

THE ELEMENTS OF CYBER SECURITY



INFORMATION SECURITY

The practice involves safeguarding information from unauthorized access, use, disclosure, disruption, modification, inspection, recording, or destruction. Information security is vital for maintaining data privacy and shielding resources from breaches. Methods include encryption, hashing, secure tokenization, and enforcing stringent access controls.



APPLICATION SECURITY

This element focuses on safeguarding software and devices against threats. Application security is integrated throughout the stages of design, development, deployment, and maintenance of applications to mitigate vulnerabilities like SQL injection, cross-site scripting, and other potential exploits. It commonly involves implementing software security protocols, conducting security testing, and managing patches.



OPERATIONAL SECURITY

Operational security (OPSEC) is a process that identifies critical information – including data, personnel, procedures, and locations – that could be exploited by adversaries. It implements policies, protocols, and practices to safeguard this information, regulate access, and mitigate risks throughout its lifecycle, from creation to disposal.



NETWORK SECURITY

Network security safeguards the usability and integrity of networks and data by utilizing hardware and software technologies. It controls network access, defends against various threats, and prevents their spread. This involves deploying firewalls, antivirus software, intrusion detection systems, and other protective measures.



CLOUD SECURITY

Cloud security is a crucial aspect of cybersecurity, focusing on protecting data throughout its lifecycle (at rest, in transit, and in process) within cloud environments. This shared responsibility between cloud service providers and their customers involves implementing strong password protocols, encryption methods, access controls, and secure data transmission policies. Additionally, adhering to data protection and privacy regulations is essential to ensure data security and compliance within the cloud.