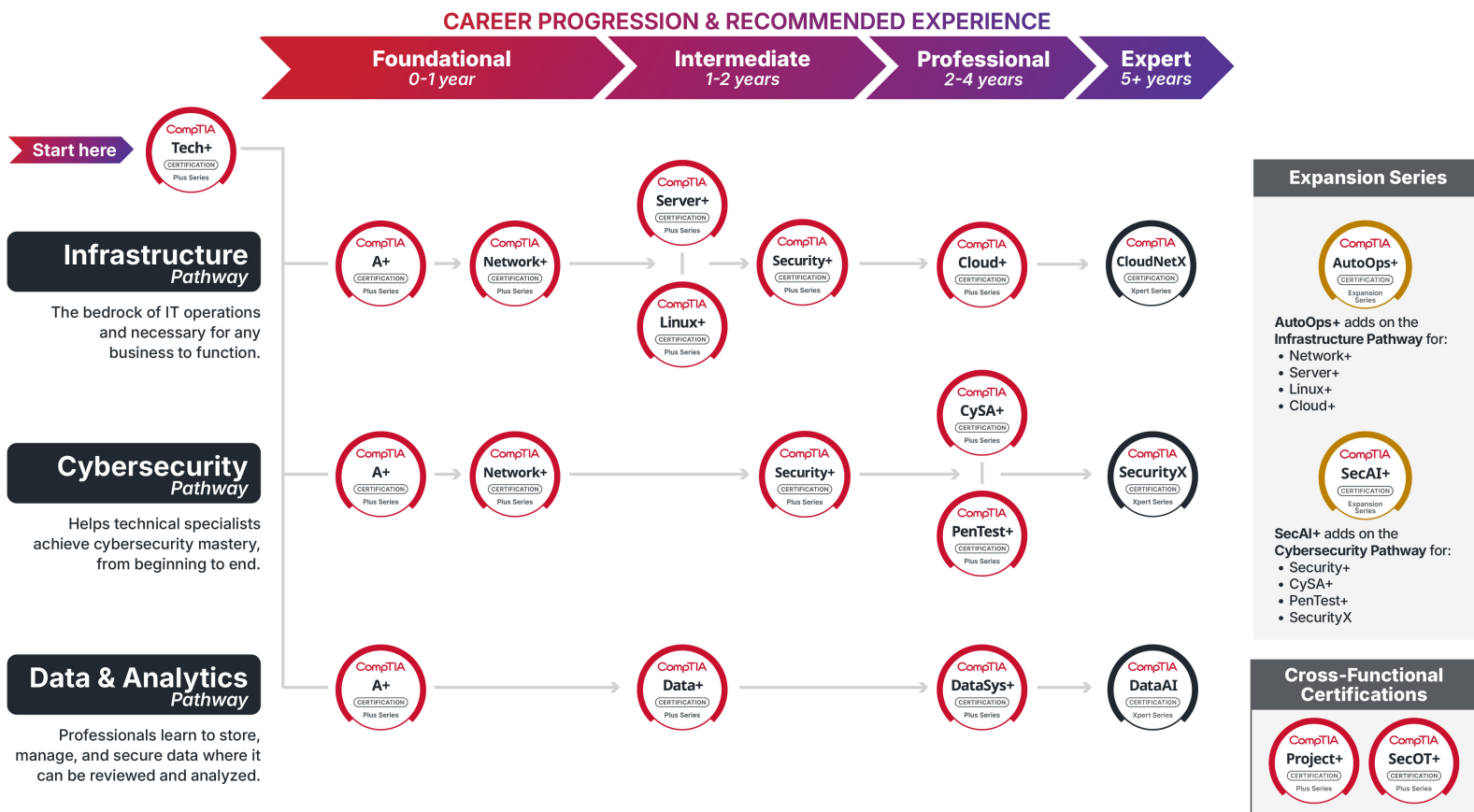# The CompTIA Career Pathways

The CompTIA Career Pathways follow a hierarchy of skills needed for a career in infrastructure, cybersecurity, or data and analytics. CompTIA certifications are built directly from real–world IT job requirements, ensuring certified professionals have the validated knowledge and practical skills employers need right now. By aligning with current global IT roles and technologies, CompTIA–certified candidates are better prepared to perform effectively on the job and meet the evolving demands of today's workforce.

CAREER PROGRESSION & RECOMMENDED EXPERIENCE

Foundational 0–1 year	Intermediate 1–2 years	Professional 2–4 years	Expert 5+ years

Start here — CompTIA Tech+ (CERTIFICATION, Plus Series)

Infrastructure Pathway
The bedrock of IT operations and necessary for any business to function.

CompTIA A+ → CompTIA Network+ → CompTIA Server+ / CompTIA Linux+ → CompTIA Security+ → CompTIA Cloud+ → CompTIA CloudNetX (Xpert Series)

Cybersecurity Pathway
Helps technical specialists achieve cybersecurity mastery, from beginning to end.

CompTIA A+ → CompTIA Network+ → CompTIA Security+ → CompTIA CySA+ / CompTIA PenTest+ → CompTIA SecurityX (Xpert Series)

Data & Analytics Pathway
Professionals learn to store, manage, and secure data where it can be reviewed and analyzed.

CompTIA A+ → CompTIA Data+ → CompTIA DataSys+ → CompTIA DataAI (Xpert Series)

Expansion Series

CompTIA AutoOps+ (Expansion Series)

AutoOps+ adds on the **Infrastructure Pathway** for:
- Network+
- Server+
- Linux+
- Cloud+

CompTIA SecAI+ (Expansion Series)

SecAI+ adds on the **Cybersecurity Pathway** for:
- Security+
- CySA+
- PenTest+
- SecurityX

Cross-Functional Certifications

CompTIA Project+ (CERTIFICATION, Plus Series)   CompTIA SecOT+ (CERTIFICATION, Plus Series)

Learn more at CompTIA.org

Infrastructure Pathway
The CompTIA Infrastructure is the bedrock of IT operations and necessary for any business to function.

Cybersecurity Pathway
The CompTIA Cybersecurity Career Pathway helps technical specialists achieve cybersecurity mastery, from beginning to end.

Data and Analytics Pathway
The CompTIA Data and Analytics Pathway helps professionals learn to store, manage, and secure data where it can be reviewed and analyzed.

CompTIA Certification Portfolio

CERTIFICATION	COMPETENCIES	JOB ROLES	TEST INFO

CompTIA Tech+ (CERTIFICATION / Plus Series)

- Understand notational systems, computing basics, the value of data, and troubleshooting methodology.
- Learn to set up and install common peripheral devices, configure wireless networks, and understand virtualization and cloud technologies.
- Gain knowledge of operating systems, application software, web browser features, and artificial intelligence tools like chatbots and generative AI.
- Apply programming language categories, organizational techniques, logic concepts, and foundational programming principles in software development.
- Understand database concepts, structures, and uses, as well as backup methods and the value of data in decision-making.
- Learn best practices for securing devices, managing passwords, and using encryption to protect data at rest and in transit.

Questions: Max 75
Length: 60 minutes

CompTIA A+ (CERTIFICATION / Plus Series)

- Install, configure, and maintain hardware components and devices effectively.
- Diagnose and resolve issues with PCs, mobile devices, and software applications.
- Understand networking basics and configure wired/wireless SOHO networks.
- Apply basic cybersecurity methods to mitigate threats and secure systems.
- Install and support multiple operating systems, including Windows, Linux, and macOS.
- Explain virtualization and cloud computing concepts and their applications.
- Follow best practices for safety, environmental impacts, and effective communication.
- Provide customer support using appropriate troubleshooting and communication skills.
- Gain a respected certification that validates your foundation in tech and prepares you for success in your career.

Job Roles:
- Help Desk Technician
- IT Support Specialist
- Computer Support Specialist
- Desktop Support Technician
- Field Service Technician
- Help Desk Analyst

Two Exams
Questions: Max 90 each
Length: 90 minutes each

CompTIA Network+ (CERTIFICATION / Plus Series)

- Deploy wired and wireless devices, covering IP addressing, ports, protocols, and network architecture for network deployment.
- Understand documentation, life-cycle, change, and configuration management processes and procedures.
- Grasp virtualization, cloud service models, elasticity, and scalability to apply cloud concepts.
- Monitor networks for high availability and resolve connectivity issues to maintain network performance.
- Establish secure networks and mitigate vulnerabilities to strengthen security.
- Diagnose and resolve network issues using appropriate tools for effective troubleshooting.

Job Roles:
- Network Administrator
- Systems Administrator
- Network Security Engineer
- Network Support
- IT Administrator
- Specialist/Technician
- Server Administrator

Questions: Max 90
Length: 90 minutes

CompTIA Security+ (CERTIFICATION / Plus Series)

- Identify various types of threats, attacks, and vulnerabilities, including malware, social engineering, and application attacks.
- Utilize security technologies and tools, such as firewalls, intrusion detection systems, and endpoint security, to protect systems.
- Design secure network architectures, implement secure systems, and apply secure protocols for architecture and design.
- Manage identity and access concepts, including authentication, authorization, and accounting, to ensure secure access control.
- Assess and manage risk through risk analysis, mitigation strategies, and business continuity planning.
- Apply cryptography concepts, including encryption algorithms, public key infrastructure (PKI), and digital signatures, to secure data.
- Implement compliance and operational security measures, including security policies, procedures, and best practices.

Job Roles:
- Cybersecurity Engineer
- Security Specialist
- Network Security Engineer
- Cybersecurity Analyst
- Information Security Analyst
- Tech Support Specialist

Questions: Max 90
Length: 90 minutes

CompTIA Project+ (CERTIFICATION / Plus Series)

- Understand the properties of a project, including phases, schedules, roles and responsibilities, cost controls, and the fundamental aspects of agile methodology.
- Analyze the impact of various constraint variables and influences throughout a project while applying risk strategies and activities.
- Implement appropriate communication methods and change control processes within the context of a project.
- Utilize various project management tools and create project and partner-centric documentation to support project success.

Job Roles:
- IT project Manager
- Technical Project Manager
- IT Project Coordinator
- Technical Project Specialist
- IT Program Manager
- Technical Lead

Questions: Max 90
Length: 90 minutes

CompTIA Certification Portfolio

CERTIFICATION	COMPETENCIES	JOB ROLES	TEST INFO

INFRASTRUCTURE CAREER PATHWAY

CompTIA Linux+ CERTIFICATION Plus Series

- Configure and manage Linux systems, storage, networks, and services in cloud and hybrid environments.
- Apply best practices including permissions, authentication, firewalls, and system hardening.
- Automate administration tasks and streamline operations with shell scripting, Python, and configuration management tools.
- Deploy, maintain, and monitor containers and virtual machines using leading technologies.
- Troubleshoot system, network, security, and application issues to ensure uptime and reliability for business operations.

- Linux Administrator
- Systems Administrator
- Network Administrator
- Server Administrator
- DevOps Support Engineer
- Network Support Specialist/Technician

Questions: Max 90

Length: 90 minutes

CompTIA Server+ CERTIFICATION Plus Series

- Install physical hardware, configure storage solutions, and perform hardware maintenance for server hardware installation and management.
- Manage server operating systems, configure network services, implement high availability, and utilize virtualization technologies for effective server administration.
- Apply server hardening techniques, implement data security measures, and develop disaster recovery and backup strategies to enhance security and disaster recovery.
- Diagnose and resolve issues related to hardware, software, connectivity, storage, and security through effective troubleshooting.

- Server Administrator
- Server Engineer
- Systems Administrator
- Network Administrator
- Data Center Technician
- Cloud Administrator

Questions: Max 90

Length: 90 minutes

CompTIA Cloud+ CERTIFICATION Plus Series

- Analyze cloud models and design solutions to meet business requirements for effective cloud architecture.
- Execute workload migrations, implement infrastructure as code (IaC), and provision cloud resources to support deployment.
- Manage and optimize cloud environments by scaling, performing backups, and ensuring recovery operations.
- Implement security measures, address vulnerabilities, and ensure compliance with standards like PCI DSS and ISO 27001.
- Apply DevOps fundamentals, including source control, CI/CD pipelines, automation, system integration, and DevOps tools.
- Diagnose and resolve deployment, network, and security issues to troubleshoot cloud environments effectively.

- Cloud Engineer
- Cloud Specialist
- Systems Administrator
- Network Administrator
- IT Administrator
- Network Security Engineer

Questions: Max 90

Length: 90 minutes

CompTIA CloudNetX CERTIFICATION Xpert Series

- Analyze business requirements and design secure network architectures tailored for hybrid environments.
- Implement Zero Trust principles, configure access controls, and secure hybrid networks to enhance network security.
- Use tools to monitor network performance, automate tasks, and maintain reliable network environments for effective network monitoring and operations.
- Diagnose and resolve connectivity, performance, and security issues to troubleshoot hybrid networks effectively.

- Cloud Architects
- Network Architects
- Systems Architect
- Cloud Engineer
- Cloud Infrastructure Architect
- Automation Engineer

Questions: Max 90

Length: 165 minutes

CYBERSECURITY CAREER PATHWAY

CompTIA PenTest+ CERTIFICATION Plus Series

- Plan and scope penetration tests while ensuring compliance with legal and ethical requirements, and develop detailed reports with remediation recommendations to support engagement management.
- Perform active and passive reconnaissance, gather information, and enumerate systems to uncover vulnerabilities effectively.
- Conduct vulnerability scans, analyze results, and validate findings to identify and address security weaknesses.
- Execute network, host-based, web application, and cloud-based attacks using appropriate tools and techniques to test system defenses.
- Maintain persistence, perform lateral movement, and document findings to support remediation efforts during post-exploitation activities.

- Penetration Tester
- Vulnerability Analyst
- Threat Intelligence Analyst
- Application Security Vulnerability Analyst
- Cybersecurity Analyst
- Network Security Engineer

Questions: Max 85

Length: 165 minutes

CompTIA Certification Portfolio

CERTIFICATION	COMPETENCIES	JOB ROLES	TEST INFO
CompTIA CySA+ CERTIFICATION Plus Series	• Enhance security operations processes, differentiate threat intelligence and threat hunting, and identify malicious activity using appropriate tools. • Conduct vulnerability assessments, prioritize vulnerabilities, and recommend effective mitigation strategies for vulnerability management. • Apply attack methodology frameworks, perform incident response, and understand the incident management lifecycle to handle security incidents effectively. • Utilize communication best practices to report on vulnerability management and incident response, providing stakeholders with actionable plans and meaningful metrics.	• Cybersecurity Analyst • Security Operations Center (SOC) Analyst • Information Security Analyst • Cybersecurity Engineer • Vulnerability Analyst • Threat Intelligence Analyst	**Questions:** Max 85 **Length:** 165 minutes
CompTIA SecurityX CERTIFICATION Xpert Series	• Design, implement, and integrate secure solutions across complex environments to support a resilient enterprise in security architecture and engineering. • Use automation, monitoring, detection, and incident response to proactively support ongoing security operations. • Apply security practices to cloud, on-premises, and hybrid environments to ensure enterprise-wide protection. • Utilize cryptographic technologies and techniques while evaluating the impact of emerging trends, such as artificial intelligence, on information security. • Implement governance, compliance, risk management, and threat modeling strategies across the enterprise. • Validate advanced, hands-on skills in security architecture and senior security engineering within live environments.	• Cybersecurity Architect • Information Security Architect • Cybersecurity Manager • Security Operations Center (SOC) Manager • Cybersecurity Engineer • Network Security Architect	**Questions:** Max 90 **Length:** 165 minutes

DATA PATHWAY

CERTIFICATION	COMPETENCIES	JOB ROLES	TEST INFO
CompTIA Data+ CERTIFICATION Plus Series	• Build a foundation in modern data concepts so you can confidently navigate analytics tools and data sources in any organization. • Transform, clean, and organize raw data to make it reliable and useful for analysis. • Apply statistical methods to extract trends, uncover insights, and support business decisions. • Use data visualizations and dashboards to translate complex results into presentations anyone can understand. • Maintain data quality, ensure compliance, and protect sensitive information in alignment with industry standards. • Solve data problems, validate reports, and resolve analytics issues as they arise on the job.	• Data Analyst • Data Specialist • Business Intelligence (BI) Analyst • Reporting Analyst • Sales and Marketing Data Analyst	**Questions:** Max 90 **Length:** 90 minutes
CompTIA DataSys+ CERTIFICATION Plus Series	• Understand database structure types and develop, modify, and run SQL code to gather, store, and manage data assets across various operating systems. • Plan and design databases, implement and test systems, and optimize data deployment processes for effective database deployment. • Monitor and report on database performance, perform maintenance tasks and create critical documentation to support database management and maintenance. • Secure databases, protect against attacks, manage authorization, and ensure governance and regulatory compliance to enhance data and database security. • Prepare for and recover from incidents by implementing disaster recovery, backup, and restoration best practices for database management systems.	• Database Administrator • Database Developer • SQL Database Administrator • Database Analyst • Data Center Technician • Data Warehouse Specialist	**Questions:** Max 90 **Length:** 90 minutes
CompTIA DataAI CERTIFICATION Xpert Series	• Apply mathematical and statistical methods appropriately, including data processing, cleaning, statistical modeling, linear algebra, and calculus concepts. • Utilize appropriate analysis and modeling methods to make justified model recommendations for modeling, analysis, and outcomes. • Implement machine learning models and understand deep learning concepts to advance data science capabilities. • Implement data science operations and processes effectively to support organizational goals. • Demonstrate an understanding of industry trends and specialized applications of data science in various fields.	• Data Scientist • Quantitative Analyst • ML/AI Engineer • Engineer/Specialist • Predictive Analyst • Artificial Intelligence (AI) Engineer	**Questions:** 90 **Length:** 165 minutes

CompTIA Certification Portfolio

CERTIFICATION	COMPETENCIES	Expands Upon	TEST INFO
Expansion Series CompTIA **SecAI+** CERTIFICATION Expansion Series	• Apply AI concepts to strengthen your organization's cybersecurity posture. • Secure AI systems using advanced controls and protections to safeguard data, models, and infrastructure. • Leverage AI technologies to automate workflows, accelerate incident response, and scale security operations. • Navigate global GRC frameworks to ensure ethical and compliant AI adoption across industries. • Defend against AI-driven threats like adversarial attacks, automated malware, and malicious use of generative AI. • Integrate AI securely into DevSecOps pipelines and enterprise security strategies.	Ideal for those who currently hold a CompTIA cybersecurity certification (such as Security+, CySA+, PenTest+, etc.) or equivalent experience, and are looking to expand their skillset for evolving job roles in the context of AI technologies.	**Questions:** Max 60 **Length:** 60 minutes
CompTIA **AutoOps+** CERTIFICATION Expansion Series Launching June 2026	• Use scripting and automation to streamline IT workflows and manage enterprise systems efficiently. • Automate configuration, provisioning, and maintenance using infrastructure-as-code and modern toolchains. • Build and manage CI pipelines to automate testing, ensure quality, and improve collaboration between teams. • Implement secure, compliant delivery pipelines that enable rapid, reliable deployment and operational efficiency.	• Ideal for this who currently hold a CompTIA infrastructure certification (such as Network+, Linux+, Cloud+, Server+) or equivalent experience, and working in roles such as systems administrator, cloud administrator, or DevOps engineer.	**Still In Development**

CompTIA CertMaster Learning Solutions

CompTIA CertMaster Perform

CertMaster Perform is a comprehensive, interactive online learning solution that brings together narrative instructional content, videos, skills assessments, and lab activities in simulated and live environments to prepare candidates for their CompTIA certification exam and a career in IT.

CompTIA CertMaster Learn

CompTIA CertMaster Learn is a comprehensive, interactive online learning solution that combines instructional lessons with engaging videos, skills assessments, practice questions, and lab activities in a simulated environment, equipping participants with the knowledge and practical experience necessary to prepare candidates for their CompTIA certification exam and a career in IT.

CompTIA CertMaster Practice

CompTIA CertMaster Practice is an online knowledge assessment and training companion tool to help candidates prepare for their CompTIA certification exam. Featuring an adaptive question-first design, CertMaster Practice quickly assesses what candidates already know and what they still need to learn. For those topics where candidates need more support, CertMaster Practice provides personalized remediation and feedback. Once a candidate is ready, they can demonstrate their knowledge on a timed practice test complete with performance-based questions.

CompTIA CertMaster Labs

CompTIA CertMaster Labs is a standalone lab solution that allows candidates to apply knowledge learned from the course material and solve problems for a wide range of technologies in a remote, browser-based environment.

CompTIA Study

CertMaster Study is more than an eBook – it's an interactive learning experience. Go beyond static pages with engaging content that includes text, images, videos, and knowledge-check quizzes, all seamlessly integrated on the CertMaster platform.

Instruction is centered around a learning progression model to help candidates learn concepts and actively build skills related to the course objectives. This learning methodology uses a series of steps to contextualize the material, elaborate on areas where additional instruction is needed, and provide relevance through practice and customized feedback.

OnDemand Solution

CompTIA's OnDemand solution offers learners maximum schedule flexibility while providing a highly structured learning environment with high-quality eLearning materials, performance feedback, measurable skills development, and robust support features. CompTIA's OnDemand solution allows learners to progress on their own schedule and timeline, with assistance from a detailed pacing guide that provides week-to-week guidance. In addition, study modules and activities are structured to facilitate steady and sustainable learning progress.

OnDemand is designed to promote demonstrable evidence of learning and provide comprehensive preparation for job roles aligned with specific CompTIA certifications. Each OnDemand solution provides the necessary scaffolding to guide students to certification readiness regardless of their previous study or experience in technology.

CertMaster CE

CertMaster CE is a self-paced, online course that provides an efficient way to renew a CompTIA certification automatically. CertMaster CE is only available for CompTIA A+, Network+, and Security+.

Other options to renew your certification include:

1. Complete continuing education (CE) activities and earn a sufficient number of Continuing Education Units (CEUs) (annual renewal fee required)
2. Earn a qualifying higher-level CompTIA certification (no annual renewal fee required)
3. Pass the most current version of the exam for your respective, existing certification (no annual fee required)

CompTIA.

Learn more at CompTIA.org/Certifications