Foote Partners, LLC
Foote Research Group

FOR IMMEDIATE RELEASE

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NOTE: This news release is a summary extract of content from the 1st Quarter 2022 data update edition of both the Foote Partners' *2022 IT Skills Demand and Pay Trends Report* and *2022 IT Skills and Certification Volatility Index*, two market intelligence trend reports updated every 3 months from data contributed by HR departments at 3,988 U.S. and Canadian employers. It contains IT jobs, skills and certifications data trends published in the firm's *IT Skills and Certifications Pay IndexTM* and deep-dive supply/demand benchmark analysis from Foote Partners field interviews.

Average market value for 659 non-certified tech skills showed dramatic strength in the first quarter of 2022, gaining the most value in 14 years of quarterly pay premium results. 135 skills increased in value compared to only 83 in the previous quarter, while only 81 recorded market value declines compared to 119 in the final quarter of 2021.

The average cash premium for 579 tech certifications declined 1.2 percent in the first quarter of 2022, the largest quarterly loss since late 2020. 111 certifications changed in market value compared to just 64 in the prior quarter, with 76 losing market value.

We continue to stand by our mid-2020 pandemic prediction that employers won't be feeling a true sense of normalcy or find comfort in predicting their future until the fourth quarter, despite recent relief in various restrictions.

May 20, 2022 – Vero Beach, FL. Extra pay awarded by employers to talented tech professionals for **659 non-certified tech skills** ---also known as cash pay premiums---showed robust growth in the first quarter of 2021, contributing to a 1.6 percent average increase. The current average pay premium bonus for a single skills is the equivalent of 9.5 percent of base salary.

Conversely, average market values for **579 tech certifications** decreased in Q1 after two consecutive quarters of growth, down 1.2 percent, to the equivalent of 6.6 percent of base salary cash bonus premium on average for a single certification**.** This is the largest quarterly loss since late 2020**.**

This according to the latest quarterly update of Foote Partners' *IT Skills and Certifications Pay IndexTM* (ITSCPI) based on compensation data provided by 3,988 private and public-sector employers in 83 U.S. and Canadian cities who partner with the firm to report pay for their 365,746 technology professionals in the U.S. and Canada.

Since its launch in 1999, the ***IT Skills and Certifications Pay Index^TM*** 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 1,239 certifications and non-certified skills.

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

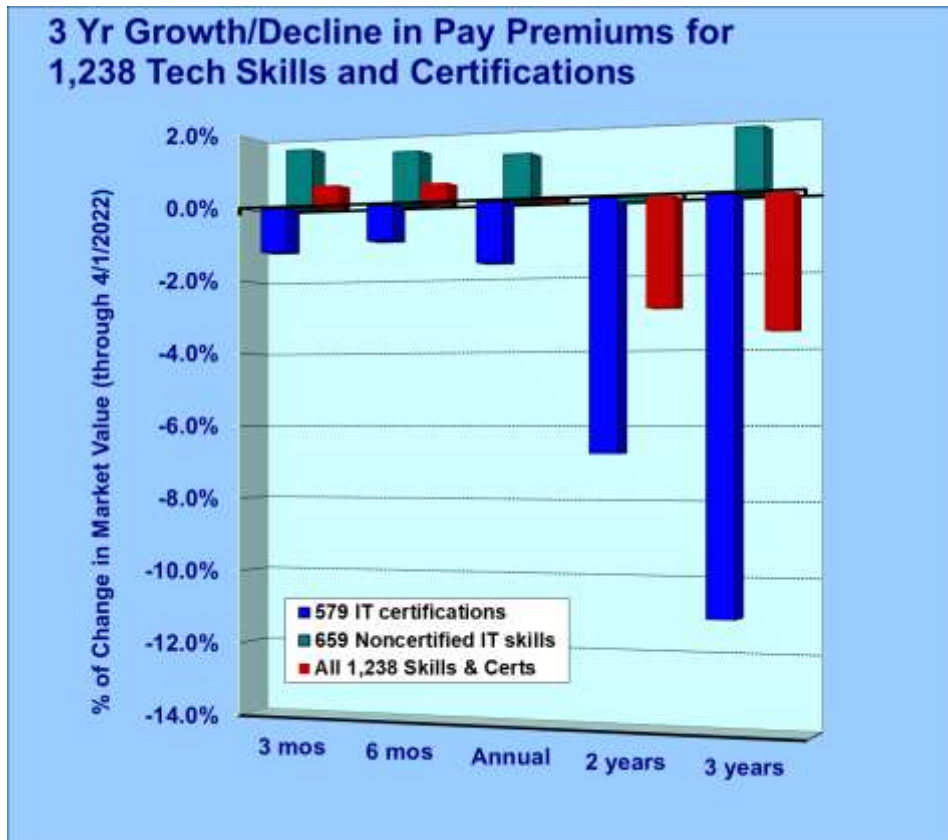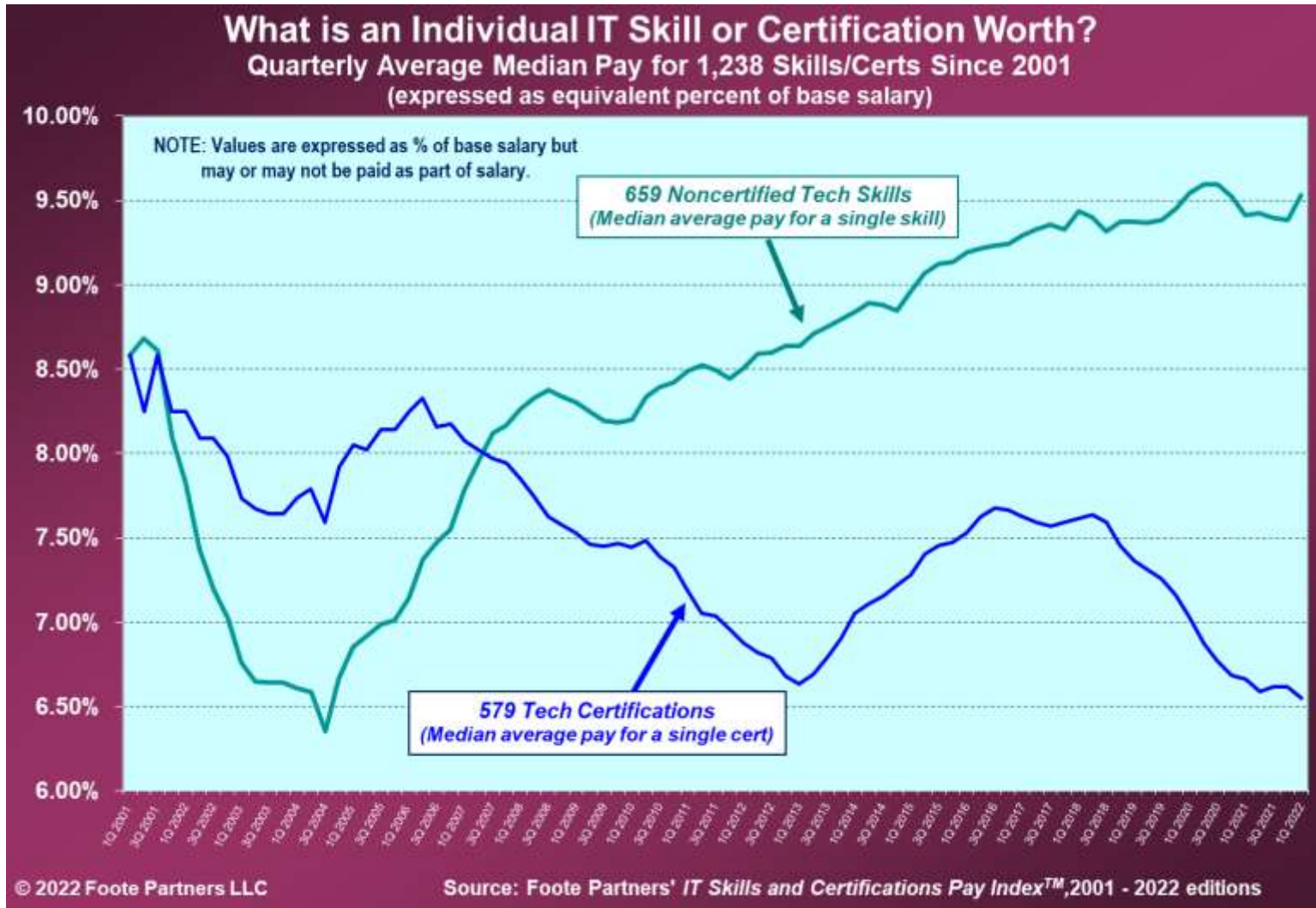(88,420 IT professionals, data through 4/1/2022)

Figure 1

Source: Foote Partners, *IT Skills and Certifications Pay Index^TM* (1Q2019 – 1Q2022 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 = 88,420 IT Professionals

IT Skills & Certifications Pay Data Trend Charts & Analysis

IT Skills and Certifications Pay Index™ – 1st Quarter 2021 data edition

(Data collected through April 1, 2022)

- **Noncertified IT Skills** (Page 6)
- **IT Skills & Certifications Volatility Index™** (Page 29)

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

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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 April 1, 2022)

659 Non-Certified Tech Skills Reported

Foote Partners News Release – May 20, 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
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 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
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 Endevor
Chef/Opscode
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 Mgmnt
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 Experience/User-Centered
 Design
Vulnerability Scanning/ Assess-
 ment/Management
Waterfall
Web Analytics
Webtrends analytics
Zachman Framework

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IT NONCERTIFIED SKILLS PAY SUMMARY – Through April 1, 2022

A.   NONCERTIFIED TECH SKILLS PAY PERFORMANCE: By Category

NON-CERTIFIED TECH SKILLS. 216 of 642 non-certified tech skills changed cash market value from January 1 to April 1, 2022 compared to 202 and 195 skills in the prior two calendar quarters. The average **c**ash pay premium for **642 non-certified skills** increased significantly last quarter, **the largest quarterly gain in 14 years.**

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

(659 skills, data through 4/1/2022)
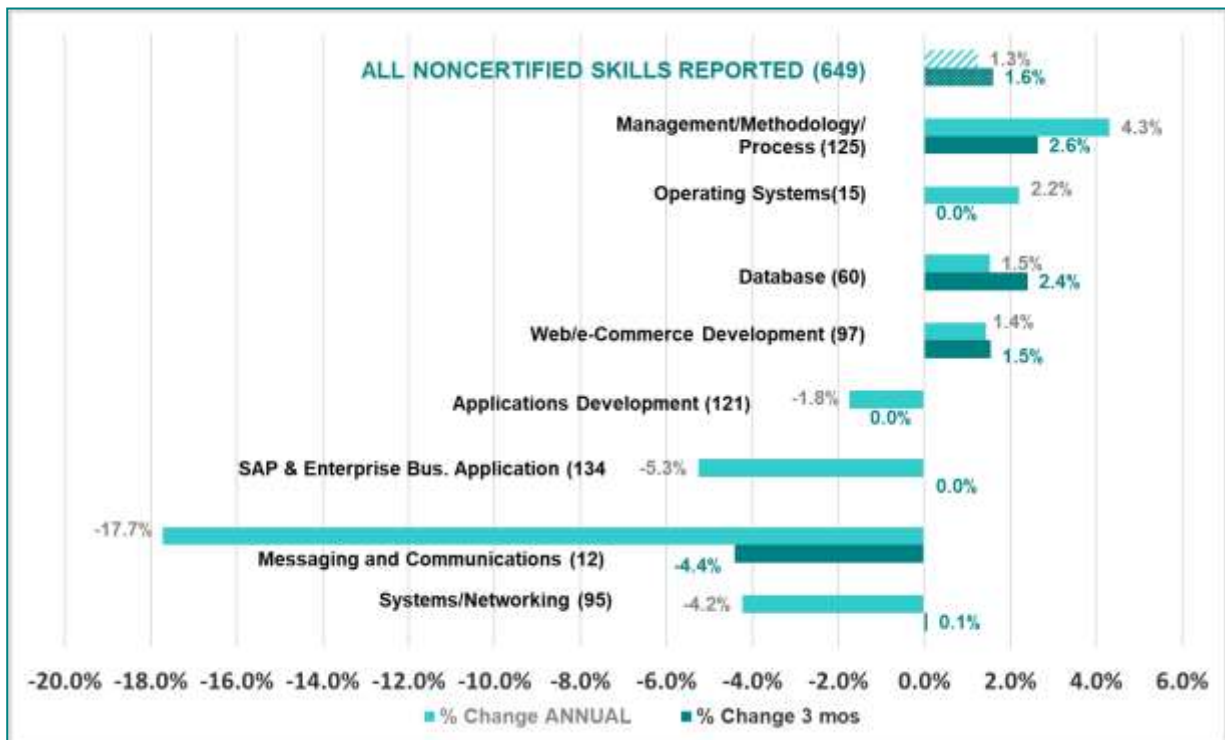
Figure 2

Source: Foote Partners *IT Skills & Certifications Pay Index*[TM], 1st 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 April 1, 2022 – 88,420 IT Professionals

Pay data supporting these charts available in the *IT Skills and Certifications Pay Index*[TM] – 1Q 2022 data edition
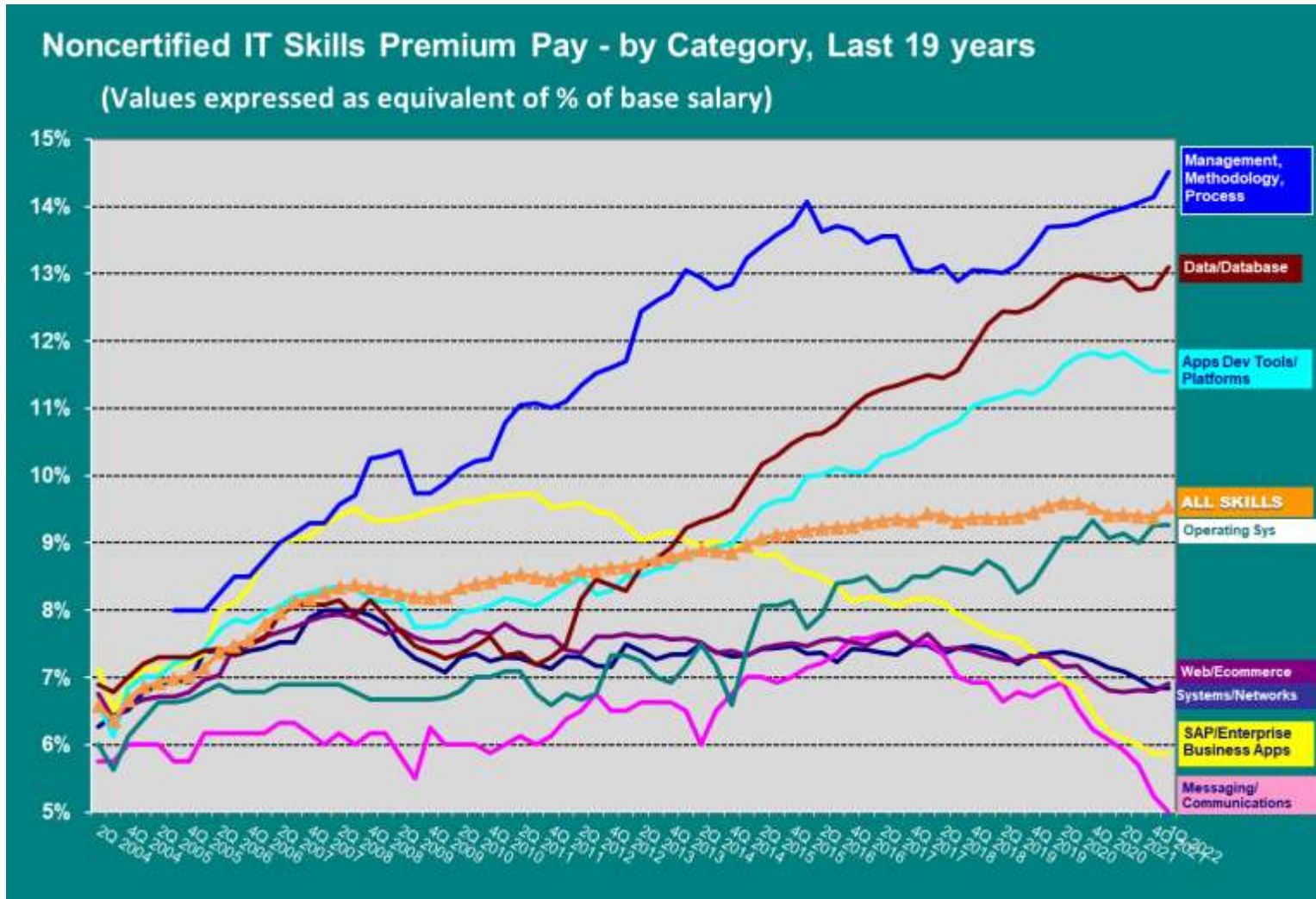
HIGHEST PAYING Noncertified IT Skills (cash pay premiums, all 659 skills surveyed, ranked)

These **non-certified IT skills** are among those earning the highest pay premiums (data collected January 1, 2022 to April 1, 2022). **Shown in alphabetical order grouped by <u>overall market value rank in descending order including ties</u>.** Green/Red = increased/decreased in market value this quarter. **Purple** = Made the list this quarter for first time.

1.   Smart Contracts

2.[Tie] Artificial Intelligence for IT Operations
     Azure Key Vault
     Big Data analytics
     Blockchain
     Deep Learning
     DevSecOps
     Ethereum
     MLOps
     Prescriptive Analytics
     Security architecture and models

3.[Tie] Complex Event Processing/Event
          Correlation
     Google TensorFlow
     PyTorch
     Scaled Agile Framework (SAFe)
     Site Reliability Engineering

4.[Tie] Amazon DynamoDB
     Caffe
     Continuous Delivery
     Data Architecture
     Data Engineering
     Data Science
     Data Strategy
     DevOps
     Flink
     Identity and access management

Machine Learning
Microservices
Natural language processing
Risk analytics/assessment
Splunk
Zachman Framework

5.[Tie] Amazon Athena
     Amazon RedShift
     Apache Cassandra
     Apache Spark
     Apache Zookeeper
     Artificial Intelligence
     Big Data
     Bioinformatics
     Clojure
     Cloudera software
     DataOps
     Functional Programming
     GitOps
     Google Big Query
     HBase
     Informatica
     Master data management
     Network Architecture
     Neural Networks
     NIST/NIST 800
     Oracle Exadata
     Redis
     Risk management
     Security auditing
     Threat Detection/Modelling/ Mgt

6.[Tie] Amazon SageMaker (ML)
     Apache Airflow
     Apache Hive
     Apache Spark SQL
     AWS Lambda
     Azure Machine Learning
     Azure SQL Data Warehouse
     Bamboo
     Configuration Management
     Continuous Integration
     Cryptography (encryption, VPN,
     SSL/TLS, Hybrids)
     Cyber Threat Intelligence
     Cybersecurity
     Data Analytics
     Data Governance
     Data Integration
     Data Management
     Data Migration
     Data Modelling
     Data Transformation
     Deployment Automation
     Go language (Golang)
     Kanban
     Kibana
     MapReduce
     Marketo
     Metadata design and development
     MongoDB
     NoSQL

Oracle Business Intelligence Enterprise Edition
Plus
PostgreSQL
Program Management
Rust
Scala
Security testing
Software development lifecycle management
Test Driven Development/Scripting
Usability Research/Human Factors Research

SOURCE: Foote Partners *IT Skills & Certifications Pay Index*^{TM}, 1st Quarter 2022 data edition

NONCERTIFIED IT SKILLS TREND HIGHLIGHTS: Market Value Gainers & Highest Paying – 1st Quarter 2022 data

These non-certified tech skills *gained 10% or more in market value in the three months ending April 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)
Applications Development skills WebSphere MQ (MQSeries) Apache Ant TestNG MapReduce Progress 4GL/Development tools TransacT-SQL/tSQLt **Database Skills** Sqoop Azure Cosmos DB DB2 Azure SQL Data Warehouse Oracle Business Intelligence Enterprise Edition Plus Redis Master data management Blockchain **Management, Process & Methodology skills** DataRobot Enterprise AI Platform TIBCO BusinessWorks Security auditing Artificial Intelligence for IT Operations HL7 Big Data analytics	**Systems/Networking skills** RedHat OpenShift Microsoft SCVMM Juniper Azure Sentinel Cisco ISE (Identity Services Engine) WAN 4G/5G services Software-Defined Networking WiMAX/LTE Apache Flume **SAP & Enterprise Business Applications skills** SAP Oil & Gas SAP Smart Forms SAP WEBI IBM Sterling J.D. Edwards (Oracle) Lawson SAP HR-PA SAP Lumira SAP PM SAP HR-PY (Payroll) Oracle E-Business suite SAP CRM SAP HCM (SAP HR) Oracle Financials Workday HCM Oracle SOA Suite	**Web/SOA/E-Commerce skills** Microsoft Sharepoint/Sharepoint Server Apache Solr ColdFusion/ColdFusion MX Documentum Spring Security WebSphere Datapower GatsbyJS WebSphere Microsoft BizTalk Server Node.js Oracle Fusion Redux Amazon Cloudwatch Google App Engine Google Cloud Platform Mobile applications development Spring Cloud Jetty **Operating System skills** Mobile operating systems (iOS, Android, etc.)	- Amazon DynamoDB - Artificial Intelligence for IT Operations - Azure Key Vault - Big Data analytics - Blockchain - Caffe - Complex Event Processing/Event Correlation - Continuous Delivery - Data Architecture - Data Engineering - Data Science - Data Strategy - Deep Learning - DevOps - DevSecOps - Ethereum - Flink - Google TensorFlow - Identity and access management - Machine Learning - Microservices - MLOps - Natural language processing - Prescriptive Analytics - PyTorch - Risk analytics/assessment - Scaled Agile Framework (SAFe) - Security architecture and models - Site Reliability Engineering - Smart Contracts - Splunk

Source: Foote Partners *IT Skills & Certifications Pay Index™*, 1st Quarter 2022 data

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NONCERTIFIED IT SKILLS TREND HIGHLIGHTS: Market Value Losers – 1st Quarter 2022 data

These noncertified IT skills *declined 10% or more in market value in the three months ending April 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 Cordova
Elixir
NetWeaver
Grunt
Apache Pig
RapidMiner
Apache Struts/Struts2
Erlang
Cloud Foundry PaaS
Apache Zookeeper
HP ALM (Application Lifecycle
    Management)
Microsoft SQL Server Management
Studio (SSMS)

Web/E-commerce Development skills
Active Server Pages
Apache web server
Apache Wicket
Ember.js
Microsoft Internet Information Services
Julia
Spring Integration
Social Media/Networks
Adobe Experience Manager
Microsoft Forefront Threat Management
    Gateway

SAP & Enterprise Business Applications skills
Oracle BPM
Oracle SCM
SAP Business One
SAP MDG
SAP PI
SAP PP
Oracle ERP
PeopleSoft (CRM/Financials/HCM)
Salesforce CRM
Salesforce Service Cloud
SAP BPC
SAP CO
SAP Fiori
SAP GTS
SAP UI development toolkit for HTML5

Management, Process & Methodology
Business performance management
    (software/systems)
E-Procurement

Messaging & Communications skills
Microsoft Exchange
Message-oriented Middleware (Wave,
XMPP/Jabber, etc.)
RabbitMQ

Operating Systems
SUSE

Data/Database
Oracle Coherence
Base SAS

Systems/Networking skills
SolarWinds
Tivoli
Cisco IPCC
Cisco Prime
Mobile device management
Cisco UCCX
SMTP
TCP/IP
VoIP/IP telephony
HP ConvergedSystem
HP Quality Center
Prometheus

Source: Foote Partners *IT Skills & Certifications Pay Index™*, 1st Quarter 2022 data

NON-CERTIFIED IT SKILLS ANALYSIS – Winners

A. <u>NON-CERTIFIED TECH SKILLS</u> 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 659 skills reported in our *IT Skills and Certifications Pay Index*™ in quarter ending April 1, 2022.

✓ They ***recorded gains in cash market value*** in the six months ending April 1, 2022.

No skill below is earning less than the equivalent of 15 percent of base salary—significant considering the average for all skills reported is 9.5 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):

- Amazon RedShift	- Data Strategy	- NoSQL
- Apache Spark	- Deep Learning	- Oracle Business Intelligence Enterprise
- Artificial Intelligence for IT Operations	- DevOps	Edition Plus
- Bioinformatics	- DevSecOps	- PostgreSQL
- AWS Lambda	- Functional Programming	- Prescriptive Analytics
- Azure Machine Learning	- Informatica	- PyTorch
- Azure SQL Data Warehouse	- Machine Learning	- Redis
- Big Data	- MapReduce	- Threat Detection/Modeling/Management
- Big Data analytics	- Marketo	- Scaled Agile Framework (SAFe)
- Blockchain	- Master data management	- Security architecture and models
- Caffe/Caffe2	- MLOps	- Security Auditing
- Cloudera software	- MongoDB	- Security testing
- Complex Event Processing/Event Correlation	- Network Architecture	- Smart Contracts
- Data Engineering	- Neural Networks	- Software development lifecycle
- Data Migration	- NIST/NIST 800	management
		- Zachman Framework

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

1. **Smart Contracts**
   Average Pay Premium: 20 percent of base salary equivalent
   Market Value Increase: 33.3 percent (in the six months through April 1, 2022)

2. **Artificial Intelligence for IT Operations (AIOps)**
   Average Pay Premium: 19 percent of base salary equivalent
   Market Value Increase: 26.7 percent (in the six months through April 1, 2022)

.
3. **[Tie] Big Data analytics**
   Blockchain
   Prescriptive Analytics
   Security architecture and models
   Average Pay Premium: 19 percent of base salary equivalent
   Market Value Increase: 11.8 percent (in the six months through April 1, 2022)

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

7. **[Tie] Deep Learning**
    DevSecOps
    MLOps
    Average Pay Premium: 19 percent of base salary equivalent
    Market Value Increase: 5.6 percent (in the six months through April 1, 2022)

10. **Complex Event Processing/Event Correlation**
    Average Pay Premium: 18 percent of base salary equivalent
    Market Value Increase: 28.6 percent (in the six months through April 1, 2022)

11. **Scaled Agile Framework (SAFe)**
    Average Pay Premium: 18 percent of base salary equivalent
    Market Value Increase: 12.5 percent (in the six months through April 1, 2022)

12. **PyTorch**
    Average Pay Premium: 18 percent of base salary equivalent
    Market Value Increase: 5.9 percent (in the six months through April 1, 2022)

13. **[Tie] DevOps**
    Caffe/Caffe2
    Average Pay Premium: 17 percent of base salary equivalent
    Market Value Increase: 13.3 percent (in the six months through April 1, 2022)

15. **[Tie] Data Engineering**
    Data Strategy
    Machine Learning
    Zachman Framework
    Average Pay Premium: 17 percent of base salary equivalent
    Market Value Increase: 6.3 percent (in the six months through April 1, 2022)

19. **[Tie] Cloudera software**
    Bioinformatics
    Average Pay Premium: 16 percent of base salary equivalent
    Market Value Increase: 33.3 percent (in the six months through April 1, 2022)

21. **Redis**
    Average Pay Premium: 16 percent of base salary equivalent
    Market Value Increase: 23.3 percent (in the six months through April 1, 2022)

22. **[Tie] Master data management**
    Network Architecture
    Neural Networks
    Average Pay Premium: 16 percent of base salary equivalent
    Market Value Increase: 14.3 percent (in the six months through April 1, 2022)

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

25. **[Tie] Amazon RedShift**
    Apache Spark
    Big Data
    Functional Programming
    Informatica
    NIST/NIST 800
    Security Auditing
    Threat Detection/Modeling/Management
    Average Pay Premium: 16 percent *of base salary equivalent*
    Market Value Increase: 6.7 percent (in the six months through April 1, 2022)

33. **[Tie] Azure Machine Learning**
    Azure SQL Data Warehouse
    MapReduce
    Marketo
    Oracle Business Intelligence Enterprise Edition Plus
    Average Pay Premium: 15 percent *of base salary equivalent*
    Market Value Increase: 15.4 percent (in the six months through April 1, 2022)

A. **[Tie] AWS Lambda**
    Data Migration
    MongoDB
    NoSQL
    PostgreSQL
    Security testing
    Software development lifecycle management
    Average Pay Premium: 15 percent *of base salary equivalent*
    Market Value Increase: 7.1 percent (in the six months through April 1, 2022)

IT Certification Data Trend Charts & Analysis

(Data collected through April 1, 2022)

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 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)
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

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

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)

Dell Implementation Engineer - Expert (DCE - IE)
Dell Implementation Engineer - Specialist (DCS - IE)
Dell Information Storage and Management Associate (DCA-ISM)
Dell Information Storage and Management Expert (DCE-ISM)
Dell Information Storage and Management Specialist (DCS-ISM)
Dell Platform Engineer/PowerScale - Specialist (DCS-PE)
EC-Council Certified Application Security Engineer (CASE)
EC-Council Certified Encryption Specialist (ECES)
EC-Council Certified Ethical Hacker (CEH)
EC-Council Certified Incident Handler V2 (ECIH)
EC-Council Certified Network Defender
EC-Council Certified Network Defense Architect (CNDA)
EC-Council Certified Security Analyst (ECSA)
EC-Council Computer Hacking Forensic Investigator (CHFI)
EC-Council Disaster Recovery Professional (EDRP)
EC-Council Licensed Penetration Tester (LPT)
Fortinet Network Security Expert (NSE) Level 1
Fortinet Network Security Expert (NSE) Level 2
Fortinet Network Security Expert (NSE) Level 3
GIAC Assessing and Auditing Wireless Networks
GIAC Certified Defending Advanced Threats (GDAT)
GIAC Certified Detection Analyst (GCDA)
GIAC Certified Enterprise Defender (GCED)
GIAC Certified Forensics Analyst (GCFA)
GIAC Certified Forensics Examiner
GIAC Certified Incident Handler (GCIH)
GIAC Certified Intrusion Analyst (GCIA)
GIAC Certified Project Manager (GCPM)
GIAC Certified Web Application Defender
GIAC Certified Windows Security Administrator (GCWN)
GIAC Cloud Penetration Tester (GCPN)
GIAC Cloud Security Automation (GCSA)
GIAC Critical Controls Certifications (GCCC)
GIAC Cyber Threat Intelligence (GCTI)
GIAC Defensible Security Architecture (GDSA)
GIAC Enterprise Vulnerability Assessor (GEVA)
GIAC Exploit Researcher and Advanced Penetration Tester (GWAPT)

GIAC Information Security Fundamentals (GISF)
GIAC Information Security Professional (GISP)
GIAC Mobile Device Security Analyst (GMOB)
GIAC Network Forensic Analyst (GNFA)
GIAC Penetration Tester (GPEN)
GIAC Python Coder (GPYC)
GIAC Reverse Engineering Malware (GREM)
GIAC Security Essentials (GSEC)
GIAC Security Expert (GSE)
GIAC Security Leadership (GSLC)
GIAC Systems and Network Auditor (GSNA)
GIAC Web Application Penetration Tester (GWAPT)
Google Associate Cloud Engineer
Google Certified Professional Cloud Architect
Google Cloud Certified - Professional Data Engineer
Google Cloud DevOps Engineer
Google Professional Cloud Developer
Google Professional Cloud Network Engineer
Google Professional Cloud Security Engineer
HDI Customer Service Representative
HDI Desktop Support Manager
HDI Desktop Support Technician
HDI Support Center Analyst
HDI Support Center Director
HDI Support Center Manager
HDI Support Center Team Lead
HDI Technical Support Professional
Help Desk Analyst: Tier 1 Support Specialist/Ed2Go
Help Desk Team Lead/RCCSP
Hitachi Qualified Professional - Storage Administration
HP Accredited Solutions Expert (ASE - all)
HP Accredited Technical Professional (ATP - all)
HP ASE - Storage Solutions V4
HP ATP - Hybrid IT Solutions V2
HP ATP - Storage Solutions V1 /V2
HP Master Accredited Solutions Expert (MASE - all)
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)

IAPP Certified Information Privacy Professional
IBM Advanced Systems Administrator (all)
IBM Certified Administrator - Cognos Analytics
IBM Certified Application Developer - Cloud Solutions v3
IBM Certified Application Developer - DB2 9.7 for Linux, Unix and Windows
IBM Certified Application Developer (all)
IBM Certified Data Architect - Big Data
IBM Certified Data Engineer - Big Data
IBM Certified Database Administrator - DB2 11.1 for Linux, UNIX and Windows
IBM Certified Developer - Cognos Analytics
IBM Certified Professional Developer - Cloud v4
IBM Certified Professional SRE - Cloud v1
IBM Certified Solution Advisor - Blockchain Platform V2
IBM Certified Solution Advisor - DevOps V2
IBM Certified Solution Architect – Cloud v4
IBM Certified Solution Architect - Data Warehouse V1
IBM Certified Solution Designer (all)
IBM Certified Specialist - AI Enterprise Workflow V1
IBM Certified Systems Administraton: WebSphere Application Server Network Deployment
IBM Certified Systems Administrator (all)
Information Systems Security Architecture Professional (ISSAP/CISSP)
Information Systems Security Engineering Professional (ISSEP/CISSP)
InfoSys Security Management Professional (ISSMP/CISSP)
ITIL Expert Certification
ITIL Foundation Certification
ITIL Intermediate Certification
ITIL Master Certification
JBoss Certified Developer (Seam, Persistence, ESB)
Juniper Networks Certified Internet Associate
Juniper Networks Certified Internet Expert
Juniper Networks Certified Internet Professional
Juniper Networks Certified Internet Specialist
Linux Foundation Certified Engineer
Linux Foundation Certified System Administrator

Linux Professional Institute certification (LPIC-2)
Linux Professional Institute certification (LPIC-3)
Magento 2 Certified Professional Developer
Magento 2 Certified Associate Developer
MCSE: Core Infrastructure
Microsoft Certified Azure Administrator
Microsoft Certified Azure Administrator Associate
Microsoft Certified Azure AI Engineer Associate
Microsoft Certified Azure Data Engineer Associate
Microsoft Certified Azure Data Scientist Associate
Microsoft Certified Azure Developer Associate
Microsoft Certified Azure Fundamentals
Microsoft Certified Azure Security Engineer Associate
Microsoft Certified Azure Solutions Architect
Microsoft Certified Azure Solutions Architect Expert
Microsoft Certified DevOps Engineer Expert
Microsoft Certified Professional
Microsoft Certified Solutions Associate(all)
Microsoft Certified Solutions Associate: BI Reporting
Microsoft Certified Solutions Associate: SQL 2016 DBA
Microsoft Certified Solutions Associate: SQL Server 2012/2014/2016
Microsoft Certified Solutions Associate: Web Applications
Microsoft Certified Solutions Associate: Windows Server 2012/2016
Microsoft Certified Solutions Developer (MCSD)
Microsoft Certified Solutions Developer: Applications Builder
Microsoft Certified Solutions Expert: Business Applications
Microsoft Certified Solutions Expert: Data Platform
Microsoft Certified Solutions Expert: Desktop Infrastructure
Microsoft Certified Solutions Expert: Server Infrastructure
Microsoft Certified Trainer (MCT)
Microsoft MTA: Windows OS
Microsoft Office Specialist

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 Certification
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 April 1, 2022

A.   CERTIFIED TECH SKILLS PAY PERFORMANCE: By Category

IT CERTIFICATIONS. Unlike the results of non-certified skills, the average cash premium for 579 tech certifications declined 1.2 percent in the first quarter of 2022, the largest quarterly loss since late 2020. 111 certifications changed in market value compared to 64 in the prior quarter.

IT Certifications - % Growth/Decline
3 months & 12 months
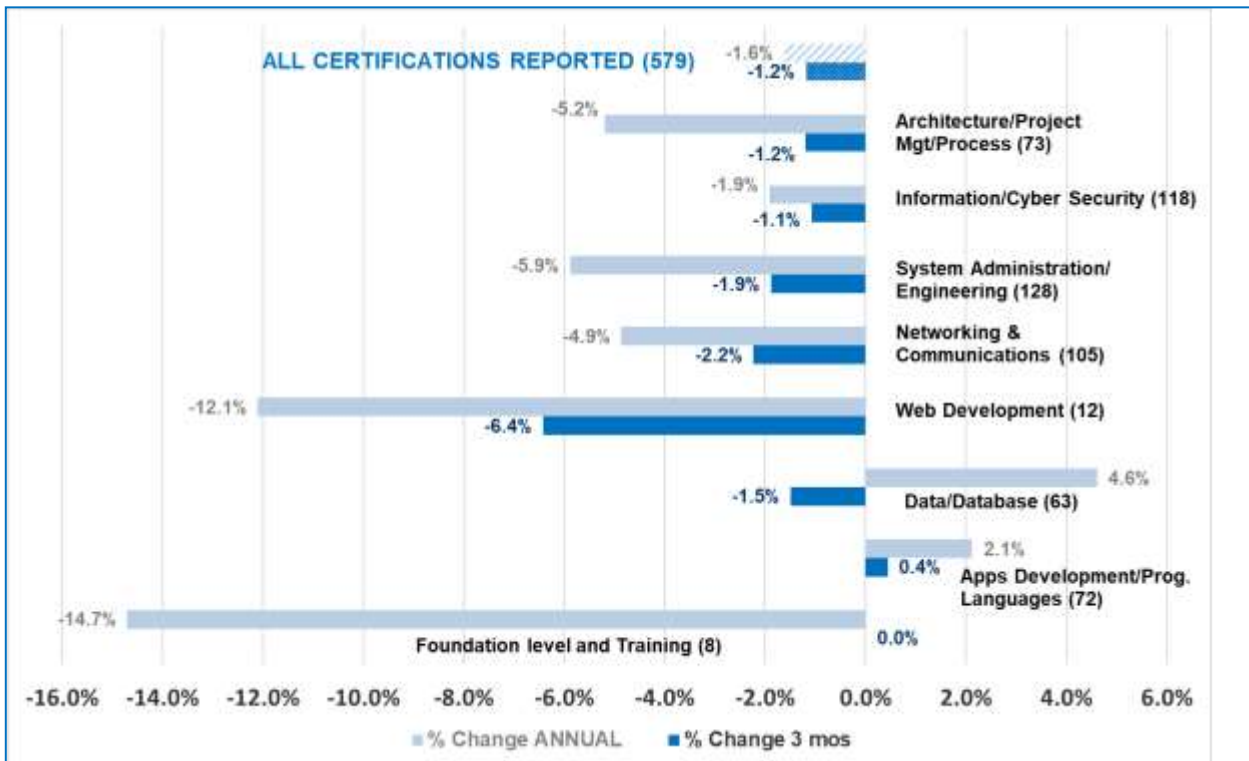
(579 certifications, data through 4/1/2022)

Figure 2
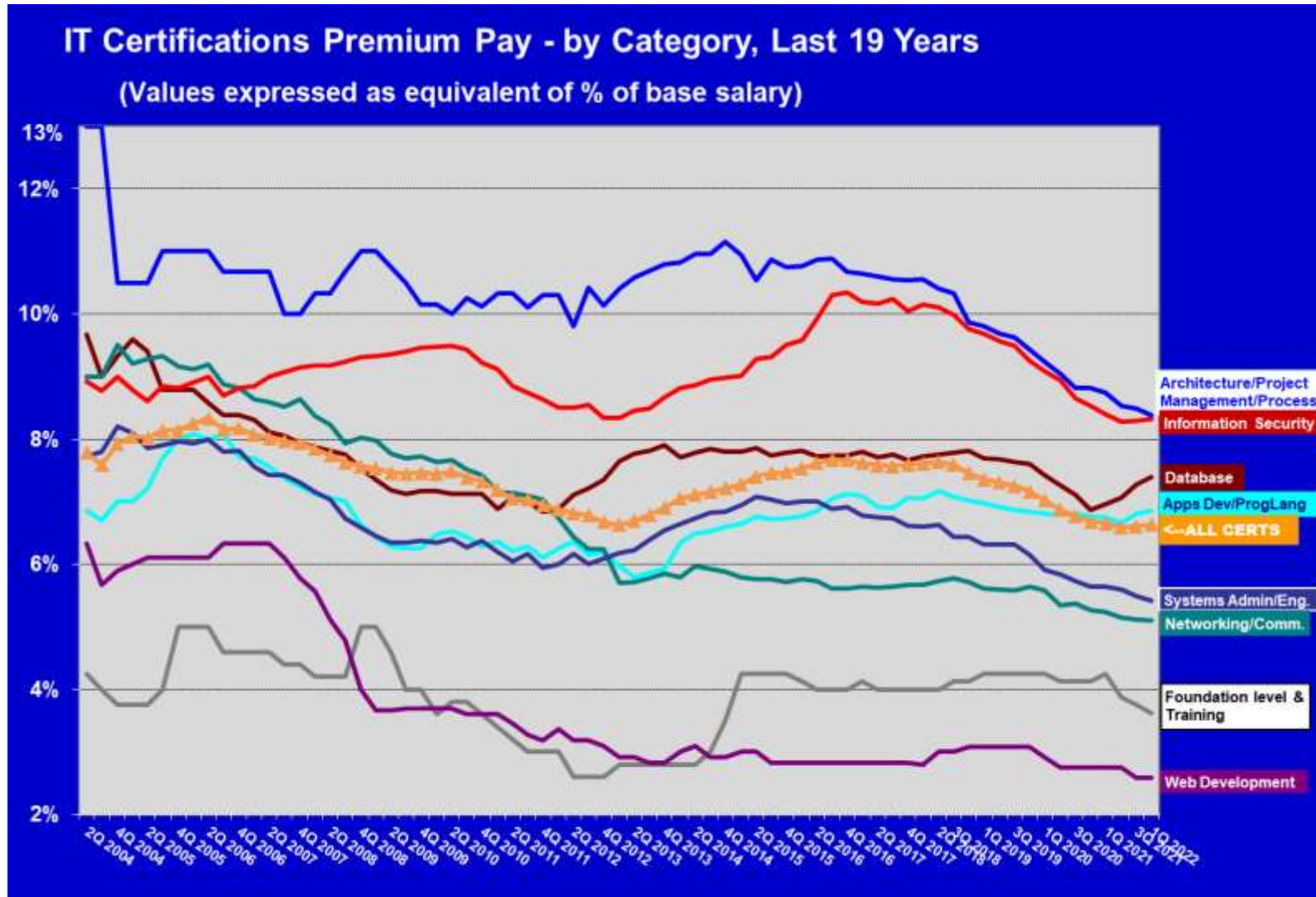
Source: Foote Partners *IT Skills & Certifications Pay Index*[TM], 1st Quarter 2022 data

19-YEAR QUARTERLY IT CERTIFICATTION PAY TRENDS BY CATEGORY

Average quarterly median cash pay premium for a single IT certification. Data through April 1, 2022 – 88,420 IT Professionals

Pay data supporting these charts available in the *IT Skills and Certifications Pay Index*™ – 1Q 2022 data edition

HIGHEST PAYING IT Certifications (cash pay premiums, all 579 certifications surveyed, ranked)

These **IT certifications** are among those earning the highest pay premiums (data collected January 1, 2022 to April 1, 2022). **Shown in alphabetical order by overall market value rank in descending order including ties.** **Green**/**Red** = increased/decreased in market value this quarter. **Purple** = Made the list this quarter for first time.

1. Cisco Certified Architect

2. [Tie] Certified Cloud Security Professional (ISC2-CCSP)
   Certified ScrumMaster
   Certified Secure Software Lifecycle Professional (CSSLP)
   EC-Council Certified Encryption Specialist (ECES)
   GIAC Security Expert (GSE)
   GIAC Security Leadership (GSLC)
   Zachman Certified - Enterprise Architect

3. [Tie] Cloudera Certified Professional: Data Engineer
   Certified Manager of Software Quality (CMSQ)
   Certified Scrum Professional
   Check Point Certified Security Master (CCSM)
   CyberSecurity Forensic Analyst (CSFA)
   EC-Council Certified Ethical Hacker (CEH)
   GIAC Certified Forensics Analyst (GCFA)
   InfoSys Security Engineering Professional (ISSEP/CISSP)
   InfoSys Security Management Professional (ISSMP/CISSP)
   Okta Certified Developer
   PMI Risk Management Professional (PMI-RMP)
   SAS® Certified Advanced Analytics Professional Using SAS 9
   Six Sigma Master Black Belt
   TOGAF 9 Certified

4. [Tie] Certificate of Cloud Security Knowledge
   Certified Healthcare Information Security and Privacy Practitioner (ISC2)
   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
   Check Point Certified Security Expert (CCSE)
   Cisco Certified CyberOps Associate
   Cisco Certified Network Professional - Security
   Cloudera Certified Associate Data Analyst
   InfoSys Security Architecture Professional (ISSAP/CISSP)
   Okta Certified Consultant
   Oracle Certified Master - DBA (OCM)
   Pegasystems Certified Robotics System Architect 16   0 miss 10 chall
   PMI Program Management Professional (PgMP)
   SAFe Certification
   SAS Certified Data Scientist Using SAS 9
   Teradata 14 Certified Master

SOURCE: Foote Partners *IT Skills & Certifications Pay Index*™, 1st Quarter 2022 data edition

IT CERTIFICATION PAY TREND HIGHLIGHTS: Market Value Gainers & Highest Paying – 1st Quarter 2022 data

These IT certifications *gained 10% or more in market value in the three months ending April 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)
Info/Cyber Security certifications	**Systems Administration certifications**	- Certified Cloud Security Professional
Certificate of Cloud Security Knowledge	IBM Certified Systems Administrator (all)	- Certified Manager of Software Quality
Certified Healthcare Information Security and Privacy Practitioner (ISC2)	VMware Certified Design Expert (all)	- Certified Scrum Professional
Microsoft Certified: Azure Security Engineer Associate	Google Associate Cloud Engineer	- Certified ScrumMaster
Certified Compliance Professional	Microsoft Certified Azure Solutions Architect	- Certified Secure Software Lifecycle Professional
Google Professional Cloud Security Engineer		- Check Point Certified Security Master
Offensive Security Exploitation Expert (OSEE)	**Architecture, Project Management, and Process Certifications**	- Cisco Certified Architect
AWS Certified Security - Specialty	Oracle Cloud Infrastructure 2021 Certified Architect Professional	- Cloudera Certified Professional: Data Engineer
Certified Business Continuity Professional (CBCP)	Prince2 Practitioner	- CyberSecurity Forensic Analyst
Okta Certified Consultant	Microsoft Certified: DevOps Engineer Expert	- EC-Council Certified Encryption Specialist
InfoSys Security Management Professional (ISSMP/CISSP)	SAFe Certification	- EC-Council Certified Ethical Hacker
Check Point Certified Security Master (CCSM)	Certified in Governance, Risk and Compliance	- GIAC Certified Forensics Analyst
GIAC Certified Forensics Analyst (GCFA)	TOGAF 9 Certified	- GIAC Security Expert
Okta Certified Developer		- GIAC Security Leadership
Networking and Communications certifications	**Application Development/Programming Languages certifications**	- InfoSys Security Engineering Professional
Juniper Networks Certified Professional (JNCIP - all specializations)	TIBCO Certified Architect	- InfoSys Security Management Professional
	TIBCO Certified Professional	- Okta Certified Developer
Data/Database certifications	Pivotal Developer	- PMI Risk Management Professional
AWS Certified Data Analytics – Specialty.	Microsoft Certified: Azure Developer Associate	- SAS® Certified Advanced Analytics Professional Using SAS 9
Microsoft Certified Azure Data Scientist Associate	Cloudera Certified Associate Spark and Hadoop Developer	- Six Sigma Master Black Belt
	AWS Certified DevOps Engineer - Professional	- TOGAF 9 Certified
General/Foundation/Training certifications		- Zachman Certified - Enterprise Architect
CompTIA Certified Technical Trainer (CTT+) Microsoft Certified Trainer (MCT)		

Source: Foote Partners *IT Skills & Certifications Pay Index*TM, 1st Quarter 2022 data edition

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IT CERTIFICATION PAY TREND HIGHLIGHTS: Market Value Losers – 1st Quarter 2022 data

These IT certifications *declined 10% or more in market value in the three months ending April 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
Salesforce B2C Commerce Developer
Red Hat Certified Enterprise Application Developer
Salesforce Platform App Builder
Red Hat Certified Architect: Infrastructure
Salesforce Certified Application Architect

Web Development certifications
CIW Certified Database Design Specialist
Microsoft Certified Solutions Associate: Web
    Applications

Info/Cyber Security certifications
Certified Computer Examiner
Okta Certified Professional
Offensive Security Experienced Penetration Tester
Certified Forensic Computer Examiner
CompTIA Cybersecurity Analyst+
CSX CyberSecurity Practitioner
GIAC Certified Windows Security Administrator
Fortinet Network Security Expert - Level 1
GIAC Reverse Engineering Malware
GIAC Cyber Threat Intelligence
GIAC Information Security Professional
GIAC Certified Project Manager
GIAC Penetration Tester
Systems Security Certified Practitioner

Systems Administration certifications
Linux Professional Institute certification (LPIC-Level 2)
VMware Certified Professional - Digital Workspace
Oracle Certified Expert - Solaris 10 Network Administrator for
    Solaris
Oracle Certified Professional - Solaris 10 Systems
    Administrator
Microsoft Certified Azure Fundamentals
Red Hat Certified Systems Administrator
HP Accredited Solutions Expert (all)
Red Hat Certified Engineer in Red Hat OpenStack
HP Accredited Technical Professional (ATP - all)
HP Master ASE - Storage Solutions Architect V3
MCSE: Core Infrastructure
Red Hat Certified System Administrator in Red Hat
    OpenStack
HP ATP - Hybrid IT Solutions V2
HP Master Accredited Solutions Expert (MASE - all)
Pivotal Cloud Foundry Operator certification
Red Hat Certified Architect (RHCA)
Red Hat Certified Architect: Cloud
Microsoft Certified Azure Solutions Architect Expert

Networking and Communications
NetScout/nGenius Certified Specialist (nCS)
Juniper Networks Certified Associate (JNCIA - all
specializations)
Brocade Certified Network Professional
SolarWinds Certified Professional (SCP)
Dell Platform Engineer/PowerScale - Specialist
(DCS-PE)
Dell Information Storage and Management
Associate (DCA-ISM)
Avaya Certifed Design Specialist (ACDS)
Cisco Certified Network Professional - Enterprise
(was CCNP Routing and Switching
Dell Information Storage and Management
Specialist (DCS-ISM)
Google Professional Cloud Network Engineer
Huawei Certified Network Expert (all)
Dell Information Storage and Management
    Expert (DCE-ISM)

**General/Foundation and Training
    Certifications**
Microsoft Certified Professional
Citrix Certified Instructor (CCI - Virtualization,
    Networking, or Mobility)

Source: Foote Partners *IT Skills & Certifications Pay Index™*, 1st Quarter 2022 data edition

IT CERTIFICATION PAY TREND HIGHLIGHTS: Market Value Losers – 1st Quarter 2022 data

These IT certifications *declined 10% or more in market value in the three months ending April 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 – cont'd.

Architecture, Project Management, and Process Certifications

Six Sigma Green Belt
Certified in the Governance of Enterprise IT (CGEIT)
HDI Customer Service Representative
HDI Desktop Support Manager
PMI Professional in Business Analysis (PMI-PBA)
HDI Technical Support Professional
ITIL Expert Certification
Six Sigma Yellow Belt
Certification of Capability in Business Analysis (CCBA)
Certified Scrum Developer
Dell Cloud Services Architect - Expert (DCE - CA)
Salesforce Certified Technical Architect

Data/Database certifications

Oracle Certified Professional - DBA (OCP)
Dell Data Science Associate (DCA-DS)
IBM Certified Specialist - AI Enterprise Workflow V1
Dell Data Science Specialist - Advanced Analytics (DCS-DA)
IBM Certified Application Developer - DB2 9.7 for Linux, Unix and Windows
Oracle Certified Expert - MySQL 5.1 Cluster Database Administrator
Oracle Certified Associate - DBA (OCA)

Source: Foote Partners *IT Skills & Certifications Pay Index*™, 1st Quarter 2022 data edition

IT CERTIFICATIONS ANALYSIS – Winners

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

As a group, the 579 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 quarter 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 April 1, 2022.
- Second, they **earned workers** *cash pay premiums well above the average* of all 579 certifications in our *IT Skills and Certifications Pay Index™*

No IT certification the follows is earning less than the equivalent of 9 percent of base salary—significant considering the average for all skills reported is 6.5 percent of base—and every certification listed below grew between 9 percent and 38 percent in cash market value in the six months ending April 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 Security - Specialty
- Certificate of Cloud Security Knowledge (CCSK)
- Certified Business Continuity Professional (CBCP)
- Certified Healthcare Information Security and Privacy Practitioner (HCISPP)
- Certified Penetration Testing Engineer (CPTE)
- Certified Scrum Master
- Check Point Certified Security Master (CCSM)
- Cisco Certified CyberOps Associate
- Cloudera Certified Associate Data Analyst
- Cloudera Certified Professional: Data Engineer
- GIAC Certified Forensics Analyst (GCFA)

- GIAC Certified Intrusion Analyst (GCIA)
- GIAC Security Expert (GSE)
- InfoSys Security Management Professional (ISSMP/CISSP)
- Microsoft Certified: DevOps Engineer Expert
- Okta Certified Consultant
- Okta Certified Developer
- Oracle Certified Master - DBA (OCM)
- Prince2 Practitioner
- SAFe Certification
- TIBCO Certified Architect
- TOGAF 9 Certified (The Open Group Architecture Framework)

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

1. **InfoSys Security Management Professional (ISSMP/CISSP)**
   Average Pay Premium: 11 percent of base salary equivalent
   Market Value Increase: 38 percent (in the six months through 4/1/2022)

2. **GIAC Security Expert (GSE)**
   Average Pay Premium: 12 percent of base salary equivalent
   Market Value Increase: 33 percent (in the six months through 4/1/2022)

3. **AWS Certified Security - Specialty**
   Certified Penetration Testing Engineer (CPTE)
   TIBCO Certified Architect
   Average Pay Premium: 9 percent of base salary equivalent
   Market Value Increase: 28.6 percent (in the six months through 4/1/2022)

IT CERTIFICATIONS ANALYSIS – Winners, cont'd.

6. **[Tie] Certificate of Cloud Security Knowledge (CCSK)**
   Certified Healthcare Information Security and Privacy Practitioner (HCISPP)
   Cisco Certified CyberOps Associate
   Average Pay Premium: 10 percent of base salary equivalent
   Market Value Increase: 25 percent (in the six months through 4/1/2022)

9. **[Tie] Certified Business Continuity Professional (CBCP)**
   GIAC Certified Intrusion Analyst (GCIA)
   Microsoft Certified: DevOps Engineer Expert
   Prince2 Practitioner
   Average Pay Premium: 9 percent of base salary equivalent
   Market Value Increase: 12.5 percent (in the six months through 4/1/2022)

13. **[Tie] Cloudera Certified Associate Data Analyst**
    Okta Certified Consultant
    Oracle Certified Master - DBA (OCM)
    SAFe Certification
    Average Pay Premium: 10 percent of base salary equivalent
    Market Value Increase: 11.1 percent (in the six months through 4/1/2022)

17. **[Tie] Check Point Certified Security Master (CCSM)**
    Cloudera Certified Professional: Data Engineer
    GIAC Certified Forensics Analyst (GCFA)
    Okta Certified Developer
    TOGAF 9 Certified (The Open Group Architecture Framework)
    Average Pay Premium: 11 percent of base salary equivalent
    Market Value Increase: 10 percent (in the six months through 4/1/2022)

22. **Certified Scrum Master**
    Average Pay Premium: 12 percent of base salary equivalent
    Market Value Increase: 9 percent (in the six months through 4/1/2022)

IT CERTIFICATIONS ANALYSIS – Losers

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

The average market value for 579 tech certifications 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 April 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: -33% to -60%**

- Citrix Certified Associate - Virtualization
- Cisco Certified Network Associate (was Design Associate)
- CIW Certified Database Design Specialist
- [TIE] BICSI Technician and Registered Communications Distribution Designer
     VMware Certified Design Expert - Cloud Mgt and Automation
- PMI Professional in Business Analysis
- [TIE] Citrix Certified Professional - Networking
     Citrix Certified Professional-Virtualization
     Linux Professional Institute certification (LPIC-Level 2)
     Cisco Certified Network Associate – Data Center
     Cisco Certified Network Associate
     Citrix Certified Associate - Networking
     Novell Certified Linux Engineer (CLE)
     Novell Certified Linux Professional
     Novell Identity Manager Administrator
     Juniper Networks Certified Associate (all)
     Six Sigma Green Belt
     Avaya Certified Implementation Specialist

- EC-Council Computer Hacking Forensic Investigator (CHFI)
- [TIE] Rackspace Certified Technician
     Microsoft Certified Azure Administrator Associate
     VMware Certified Design Expert (all)
- EC-Council Certified Security Analyst (ECSA)
- GIAC Reverse Engineering Malware (GREM)
- Certified Forensic Computer Examiner (CFCE)

2022 IT Skills & Certifications Volatility Index™

(Data collected through April 1, 2022)

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

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What is skills and certifications 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 October 1, 2021 to January 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 April 1, 2022)

TOTAL: All Skills and Certifications

- **27%** of skills and certifications (327 of 1,209) changed in market value in 1st Quarter 2022, a significant increase from **22.4%** in the prior quarter. Average volatility in the prior calendar year 2021 averaged **25%**.

- **157** gained value and **170** declined in value in 1st Quarter 2022 compared to 110 and 171, respectively, in the prior quarter.

CERTIFIED SKILLS

- **19.6%** of reported certifications (111 of 567) changed market value in 1st Quarter 2022, dramatically higher than the **11.5%** volatility in the prior quarter in which only 64 certs changed in value.

- **35** certifications gained market value while **76** declined in value in Q1 compared to 27 and 37, respectively, in the prior quarter---a significant 74% increase in overall quarter-to-quarter volatility.

NON-CERTIFIED SKILLS

- **33.6%** of reported skills (216 of 642) changed value in 1st Quarter 2022, slightly higher than the **32.1%** volatility in the prior quarter. This is consistent with the **average volatility of 33.5% for the 2021 calendar year.**

- **135** noncertified skills gained in market value; **81** declined in value in the 1st Quarter compared to 83 and 119, respectively, in the prior quarter—a flip-flop between gains and declines that resulted in a reversal of recent trends in pay for noncertified skills.

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 1,238 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.

They will be able to achieve those capabilities through applying architecture principles and practices to people management. We discuss this in greater detail earlier in this news release.

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VOLATILITY HIGHLIGHTS - 15 Year Trending

IT Skills and Certifications Volatility Index™ – 1,238 Skills and Certifications

This chart shows the percentage of skills and certifications that changed value (either up or down) every calendar quarter since 2007.
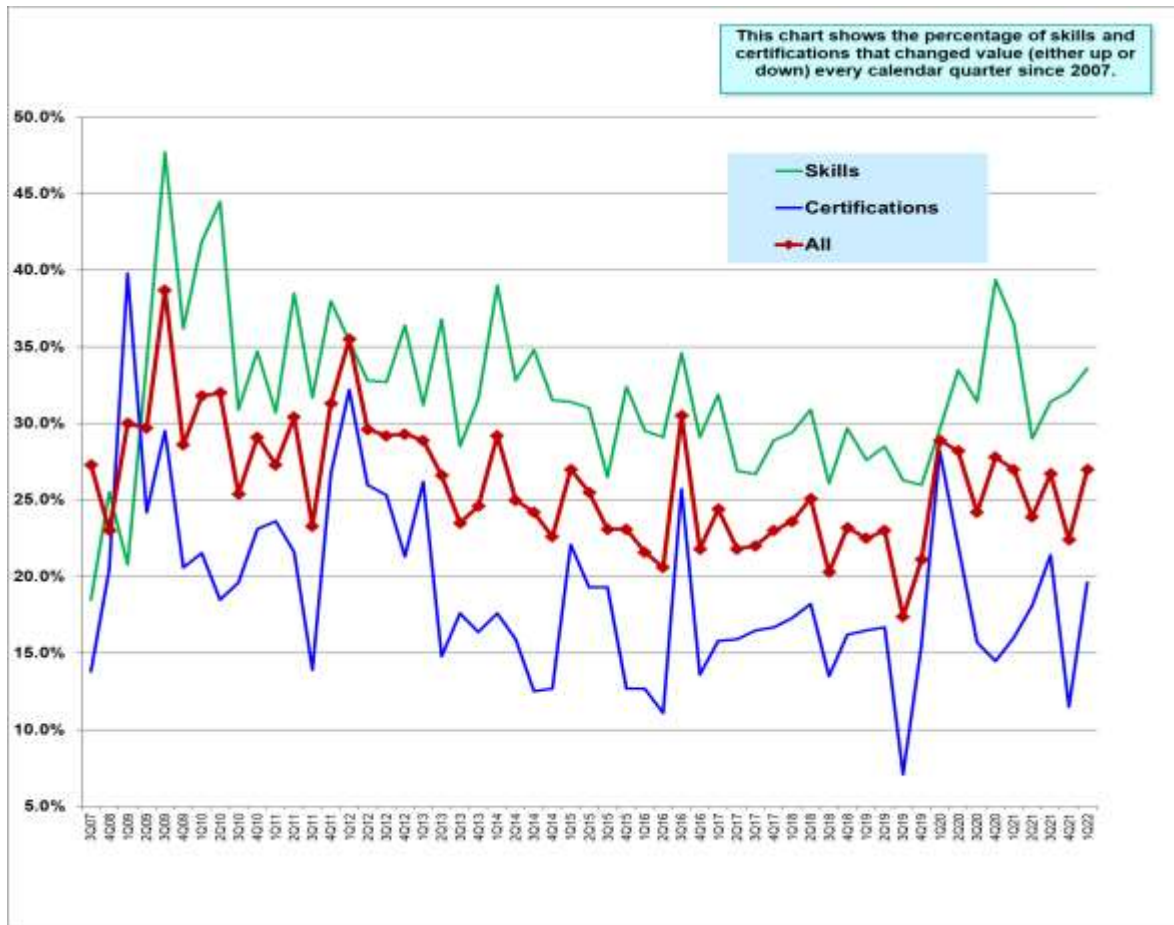
Legend: Skills · Certifications · All

Recent IT skills and certifications volatility trends

QUARTERLY SUMMARY

1st Quarter 2022 volatility in skills and certifications values is eight points higher than the prior quarter, the result of significant changes in pay for certifications.

NONCERTIFIED SKILLS VOLATILITY in 1Q 2022 (33.6%) was slightly higher than both the prior quarter (32.1%) and the average volatility for the 2021 calendar year (32.3%).

IT CERTIFICATIONS VOLATILITY in 1Q 2022 rose dramatically, to 19.6% from 11.5% in the prior quarter. This is considerably higher than the 16.8% average quarterly volatility for calendar 2021.

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

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

VOLATILITY HIGHLIGHTS   **IT Certifications – 1st Quarter 2022 data**

VOLATILITY INDEX: How Many of 579 IT Certifications Changed Market Value in 1st Quarter 2022?

Architecture/Project Management/Process — 28.4% / 19.7% / 9.7%
Info/Cyber Security — 26.5% / 15.0% / 11.5%
System Admin & Engineering — 17.9% / 14.6% / 3.3%
Networking & Communications — 12.4% / 11.4% / 1.0%
Web Development — 16.7% / 16.7% / 0.0%
Data/Database — 15.9% / 12.7% / 3.2%
Apps Development/Prog. Languages — 15.5% / 7.0% / 8.5%
Beginner and Training — 50.0% / 25.0%
ALL CERTIFICATIONS SURVEYED — 19.6% / 13.4% / 6.2%

Legend: Total that changed / Went Down in Value / Went Up in Value

% of Certifications That Changed Market Value from Prior Quarter (Gain or Decline)

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

IT Skills and Certifications Volatility Index™
1Q 2022 data edition findings: Tech Certifications

IT Certifications Volatility Highlights

Among all 579 certifications surveyed, highest volatility (>15%) occurred in these segments (ranked highest to lowest):

- Beginner & Training
- [Tie] Architecture/Project Mgt/Methodology; Info/Cybersecurity
- Systems Admin & Engineering
- Web Development
- Data/Database
- Applications Development

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

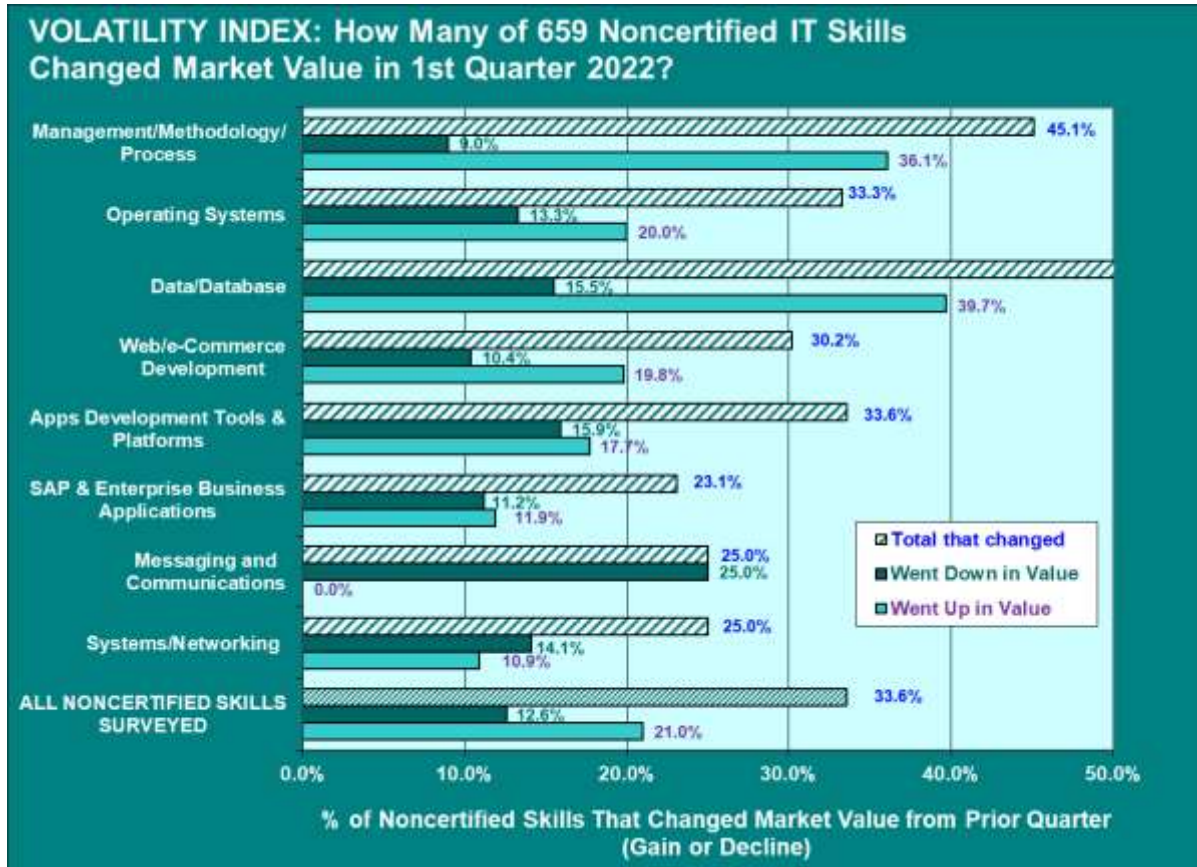- Beginner & Training
- Info/Cybersecurity

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

- Beginner & Training
- Architecture/Project Mgt/Methodology
- Web Development
- Info/Cybersecurity
- 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 – 1st Quarter 2022 data

VOLATILITY INDEX: How Many of 659 Noncertified IT Skills Changed Market Value in 1st Quarter 2022?

	Management/Methodology/Process	Operating Systems	Data/Database	Web/e-Commerce Development	Apps Development Tools & Platforms	SAP & Enterprise Business Applications	Messaging and Communications	Systems/Networking	ALL NONCERTIFIED SKILLS SURVEYED
Total that changed	45.1%	33.3%		30.2%	33.6%	23.1%	25.0%	25.0%	33.6%
Went Down in Value	9.0%	13.3%	15.5%	10.4%	15.9%	11.2%	25.0%	14.1%	12.6%
Went Up in Value	36.1%	20.0%	39.7%	19.8%	17.7%	11.9%	0.0%	10.9%	21.0%

% of Noncertified Skills That Changed Market Value from Prior Quarter (Gain or Decline)

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

IT Skills and Certifications Volatility Index™
1Q 2022 data edition findings: Non-certified IT Skills

Noncertified IT Skill Pay Volatility Highlights

Among all 659 noncertified IT skills surveyed, high volatility (>20%) occurred in all but one segments (ranked highest to lowest):

- Data/Database
- Management/Methodology/Process
- [Tie] Applications Development Tools & Platforms; Operating Systems
- Web/E-commerce Development
- [Tie] Systems/Networking; Messaging and Communications
- SAP & Enterprise Business Apps

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

- Data/Database
- Management/Methodology/Process
- Operating Systems
- Web/E-commerce Development

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

- Messaging and Communications
- Applications Development Tools & Platforms
- Data/Database

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

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2022 IT Skills and Certifications Pay Index™ (1st Quarter data edition)

- Pay premiums for **1,238 certified and noncertified IT skills**
  - Three data points for each position: 10th, 50th, 90th percentile

- Verified and validated IT skills pay data from **88,420 IT professionals at 3,988 employers** in US and Canada

- Current data collected through April 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

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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[TM]* **(ITSCPI),** launched in 1999 and updated every three months since that time. Data covering 365,764 tech professionals at 3,988 employers in 83 U.S. and Canada cities are reported for IT salaries and skills pay earned for 257 positions and 1,238 certified and noncertified technical and business skills. Verified and validated pay data for 88,420 tech workers has been included in the 1st Quarter 2022 data edition of the ITSCPI, compiled from data collected through April 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[TM]*

Please visit the Foote Partners web site: IT Skills and Certifications Pay Index

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Foote Partners 2022 IT Compensation Survey Product Map

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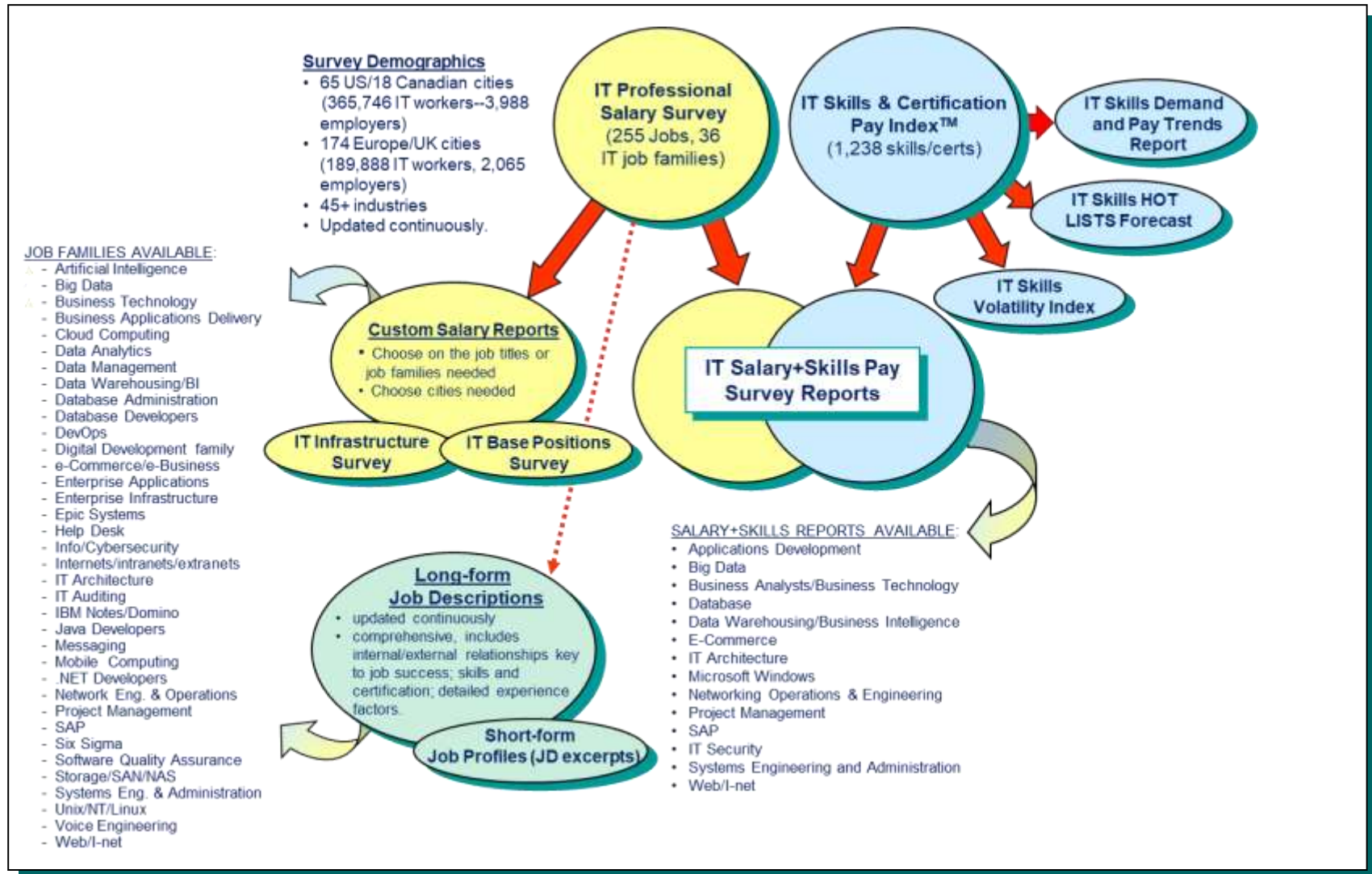
ABOUT FOOTE PARTNERS

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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