# The CIA Triad

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#### **Details**

The CIA triad is a model which forms the basis for information security. The acronym stands for Confidentiality, Integrity, and Availability. For data to meet the criteria for being confidential, it means that only authorized persons and processes have access to it. Integrity, in the case of information security, means that data has been maintained in its correct state and protected from intentional and accidental modification. Availability means that authorized users have access to data when they need it. (Fruhlinger, 2020) In this write-up we will focus on characteristics of the first letter in the triad —confidentiality. Two aspects of confidentiality include authentication and authorization.

Authentication is the process of proving that a user is who they say they are. An example of the authentication process is providing a username and password in order to prove that it is you that is accessing your online bank account. Other authentication methods include biometrics, access badges, and tokens. Multi-factor authentication is an additional process of proving your identity by means of providing more than one proof; (1) something you know, (PINs and passwords), (2) something you have (smart cards and tokens), and/or (3) something you are (retinal scan, fingerprints).

Authorization is when a user is given the right to access certain data. For example, you may prove your identity by providing a username and password (authentication), but it does not necessarily mean that you are allowed access to all data. In many cases, especially cases involving sensitive information, it is required that have a need-to-know in order to be authorized access to certain information. Need-to-know is simply a term used to mean that a person can only have access to sensitive information if the information is required knowledge for their job.

Public-key cryptography enforces both authentication and authorization (Fruhlinger, 2020). Your public and private key prove that you are who you say you are, and your private key establishes your right to decrypt messages intended for you. In short, both authentication and authorization are a vital aspect of ensuring confidentiality in information security.

## References

Fruhlinger, J. (2020). The CIA triad: definition, components and examples. IDG Communications, Inc. <u>https://drive.google.com/file/d/</u> <u>1Mn3icTLG5X3W7tJjuDaohW8OscHdLOQI/view</u>