

Encrypting property values

By default, Web Application Platform properties are stored as plain text. If required, any of these properties can be encrypted. For property encryption and decryption, you need to generate a pair of keys by using our property encryption tool. The tool is provided as the *encryptor.jar* file and the steps below explain how to use it.

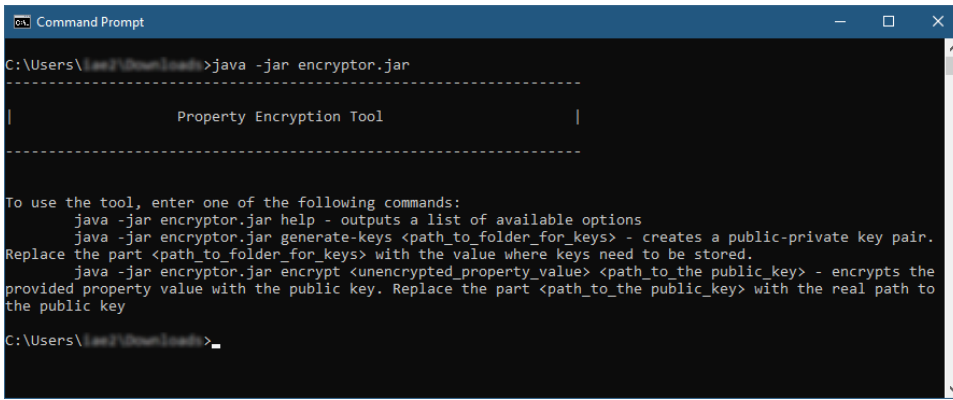


Prerequisites

The encryption tool uses Java 11. Therefore, the system **PATH** variable needs to point to the location of the *bin* folder of the Java 11 home directory, e. g. `C:\Java\Java11\bin` or `/opt/Java/Java11/bin`.

To encrypt Web Application Platform properties

1. Click the link to download the [encryptor.jar](#) file.
2. Open the command-line interface and navigate to the directory where the *encryptor.jar* file is located.
3. Run the **java -jar encryptor.jar** command. You should see the information on how to use the tool as displayed below.



```
Command Prompt
C:\Users\lee7\Downloads>java -jar encryptor.jar

-----
|                               |
|           Property Encryption Tool           |
|                               |
|-----|

To use the tool, enter one of the following commands:
  java -jar encryptor.jar help - outputs a list of available options
  java -jar encryptor.jar generate-keys <path_to_folder_for_keys> - creates a public-private key pair.
Replace the part <path_to_folder_for_keys> with the value where keys need to be stored.
  java -jar encryptor.jar encrypt <unencrypted_property_value> <path_to_the_public_key> - encrypts the
provided property value with the public key. Replace the part <path_to_the_public_key> with the real path to
the public key
C:\Users\lee7\Downloads>
```

4. Run the **java -jar encryptor.jar generate-keys <path_to_folder_for_keys>** command to generate a pair of keys for property encryption and decryption. Make sure to replace the **<path_to_folder_for_keys>** placeholder with the actual path to the directory where you want to store the keys. You should see a confirmation that the keys have been successfully generated.



Keys for encryption and decryption

After executing the command, the following keys are created in the specified directory:

- **propertiesEncryptionKey.pub** - a public key used to encrypt property values.
- **propertiesEncryptionKey** - a private key used to decrypt property values.

5. To encrypt a property, run the **java -jar encryptor.jar encrypt <unencrypted_property_value> <path_to_the_public_key>** command. Make sure to replace the **<unencrypted_property_value>** and **<path_to_the_public_key>** placeholders with the actual property value and the path to the *propertiesEncryptionKey.pub* file. The tool will output the encrypted property value.

```

C:\Users\user2\Downloads>java -jar encryptor.jar encrypt MY_PASSWORD C:\Users\user2\Downloads\propertiesEncryptionkey.pub

-----
|                               |
|      Property Encryption Tool      |
|                               |
-----

Property MY_PASSWORD has been successfully encrypted. Encrypted value:

1cvPbmmI32vnj1jD2EYrQfMLu7ydx+/DW8WljMsk/+UcjrPWXELau1YC1FFTa3UBMptu3sFK6wjOuLipveVB3Jyzo0k+yfgt1qnD1ud/3E7LsR6wMe4sr1A1F7Kfq36pPywU58NBYP6M8yktIDTtKtQSVuZF8Qcb38Vw560kGCd9Io+vdM5aTNTNi21s7jnn09B8uqD61ZvwJ/atcrd0grfEhxxwM3P5w0zzUS+EenJwedTogxpfXLTUbTeuzwYMGqy15goX9Wb3vnmKPS7x1L/ZhqYYIQCXwQaREbzLIH30JEHJxRvUpFIhWJoc/7L3fjn/09ukx0wgF296kEgI+rA==

Copy this value as the value of the property to the webapp\platform.properties file in the format ENC(encrypted_property_value), i.e.:

ENC(1cvPbmmI32vnj1jD2EYrQfMLu7ydx+/DW8WljMsk/+UcjrPWXELau1YC1FFTa3UBMptu3sFK6wjOuLipveVB3Jyzo0k+yfgt1qnD1ud/3E7LsR6wMe4sr1A1F7Kfq36pPywU58NBYP6M8yktIDTtKtQSVuZF8Qcb38Vw560kGCd9Io+vdM5aTNTNi21s7jnn09B8uqD61ZvwJ/atcrd0grfEhxxwM3P5w0zzUS+EenJwedTogxpfXLTUbTeuzwYMGqy15goX9Wb3vnmKPS7x1L/ZhqYYIQCXwQaREbzLIH30JEHJxRvUpFIhWJoc/7L3fjn/09ukx0wgF296kEgI+rA==)


C:\Users\user2\Downloads>
  
```

6. Go to the `Web_App_Platform_installation_directory>apache-tomcat\shared\conf` directory and open the `webappplatform.properties` file.
7. In the `webappplatform.properties` file, replace the actual property value with the encrypted property value in the following format: **ENC (encrypted_property_value)**.

✔ **Example of an encrypted property**

For example, an encrypted Teamwork Cloud administrator password, should look similar to this one: **twc.admin.password=ENC**
(lcvPbmml32vn1jD2EYrQfMLu7ydX+/DW8wjJmSk/
+UcjrPWXELau1YC1FFTa3UBMptu3sFK6wjOuLipveVBjYzo0k+yfgt1qnD1ud
/3E7LsRgWMe4srIAIF7Kfq36pPywTu58NByp6M8yktIDtKtQsVvZf8Qcb38Vw56OkGCd9Io+vdM5aTN
TNi2ls7jnN09BuqD6lZvwJ/atcrd0grfEhxwM3PSw0zzUS+EenJWedTxogxpfxLtUbTEuzwYSMGqyi5goX9Wb3vnkMPs7xIL
/ZhqYYIQCXwQaREbzLIH3oJEHJxRvUpFIhWJoc/7LJfn/09ukx0wjgF296kEgl+rA==).

8. Go to the `<Web_App_Platform_installation_directory>\apache-tomcat\conf` directory and open the `catalina.properties` file.
9. In the `catalina.properties` file, add the **properties.encrypted.private.key.location** property and specify the path to the private key (the `propertiesEncryptionKey` file) as its value, e.g., **properties.encrypted.private.key.location=C:\\apache-tomcat-9.0.19\\shared\\conf\\keys\\propertiesEncryptionKey**.

 **Private key location**

The private key (the *propertiesEncryptionKey* file) should be in the location which Web Application Platform can access.

10. Restart Web Application Platform.