

# Password Encryption

## Description

Normally, components that are required to authenticate against a database or another repository need to have user credentials specified in configuration files. Such sensitive information can be encrypted, so that only during runtime the actual value of the password will be known, protecting Aspire from potential malicious attacks.

## Admin Interface

In general, when using pre-packaged applications and the standard Aspire Admin interface (i.e. <http://localhost:50505>), all password encryption will be handled automatically. All passwords will be encrypted when stored in the relational database or in configuration files on disk.

## Creating the Main Password

All password encryption / decryption is based on a main password. Use the following steps to create one:

1. Go to `ASPIRE_HOME`
2. Run `bin\createMaster.bat`. This script creates an encrypted main password file (in the `config/passwords` directory). This file will contain a random key used to decrypt passwords inside Aspire.

**Note:** The main password file must be secured by the operating system. This means that administrators should grant read access only to the user running Aspire.

## Password Encryption for Custom Applications

If you are creating a custom application which requires password encryption, you may need to use the "encryptPassword" script.

- The encrypted password will be stored as a property in the `settings.xml` file.
- The property should then be specified to the appropriate component's configuration in the `application.xml` file.

To use password encryption, follow these instructions:

1. Run `bin\encryptPassword.bat`. This script will prompt for the password you need to encrypt, and a property name where the encrypted password will be stored. This property is written to the Aspire `settings.xml` file.
2. Reference the created property from the component's configuration using `${propertyName}` syntax.
3. Make sure your component allows password encryption.

## Important Notes

- This has been tested on Windows only.
- By default, Aspire will use a secret pre-configured main password unless an administrator uses **createMaster.bat** to create a new one.