**SECDISPATCH**

**Monday 15:50 Viger**

# Data At Rest Encryption

## DARE Container / DARE Message

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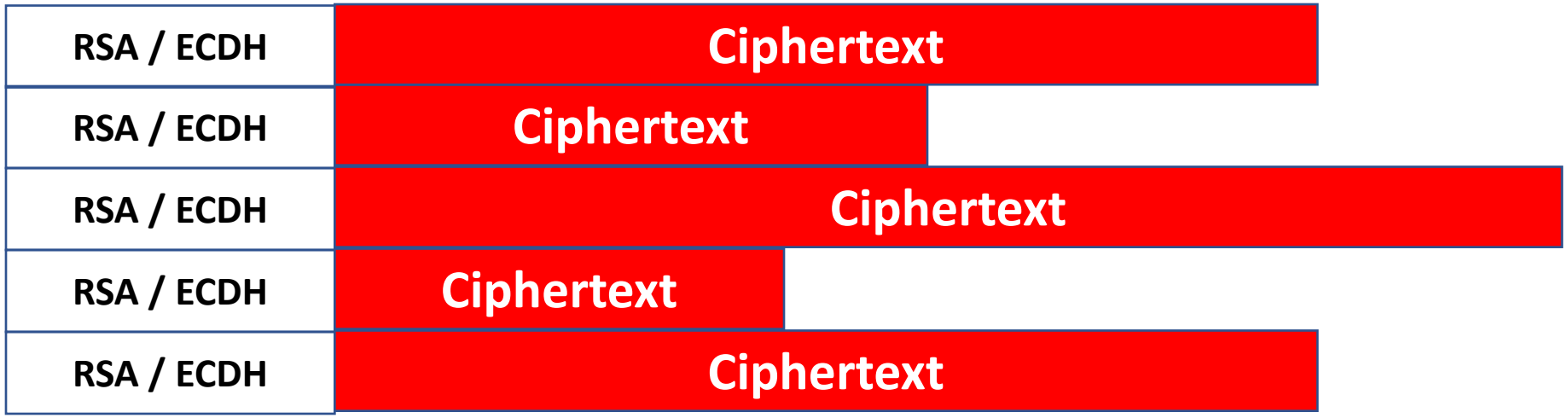
Comodo Security Solutions

# Encrypting log files with OpenPGP*




- Each entry is a separate message
- Big overhead, no return

* S/MIME = OpenPGP + ASN.1

# DARE Container

- Designed to support ***incremental encryption*** & authentication
  - Append only log
- Authentication
  - Digest Chain* or Merkle Tree.
  - Signature on individual records, chain or tree
- Encryption
  - Key exchange can be used for one record or multiple records.
  - Supports encrypted payloads and attributes.

* For my ICO see www.dunningkrugerrand.com

# Efficiency

- All write operations are log(n) or better
  - Open container
  - Append record

- Read efficiency depends on container type*
  - First, Last, Previous, Next are O(1).
  - Seek is O(n) for simple container Log(n) for Tree

- Choose JSON or JSON-B (Binary) encoding.
  - Can keep log entry size within O/S atomic write limit.

* If you encrypt a container and lose the key, performance will suffer

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# Applications

- Designed for
  - Persistence stores
    - Messages
    - Bookmarks
    - Contacts
    - Offline Internet distribution to defeat state censorship
- Applied to
  - Protecting PII in server logs to meet GDPR requirements*

* The ‘put a bird on it’ school of GDPR compliance