AFS
 SAP ALE
 SAP APO
 SAP Ariba
 SAP Auto-ID infrastructure (SAP RF)
 SAP Basis Components
 SAP BI / SAP BW
 SAP BO Data Services
 SAP BODI
 SAP BOXI
 SAP BO Dashboard Design
 SAP BPC
 SAP BSP
 SAP Business One
 SAP Business Workflow/Webflow
 SAP CA
 SAP CAF
 SAP CAR

SAP CCM
 SAP CE
 SAP CFM
 SAP CO
 SAP CO-PA
 SAP CRM
 SAP Crystal Reports
 SAP CS
 SAP CX
 SAP Digital Banking
 SAP EBP
 SAP EDI
 SAP EHS
 SAP EPM
 SAP ERP
 SAP ESA
 SAP Exchange Infrastructure (XI)
 SAP FI (Financial Accounting)
 SAP FI – CA
 SAP FI - CO
 SAP FI – FSCM
 SAP FI - Travel Management
 SAP Fiori
 SAP F&R (Forecasting/Replenish)
 SAP FS (Insurance)
 SAP GRC
 SAP GTS
 SAP HANA
 SAP HCM (SAP HR)
 SAP HCM ESS/MSS
 SAP HR-PA
 SAP HR-PY (Payroll)
 SAP Hybris
 SAP IBP (Integrated Business Planning)
 SAP IS-U (Utilities)
 SAP ITS
 SAP Leonardo
 SAP LES
 SAP LO
 SAP Lumira
 SAP Manufacturing
 SAP MDG
 SAP MDM
 SAP MDX
 SAP MI
 SAP MII
 SAP MM

SAP MRO
 SAP MRS
 SAP Netweaver Applications Server
 SAP Netweaver BW (BIW)
 SAP NetWeaver Visual Composer
 SAP NWDI
 SAP NWDS
 SAP Oil & Gas
 SAP PI (NetWeaver Process Integration)
 SAP PLM
 SAP PM
 SAP POSDM
 SAP PP
 SAP PS
 SAP PSCD
 SAP Public Sector Management
 SAP QM
 SAP for Retail
 SAP SAM (Service & Asset Mgt)
 SAP S/4HANA
 SAP SCM
 SAP SD
 SAP SD - GTS
 SAP Security
 SAP SEM
 SAP SM
 SAP Smart Forms
 SAP Solution Manager
 SAP SRM
 SAP TM
 SAP UI5 (UI development toolkit for HTML5)
 SAP Web Application Server
 SAP WEBI
 SAP WM
 SAP WM – EWM
 Siebel/Siebel Analytics
 Software AG webMethods
 SuccessFactors
 Web Dynpro
 Workday HCM

Data/Database

Alteryx Designer
 Amazon Athena
 Amazon DynamoDB
 Amazon RedShift
 Apache Cassandra
 Apache CouchDB
 Apache Hive
 Apache Spark SQL
 Azure Cosmos DB
 Azure Data Factory
 Azure SQL Data Warehouse
 Azure SQL Database
 Azure Synapse Analytics
 Base SAS
 Big Data
 Blockchain
 Cloudera Impala
 Couchbase Server
 Data mining
 Data security
 Database management
 DB2
 dBASE/xBASE
 ETL (Extract, transform, load)
 GIS
 Google Big Query
 Google Data Studio
 Hbase
 Informatica
 Java Database Connectivity
 Kibana
 Looker
 Master data management
 Microsoft Access
 Microsoft Exchange Server 2007/2010/2013
 Microsoft SQL Server 2019/2016/2014/2012
 Microsoft SQL Server Integration Services
 MongoDB
 MySQL
 NewSQL
 NoSQL
 OpenEdge ABL
 Oracle Application Server

Oracle Business Intelligence Enterprise Edition Plus
 Oracle Coherence
 Oracle DB 9i/10g/11i/12c
 Oracle Enterprise Manager
 Oracle Exadata
 Oracle Forms
 Oracle Reports
 PostgreSQL
 Power Query
 Redis
 Riak
 Riak
 Smart Contracts
 Snowflake/Snowflake Schema
 Sqoop
 Sybase Adaptive Server
 Teradata
 TIBCO Spotfire
 Visual SQL

Messaging & Communications

ActiveMQ
 Apache Camel
 Apache Kafka
 HCL Domino
 Java Messaging Service
 Message-oriented Middleware (Wave, XMPP/Jabber, etc.)
 Microsoft Exchange
 Novell Groupwise
 Oracle Comm Messaging Server
 RabbitMQ
 TIBCO Enterprise Message Service
 TIBCO Rendezvous
 Unified Communications/Messaging

Systems/Networking

Active Directory
Amazon AWS CloudTrail
Amazon Elastic Kubernetes Service
Ansible
Apache Flume
Arista
ATM
AWS Fargate
Azure Active Directory
Azure Logic Apps
Azure Sentinel
Azure Storage
Business continuity and disaster recovery planning
CA Endeavor
Chef/Opsscode
Cisco ASA
Cisco CUCM
Cisco ICM
Cisco IPCC
Cisco ISE/Identity Services Engine
CiscoNexus
Cisco Prime
Cisco UCCE
Cisco UCCX
Citrix Hypervisor (XenServer)
Citrix Virtual Apps (XenApp)
Cloud architecture
Cloud security
DHCP
EIGRP
Ethernet
Fast Ethernet
Gigabit Ethernet
Grafana
HP ConvergedSystem
HP Quality Center
HTTPS
IaaS (Infrastructure as a Service)
Infrastructure architecture
Intrusion prevention/detection sys
IPX/SPX
Juniper
Kubernetes
LAN
Microsoft Application Virtualization
Microsoft Azure Sentinel
Microsoft Hyper-V
Microsoft SCCM

Microsoft SCVMM
Microsoft Virtual Server
Mobile device management
Mobile security
Multiprotocol Label Switching
NAS/Network Attached Storage
Network access control/Identity mgt systems
Network security management
Novell Netware
PaaS
Performance Analysis/Tuning
Performance Management/Metrics
Performance Testing
Prometheus
Puppet
Rackspace Cloud
RedHat OpenShift
Routing (e.g. OSPF)
Salt
SAN/Storage Area Networks
Security skills (project-based)
Security Information and Event Management
SMTP
SNA
Software-Defined Networking
SolarWinds
Storage virtualization/administration
TCP/IP
Terraform
Tivoli
Vagrant
vCenter Server
vCloud
Virtualization (various)
Virtual security
VMware ESXi Server
VMware NSX
VoIP/IP telephony
VPN/OpenVPN
WAN/3G/4G services
Web Infrastructure
Web services security
Wireless Network Mgmt
Wireless security
Wireless sensors/RFID
Wireline Networking/Telecomm.
WML

Management, Methodologies and

Process
Artificial Intelligence
Artificial Intelligence for IT Operations (AIOps)
Azure Key Vault
Azure Machine Learning
Azure Service Fabric
Big Data Analytics
Bioinformatics
Business Analysis
Business Analytics
Business Intelligence
Business performance mgt
Business process management/modeling/improvement SW
Caffe
Capacity Planning/Management
Change management
COBIT
Collaboration software
Complex Event Processing/Event Correlation
Configuration Management
Continuous Delivery
Continuous Improvement
Continuous Integration
CRM
Cryptography (encryption, VPN)
Cyber Threat Intelligence
Cybersecurity
Data Acquisition and Control Systems
Data Analytics
Data Architecture
Data Cleansing
Data Engineering
Data Governance
Data Integration
Data Management
Data Migration
Data Modelling
Data Privacy
Data Protection
Data Quality
Data Science
Data Security
Data Strategy
Data Transformation

Data Visualization
DataOps
DataRobot Enterprise AI Platform
Deep Learning
Deployment Automation
DevOps
DevSecOps
Digital Analytics
Digital Forensics
Digital Marketing
E-Discovery
E-Procurement
ERP
Flink
Functional Programming
Functional Testing
Game Development
General Data Protection Regulation (GDPR)
Google TensorFlow
HL7
Identity and access management
Incident Management
Information management
IT Audit
IT Governance
ITIL V3
IT Service Management/ITSM
Kanban
Keras
Machine Learning
Marketo
Metadata design and development
Microservices
Microsoft SQL Server Analysis Services
Microsoft Visio
MLOps
Natural language processing
Network Architecture
Neural Networks
NIST/NIST 800
Penetration testing
Power BI
Predictive Analytics and Modeling
Prescriptive Analytics

Program Management
Project Management/Governance
PyTorch
QlikView
Quality Assurance/QA
Automation
Quality management/TQM
Quantitative
Analysis/Regression
Razor
Requirements Engineering/Analysis
Risk analytics/assessment
Risk management
Robotic Process Automation
Scaled Agile Framework (SAFe)
Security architecture and models
Security auditing
Security management
Security testing
SEO
Site Reliability Engineering
Six Sigma/Lean Six Sigma
Social media analysis/analytics
Software development lifecycle management
Splunk
Test Driven
Development/Scripting
Threat Detection/Modelling/Mgt
TIBCO BusinessWorks
TOGAF
Unit Testing
Usability Research/Human Factors Research
User Acceptance Testing
User-Centered Design
User Experience/User-Centered Design
Vulnerability Scanning/ Assessment/Management
Waterfall
Web Analytics
Webtrends analytics
Zachman Framework

IT NONCERTIFIED SKILLS PAY SUMMARY – Through October 1, 2022

A. NONCERTIFIED TECH SKILLS PAY PERFORMANCE: By Category

NON-CERTIFIED TECH SKILLS. 173 of 661 non-certified tech skills changed cash market value from April 1 to July 1, 2022 compared to 201 and 216 skills in the prior two calendar quarters. The average cash pay premium for **663 non-certified skills** increased slightly last quarter, up only 0.3 percent overall for a total 2.1 percent growth so far in 2022.

Noncertified IT Skills - % Growth/Decline
 3 months & 12 months

(663 skills, data through 10/1/2022)

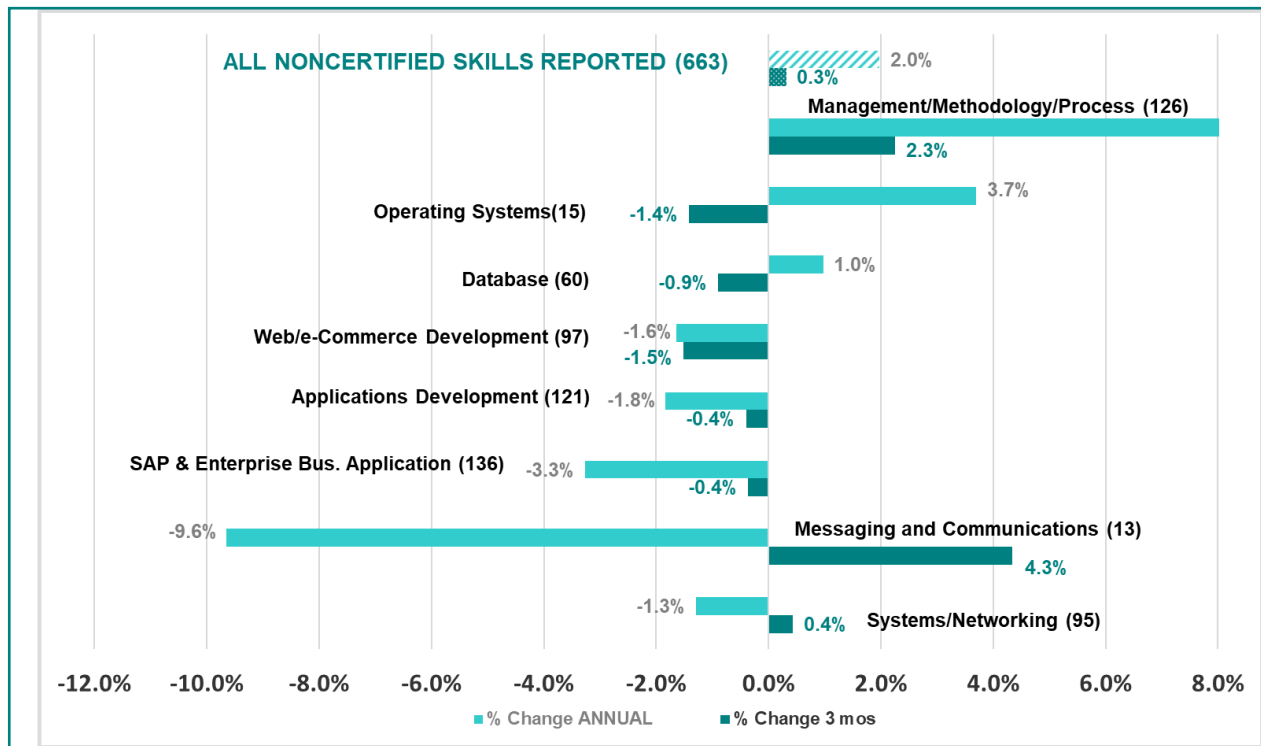


Figure 3

Source: Foote Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter 2022 data

18-YEAR QUARTERLY NONCERTIFIED IT SKILLS PAY TRENDS BY CATEGORY

Average quarterly median cash pay premium for a single non-certified IT skill. Data through 10/1/2022 – 90,126 IT Professionals

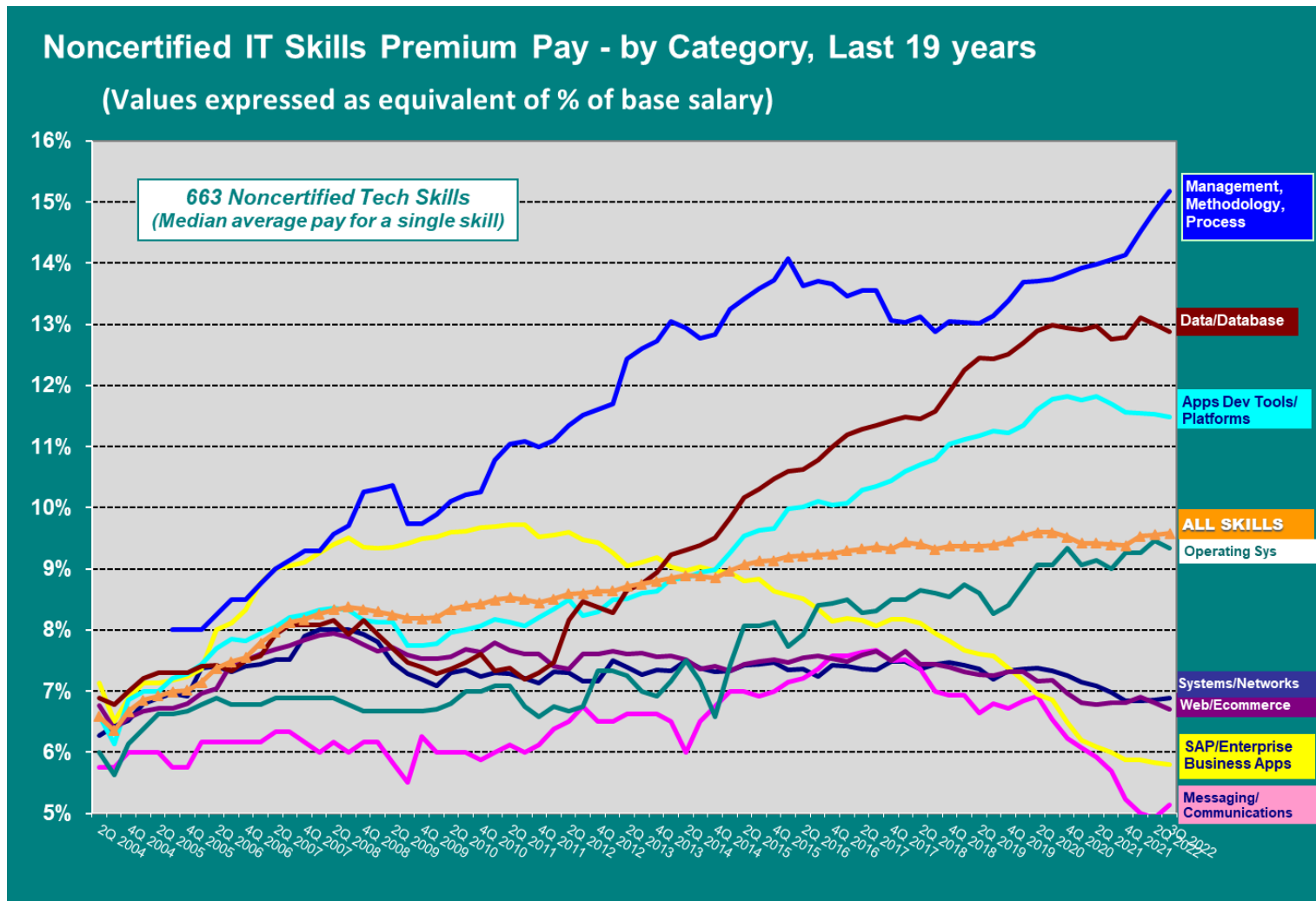


Figure 4

Pay data supporting these charts available in the [IT Skills and Certifications Pay Index™](#) – 3Q 2022 data edition

HIGHEST PAYING Noncertified IT Skills (cash pay premiums, all 663 skills surveyed, ranked)

These non-certified IT skills are earning the highest pay premiums (data collected July 1, 2022 to October 1, 2022). Grouped by cash pay premium market value in descending order and alphabetically within groups. Green/Red = increased/decreased in market value this quarter. Purple = Made the list this quarter for first time.

1.[Tie] Big Data analytics Ethereum	4.[Tie] Amazon DynamoDB Artificial Intelligence Azure Machine Learning Big Data Caffe Continuous Integration Data Analytics Data Integration Data Science DataOps DataOps DevOps GitOps Google TensorFlow Governance, Risk management and Compliance Informatica Keras Network Architecture NIST/NIST 800 Penetration testing Quantitative Analysis/Regression Analysis Redis Security testing Threat Detection/Modelling/ Management	5.[Tie] cont'd. Cloudera software Complex Event Processing/Event Correlation Configuration Management Cybersecurity Data Management Data Modelling Data Transformation Deployment Automation Flink Kibana Marketo Master data management Predictive Analytics and Modeling Rust Sqoop Test Driven Development/ Vulnerability Scanning/ Assessment/Management	6.[Tie] cont'd Data Migration Data Quality Data Security Functional Testing Go language (Golang) IT Audit Kanban NoSQL Oracle Exadata PostgreSQL Red Hat Fuse Scala Six Sigma/Lean Six Sigma Software development lifecycle management Test automation Unit Testing User Experience/User-Centered Design
2.[Tie] Artificial Intelligence for IT Operations Azure Key Vault Bioinformatics Blockchain Data Engineering Deep Learning DevSecOps MLOps Security architecture and models Security auditing Site Reliability Engineering Zachman Framework	5.[Tie] Amazon Athena Apache Cassandra Apache Hive Apache Pig Azure Service Fabric Business analytics	6.[Tie] Amazon RedShift Apache Airflow Apache Camel Apache Spark Apache Zookeeper Azure SQL Data Warehouse Cloud Foundry PaaS Continuous Improvement Cyber Threat Intelligence Data Governance	
3.[Tie] Continuous Delivery Cryptography (encryption, VPN, SSL/TLS, Hybrids) Data Architecture Data Strategy Functional Programming Identity and access management Machine Learning Metadata design and development Microservices Natural language processing Neural Networks PyTorch Risk analytics/assessment Scaled Agile Framework (SAFe) Smart Contracts Splunk		Scripting	

NONCERTIFIED IT SKILLS TREND HIGHLIGHTS: Market Value Gainers & Highest Paying – 3rd Quarter 2022 data

These non-certified tech skills *gained 10% or more in market value in the three months ending October 1, 2022* vs. prior quarter (seen below grouped by segment). *Listed in descending order of amount of % gain in cash pay premium* (including ties). Highest paying skills listed on right in **alphabetical order**.

IT SKILLS (noncertified)			Highest Paying – Cash Premiums (A-Z)
<p><u>Applications Development skills</u> HP ALM (Application Lifecycle Management) Apache Cordova Rstudio BusinessObjects Cerner Millennium Red Hat Fuse Grunt</p> <p><u>SAP & Enterprise Business Applications skills</u> SAP PP (Production Planning) SAP PS (Project Systems) SAP BusinessObjects Dashboards SAP ALE SAP Leonardo SAP PSCD SAP UI development toolkit for HTML5 (SAP UI5) SAP WM (Warehouse Management) Oracle ERP SAP PM SAP CO (Controlling) SAP MM (Materials Management) SAP Ariba SAP FI SAP FI - CO SAP S/4HANA SAP GRC</p>	<p><u>Database Skills</u> Kibana Oracle Enterprise Manager Microsoft Exchange Server 2007/2010/2013 Oracle DB 10g/11i/12c</p> <p><u>Messaging & Communications Skills</u> TIBCO Rendezvous Apache Pulsar TIBCO Enterprise Message Service</p> <p><u>Systems/Networking skills</u> Rackspace Cloud Microsoft Virtual Server Routing (e.g. OSPF, RIP, IGRP) Microsoft Application Virtualization Cisco ISE (Identity Services Engine) Software-Defined Networking</p>	<p><u>Web/SOA/E-Commerce skills</u> Microsoft Internet Information Services Ember.js WebSphere</p> <p><u>Operating System skills</u> AIX</p> <p><u>Management, Process & Methodology skills</u> DataRobot Enterprise AI Platform Metadata design and development Security auditing IT Audit Azure Service Fabric Quantitative Analysis/Regression Analysis Keras Penetration testing</p>	<ul style="list-style-type: none"> - Artificial Intelligence for IT Operations (AIOps) - Azure Key Vault - Big Data analytics - Bioinformatics - Blockchain - Continuous Delivery - Cryptography - Data Architecture - Data Engineering - Data Strategy - Deep Learning - DevSecOps - Ethereum - Functional Programming - Identity and access management - Machine Learning - Metadata design and development - Microservices - MLOps - Natural language processing - Neural Networks - PyTorch - Risk analytics/assessment - Scaled Agile Framework (SAFe) - Security architecture and models - Security auditing - Site Reliability Engineering - Smart Contracts - Splunk - Zachman Framework
<p>SOURCE: Foote Partners IT Skills & Certifications Pay Index™, 3rd Quarter 2022 data edition</p>			

NONCERTIFIED IT SKILLS TREND HIGHLIGHTS: Market Value Losers – 3rd Quarter 2022 data

These noncertified IT skills **declined 10% or more in market value in the three months ending October 1, 2022** vs. prior quarter (seen below grouped by segment). **Listed in descending order of amount of % decline in cash pay premium**, including ties.

IT SKILLS (Non-certified)

Applications Development skills

Apache Flex
TestNG
MATLAB
Java SE/Java EE
Clojure
Kotlin
Visual Basic 6.0

Web/E-commerce Development skills

Documentum
Mule/MuleESB
Google App Engine
Microsoft Sharepoint/Sharepoint Server
Spring Cloud
WSDL (Web Services Description Language)
Mobile applications development
SailPoint
Google Cloud Platform
Pandas

SAP & Enterprise Business Applications skills

Oracle HRMS
SAP Oil & Gas
Oracle E-Business suite
SAP CAR
SAP IBP
SAP HCM (SAP HR)
SAP HR-PY
SAP PI (NetWeaver Process Integration)
SAP Business One
SAP MDM
SAP for Retail (IS-Retail)
Oracle Financials
SAP FI - FSCM
SAP Forecasting and Replenishment
SAP CRM
Salesforce Service Cloud
Oracle SOA Suite
SAP QM

Data/Database

Snowflake/Snowflake Schema
GIS
Google Data Studio
DB2
Oracle Business Intelligence Enterprise Edition Plus
Smart Contracts

Operating System skills

Solaris

Systems/Networking skills

Cisco UCCX
NAS/Network Attached Storage
VPN/OpenVPN
Azure Sentinel
RedHat OpenShift

Management, Process &

Methodology skills

Prescriptive Analytics
Game Development
Complex Event Processing/Event Correlation

NON-CERTIFIED IT SKILLS ANALYSIS – Winners

A. NON-CERTIFIED TECH SKILLS EARNING HIGH PAY---AND STILL GROWING IN VALUE

The following non-certified tech skills meet two prerequisites:

- They **earned workers cash pay premiums well above the average** of all 663 skills reported in our *IT Skills and Certifications Pay Index™* in quarter ending October 1, 2022.
- They **recorded gains in cash market value** in the six months ending October 1, 2022.

No skill below is earning less than the equivalent of 17 percent of base salary—significant considering the average for all skills reported is 9.6 percent of base—and are listed in descending ranked order of cash premium and market value increases (including ties). Not surprising, the list contains a number of security, coding, database, analytics and artificial intelligence related skills.

Here is the list of noncertified IT skills pay premiums meeting the above criteria (in alphabetical order):

- | | | |
|---|--------------------------|--|
| - Apache Cassandra | - Data Analytics | - Microservices |
| - Artificial Intelligence | - Data Architecture | - Natural Language Processing |
| - Artificial Intelligence for IT Operations | - Data Engineering | - Network Architecture |
| - Azure Machine Learning | - Data Integration | - Neural Networks Prescriptive Analytics |
| - Big Data | - DataOps | - Redis |
| - Big Data analytics | - Data Strategy | - Scaled Agile Framework (SAFe) |
| - Bioinformatics | - Deep Learning | - Security architecture and models |
| - Blockchain | - DevOps | - Smart Contracts |
| - Complex Event Processing/Event Correlation | - Functional Programming | - Zachman Framework |
| - Cryptography(encryption, VPN, SSL/TLS, Hybrids) | - Informatica | |
| | - Machine Learning | |

Below is the same list, but **in descending ranked order of cash premium first and market value increase second** (including ties).

* * * *

1. **[Tie] Big Data analytics**
 Ethereum

Average Pay Premium: 20 percent of base salary equivalent
 Market Value Increase: 5.3 percent (in the six months through October 1, 2022)

3. **[Tie] Security Auditing**
 Bioinformatics

Average Pay Premium: 19 percent of base salary equivalent
 Market Value Increase: 18.8 percent (in the six months through October 1, 2022)

5. **[Tie] Data Engineering**
 Zachman Framework

Average Pay Premium: 19 percent of base salary equivalent
 Market Value Increase: 11.8 percent (in the six months through October 1, 2022)

7. **[Tie] Azure Key Vault**
 Site Reliability Engineering

Average Pay Premium: 19 percent of base salary equivalent
 Market Value Increase: 5.6 percent (in the six months through October 1, 2022)

NON-CERTIFIED IT SKILLS ANALYSIS – Winners, cont'd.

9. **[Tie] Cryptography (encryption, VPN, SSL/TLS, Hybrids)**
Metadata design and development
Average Pay Premium: 18 percent of base salary equivalent
Market Value Increase: 20 percent (in the six months through October 1, 2022)

11. **[Tie] Functional Programming**
Neural Networks
Average Pay Premium: 18 percent of base salary equivalent
Market Value Increase: 12.5 percent (in the six months through October 1, 2022)

13. **[Tie] Continuous Delivery**
Data Architecture
Data Strategy
Identity and access management
Machine Learning
Microservices
Natural language processing
Risk analytics/assessment
Splunk
Average Pay Premium: 18 percent of base salary equivalent
Market Value Increase: 5.9 percent (in the six months through October 1, 2022)

22. **[Tie] Keras**
Penetration Testing
Quantitative Analysis/Regression Analysis
Average Pay Premium: 17 percent of base salary equivalent
Market Value Increase: 21.4 percent (in the six months through October 1, 2022)

25. **[Tie] Azure Machine Learning**
Continuous Integration
Data Analytics
Data Integration
Security testing
Average Pay Premium: 17 percent of base salary equivalent
Market Value Increase: 13.3 percent (in the six months through October 1, 2022)

30. **[Tie] Artificial Intelligence**
Big Data
DataOps
GitOps
Governance, Risk management and Compliance
Informatica
Network Architecture
NIST/NIST 800
Redis
Threat Detection/Modelling/Management
Average Pay Premium: 17 percent of base salary equivalent
Market Value Increase: 13.3 percent (in the six months through October 1, 2022)

IT Certification Data Trend Charts & Analysis

(Data collected through October 1, 2022)

<p>Avaya Certified Design Specialist Avaya Certified Implementation Specialist Avaya Certified Integration Specialist Avaya Certified Solution Specialist Avaya Professional Design Specialist AWS Certified Advanced Network – Specialty AWS Certified Data Analytics – Specialty AWS Certified Developer - Associate AWS Certified DevOps Engineer - Professional AWS Certified Security - Specialty AWS Certified Solutions Architect - Associate (Cloud) AWS Certified Solutions Architect - Professional (Cloud) AWS Certified SysOpsAdministrator-Associate (Cloud) AXELOS ITIL 4 certifications BICSI ITS Technician BICSI Technician and Registered Communications Distribution Designer Brocade Certified Network Engineer Brocade Certified Network Professional Brocade Certified Fabric Designer Brocade Certified Fabric Professional (BCFP) Certificate in Information Security Management Principles (CISMP) Certificate of Cloud Security Knowledge Certification Authorization Professional (CAP) Certification of Capability in Business Analysis (CCBA) Certified Analytics Professional (CAP) Certified Business Analysis Professional (CBAP) Certified Business Continuity Professional (CBCP) Certified Cisco Systems Instructor (CCSI) Certified Cloud Architect Certified Cloud Security Professional (CCSP) Certified Cloud Technology Professional Certified Compliance Professional Certified Computer Examiner (CCE) Certified Computing Professional (CCP-ISC2) Certified Data Centre Management Professional (CDCMP) Certified Data Professional (CDP) Certified Disaster Recovery Engineer (C/DRE) Certified Forensic Computer Examiner (CFCE) Certified Fraud Examiner Certified Healthcare Information Security and Privacy Practitioner (HCISPP) Certified in Convergent Network Technologies (CCNT)</p>	<p>Certified in Governance, Risk and Compliance Certified in Risk and Information Systems Control (CRISC) Certified in the Governance of Enterprise IT (CGEIT) Certified Information Privacy Manager- all countries Certified Information Privacy Professional - all countries Certified Information Privacy Technologist- all countries Certified Information Security Manager (CISM) Certified Information Systems Auditor (CISA) Certified Information Systems Risk Manager/Mile2 Certified Information Systems Security Professional (CISSP) Certified IP Telecom Network Specialist (CIPTS) Certified IT Architect (IASA CITA) Certified Manager of Software Quality (CMSQ) Certified Penetration Testing Engineer (CPTe) Certified Project Management Practitioner Certified Protection Professional Certified Scrum Developer Certified Scrum Master Certified Scrum Product Owner Certified Scrum Professional Certified Scrum Team Coach Certified Scrum Trainer Certified Secure Software Lifecycle Professional (CSSLP) Certified Software Quality Analyst (CSQA) Certified Telecommunications Network Specialist (CTNS) Check Point Certified Security Administrator (CCSA) Check Point Certified Security Expert (CCSE) Check Point Certified Security Master (CCSM) Cisco Certified Architect Cisco Certified CyberOps Associate Cisco Certified Design Expert (CCDE) Cisco Certified DevNet Associate Cisco Certified DevNet Professional Cisco Certified Entry Network Technician (CCENT) Cisco Certified Internetwork Expert (CCIE, all variations) Cisco Certified Network Associate - Data Center</p>	<p>Cisco Certified Network Associate (CCNA Routing and Switching) Cisco Certified Network Associate (Network Security) Cisco Certified Network Associate (Networking automation and programmability) Cisco Certified Network Associate (was CCNA Cloud) Cisco Certified Network Associate (was CCNA Collaboration) Cisco Certified Network Associate (was CCNA Wireless) Cisco Certified Network Associate (was Design Associate) Cisco Certified Network Professional - Collaboration Cisco Certified Network Professional - Data Center Cisco Certified Network Professional - Data Center (CCNP Cloud) Cisco Certified Network Professional - Enterprise (was CCNP Routing and Switching) Cisco Certified Network Professional - Enterprise (was CCNP Wireless) Cisco Certified Network Professional - Security Cisco Certified Network Professional (CCNP) Cisco Certified Network Professional (was CC Design Professional) Cisco Certified Systems Instructor (CCSI) Cisco Data Center Unified Computing Design Specialist Cisco Data Center Unified Fabric Support Specialist Citrix Certified Associate - Networking Citrix Certified Associate - Virtualization Citrix Certified Expert – Networking Citrix Certified Expert - Virtualization Citrix Certified Instructor (CCI - Virtualization, Networking, or Mobility) Citrix Certified Professional - Networking Citrix Certified Professional - Virtualization (CCP-V) Citrix XenServer Certified (CC-XenServer) CIW Advanced HTML5 and CSS3 Specialist CIW Certified Database Design Specialist CIW Web Design Professional CIW Web Development Professional CIW Web Foundations Associate</p>	<p>CIW Web Security Professional Cloud U (Rackspace) Cloudera Certified Associate Administrator Cloudera Certified Associate Data Analyst Cloudera Certified Associate Spark and Hadoop Developer Cloudera Certified Professional: Data Engineer CompTIA A+ CompTIA Advanced Security Practitioner CompTIA Certified Technical Trainer CompTIA Cloud Essentials CompTIA Cloud+ CompTIA Cybersecurity Analyst+ CompTIA Linux+ CompTIA Mobile App Security+ CompTIA Mobility+ CompTIA Network (Network+) CompTIA Penetration Tester CompTIA Project+ CompTIA Security+ CompTIA Server+ CompTIA Storage+ Convergence Technologies Professional (CTP) CSX CyberSecurity Practitioner (CSXP) CWNP Certified Wireless Security Professional (CWSP) CWNP/Certified Wireless Analysis Professional (CWAP) CWNP/Certified Wireless Design Professional (CWDP) CWNP/Certified Wireless Network Administrator (CWNA) CWNP/Certified Wireless Network Trainer (CWNT) CWNP/Certified Wireless Network Expert (CWNE) CWNP/Certified Wireless Technology Specialist (CWTS) Cyber Security Forensic Analyst Dell Cloud Infrastructure - Specialist (DCS - CA) Dell Cloud Services Architect - Expert (DCE - CA) Dell Data Science Associate (DCA-DS) Dell Data Science Specialist - Advanced Analytics (DCS-DA) Dell EMC Technology Architect - Expert (DCE-TA) Dell EMC Technology Architect - Specialist (DCS-TA)</p>
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Dell Implementation Engineer - Expert (DCE - IE)	GIAC Information Security Fundamentals (GISF)	IAPP Certified Information Privacy Professional	Linux Professional Institute certification (LPIC-2)
Dell Implementation Engineer - Specialist (DCS - IE)	GIAC Information Security Professional (GISP)	IBM Advanced Systems Administrator (all)	Linux Professional Institute certification (LPIC-3)
Dell Information Storage and Management Associate (DCA-ISM)	GIAC Mobile Device Security Analyst (GMOB)	IBM Certified Administrator - Cognos Analytics	Magento 2 Certified Professional Developer
Dell Information Storage and Management Expert (DCE-ISM)	GIAC Network Forensic Analyst (GNFA)	IBM Certified Application Developer - Cloud Solutions v3	Magento 2 Certified Associate Developer
Dell Information Storage and Management Specialist (DCS-ISM)	GIAC Penetration Tester (GPEN)	IBM Certified Application Developer - DB2 9.7 for Linux, Unix and Windows	MCSE: Core Infrastructure
Dell Platform Engineer/PowerScale - Specialist (DCS-PE)	GIAC Python Coder (GPYC)	IBM Certified Application Developer (all)	Microsoft Certified Azure Administrator Associate
EC-Council Certified Application Security Engineer (CASE)	GIAC Reverse Engineering Malware (GREM)	IBM Certified Data Architect - Big Data	Microsoft Certified Azure AI Engineer Associate
EC-Council Certified Encryption Specialist (ECES)	GIAC Security Essentials (GSEC)	IBM Certified Data Engineer - Big Data	Microsoft Certified Azure Data Engineer Associate
EC-Council Certified Ethical Hacker (CEH)	GIAC Security Expert (GSE)	IBM Certified Database Administrator - DB2 11.1 for Linux, UNIX and Windows	Microsoft Certified Azure Data Scientist Associate
EC-Council Certified Incident Handler V2 (ECIH)	GIAC Security Leadership (GSLC)	IBM Certified Developer - Cognos Analytics	Microsoft Certified Azure Developer Associate
EC-Council Certified Network Defender	GIAC Systems and Network Auditor (GSNA)	IBM Certified Professional Developer - Cloud v4	Microsoft Certified Azure Fundamentals Associate
EC-Council Certified Network Defense Architect (CNDA)	GIAC Web Application Penetration Tester (GWAPT)	IBM Certified Solution Advisor - Blockchain Platform V2	Microsoft Certified Azure Security Engineer Associate
EC-Council Certified Security Analyst (ECSA)	Google Associate Cloud Engineer	IBM Certified Solution Advisor - DevOps V2	Microsoft Certified Azure Solutions Architect Expert
EC-Council Computer Hacking Forensic Investigator (CHFI)	Google Certified Professional Cloud Architect	IBM Certified Solution Architect – Cloud v4	Microsoft Certified Azure Solutions Architect Expert
EC-Council Disaster Recovery Professional (EDRP)	Google Cloud Certified - Professional Data Engineer	IBM Certified Solution Architect - Data Warehouse V1	Microsoft Certified DevOps Engineer Expert
EC-Council Licensed Penetration Tester (LPT)	Google Cloud DevOps Engineer	IBM Certified Solution Designer (all)	Microsoft Certified Professional
Fortinet Network Security Expert (NSE) Level 1	Google Professional Cloud Developer	IBM Certified Specialist - AI Enterprise Workflow V1	Microsoft Certified Solutions Associate(all) Reporting
Fortinet Network Security Expert (NSE) Level 2	Google Professional Cloud Network Engineer	IBM Certified Systems Administrator: WebSphere Application Server Network Deployment	Microsoft Certified Solutions Associate: SQL 2016 DBA
Fortinet Network Security Expert (NSE) Level 3	Google Professional Cloud Security Engineer	IBM Certified Systems Administrator (all)	Microsoft Certified Solutions Associate: SQL Server 2012/2014/2016
GIAC Assessing and Auditing Wireless Networks	HDI Customer Service Representative	Information Systems Security Architecture Professional (ISSAP/CISSP)	Microsoft Certified Solutions Associate: Web Applications
GIAC Certified Defending Advanced Threats (GDAT)	HDI Desktop Support Manager	Information Systems Security Engineering Professional (ISSEP/CISSP)	Microsoft Certified Solutions Associate: Windows Server 2012/2016
GIAC Certified Detection Analyst (GCDA)	HDI Desktop Support Technician	InfoSys Security Management Professional (ISSMP/CISSP)	Microsoft Certified Solutions Developer (MCSD)
GIAC Certified Enterprise Defender (GCED)	HDI Support Center Analyst	ITIL Expert Certification	Microsoft Certified Solutions Developer: Applications Builder
GIAC Certified Forensics Analyst (GCFA)	HDI Support Center Director	ITIL Foundation Certification	Microsoft Certified Solutions Expert: Business Applications
GIAC Certified Forensics Examiner	HDI Support Center Manager	ITIL Intermediate Certification	Microsoft Certified Solutions Expert: Data Platform
GIAC Certified Incident Handler (GCIH)	HDI Support Center Team Lead	ITIL Master Certification	Microsoft Certified Solutions Expert: Desktop Infrastructure
GIAC Certified Intrusion Analyst (GCIA)	HDI Technical Support Professional	JBoss Certified Developer (Seam, Persistence, ESB)	Microsoft Certified Solutions Expert: Server Infrastructure
GIAC Certified Project Manager (GCPM)	Help Desk Analyst: Tier 1 Support Specialist/Ed2Go	Juniper Networks Certified Internet Associate	Microsoft Certified Trainer (MCT)
GIAC Certified Web Application Defender	Help Desk Team Lead/RCCSP	Juniper Networks Certified Internet Expert	Microsoft MTA: Windows OS
GIAC Certified Windows Security Administrator (GCWN)	Hitachi Qualified Professional - Storage Administration	Juniper Networks Certified Internet Professional	Microsoft Office Specialist
GIAC Cloud Penetration Tester (GCPN)	HP Accredited Solutions Expert (ASE - all)	Linux Foundation Certified Engineer	
GIAC Cloud Security Automation (GCSA)	HP Accredited Technical Professional (ATP - all)	Linux Foundation Certified System Administrator	
GIAC Critical Controls Certifications (GCCC)	HP ASE - Storage Solutions V4		
GIAC Cyber Threat Intelligence (GCTI)	HP ATP - Hybrid IT Solutions V2		
GIAC Defensible Security Architecture (GDSA)	HP ATP - Storage Solutions V1 /V2		
GIAC Enterprise Vulnerability Assessor (GEVA)	HP Master Accredited Solutions Expert (MASE - all)		
GIAC Exploit Researcher and Advanced Penetration Tester (GWAPT)	HP Master ASE – Hybrid IT Solutions Architect V1		
	HP Master ASE - Storage Solutions Architect V3		
	Huawei Certified Network Associate (all)		
	Huawei Certified Network Professional (all)		
	Huawei Certified Network Expert (all)		

Mongo DB Certified DBA
 Mongo DB Certified Developer
 MongoDB Certified Developer Associate
 NetApp Certified Data Administrator, ONTAP (NCDA)
 NetApp Certified Implementation Engineer (NCIE)
 NetApp Certified Storage Associates – Hybrid Cloud
 NetScout/nGenius Certified Analyst (nCA)
 NetScout/nGenius Certified Associate (nCA)
 NetScout/nGenius Certified Expert (nCE)
 NetScout/nGenius Certified Specialist (nCS)
 Novell Certified Administrator (CNA)
 Novell Certified Novell Engineer (CNE)
 Novell Certified Instructor
 Novell Certified Linux Engineer (Novell CLE)
 Novell Certified Linux Professional (Novell CLP)
 Novell Identity Manager Administrator
 Offensive Security Experienced Penetration Tester (OSEP)
 Offensive Security Exploitation Expert (OSEE)
 Offensive Security Wireless Professional (OSWP)
 Okta Certified Administrator
 Okta Certified Consultant
 Okta Certified Developer
 Okta Certified Professional
 Open Group Certified Architect (Open CA)
 Open Group Certified IT Specialist (Open CITS)
 Oracle Business Intelligence Foundation Suite 11g Certified Implementation Specialist
 Oracle Certified Associate - DBA (OCA)
 Oracle Certified Associate - Java SE Programmer
 Oracle Certified Associate - MySQL 5
 Oracle Certified Associate - WebLogic Server Administrator
 Oracle Certified Expert - Java Platform EE Developer (all)
 Oracle Certified Expert - MySQL 5.1 Cluster Database Administrator
 Oracle Certified Expert - Siebel CRM Business Analyst
 Oracle Certified Expert - Solaris 10 Network Administrator for Solaris
 Oracle Certified Master - DBA (OCM)
 Oracle Certified Master - Java EE Enterprise Architect
 Oracle Certified Master - Java SE Developer
 Oracle Certified Professional - Advanced PL/SQL Developer
 Oracle Certified Professional - Application Server Administrator
 Oracle Certified Professional - Database Cloud Administrator
 Oracle Certified Professional - DBA (OCP)
 Oracle Certified Professional - E-Business Suite 12
 Oracle Certified Professional - Fusion Middleware 11g Forms Developer
 Oracle Certified Professional - Java EE Web Component Developer
 Oracle Certified Professional - Java EE Web Services Developer
 Oracle Certified Professional - Java SE Programmer
 Oracle Certified Professional - MySQL 5.x Database Administrator
 Oracle Certified Professional - MySQL 5.x Developer
 Oracle Certified Professional - PL/SQL Developer
 Oracle Certified Professional - Solaris 10 Systems Administrator
 Oracle Certified WebLogic Server System Administrator Certified Expert
 Oracle Cloud Infrastructure 2021 Certified Architect Professional
 Oracle Linux Certified Administrator (OCA)
 Oracle SOA 12c Certified Implementation Specialist
 Oracle VM 3.0 for x86 Certified Implementation Specialist
 Pegasystems Certified Data Scientist
 Pegasystems Certified Decisioning Consultant
 Pegasystems Certified Lead System Architect
 Pegasystems Certified Senior Systems Architect
 Pegasystems Certified System Architect
 Pegasystems Certified Pega Business Architect
 Pegasystems Certified Robotics System Architect
 PHP Certification
 Pivotal Application Architect
 Pivotal Cloud Foundry Operator certification
 Pivotal Developer
 PMI Agile Certified Practitioner (PMI-ACP)
 PMI Certified Associate in Project Management (CAPM)
 PMI Portfolio Management Professional (PfMP)
 PMI Professional in Business Analysis (PMI-PBA)
 PMI Program Management Professional (PgMP)
 PMI Project Management Professional (PMP)
 PMI Risk Management Professional (PMI-RMP)
 Prince2 Foundation
 Prince2 Practitioner
 Professional Certified Investigator
 Professional in Project Management (GAQM)
 Qlik Sense Business Analyst
 Qlik Sense Data Architect
 Qualified Information Security Professional Q/ISP
 Rackspace Certified Technician
 Red Hat Certified Architect (RHCA)
 Red Hat Certified Architect: Cloud
 Red Hat Certified Architect: Enterprise Applications
 Red Hat Certified Architect: Infrastructure
 Red Hat Certified Engineer in Red Hat OpenStack
 Red Hat Certified Engineer (RHCE)
 Red Hat Certified Enterprise Application Developer
 Red Hat Certified Specialist in Business Process Design
 Red Hat Certified Specialist in Linux Performance Tuning
 Red Hat Certified Specialist in Messaging Administration
 Red Hat Certified System Administrator in Red Hat OpenStack
 Red Hat Certified Systems Administrator (RHCSA)
 Red Hat Certified Specialist in Virtualization
 RSA Certified Administrator (RSA/CA)
 RSA Certified Instructor (RSA/CI)
 SAFE Instructor
 Salesforce B2C Commerce Developer
 Salesforce Certified Application Architect
 Salesforce Certified Data Architecture and Management Designer
 Salesforce Certified Integration Architecture Designer
 Salesforce Certified Platform Developer
 Salesforce Certified Systems Architect
 Salesforce Certified Technical Architect
 Salesforce Certified User Experience Designer
 Salesforce Development Lifecycle and Deployment Architect
 Salesforce Identity and Access Management Architect
 Salesforce Platform App Builder
 Salesforce.com Certified Administrator
 Salesforce.com Certified Advanced Administrator
 SAS Certified Big Data Professional Using SAS 9
 SAS Certified Data Integration Developer for SAS 9
 SAS Certified Data Scientist Using SAS 9
 SAS Certified Predictive Modeler - SAS Enterprise Miner 14
 SAS Certified Professional: Advanced Programming/SAS 9.4
 SAS Certified Specialist Base Programming/SAS 9.4
 SAS Certified Statistical Business Analyst - SAS 9
 SAS® Certified Advanced Analytics Professional Using SAS 9
 SAS® Certified BI Content Developer for SAS®9
 SAS® Certified Data Quality Steward for SAS®
 SAS® Certified Professional: AI and Machine Learning
 SAS® Certified Professional: Data Curation for SAS Data Scientists
 SAS® Certified Specialist: Visual Business Analytics 7.5/8.3
 ServiceNow Certified Application Developer (CAD)
 ServiceNow Certified Implementation Specialist (CIS)
 ServiceNow Certified Systems Administrator (CSA)
 Siebel 8 Consultant Certified Expert
 Six Sigma Black Belt
 Six Sigma Green Belt
 Six Sigma Master Black Belt
 Six Sigma Yellow Belt
 SNIA Certified Storage Architect
 SNIA Certified Storage Networking Expert (SCSN-E)
 SNIA Certified Storage Professional

SNIA Certified Systems Engineer Sniffer Certified Expert
SolarWinds Certified Professional (SCP)
Splunk Core Certified User
SUSE Certified Administrator
SUSE Enterprise Engineer (SCE)
SUSE Enterprise Architect or (SEA)
Systems Security Certified Practitioner (SSCP)
Tableau Desktop Certified Professional
Tableau Server Certified Professional
Teradata 14 Certified Associate
Teradata 14 Certified Database Administrator
Teradata 14 Certified Database Developer
Teradata 14 Certified Enterprise Architect
Teradata 14 Certified Master
Teradata 14 Certified Professional
Teradata 14 Certified Solutions Developer
Teradata 14 Certified Technical Specialist
TIBCO Certified Professional
TIBCO Certified SOA Architect
TOGAF 9 Certified
VMware Certified Advanced Professional - Digital Workspace
VMware Certified Advanced Professional 6.5 - Data Center Virtualization Design
VMware Certified Advanced Professional – Network Virtualization
VMware Certified Advanced Professional (all)
VMware Certified Advanced Professional 6 - Data Center Virtualization Deployment
VMware Certified Advanced Professional 6/7 - Cloud Mgt and Automation Deployment
VMware Certified Advanced Professional 6/7 - Cloud Mgt and Automation Design
VMware Certified Design Expert – Network Virtualization
VMware Certified Design Expert - Cloud Mgt and Automation
VMware Certified Design Expert (all)
VMware Certified Design Expert 6 - Data Center Virtualization
VMware Certified Professional - Digital Workspace
VMware Certified Professional – Desktop Management 2021
VMware Certified Professional - Network Virtualization
VMware Certified Professional - Security 2021
VMware Certified Professional 6 - Data Center Virtualization (VCP6-DCV)
VMware Certified Professional 6.5 - Data Center Virtualization (VCP6.5-DCV)
VMware Certified Professional 6/6.5
VMware Certified Professional 6/7 - Cloud Mgt and Automation
VMware Certified Technical Associate - Data Center Virtualization
Zachman Certified - Enterprise Architect

IT CERTIFICATIONS PAY SUMMARY – Through October 1, 2022

A. CERTIFIED IT SKILLS PAY PERFORMANCE: By Category

TECH CERTIFICATIONS. Unlike non-certified skill pay, the average cash premium for 585 tech certifications decreased both in the most recent quarter (down 0.1 percent) and in the first nine months of 2022 (down 1.2 percent overall). 125 certifications changed in market value (compared to 105 in the prior quarter) with 67 recording losses and 58 showing gains in the quarter.

IT Certifications - % Growth/Decline
 3 months & 12 months

(585 certifications, data through 10/1/2022)

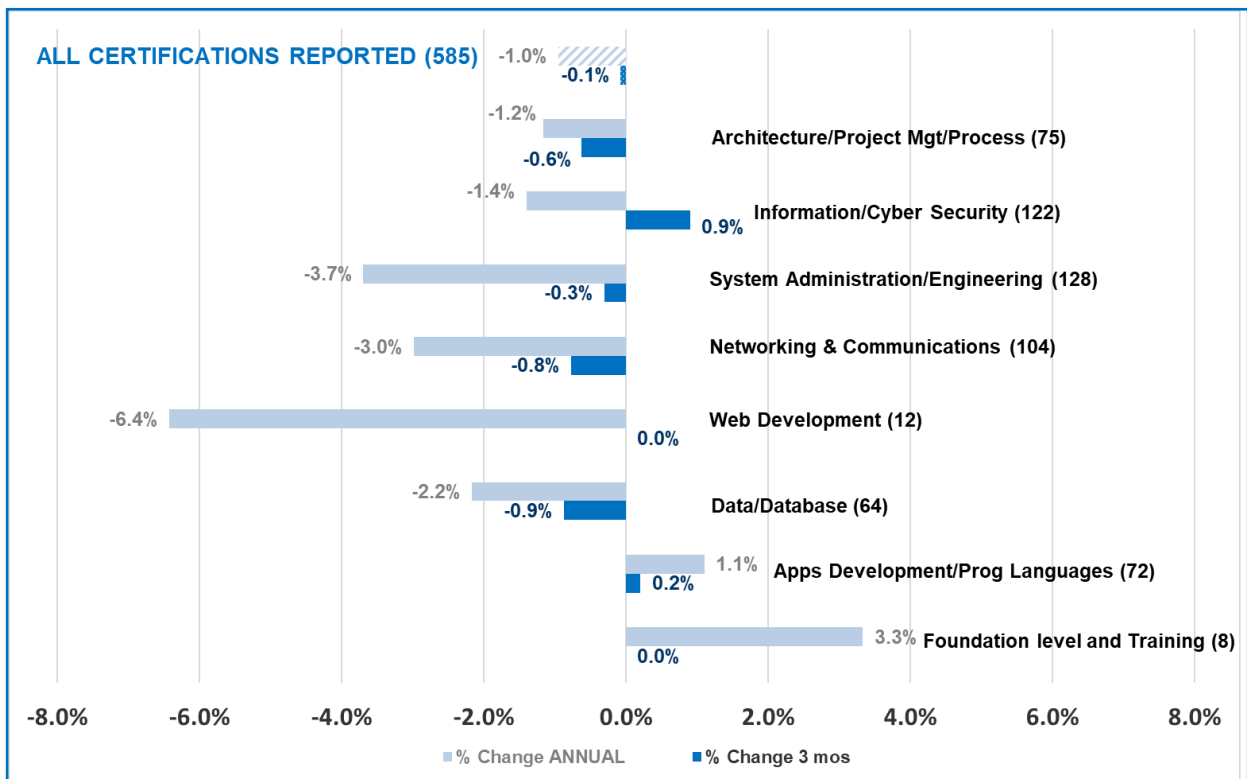


Figure 5

Source: Foote Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter 2022 data

19-YEAR QUARTERLY IT CERTIFICATION PAY TRENDS BY CATEGORY

Average quarterly median cash pay premium for a single IT certification. Data through 10/1/2022 – 90,126 IT Professionals

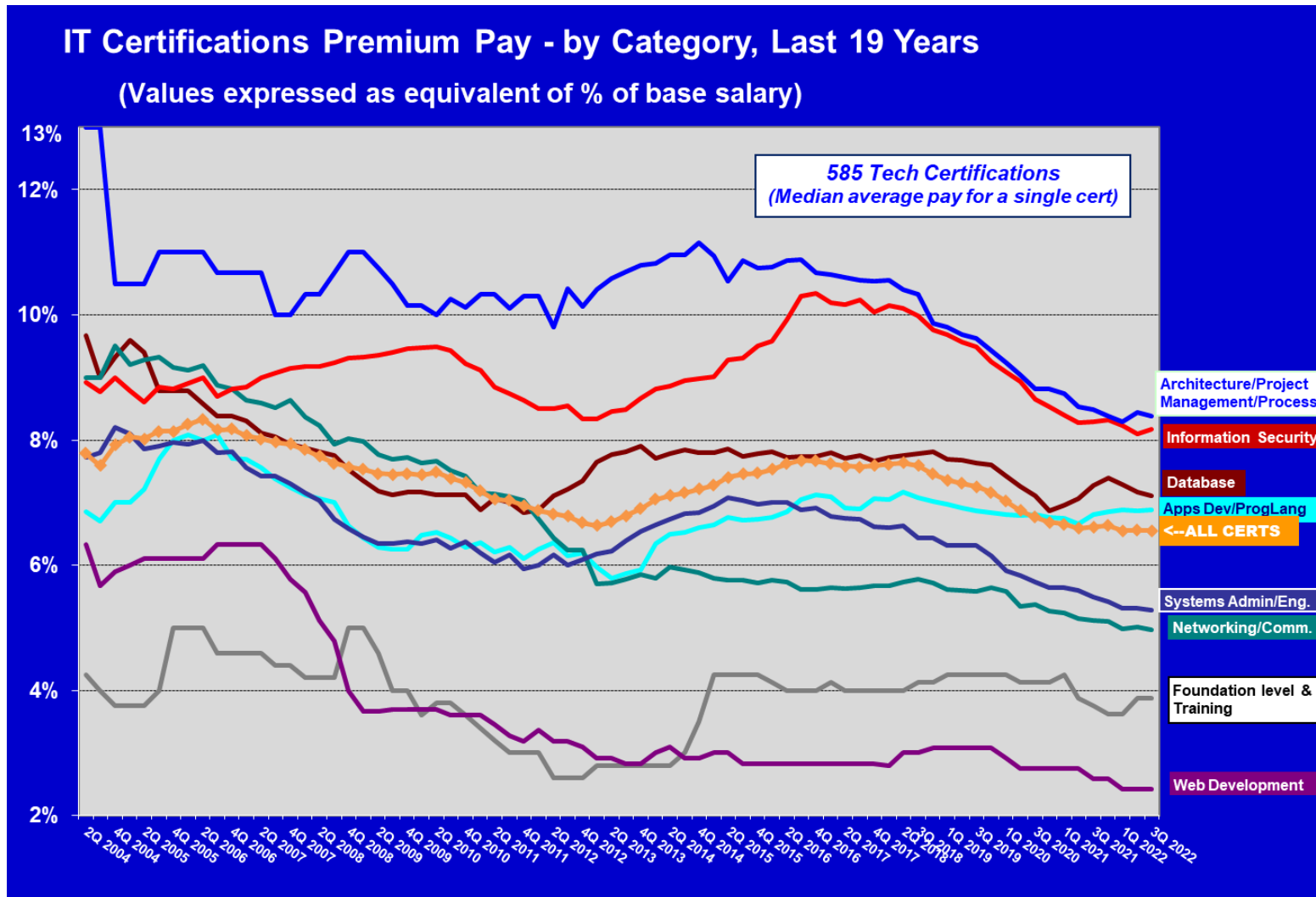


Figure 6

Pay data supporting these charts available in the [IT Skills and Certifications Pay Index™](#) – 3Q 2022 data edition

HIGHEST PAYING IT Certifications (cash pay premiums, all 584 certifications surveyed, ranked)

These **IT certifications** are among those earning the highest pay premiums (data collected July 1, 2022 to October 1, 2022). **Grouped by cash pay premium market value in descending order and alphabetically within groups.** **Green/Red** = increased/decreased in market value this quarter. **Purple** = Made the list this quarter for first time.

- | | |
|--|---|
| <p>1.[Tie] Certified Professional Scrum Product Owner
Certified Professional ScrumMaster</p> <p>2.[Tie] Certified Cloud Security Professional (ISC2-CCSP)
Certified Professional ScrumMaster
Certified ScrumMaster - Advanced
EC-Council Certified Encryption Specialist
GIAC Certified Forensics Analyst
GIAC Security Expert
GIAC Security Leadership
InfoSys Security Engineering Professional (ISSEP/CISSP)
Okta Certified Developer
PMI Program Management Professional
Zachman Certified - Enterprise Architect</p> <p>3.[Tie] AWS Certified Security - Specialty
Certificate of Cloud Security Knowledge
Certified in the Governance of Enterprise IT
Certified Manager of Software Quality
Certified Secure Software Lifecycle Professional
Cisco Certified Architect
CyberSecurity Forensic Analyst
EC-Council Certified Ethical Hacker
InfoSys Security Management Professional (ISSMP/CISSP)
Okta Certified Professional
SAFe Certification
TOGAF 9 Certified</p> | <p>4.[Tie] AWS Certified DevOps Engineer - Professional
Certified in Governance, Risk and Compliance
Certified in Risk and Information Systems Control (CRISC)
Certified Information Security Manager (CISM)
Certified Information Systems Auditor (CISA)
Certified Information Systems Security Professional (CISSP)
Certified Scrum Product Owner
Cloudera Certified Professional: Data Engineer
CompTIA Advanced Security Practitioner (CASP)
GIAC Certified Incident Handler (GCIH)
Google Certified Professional Cloud Architect
Google Cloud DevOps Engineer
InfoSys Security Architecture Professional (ISSAP/CISSP)
Okta Certified Administrator
Okta Certified Consultant
Pegasystems Certified Lead System Architect
Salesforce Certified Systems Architect
SAS® Certified Advanced Analytics Professional Using SAS 9
SAS® Certified Professional: AI and Machine Learning
Six Sigma Master Black Belt
Teradata 14 Certified Master</p> |
|--|---|

Source: Footo Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter data edition

IT CERTIFICATION PAY TREND HIGHLIGHTS: Market Value Gainers & Highest Paying – 3rd Quarter 2022 data

These IT certifications *gained 10% or more in market value in the three months ending October 1, 2022* vs. prior quarter (seen below grouped by segment). **Listed in descending order of amount of % gain in cash pay premium** (including ties). Highest paying skills listed on right **in alphabetical order**.

IT CERTIFICATION Gainers	Highest Paying – Cash Premiums (A-Z)
<p><u>Info/Cyber Security certifications</u> GIAC Certified Incident Handler CWNP Certified Wireless Security Professional Check Point Certified Security Administrator GIAC Certified Forensics Examiner CompTIA Security+ CompTIA Advanced Security Practitioner Okta Certified Professional AWS Certified Security - Specialty</p> <p><u>Networking and Communications certifications</u> CWNP/Certified Wireless Design Professional CWNP/Certified Wireless Network Expert Brocade Certified Fabric Designer Brocade Certified Fabric Professional Cisco Certified Network Associate (was CCNA Collaboration) Brocade Certified Network Professional AWS Certified Advanced Network - Specialty Brocade Certified Network Engineer Juniper Networks Certified Specialist (all specializations) Juniper Networks Certified Expert (all specializations)</p>	<p><u>Systems Administration certifications</u> Linux Professional Institute certification (LPIC-Level 2) Linux Foundation Certified Engineer Linux Foundation Certified System Administrator ServiceNow Certified Systems Administrator Rackspace Certified Technician VMware Certified Professional 6 - Data Center Virtualization VMware Certified Professional 6.5 - Data Center Virtualization VMware Certified Professional 6/6.5 VMware Certified Professional 6/7 - Cloud Mgt and Automation Linux Professional Institute certification (LPIC-Level 3) SUSE Enterprise Architect AWS Certified SysOpsAdministrator-Associate (Cloud)</p> <p><u>Architecture, Project Management, and Process Certifications</u> PMI Program Management Professional SAS® Certified Specialist: Visual Business Analytics AXELOS ITIL 4 certifications Microsoft Certified: Azure AI Engineer Associate Salesforce Certified Integration Architecture Designer Google Certified Professional Cloud Architect Google Cloud DevOps Engineer Certified in the Governance of Enterprise IT SAFe Certification</p> <ul style="list-style-type: none"> - AWS Certified Security - Specialty - Certificate of Cloud Security Knowledge - Certified Cloud Security Professional (ISC2-CCSP) - Certified in the Governance of Enterprise IT - Certified Manager of Software Quality - Certified Professional Scrum Product Owner - Certified Professional ScrumMaster - Certified ScrumMaster - Advanced - Certified Secure Software Lifecycle Professional - Cisco Certified Architect - CyberSecurity Forensic Analyst - EC-Council Certified Encryption Specialist - EC-Council Certified Ethical Hacker) - GIAC Certified Forensics Analyst - GIAC Security Expert - GIAC Security Leadership - InfoSys Security Engineering Professional - InfoSys Security Management Professional - Okta Certified Developer - Okta Certified Professional - PMI Program Management Professional - SAFe Certification - TOGAF 9 Certified - Zachman Certified - Enterprise Architect

Source: Foote Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter 2022 data edition

IT CERTIFICATION PAY TREND HIGHLIGHTS, cont'd – 3rd Quarter 2022 data

TECH CERTIFICATION Gainers – cont'd.

Data/Database certifications

Teradata 14 Certified Associate
Teradata 14 Certified Technical Specialist
Microsoft Certified Azure Data Engineer Associate
MongoDB Certified Developer
Teradata 14 Certified Database Developer
Oracle Certified Professional - DBA
Teradata 14 Certified Database Administrator
MongoDB Certified DBA
Teradata 14 Certified Enterprise Architect

Application Development/Programming Languages certifications

Salesforce Certified Systems Architect
Magento 2 Certified Professional Developer
Oracle Certified Professional - Fusion Middleware 11g
Forms Developer
AWS Certified Developer - Associate
Pegasystems Certified System Architect
Salesforce Identity and Access Management Architect
Pivotal Application Architect
Salesforce Certified Data Architecture and Management
Designer
Pegasystems Certified Lead System Architect

Source: Foote Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter 2022 data edition

IT CERTIFICATION PAY TREND HIGHLIGHTS: **Market Value Losers** – 3rd Quarter 2022 data

These tech IT certifications **declined 10% or more in market value in the three months ending October 1, 2022** vs. prior quarter (seen below grouped by segment). **Listed in descending order of amount of % decline in cash pay premium**, including ties.

IT CERTIFICATIONS Losers

Application Development/Programming Languages

Red Hat Certified Enterprise Application Developer
Salesforce Platform App Builder
Oracle Certified Professional - Application Server Administrator
Microsoft Certified: Azure Developer Associate
IBM Certified Solution Advisor - DevOps V2
Red Hat Certified Architect: Enterprise Applications
Salesforce Certified Platform Developer
Microsoft Certified Solutions Developer
TIBCO Certified Architect

Info/Cyber Security certifications

Microsoft Certified: Azure Security Engineer Associate
Cisco Certified Network Professional - Security
GIAC Exploit Researcher and Advanced Penetration Tester

Architecture, Project Management, and Process Certifications

PMI Risk Management Professional
PMI Agile Certified Practitioner
ITIL Foundation Certification
PMI Certified Associate in Project Management
Certified Professional ScrumMaster
Six Sigma Black Belt
Microsoft Certified: DevOps Engineer Expert
Prince2 Practitioner
Certified Business Analysis Professional
PMI Portfolio Management Professional

Systems Administration certifications

Microsoft Certified Solutions Associate: Windows Server 2012/2016
Citrix Certified Professional-Virtualization
Microsoft Certified Solutions Expert: Server Infrastructure
Salesforce.com Certified Administrator
ServiceNow Certified Application Developer
HP ATP - Hybrid IT Solutions V2
MCSE: Core Infrastructure
Red Hat Certified Specialist in Cloud Infrastructure (was System Administrator OpenStack)
Oracle Linux Certified Administrator
Red Hat Certified Specialist in Messaging Administration
Red Hat Certified Architect
HP Master ASE – Hybrid IT Solutions Architect V1
Red Hat Certified Architect: Cloud
Salesforce.com Certified Advanced Administrator
Red Hat Certified Specialist in Linux Performance Tuning

Networking and Communications

Cisco Data Center Unified Computing Design Specialist
Cisco Data Center Unified Fabric Support Specialist
Avaya Certified Design Specialist
Dell Implementation Engineer - Specialist
BICSI Technician and Registered Communications Distribution Designer
Cisco Certified Network Professional - Enterprise (was CCNP Wireless)
SolarWinds Certified Professional
BICSI ITS Technician

Cisco Certified Network Professional (was CC Design Professional)
Cisco Certified Design Expert
Dell EMC Technology Architect - Expert
Dell Implementation Engineer - Expert
Cisco Certified Internetwork Expert (all variations)
Juniper Networks Certified Professional (all specializations)

Data/Database certifications

Microsoft Certified Solutions Associate: BI Reporting
Qlik Sense Business Analyst
SAS Certified Statistical Business Analyst - SAS 9
IBM Certified Application Developer - DB2 9.7 for Linux, Unix and Windows
Oracle Certified Professional - MySQL 5.x Database Administrator
Tableau Server Certified Professional
Oracle Certified Associate - DBA
IBM Certified Database Administrator - DB2 11.1 for Linux, UNIX and Windows
SAS® Certified Professional: Data Curation for SAS Data Scientists
SAS Certified Data Scientist Using SAS 9
Cloudera Certified Associate Data Analyst

Source: Foote Partners [IT Skills & Certifications Pay Index™](#), 3rd Quarter data edition

IT CERTIFICATIONS ANALYSIS – Winners

A. **IT CERTIFICATIONS: Paying well above average + gaining the most in market value**

As a group, the 585 IT certifications tracked in our *IT Skills and Certifications Pay Index™* had declined in market value every calendar quarter since 3rd quarter 2018 until the second half of 2021 when they posted two consecutive quarters of gains. But in the first nine months of 2022 all those gains were lost. Still, some IT certifications bucked this trend.

The following IT certifications meet two prerequisites:

- First, they **recorded substantial gains in cash market value in the six months** ending October 1, 2022.
- Second, they **earned workers cash pay premiums well above the average** of all 585 certifications in our *IT Skills and Certifications Pay Index™*

No IT certification the follows is earning less than the equivalent of 10 percent of base salary—significant considering the average for all skills reported is 6.6 percent of base—and every certification listed below grew somewhere in the 9 percent to 57 percent range in cash market value in the six months ending October 1st. **They are listed in descending ranked order of market value gain** (including ties).

Here is the list of IT certifications the meet the above criteria (in alphabetical order):

- | | |
|---|---|
| - AWS Certified DevOps Engineer - Professional | - Google Cloud DevOps Engineer |
| - AWS Certified Security - Specialty | - InfoSys Security Engineering Professional |
| - Certificate of Cloud Security Knowledge | - Okta Certified Administrator |
| - Certified in the Governance of Enterprise IT | - Okta Certified Developer |
| - Certified Professional Scrum Product Owner | - Okta Certified Professional |
| - CompTIA Advanced Security Practitioner | - Pega Certified Lead System Architect |
| - GIAC Certified Forensics Analyst | - PMI Program Management Professional |
| - GIAC Certified Incident Handler | - SAFe Certification |
| - Google Certified Professional Cloud Architect | |

Below is the same list, but **in descending ranked order of cash premium first and market value increase second** (including ties).

* * * *

1. **Certified Professional Scrum Product Owner**
Average Pay Premium: 13 percent of base salary equivalent
Market Value Increase: 18.2 percent (in the six months through October 1, 2022)
2. **PMI Program Management Professional (PgMP)**
Average Pay Premium: 12 percent of base salary equivalent
Market Value Increase: 20 percent (in the six months through October 1, 2022)
3. **[Tie] GIAC Certified Forensics Analyst (GCFA)**
InfoSys Security Engineering Professional (ISSEP/CISSP)
Okta Certified Developer
Average Pay Premium: 12 percent of base salary equivalent
Market Value Increase: 9.1 percent (in the six months through October 1, 2022)
6. **Okta Certified Professional**
Average Pay Premium: 11 percent of base salary equivalent
Market Value Increase: 57.1 percent (in the six months through October 1, 2022)

IT CERTIFICATIONS ANALYSIS – Winners, cont'd.

7. **Certified in the Governance of Enterprise IT (CGEIT)**
Average Pay Premium: 11 percent of base salary equivalent
Market Value Increase: 37.5 percent (in the six months through October 1, 2022)
8. **AWS Certified Security - Specialty**
Average Pay Premium: 11 percent of base salary equivalent
Market Value Increase: 22.2 percent (in the six months through October 1, 2022)
9. **Certificate of Cloud Security Knowledge (CCSK)**
SAFe Certification
Average Pay Premium: 11 percent of base salary equivalent
Market Value Increase: 10 percent (in the six months through October 1, 2022)
11. **[Tie] AWS Certified DevOps Engineer - Professional**
CompTIA Advanced Security Practitioner (CASP)
GIAC Certified Incident Handler (GCIH)
Google Certified Professional Cloud Architect
Google Cloud DevOps Engineer
Okta Certified Administrator
Pegasystems Certified Lead System Architect
Average Pay Premium: 10 percent of base salary equivalent
Market Value Increase: 11.1 percent (in the six months through October 1, 2022)

IT CERTIFICATIONS ANALYSIS – Losers

B. IT CERTIFICATIONS THAT HAVE LOST THE MOST MARKET VALUE: Last 2 years

The average market value for 584 tech certifications may have increased in each of the last two calendar quarters, the first increases in several years. But this doesn't obviate the fact that they have been on a steady decline for much of the past several years.

The following tech certifications [lost the most in cash market value in the 24 months ending October 1, 2022.](#)

Why have more certifications been losing value than gaining value?

Certifications decline in market value for a number of obvious and not so obvious reasons. Pay premiums may diminish as a certification expires, is retired, or is replaced with other certifications as technology evolves. Also, there remains a lingering bias that taking a proctored exam does not confer expertise in a subject on the test taker, especially when the pass rate is 70 percent (or less) correct answers. The certification industry has fought back against this bias by adding laboratory requirements and even peer review panels that decide if the candidate has qualified to receive designation.

But just as often it is their popularity that drives down pay premiums for a certification: as interest in a certification escalates and more people attain the certification, the gap between supply and demand for the certification narrows, driving down its market value as the laws of scarcity would dictate. This has been frequently documented in the case of dozens of certifications over the 20+ years Foote Partners has been tracking and reporting their cash pay premiums in the *IT Skills and Certifications Pay Index*.

LOSING GROUND: Listed below in descending order of 24-month percent market value decline, grouped alphabetically in cases of a tie. **Loss range: -30% to -44%**

- Microsoft Certified Solutions Associate: BI Reporting
 - Avaya Certified Design Specialist (ACDS)
 - [Tie] GIAC Reverse Engineering Malware (GREM)
 - SAS® Certified Advanced Analytics Professional Using SAS 9
 - BICSI Technician and Registered Communications Distribution Designer
 - Salesforce B2C Commerce Developer
 - [Tie] Red Hat Certified Specialist in Cloud Infrastructure
 - CWNP/Certified Wireless Analysis Professional (CWAP)
 - VMware Certified Professional - Network Virtualization
 - Cisco Certified Network Professional - Data Center (CCNP Cloud)
 - Microsoft Certified Azure Administrator Associate
 - Red Hat Certified Systems Administrator (RHCSA)
 - Pegasystems Certified Robotics System Architect
 - Systems Security Certified Practitioner (SSCP)
 - Oracle Certified Professional - Advanced PL/SQL Developer
 - Oracle Certified Professional - E-Business Suite 12
 - Dell Information Storage and Management Associate
- Cont'd.
- Check Point Certified Security Master (CCSM)
 - CompTIA Server+
 - Six Sigma Master Black Belt
 - IBM Certified Solution Advisor - DevOps V2
 - Salesforce Certified Platform Developer
 - Citrix Certified Professional-Virtualization (CCP-V)
 - Cisco Data Center Unified Computing Design Specialist
 - [Tie] Certified Computer Examiner (CCE)
 - Dell Implementation Engineer - Specialist (DCS - IE)

2022 IT Skills & Certifications Pay Volatility Index™

(Data collected through October 1, 2022)

Demand dynamics in benchmarked certified and non-certified IT skills pay

What is skills and certifications pay volatility?

Skills volatility is defined as the incidence of gains or declines in premium pay earned by tech professionals for specific certified and noncertified technical and business skills. Tracking volatility is useful for both analyzing and forecasting demand for skills, for monitoring IT workforce transition, and for understanding IT management decision making. Volatility offers valuable insights that salary movements and hiring behavior do not. Important in this distinction is that skills can be segmented and benchmarked more meaningfully than jobs. Similar to IT positions, there are the broad categories (e.g., security, networking, systems, database, applications development). But also, more narrow areas, for example---web/e-commerce development, storage area networking, virtualization, architecture, business process, project management, methodology. But unlike most jobs, within categories or niche are very specific vendor-specific or vendor independent niches and skill specializations that provide more granular analysis (e.g., SAP, AJAX, Ruby on Rails, Microsoft Sharepoint, collaboration appliances, Oracle database).

TRENDS Cash Pay Premium Volatility for IT Skills and Certifications

Volatility in market value for individual IT skills and certifications—defined as incidence of gains or declines over a period of time in premium pay earned by IT professionals for specific technical and business skills—increased from July 1, 2022 to October 1, 2022 according to the latest update of Foote Partners' long-running *IT Skills and Certifications Pay Index™* of market values for tech skills. Market value is measured by tracking additional cash compensation paid to workers by their employers for specific certified and non-certified skills they possess.

Current Quarterly Recap (data collected through October 1, 2022)

TOTAL: All Skills and Certifications

- **23.9%** of skills and certifications (298 of 1,245) changed in market value in 3rd Quarter 2022, a moderate decrease from 24.7% in the prior quarter. Average volatility in the prior calendar year 2021 averaged **25%**, slightly higher than the most recent calendar quarter volatility.
- **118 gained** value and **180 declined** in value in 3rd Quarter 2022, significantly different than the 161 and 145, respectively, in the prior quarter.

CERTIFIED SKILLS

- **21.4%** of reported certifications (125 of 584) changed market value in 3rd Quarter 2022, more than three points higher than the **18.1%** volatility in the prior quarter in which only 105 certs changed value.
- **58 gained** market value while **67 declined** in value in Q3 compared to 50 and 55, respectively, in the prior quarter—a significant differential marking a return to flat or diminishing market value overall for IT certifications.

NON-CERTIFIED SKILLS

- **26.2%** of reported noncertified skills (173 of 661) changed value in 3rd Quarter 2022, four points lower than the **30.5%** volatility in the prior quarter. This is still lower than **average volatility of 32.3% for the 2021 calendar year**.
- **60 noncertified skills gained** in market value; **113 declined** in value in the 3rd Quarter compared to 111 and 90, respectively, in the prior quarter—a significant flip between total gains and losses.

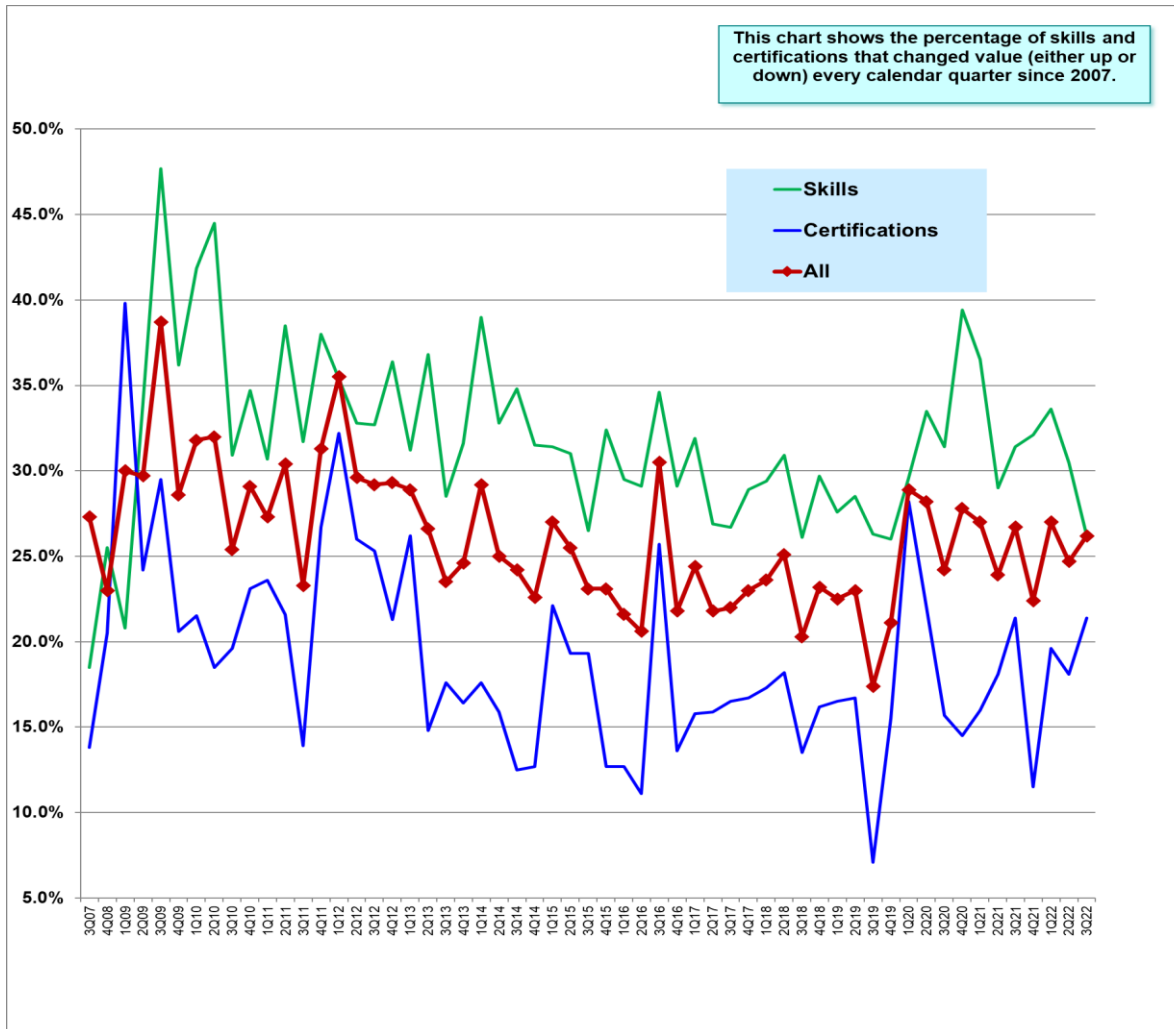
Tracking skills volatility is useful in many ways: analyzing and forecasting demand for skills; monitoring IT workforce transition; and understanding IT management decision making. In fact, we believe statistical volatility in IT skills pay offers a more complete story of true labor market conditions than salary movements and hiring behavior, among other common indicators. Important in this distinction is that skills can be segmented and benchmarked more meaningfully than jobs allowing to microanalyses.

Similar to jobs, IT skills have broad skills categories that can be tracked (e.g., security, networking, systems, database, applications development). But unlike jobs, skills pay can be pinpointed to hundreds of niches and specialization. Also, unlike most job trends analyses, within skills categories and niches are *vendor-specific* and *vendor independent* skill specializations for more granular tracking, analysis, and forecasting.

Quarterly volatility for all 1,248 certified and non-certified skills in the last two years has been widely variable, in the 17% to 28% range. This is an important shift trend that we believe signals a move that employers are taking a more long-term view to building their tech workforces for emerging technologies such as AI/Machine Learning, Data Analytics and a variety of digital solutions. Tech leaders right now are demanding more agility, faster reaction times, and more predictable execution; this is keeping volatility high as skills markets constantly adjust to meet surges in demand for specific certified and non-certified skills.

VOLATILITY HIGHLIGHTS - 16 Year Trending

IT Skills and Certifications Volatility Index™ – 1,248 Skills and Certifications



(Source: Foote Partners LLC, [2022 IT Skills & Certifications Pay Index™](#))

Recent IT skills and certifications volatility trends

QUARTERLY SUMMARY

In the 3rd Quarter 2022, 23.9% of skills and certifications recorded a change in their cash pay premiums, down slightly from 24.7% the first quarter.

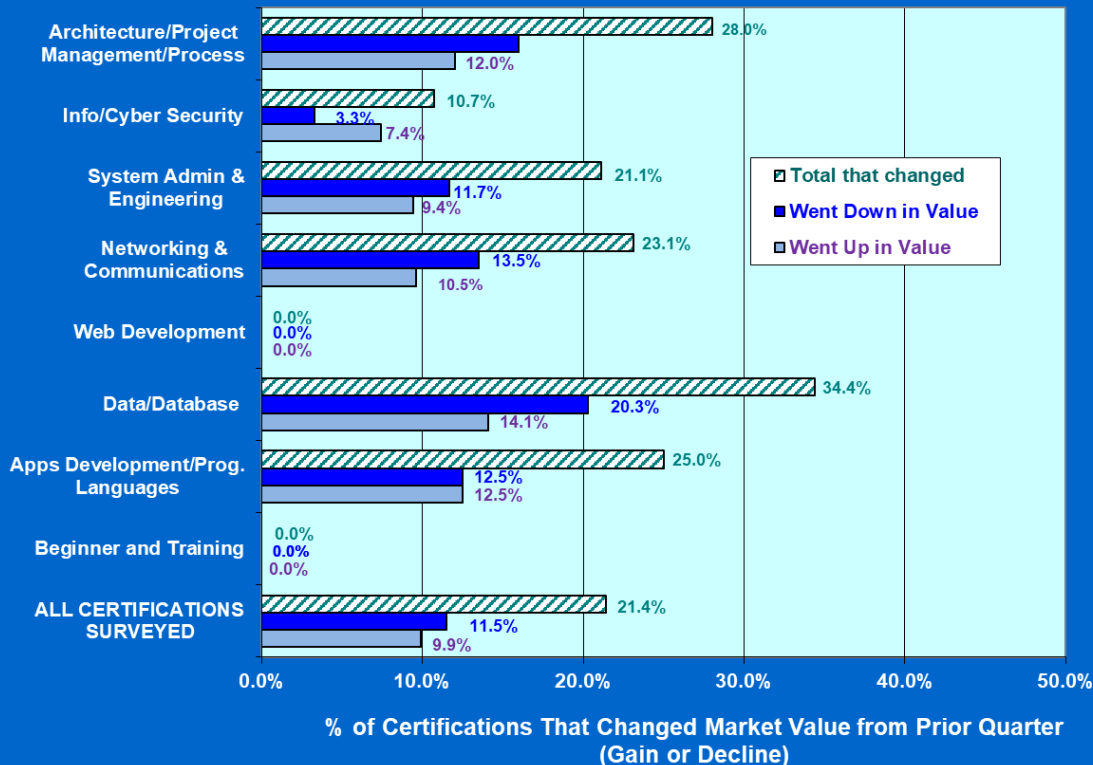
NONCERTIFIED SKILLS VOLATILITY in 3Q 2022 (26.2%) was 4 points lower than the prior quarter (30.5%) and also lower than the 30.6% average volatility over the past 12 months.

IT CERTIFICATIONS VOLATILITY in 3Q 2022 was higher than the prior quarter, up 21.4% from 18.1%. This is higher than both the 17.7% average quarterly volatility in the last 12 months and 17.6% in the last 24 months.

(Pay data supporting these charts available in the [IT Skills and Certifications Pay Index™](#) – 2007 to 2022 quarterly data edition)

VOLATILITY HIGHLIGHTS IT Certifications – 3rd Quarter 2022 data

VOLATILITY INDEX: How Many of 585 IT Certifications Changed Market Value in 3rd Quarter 2022?



(Source: Foote Partners LLC, [2022 IT Skills & Certifications Pay Index™](#))

**IT Skills and Certifications Volatility Index™
3Q 2022 data edition findings: Tech Certifications**

IT Certifications Volatility Highlights

Among all 585 certifications surveyed, highest volatility (>10%) occurred in these segments (ranked highest to lowest):

- Data/Database
- Architecture/Project Mgt/Methodology
- Applications Development
- Networking & Communication
- Systems Admin & Engineering

Within segments, notable upward volatility (value **gains**) occurred most in these:

- Data/Database
- Architecture/Project Mgt/Methodology
- Applications Development

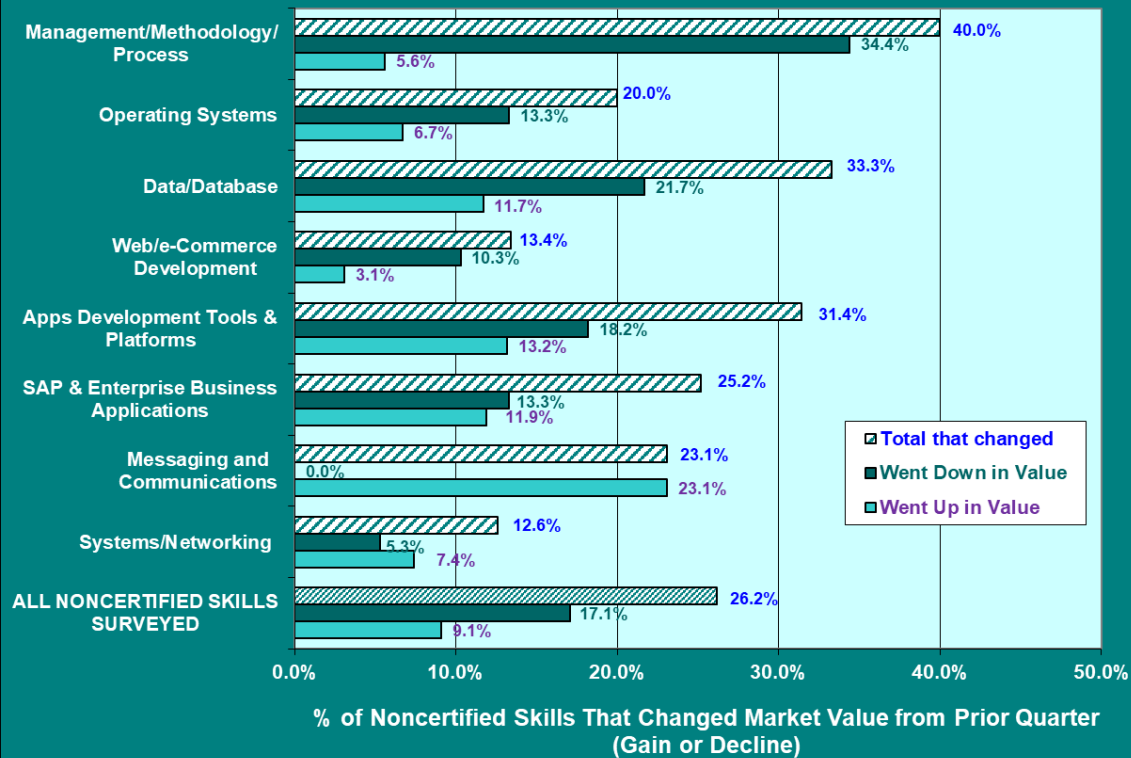
Within segments, notable downward volatility (value **declines**) occurred most in these (ranked):

- Data/Database
- Architecture/Project Mgt/Methodology
- Networking & Communication
- Applications Development
- Systems Admin & Engineering

(Pay data supporting these charts available in the [IT Skills and Certifications Pay Index™](#) – 2007 to 2022 quarterly data edition)

VOLATILITY HIGHLIGHTS Non-certified IT Skills – 3rd Quarter 2022 data

VOLATILITY INDEX: How Many of 663 Noncertified IT Skills Changed Market Value in 3rd Quarter 2022?



(Source: Foote Partners LLC, [2022 IT Skills & Certifications Pay Index™](#))

IT Skills and Certifications Volatility Index™
3Q 2022 data edition findings: Non-certified IT Skills

Non-certified IT Skill Pay Volatility Highlights

Among all 663 noncertified IT skills surveyed, high volatility (>20%) occurred in all but one segments (ranked highest to lowest):

- Management/Methodology/Process
- Data/Database
- Applications Development Tools & Platforms;
- SAP & Enterprise Business Apps
- Messaging and Communications
- Operating Systems

Within segments, notable upward volatility (value **gains**) occurred most in these (ranked):

- Messaging and Communications
- Applications Development Tools & Platforms
- SAP & Enterprise Business Apps
- Data/Database

Within segments, notable downward volatility (value **declines**) occurred most in these (ranked):

- Management/Methodology/Process
- Data/Database
- Applications Development

(Pay data supporting these charts available in the [IT Skills and Certifications Pay Index™](#) – 2007 to 2022 quarterly data edition)

2022 IT Skills and Certifications Pay Index™ (3rd Quarter data edition)

- Pay premiums for **1,248 certified and noncertified IT skills**
 - Three data points for each position: 10th, 50th, 90th percentile
- Verified and validated IT skills pay data from **90,126 IT professionals at 4,057 employers** in US and Canada
- Current data collected through October 1, 2022 (updated quarterly)
- Excel format data tables allowing for data loading into third-party data analytics tools from PayScale, MarketPay, PayFactors, CompAnalyst, WillisTowersWatson, Mercer, et. al.
- Certifications Guide containing basic information about surveyed IT certifications (pre-requisites; costs; test content; lab requirements, etc.)

Pricing: \$6,300 single edition. \$21,500 annual subscription

Definition of IT skills premium pay

- Pay that IT workers receive for possessing high-value IT and business skills used on the job
- Given in the form of a bonus, or embedded in base salary to adjust for the presence of a dominant vendor or technology central to job performance (examples: Cisco Network Engineer, Python Software Engineer, Redhat Linux Systems Administrator, or SAP Developer.)
- Often used to adjust either base pay or total pay in situations where job title does not match actual on-the-job duties and responsibilities, and changing the job title is not an attractive option
- May be used as a reward, recruiting inducement, retention tool, or as a guide for creating consulting rate cards

ABOUT THIS RESEARCH

Foote Partners' primary research survey for tracking IT skills and certifications pay and supply/demand volatility is the industry-leading ***IT Skills and Certifications Pay Index™ (ITSCPI)***, launched in 1999, and the ***IT Skills and Certifications Volatility Index***, both updated every three months since that time. Data covering 372,125 tech professionals at 4,057 employers in 83 U.S. and Canada cities are reported for IT salaries and skills pay earned for 260 positions and 1,248 certified and noncertified technical and business skills. Verified and validated pay data for 90,126 tech workers has been included in the 3rd Quarter 2022 data edition of the ITSCPI, compiled from data collected through October 1, 2022.

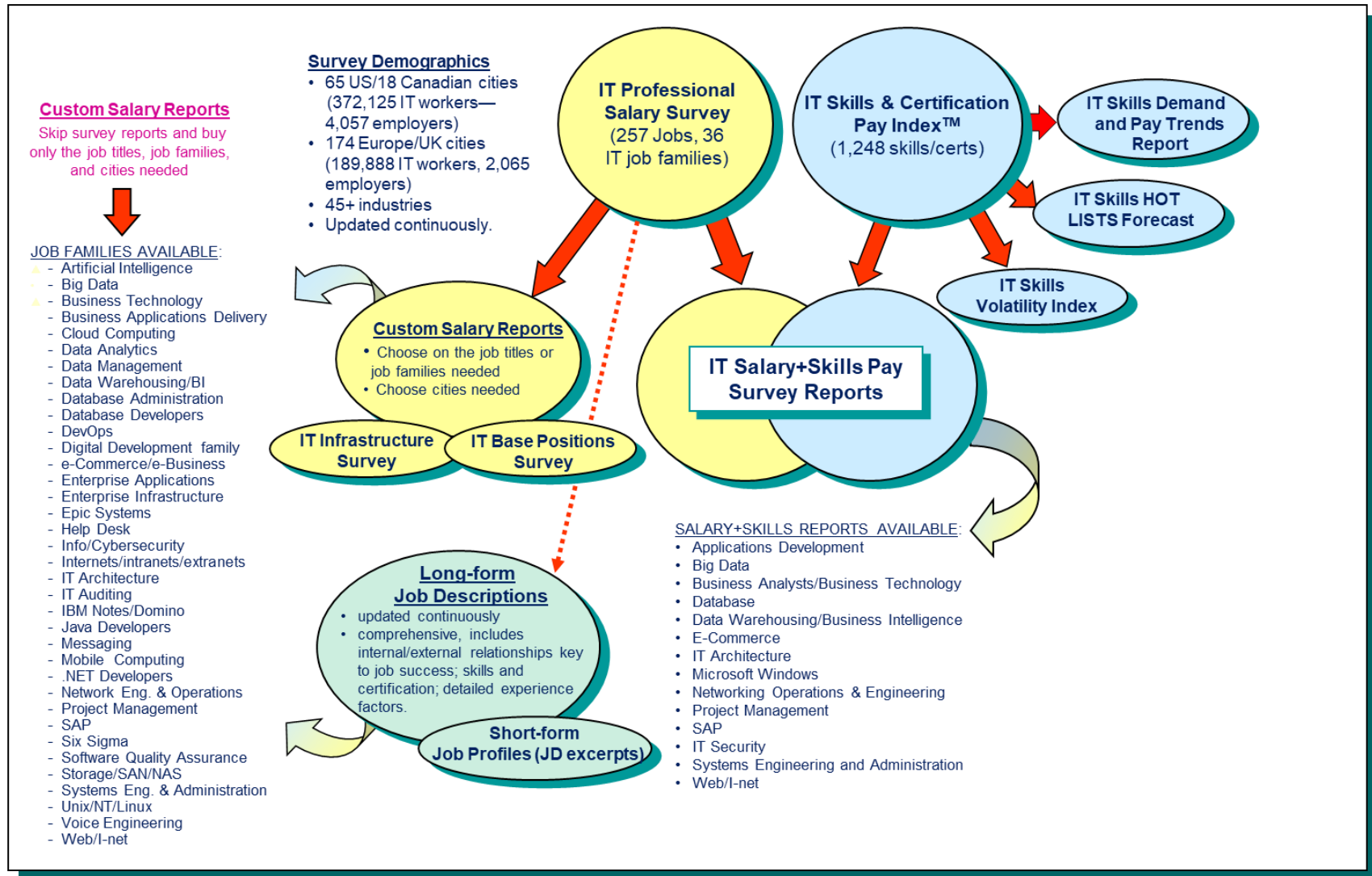
Demographics of the participating organizations for our latest update are as follows, measured most appropriately for the type of business, by revenues, assets, total premiums and operating budgets:

- 18% of participating organizations have \$5 billion+ in sales/\$15+ billion in total assets
- 28% of participating organizations earn more than \$1 billion in annual revenues or more than \$5 billion in total assets
- 46% of participating organizations have \$500+ million in sales/\$1+ billion in total assets/\$500+ million in premiums/\$500+ million operating budget (government, educational, not-for-profit)
- 54% of participating organizations fall in the SMB (small-to-medium sized business) segment, generally defined as organization under \$500 million in sales.
- [Public sector] 5% have operating budgets of \$500 million or more, [nonprofit/educational sectors] 4% with operating budgets \$100 million to less than \$500 million

TO OBTAIN A COPY OF THE LATEST ***IT SKILLS AND CERTIFICATIONS PAY INDEX™***

Please visit the Foote Partners web site: [IT Skills and Certifications Pay Index](#)

Foote Partners 2022 IT Compensation Survey Product Map



ABOUT FOOTE PARTNERS

Foote Partners, LLC is a technology analyst firm and independent benchmark research organization focusing on the people (versus vendor) side of managing technology and technology value creation. A thought leader and trusted advisor to thousands of employers on five continents who purchase our products and services, our company provides pragmatic benchmark research and forward-thinking advice and market intelligence targeting the tech workforce in the modern highly integrated business/IT hybrid environment in which all private and public organizations now operate.

Our products are deeply grounded in specialized proprietary data-driven statistical and empirical research, benchmark surveys, and business intelligence collected from thousands of North American employers with whom we have deep longstanding research partnerships. These partnerships have been created and supported specifically to enable unique market intelligence views and difficult-to-find decision support research on the multiple facets of IT human capital management. As a group, these U.S., Canadian, and European partners were selected to meet strict criteria for what we believe is the most meaningful demographic representation for tech professionals in each local labor markets.

Founded in 1997 and comprised of former Gartner industry analysts, McKinsey & Company, Mercer and WillisTowersWatson senior consultants, and former corporate HR, IT, and business executives, the firm's research division publishes 70+ quarterly-updated benchmarking, analytical research and forecasting products that help employers benchmark their IT compensation, solve difficult information technology management and workforce problems, and strengthen their ability to execute complex business solutions.

Foote Partners tech compensation survey findings and labor market trend analyses are featured regularly in countless business, HR, and IT media sources and periodicals around the globe, including *Bloomberg BusinessWeek*, *Forbes*, *Fortune*, *Wall Street Journal*, *New York Times*, *CIO Magazine*, *ComputerWorld*, and *WorldatWork's Journal* and *Workspan Magazine*; and in appearances on network and cable television, National Public Radio, and countless podcasts and webcasts.

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