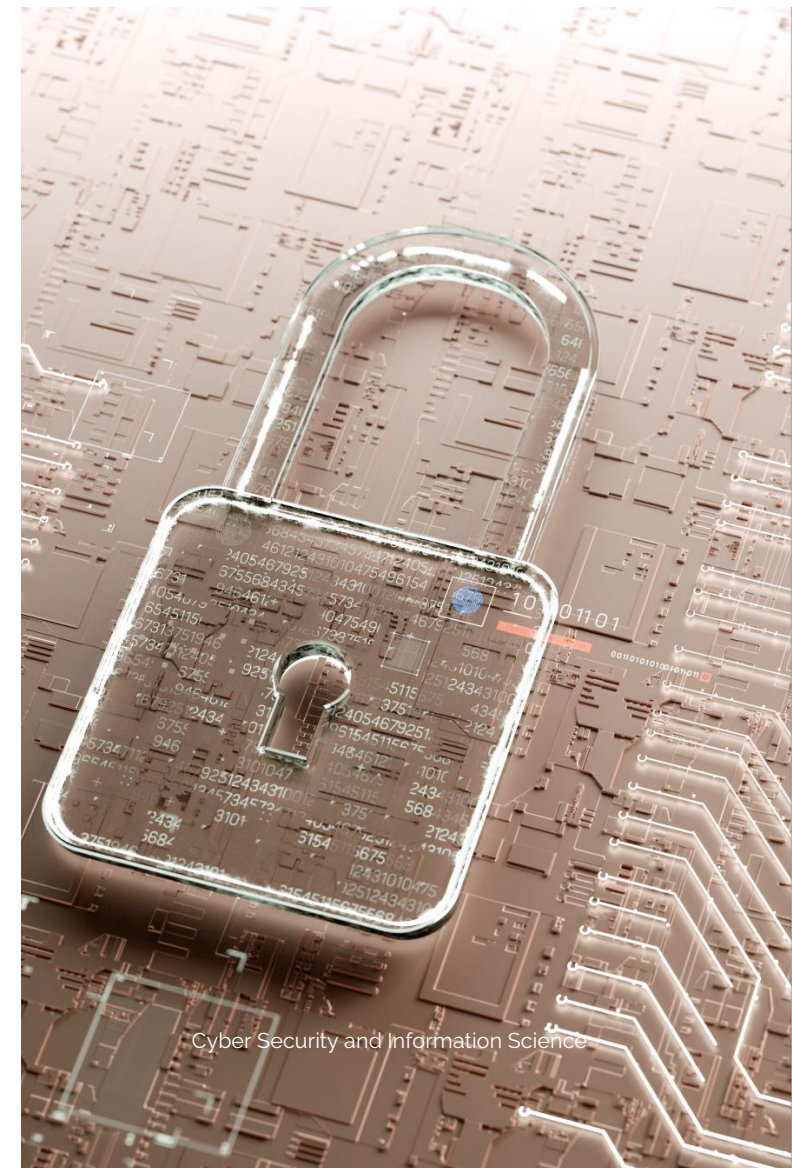




DATA SECURITY & NETWORK SECURITY

What is it?



ISCI 340/CCSA

- Data security and network security are two essential aspects of overall cybersecurity, each focusing on different elements of protecting information and resources.
- Let's compare them:

ISCI 340/CCSA

Definition:

- Data Security:

Data security is the practice of protecting data from unauthorized access, disclosure, modification, destruction, or disruption. It revolves around safeguarding the confidentiality, integrity, and availability of data, whether it's stored, transmitted, or processed.

- Network Security: Network security, on the other hand, is the practice of protecting a network and its resources from unauthorized access, misuse, modification, or denial of service. It involves implementing measures to secure the network infrastructure, devices, and communications.

ISCI 340/CCSA

Data Security Measures and Techniques

- **Encryption:**
Data encryption is used to secure data at rest, in motion, and in use. It ensures that even if data is intercepted, it remains unreadable to unauthorized parties.
- **Access Controls and Authentication:**
Implementing strong access controls and authentication mechanisms restricts data access to authorized users only.
- **Data Backup and Recovery:**
Regular data backups and well-defined recovery procedures help protect against data loss due to accidental deletion, hardware failure, or cyberattacks.

ISCI 340/CCSA

Data Security Scope

- Data at Rest: Refers to data stored on devices or servers, such as databases or file systems.
- Data in Motion: Involves data being transmitted over networks, such as emails, file transfers, or web communications.
- Data in Use: Relates to actively processed data by applications or users, such as data within a working document or database query.

ISCI 340/CCSA

Network Security

- Definition of Network Security: Network security focuses on protecting a network and its resources from unauthorized access, misuse, modification, or denial of service.
- Focus of Network Security: It primarily concentrates on securing the network infrastructure and communication channels.
- Objectives of Network Security: The main objective is to prevent unauthorized access to network resources and protect the integrity and confidentiality of network traffic.

ISCI 340/CCSA

Network Security Measures and Techniques

- **Firewalls:** Firewalls are used to monitor and control incoming and outgoing network traffic. They act as a barrier between the internal network and external threats.
- **Intrusion Detection and Prevention Systems (IDPS):** IDPS helps detect and respond to suspicious activities or attacks on the network in real-time.
- **Device Security:** Ensuring that network devices, such as routers and switches, are properly configured and protected against potential vulnerabilities.

ISCI 340/CCSA

Interdependence of Data Security and Network Security

- Data security and network security are highly interdependent in a robust cybersecurity strategy.
- For example, encrypting data ensures its security during transmission over the network.
- Strong network security safeguards prevent unauthorized access to data stored on servers or devices.



ISCI 340/CCSA

Data Security and Network Security Integration

- Integrating data security and network security measures enhances overall cybersecurity effectiveness.
- A comprehensive approach allows organizations to respond more effectively to potential threats and attacks.

