

RESOLUTION NO. 236-23

5-23-23

COL IT adopting Device Encryption Policy rev

Adopting the Cayuga County’s Device Encryption Policy

By: Christopher Petrus Chair, Government Operations

WHEREAS, the County Legislature has adopted numerous policies and procedures for conducting County business and others which are mandated by Federal and State governments; and,

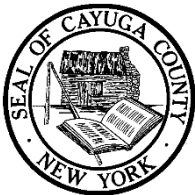
WHEREAS, the County wishes to adopt the Device Encryption Policy; now therefore be it

RESOLVED, The Cayuga County Legislature does hereby adopt The Device Encryption Policy and be it further

RESOLVED, that the policy be posted to the County Website, and e-mailed to all Department Heads by the Clerk of the Legislature’s Office; and it is further

RESOLVED, that each Department will review their policies annually and all changes/revisions will be brought by Resolution through the Government Operation Committee to the Legislature for its consideration; and it is further

RESOLVED, that this resolution will take effect immediately upon its adoption.



State of New York }
County of Cayuga }

I do hereby certify, that I have compared the forgoing copy of a Resolution duly passed and adopted by the Cayuga County Legislature at a meeting held on the 23rd day of May 2023 with the original Resolution, and that the same is a true and correct copy and transcript thereof, and the whole thereof.

Given under my hand and official seal May 24, 2023

Sheila P. Smith

Clerk, Cayuga County Legislature



Title Device Encryption

Resolution No.

Date Adopted: May 23, 2023

Modified Date:

Purpose: The purpose of this policy is to provide guidance on the use of encryption technologies to protect Cayuga County data, information resources, and other Confidential Information or Personal Identifiable Information (PII) while stored at rest or transmitted between parties. This policy also provides direction to ensure that regulations are followed.

Scope: This policy applies to all Cayuga County staff that create, deploy, transmit, or support application and system software containing Confidential Information or PII. It addresses encryption policy and controls for Confidential Information or PII that is at rest (including portable devices and removable media), data in motion (transmission security), and encryption key standards and management.

Policy:

ACCESS

The Chief Information Officer (CIO) shall ensure:

- Policies, procedures, scenarios, and processes must identify Confidential Information or PII that must be encrypted to protect against persons or programs that have not been granted access.
- Cayuga County implements appropriate mechanisms to encrypt and decrypt Confidential Information or PII whenever deemed appropriate. Internal procedures shall specify how Cayuga County transmits sensitive information as well as how often the information is transmitted.
- When encryption is needed based on data classification to protect Confidential Information or PII during transmission. Procedures shall specify the methods of encryption used to protect the transmission of Confidential Information or PII.
- Logical user access is managed separately and independently of native operating system authentication and access control mechanisms (for example, by not using local user account databases or general network login credentials) when disk encryption is used rather than file or column level database encryption.

ENCRYPTION KEY LENGTH

Cayuga County uses software encryption technology to protect Confidential Information or PII. To provide the highest-level security while balancing throughput and response times, encryption key lengths should use current industry standard encryption algorithms for Confidential Information or PII.

AT-REST ENCRYPTION

- Hard drives that are not fully encrypted (e.g., disks that one or more un-encrypted partitions, virtual disks) but connect to encrypted USB devices, may be vulnerable to security breach from the encrypted region to the unencrypted region. Full disk encryption avoids this problem and shall be the method of choice for user devices containing Confidential Information or PII.
- Confidential Information or PII at rest on computer systems owned by and located within Cayuga County controlled spaces, devices, and networks should be protected by one or more of the following mechanisms:
 - Disk/File System Encryption (e.g., Microsoft EFS technology)
 - Use of Virtual Private Networks (VPN's) and Firewalls with strict access controls that authenticate the identity of those individuals accessing the Confidential Information or PII
 - Sanitizing, redacting, and/or de-identifying the data requiring protection during storage to prevent unauthorized risk and exposure (e.g., masking or blurring PII)
 - Supplemental compensating or complimentary security controls including complex passwords, and physical isolation/access to the data, and two-factor authentication.
 - Strong cryptography on authentication credentials (i.e., passwords/phrases) shall be made unreadable during transmission and storage on all information systems.
 - Password protection to be used in combination with all controls including encryption.
 - File systems and disks in servers and Storage Area Network (SAN) environments are encrypted using industry standard encryption technology.
 - Computer hard drives and other storage media that have been encrypted shall be sanitized to prevent unauthorized exposure upon return for redistribution or disposal.

PORTABLE DEVICE ENCRYPTION

- Portable devices (e.g. smart-phones, flash cards, SD cards, USB file storage) represent a specific category of devices that contain data-at-rest. Many incidents involving unauthorized exposure of Confidential Information or PII are the result of

stolen or lost portable computing devices. **The most reliable way to prevent exposure is to avoid storing Confidential Information or PII on these devices.**

- As a general practice, Confidential Information or PII shall not be copied to or stored on a portable computing device or Cayuga County-owned computing device. However, in situations requiring Confidential Information or PII to be stored on such devices, encryption reduces the risk of unauthorized disclosure if the device becomes lost or stolen. The following procedures shall be implemented when using portable storage:
 - Hard drives (laptops, tablets, and smartphones) shall be encrypted using products and/or methods approved by the Cayuga County CIO. Such devices shall have full disk encryption with pre-boot authentication.
 - Devices shall not be used for the long-term storage of any Confidential Information or PII.
 - All devices shall have proper and appropriate protection mechanisms installed including approved anti-malware/virus software, personal firewalls with unneeded services and ports turned off, and properly configured applications.
 - Removable media including CD's, DVD's, USB flash drives, etc. shall not be used to store Confidential Information or PII.

IN-TRANSIT ENCRYPTION

In-transit encryption refers to transmission of data between endpoints. The intent of these policies is to ensure that Confidential Information or PII transmitted between companies, across physical networks, or wirelessly is secured and encrypted in a fashion that protects student Confidential Information or PII from a breach.

The CIO shall ensure:

- Formal transfer protocols, procedures, and controls are implemented to protect the transfer of information using all types of communication and transmission facilities.
- Users follow Cayuga County acceptable use policies when transmitting data and take particular care when transmitting or re-transmitting Confidential Information or PII received from non-Cayuga County staff.
- Strong cryptography and security protocols (e.g. TLS, IPSEC, SSH, etc.) are used to safeguard Confidential Information or PII during transmission over open public networks. Such controls include:
 - Only accepting trusted keys and certificates, protocols in use only support secure versions or configurations, and encryption strength is appropriate for the encryption methodology in use.
 - Public networks include but are not limited to the Internet, Wireless technologies, including 802.11, Bluetooth, and cellular technologies.

- Confidential Information or PII transmitted in e-mail messages are encrypted. Any Confidential Information or PII transmitted through a public network (e.g., Internet) to and from vendors, customers, or entities doing business with Cayuga County must be encrypted or transmitted through an encrypted tunnel (VPN) or point-to-point tunneling protocols (PPTP) that include current transport layer security (TLS) implementations.
- Wireless (Wi-Fi) transmissions used to access Cayuga County computing devices or internal networks must be encrypted using current wireless security standard protocols.
- Encryption or an encrypted/secured channel is required when users access Cayuga County Confidential Information or PII remotely from a shared network, including connections from a Bluetooth device to a Cayuga County cell phone.
- Secure encrypted transfer of documents and Confidential Information or PII over the internet uses current secure file transfer programs such as “SFTP” (FTP over SSH) and secure copy command (SCP).
- All non-console administrative access such as browser, or web-based management tools, are encrypted using SSL based browser technologies using the most current security algorithm as well as multi-factor authentication.

ENCRYPTION KEY MANAGEMENT

Effective enterprise public and private key management is a crucial element in ensuring encryption system security. Key management procedures must ensure that authorized users can access, and decrypt all encrypted Confidential Information or PII using controls that meet operational needs. Cayuga County key management systems are characterized by following security precautions and attributes:

- Cayuga County uses procedural controls to enforce the concepts of least privilege and separation of duties for staff. These controls apply to persons involved in encryption key management or who have access to security-relevant encryption key facilities and processes, including Certificate Authority (CA) and Registration Authority (RA), and/or contractor staff.
- The CIO shall verify backup storage for key passwords, files, and Confidential Information or PII to avoid single point of failure and ensure access to encrypted Confidential Information or PII.
- Key management should be fully automated.
- Keys in storage and transit must be encrypted.
- Private keys must be kept confidential.
- Application and system resource owners should be responsible for establishing data encryption policies that grant exceptions based on demonstration of a business need and an assessment of the risk of unauthorized access to or loss of Confidential Information or PII.

The CIO share ensure:

- Decryption keys are not associated with user accounts.
- Documentation and procedures exist to protect keys used to secure stored Confidential Information or PII against disclosure and misuse.
- Restrict access to cryptographic keys to the fewest number of custodians necessary.
- Cryptographic keys are stored in the fewest possible locations.
- Key management processes and procedures for cryptographic keys are fully documented.
- Retirement or replacement (for example, archiving, destruction, and/or revocation) of keys as deemed necessary when the integrity of the key has been weakened or keys are suspected of being compromised.

Note: If retired or replaced cryptographic keys need to be retained, these keys must be securely archived. Archived cryptographic keys should only be used for decryption/verification purposes.

Audit Controls and Management

On-demand documented procedures and evidence of practice should be in place for this operational policy as part of Cayuga County operational methodology.

- Cayuga County shall inventory encrypted devices and validate implementation of encryption products at least annually.
- Documentation shall exist for key management procedures.
- At-Rest encryption procedures exist and can be demonstrated.
- In-Transit encryption procedures exist and can be demonstrated.