

THREE LEVELS OF CONTROL IN NETWORK SECURITY

- Safeguards provide THREE levels of control
 - Managerial Controls
 - Operational Controls
 - Technical Controls

Managerial Controls

- Managerial controls cover security processes that are designed by the strategic planners and performed by security administration of the organization
 - Management Controls address the design and implementation of the security planning process and security program management.
 - They also address risk management and security control reviews
 - Management controls further describe the necessity and scope of legal compliance and the maintenance of the entire security life cycle.

Operational Controls

- Operational controls deal with the operational functionality of security in the organization.
 - They include management functions and lower-level planning, such as disaster recovery and incident response planning
- Operational controls also address personnel security, physical security, and the protection of production inputs and outputs
 - In addition, operational controls guide the development of education, training, and awareness programs for users, administrators and management.
 - Finally, they address hardware and software systems maintenance and the integrity

of data.

Technical Controls

- Technical controls address those tactical and technical issues related to designing and implementing security in the organization as well as issues related to examining and selecting the technologies appropriate to protecting information
- While operational controls address the specifics of technology selection and acquisition of certain technical components.
- They also include logical access controls, such as identification, authentication, authorization, and accountability.
- Technical controls also address the development and implementation of audit trails for accountability.
- In addition, these controls cover cryptography to protect information in storage and transit.
- Finally they include the classification of assets and users, to facilitate the authorization levels needed.

Summary

Using the three sets of controls just described , the organization should be able to specify controls to cover the entire spectrum of safeguards , from strategic to tactical, and from managerial to technical.

The Framework

Management Controls

- Program Management
- System Security Plan
- Life Cycle Maintenance
- Risk Management
- Review of Security Controls
- Legal Compliance

Operational Controls

- Contingency Planning
- Security ETA
- Personnel Security
- Physical Security
- Production Inputs and Outputs
- Hardware & Software Systems Maintenance
- Data Integrity

Technical Controls

- Logical Access Controls
- Identification, Authentication, Authorization, and Accountability
- Audit Trails
- Asset Classification and Control
- Cryptography