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Python library for generating TrueLicense licenses

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**README.rst**

**TrueLicense compatible license manager for Python**

This package supports managing licenses one the format used by the Java package [TrueLicense](https://truelicense.java.net/). Only the version 1 format is supported.

Please see the *TrueLicense* home page for an exhaustive reference of the license format, or [Quick license format description](https://github.com/moses-palmer/truepy#quick-license-format-description) below.

**Quick license format description**

A license has a validity window in time, an issuer, a holder and various meta data.

It is signed by the holder, and the signature can be verified using the issuer certificate.

The license file is also encrypted with a key derived from a password.

**Quick library reference**

The main class exported by *truepy* is truepy.License.

* To generate a new license, use the class method truepy.License.issue.
* To load a license from a file or stream, use the class method truepy.License.load.
* To save a license to a file or stream, use the method truepy.License.store.
* To verify the signature of a license, use the method truepy.License.verify.
* To read license information, use the truepy.License.license\_data attribute; this is of the type truepy.LicenseData.

Loading and storing licenses requires only the license password; these operations do not perform signing and signature verification.

Issuing a new license requires the private key of the issuer certificate.

Verifying a license signature requires the issuer certificate.

**Quick application reference**

Please run the application with python -m truepy -h for more information.

**Usage**

This section describes how to configure a system to use *truepy*.

Configuration includes installing *truepy*, generating an issuer certificate, generating licenses and validating licenses.

**Installation**

To install *truepy*, run the following command:

pip install truepy

**Generating an issuer certificate**

This functionality in not included in *truepy*. The recommended tool to use is [OpenSSL](https://www.openssl.org/). To issue a certificate and generate a private key, run the following command:

openssl req -x509 \

-newkey rsa:4096 \

-keyout key.pem \

-out certificate.pem \

-days $VALIDITY

This will prompt you for a password to protect the private key, and some other information to be included in the certificate.

The most important pieces of information are the password, which you will need later, and the $VALIDITY. The command line argument -days passed to *OpenSSL* determines how many days the certificate will be valid. Be sure not to set a too low value, as you will ne be able to use the certificate after this number of days have passed.

**Issuing licenses**

Once you have a certificate and a private key, you can start issuing licenses. The code below shows the minimum steps required:

from cryptography.hazmat import backends

from cryptography.hazmat.primitives import serialization

from truepy import LicenseData, License

# Load the certificate

with open('certificate.pem', 'rb') as f:

certificate = f.read()

# Load the private key

with open('key.pem', 'rb') as f:

key = serialization.load\_pem\_private\_key(

f.read(),

password=b'MySecretPassword',

backend=backends.default\_backend())

# Issue the license

license = License.issue(

certificate,

key,

license\_data=LicenseData(

'2016-10-01T00:00:00',

'2020-10-01T00:00:00'))

# Store the license

with open('license.key', 'wb') as f:

license.store(f, b'LicensePassword')

Please note the second parameter to License.store. It is a password used to derive an encryption key to encrypt the final license data. It is not secret, as it will need to be available to the application verifying the license.

**Validating licenses**

To validate a license, you will need the certificate used in the step above, as well as the password used to encrypt the final license data. The code below shows the minimum steps required:

from truepy import License

# Load the certificate

with open('certificate.pem', 'rb') as f:

certificate = f.read()

# Load the license

with open('license.key', 'rb') as f:

license = License.load(f, b'LicensePassword')

# Verify the license; this will raise License.InvalidSignatureException if

# the signature is incorrect

license.verify(certificate)

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