Jose Gonzalez

September 15, 2024

CYSE200T

Professor Hagh

The CIA triad and the difference between authorization and authentication

What is the CIA triad?

The CIA triad as stated by Wesley Chai in the article "What is the CIA Triad? Definition, Explanation, Examples", "Confidentiality, integrity and availability, also known as the CIA triad, is a model designed to guide policies for information security within an organization" (Hashemi-Pour & Chai, 2023). Each of the elements of the CIA triad is important to cybersecurity and each element works with each other to be successful, if one component of the triad is compromised, the others will fall eventually. The article by Coursera named "What Is the CIA Triad?" gives some examples of each of the elements. The article says "Confidentiality: Effective information security considers who receives authorization and the appropriate level of confidentiality...Integrity: Organizations need to determine who can change the data and how it can be changed... Availability: Information security professionals must balance availability with confidentiality and integrity" (Coursera Staff, 2023).

Authorization and authentication and their differences

The main difference between authorization and authentication as stated by the website auth0.com "In simple terms, authentication is the process of verifying who a user is, while authorization is the process of verifying what they have access to" (Auth0, n.d). One other difference that makes authentication and authorization unique is that authentication normally comes first, and authorization comes after completing authentication. For example, authentication can first occur when joining a company that requires you to use a company computer, while authorization occurs when logging back into the computer when arriving at the job. Another difference that is significant comes from auth0.com, it states "Authentication: challenges the user to validate credentials, Authorization: verifies whether access is allowed through policies and rules" (Auth0, n.d).

Conclusion

The CIA triad, that is composed of confidentiality, integrity and availability, is an important part of cybersecurity. Without the three components working together, the entire triad stops working entirely. Authorization and authentication have differences that at first seem confusing, however are simple when truly looking at them. Without the CIA triad or authorization and authentication present in cybersecurity, most information and data of online users would be out and used for many malicious this that threat actors are waiting to exploit.

References

Auth0. (n.d.). *Authentication vs. Authorization*. Auth0 Docs. https://auth0.com/docs/get-started/identity-fundamentals/authentication-and-authorization

Coursera Staff. (2023, November 29). *What is the CIA triad?*. Coursera. https://www.coursera.org/articles/cia-triad

Hashemi-Pour, C., & Chai, W. (2023, December 21). *What is the CIA triad?: Definition from TechTarget*. Tech Target | What Is. https://www.techtarget.com/whatis/definition/Confidentiality-integrity-and-availability-CIA