

## Encryption in Industrial HiVision

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### 1. Data in Transit

- Within Industrial HiVision:
  - GUI - Kernel: Corba over SSL (encrypted)
  - Kernel - Kernel: Corba over SSL (encrypted)
  - Communication between kernel and UI uses the same method as HTTPS
  
- Industrial HiVision - Devices (dependent on the device / the configuration of the device):
  - Unencrypted:
    - SNMP V1, HTTP, Telnet, HiDiscoveryV1,, EtherNet/IP
  - Encrypted:
    - SNMP V3, HTTPS, SSH

### 2. Data at Rest

- Most data is stored unencrypted in the Industrial HiVision database
  - All passwords and community strings (SNMP V1) are encrypted in the database
  - Keys are 64 bits long (for the passwords).
- Some data is stored unencrypted in files, for example the IP address of the server to which the GUI is connected
- Industrial HiVision User Management: stored in an unencrypted file, passwords saved as a hash

### 3. Authentication and Management of Security Services

- User Management in Industrial HiVision: configurable:

- None
- LDAP (secure or unsecure)
- RADIUS (unsecure)
- Local (Industrial HiVision User Management)
- Password to protect Edit Mode (optional and configurable)

#### 4. **Protocol Security**

- SNMP V3: depending on the settings: MD5, SHA / DES, AES128
- All passwords and community strings in the database: DES
- Communication via SNMP can use keys up to 256 bits (AES256C), if the devices support it.  
Keys for HTTPS are between 1024 and 2048 bits