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The CIA Triad

The CIA Triad is a model consisting of three parts designed to guide policies for information security within an organization (Chai, 2022).

Description

The CIA triad is an abbreviation for confidentiality, integrity, and availability. It is a security model for businesses to focus on the biggest three attributes of data (Chai, 2022). These attributes are crucial to cybersecurity because severe consequences can occur if not maintained.

Confidentiality

Confidentiality is a set of rules that limit access to information (Chai, 2022). It ensures that sensitive data is only accessible to authorized parties. This is commonly achieved through encryption, role-based permission, or secure authentication (Irwin, 2023). Sensitive data may include customer records, employee information, or intellectual property (Irwin, 2023).

Integrity

Integrity is the maintenance of consistency, accuracy, and trustworthiness of data (Chai, 2022). Data integrity involves extra steps to ensure data cannot be altered by unauthorized people in a breach of confidentiality (Chai, 2022). Integrity ensures that data is reliable, consistent, and protected from unauthorized users (Irwin, 2023).

Availability

Availability means that information is consistently and readily accessible for authorized users (Chai, 2022). Anybody could want or need

to access their data at any time and there needs to be systems in place for that time. However, businesses can't always be accessible around the clock. Sometimes there are things that happen within the business that prevents data from being accessible. This includes events like power outages, hardware or software failures, or ransomware attacks (Irwin, 2023).

Authorization vs. Authentication

Authorization is the process of determining and granting rights to an authenticated user of a system (GeeksforGeeks, 2019). It defines what resources any user can access and what actions they are allowed to perform (GeeksforGeeks, 2019). Authentication is the process of verifying the identity of a user or system to ensure they are who they claim to be (GeeksforGeeks, 2019). It involves credential requirements such as usernames and passwords (GeeksforGeeks, 2019). For example, providing your username and password to a company is authentication to access your emails (Auth0, n.d.). However, you are not given authorization to access the company's security systems (Auth0, n.d.).

Conclusion

In conclusion, the CIA Triad is an abbreviation for confidentiality, integrity, and availability. The triad is a security model intended to protect systems and prevents attacks while also providing access to information for the user. Also, authorization is the process of giving permissions of a system to a user while authentication is the process of verifying the identity of the user.

References

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