

CIA Triad

What is the CIA Triad ?

The CIA Triad is a model that is used as the basis or the foundation towards the development of security systems within various organizations. It consists of three core principles such as Confidentiality, Integrity, and Availability which serve as a framework for protecting and managing information systems.

Confidentiality, Integrity, and Availability

As mentioned previously, Confidentiality, Integrity, and Availability are the three core principles that make up the CIA Triad which is a foundational model in the cybersecurity field (Fortinet). Confidentiality, Integrity, and Availability all work together to construct an approach to securing digital assets and keeping data private.

Confidentiality is defined as the state of being kept secret or private (Oxford Dictionary). It is a key principle of the CIA Triad because it ensures that sensitive information remains private and secured within various organizations or information systems. Confidentiality also guarantees that only authorized individuals within an organization will be able to access certain information whereas the unauthorized will not (Fortinet). Therefore by maintaining confidentiality in an organization, information is protected from exposure, information stays safe and secure, and information is only available to those who are authorized to access it.

Secondly, integrity is defined as the quality of being honest and having strong moral principles (Oxford Dictionary). This is another key principle of the CIA Triad that is probably the most important out of all because it ensures that information within an organization is trustworthy. Without trust, operations within an organization would be meaningless. It is important for information within organizations to not only be trustworthy but authentic and

accurate because actions, thoughts, and operations rely on this information (Fortinet). If the integrity of data or information within an organization is compromised it could harm the organization's reputation. Thus by maintaining the integrity of information within an organization, it keeps the organization reputable as well as the information trustworthy, reliable, and accurate.

Lastly, availability is defined as the quality of being able to be used or obtained (Oxford Dictionary). Availability is the final core principle in the CIA Triad because it guarantees that information is readily available for authorized individuals to access. However, having information readily available is important not only for authorized individuals such as members within the organization to access, but also for members outside of the organization like customers as well (Fortinet). So by maintaining availability of information within an organization, it ensures that operations within the organization run smoothly and information can be accessed without interruption.

Authentication and Authorization (A&A) : What's the difference ?

Authentication and authorization are two related terms that serve completely different purposes. These two terms tend to get mixed up at times, however they have two completely different meanings. Authentication is defined as the process or action of proving or showing something to be true, genuine, or valid (Oxford Dictionary). Authorization on the other hand is defined as the action or fact of authorizing or being authorized (Oxford Dictionary). The difference between these two terms is that one verifies the identity of a user, while the other grants certain permissions to a user.

Examples Of (A&A)

Today there are many forms of authentication and authorization used in various systems to ensure secure access to applications. Examples of authentication include entering a password or the usage of biometric authentication such as fingerprint recognition, and or facial recognition (NCSC). All of which we see today in Apple iPhones when we want to unlock our cellular devices, download an app, and access various things in the device such as Apple wallet or stored passwords. Examples of authorization however, include accessing documents such as google

docs, assignments on canvas, medical records, and so on. When it comes to certain documents through the google docs application, a request to view and or edit sometimes has to be accepted from the owner of the document. The same applies for the canvas application, on canvas you can only access the materials that are provided to you through the application or the instructor. Then when it comes to medical records, to access those you have to request them from an authorized application or a healthcare provider. Which in sum ensures that only those with permission can access certain information.

Conclusion

In conclusion, the CIA Triad serves as a framework for creating strong information security systems within organizations. The three principles of the CIA Triad: Confidentiality, Integrity, and Availability, work together to ensure that information within organizations is protected, trustworthy, accurate, reliable, and accessible to those who have the proper authorization to access it. By maintaining confidentiality, organizations protect data from unauthorized access. By preserving integrity, organizations remain reputable as well as their information as trustworthy and reliable. Then by maintaining availability, organizations guarantee that information will be accessible to those who need it. Moreover, authentication and authorizations are also important because it secures both the information itself as well as the access to it. While there may be many similarities between the two terms, there are also distinctions between them that are important when it comes to securing access to information. Authentication verifies the identity of a user while authorizations grant certain permissions to users. In sum, all of these concepts also work together to protect data and ensure that only authorized individuals may access it.

Works Cited

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