

AAA - Authentication, Authorization, Auditing

Authentication -> Process of verifying the identity of a user, device or other entity in a computer, typically as a prerequisite to granting access to a resource (user can login)

Authorization -> Once a user is authenticated, the authorization determines what that user is permitted to do by matching user credentials against an access control list (user permission based on ACL)

Auditing (or accounting) -> Ensured by keeping a track of activities, logging and monitoring all user actions

Accountability is key for non-repudiation, it ensures individuals or entities are held responsible for their actions

1. Identification
2. Authentication
3. Authorization
4. Accounting
5. Accountability

Non-repudiation -> Ensure that a party in a communication cannot deny the authenticity of their actions (always have proof of a action)

To monitor this:

- Digital signatures
- Logs
- Audit

Solutions:

- TACACS+ -> TCP routers, switches, and firewalls -> for environments requiring strict control
- RADIUS -> UDP Wi-Fi, VPN, dial-in -> where speed and scalability are important

Authentication people:

- Usernames and passwords
- Biometrics
- MFA

Authentication device:

- Digital certificates
- IP addresses
- MAC addresses