ENAPP 2012 - WEBSHOP

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1. Intro

In the module ENAPP.H12 a Webshop has to be developed. This documentation covers the most neccesary information and a short overview of the architecture.

1.1. Technology

A short overview over the technologies used.

- J2EE 1.6 (Java Enterprise Edition)
- Java 7
- Java Server Faces (JSF)
- Java Message Service (JMS)
- SOAP Webservices
- Rest Webservices
- JDBC / JPA (MySQL)

1.2. Usage

The application is more or less self-explanatory or should be. There are seperate users for administration and shopping. A already installed user can be used or a new one can be created.

Webshop
0160.intra015.el.campus.intern:8080/enapp12-tapaoluc-web/index.xhtml
User/Password: dude/dude

Adminpanel
0160.intra015.el.campus.intern:8080/enapp12-tapaoluc-web-admin/index.xhtml
User/Password: admin/admin

2. Infrastructure

This section covers information about the Infrastructure.

2.1. Integration

Description of the integrationplattform in the EnterpriseLab @ HSLU.

2.1.1. OperatingSystem

Type: Solaris
User: tapaoluc (EL User)
root Password: ENAPP_H12

2.1.2. Database

Type: MySQL
Server: s0160.intra015.el.campus.intern
User: enapp
Password: enapp

2.1.3. Applicationserver

Type: Glassfish 3+
Adminpanel: https://s0160.intra015.el.campus.intern:4848
User: admin
Password: ENAPP_H12

2.1.4. /etc/hosts

For the connection to the Navision service an additional entry to the hosts file is needed.

```
#navision
10.29.2.12      icompanydb01.icompany.intern
```

2.2. Configuration.

2.2.1. Database

JDBC Connection Pool
Poolname: EnappWebshopTapaolucPool
Resource Type: javax.sql.DataBase
Datasource Classname: com.mysql.jdbc.jdbc2.optional.MysqlDataSource
Additional Properties on Connection Pool
password = enapp
user = enapp
servername = s0160.intra015.el.campus.intern
roleName = com.mysql.jdbc.Driver
datasourceName = jdbc:mysql://s0160.intra015.el.campus.intern:3306/enappwebshop
databaseName = enappwebshop

portNumber = 3306
Ressource
JNDI Name: jdbc/enappwebshoptapaoluc
Poolname: EnappWebshopTapaolucPool

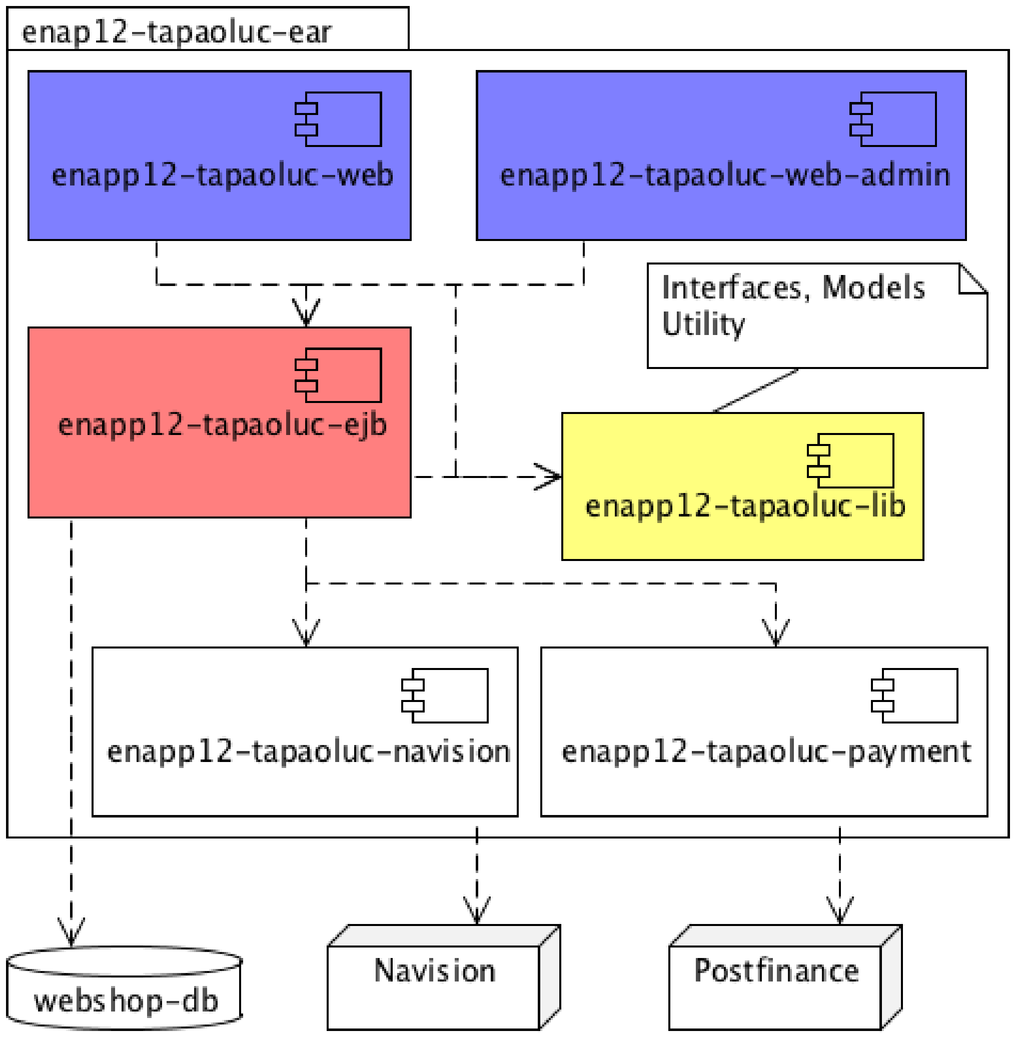
2.2.2. Java Message Service
Queuefactory
Poolname: jms/purchasequeuefactory
Ressource Type: javax.jms.QueueConnectionFactory
Transaction: XATransaction
AdditionalProperty: AddressList = mq://10.29.3.152:7676/jms
Queue
JNDI Name: jms/purchasequeue
Physical Name: EnappQueue
Resource Type: javax.jms.Queue

2.2.3. Security *Security - Realm*
Configuration: server-config
Realm Name: enappwebshoprealm
Classname: com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm
JAAS Context: jdbcRealm
JNDI Name: jdbc/enappwebshoptapaoluc
Usertable: customer
Usercolumn: username
Passwordcolumn: password
Grouptable: customergroups
Grouptable-Usercolumn: username
Groupcolumn: groupname
Digest algorithm: none
Encryption algorithm: none
Attention: There is no encryption so do not use your own passwords for tests!

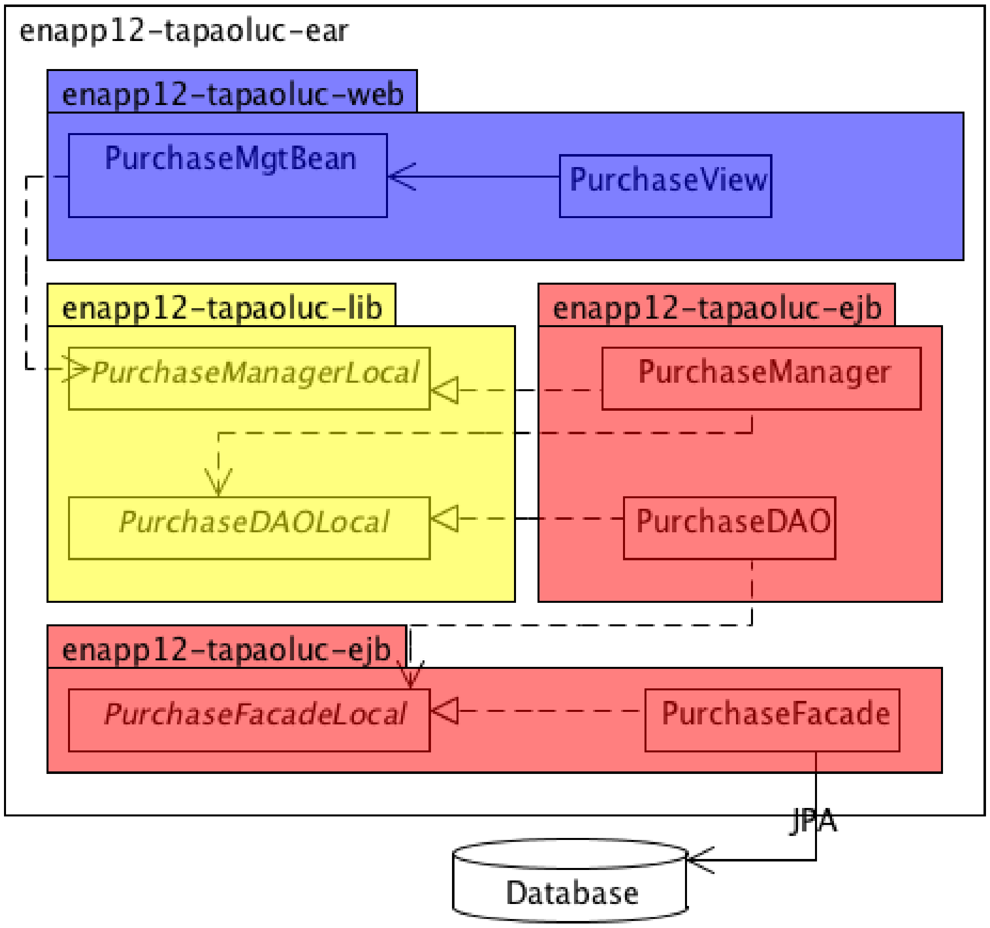
2.2.4. JNDI - Custom Ressources
This setting sets the stage of the application to production.
JNDI Name: javax.faces.PROJECT_STAGE
Ressource Type: java.lang.String
Factory Class: org.glassfish.resources.custom.factory.PrimitivesAndStringFactory
Property: stage = production

3. Architecture

Below is an overview of the webshop. It is a component based architecture. All accesses to other components are done via Interfaces defined in enapp12-tapaoluc-lib. The general idea of this architecture is to avoid any changes in business logic when the datasource changes. For example when the purchase is sent to a JMS queue insted of stored in a relational database, in general there shouldn't be any changes insted of some annotations tellig CDI that another implementation is needed.



Inside the EJB component a "Entity Controller Boundary" pattern is implemented. Below there is a sample from the Purchase.



The JSF Managed Bean accesses the PurchaseManager via the Interface PurchaseManager-Local. The PurchaseManager has the BusinessLogic implemented and gets hist Data from PurchaseDAO via PurchaseDAOLocal. The implementations are injected via the Context and Dependency Injection.

In code it looks like this (this ist not the actual code but it shows the general idea):

```
/* PurchaseMgmtBean.java (web)*/
@Inject
private PurchaseManagerLocal pml;

public void checkoutPurchase(){
        // collect data entered from user and send it to ejb
        this.pml.checkoutPurchase(purchase);
}


/* PurchaseManager.java (ejb)*/
@Inject
@JMSPurchaseDAO
private PurchaseDAOLocal dao;

@Inject
@PostfinancePayment
private CreditCardPayment payment;

private boolean anythingWentWrong;

public void checkoutPurchase(Purchase purchase){
        // do the payment
        payment.pay();
        // store purchase
        dao.storePurchase(purchase);
        // send feedback if neccesary
        if(anythingWentWrong){
                throw new BusinessException("something wrong");
        }
}


/* PurchaseDAO (JMS impl) */
@StatelessBean
@JMSPurchaseDAO
public class JMSPurchaseDataAccess implements PurchaseDAOLocal{}
```

When the Interface to the Purchase service changes for example to a Rest service there is only the Annotation @JMSPurchaseDAO changed to @RestPurchaseDAO which points to the Rest implemenation.