**Template Instructions**

Security Logging Standard

Follow the instructions below to complete this standard template for use within your own organization.

1. Click each bracketed field below to input basic standards information:

* **Organization Name *(e.g. ACME Co)*:**

[Organization Name]

* **Organization Address *(e.g. 123 Elm St. City, ST. 12345)*:**

[Organization Address]

* **Standard Authority *(e.g. CEO, CIO, or CISO)*:**

[Policy Authority]

* **Standard Owner *(e.g. IT Department)*:**

[Policy Owner]

* **Standard Contact Info *(e.g.*** [***jon.smith@acme.com***](mailto:jon.smith@acme.com)***)*:**

[Owner Contact Info]

* **Standard Number *(e.g. STRD-INFOSEC-01)*:**

[Policy Number]

1. Thoroughly review all 10 Standard Sections to ensure accuracy and alignment with existing organizational policies, procedures, and standards.
2. Input key term definitions that require clarification into Section 7.
3. Review related documents in Section 10.
4. Save the document and print the necessary pages to a PDF or printer.
5. Visit [docs.policytemplates.online](https://docs.policytemplates.online/) for further policy/standard creation and implementation resources.

|  |  |
| --- | --- |
| [Organization Name] | **No:**  [Policy Number] |
| **IT Standard**:  **Security Logging** | **Updated:** 11/1/2024 |
| **Issued By:**  [Policy Authority]  **Owner:**  [Policy Owner] |

# 1.0 Purpose and Benefits

The purpose of this Security Logging Standard is to establish guidelines for the generation, management, storage, disposal, access, and use of security logs, ensuring effective monitoring of systems and networks. This standard aims to safeguard authorized usage, enhance situational awareness, and facilitate early detection of potential security incidents through comprehensive logging from various sources, including security software, operating systems, and applications.

The benefits of adhering to this standard include enhanced security monitoring, which allows for timely identification of incidents; regulatory compliance that supports legal obligations; and improved incident response preparedness through detailed logs. Additionally, log data analysis provides operational insights that can optimize system performance, while creating an audit trail fosters accountability and traceability among users, ultimately strengthening the organization’s cybersecurity posture.

# 2.0 Authority

This standard is established under the authority of organizational management and is guided by best practices outlined in the National Institute of Standards and Technology (NIST) Cybersecurity Framework 2.0. While not mandated by law, the organization adopts this framework to enhance its cybersecurity posture and protect its information assets. The authority for enforcement and adherence to this standard is vested in the [Policy Authority], who is responsible for ensuring compliance across all departments.

# 3.0 Scope

This standard applies to all employees, contractors, third-party vendors, and any individuals or entities accessing, using, or managing the organization's information systems, networks, and physical infrastructure, regardless of the medium or format of the information. It covers all electronic, paper-based, and verbal communication, including, but not limited to, data processing systems, cloud services, email platforms, mobile devices, databases, and other digital storage mechanisms that store, transmit, or process sensitive organizational information.

The standard encompasses internal and external users, whether they access the organization's systems on-site or remotely, and includes all physical infrastructure such as data centers, workstations, and hardware that interact with or support the organization's information environment. Additionally, it extends to any devices, both personal and organizational, that connect to the corporate network or handle company data.

All users are responsible for protecting the confidentiality, integrity, and availability of information, complying with this standard and relevant laws, and familiarizing themselves with the organization's security policies and procedures to ensure the protection of organizational assets. Failure to comply with these requirements may result in disciplinary action, including termination of access rights or contractual agreements.

# 4.0 Information Statement

Logs must be generated in information technology (IT) systems and networks. Because of the nature of the data contained in security logs (e.g., passwords, e-mail content), they are considered personally identifying information (PII) and must be protected with the controls for a confidentiality and integrity of high.

* 1. Initial Log Generation

1. All hosts and networking equipment must perform security log generation for all components (e.g., OS, service, application).
2. All security events (Appendix A) must be logged and must be set to capture significant levels of detail to indicate activity.
   1. Log Administration
3. All hosts and networking equipment must issue alerts on security log processing failures, such as software/hardware errors, failures in the log capturing mechanisms, and log storage capacity being reached or exceeded. All alerts must be as close to real time as possible.
4. When non-revolving log storage reaches 90% capacity, a warning must be issued.
   1. Log Consolidation
5. Security-related information from all systems, with the exception of individual workstations, must be transferred to a consolidated log infrastructure. Systems running workstation operating systems which are used for shared services, such as shared file storage or web services must also satisfy these requirements.
6. All workstations must have the ability to transfer logs to a consolidated log infrastructure, if needed.
7. Log data must be transferred real-time from individual hosts to a consolidated log infrastructure. Where real-time transfer is not possible, data must be transferred from the individual hosts to a consolidated log infrastructure as quickly as the technology allows.
8. Entities must establish processes for the establishment, operation and, as appropriate, integration of log management systems.
   1. Log Storage and Disposal
9. Within the consolidated log infrastructure, logs must be maintained and readily available for a minimum of 92 days. Based on entity requirements, including audit or legal needs, logs may need to be retained for a longer period of time.
10. Log data must be securely disposed of (at both the system and the infrastructure level) in compliance with the Sanitization/Secure Disposal Standard.
11. Systems that collect logs, whether local or consolidated, must maintain sufficient storage space to meet the minimum requirements for both readily available and retained logs. Storage planning must account for log bursts or increases in storage requirements that could reasonably be expected to result from system issues, including security.
12. A process must be put in place to provide for log preservation requests, such as a legal requirement to prevent the alteration and destruction of particular log records (e.g., how the impacted logs must be marked, stored, and protected).
13. Log integrity for consolidated log infrastructure needs to be preserved, such as storing logs on write-once media or generating message digests for each log file.
    1. Log Access and Use
14. Log data must be initially analyzed as close to real time as possible.
15. Access to log management systems must be recorded and must be limited to individuals with a specific need for access to the records. Access to log data must be limited to the specific sets of data appropriate for the business need.
16. Procedures must exist for managing unusual events. Response must be commensurate with system criticality, data sensitivity and regulatory requirements.

# 5.0 Compliance

This standard shall take effect upon publication. Compliance is expected with all enterprise policies and standards. Policies and standards may be amended at any time; compliance with amended policies and standards is expected.

If compliance with this standard is not feasible or technically possible, or if deviation from this standard is necessary to support a business function, entities shall request an exception through the following process.

# 6.0 Standard Exceptions

Requests for exceptions to this standard must be submitted to the [Policy Authority] by the requesting department. Each request should include the scope and justification for the exception, potential risks, proposed mitigation measures, and a timeframe for achieving compliance. The [Policy Authority] will review and discuss these requests with the department.

# 7.0 Definitions of Key Terms

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Information Systems | Any combination of hardware, software, data, and personnel that processes, stores, or transmits information, including but not limited to computers, servers, networks, and applications. |
| Users | Individuals or entities, including employees, contractors, and third-party vendors, who access or interact with the organization’s information systems and data. |
|  |  |

# 8.0 Contact Information

Submit all inquiries and requests for future enhancements to the standard owner at:

[Policy Owner]

[Owner Contact Info]

[Organization Address]

# 9.0 Review and Revision

This standard should be reviewed at least annually to keep pace with evolving regulations, threat landscapes, and organizational changes. However, more frequent reviews may be necessary following regulatory updates, cybersecurity incidents, significant technology changes, organizational shifts, or compliance audits. This standard should be revised based on these reviews and those revisions noted below.

|  |  |  |
| --- | --- | --- |
| **Date** | **Description of Change** | **Reviewer** |
|  |  |  |

# 10.0 Related Documents

[National Institute of Standards and Technology (NIST) SP: 800-92 - Guide to Computer Security Log Management](https://csrc.nist.gov/pubs/sp/800/92/final)

**Appendix A: Security Events to Log**

Security events that must be logged for all systems include but are not limited to:

Successful and unsuccessful authentication events to include but not limited to:

* + system logon/logoff;
  + account or user-ID;
  + change of password;
  + the type of event;
  + an indication of success or failure of event;
  + the date and time of event; and
* Identification of the source of event such as location, IP addresses terminal ID or other means of identification.

Unsuccessful resource access events will be logged to include at minimum:

* + account or user-ID;
  + the type of event;
  + an indication of the event;
  + the date and time of event;
  + the resource; and
* identification of the source of event such as location, IP addresses terminal ID or other means of identification.

Successful and unsuccessful privileged operations including but not limited to:

* + use of system privileged accounts;
  + system starts and stops;
  + hardware attachments and detachments;
  + system and network management alerts and errors messages; and
* security events - account/group management and policy changes.

Successful and unsuccessful access to log files to include but not limited to:

* + account or user-ID;
  + the type of event;
  + an indication of success or failure of event;
  + the date and time of event; and
* identification of the source of event such as location, IP address, terminal ID or other means of identification.

Most web servers offer the option to store log files in either the common log format or an extended log format. The extended log format records more information than the common log file format. When technically feasible web servers must use extended log format. The extended log format adds valuable logging information to your log file so you can determine where messages are coming from, who is sending the message and adds information to the log file that would be necessary to trace an attack.

For systems identified as critical based on a risk assessment or systems that have not yet been classified, in addition to the above, successful resource access events will be logged to include at a minimum:

* + account or user-ID;
  + the type of event;
  + an indication of the event;
  + the date and time of event;
  + the resource; and
* identification of the source of event such as location, IP addresses terminal ID or other means of identification.