



GUIDE

Risk Assessment

Adapted from

NIST SP 800-30 Rev. 1

v1.0.2

Author:

Eldon Gabriel

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REVISION HISTORY

| Version | Date | Author | Description of Changes |
|---------|------------|----------|---|
| v1.0.0 | 02/21/2025 | Eldon G. | Initial draft. |
| v1.0.1 | 07/11/2025 | Eldon G. | Added conclusion section outlining key takeaways. |
| v1.0.2 | 03/17/2026 | Eldon G. | Updated document title and finalized formatting for portfolio publication |



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1.0 RISK ASSESSMENT GUIDE

Adapted from NIST SP 800-30 Rev. 1

1.1 Introduction

NIST SP 800-30 provides a structured approach for assessing risks in information systems. This guide outlines strategies for identifying, analyzing, and mitigating risks, helping organizations allocate resources effectively, and prioritizing remediation efforts.

Note: NIST's [Computer Security Resources Center](#) contains more information on SP 800-30 Rev. 1.



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1.2 Threat Sources

Threat sources are entities or circumstances that can negatively impact an organization's information systems. These sources can be internal or external and may have different capabilities and intentions.

| Type | Examples | Description |
|--------------------------------|---|--|
| Standard User | Employee, Customer | Accidental or intentional exploitation of system vulnerabilities |
| Privileged User | System Administrator | Elevated access rights can lead to misuse or compromise. |
| Group | Competitor, Supplier, Business Partner, Nation-State | Exploiting vulnerabilities through organized efforts |
| Outsider | Hacker, Hacktivist, Advanced Persistent Threat (APT) | Malicious actors target organizational assets. |
| Hardware | Storage, Processing, Communications | Failures owing to resource depletion or aging infrastructure. |
| Software | Operating Systems, Networking, Malicious Software | Vulnerabilities that can be exploited in attacks. |
| Operational Environment | Temperature Controls, Humidity, Power Supply Failures | Environmental factors affecting system integrity |
| Natural Hazards | Power Outages, Extreme Weather Events | External conditions disrupt operations. |



1.3 Threat Events

Threat events occur when a threat source exploits a vulnerability, causing damage or harm to an organization's information systems.

| Example | Description |
|--|---|
| Reconnaissance & Surveillance | Threat actors gather intelligence regarding vulnerabilities. |
| Exfiltration of Sensitive Information | Malicious software extracts confidential data. |
| Data Alteration or Deletion | Critical business information is either modified or erased. |
| Creation of Counterfeit Certificates | Unauthorized entities forge certificates to bypass security controls. |
| Persistent Network Sniffers | Malicious software intercepts and monitors network traffic. |
| Denial of Service (DoS) Attacks | Attackers flood systems with traffic, disrupting operations. |
| Disruption of Mission-Critical Operations | Business processes became non-functional. |
| Obfuscation of Future Attacks | Threat actors bypass intrusion detection and logging mechanisms. |
| Man-in-the-Middle Attacks | Unauthorized interception and modification of communications. |



1.4 Likelihood of a Threat Event

Likelihood measures the probability that a threat event will occur based on available evidence, historical data, and expert judgment.

Likelihood Ratings

| Qualitative Value | Quantitative Value | Description |
|-------------------|--------------------|--|
| High | 3 | The event is almost certain to have a severe impact. |
| Moderate | 2 | This event is likely to affect operations. |
| Low | 1 | This event is unlikely to have minimal effects. |

1.5 Severity of a Threat Event

Severity assesses the potential impact of a threat event on business operations.

Severity Ratings

| Qualitative Value | Quantitative Value | Description |
|-------------------|--------------------|--|
| High | 3 | Severe or catastrophic effects on operations |
| Moderate | 2 | Significant disruption, but not total failure. |
| Low | 1 | Slight impact with negligible consequences. |

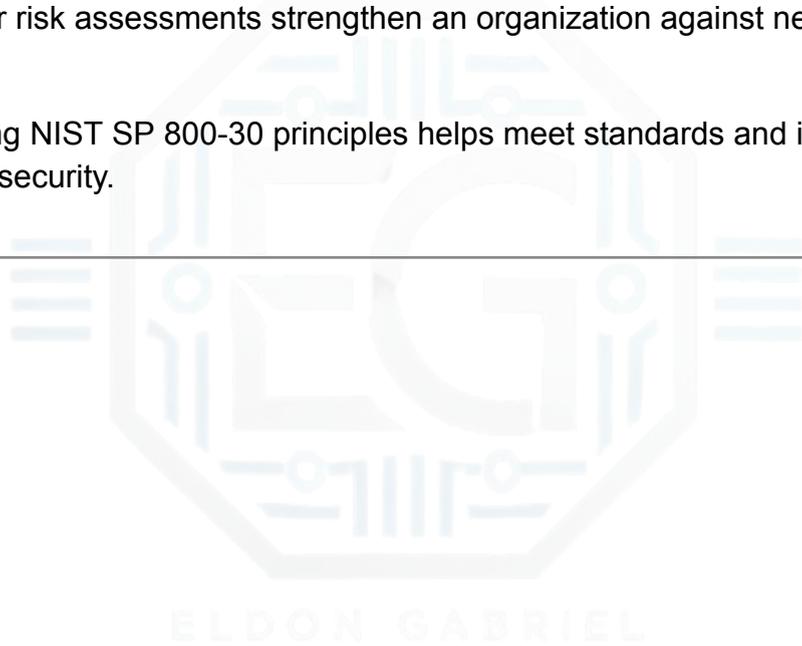


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2.0 CONCLUSION

2.1 Key Takeaways

- A clear risk assessment approach helps identify and rank threats to information systems.
 - Understanding the sources and mechanisms by which threats occur enables focus on fixing the correct problems.
 - Evaluating likelihood and severity quantifies risk and helps allocate resources effectively.
 - Regular risk assessments strengthen an organization against new cyber threats.
 - Adopting NIST SP 800-30 principles helps meet standards and improves overall security.
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