MINISTRY OF HUMAN RESOURCES

HRD CORP
HUMAN RESOURCE DEVELOPMENT CORPORATION

IndSF | INDUSTRIAL SKILLS FRAMEWORK

2nd Edition 2023

CYBERSECURITY

MDEC™ PIKOM CyberSecurity MALAYSIA
Company No. 200601006881 (726630-U)
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MCMC

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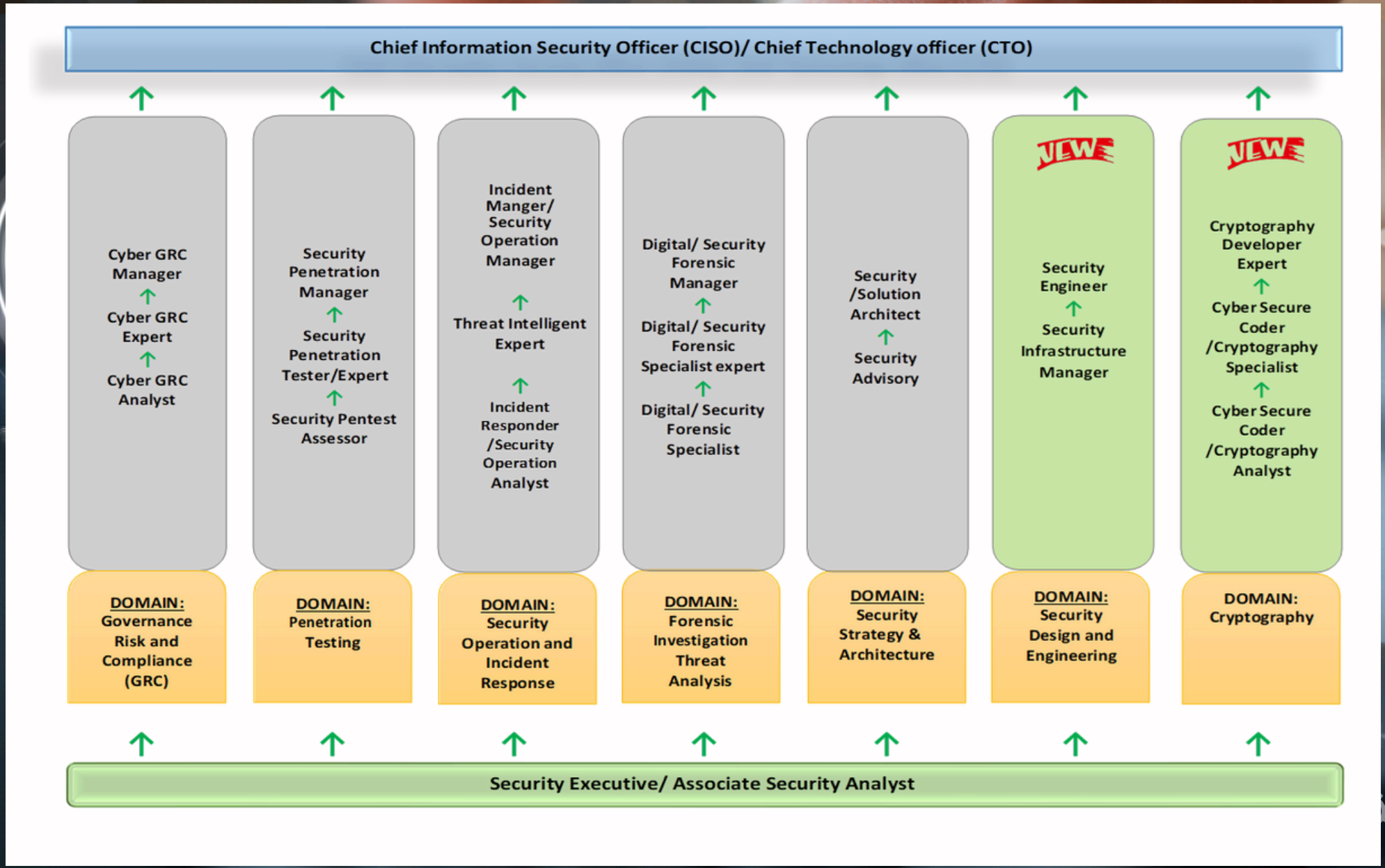
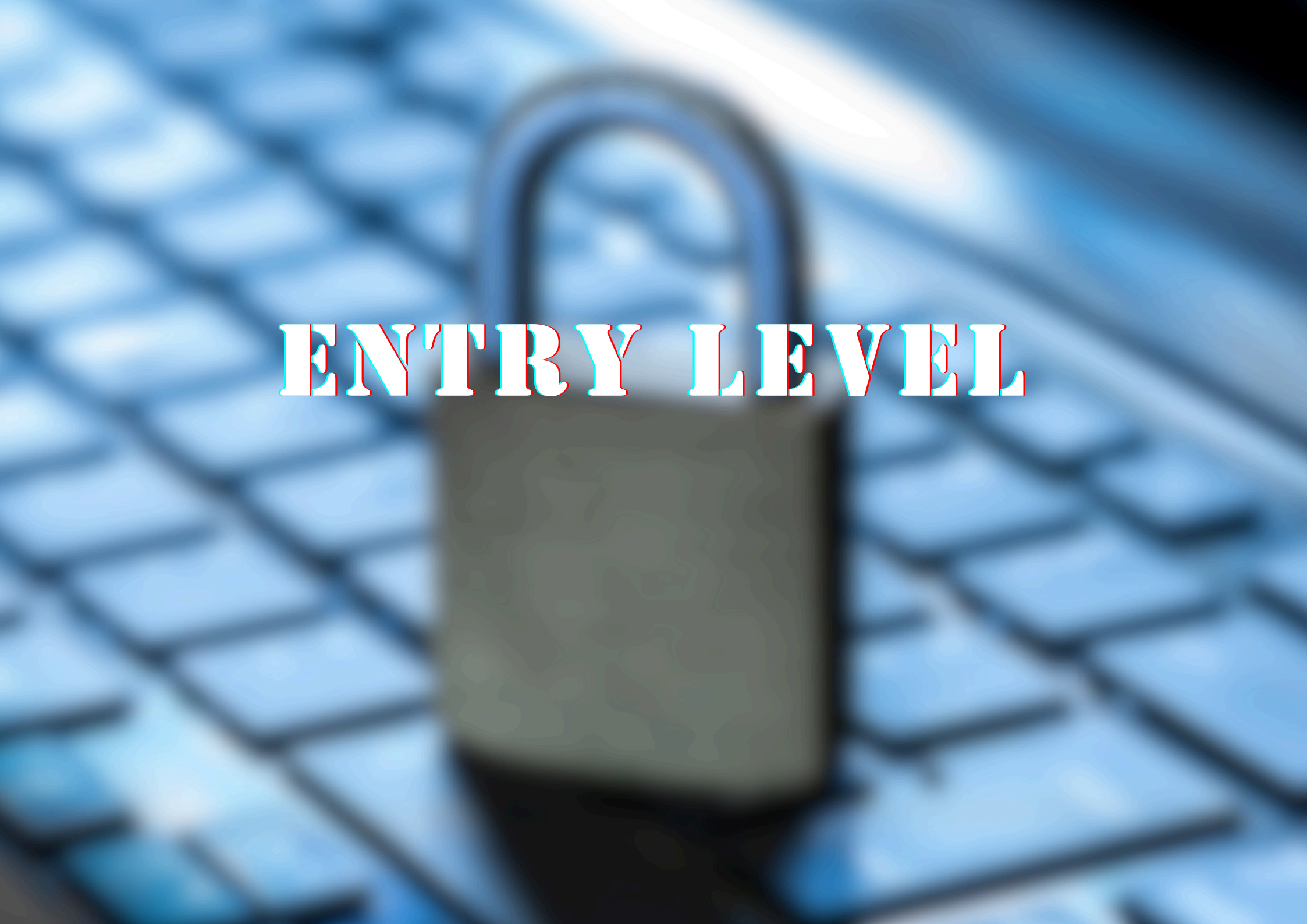
Career Pathway




ENTRY LEVEL

Security Analyst/ Associate Security Analyst

Job Description

- To support administration, monitoring, and maintenance of security systems and operations.
- To monitor security alerts and events.
- To collect and document contextual information following established practices.
- To support the preparation and publishing of security advisories.
- To conduct vulnerability assessments and penetration testing to identify system and network vulnerabilities.
- To monitor and analyze security alerts and reports to identify potential security breaches.
- To provide incident response support.
- To implement security policies, procedures, and standards.
- To configure and manage security tools, including firewalls, antivirus software, and intrusion detection systems.

Common Certification

- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field.
- ISACA CSX Fundamental Certificate (For Beginner)
- CompTIA A+ (For Beginner)
- EC-Council Certified Network Defender (CND) (For Beginner)
- Cisco Certified Entry Networking Technician (CCENT) (For Beginner)
- GIAC Security Essentials Certification (GSEC) (Level 1)
- Cisco Certified Network Professional Security (CCNP Security)
- CompTIA Security+
- EC-Council Certified Ethical Hacker (CEH)
- (ISC)² Systems Security Certified Practitioner (SSCP)
- EC-Council Certified Incident Handler (E|CIH)
- ITIL V4 Foundation for IT Service Management
- ISO/IEC 27001:2013 Information Security Management System Requirements
- Certified Information Security Management System Auditor (CISMSA)
- Certified Penetration Tester (Security Tools)
- Certified Incident Handling and Network Security Analyst
- Certified Digital Forensic for First Responder (Foundation)
- Certified Cryptography Foundation

Security Analyst/ Associate Security Analyst

Essential Skills

- Information Security Knowledge
- Risk Management
- Legal and Compliance Understanding
- Ethical Hacking Skills
- Technical Proficiency / Analytical Skills / Problem Solving Skills

Common Used Tools/ Technologies

- Programming and Scripting Tools
- Scanner (Network, Vulnerability)
- Governance, Risk and Compliance (Platforms)
- Security Information and Event Management (SIEM)
- Threat Intel

Soft Skills

- Communication
- Creative Thinking
- Teamwork
- Stakeholder Management

Competencies

- Cyber Incident Management & Problem Management
- Cyber Forensics
- Infrastructure Support
- Security Administration
- Security Assessment & Testing
- Security Education & Information Security Awareness
- Project Management
- Threat Intelligence & Detection
- Programming


GOVERNANCE
RISK &
COMPLIANCE

Cyber GRC Analyst

Job Description

- To assist and maintain cybersecurity governance frameworks and policies.
- To assist in developing cybersecurity standards, procedures, and guidelines aligned with industry best practices and regulatory requirements.
- To assist in conducting cybersecurity risk assessments within the organization.
- To identify potential vulnerabilities, analyze their impact, and report incidents.
- To contribute to minimizing threats to the organization's information systems and data.
- To play a key role in monitoring and detecting cybersecurity incidents.
- To investigate security breaches and coordinate response efforts.
- To participate in testing incident response plans and procedures for effective mitigation and recovery.

Common Certification

- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field.
- Certified Information Systems Security Professional (CISSP)
- Certified in Risk and Information Systems Control (CRISC)
- Certified Information Privacy Professional (CIPP)
- Certified Information Security Management System Auditor (CISMSA)
- Certified Information Systems Auditor (CISA)
- Certificate of Cloud Security Knowledge (CCSK)

Competencies

- Information Security and Cybersecurity Domain Knowledge
- Understanding and Awareness on ISO Standards and Industry Best Practices
- Understanding and Awareness on Malaysian Laws and Regulations related to Cybersecurity

Cyber GRC Analyst

Essential Skills

- Analytical Skills
- Communication Skills
- Attention to Detail
- Problem-Solving
- Collaboration and Relationship Building
- Continuous Learning
- Program Management (Audit Risk Compliance)

Soft Skills

- Communication
- Critical Thinking
- Problem-Solving
- Adaptability
- Collaboration
- Attention to Detail
- Time Management
- Ethical Conduct

Common Used Tools/ Technologies

- Governance, Risk, and Compliance Platforms
- Risk Assessment Tools
- Compliance Management Tools
- Security Information and Event Management (SIEM) Systems
- Vulnerability Management Tools
- Data Loss Prevention (DLP) Solutions
- Compliance and Risk Assessment Frameworks
- Documentation and Policy Management Tools
- Project Management and Collaboration Tools

Cyber GRC Expert

Job Description

- To establish and oversee security policies, standards, and procedures within the organization.
- To lead the organization's cybersecurity risk management program, conducting regular risk assessments and implementing effective risk mitigation strategies.
- To collaborate with business units to integrate risk management into decision-making processes.
- To ensure alignment of security practices with business objectives.
- To identify, assess, and prioritize risks related to information security.
- To develop risk mitigation strategies and action plans.
- To monitor risk exposure and adjust strategies as needed.
- To ensure compliance with relevant regulations, industry standards, and internal policies.
- To conduct regular audits and assessments to verify adherence.
- To provide guidance to teams on compliance requirements.
- To plan and execute internal and external cybersecurity audits, working collaboratively with audit teams.
- To address audit findings and implement improvements to enhance cybersecurity controls.
- To engage in research and development activities to enhance investigative techniques in the digital forensics field.
- To develop and deliver cybersecurity awareness and training programs for employees.
- To cultivate a culture of cybersecurity awareness and responsibility throughout the organization

Common Certification

- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field.
- Minimum 5 years of experience in cybersecurity, risk management, or compliance.
- Certified Information Systems Security Professional (CISSP)
- Certified in Risk and Information Systems Control (CRISC)
- Certified Information Security Manager (CISM)
- Certified Information Privacy Professional (CIPP)
- Certified Information Privacy Manager (CIPM)
- ISO 27001 Lead Implementer or Lead Auditor
- ISACA COBIT
- Certified Information System Auditor (CISA)
- Certified of Cloud Auditing Knowledge (CCAK)

Competencies

- Strategic Thinking
- Leadership
- Business Acumen
- Analytical and Problem-Solving Skills
- Communication and Influencing
- Collaboration and Relationship Building
- Regulatory and Industry Knowledge
- Change Management
- Ethical Conduct

Cyber GRC Expert

Essential Skills

- Strong Knowledge of Information Security and Cybersecurity Domain
- Governance, Risk, and Compliance (GRC) Expertise
- Risk Management
- Compliance Management
- Analytical and Problem-Solving Skills
- Communication and Stakeholder Management
- Leadership and Influence
- Ethical Conduct
- Continuous Learning
- Program Management (Audit Risk Compliance))

Soft Skills

- Communication
- Critical Thinking
- Problem-Solving
- Adaptability
- Collaboration
- Attention to Detail
- Time Management
- Ethical Conduct

Common Used Tools/ Technologies

- Governance, Risk, and Compliance Platforms
- Risk Assessment Tools
- Compliance Management Tools
- Security Information and Event Management (SIEM) Systems
- Vulnerability Management Tools
- Data Loss Prevention (DLP) Solutions
- Compliance and Risk Assessment Frameworks
- Documentation and Policy Management Tools
- Project Management and Collaboration Tools

Cyber GRC Manager

Job Description

- To develop, drive and direct the cybersecurity GRC strategy aligned with overall business objectives.
- To understand the organization's risk appetite, define long-term goals, and create a roadmap for achievement.
- To ensure the cybersecurity GRC program supports the organization's strategic direction and effectively manages risks
- To oversee the identification, assessment, and management of cybersecurity risks.
- To coordinate risk assessments, vulnerability assessments, and penetration tests.
- To develop risk treatment plans and ensure appropriate controls are in place for effective risk management.

Common Certification

- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field.
- Minimum 7 years of experience in cybersecurity, risk management, or compliance.
- Certified Information Systems Security Professional (CISSP)
- Certified in Risk and Information Systems Control (CRISC)
- Certified Information Security Manager (CISM)
- Certified in the Governance of Enterprise IT (CGEIT)
- Certified Information Privacy Professional (CIPP)
- ISO 27001 Lead Implementer/Lead Auditor
- Project Management Professional (PMP)

Competencies

- Cybersecurity Knowledge
- Governance, Risk, and Compliance Expertise
- Leadership and Management Skills
- Risk Management
- Compliance Management
- Communication and Influencing Skills
- Stakeholder Management
- Analytical and Critical Thinking
- Business Acumen
- Continuous Learning

Cyber GRC Manager

Essential Skills

- Strong Knowledge of Information Security and Cybersecurity Domain
- Governance, Risk, and Compliance (GRC) Expertise
- Risk Management
- Compliance Management
- Analytical and Problem-Solving Skills
- Communication and Stakeholder Management
- Leadership and Influence
- Ethical Conduct
- Continuous Learning
- Program Management (Audit Risk Compliance))

Soft Skills

- Communication
- Critical Thinking
- Problem-Solving
- Adaptability
- Collaboration
- Attention to Detail
- Time Management
- Ethical Conduct
- Decision Making Skills
- Conflict Resolution Skills

Common Used Tools/ Technologies

- Governance, Risk, and Compliance Platforms
- Risk Assessment Tools
- Compliance Management Tools
- Security Information and Event Management (SIEM) Systems
- Vulnerability Management Tools
- Data Loss Prevention (DLP) Solutions
- Compliance and Risk Assessment Frameworks
- Documentation and Policy Management Tools
- Project Management and Collaboration Tools


PENETRATION
TESTING

Security Pentest Assessor

Job Description

- To perform security assessments on computer systems, networks, and applications.
- To identify vulnerabilities, weaknesses, and potential security risks using various tools and techniques to simulate real-world attacks.
- To conduct penetration tests on target systems.
- To identify vulnerabilities and attempt exploitation for unauthorized access or data compromise.
- To Identify potential attack vectors, executing test scenarios, and documenting findings.
- To utilize vulnerability scanning tools for identifying and assessing vulnerabilities.
- Conducting automated scans to discover weaknesses like misconfigurations or unpatched software.
- Documenting assessment steps, techniques used, and potential impact of identified vulnerabilities.
- To provide detailed recommendations for addressing and mitigating identified vulnerabilities.
- To stay updated with the latest security threats, attack techniques, and countermeasures.
- To keep abreast of new vulnerabilities, exploits, and emerging security technologies.
- To apply industry best practices and follow ethical hacking guidelines.
- To understand system architecture, application design, and relevant security requirements.
- To utilize effective communication skills to explain technical concepts, discuss findings, and provide clear recommendations.
- To assist in the remediation process by providing guidance and clarification on identified vulnerabilities.
- Collaborating with the organization's IT and security teams to ensure proper implementation of security measures.
- To consider compliance requirements and regulatory frameworks applicable to the organization.
- To ensure alignment of security assessments with standards, legal, and ethical guidelines.
- To stay updated with the latest security technologies, tools, and techniques.
- To engage in continuous learning, attending conferences, and obtaining relevant certifications.
- To enhance expertise in security assessments and penetration testing methodologies.

Security Pentest Assessor

Common Certification

- Certified Ethical Hacker (CEH)
- Offensive Security Certified Professional (OSCP)
- Certified Penetration Testing Engineer (CPTE)
- GIAC Penetration Tester (GPEN)
- Certified Information Systems Security Professional (CISSP)
- Certified Web Application Penetration Tester (CWAPT)
- Certified Mobile and Web Application Penetration Tester (CMWAPT)

Competencies

- Technical Proficiency
- Penetration Testing Methodologies
- Vulnerability Assessment
- Ethical Hacking Techniques
- Security Tools
- Risk Assessment and Management
- Compliance and Regulatory Knowledge
- Documentation and Reporting
- Continuous Learning
- Professionalism and Ethics

Security Pentest Assessor

Essential Skills

- Technical Proficiency
- Ethical Hacking Techniques
- Vulnerability Assessment
- Penetration Testing Methodologies
- Security Tools and Technologies
- Risk Assessment and Management
- Critical Thinking and Problem-Solving
- Attention to Detail
- Documentation and Reporting

Soft Skills

- Communication Skills
- Active Listening
- Problem-Solving Abilities
- Analytical Thinking
- Adaptability
- Time Management
- Attention to Detail
- Client-Focused Approach
- Collaboration and Teamwork
- Ethical Conduct
- Continuous Learning

Common Used Tools/ Technologies

- Network and vulnerability scanning tools
- Software security application software
- Penetration testing frameworks and tools
- Network packet analysing tools
- Password cracking and testing tools
- Wired and wireless network security tools
- Web application scanning tools
- Advanced penetration testing and security auditing operating systems

Security Penetration Tester

Job Description

- To collaborate with clients or project stakeholders.
- To define the scope of the penetration testing engagement.
- To understand goals, objectives, and constraints.
- To develop a testing plan and methodology based on the defined scope.
- To identify target systems, networks, or applications for testing.
- To gather necessary information about the target environment.
- To conduct vulnerability assessments using various tools and techniques.
- To provide technical expertise and support during complex assessments.
- To scan target systems, networks, and applications for potential vulnerabilities and misconfigurations.
- To work closely with clients to understand security requirements.
- To utilize ethical hacking techniques to exploit identified vulnerabilities.
- To gain unauthorized access to systems or applications.
- To simulate real-world attacks and assess the effectiveness of existing security controls.
- To adhere to legal and ethical guidelines.
- To perform social engineering tests to assess the human element of security.
- To conduct phishing attacks, physical security bypass, or other tactics.
- To test the organization's ability to defend against social engineering attacks.
- To prepare comprehensive reports detailing identified vulnerabilities and their potential impact.
- To provide actionable recommendations to address identified vulnerabilities.
- To offer support and guidance during the remediation process.
- To ensure that penetration testing activities and deliverables comply with applicable legal, regulatory, and industry standards.
- To address questions or concerns regarding identified vulnerabilities and recommended mitigation strategies.
- To stay updated with the latest security threats, attack techniques, and security technologies.
- To engage in continuous learning and professional development.
- To enhance skills and stay at the forefront of the field.
- To maintain a high level of ethical conduct throughout the testing process.
- To respect client confidentiality and ensure assessments are conducted within agreed-upon boundaries.

Security Pentest Tester

Common Certification

- Certified Ethical Hacker (CEH)
- Offensive Security Certified Professional (OSCP)
- Certified Penetration Testing Professional (CPENT)
- Certified Information Systems Security Professional (CISSP)
- GIAC Penetration Tester (GPEN)
- Certified Penetration Tester (CPT)
- eLearnSecurity Certified Professional Penetration Tester (eCPPT)
- Certified Web Application Penetration Tester (CWAPT)
- Offensive Security Certified Professional (OSCP)
- A bachelor's degree in a relevant field such as Computer Science, Information security, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 3 years of experience in penetration testing.

Competencies

- Technical Knowledge
- Penetration Testing Methodologies
- Vulnerability Assessment
- Exploitation Techniques
- Security Tools and Technologies
- Risk Assessment
- Reporting and Documentation
- Industry Knowledge
- Problem-Solving and Analytical Thinking
- Communication and Collaboration
- Ethical Conduct

Security Pentest Tester

Essential Skills

- Technical Proficiency
- Ethical Hacking Techniques
- Vulnerability Assessment
- Penetration Testing Methodologies
- Security Tools and Technologies
- Risk Assessment and Management
- Critical Thinking and Problem-Solving
- Attention to Detail
- Documentation and Reporting

Soft Skills

- Communication Skills
- Active Listening
- Problem-Solving Abilities
- Analytical Thinking
- Adaptability
- Time Management
- Attention to Detail
- Client-Focused Approach
- Collaboration and Teamwork
- Ethical Conduct
- Continuous Learning

Common Used Tools/ Technologies

- Network and vulnerability scanning tools
- Software security application software
- Penetration testing frameworks and tools
- Network packet analysing tools
- Password cracking and testing tools
- Wired and wireless network security tools
- Web application scanning tools
- Advanced penetration testing and security auditing operating systems

Security Penetration Manager

Job Description

- To lead and manage a team of Security Penetration Testers.
- To recruit, hire, and train team members.
- To provide guidance, mentoring, and performance evaluations.
- To oversee the planning, execution, and delivery of penetration testing projects.
- To coordinate with clients, understand project requirements, and assign resources.
- To ensure timely and high-quality project deliverables.
- To effectively communicate with stakeholders, including clients, senior management, and other teams.
- To communicate assessment findings and recommendations to clients or project stakeholders in a clear and understandable manner.
- To build and maintain strong client relationships.
- To develop and implement strategies to enhance the effectiveness and efficiency of the penetration testing process.
- To define testing methodologies, frameworks, and best practices.
- To continuously improve the team's skills and capabilities.
- To provide guidance on penetration testing scope and objectives.
- To ensure the quality and accuracy of penetration testing activities and deliverables.
- To review and validate assessment reports.
- To conduct technical reviews of methodologies.
- To implement quality control measures.
- To manage risks associated with penetration testing activities.
- To evaluate potential impacts and develop risk mitigation strategies.
- To ensure compliance with legal and ethical standards.
- To provide technical leadership and guidance to the team of Security Penetration Testers.
- To improve the security posture of tested systems, networks, or applications.
- To collaborate with stakeholders to prioritize and implement remediation measures
- To stay updated with the latest security trends, technologies, and vulnerabilities.
- To drive continuous improvement initiatives within the penetration testing team.
- To identify areas for improvement and implement process enhancements.
- To foster a culture of innovation and learning.
- To present assessment findings and explain technical concepts in a non-technical manner.
- To advise on security strategies and recommendations.
- To understand and adhere to relevant regulations, such as PCI DSS or GDPR.
- To manage the budget allocated for penetration testing projects.

Security Pentest Manager

Common Certification

- Certified Ethical Hacker (CEH)
- Offensive Security Certified Professional (OSCP)
- Certified Penetration Testing Professional (CPENT)
- Certified Information Systems Security Professional (CISSP)
- GIAC Penetration Tester (GPEN)
- Certified Penetration Tester (CPT)
- eLearnSecurity Certified Professional Penetration Tester (eCPPT)
- Certified Web Application Penetration Tester (CWAPT)
- Offensive Security Certified Professional (OSCP)
- A bachelor's degree in a relevant field such as Computer Science, Information security, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 3 years of experience in penetration testing.

Competencies

- Technical Knowledge
- Penetration Testing Methodologies
- Vulnerability Assessment
- Exploitation Techniques
- Security Tools and Technologies
- Risk Assessment
- Reporting and Documentation
- Industry Knowledge
- Problem-Solving and Analytical Thinking
- Communication and Collaboration
- Ethical Conduct
- Strategic thinking
- Business Acumen

Security Pentest Manager

Essential Skills

- Technical Proficiency
- Ethical Hacking Techniques
- Vulnerability Assessment
- Penetration Testing Methodologies
- Security Tools and Technologies
- Risk Assessment and Management
- Critical Thinking and Problem-Solving
- Attention to Detail

Soft Skills

- Leadership
- Communication
- Collaboration
- Problem-Solving
- Time Management
- Adaptability
- Emotional Intelligence
- Ethical Conduct
- Client Relationship Management
- Continuous Learning

Common Used Tools/ Technologies

- Network and vulnerability scanning tools
- Software security application software
- Penetration testing frameworks and tools
- Network packet analysing tools
- Password cracking and testing tools
- Wired and wireless network security tools
- Web application scanning tools
- Advanced penetration testing and security auditing operating systems
- Post exploitation tools
- Adversary simulation tools


INCIDENT RESPONDER
/
SECURITY OPERATION
ANALYST

Incident Responder / Security Operation Analyst

Job Description

- To continuously monitor and track various sources of threat intelligence.
- Including open-source feeds, internal data sources, and vendor reports.
- To identify emerging threats.
- To gather and compile data related to known threats, vulnerabilities, and attacks.
- Including malware indicators, attack techniques, and attacker profiles.
- To analyze collected data to understand the potential impact of threats.
- On the organization's systems, data, and operations.
- To evaluate severity, relevance, and potential exposure.
- To identify patterns, trends, and developments in the threat landscape. Including tracking changes in attack methods, tactics, techniques, and procedures (TTPs).
- To create and distribute threat intelligence reports and alerts.
- To relevant stakeholders within the organization.
- Providing actionable recommendations for mitigating threats.
- To collaborate with the vulnerability management team.
- To assess the organization's systems and infrastructure for vulnerabilities and potential weaknesses.
- To support incident response teams.
- To participate in threat information sharing forums.
- To collaborate with external organizations, such as ISACs.
- To exchange threat intelligence.
- To utilize and manage threat intelligence platforms and tools for data collection, analysis, and dissemination.
- To conduct training and awareness programs for staff.
- To enhance their understanding of cybersecurity threats and best practices.
- To stay up-to-date with cybersecurity regulations and compliance requirements ensuring that the organization remains in compliance with relevant standards.

Incident Responder / Security Operation Analyst

Common Certification

- GIAC Cyber Threat Intelligence (GCTI)
- GIAC Certified Intrusion Analyst Certification (GCIA)
- GIAC Certified Incident Handler (GCIH)
- GIAC Penetration Tester (GPEN)
- (ISC)² Certified Information Systems Security Professional (CISSP)
- EC-Council Certified SOC Analyst (CSA)
- EC-Council Certified Threat Intelligence Analyst (CTIA)
- EC-Council Certified Incident Handler (ECIH)
- EC-Council Certified Network Defender (CND)
- EC-Council Certified Ethical Hacking (CEH)
- CompTIA PenTest+
- CompTIA Cybersecurity Analyst (CySA+)
- ISO/IEC 27001 ISMS Lead Implementer/ Lead Auditor
- ISO/IEC 22301 BCMS Lead Implementer/ Lead Auditor
- CREST Certification

Competencies

- Cyber Incident Management
- Cyber Risk Management and Assessment
- Disaster Recovery Management
- Threat Analysis & Defense
- Threat Intelligence & Detection
- Enterprise Architecture
- Cyber Crisis Management
- Cyber Forensic
- Surveillance and Incident Response
- Operations Management

Incident Responder / Security Operation Analyst

Essential Skills

- Incident Management
- ITIL
- Troubleshooting

Soft Skills

- Communication
- Creative Thinking
- Problem Solving
- Sense Making
- Teamwork
- Stakeholder Management
- Analytical Thinking

Common Used Tools/ Technologies

- Security Information and Event Management (SIEM) systems
- Network/ Packet Analyzer tools
- Vulnerability Assessment and Penetration Testing (VAPT) tools
- Malware Analysis tools
- Multi OS platform software
- Network/ Packet Analyzer tools
- Vulnerability Assessment and Penetration Testing (VAPT) tools
- Malware Analysis tools
- Incident Management Ticketing systems
- Virtual Environment

Threat Intelligence Expert

Job Description

- To continuously monitor and track various sources of threat intelligence.
- Including open-source feeds, internal data sources, and vendor reports.
- To identify emerging threats.
- To gather and compile data related to known threats, vulnerabilities, and attacks.
- Including malware indicators, attack techniques, and attacker profiles.
- To analyze collected data to understand the potential impact of threats.
- On the organization's systems, data, and operations.
- To evaluate severity, relevance, and potential exposure.
- To identify patterns, trends, and developments in the threat landscape. Including tracking changes in attack methods, tactics, techniques, and procedures (TTPs).
- To create and distribute threat intelligence reports and alerts.
- To relevant stakeholders within the organization.
- Providing actionable recommendations for mitigating threats.
- To collaborate with the vulnerability management team.
- To assess the organization's systems and infrastructure for vulnerabilities and potential weaknesses.
- To support incident response teams.
- To participate in threat information sharing forums.
- To collaborate with external organizations, such as ISACs.
- To exchange threat intelligence.
- To utilize and manage threat intelligence platforms and tools for data collection, analysis, and dissemination.
- To conduct training and awareness programs for staff.
- To enhance their understanding of cybersecurity threats and best practices.
- To stay up-to-date with cybersecurity regulations and compliance requirements.
- Ensuring that the organization remains in compliance with relevant standards.

Threat Intelligence Expert

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- Certified Information Systems Security Professional (CISA)
- CompTIA Security+
- Certified Ethical Hacker (CEH)
- GIAC Certified Incident Handler (GCIH)
- GIAC Cyber Threat Intelligence (GCTI)
- EC-Council Certified Security Analyst (ECSA)
- Certified Threat Intelligence Analyst (CTIA)
- Cisco Certified CyberOps Associate
- A bachelor's degree in a relevant field such as Computer Science, Information Technology, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 7 years of experience in with a focus on threat intelligence

Competencies

- Cybersecurity Knowledge
- Threat Analysis
- Information Gathering
- Data Analysis
- Risk Assessment
- Communication Skills
- Incident Response
- Tool Proficiency
- Continuous Learning
- Security Compliance
- Technical Skills

Threat Intelligence Expert

Essential Skills

- Malware analysis
- Network analysis
- Data collection and analysis tools
- Security information and event management (SIEM) systems
- Threat intelligence platforms
- Encryption and authentication protocols
- Open-source intelligence (OSINT) tools
- Digital forensics tools
- Intrusion detection and prevention systems (IDS/IPS)
- Programming and scripting (e.g., Python, PowerShell)
- Vulnerability assessment tools

Soft Skills

- Critical thinking
- Attention to detail
- Problem-solving
- Analytical skills
- Communication skills
- Adaptability
- Teamwork
- Time management
- Emotional intelligence
- Cross-functional collaboration
- Report writing
- Continuous learning

Common Used Tools/ Technologies

- Security Information and Event Management (SIEM)
- Multi OS platform software
- Network/ Packet Analyzer tools
- Vulnerability Assessment and Penetration Testing (VAPT) tools
- Malware Analysis tools
- Incident Management Ticketing systems

Incident Manager / Security Operation Manager

Job Description

- To manage, develop, and implement capabilities for SOC comprised of both outsourced and in-house resources structured to efficiently and effectively respond to incidents.
- To lead the operations of the security monitoring and intelligence team.
- To ensure optimal identification and resolution of security incidents.
- To manage outsourced and in-house security monitoring and intelligence team services.
- To ensure quality performance and fulfilment of Service Level Agreements (SLA).
- To direct the functions, processes, and operations of the security monitoring and intelligence team.
- To ensure policies, procedures, and objectives align with company goals.
- To oversee the monitoring, identification, and resolution of security incidents.
- To ensure threats detection through analysis, investigations, and prioritization of incidents based on risk/exposure.
- To develop, maintain, and lead an incident response management program including incident detection, analysis, containment, eradication, recovery, and chain of evidence/forensic artifacts required for additional investigations.
- To conduct scheduled and ad hoc training exercises to ensure staff are adequately prepared for incidents.
- To ensure adherence to regulatory compliance and laws governing information security, personal identifiable information, and assets.
- To identify potential threats/compromises targeting the company.
- To develop proactive strategies to minimize the impact of these threats.

Common Certification

- EC-Council Information Security Manager (EISM)
- Certified Information Systems Security Professional (CISSP)
- Projects In Controlled Environments (PRINCE2)
- Project Management Professional (PMP)
- GIAC Security Operation Manager (GSOM)
- GIAC Certified Incident Handler (GCIH)
- GIAC Cyber Threat Intelligence (GCTI)
- Certified Information Security Manager (CISM)
- CREST Certification
- ISO/IEC 27001 ISMS Lead Implementer/ Lead Auditor
- ISO/IEC 22301 BCMS Lead Implementer/ Lead Auditor

Competencies

- Cyber Incident Management
- Cyber Risk Management and Assessment
- Disaster Recovery Management
- Threat Analysis & Defense
- Threat Intelligence & Detection
- Enterprise Architecture
- Cyber Crisis Management
- Cyber Forensic
- Surveillance and Incident Response
- Operations Management
- Emerging Tech

Threat Intelligence Expert

Essential Skills

- Security Information and Event Management (SIEM)
- Multi OS platform software
- Network/ Packet Analyzer tools
- Vulnerability Assessment and Penetration Testing (VAPT) tools
- Malware Analysis tools
- Incident Management Ticketing systems
- Virtual Environment
- Security Audit and Risk Assessment

Soft Skills

- Communication
- Creative Thinking
- Problem Solving
- Teamwork
- Stakeholder Management
- Analytical Thinking
- Leadership Skills

Common Used Tools/ Technologies

- Security Information and Event Management (SIEM) systems
- Network/ Packet Analyzer tools
- Vulnerability Assessment and Penetration Testing (VAPT) tools
- Malware Analysis tools
- Encryption tools


FORENSIC
INVESTIGATION
THREAT ANALYSIS

Digital/Security Forensic Specialist

Job Description

- To assist in conducting forensic analysis on complex cases
- To assist in conducting digital evidence preservation at field site for complex cases
- To assist in conducting research on forensic acquisition and analysis of emerging technologies.
- To execute analysis methods for complex cases and new, emerging technologies to solve incoming cases.
- To assist in implementation of guidelines and best practices for acquistion, analysis and presentation of digital evidence
- To utilize tools to assist forensic acquisition and analysis of digital evidence
- To produce forensic reports

Common Certification

- Fundamentals of Incident Response, Threat Hunting, and Digital Forensics
- Enterprise Cloud Forensics and Incident Response
- Reverse-Engineering Malware: Malware Analysis Tools and Techniques
- Fundamentals of Network Forensics: Threat Hunting, Analysis, and Incident Response
- Smartphone Forensic Analysis In-Depth
- Mac and iOS Forensic Analysis and Incident Response
- AccessData Certified Examiner (ACE)
- IACIS Certified Forensic Computer Examiner (CFCE)
- GIAC Certified Forensic Analyst (GCFA)
- EnCase™ Certified Examiner (EnCE)
- EC-Council Computer Hacking Forensic Investigator (CHFI)
- GIAC Certified Forensic
- Magnet Axiom certification

Digital/Security Forensic Specialist

Essential Skills

- Network, Firewall, WAF, SIEM, EDR, AV and Penetration Security
- Operating System and Architecture
- Computer Forensics
- Scripting
- Forensic Analysis
- Cloud, Mobile, Technology Infrastructure

Common Used Tools/ Technologies

- Digital Forensics Tools
- Digital Identity Tools
- Data protection Tools
- Secure Infrastructure Tools
- Scripting Tools
- Security Information and Event Management (SIEM) tools
- Open Source Tools

Competencies

- Cyber Forensic
- Cyber Risk Management
- Cyber Incident Management
- Security Assessment & Testing
- Threat Analysis & Defense
- Threat Intelligence & Detection
- Enterprise and Device Architecture
- Law and regulation
- IT and Network Domain
- Cloud Security
- Mobile and IoT Security
- Malware Analysis / Reverse Engineering

Soft Skills

- Communication
- Creative Thinking
- Problem Solving
- Teamwork
- Stakeholder Management
- Analytical and Investigation Skills
- Ethics and Trust

Digital/Security Forensic Expert

Job Description

- To conduct systematic investigations and collect digital evidence from various sources.
- To ensure data integrity and chain of custody while preserving evidence from computers, mobile devices, networks, and cloud environments.
- To collaborate with incident response teams to identify and analyze security incidents.
- To determine the extent of breaches and develop strategies for containment, eradication, and recovery.
- To provide guidance and support in incident handling and reporting.
- To utilize advanced digital forensic tools and methodologies for analyzing digital evidence.
- To extract relevant information, including recovering deleted files, examining system logs, analyzing network traffic, and decrypting encrypted data.
- To perform data recovery operations on compromised systems and devices.
- To retrieve valuable evidence or data intentionally or unintentionally deleted, encrypted, or hidden.
- To prepare detailed reports and documentation of findings and investigative methods.
- To present findings in a clear and concise manner suitable for technical and non-technical audiences.
- To collaborate with legal teams and provide expert testimony in court proceedings.
- To prepare and present technical evidence supporting legal arguments.
- To assist in drafting affidavits and search warrants and stay updated on relevant laws and regulations.
- To stay current with emerging digital forensic tools, technologies, and methodologies.
- To engage in research and development activities to enhance investigative techniques in the digital forensics field.
- To stay current with emerging digital forensic tools, technologies, and methodologies.

Digital/Security Forensic Expert

Common Certification

- ITIL Foundation: ITIL (Information Technology Infrastructure Library).
- Certified Incident Manager (CIM):
- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- Project Management Professional (PMP).
- Certified Business Continuity Professional (CBCP)
- Certified Incident Handling Engineer (CIHE)
- Certified Information Privacy Professional (CIPP)
- Certified Forensic Computer Examiner (CFCE)
- EnCase Certified Examiner (EnCE)
- Certified Computer Examiner (CCE)
- GIAC Certified Forensic Analyst (GCFA)
- Certified Digital Forensic for First Responder (CDFFR)
- GIAC Certified Incident Handler (GCIH)
- EC-Council Certified Incident Handler (ECIH)
- Certified Cyber Forensics Professional (CCFP)
- A bachelor's degree in a relevant field such as Computer Science, Digital Forensics, Cybersecurity or other related field. A master's degree is an added advantage.
- Mininum 7 years of experience in digital forensics.

Competencies

- Incident Management Expertise
- Technical Knowledge
- Problem-Solving Skills
- Stakeholder Management
- Adaptability and Resilience
- Documentation and Reporting
- Customer Focus

Digital/Security Forensic Expert

Essential Skills

- Proficiency in using digital forensic tools and software.
- In-depth understanding of computer systems, file structures, and network protocols.
- Strong analytical and problem-solving skills.
- Knowledge of legal and ethical considerations in digital forensics

Soft Skills

- Communication
- Creative Thinking
- Problem Solving
- Teamwork
- Stakeholder Management

Common Used Tools/ Technologies

- Cyber Defense Tools
- Digital Identity Tools
- Data protection Tools
- Secure Infrastructure Tools
- Scripting Tools (eg. Python)
- Security Information and Event Management (SIEM) tools

Digital/Security Forensic Manager

Job Description

- To drive and direct forensic acquisition and analysis work.
- To ensure the right methods and tools are being applied to the forensic acquisition and analysis work.
- To ensure the right methods and tools are applied to forensic acquisition and analysis work.
- To review and endorse forensic results and/or patterns.
- To ensure consistency, accuracy, and the quality of work.
- To attend meetings and provide inputs on forensic findings.
- To assist in investigation and strategic decisions.
- Develop and implement strategic plans for the digital forensics function.
- To provide input for improving the competency development and continuous education program for the digital/security forensics team.
- To provide expert testimony in court.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Project Management Professional (PMP)
- Certified Forensic Computer Examiner (CFCE)
- EnCase Certified Examiner (EnCE)
- Certified Computer Examiner (CCE)
- GIAC Certified Forensic Analyst (GCFA)
- Certified Digital Forensic for First Responder (CDFFR)
- GIAC Certified Incident Handler (GCIH)
- EC-Council Certified Incident Handler (ECIH)
- Certified Cyber Forensics Professional (CCFP)
- A bachelor's degree in a relevant field such as Computer Science, Digital Forensics, Cybersecurity or other related field. A master's degree is an added advantage.
- Mininum 7 years of experience in digital forensics.

Competencies

- Digital Forensics Expertise
- Cybersecurity Knowledge
- Incident Response Management
- Governance, Risk, and Compliance Expertise
- Leadership and Team Management
- Analytical and Critical Thinking
- Communication Skills
- Stakeholder Management
- Continuous Learning

Digital/Security Forensic Manager

Essential Skills

- Digital Forensics
- Cybersecurity Knowledge
- Incident Response Management
- Compliance Management
- Leadership and Team Management
- Analytical and Critical Thinking
- Communication
- Continuous Learning

Soft Skills

- Communication Skills
- Leadership Skills
- Teamwork and Collaboration
- Problem-Solving and Analytical Thinking
- Adaptability and Flexibility
- Emotional Intelligence
- Time Management
- Decision-Making Skills

Common Used Tools/ Technologies

- Cyber Defense Tools
- Digital Identity Tools
- Data protection Tools
- Secure Infrastructure Tools
- Scripting Tools (eg. Python)
- Security Information and Event Management (SIEM) tools


SECURITY STRATEGY
&
ARCHITECTURE

Security Advisor

Job Description

- To develop and implement cybersecurity policies, procedures, and standards.
- To conduct regular risk assessments and vulnerability tests.
- To identify security threats and address security weaknesses.
- To stay up-to-date on industry trends and emerging threats.
- To ensure the organization's security measures remain effective.
- To provide training and guidance to employees on cybersecurity standards and best practices.
- To develop and manage incident response plans and protocols.
- To ensure a timely and effective response to threats.
- To collaborate with IT and other departments.
- To ensure security measures are integrated throughout the organization's systems and networks.
- To review and assess third-party security vendors.
- To ensure they meet the organization's security requirements.
- To maintain cybersecurity standards and documentations.
- To coordinate and advise control owners on the organization's cybersecurity implementation.
- To test and evaluate security controls.
- To ensure they meet the desired outcome of the organization's security requirements.

Common Certification

- Certified Information Security Awareness Manager
- Certified Information Security Management System Auditor
- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- CompTIA Security+
- GIAC Security Essentials Certification (GSEC)
- Certified Information Systems Auditor (CISA)
- ISO 27001 Lead Auditor
- Certified in Risk and Information Systems Control (CRISC)
- Certified Cloud Security Professional (CCSP)
- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 5 years of experience in cybersecurity, with a focus on assurance validation and compliance.

Security Advisor

Competencies

- Expert in cybersecurity domains such as security assurance, incident handling response, digital forensics, governance, risks, compliance, cryptography.
- Analytical Skills
- Technical Skills - various programming languages, operating systems, and network protocols.
- Problem-Solving Skills
- Technical knowledge on firewalls, intrusion detection systems, encryption, and malware analysis.
- Compliance - familiar with compliance regulations such as GDPR or HIPAA, depending on the industry they work in.

Essential Skills

- Risk Management
- Compliance Knowledge
- Leadership Skills
- Strategic Planning
- Incident Response
- Policy and Procedure Development
- Security Awareness and Training
- Vendor and Third-Party Risk Management
- Project Management
- Technical Skills
- Data Analysis
- Legal and Ethical Understanding
- Vendor and Tool Evaluation

Common Used Tools/ Technologies

- Firewall and intrusion detection systems (IDS)
- Vulnerability scanning and assessment tools
- Security incident and event management (SIEM) systems
- Antivirus and anti-malware software
- Network access control (NAC) systems
- Data loss prevention (DLP) tools
- Identity and access management (IAM) systems
- Encryption and decryption technologies
- Two-factor authentication (2FA) and multi-factor authentication (MFA) technologies
- Mobile device management (MDM) tools
- Security Awareness and Training Systems
- Authentication and Identity Management Tools
- Reporting Systems
- Risk Assessment and Management Tools
- Compliance and Policy Management Tools

Soft Skills

- Communication skills
- Critical thinking and problem-solving
- Flexibility and adaptability
- Collaboration and teamwork
- Attention to detail
- Ethics and integrity

Security/Solution Architect

Job Description

- To identify security risks and vulnerabilities.
- To develop strategies to mitigate identified risks.
- Developing Security Architecture and Systems:
- To develop and design security architecture and systems.
- To meet business requirements and security standards.
- To develop and implement security policies and procedures.
- To ensure compliance with regulatory requirements and industry standards.
- To collaborate with other IT teams.
- To integrate security solutions into existing systems and networks.
- To conduct security assessments and audits.
- To identify vulnerabilities and gaps in security systems.
- To provide technical leadership and guidance. To cybersecurity teams and other IT departments.
- To research and stay up-to-date on the latest trends and technologies in cybersecurity.
- To develop and maintain documentation related to security architecture and solutions.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- Certified Cloud Security Professional (CCSP)
- Certified Ethical Hacker (CEH)
- Cisco Certified Network Associate - Security (CCNA Security)
- CompTIA Security+
- GIAC Information Security Fundamentals (GISF)
- (ISC)² Certified Cloud Security Professional (CCSP)
- Certified Information Systems Auditor (CISA)
- A bachelor's degree in a relevant field such as Computer Science, Information Security, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 5 years of experience in digital forensics.

Security/Solution Architect

Essential Skills

- Cybersecurity expertise
- Technical skills
- Problem-solving skills
- Communication skills
- Project management skills
- Risk management skills

Soft Skills

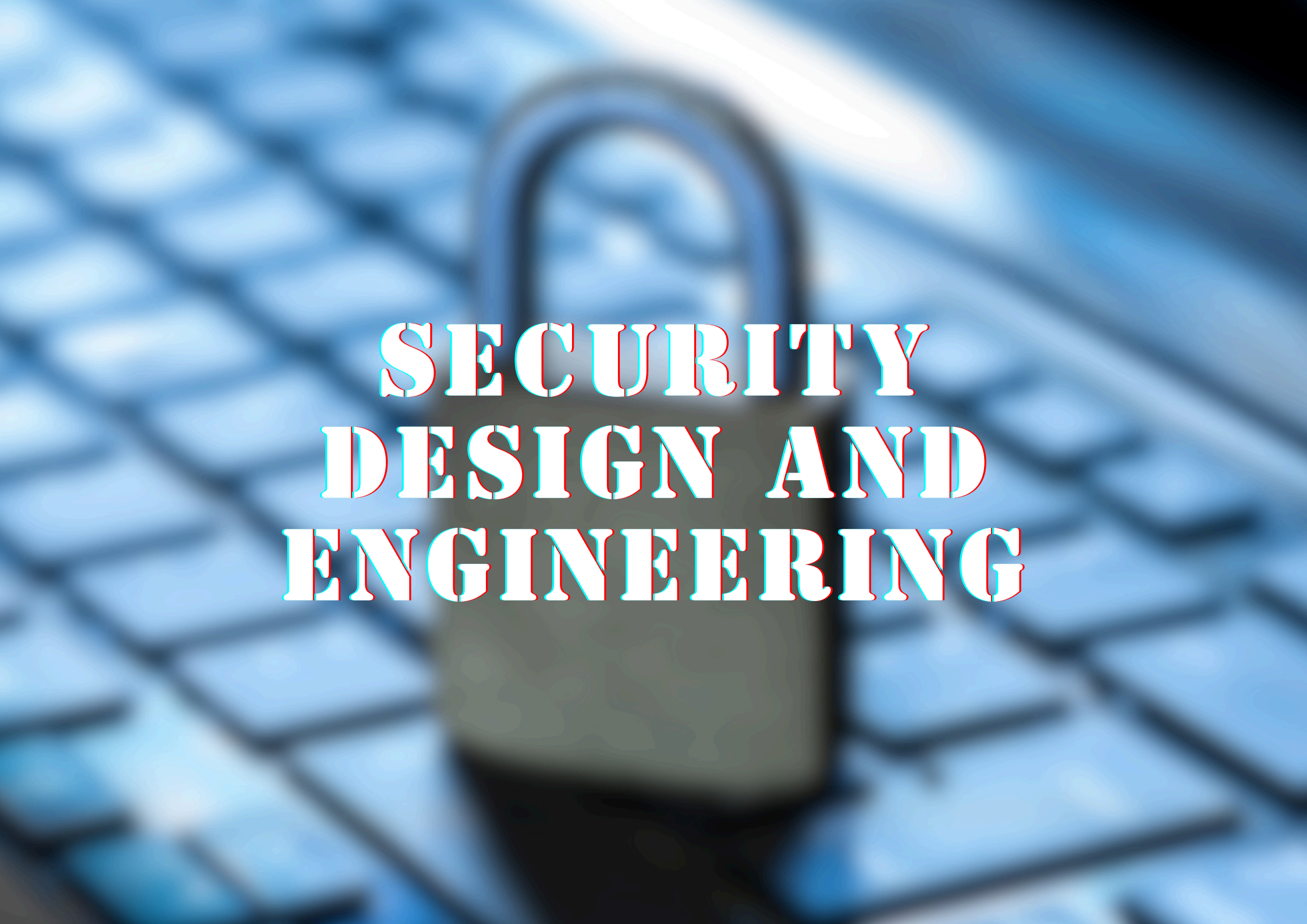
- Communication
- Leadership
- Problem-solving
- Adaptability

Competencies

- Technical expertise
- Communication skills
- Analytical and problem-solving skills
- Project management skills
- Creativity
- Business acumen

Common Used Tools/ Technologies

- Security Information and Event Management (SIEM) systems
- Intrusion Detection and Prevention Systems


SECURITY
DESIGN AND
ENGINEERING

Cybersecurity Infrastructure Manager

Job Description

- To develop and implement security policies and procedures.
- To safeguard the organization's assets.
- To oversee the installation, configuration, and maintenance of security infrastructure.
- Including firewalls, intrusion detection systems, and other security tools.
- To identify potential security risks and to develop strategies to mitigate the risks.
- To conduct regular security audits.
- To ensure the organization's security infrastructure is up-to-date and effective.
- To manage security incidents which includes responding to security breaches and coordinating with law enforcement agencies.
- To manage a team of security professionals.
- To provide guidance and support to ensure effective performance of duties.
- To keep up-to-date with the latest security trends and technologies.

Common Certification

- Certified Penetration Tester
- Certified Incident Handling and Network Security
- Certified Information Security Management System Auditor
- Certified Information Systems Security Professional (CISSP):
- Certified Ethical Hacker (CEH)
- CompTIA Security+
- Certified Cryptography Expert (CCE)
- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 7 years of experience in with a focus on infrastructure management.

Cybersecurity Infrastructure Manager

Common Used Tools/ Technologies

- Vulnerability Assessment and Scanning Tools
- Security Information and Event Management (SIEM) Systems
- Security Analytics and Threat Detection Tools
- Penetration Testing Tools
- Risk Assessment and Management Tools
- Compliance and Policy Management Tools
- Incident Response and Forensics Tools
- Network Security Tools
- Cloud Security Tools
- Collaboration and Communication Tools
- Security Awareness and Training Systems
- Authentication and Identity Management Tools
- Mobile Device Management (MDM) Tools
- Reporting Systems

Competencies

- Expert in cybersecurity domains such as security assurance, incident handling response, digital forensics, governance, risks, compliance, cryptography.
- Analytical Skills
- Technical Skills - various programming languages, operating systems, and network protocols.
- Problem-Solving Skills

Essential Skills

- Risk Management
- Compliance Knowledge
- Leadership Skills
- Strategic Planning
- Incident Response
- Policy and Procedure Development
- Security Awareness and Training
- Vendor and Third-Party Risk Management
- Project Management
- Technical Skills
- Data Analysis
- Legal and Ethical Understanding
- Vendor and Tool Evaluation

Soft Skills

- Communication skills
- Collaboration
- Attention to detail
- Critical thinking
- Adaptability
- Collaboration and Team Building
- Crisis Management

Cybersecurity Engineer

Job Description

- To design and implement security measures to protect computer networks and systems from cyber attacks.
- To conduct vulnerability assessments and penetration testing to identify potential security issues.
- To develop and implement security policies, procedures, and standards to ensure compliance with regulations and industry best practices.
- To monitor network traffic and system logs for signs of suspicious activity.
- To respond to security incidents and conduct forensic investigations to determine the cause and scope of the breach.
- To collaborate with other IT professionals to identify and implement security solutions that meet the needs of the organization.
- To stay up-to-date with the latest trends and technologies
- To create solutions for pre-existing security issues
- To configure and install firewalls and intrusion detection systems (IDS)
- To respond to data security issues
- To oversee any changes in facilities, software, hardware, user needs and telecommunications.
- Conducting network maintenance
- To ensure the security configuration of end-user devices.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Ethical Hacker (CEH)
- CompTIA Security+ Advance
- GIAC Security Essentials (GSEC)
- Offensive Security Certified Professional (OSCP)
- Certified Information Security Manager (CISM)
- A bachelor's degree in a relevant field such as Computer Science, Information Systems, Cybersecurity or other related field. A master's degree is an added advantage.
- Minimum 5 years of experience in cybersecurity field.

Cybersecurity Engineer

Common Used Tools/ Technologies

- Firewalls
- Intrusion Detection/Prevention Systems (IDPS)
- Security Information and Event Management (SIEM) Systems
- Vulnerability Scanners
- End Point Detection EDR
- DDOS
- Network Defence
- 8.Penetration Test
- 9.Encyrption Tool
- 10.SOAR

Essential Skills

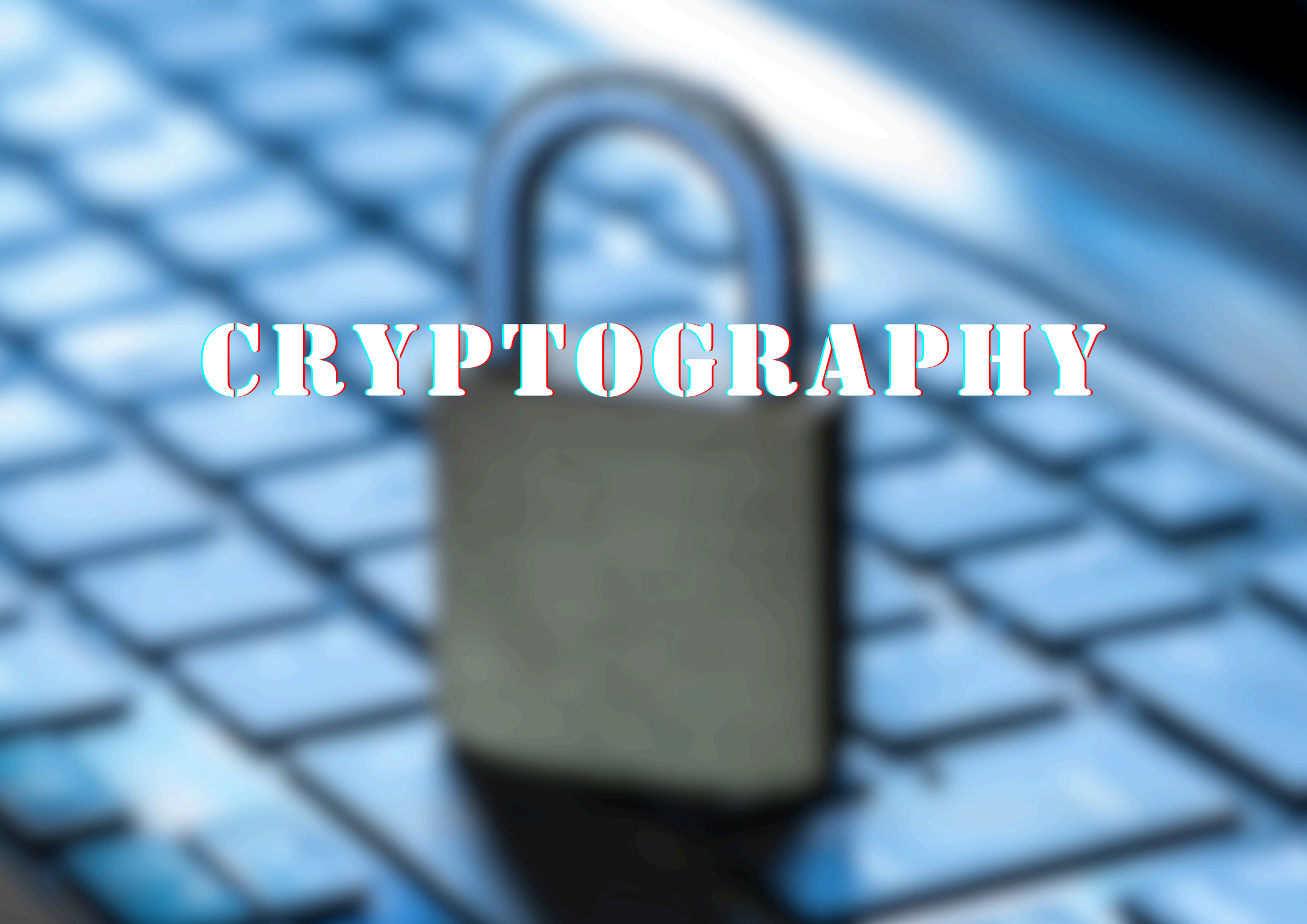
- Analytical skills
- Problem-solving skills
- Communication skills
- Attention to detail
- Continuous learning
- Leadership skills

Competencies

- Technical knowledge on cybersecurity product
- Communication skills
- Collaboration
- experience with incident detection, incident response, and forensics.
- Experience with Firewalls (functionality and maintenance
- Proficiency in Programming Languages
- Ability to work under pressure in a fast-paced environment
- Strong attention to detail with an analytical mind and outstanding problem-solving skills
- Great awareness of cybersecurity trends and hacking techniques

Soft Skills

- Communication
- Problem-solving
- Collaboration
- Adaptability
- Attention to detail
- Ethics


CRYPTOGRAPHY

Cyber Secure Coder/Cryptography Analyst

Job Description

- To analyze and assess the security of cryptographic systems and algorithms including encryption methods, key management, and cryptographic protocols.
- To identify vulnerabilities and weaknesses in cryptographic systems that could potentially be exploited by attackers.
- To stay informed about emerging threats and new cryptographic techniques.
- To develop and implement cryptographic solutions for data protection including encryption and decryption processes for various applications.
- To manage cryptographic keys, including key generation, distribution, rotation, and storage and to ensure their security and integrity.
- To evaluate and implement cryptographic protocols such as SSL/TLS, IPsec, and others to secure network communications.
- To conduct security audits and assessments of cryptographic systems.
- To ensure compliance with security policies and industry standards.
- To participate in incident response efforts.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- Certified Information Systems Security Professional (CISA)
- Certified Encryption Specialist (CES)
- Certified Cryptography Expert (CCE)
- Certified Cryptographic Architect (CCA)
- Certified Secure Software Lifecycle Professional (CSSLP)
- GIAC Certified Encryption Specialist (GCES)
- CompTIA Security+
- EC-Council Certified Encryption Specialist (ECES)
- Certified Cryptography Engineer (CCE)
- Bachelor's degree in mathematics, Computer Science, Information Technology, or a related field. A master's degree's degree is an added advantage.

Cyber Secure Coder/Cryptography Analyst

Essential Skills

- Cryptographic Algorithms
- Encryption and Decryption
- Key Management
- Public Key Infrastructure (PKI)
- Hash Functions
- Digital Signatures
- Secure Protocols (TLS, SSL)
- Cryptanalysis Techniques
- Cryptographic Libraries (e.g., OpenSSL)
- Secure Socket Layer (SSL) Analysis
- Blockchain and Distributed Ledger Technologies

Soft Skills

- Analytical thinking
- Attention to detail
- Problem-solving
- Communication
- Adaptability
- Collaboration
- Critical thinking
- Time management
- Integrity and ethics
- Continuous learning

Common Used Tools/ Technologies

- Cryptography tools
- Project Management and Collaboration Tools

Competencies

- Strong understanding of cryptographic algorithms and protocols.
- Analytical and problem-solving skills.
- Mathematical and statistical proficiency.
- Cryptographic implementation and vulnerability assessment.
- Familiarity with security standards and compliance.
- Programming and scripting knowledge.
- Risk assessment and mitigation.
- Communication and documentation skills.
- Security research and continuous learning.

Cyber Secure Coder/Cryptography Specialist

Job Description

- To creating, implementing, and maintaining cryptographic protocols and systems that protect sensitive information from unauthorized access and manipulation.
- To design and implement cryptographic algorithms and protocols for secure communication and data protection.
- To develop secure coding practices can protect organization against various types of vulnerabilities.
- To identify and minimize software and security vulnerabilities, handle exploits and attacks as they occur, and develop secure code and programming practices that can help prevent exploitation in an application.
- Identifying security risks
- Eliminating vulnerabilities
- Designing secure software architecture
- Implementing security measures
- Testing for and correcting security defects
- Maintaining the security of deployed software
- To introduce secure coding methodologies before the software or application is transferred into a production environment.
- To conduct research to stay up to date with current cryptographic practices.

Common Certification

- Certified Cryptography Expert (CCE)
- Certified Information Systems Security Professional (CISSP)
- Certified Ethical Hacker (CEH)
- CompTIA Security+
- SC2 CSSLP
- Certified Ethical Hacker (CEH)

Cyber Secure Coder/Cryptography Specialist

Essential Skills

- Cryptographic Algorithms
- Encryption and Decryption
- Key Management
- Public Key Infrastructure (PKI)
- Hash Functions
- Digital Signatures
- Secure Protocols (TLS, SSL)
- Cryptanalysis Techniques
- Cryptographic Libraries (e.g., OpenSSL)
- Secure Socket Layer (SSL) Analysis
- Blockchain and Distributed Ledger Technologies

Soft Skills

- Analytical thinking
- Attention to detail
- Problem-solving
- Communication
- Adaptability
- Collaboration
- Critical thinking
- Time management
- Integrity and ethics
- Continuous learning

Common Used Tools/ Technologies

- Cryptography tools
- Project Management and Collaboration Tools

Competencies

- Strong understanding of cryptographic algorithms and protocols.
- Analytical and problem-solving skills.
- Mathematical and statistical proficiency.
- Cryptographic implementation and vulnerability assessment.
- Familiarity with security standards and compliance.
- Programming and scripting knowledge.
- Risk assessment and mitigation.
- Communication and documentation skills.
- Security research and continuous learning.

Cryptography Developer Expert

Job Description

- To design and develop cryptographic algorithms and protocols to secure data and communications.
- To analyze and evaluate existing cryptographic systems and identify vulnerabilities.
- Develop and implement security solutions to protect against attacks and unauthorized access.
- To collaborate with other security professionals, software developers, and system administrators to ensure the security of systems and applications.
- To conduct research and stay up-to-date with the latest developments
- To decrypt and dissect ciphers and algorithms used to encrypt data.
- To create security systems to guard against unauthorized access and protect data.
- To develop protections to ensure critical information can't be edited, copied, or deleted.
- To analyze mathematical or statistical codes to solve security issues
- To test data security systems to identify vulnerabilities.
- To learn advanced coding strategies and new encryption programming techniques
- To provide technical support for hardware and software engineers
- To design cryptographic solutions for data protection, ensuring they align with industry standards and organizational security requirements.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Ethical Hacker (CEH)
- Certified Cryptography Expert (CCE)
- Certified Secure Software Lifecycle Professional (CSSLP)
- GIAC Certified Encryption Specialist (GCES)
- CompTIA Security+
- Certificate of Cloud Security Knowledge (CCSK)
- Certified Network Defense Architect (CNDA)
- Certified Encryption Specialist (ECES)
- Certified Cryptography Engineer (CCE)
- Bachelor's degree in mathematics, Computer Science, Information Technology, or a related field. A master's degree's degree is an added advantage.

Cryptography Developer Expert

Essential Skills

- Strong knowledge of cryptography algorithms, protocols, and standards.
- Proficiency in programming languages
- Information Security and Cybersecurity Domain

Common Used Tools/ Technologies

- • Cryptography libraries and APIs
- • Cryptographic protocols
- • Hashing algorithms
- • Symmetric encryption algorithms
- • Asymmetric encryption algorithms
- • Digital signature algorithms
- • Key management and distribution systems
- • Secure communication protocols
- • Cryptanalysis tools
- • Programming languages

Soft Skills

- Analytical thinking
- Attention to detail
- Communication skills
- Collaboration
- Adaptability
- Problem-solving
- Ethical behaviour

Competencies

- Strong understanding of cryptographic algorithms and protocols, including symmetric and asymmetric key cryptography, hashing, digital signatures, and key exchange protocols.
- Experience with programming
- Knowledge of cryptographic libraries and frameworks
- Familiarity with cryptographic hardware
- Understanding of security threats and vulnerabilities related to cryptography and how to mitigate them.
- Ability to design and implement secure cryptographic solutions for various applications, such as secure communication, data storage, and authentication.
- Knowledge of regulatory and compliance requirements related to cryptography,
- Expertise in cryptographic algorithms, protocols, and key management.
- Proficient in secure coding practices and secure software development lifecycle (SDLC).


MANAGEMENT LEVEL

Chief Information Security officer

Job Description

- To create and execute a comprehensive cybersecurity strategy aligned with organizational goals and risk tolerance.
- To identify, assess, and prioritize cybersecurity risks.
- To develop strategies to mitigate or manage risks effectively.
- To ensure organizational compliance with industry regulations and data protection laws. Such as GDPR, HIPAA, or PCI DSS.
- To establish and enforce security policies, standards, and procedures.
- To develop and implement training programs to educate employees about security best practices and create a culture of security awareness.
- To oversee the selection, implementation, and management of security technologies such as firewalls, intrusion detection systems, encryption, and antivirus software.
- To assess and manage security risks associated with third-party vendors and service providers.
- To provide regular updates and reports to the board and executive leadership on the state of cybersecurity within the organization.
- To act as the primary point of contact for external entities.
- To stay current with the latest cyber threats, security technologies, and industry trends.
- To develop and manage the security budget, and reporting on the effectiveness of security controls and the status of security incidents to the board.

Common Certification

- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager (CISM)
- Certified Chief Information Security Officer (CCISO)
- Certified Information Systems Auditor (CISA)
- Certified Information Security Manager (CISM)
- Certified Cloud Security Professional (CCSP)
- GIAC Security Leadership (GSLC)

Chief Information Security officer

Competencies

- In-depth knowledge of information security principles, practices, and technologies.
- Understanding of cybersecurity threats, vulnerabilities, and risk management.
- Familiarity with security frameworks and standards (e.g., NIST, ISO 27001, CIS).
- Strong leadership skills to lead the security team and foster a culture of security awareness within the organization.
- Strategic thinking and the ability to align security initiatives with business goals and risk management strategies.
- Effective project and program management skills to oversee security-related projects.
- The ability to identify, assess, and prioritize security risks to the organization.
- Skills in developing and implementing risk mitigation strategies and security policies.
- Knowledge of industry-specific regulations (e.g., GDPR, HIPAA) and the ability to ensure organizational compliance.
- Experience in handling compliance audits and reporting.
- Proficiency in incident response planning and execution.
- Skills in managing security incidents and minimizing their impact.
- Understanding of security architecture design and implementation to safeguard information systems and data.
- Knowledge of network and application security.
- Excellent communication skills to interact with both technical and non-technical stakeholders.
- The ability to convey complex security issues in a clear and understandable manner.
- Skills in assessing and managing security risks associated with third-party vendors and service providers.
- The ability to develop and implement security awareness programs for employees.
- Financial management skills to oversee the security budget and allocate resources effectively.
- Understanding of legal and regulatory aspects of cybersecurity, including privacy laws, data breach notification requirements, and liability.
- Stay up-to-date with the latest cybersecurity threats, trends, and emerging technologies in the industry.
- A commitment to maintaining the highest ethical standards and professional conduct.
- The ability to adapt to evolving threat landscapes and learn continuously to stay current in the field.
- Skills in presenting security matters to the board and executive leadership, translating technical issues into business terms.
- Proficiency in various security technologies and tools, such as firewalls, intrusion detection systems, encryption, and identity and access management solutions.

Chief Information Security officer

Essential Skills

- Technical Expertise
- Risk Management
- Leadership
- Strategic Thinking
- Communication Skills
- Regulatory and Compliance Knowledge
- Incident Response
- Security Awareness and Training
- Security Architecture
- Vendor and Third-Party Risk Management
- Financial Management
- Legal and Regulatory Knowledge
- Ethical and Professional Conduct:
- Business Acumen
- Adaptability and Continuous Learning
- Crisis Management
- Stakeholder Engagement

Common Used Tools/ Technologies

- Security Information and Event Management (SIEM) systems
- Intrusion Detection and Prevention Systems (IDPS)
- Firewall and Network Security Appliances
- Vulnerability Scanning and Assessment tools
- Antivirus and Anti-Malware software
- Encryption tools and technologies
- Access Control and Identity Management solutions
- Incident Response and Forensics tools
- Security Assessment and Penetration Testing tools
- Security Awareness and Training platforms
- Risk Management and GRC (Governance, Risk, and Compliance) software
- Secure File Transfer and Data Loss Prevention (DLP) solutions
- Cloud Security and CASB (Cloud Access Security Broker) tools
- Security Analytics and Threat Intelligence platforms
- Mobile Device Management (MDM) and Endpoint Security tools
- Secure Communication and Collaboration platforms
- Security Policy and Compliance Management software
- Secure Password and Credential Management solutions
- Secure Email Gateways and Email Filtering tools

Chief Information Security officer

Soft Skills

- Leadership
- Communication
- Strategic thinking
- Adaptability
- Collaboration
- Problem-solving
- Decision-making
- Ethics and integrity
- Empathy
- Conflict resolution
- Time management
- Influencing and persuading
- Emotional intelligence
- Stakeholder engagement
- Team building
- Negotiation skills
- Critical thinking
- Stress management
- Creativity