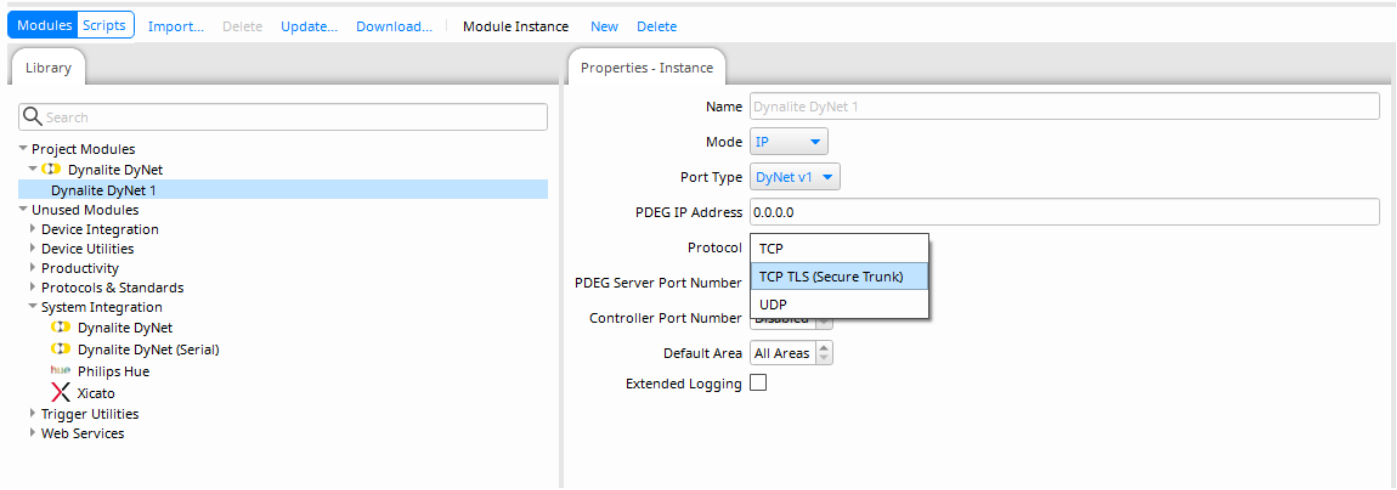
Secure Dynalite (PDEG-S)

Application Note

Introduction

This application note provides guidance for using Secure Dynalite (PDEG-S) in Pharos Designer. Dynalite supports security using a certificate which is signed with a specific controller. The certificate is used to connect to the controller. Once connected, Dynalite communication works over TLS the same as over TCP.

The Secure Dynalite feature is supported in the Dynalite DyNet (IP) IO module in Pharos Designer, in v2.6.0.B2 and later versions. To access the feature, select **TCP TLS (Secure Trunk)** from the **Protocol** dropdown menu in the IO Module instance's **Properties** tab. The **Certificate** and **Key** fields should now be visible. These fields are used for establishing a connection with a Pharos Designer controller.



Connecting a Controller

To create a connection between Dynalite PDEG-S and a Pharos Designer controller, first **install OpenSSL** and **Dynalite SystemBuilder.**

Then follow these steps:

- Create a CSR (certificate signing request) in OpenSSL
- Create a signed certificate using Dynalite SystemBuilder
- Convert output PFX file to text (PEM) format
- Input certificate and private key into Pharos Designer

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Create CSR

Use the following command in OpenSSL to create a CSR (certificate signing request):

openssl req -nodes -newkey rsa:1024 -keyout PRIVATEKEY.key -out MYCSR.csr

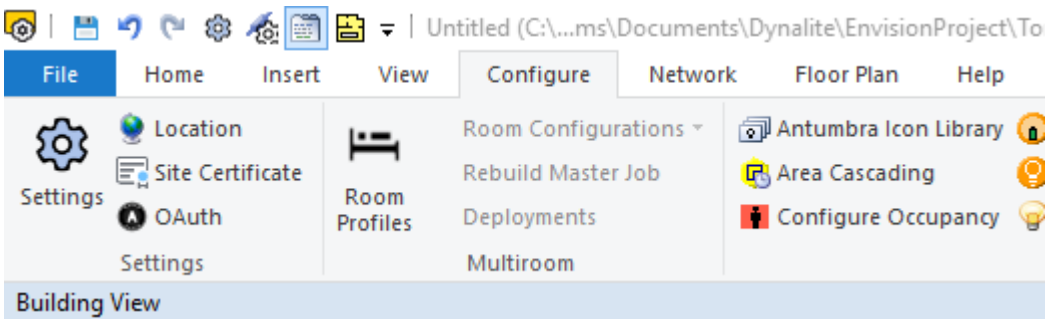
You will be prompted for the following:

- Country Name [AU]
  - A two-letter ISO-3166 country code: Country Codes - SSL.com
- State or Province Name (full name) [Some-State]:
  - Your state name, or can be left blank
- Locality Name []:
  - Your city name or can be left blank
- Organization Name [Internet Widgits Pty Ltd]:
  - Your company name
- Common Name (e.g. server FQDN) []:
  - This is the IP address of your Pharos controller (or hostname if you have a DNS system configured)
- Email Address []:
  - Your email address
- A challenge password []:
  - Leave this blank
- An optional company name []:
  - Leave this blank

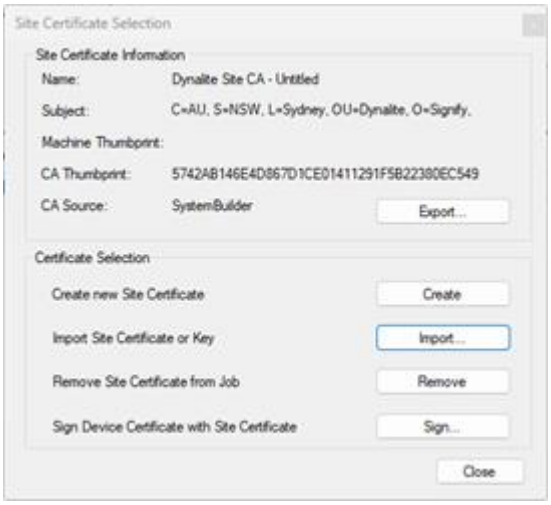
This creates two files. The CSR file is used in Dynalite SystemBuilder to create a sign certificate.

Create Signed Certificate

In Dynalite SystemBuilder, go to the tab **Configure -> Site Certificate** and then select **Sign Device Certificate with Site Certificate.**



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The software will prompt you for the CSR file and then output a PFX file.

Convert PFX to Text (PEM) Format

The binary PFX file needs to be converted into a text format for use in Pharos Designer.

Run the following command in OpenSSL:

openssl pkcs12 -in dynalite_out.pfx -nodes -out designer_file.pem -clcerts

This will create an output file called designer_file.pem. Open this file in a text editor.

Input certificate and private key into Pharos Designer

Copy two sections out of designer_file.pem into Pharos Designer, by opening the file in a text editor:

- Copy the section that starts with **-----BEGIN CERTIFICATE-----** and ends with **-----END CERTIFICATE-----** into the **Certificate** box in Pharos Designer.
- Copy the section that starts with **-----BEGIN PRIVATE KEY-----** and ends with **-----END PRIVATE KEY-----** into the **Key** box in Pharos Designer.

Support

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