SO, WHAT IS THE CIA TRIAD ANYWAY?

The CIA Triad is a core element of Cybersecurity, representing Confidentiality, Integrity, and Availability (not to be confused with the Central Intelligence Agency). It plays a vital role in all areas of a business, program, education, or continuity plan.

So, what is it?

The CIA Triad is an extremely well-known framework in the cybersecurity field. Frameworks are very structured guidelines for an organization to follow if you do not know where to start. They usually contain "best practices, standards, and guidelines designed to help businesses manage cybersecurity risks. *(Splunk, 2024)*". Most cybersecurity frameworks are on the defensive side of the spectrum with few being on the offensive side. These type of offensive frameworks are called "threat hunting frameworks". The CIA triad is meant to enable maximum security whilst letting organizations still perform everyday tasks without much interference from security.

Confidentiality

Confidentiality is the first step to the CIA triad. It involves keeping data (sensitive or unsensitive) safe from unauthorized access from entities. This may include threat actors, advanced persistent threats (APTs) or even insider threats.

Integrity

Integrity is the second and arguably the most important section of the CIA Triad. It involves "making sure your data is trustworthy and free from tampering. (FORTINET, 2025)". Some of the ways we can defend the integrity of our systems is to introduce hashing, digital certificates, or digital signatures for non-repudiation purposes. As referenced to in the TechTarget article, there needs to be a means of detecting changes in your data being changed from a multitude of events or even catastrophes.

Availability

The last section of the CIA Triad is availability. Availability is assuring that the data you keep within your organization and systems is going to be available to your customers, employees, or data collection systems that rely on whatever you store. This can be achieved via different methods like using redundant array of inexpensive disks (RAID) and its several configurations. Ensuring redundancy is the main priority of availability.

Authenticity vs Authorization

Authentication and authorization are sometimes confused with one another because they are similar but they do have their distinct differences. As stated in the IBM article, authentication relies primarily on

credentials to prove who a user is based on what's in its system while authorization relies on user permissions in a system to outline what a user can and cannot do. They do have one thing in common. The application to both human and non-human users. An example of authentication would be passwords and fingerprints. An example of authorization would be file permissions for a user that dictates whether they have access to only read, write, or even delete privileges.

Conclusion

The CIA Triad is an especially important framework used in cybersecurity with thoughts and discussions on a new modern upgrade that includes more sections as the world of cybersecurity shifts rapidly. We are ever needing to protect our systems and build updated frameworks to ensure systems are protected from attacks. AI and APT threats faced in recent years support the needed change and consideration for best practices, frameworks, and continuity plans for businesses to follow.

References

CYBERSECURITY FRAMEWORKS: WHAT THEY ARE & HOW TO USE THEM | SPLUNK. (2024). SPLUNK. HTTPS://WWW.SPLUNK.COM/EN_US/BLOG/LEARN/CYBERSECURITY-FRAMEWORKS.HTML

STAFF, C. (2025, SEPTEMBER 10). WHAT IS THE CIA TRIAD? COURSERA. HTTPS://WWW.COURSERA.ORG/ARTICLES/CIA-TRIAD?MSOCKID=2172821755F16DA0174B9792545C6C97

WHAT IS THE CIA TRIAD AND WHY IS IT IMPORTANT? | FORTINET. (2025). FORTINET. HTTPS://WWW.FORTINET.COM/RESOURCES/CYBERGLOSSARY/CIA-TRIAD

WHAT IS THE CIA TRIAD _ DEFINITION, EXPLANATION, EXAMPLES - TECHTARGET.PDF. (2025). GOOGLE DOCS. HTTPS://DRIVE.GOOGLE.COM/FILE/D/1898R4PGPKHN6BMKCWLXPDVZPCC6MOY8L/VIEW

KOSINSKI, M. (2024, JUNE 28). AUTHENTICATION VS AUTHORIZATION. IBM.COM.

HTTPS://WWW.IBM.COM/THINK/TOPICS/AUTHENTICATION-VS-AUTHORIZATION