STATIONX

CompTIA Security+ Cheat Sheet

SY0-701 Exam

CompTIA Security+ Cheat Sheet SY0-701 Exam

This SY0-701 CompTIA Security+ Cheat Sheet **provides a high-level overview of key Security+ concepts and abbreviations to support your exam prep.** Since Security+ shares significant overlap with Network+, CCNA, and other networking-focused certifications, networking topics are intentionally excluded and should be reviewed separately.

What Is the CompTIA Security+ Certification?

The **CompTIA Security+** certification focuses on the day-to-day, real-time application of IT security knowledge in the workplace. More than 700,000 IT professionals hold Security+ certification largely because the U.S. Department of Defense (DoD) has approved it as meeting Directive 8140.03-M requirements, and it complies with ISO 17024 standards.

Mastery in the five Security+ domains shows employers that you can perform essential cyber security functions, such as assessing and improving enterprise security posture, monitoring and securing hybrid environments (cloud, mobile, IoT), and handling security incidents while adhering to principles of governance, risk, and compliance.

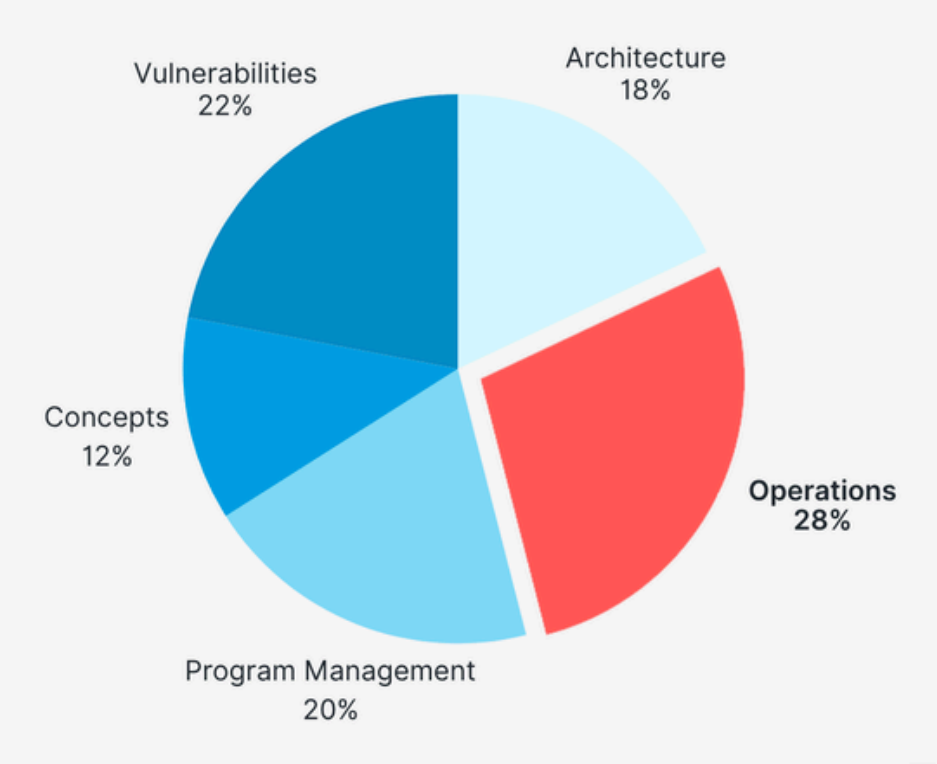
You'll need to answer at most 90 questions, either multiple-choice or performance-based, in this 90-minute examination and complete a survey after it ends. The passing score is 750 on a scale of 100–900. The exam costs $425 USD (see all pricing).

Security+ Domains (SY0-701)

As the landscape of cyber security evolves, so do the primary focus areas (Domains) of the Security+ exam. Every three years, CompTIA updates the Security+ exam to reflect the highest priorities in cyber security.

The latest breakdown of Security+ Domains is as follows:

Security+ 701 Domain



Security+ SY0-701 Domain	Exam Weighting (%)
CompTIA Security+ Domains (SY0-701)	12%
Threats, Vulnerabilities, and Mitigations	22%
Security Architecture	18%
Security Operations	28%
Security Program Management and Oversight	20%

General Security Concepts

This Domain covers essential security concepts, security considerations in change management processes, and cryptography fundamentals.

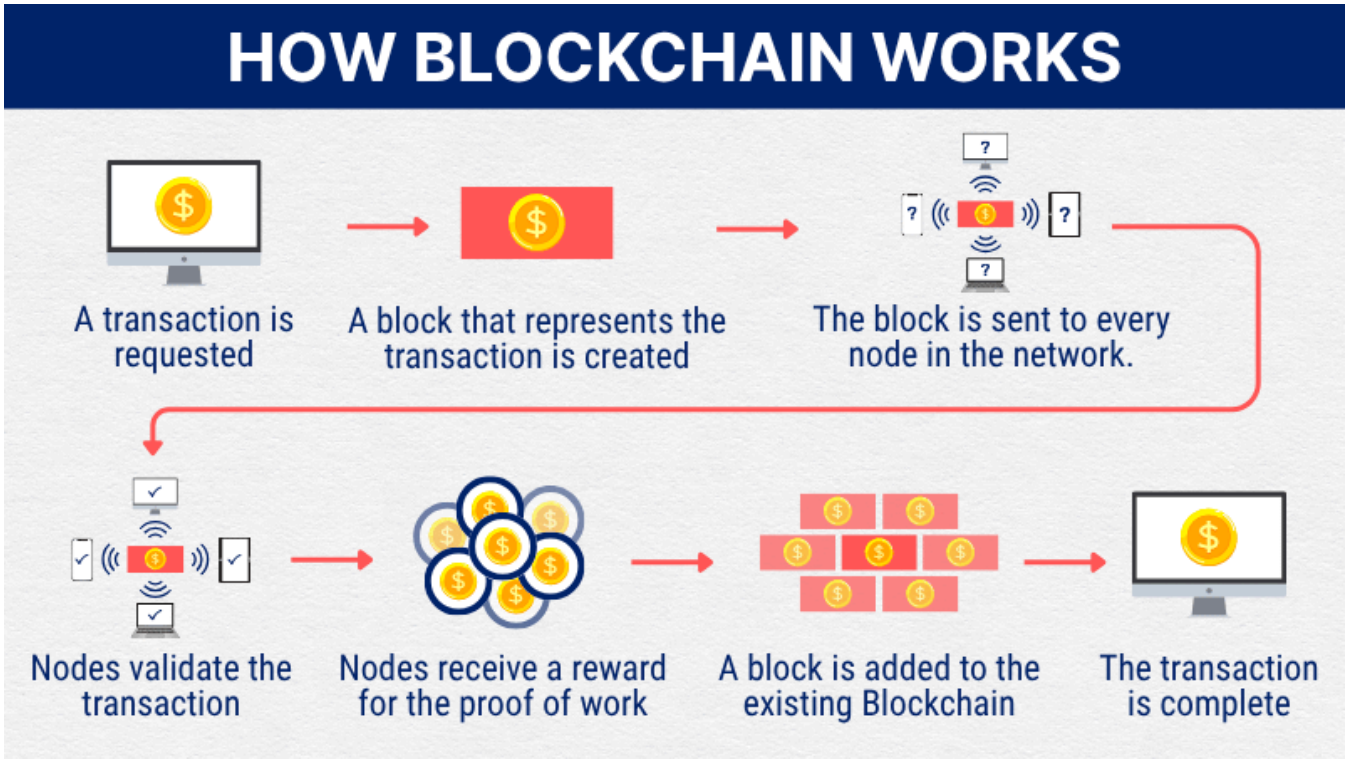
Concept	Description
Security controls (Learn to classify them based on given scenarios)	Categories: • Technical • Managerial • Operational • Physical Control types: • Preventive • Deterrent • Detective • Corrective • Compensating • Directive
CIA	Confidentiality, Integrity, and Availability
Non-repudiation	Impossible to deny your involvement
AAA	Authentication, Authorization, and Accounting
Gap analysis	Identify weaknesses in one's current security posture and a clear path toward the desired security posture
Zero-Trust	Never trust, always verify
Physical security	Tangible security measures around buildings and facilities to control access
Deception and disruption technology	To catch and understand threat actors. • Honeypot • Honeynet • Honeyfile • Honeytoken
Change management	Planning, implementing, and solidifying changes in an organization
Ownership	Parties responsible for organizational changes
Stakeholders	Parties affected by organizational changes
Impact analysis	Analysis of changes within a project and their potential consequences

Concept	Description
Test results	Outcomes of manual/automated tests used to validate changes
Backout plan	Procedures to restore systems to the previous baseline prior to the latest modifications
Maintenance window	Predefined, scheduled period for planned changes, updates, or maintenance, minimizing disruption to users
Standard operating procedure (SOP)	Clear steps for implementing changes with well-defined roles and responsibilities, and strategies for communication geared toward stakeholders
Allow lists/deny lists	List-based access control mechanisms permitting/forbidding access to systems
Downtime	Time when a system is unavailable
Legacy application	Outdated software still in use, often with known vulnerabilities
Dependency	Code packages required by a project to run properly
Version control	The practice of tracking and managing changes to files, often collaboratively
PKI	Public key infrastructure
Encryption levels	• Full-disk • Partition • File • Volume • Database
Symmetric cipher	Streaming: • RC4 Block: • DES • Blowfish • 3DES Considerations: • key length • block size • number of rounds

Concept	Description
Asymmetric cipher	Examples: • Diffie-Hellman key exchange • RSA • Elliptic-curve cryptography
TPM	Trusted Platform Module
HSM	Hardware security module
Key management system	System for managing cryptographic keys and their metadata
Secure enclave	Isolated hardware system for protecting sensitive data and operations
Steganography	Hide data inside other data
Tokenization	Substituting sensitive data elements with non-sensitive equivalents (tokens) with no intrinsic or exploitable meaning or value
Data masking	Replacing sensitive data with fake, usable data for added security
Hashing	One-way, deterministic process of transforming a string of characters into another
Salting	Characters appended to a string (e.g., password) before hashing
Digital signature	Public key sender verified to own corresponding private key
Key stretching	Method that strengthens weak passwords
Blockchain	Decentralized digital ledger of records linked sequentially by cryptographic hashes
Open public ledger	Freely accessible and verifiable system of transactional data
Certificate authority	Issuer of digital certificates to ensure the legitimacy of web hosts
CRL	Certificate revocation list
OCSP	Online Certificate Status Protocol

Concept	Description
Self-signed certificate	Same issuer and subject
Third-party certificate	The issuer has no direct affiliation with your hosting or server environment
Root of trust	Secure, trusted source within a cryptographic system such as HSM
CSR	Certificate signing request
Wildcard certificate	Secure a domain and all its first-level subdomains using an asterisk (*)
CAPTCHA	Completely Automated Public Turing Test to Tell Computers and Humans Apart

The next Domain has everything to do with offensive and defensive hacking.



How Blockchain Works

Threats, Vulnerabilities, and Mitigations

All you must know about threat actors, threat vectors, vulnerabilities, indicators of malicious activity, and threat mitigation techniques are in this Domain.

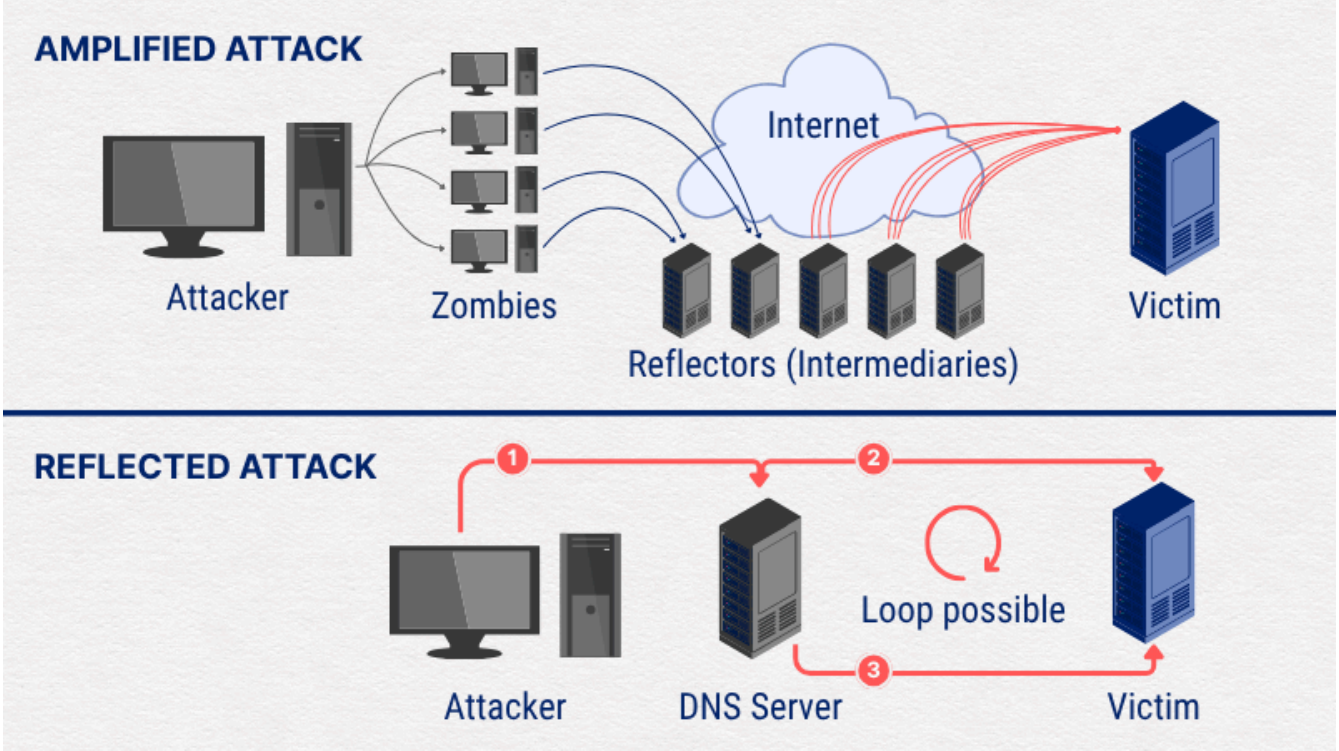
Concept	Description
Threat actor	Vulnerability exploiter. Attributes: • Internal/external • Resources/funding • Level of sophistication/capability • Motivations: • Data exfiltration • Espionage • Service disruption • Blackmail • Financial gain • Philosophical/political beliefs • Ethical • Revenge • Disruption/chaos • War
Nation-state threat actor/state actor	Foreign government agent
Unskilled attacker/script kiddie	Executor of pre-made programs
Hacktivist	Politically motivated agent
Insider threat	Saboteur inside an organization
Organized crime	Profit-driven agent with intent to blackmail
Shadow IT	IT systems deployed without the central IT department's oversight
Malware attacks	• Virus • Worm • Trojan • Rootkit • Keylogger • Spyware • Bloatware • Ransomware • Logic bomb
MSP	Managed service provider

Concept	Description
Social engineering	Principles (reasons for effectiveness): • Authority • Intimidation • Consensus • Scarcity • Familiarity • Trust • Urgency
Phishing attack	By email; single target
Vishing attack	By telephone or voicemail
Smishing attack	By SMS text message
Misinformation/disinformation	Exploitation of human vulnerabilities
Impersonation, identity fraud/theft	Attacks using stolen credentials or personal information
Business email compromise	Impersonate trusted leaders to trick employees into sending money or data or granting privileged access
Pretexting	Digital gunpoint with the ransom being one's private information
Watering hole	Infect a trusted website
Brand impersonation	Pose as a trusted brand to dupe victims and steal their data
Typosquatting	Attacks using mistyped web addresses
TOC	Time-of-check
TOU	Time-of-use
CRL	Certificate revocation list
SQLi	Structured Query Language injection
XSS	Cross-site scripting
Memory injection	Injecting malicious code into memory to execute unauthorized commands
Buffer overflow	Amount of data in the buffer exceeds its storage capacity
Malicious update	Harmful code disguised as a legitimate software update

Concept	Description
Side loading	Installing mobile apps from sources outside official app stores
Jailbreak	Bypassing inbuilt security restrictions in mobile devices to install unauthorized software
Agentless	Without requiring the installation of dedicated software agents
End-of-life	No longer supported by the vendor
Virtual machine (VM) escape	Malicious code running inside a VM gains unauthorized access to the host operating system or other VMs on the same physical server, thus potentially controlling all
Race condition	A vulnerability in which multiple process threads “race” against each other to access/change the data simultaneously, leading to unpredictable and potentially harmful outcomes
Amplified network attack	Generate such a large volume of traffic that it disrupts normal traffic to a web property; includes DDoS attack
Reflected network attack	Flood a victim’s system with traffic by leveraging the responses from a third-party server
Radio frequency identification (RFID) cloning	Tamper with access control, authentication, or sensitive data storage by the unauthorized copying or duplication of the information stored on an RFID tag
Distributed denial-of-service (DDoS) attack	Cybercrime; flood a server with internet traffic preventing legitimate users from access
Domain Name System (DNS) attack	Exploit vulnerabilities in DNS
Wireless attack	Compromise the security of a wireless network such as by exploiting vulnerabilities
On-path attack	Eavesdrop; secretly intercept or modify communication between two parties who believe they are communicating directly

Concept	Description
Replay attack	Intercept data and replay later for gaining unauthorized access or triggering unintended actions
Credential replay attack	Intercept and reuse stolen authentication credentials (e.g., usernames, passwords, session tokens) to gain unauthorized access
Privilege escalation	Gain unauthorized access to higher-level permissions
Forgery attack	Deceive the recipient about the identity of the sender
Directory traversal	Access files and directories stored outside the web root folder
Downgrade attack	Force a system to use a weaker protocol or encryption method
Collision attack	Find two different inputs that produce the same hash value when passed through a cryptographic hash function
Birthday attack	Exploits birthday paradox (>50% probability of two people sharing the same birthday in a group of 23 people) to find collisions in hash functions
Brute-force attack	Trying character combinations
Spraying attack	Trying the same password across different accounts
Configuration enforcement	Ensuring hardware/software adherence to predefined security settings and policies
Application allow list	Block any application not on the list from running
ACL	Access control list
Patching	Applying updates or fixes to address bugs and vulnerabilities
Least privilege	Only grant the minimum necessary rights to perform designated tasks
Decommissioning	Retiring assets from operation, including data sanitization

Concept	Description
Hardening	Tools and techniques to reduce vulnerabilities in systems, applications, etc.
Host-based firewall	Network traffic filter on a single computer/server
HIPS	Host-based Intrusion Prevention System
HIDS	Host-based Intrusion Detection System



Amplified vs Reflected Attack

What makes a system vulnerable? The next Domain offers an in-depth look.

Security Architecture

On a macro level, aspiring cyber security professionals must learn about network architecture models, enterprise infrastructure, data protection, and measures for resilience and recovery.

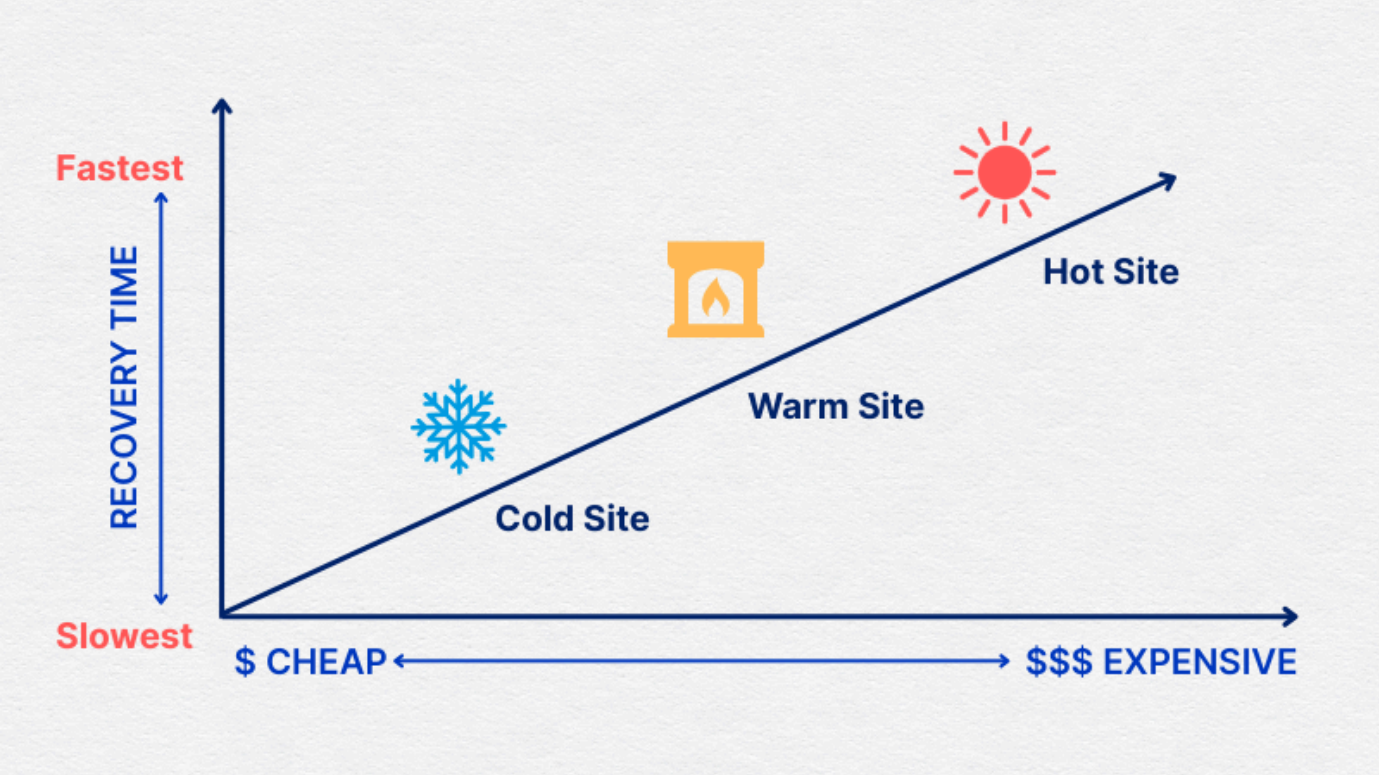
Concept	Description
IPS	Intrusion prevention system
IDS	Intrusion detection system
EAP	Extensible Authentication Protocol
WAF	Web application firewall
UTM	Unified threat management
NGFW	Next-generation firewall
IaC	Infrastructure as code
Air-gapped	Hardware isolation of computer/network from external connections to protect it from malicious activity
Logical segmentation	Division of computer system into isolated segments using software
RTBH	Remotely Triggered Black Hole
SDN	Software-defined networking
ICS	Industrial control systems
SCADA	Supervisory Control and Data Acquisition
Containerization	Packaging applications and their dependencies together into a single unit (container)
Virtualization	Creation of virtual environments from a single physical machine for efficient use of computing resources
RTOS	Real-time operating system
Fail-open	A system defaults to an operational state, allowing continued functionality in the event of failure

Concept	Description
Fail-closed	A system defaults to shutdown and prevention of further operations in the event of failure
Serverless	Users can write and deploy code without worrying about the underlying infrastructure
Microservices	Infrastructure where small, independent, and loosely coupled services make up an application
Active device	Actively participate in network traffic flow
Passive device	Only observe network traffic
Inline device	Sit in the data path, able to block or modify malicious traffic
Tap/monitor device	Passively monitor the traffic but won't take action upon finding anything malicious
Jump server	Funnel traffic through firewalls using a supervised secure channel
Proxy server	Gateway between end users and the web pages they visit only; able to prevent cyber attackers from entering a private network
IEEE 802.1X	Standard for port-based network access control
Responsibility matrix	Responsible, Accountable, Consulted, Informed
IoT	Internet of Things
Embedded systems	Small computers integrated into larger systems to execute specific tasks such as graphics, data processing, and sensing
Remote access	Connecting to networks and systems from remote locations
Tunneling	Data transfer by wrapping a data packet in another
VPN	Virtual private network

Concept	Description
TLS	Transport Layer Security
IPSec	Internet protocol security
SD-WAN	Software-defined wide area network
SASE	Secure access service edge
Data at rest	On computer storage
Data in use/processing	In RAM being accessed
Data in transit/motion	Traveling along cables or broadcasting wirelessly
Data sovereignty	A country or jurisdiction has the authority and right to govern and control the data generated within its borders
Geolocation	Identify the geographical location of a device or user
High availability	A system's ability to operate continuously for a designated uptime despite individual component failure
Load balancing	Distribute workloads or network traffic across multiple servers to prevent overloading and improve application performance and availability
Clustering	Combination of servers to function as a single unit for redundancy and increased processing power
Snapshots	Point-in-time backups of data or systems to aid recovery
Cold site	Power, networking capability, and cooling; no servers or storage
Warm site	Cold site plus storage hardware; still requires data transportation
Hot site	Fully functional backup site with important data mirrored to it
COOP	Uninterruptible power supply

Cold, Warm, and Hot Disaster Recovery Sites

Cold Site	Warm Site	Hot Site
✓ Secondary Location	✓ Secondary Location	✓ Secondary Location
✗ Equipment at Location	✓ Equipment at Location	✓ Equipment at Location
✗ Connectivity at Location	✓ Connectivity at Location	✓ Connectivity at Location
✗ Active Before Failover	✗ Active Before Failover	✓ Active Before Failover
✗ Backup Data Ready	✗ Backup Data Ready	✓ Backup Data Ready



Cold, Warm, and Hot Disaster Recovery Sites

Security Operations

On a micro level, aspiring cyber security professionals should also know how to protect and monitor computing resources and data assets, incident response, as well as identity and access management.

Concept	Description
MDM	Mobile device management
BYOD	Bring your own device
COPE	Corporate-owned, personally enabled
CYOD	Choose your own device
WPA3	Wi-Fi Protected Access 3
RADIUS	Remote Authentication Dial-In User Service
Application security	Measures to protect software from threats and vulnerabilities during SDLC
Input validation	Ensuring data conforms to predefined standards
Secure cookies	Transmittable over HTTPS but not HTTP
Static code analysis	Examining source code without execution to identify errors, vulnerabilities, and deviations from coding standards
Code signing	Digital verification of software authenticity and integrity
Sandboxing	Isolation of programs/processes in a virtual environment to limit potential damage

Finally, we conclude with globally recognized best practices in managing cyber security programs.

Security Program Management and Oversight

This Domain is responsible for cyber security concepts and acronyms related to governance, risk, and compliance.

Concept	Description
SLA	Service-Level Agreement
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSA	Master Service Agreement
WO	Work Order
SOW	Statement of Work
NDA	Non-disclosure Agreement
BPA	Business Partners Agreement
BCP	Business Continuity Plan
COOP	Continuity of operations
DRP	Disaster Recovery Plan
IRP	Incident Response Plan
IoC	Indicators of Compromise
AUP	Acceptable Use Policy
SDLC	Software Development Lifecycle
GDPR	General Data Protection Regulation
PCI DSS	Payment Card Industry Data Security Standard
ISO	International Organization for Standardization
CSA	Cloud Security Alliance
AV	Asset Value

Concept	Description
EF	Exposure Factor
SLE	Single Loss Expectancy = AV × EF
ARO	Annualized Rate of Occurrence
ALE	Annualized Loss Expectancy = SLE × ARO
BIA	Business impact analysis
MTBF	Mean time between failures
MTTF	Mean time to failure
MTTR	Mean time to repair
RTO	Recovery time objective
RPO	Recovery point objective
Residual risk	Remaining risk after mitigation

CompTIA Security+ Cheat Sheet Conclusion

Want to maximize your chances of success? **We offer a CompTIA Security+ Course & SY0-701 Practice Test Bundle** available as a one-time purchase. This grants lifetime access to over 20 hours of video training, three full-length practice exams, flashcards, and more.

You can also look at our StationX Master's Program for complete career guidance, mentorship, a personalized certification roadmap, access to over 30,000 courses and labs, and much more.

You can also purchase an official CompTIA Security+ exam voucher through StationX at a tremendous discount!

Frequently Asked Questions

Is the CompTIA Security+ exam hard?

Yes. This entry-level cyber security certification exam is moderately challenging and encompasses a substantial amount of material. The better prepared you are, the faster and more accurately you can answer the questions. If you already hold a networking certification like Network+ or CCNA, you will have a much easier time. You'll need to answer up to 90 questions in 90 minutes, so read each question carefully. Our **in-depth article** has details.

How can I pass my Security+ fast?

Cramming before the exam may be counterproductive. Instead, set aside plenty of time for studies, practice exams, and rest. Performing well in performance-based questions will require hands-on experience, such as virtual labs. Here are **10 tips to streamline your Security+ studies.**

Can you skip questions on the Security+ exam?

Yes, you can select the **"Mark question"** option on questions you're unsure of and answer them later. Many candidates choose to save performance-based questions for the last.

How long should you study for CompTIA Security+?

If you're new to CompTIA certifications, expect your preparation to span about **three to six months** at least. Having hands-on experience reduces study time. Security+ has significant overlap with Network+, so if you've just passed Network+ and the topics are still fresh on your mind, use your memory to your advantage.

What is the passing score for the Security+ exam?

The passing score is 750 on a scale of 100–900. Consistently getting 85% or above in your practice exams will help you pass Security+.

Guarantee Your Cyber Security Career with the StationX Master's Program!

Get real work experience and a job guarantee in the StationX Master's Program. Dive into tailored training, mentorship, and community support that accelerates your career.

- **Job Guarantee & Real Work Experience:** Launch your cybersecurity career with guaranteed placement and hands-on experience within our Master's Program.
- **30,000+ Courses and Labs:** Hands-on, comprehensive training covering all the skills you need to excel in any role in the field.
- **Pass Certification Exams:** Resources and exam simulations that help you succeed with confidence.
- **Mentorship and Career Coaching:** Personalized advice, resume help, and interview coaching to boost your career.
- **Community Access:** Engage with a thriving community of peers and professionals for ongoing support.
- **Advanced Training for Real-World Skills:** Courses and simulations designed for real job scenarios.
- **Exclusive Events and Networking:** Join events and exclusive networking opportunities to expand your connections.

TAKE THE NEXT STEP IN YOUR CAREER TODAY!

UNLOCK YOUR MASTER'S PROGRAM