



Systems Security
Certified Practitioner

Certification **Exam Outline**

Effective Date: November 2018



About SSCP

The Systems Security Certified Practitioner (SSCP) is the ideal certification for those with proven technical skills and practical, hands-on security knowledge in operational IT roles. It provides confirmation of a practitioner's ability to implement, monitor and administer IT infrastructure in accordance with information security policies and procedures that ensure data confidentiality, integrity and availability.

The broad spectrum of topics included in the SSCP Common Body of Knowledge (CBK) ensure its relevancy across all disciplines in the field of information security. Successful candidates are competent in the following 7 domains:

- Access Controls
- Security Operations and Administration
- Risk Identification, Monitoring, and Analysis
- Incident Response and Recovery
- Cryptography
- Network and Communications Security
- Systems and Application Security

Experience Requirements

Candidates must have a minimum of 1 year cumulative work experience in 1 or more of the 7 domains of the SSCP CBK. A 1 year [prerequisite pathway](#) will be granted for candidates who received a degree (bachelors or masters) in a cybersecurity program.

A candidate that doesn't have the required experience to become an SSCP may become an Associate of (ISC)² by successfully passing the SSCP examination. The Associate of (ISC)² will then have 2 years to earn the 1 year required experience.

Accreditation

SSCP is in compliance with the stringent requirements of ANSI/ISO/IEC Standard 17024.

Job Task Analysis (JTA)

(ISC)² has an obligation to its membership to maintain the relevancy of the SSCP. Conducted at regular intervals, the Job Task Analysis (JTA) is a methodical and critical process of determining the tasks that are performed by security professionals who are engaged in the profession defined by the SSCP. The results of the JTA are used to update the examination. This process ensures that candidates are tested on the topic areas relevant to the roles and responsibilities of today's practicing information security professionals.

SSCP Examination Information

Length of exam	3 hours
Number of questions	125
Question format	Multiple choice
Passing grade	700 out of 1000 points
Exam availability	English, Japanese, and Brazilian Portuguese
Testing center	Pearson VUE Testing Center

SSCP Examination Weights

Domains	Weight
1. Access Controls	16%
2. Security Operations and Administration	15%
3. Risk Identification, Monitoring, and Analysis	15%
4. Incident Response and Recovery	13%
5. Cryptography	10%
6. Network and Communications Security	16%
7. Systems and Application Security	15%
Total:	100%



Domain 1: Access Controls

1.1 Implement and maintain authentication methods

- » Single/multifactor authentication
- » Single sign-on
- » Device authentication
- » Federated access

1.2 Support internetwork trust architectures

- » Trust relationships (e.g., 1-way, 2-way, transitive)
- » Extranet
- » Third party connections

1.3 Participate in the identity management lifecycle

- » Authorization
- » Proofing
- » Provisioning/de-provisioning
- » Maintenance
- » Entitlement
- » Identity and Access Management (IAM) systems

1.4 Implement access controls

- » Mandatory
- » Non-discretionary
- » Discretionary
- » Role-based
- » Attribute-based
- » Subject-based
- » Object-based



Domain 2: Security Operations and Administration

2.1 Comply with codes of ethics

- » (ISC)² Code of Ethics
- » Organizational code of ethics

2.2 Understand security concepts

- » Confidentiality
- » Integrity
- » Availability
- » Accountability
- » Privacy
- » Non-repudiation
- » Least privilege
- » Separation of duties

2.3 Document, implement, and maintain functional security controls

- » Deterrent controls
- » Preventative controls
- » Detective controls
- » Corrective controls
- » Compensating controls

2.4 Participate in asset management

- » Lifecycle (hardware, software, and data)
- » Hardware inventory
- » Software inventory and licensing
- » Data storage

2.5 Implement security controls and assess compliance

- » Technical controls (e.g., session timeout, password aging)
- » Physical controls (e.g., mantrap, cameras, locks)
- » Administrative controls (e.g., security policies and standards, procedures, baselines)
- » Periodic audit and review

2.6 Participate in change management

- » Execute change management process
- » Identify security impact
- » Testing /implementing patches, fixes, and updates (e.g., operating system, applications, SDLC)

2.7 Participate in security awareness and training

2.8 Participate in physical security operations (e.g., data center assessment, badging)



Domain 3: Risk Identification, Monitoring, and Analysis

3.1 Understand the risk management process

- » Risk visibility and reporting (e.g., risk register, sharing threat intelligence, Common Vulnerability Scoring System (CVSS))
- » Risk management concepts (e.g., impact assessments, threat modelling, Business Impact Analysis (BIA))
- » Risk management frameworks (e.g., ISO, NIST)
- » Risk treatment (e.g., accept, transfer, mitigate, avoid, recast)

3.2 Perform security assessment activities

- » Participate in security testing
- » Interpretation and reporting of scanning and testing results
- » Remediation validation
- » Audit finding remediation

3.3 Operate and maintain monitoring systems (e.g., continuous monitoring)

- » Events of interest (e.g., anomalies, intrusions, unauthorized changes, compliance monitoring)
- » Logging
- » Source systems
- » Legal and regulatory concerns (e.g., jurisdiction, limitations, privacy)

3.4 Analyze monitoring results

- » Security baselines and anomalies
- » Visualizations, metrics, and trends (e.g., dashboards, timelines)
- » Event data analysis
- » Document and communicate findings (e.g., escalation)



Domain 4: Incident Response and Recovery

4.1 Support incident lifecycle

- » Preparation
- » Detection, analysis, and escalation
- » Containment
- » Eradication
- » Recovery
- » Lessons learned/implementation of new countermeasure

4.2 Understand and support forensic investigations

- » Legal and ethical principles
- » Evidence handling (e.g., first responder, triage, chain of custody, preservation of scene)

4.3 Understand and support Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP) activities

- » Emergency response plans and procedures (e.g., information system contingency plan)
- » Interim or alternate processing strategies
- » Restoration planning
- » Backup and redundancy implementation
- » Testing and drills



Domain 5: Cryptography

5.1 Understand fundamental concepts of cryptography

- » Hashing
- » Salting
- » Symmetric/asymmetric encryption/Elliptic Curve Cryptography (ECC)
- » Non-repudiation (e.g., digital signatures/certificates, HMAC, audit trail)
- » Encryption algorithms (e.g., AES, RSA)
- » Key strength (e.g., 256, 512, 1024, 2048 bit keys)
- » Cryptographic attacks, cryptanalysis, and counter measures

5.2 Understand reasons and requirements for cryptography

- » Confidentiality
- » Integrity and authenticity
- » Data sensitivity (e.g., PII, intellectual property, PHI)
- » Regulatory

5.3 Understand and support secure protocols

- » Services and protocols (e.g., IPSec, TLS, S/MIME, DKIM)
- » Common use cases
- » Limitations and vulnerabilities

5.4 Understand Public Key Infrastructure (PKI) systems

- » Fundamental key management concepts (e.g., key rotation, key composition, key creation, exchange, revocation, escrow)
- » Web of Trust (WOT) (e.g., PGP, GPG)



Domain 6: Network and Communications Security

6.1 Understand and apply fundamental concepts of networking

- » OSI and TCP/IP models
- » Network topographies (e.g., ring, star, bus, mesh, tree)
- » Network relationships (e.g., peer to peer, client server)
- » Transmission media types (e.g., fiber, wired, wireless)
- » Commonly used ports and protocols

6.2 Understand network attacks and countermeasures (e.g., DDoS, man-in-the-middle, DNS poisoning)

6.3 Manage network access controls

- » Network access control and monitoring (e.g., remediation, quarantine, admission)
- » Network access control standards and protocols (e.g., IEEE 802.1X, Radius, TACACS)
- » Remote access operation and configuration (e.g., thin client, SSL VPN, IPSec VPN, telework)

6.4 Manage network security

- » Logical and physical placement of network devices (e.g., inline, passive)
- » Segmentation (e.g., physical/logical, data/control plane, VLAN, ACLs)
- » Secure device management

6.5 Operate and configure network-based security devices

- » Firewalls and proxies (e.g., filtering methods)
- » Network intrusion detection/prevention systems
- » Routers and switches
- » Traffic-shaping devices (e.g., WAN optimization, load balancing)

6.6 Operate and configure wireless technologies (e.g., bluetooth, NFC, WiFi)

- » Transmission security
- » Wireless security devices (e.g., WIPS, WIDS)



Domain 7: Systems and Application Security

7.1 Identify and analyze malicious code and activity

- » Malware (e.g., rootkits, spyware, scareware, ransomware, trojans, virus, worms, trapdoors, backdoors, and remote access trojans)
- » Malicious code countermeasures (e.g., scanners, anti-malware, code signing, sandboxing)
- » Malicious activity (e.g., insider threat, data theft, DDoS, botnet)
- » Malicious activity countermeasures (e.g., user awareness, system hardening, patching, sandboxing, isolation)

7.2 Implement and operate endpoint device security

- » HIDS
- » Host-based firewalls
- » Application white listing
- » Endpoint encryption
- » Trusted Platform Module (TPM)
- » Mobile Device Management (MDM) (e.g., COPE, BYOD)
- » Secure browsing (e.g., sandbox)

7.3 Operate and configure cloud security

- » Deployment models (e.g., public, private, hybrid, community)
- » Service models (e.g., IaaS, PaaS and SaaS)
- » Virtualization (e.g., hypervisor)
- » Legal and regulatory concerns (e.g., privacy, surveillance, data ownership, jurisdiction, eDiscovery)
- » Data storage and transmission (e.g., archiving, recovery, resilience)
- » Third party/outsourcing requirements (e.g., SLA, data portability, data destruction, auditing)
- » Shared responsibility model

7.4 Operate and secure virtual environments

- » Software-defined networking
- » Hypervisor
- » Virtual appliances
- » Continuity and resilience
- » Attacks and countermeasures
- » Shared storage

Additional Examination Information

Supplementary References

Candidates are encouraged to supplement their education and experience by reviewing relevant resources that pertain to the CBK and identifying areas of study that may need additional attention.

View the full list of supplementary references at www.isc2.org/certifications/References.

Examination Policies and Procedures

(ISC)² recommends that SSCP candidates review exam policies and procedures prior to registering for the examination. Read the comprehensive breakdown of this important information at www.isc2.org/Register-for-Exam.

Legal Info

For any questions related to (ISC)²'s legal policies, please contact the (ISC)² Legal Department at legal@isc2.org.

Any Questions?

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