

Understanding the CIA Triad, Authentication, and Authorization

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Information Security is based upon the CIA Triad . It includes Confidentiality , Integrity and Availability . Authentication and Authorization are two related security concepts that work together to protect systems, but serve different purposes. Knowing these terms allows organizations to secure sensitive data and manage access to resources.

The CIA Triad

The CIA Triad is a cybersecurity model that helps organizations protect information. confidentiality means sensitive information is only available to those who are allowed to access it. Methods such as passwords, encryption and multi-factor authentication are used to maintain confidentiality (Chai, 2022). Integrity means ensuring that the data remains accurate, consistent and trustworthy for its entire life cycle of use. Controls such as access permissions, version control and checksums help to prevent unauthorized changes to the data. Availability is that authorized users are able to access information without interference when it is needed. Availability is achieved by organizations through system maintenance, backups, redundancy, and disaster recovery planning.

Authentication vs. Authorization

Authentication and authorization are often confused, but they are different. Authentication is the act of verifying a user's identity. For instance, when a user inputs a username and password to log into an online banking account, the system verifies they are that person. Authorization occurs after authentication and determines what resources or operations the user can access. A bank customer, for example, may be authorized to view account balances and transfer funds, but not to access administrative banking systems. In simpler terms, authentication answers the question "Who are you?" while authorization answers "What are you allowed to do?".

Conclusion

Confidentiality, integrity, and availability are the basis for protecting organizational information and are collectively known as the CIA Triad. Authentication is the process of proving who you are. Authorization is the process of determining what you are allowed to do. These concepts together form a method for organizations to maintain secure and reliable information systems.

Reference

Chai, W. (2022). *What is the CIA triad? Definition, explanation, examples*. TechTarget.