



APP NOTES

Onsight Rugged Smart Camera
Certificate Management

July 2016

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Document Revision

Librestream

Low Bandwidth Media Configuration

Doc #: 400222-02

July 2016

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Name of Librestream Software OnSight Connect

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1. Overview

X.509 Certificates are used to authenticate the identity of a User or Computer on a network. Onsight Rugged Smart Cameras support using X.509 certificates for the following:

- 802.1X Wireless Network User Authentication e.g. TLS
- Server Authentication e.g. TLS or PEAP
- SIP-TLS encryption e.g. SIP Proxy Server registration

1.1 Supported Certificate Formats:

- Certificates: .cer – contains certificate information with public a public key but not a private key. This is a generic extension that denotes a certificate. Server, Root Certificate Authority (CA), and Intermediate CA certificates can be in this format. It is commonly a plain text file and can be PEM, DER or Base 64 format. You can import these formats into the Windows certificate store.
- Public-Key Cryptography Standards (PKCS #12): .pfx, .p12 – stores private keys with accompanying public key certificates, protected with a password based symmetric key. This format is generally only seen with a Client Certificate.
- Private Keys: .pvk – private key for a User certificate.



*All Onsight Rugged Smart Cameras **must** have Date and Time set accurately to allow successful authentication with certificates.*

1.2 Stores List

Certificates can be imported into the following three certificate stores:

- My Certificates: contains individual certificates for users.
- Trusted Authorities: contains certificates from Trusted Root authorities.
- Other Authorities: stores all other certificate types, e.g. intermediate CA authorities.

1.3 Setup Wizard - Importing Certificates:

The Setup Wizard can be used to import certificates to Onsight Cameras. It will automatically run when the Onsight Camera is run the first time. It can also be launched by pressing the [Run Setup Wizard](#) link on the User Authentication (Login) screen.

1. Insert the SD card into the Onsight Camera.
2. Power up the Onsight Camera.
3. Press Run Setup Wizard.
4. Follow the onscreen instructions, click NEXT to continue.
5. You must set the correct date and time in order to use certificates.
6. When prompted with 'Does your installation require the use of a certificate?'; Press YES.

7. Press ADD CERTIFICATE.
8. Press Import...
9. Select the certificate you wish to import, Press Import.
10. Press OK.
11. Press NEXT to finish the Setup Wizard steps until you reach the Login screen.

1.4 Manually Importing Certificates:

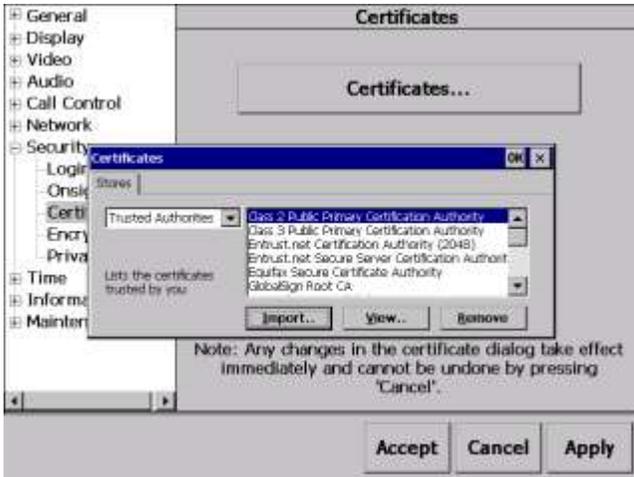
1. Copy the certificate you wish to install onto the Root directory of an SD card e.g. siphost.cer.
2. Insert the SD card into the Onsight Camera.
3. Login to the Onsight Camera.
4. Go to the Main Menu and select Configuration.



5. Go to Security\Certificates and Press 'Certificates...' button.



6. Press 'Import...' button.



7. Select the certificate to import and press 'Import' button. Note: you may be prompted to enter a password if the certificate is password protected.



2. Certificate Packages using Onsite Management Suite

Librestream's Onsite Management Suite can be used to manage your Onsite Cameras and install certificates by creating certificate packages which are installed during a Software Update Job.

The Onsite Management Suite Administrator creates a Certificate package which includes the certificate types supported by the Onsite Camera. This package is then added to a Software Update Job that is pushed out to the devices when they connect to the Onsite Management Web Service.

Each certificate is assigned to a Certificate Store and can be installed for use by all Users or a selected User only.



Consult the Onsight Management Suite User Manual for details on creating Certificate and Software Update Packages.

3. Onsight Camera SIP Registration - SIP-TLS Check List:

1. Confirm the correct date and time is set on the Onsight Camera
2. Install required X.509 certificates:
3. SIP Server Certificate e.g. siphost.cer
4. Set the Authentication Transport to 'TLS'



4. Onsight Camera Wireless Network - EAP-TLS Check List:

1. Confirm the correct date and time is set on the Onsight Camera
2. Install required X.509 certificates:
3. User Certificate
4. Server
5. Certificate Authority Root (if necessary)
6. Correct WiFi security settings are entered on the Onsight Mobile
7. Encryption: TKIP or AES
8. Authentication: WPA or WPA2
9. EAP type: TLS
10. Enter the user name of the Certificate under Configuration\Network\Wireless\Advanced\Wireless Network Properties\Properties\Authentication Settings\User Information
11. Press 'Select' and tap on the correct Certificate to use for Authentication

5. Onsight Camera Wireless Network - PEAP Check List:

1. Confirm the correct date and time is set on the Onsight Mobile
2. Enter PEAP user name and password under Configuration\Network\Wireless\Advanced\Wireless Network Properties\Properties\Authentication Settings\User Information
3. Verify the 'Validate Server' check box is correctly set on the User Information page
4. If you are not validating the identity of the server uncheck 'Validate Server'.

5. If you are validating the identity of the server check 'Validate Server' and install the certificate for the server on the OnSight Camera.
6. Install required X.509 certificates:
7. Server
8. Certificate Authority Root (if necessary)
9. Correct WiFi security settings are entered on the OnSight Camera.
10. Encryption: TKIP or AES
11. Authentication: WPA or WPA2
12. EAP type: PEAP

6. Troubleshooting

1. After following the setup steps the device still can't Authenticate:
 - a. Is the user locked out because of too many authentication attempts?
 - b. Time outs can occur during authentication attempts. E.g. Cisco Access Point controllers have an 'identity-request-timeout' this can be modified to increase the timeout to prevent lockouts. If a user hasn't entered the username/password correctly and has to re-enter information the timeout can cause a lockout to occur.
 - c. Fix: Reset the PEAP user account at the RADIUS Server.
2. The username and password were entered in the correct location but the Network Information Dialog still prompts me for user name/password information.
 - a. A typo may have occurred when entering the information.
 - b. Press the 'Advanced' button on the Wireless Information tab. Delete the SSID you are trying to connect to from the 'Preferred Networks' list. Press 'OK'.
 - c. Re-enter the information for the connection to the SSID including PEAP username/password information.
3. Has the date and time been reset?
 - a. If the battery was allowed to drain the date and time may have been reset, check that the date and time are accurate.

7. For More Information

If you need assistance, please contact Librestream at support@librestream.com.