

SEC-08-02-S

State CIO Adopted: February 8, 2024

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Replaces:

Encryption Standard

March 14, 2023

ENCRYPTION STANDARD

See Also:

RCW [43.105.054](#) WaTech Governance

RCW [43.105.052](#) Powers and duties of agency—Application to higher education, legislature, and judiciary.

RCW [43.105.020](#) (22) "State agency"

RCW [43.105.450](#) Office of Cybersecurity

[NIST SP 800-57 Part 1 - Recommendation for Key Management.](#)

[NIST SP 800-57 Part 2 - Best Practices for Key Management.](#)

[NIST SP 800-57 Part 3 - Application-Specific Key Management Guidance.](#)

[NIST SP 800-175A - Guideline for Using Cryptographic Standards...Directives, Mandates and Policies.](#)

[NIST SP 800-52 - Guidelines for the Selection, Configuration, and Use of Transport Layer Security \(TLS\)...](#)

[NIST 800-53 - Security and Privacy Controls for Info Systems and Organizations.](#)

1. Agencies must use approved standards to protect category 3 and category 4 and may use these standards for category 1 and 2 data as described in the [SEC-08-01-S Data Classification Standard](#).
2. Agencies must perform full disk [encryption](#) for all workstations that access or contain agency information.
 - a. Full disk encryption products must use either pre-boot authentication that utilizes the device's Trusted Platform Module (TPM), or Unified Extensible Firmware Interface (UEFI) Secure Boot.
 - b. Encryption of the entire hard drive volume and all files on the hard drive must meet National Institute of Standards and Technology Federal Information Processing Standards [FIPS 140-3 Security Requirements for Cryptographic Modules](#) Level 1 minimum requirements.
3. Agencies must use NIST FIPS approved encryption for the confidentiality and integrity of [data at rest](#) and [data in transit](#).
 - a. A cryptographic module does not meet the requirements or conform to the NIST FIPS standard unless a reference can be made to the validation certificate number.
 - b. Use of outdated, cryptographically broken, or proprietary encryption algorithms/hashing functions is prohibited.
 - c. Agencies must use FIPS mode if processing Sensitive but Unclassified [data](#) (SBU), which maps to Category 3 on the Data Classification Standard when

required by federal partners.

- d. Electronic information used to authenticate the identity of an individual or process must be encrypted when stored, transported, or transmitted.
- e. This does not include the distribution of a one-time use PIN, password, passphrase, token code, etc., provided it is not distributed along with any other authentication information.

4. Data must be encrypted at rest.

- a. Agencies must select and apply encryption for category 3 and category 4 data using encryption algorithms from [FIPS 140-3 Security Requirements for Cryptographic Modules](#) encryption algorithms in such a way that the data becomes unusable to anyone but authorized personnel.
- b. Agencies must protect the confidential process, encryption key or other means to decipher the information from unauthorized access.

5. Agencies must use approved encryption algorithms for category 3 and category 4 data in addition to consideration for special handling requirements.

- a. Symmetric encryption: [FIPS 197 - Advanced Encryption Standard \(AES\)](#) validated Advanced Encryption Standard (AES) (≥ 128 - bit).
- b. Asymmetric encryption: RSA (≥ 2048 -bit).
- c. Hashing: [FIPS 180-4 Secure Hash Standards \(SHS\)](#) validated SHA-2 and SHA-3

6. Data must be encrypted while in transit.

- a. Agencies must appropriately protect information transmitted electronically. The transmission of category 3 and 4 data requires encryption such that:
- b. All manipulations or transmissions of data during the exchange are secure.
- c. If intercepted by unauthorized parties during transmission the data cannot be deciphered.
- d. When necessary, confirmation is received when the intended recipient receives the data.
- e. Appropriate encryption methods for data in transit include, but are not limited to:
- f. Transport Layer Security (TLS) 1.2 or later version.

- g. Secure Shell (SSH) 2.0 or later version.
- h. Clients and servers must be configured to support the strongest cipher suites possible. Ciphers that are not compliant with this standard must be disabled.

7. Agencies must protect cryptographic keys.

- a. Qualification or Keys must be distributed and stored securely.
- b. Access to keys must be restricted to individuals who have a business need.
- c. Unencrypted keys must not be stored with the data that they encrypt.
- d. Encryption keys and their associated software products must be maintained for the life of the archived data that was encrypted with that product.
- e. Compromise of a cryptographic key would cause all information encrypted with that key to be considered unencrypted. If a compromise has been discovered a new key must be generated and used to continue protection of the encrypted information. See the state Incident Response Plan and [SEC-10 - IT Security Incident Response Policy](#).

REFERENCES

1. [Definition of Terms Used in WaTech Policies and Reports](#).
2. [SEC-08-01-S Data Classification Standard](#).
3. [FIPS 140-3 - Security Requirements for Cryptographic Modules](#).
4. [FIPS 197 - Advanced Encryption Standard \(AES\)](#).
5. [FIPS 180-4 Secure Hash Standards \(SHS\)](#).
6. [SEC-10 - IT Security Incident Response Policy](#).
7. NIST Cybersecurity Framework Mapping
 - ID.SC-3: Contracts with suppliers and third-party partners are used to implement appropriate measures designed to meet the objectives of an organization's cybersecurity program and Cyber Supply Chain Risk Management Plan.
 - PR.DS-1: Data-at-rest is protected.
 - PR.DS-2: Data-in-transit is protected.
 - PR.IP-4: Backups of information are conducted, maintained, and tested.
 - PR.AT-3: Third-party stakeholders (e.g., suppliers, customers, partners) understand their roles and responsibilities.
 - PR.AT-2: Privileged users understand their roles and responsibilities.

CONTACT INFORMATION

- For questions about this policy, please email the [WaTech Policy Mailbox](#).