

Olivia Woodward

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The CIA Triad and The Difference Between Authorization and Authentication

This write-up will summarize the CIA Triad and its use. Also, define authorization and authentication, and how they relate to the Triad.

The CIA Triad

The CIA triad is 3 concepts used together in a business's practices to allow for heightened information security. According to the article "What is the CIA Triad? Definition, Explanation, Examples" by Wesley Chai (2022), the CIA triad has been the main guideline for business data security and has been cultivating over a long time. The 3 concepts are: confidentiality, integrity, and availability. According to Chai, confidentiality means to prevent unauthorized access to sensitive information; integrity means to maintain the confidentiality of the information constantly and consistently; availability means to have the information accessible to the authorized parties whenever needed. Using all three simultaneously allows for high system security.

Authorization and Authentication

In an information security context, authorization means to grant someone reliable access to certain secure data; to authenticate someone means to verify their identity and authorizations.

If we look at the Merriam-Webster (n.d.) definition, we can see that to authorize something means to "endorse, justify, or permit by some recognized or proper authority." If we apply this to information security, this could be seen as the government clearance levels. Confidential, secret, and top secret all give different levels of access to certain information. The government being the recognized authority and clearance being the permit given for actions and information.

Again, Merriam-Webster (n.d.) defines authenticate as to "prove or serve to prove to be real, true, or genuine." We can see this in our everyday lives at ODU. Take the MIDAS portal login for example: you log in as your user, and to make sure you are this user, you must input your unique password. Then, to verify your user once again, you get sent a code or notification to your phone, which only you should be able to access. This is called two-factor authentication and, like the dictionary definition, proves that you are, in fact, the real you.

Looking at the examples for the two, they can be used as practices for an organization's CIA Triad infrastructure. Authorization provides confidentiality by restricting access to the information; authentication also provides confidentiality by verifying an employee or user's identity when accessing information. Both used together and consistently when a user logs into the information database can provide the organization with integrity. Although they do not provide accessibility, they can be used as a start to an organization's implementation of the CIA Triad.

Conclusion

The CIA Triad provides a stable foundation for businesses to build upon when they are just starting to implement information security into their practice.

Authorization and authentication – although widely used interchangeably – provide two different types of security concepts that apply to the CIA Triad by implementing confidentiality and integrity to a business.

References

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