

# Enabling secure connection between client and server

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## Generating a key pair using Java Keytool

To enable a secure connection between the client and the server, you need to generate two keystore files, each in their own keystores:

- **KeyStore.jks** (contains key and certificate) – server-side – upload it using TWCloud Admin console.
- **cert.jks** (contains public certificate) – client-side – place it in the *<Application folder>\certs* directory.

To generate a key pair

1. Go to your **Java** directory and open the folder named **bin**.
2. Enter `keytool -genkey -alias MyDomain -keyalg RSA -keystore KeyStore.jks -keysize 2048` and press Enter.



You can give any name to *MyDomain* and **KeyStore.jks**.

3. Enter a password for your keystore and answer the questions asked. A certificate with a key is generated and placed into the keystore.
4. To extract a certificate without a key, type `keytool -export -alias MyDomain -file certificate.cer -keystore KeyStore.jks` and press Enter.
5. To place a certificate into another keystore, e.g. **cert.jks**, type `keytool -import -alias MyDomain -file certificate.cer -keystore cert.jks` and press Enter.



You can give any name to **cert.jks**. However, by default, the tool searches for this exact name.

Two keystore files are generated: one for the server (**KeyStore.jks**) and one for the client (**cert.jks**). You can now proceed to enable a secure connection between the client (modeling tool) and the server (Teamwork Cloud).

## Enabling a secure connection to Teamwork Cloud

To enable a secure connection to TWCloud, you must enable TLS (Transport Layer Security) on the TWCloud Admin's **Server Settings** page. This page also allows you to disable the option if you do not need to use a secure connection (see the following figure). You can always enable it whenever necessary.



The default port used for a secure connection is 10002.

### Secure connection

Use TLS

Port \*

10002

Keystore file \*

KeyStore.jks

Certificate is required to enable a secure connection

Password \*

Keystore password

SAVE

Enabling TLS protocol in TWCloud (when the option is turned on, the color changes to orange).



#### Self-signed TLS certificate warning

TWCloud Admin uses TLS (Transport Layer Security) as the security protocol to keep any information you enter on TWCloud Admin private and secure.

By default, your server generated a TLS certificate and signed it as being valid (self-signed certificate). The self-signed TLS certificate allows a secure connection to be established but does not verify the authenticity of the server like the TLS certificate issued by a valid Certificate Authority (CA) does.

### Setting up TLS in TWCloud Admin

To enable a secure connection using the TLS protocol in TWCloud Admin

Trusted root certificates are embedded into popular browsers such as Internet Explorer, Firefox, and Chrome. They are used to verify all TLS certificates

that the browsers encounter. If a certificate is not signed by one of these roots, the browsers display an error or warning message stating that it is

untrusted. Thus, when you try to access the server via the self-signed one, you will get an error or warning in your web browser. The following figure below shows an example of the "TLS certificate not trusted" warning in Chrome.

1. Go to the **Settings** app.
2. Change sliders position to the right to enable the TLS protocol.
3. Type in the port, upload a **Java Key Store** file and type the password.
4. Click **Save**.

At this point, you will be able to connect to TWCloud from the modeling tool via the TLS connection.

### Setting up client-side TLS

To enable a secure connection using the TLS protocol on the client-side

1. Locate the client certificate manually.
2. Create a folder named **certs** under the modeling tool install folder. Place the following files into the newly created **certs** folder:
  - A client certificate named **cert.jks**.
  - A file named **cert.pass** wherein the certificate password is typed.

#### Related pages

- [Changing the SSL certificate](#)
- [Managing HTTPS and SSL on server](#)