

Jboss encryption module and web frontend for TIM

TIM encoder uses a Jboss module for encryption and to validate keys. The encryption is used e.g. for database connections and third-party applications within the configuration files in order to hide sensitive information like usernames and passwords from plain sight.

To use this module the following steps need to be done:

1. Add the encoder.war of the TIM Encryption Webarchive
2. Modiy the standalone-tim.xml
3. Generating a java key with web-interface or console
4. Use encryption with TIM

Add the encoder.war of the TIM Encryption Webarchive

To enable TIM to encrypt usernames and passwords and to use those encrypted values insert the encoder.war to the standalone\deployments folder in your %JBOSS_HOME% e.g. C:\tim\jboss-eap-7.1\standalone\deployments. Upon JBoss startup it will deploy automatically.

Modify the standalone-tim.xml

```
<subsystem xmlns="urn:jboss:domain:datasources:1.2">
  <datasources>
    <datasource jta="true" jndi-name="java:/doorisPortalDB" pool-name="doorisPortalDB" enabled="true" use-java-context="true" use-ccm="true">
      <connection-url>jdbc:sqlserver://localhost:1433:databaseName=test:</connection-url>
      <driver>sqlserver</driver>
      <pool>
        <min-pool-size>20</min-pool-size>
        <max-pool-size>150</max-pool-size>
      </pool>
      <!--security>
      <user-name>test</user-name>
      <password>test</password>
      </security-->
      <security>
        <security-domain>secDomDS</security-domain>
      </security>
      <validation>
        <check-valid-connection-sql>SELECT 1</check-valid-connection-sql>
        <validate-on-match>true</validate-on-match>
        <background-validation>>false</background-validation>
        <use-fast-fail>>false</use-fast-fail>
      </validation>
    </datasource>
  </datasources>
</subsystem>
```

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standalone.xml are made accordingly. In your *subsystem datasource* below your database implemet:

```
<security>
  <security-domain>secDomDS</security-domain>
```

```
</security>
```

as can be seen in the first screenshot.

In the *subsystem security* add:

```
<security-domain name="secDomDS" cache-type="default">
  <authentication>
    <login-module
      code="org.picketbox.datasource.security.TimSecureIdentityLoginModule"
      flag="required">
      <module-option name="username" value="$enc$c5507593f47122e"/>
      <module-option name="password"
        value="$enc$-3c3702fd5f714bd0045dcdcd12584c8"/>
    </login-module>
  </authentication>
</security-domain>
```

as can be seen in the screenshot below.

```
<subsystem xmlns="urn:jboss:domain:security:1.2">
  <security-domains>
    <security-domain name="other" cache-type="default">
      <authentication>
        <login-module code="Remoting" flag="optional">
          <module-option name="password-stacking" value="useFirstPass"/>
        </login-module>
        <login-module code="RealmDirect" flag="required">
          <module-option name="password-stacking" value="useFirstPass"/>
        </login-module>
      </authentication>
    </security-domain>
    <security-domain name="jboss-web-policy" cache-type="default">
      <authorization>
        <policy-module code="Delegating" flag="required"/>
      </authorization>
    </security-domain>
    <security-domain name="jboss-ejb-policy" cache-type="default">
      <authorization>
        <policy-module code="Delegating" flag="required"/>
      </authorization>
    </security-domain>
    <security-domain name="loom" cache-type="default">
      <authentication>
        <login-module code="com.dooris.security.LoomLoginModule" flag="required"/>
      </authentication>
    </security-domain>
    <security-domain name="secDomDS" cache-type="default">
      <authentication>
        <login-module code="org.picketbox.datasource.security.TimSecureIdentityLoginModule" flag="required">
          <module-option name="username" value="$enc$3b7965db3d853e17"/>
          <module-option name="password" value="$enc$-44f6b421a454e75a"/>
        </login-module>
      </authentication>
    </security-domain>
  </security-domains>
</subsystem>
```

Generating a java key with web-interface or console

There are two ways to encrypt your credentials. Either with the web-interface or with via the console.

The module can be called via the web-interface e.g. http://your_tim_url:port/encoder/ . In order to

encrypt a secret insert use the text field and hit the *encrypt secret* button. To validate a encrypted secret past the secret in the correct text field and hit the *validate encrypted secret* button. This method can as well be used to encrypt any secret in e.g tim.properties or dashboard.properties.

To encode your credentials via console use the following commands:

to generate a key:

```
java -cp modules/system/layers/base/org/picketbox/main/tim-encoder-
module.jar:modules/system/layers/base/org/picketbox/main/picketbox-4.1.1.Fin
al-redhat-1.jar
org.picketbox.datasource.security.TimSecureIdentityLoginModule '123'
```

to validate password-key combination:

```
java -cp modules/system/layers/base/org/picketbox/main/tim-encoder-
module.jar:modules/system/layers/base/org/picketbox/main/picketbox-4.1.1.Fin
al-redhat-1.jar
org.picketbox.datasource.security.TimSecureIdentityLoginModule '123'
'$enc$b530c41fe274111'
```

to validate the key:

```
java -cp modules/system/layers/base/org/picketbox/main/tim-encoder-
module.jar:modules/system/layers/base/org/picketbox/main/picketbox-4.1.1.Fin
al-redhat-1.jar
org.picketbox.datasource.security.TimSecureIdentityLoginModule ''
```

'\$enc\$b530c41fe274111'

TIM Properties

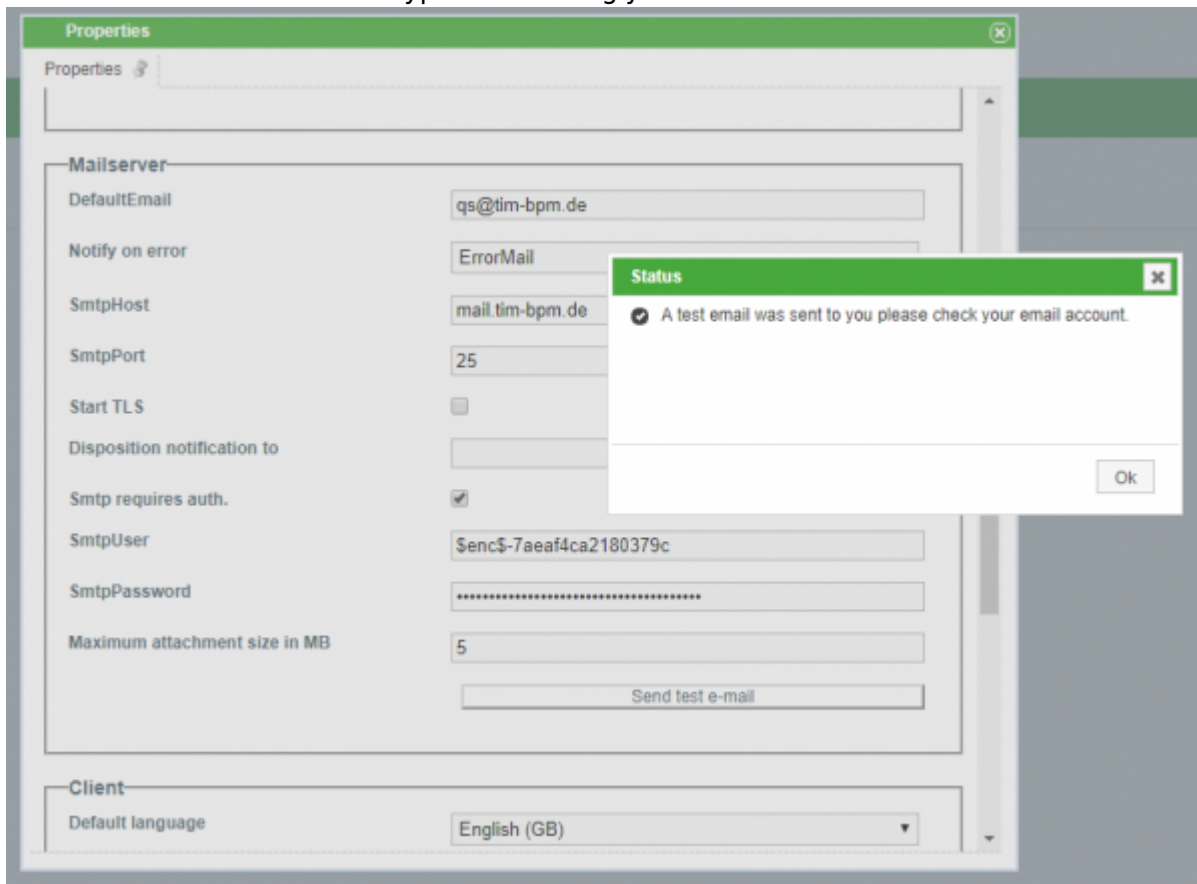
In *tim.properties* credentials can be encrypted with the encoder or the console and replace plain text usernames and passwords. As an example the image shows setting and editing the superuser and client-administrator passwords:

```
#Default init password  
initpass-super-admin=$enc$7875f8726eled2c7  
initpass-super-sys.support=$enc$-66c2ca6af02ba4c5  
initpass-x-admin=$enc$66cb4a689ca87a97  
initpass-x-sys.support=$enc$-37fa8d4f2b81e0c9  
initpass-x-others=$enc$6ec2f555069f3ca1
```

E-Mail Configuration

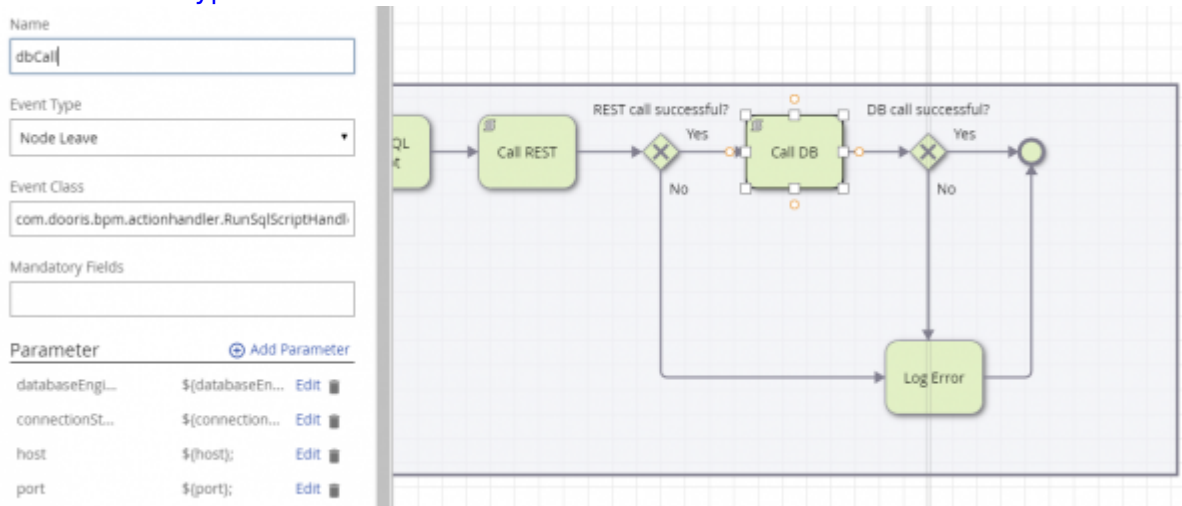
In the properties of the client under the category *mail server* are the parameters *SmtplibUser* and *SmtplibPassword*.

These credentials can be encrypted accordingly to the methods above and as shown in the example.



Actionhandler

Actionhandler like HTTPRequestHandler or RunSqlScriptHandler use credentials that can be encrypted by said methods. The example shows the RunSqlScriptHandler where `#{user}` and `#{pass}` are passed on encrypted via smartform:



RunSqlScriptHandler

- databaseEngine
- connectionString
- host
- port
- database
- User
- pass
- query

```

mysql
jdbc:sqlserver://localhost:1433;databaseName=tim_594;
localhost
1433
tim_594
!$enc$3b7965db3c853e17
!$enc$-42792bce12a4cd65
SELECT * FROM Mitarbeiter WHERE Gehalt>50000;
  
```

Timer

Just like *actionhandler* TIM can encrypt necessary credentials for *timer* as well and hide them from plain text. The example shows the Timer signalByMailReply:

Timer name	Webservice name	Webservice methode	Parameter	Intervall	Max. recursion	Act. recursion	Status	Last execution
signalProcessInstanceByNodeNameAndTime	ProcessInstanceManager	signalProcessInstanceByNodeNameAndTime	%signalProcessInstanceByNode% Activity, ts, 100	1s	1	0	-	25/06/2018, 04:49
SignalByMailReply	ProcessInstanceManager	signalByMailReply	qs@tim-bpm.de;\$enc\$-30992390ec9662f6c39275f6665b4a84.143.192.168.1.10_TNR-4273 SignalByMailReply-*(Wait4)*;false.helper.nein.nein;ja.ja.(Wait4?)*Antwort: ?s	10m	1	0	-	09/04/2018, 09:48

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