i-PRO

WHITE PAPER

GMO GlobalSign Preinstalled certificate

i-PRO Video Surveillance Systems

i-PRO

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1. Preinstalled certificate

1.1. Electronic certificate PKI

PKI (Public-Key Infrastructure) is a security infrastructure that governs data exchange in a safer internet environment using "Public key encryption method" which is consisted of public key and private key. Both SSL/TLS as a communication encryption and electronic certificates are based on the technology used for this PKI public key method. Therefore, a secured electronic certificate issued by a reliable certificate agent (CA) is important for PKI.

There are two types of certificates, the ones user's self-validated certificate and the ones that are validated through CA. The self-validated certificates do not have CA's validation, thus the level of protection is limited.　The following is the steps to purchase a certificate validated by a reliable CA to install to your i-PRO camera.

① Generate a key
② Create CSR
③ Send CSR to CA
④ Validated certificate is generated at CA
⑤ Install the certificate returned from the CA

Cost will incur when purchasing certificates from CA for each camera and also the steps can be time consuming.

1.2. GMO GlobalSign Preinstalled certificate

The HTTPS communication as well as detection function that detects data falsification of SD card featured in i-PRO camera adopt CA validated certificates. The certificate is already installed to all i-PRO camera (one certificate per camera) before it leaves the factory. This means that the customer will not need extra time or cost to deal with the certificates and the preinstalled certificates are effective from the moment they purchased the camera.

GMO GlobalSign is a reliable CA that operates worldwide and specialize in issuing electronic certificates. Please visit their website for more information.

https://www.globalsign.co.jp/company/index.html

1.3. i-PRO certificate preinstallation procedure

A pair of keys is required to generate a certificate (public key and private key). The private key must

be kept protected in order to increase the security level.   The risk of compromising the private key is higher if you use PC to generate the key and install it into your camera. This risk is minimized as we generate the keys during the production in our factory, this way the keys cannot be taken out from the cameras. Secure Element embedded camera has even securer protection as the keys are generated within Secure Element and they cannot be taken out from it. The following is the procedure to install GMO GlobalSign certificates to i-PRO cameras.

① Generate a pair of keys within a camera (RSA key)
② Generate CSR
③ Send CSR to RA (registration agent) of GMO GlobalSign
④ Certificate is created and validated by GMO GlobalSign
⑤ Download the validated certificate from RA
⑥ Install the certificate to camera

Our factory and GMO GlobalSign has a network connection where we can issue certificates 24/7 throughout the year. The issued certificates are installed in each camera before the shipment so that the cameras are ready to be used safely with the reliable preinstalled certificate
(by GMO GlobalSign) as soon as the customers pay for i-PRO camera.
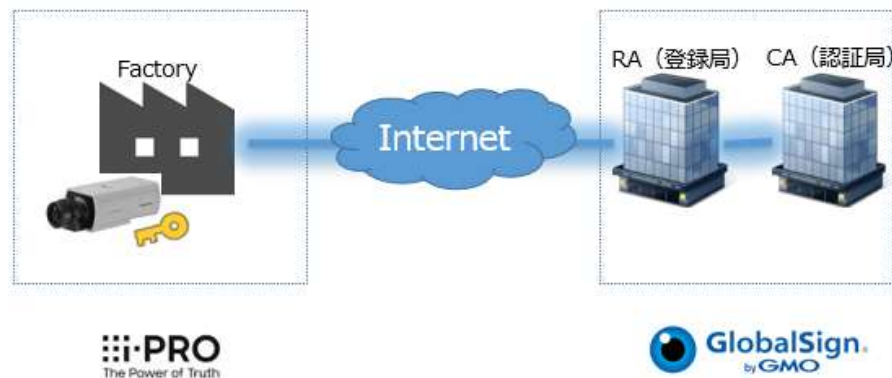
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