CoALA Installation Manual

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1 . Introduction

This manual will help you to install and configure CoALA.

1.1 Document Overview

This manual will help you to install and configure CoALA.
Chapter 1 gives a short introduction to the installation program of CoALA.
Chapter 2 details all prerequisites necessary for the installation of CoALA.
Chapter 3 is a guideline how to build the application out-of-the-box.
Chapter 4 deals with the actual installation procedure, describing all steps to be completed.
Chapter 5 describes how to start and how to stop the application.
Chapter 6 gives information about some special issues which you should take care of.
Appendix contains the default port configuration and a printout of CoALA default settings.

1.2 The Installation Program

CoALA comes with no dedicated install program. However the build environment Maven does provide a automatic deployment feature. Read the Maven documentation for further information how to trigger this feature.

2. Prerequisites

2.1 Required Prior Knowledge

In order to build a working instance of CoALA it is necessary to use a couple of essential development tools:

- Java JDK 1.6
- Maven 1.x and 2.x
- Subversion

To install a production environment, you need to be familiar with the administration of the following systems:

- Operating System (the OS the CoALA application will run on)
- HSQLDB database (administration)
- Network infrastructure (IP addresses, firewall rules, SSL certificates, ...)

2.2 Hardware and Software Requirements

The following components have to be installed and running on your system:

- Apache Tomcat 6.0.x
- Java JDK 1.6
  (please set JAVA_HOME environment variable to your Java installation directory)

A database server is required and must be accessible by your CoALA installation:

- HSQLDB 1.8.0.x

2.3 Preparing the Database

While building and running CoALA a database instance will be created. The build process will take care of creating all necessary database schemes.

3. Building CoALA

As a first step you should get the source code by checking it out via SVN:
E.g.: **"svn checkout https://svn.mi.hs-heilbronn.de/smc/ss11/code/assemblies/coala/trunk"**
(HINT: This URL may be deprecated soon and/or authentication is necessary)

As soon as the source code is downloaded you will find the file "**configuration.properties**" in current folder. Here you have the possibility to set up your local network environment like proxy settings, ATNA and DB configuration needed for building CoALA.
Now you can start building the project. At the moment the build process of the assembly is based on Maven version 1. (HINT: All modules which are part of the assembly are based on Maven version 2). So it is expected that Maven is proper installed with all environment variables set. If you are not sure how to set up the build environment check Apache documentation for Maven 1 (http://maven.apache.org/maven-1.x/start/index.html).
Now you can simply start the build process in console within the project folder (from now on called <svn_coala_checkout>) with:
"maven dev:build"
This may take a while so be prepared for a coffee break ;-)
After successful build you can find the file "**coala-assembly.war**" in the folder "<svn_coala_checkout>/target". Read the next sections for instructions how to deploy and run CoALA.

4. Installing / Updating CoALA

For manual deployment just copy the assembly file "**coala-assembly.war**" from "<svn_coala_checkout>/target" to "<tomcat_home>/webapps" folder and restart the Apache Tomcat service.
HINT: If the assembly already is deployed on Apache Tomcat make sure to remove the sub folder "coala-assembly" in <tomcat_home>/webapps" before restarting Tomcat, so this folder can be updated properly.

Be aware that in this state CoALA runs now with default settings. To make adaptions of your interest please follow the next chapter.

5. Setting up the environment

Right after the deployment the default settings of CoALA are set. In order to integrate the application within your clinical environment you have to adapt some property files located under "<tomcat_home>/webapps/coala-assembly/WEB-INF/classes/META-INF/". The most important properties are in order to make CoALA work are listed below. For a listing of all default properties see appendix.
HINT: Do not forget to restart the application to make the changes happen.

coala-pxs.properties:

```
# Endpoint to use for XDS communication for ITI-18, ITI-41 and ITI-43
coala.pxs.xds.iti18.endpoint
coala.pxs.xds.iti41.endpoint
coala.pxs.xds.iti43.endpoint

# Assigning authority
coala.pxs.authority.oid

# Unique ID of repository that should be used
coala.repository.unique.id
```

```
# Endpoint for ITI-21 communication
coala.pxs.pdq.endpoint.url

# Endpoint for ITI-18 cummunication
coala.pxs.xds.iti18.endpoint
```

coala-communication-custom-context.xml:

```
# Name of the XSL Stylesheet used for HTLM transformation of CDAs
nameOfXSLTSheet
```

6. Starting and Stopping the Application

6.1 Starting

These are the steps to start CoALA

1. start the HSQLDB service (e.g. "**/etc/init.d/hsqldb<<yoursuffix>> start** ")
2. start the Apache Tomcat service (e.g. "**/etc/init.d/tomcat<<yoursuffix>> start** ")
3. cross fingers and open your internet browser of choice with the URL: http://localhost:8080/coala-assembly/

6.2 Stopping

These are the steps to stop CoALA

1. stop the Apache Tomcat service (e.g. "**/etc/init.d/tomcat<<yoursuffix>> stop** ")
2. stop the HSQLDB service (e.g. "**/etc/init.d/hsqldb<<yoursuffix>> stop** ")

7. Special Issues

CAUTION: Be aware that CoALA and the corresponding HL7 server time and time zone should be in sync. Otherwise communication issues may occur.

7. APPENDIX

7.1 Default Port Configuration

The following table lists the default port configurations that are used as long as you have not specified your own port configurations for the individual components.

Port	Purpose
8443	Tomcat SSL ITI-18, ITI-41, ITI-43 Endpoints
8080	Tomcat HTTP
9999	HSQLDB
3750	MPI Query port for Imaging Order
514	ATNA

7.2 CoALA Default XDS settings

```
# Document source OID of application
coala.documentsource.oid = 2.16.840.1.113883.3.37.900.5.1.1
# Unique ID of repository that should be used
coala.repository.unique.id = 1.2.840.113619.20.2.2.1
# Basic uniqueID string to use for generating uniqueIDs for submission sets
coala.submissionset.base.unique.id = 2.16.840.1.113883.3.37.900.5.3

# Date pattern for time stamps
coala.consent.longdatepattern = yyyyMMddHHmmss
coala.consent.shortdatepattern = yyyyMMdd

# language code to use for creation of consent documents (type code, format
code, etc)
coala.consent.language.code = en-US
# encoding to use for creation of consent documents (type code, format code,
etc)
coala.consent.encoding = UTF-8

# values for IPF-Code object for BPPC consent class code
coala.consent.class.code = Consent;Consent;IHE Class Codes

# values for IPF-Code object for BPPC consent type code
coala.consent.document.type.code.code = 57016-8
coala.consent.document.type.code.displayname = Privacy Policy Acknowledgement
Document
coala.consent.document.type.code.schemename = LOINC

# values for IPF-Code object for BPPC consent format code
coala.consent.format.code.code = urn:ihe:iti:bppc:2007
coala.consent.format.code.displayname = urn:ihe:iti:bppc:2007
coala.consent.format.code.schemename = IHE Format Codes

# default title for submission set
coala.consent.default.submissionset.title = Submission Set
```

7.3 CoALA Default PXS settings

```
# Endpoint to use for XDS communication for IT-18, IT-41 and ITI-43
coala.pxs.xds.iti18.endpoint = xds-iti18://icw-pxs.iap.hs-heilbronn.de:8443/pxs-vmr-assembly/webservices/xdsb-storedquery?secure=true
coala.pxs.xds.iti41.endpoint = xds-iti41://icw-pxs.iap.hs-heilbronn.de:8443/pxs-vmr-assembly/webservices/xdsb-provideandregister?secure=true
coala.pxs.xds.iti43.endpoint = xds-iti43://icw-pxs.iap.hs-heilbronn.de:8443/pxs-vmr-assembly/webservices/xdsb-retrievedocuments?secure=true

# Assigning authority
coala.pxs.authority.oid = 2.16.840.1.113883.3.37.4.1.1.2.2.1

# Date pattern for time stamps
coala.consent.longdatepattern = yyyyMMddHHmmss
coala.consent.shortdatepattern = yyyyMMdd

# Document source OID of application
coala.documentsource.oid = 2.16.840.1.113883.3.37.900.5.1.1
# Basic uniqueID string to use for generating uniqueIDs for submission sets
coala.submissionset.base.unique.id = 2.16.840.1.113883.3.37.900.5.3
# Basic uniqueID string to use for generating uniqueIDs for consent documents
coala.document.base.unique.id = 2.16.840.1.113883.3.37.900.5.2

# Unique ID of repository that should be used
coala.repository.unique.id = 1.2.840.113619.20.2.2.1
# default title for submission set
coala.consent.default.submissionset.title = Submission Set

# language code to use for creation of consent documents (type code, format
code, etc)
coala.consent.language.code = en-US
# encoding to use for creation of consent documents (type code, format code,
etc)
coala.consent.encoding = UTF-8

# values for IPF-Code object for BPPC consent format code
coala.consent.format.code.code = urn:ihe:iti:bppc:2007
coala.consent.format.code.displayname = urn:ihe:iti:bppc:2007
coala.consent.format.code.schemename = IHE Format Codes

# values for IPF-Code object for BPPC consent type code
coala.consent.document.type.code.code = 57016-8
coala.consent.document.type.code.displayname = Privacy Policy Acknowledgement
Document
coala.consent.document.type.code.schemename = LOINC
```

7.4 ICW eHF Standard Configuration

```
##############################################
##     ICW eHF Standard Configuration      ##
## Created by the ICW eHF Project Template ##
##############################################

#
# Configuration file containing deployment environment specific settings
# This settings have to be adapted to the local environment.
#

#
# Connection Settings
#

# connection settings (HSQLDB)
connection.driver.lib.path=lib/hsqldb-1.8.0.7.jar
connection.dialect=org.hibernate.dialect.HSQLDialect
connection.driver=org.hsqldb.jdbcDriver
connection.url=jdbc:hsqldb:hsql://localhost:9999/testdb
connection.validation.query=select count(TYPE_NAME) from
INFORMATION_SCHEMA.SYSTEM_ALLTYPEINFO
connection.context=hsqldb

# connection settings (ORACLE)
#connection.driver.lib.path=lib/ojdbc6-11.1.0.7.0.jar
#connection.dialect=org.hibernate.dialect.Oracle10gDialect
#connection.driver=oracle.jdbc.OracleDriver
#connection.url=jdbc:oracle:thin:@ehf008.de.icw.int:1521:phr7db
#connection.tablespace=phr7users
#connection.validation.query=select 1 from dual
#connection.validation=true
#connection.context=oracle
# add for connection.context=oracle-ods
#connection.datasource.oracle.connectionCaching=true
#connection.datasource.oracle.fastConnectionFailover=false
#connection.datasource.oracle.onsConfig=
# add for connection.context=oracle-ods with RAC
#connection.datasource.oracle.connectionCaching=true
#connection.datasource.oracle.fastConnectionFailover=true
#connection.datasource.oracle.onsConfig=nodes=racnode1:6200,racnode2:6200

# connection settings (DB UNSPECIFIC)
connection.datasource.initialSize=10
connection.datasource.minActive=0
connection.datasource.maxActive=50
connection.datasource.minIdle=0
connection.datasource.maxIdle=50
connection.datasource.tcpConnectTimeout=60000
connection.datasource.maxConnectionAge=120000
connection.validation=true
connection.jdbc.batch.size=30
connection.schema.prefix=
connection.schema.suffix=

# audit specific settings (HSQLDB)
audit.connection.driver.lib.path=lib/hsqldb-1.8.0.7.jar
audit.connection.dialect=org.hibernate.dialect.HSQLDialect
audit.connection.driver=org.hsqldb.jdbcDriver
audit.connection.url=jdbc:hsqldb:hsql://localhost:9999/testdb
audit.connection.validation.query=select count(TYPE_NAME) from
```

```
INFORMATION_SCHEMA.SYSTEM_ALLTYPEINFO
audit.connection.context=hsqldb

# audit specific settings (ORACLE)
#audit.connection.driver.lib.path=lib/ojdbc6-11.1.0.7.0.jar
#audit.connection.dialect=org.hibernate.dialect.Oracle10gDialect
#audit.connection.driver=oracle.jdbc.OracleDriver
#audit.connection.url=jdbc:oracle:thin:@<HOST>:<PORT>:<SID>
#audit.connection.tablespace=<AUDIT_TABLESPACE>
#audit.connection.validation.query=select 1 from dual
#audit.connection.context=oracle
# add for audit.connection.context=oracle-ods
#audit.connection.datasource.oracle.connectionCaching=true
#audit.connection.datasource.oracle.fastConnectionFailover=false
#audit.connection.datasource.oracle.onsConfig=
# add for audit.connection.context=oracle-ods with RAC
#audit.connection.datasource.oracle.connectionCaching=true
#audit.connection.datasource.oracle.fastConnectionFailover=true
#audit.connection.datasource.oracle.onsConfig=nodes=racnode1:6200,racnode2:6200

# audit connection settings (DB UNSPECIFIC)
audit.connection.datasource.initialSize=2
audit.connection.datasource.minActive=0
audit.connection.datasource.maxActive=5
audit.connection.datasource.minIdle=0
audit.connection.datasource.maxIdle=5
audit.connection.datasource.tcpConnectTimeout=60000
audit.connection.datasource.maxConnectionAge=120000
audit.connection.validation=true
audit.connection.jdbc.batch.size=30


# encryption specific settings (HSQLDB)
encryption.connection.driver.lib.path=lib/hsqldb-1.8.0.7.jar
encryption.connection.dialect=org.hibernate.dialect.HSQLDialect
encryption.connection.driver=org.hsqldb.jdbcDriver
encryption.connection.url=jdbc:hsqldb:hsql://localhost:9999/testdb
encryption.connection.validation.query=select count(TYPE_NAME) from
INFORMATION_SCHEMA.SYSTEM_ALLTYPEINFO
encryption.connection.context=hsqldb

# encryption specific settings (ORACLE)
#encryption.connection.driver.lib.path=lib/ojdbc6-11.1.0.7.0.jar
#encryption.connection.dialect=org.hibernate.dialect.Oracle10gDialect
#encryption.connection.driver=oracle.jdbc.OracleDriver
#encryption.connection.url=jdbc:oracle:thin:@<HOST>:<PORT>:<SID>
#encryption.connection.tablespace=<AUDIT_TABLESPACE>
#encryption.connection.validation.query=select 1 from dual
#encryption.connection.validation=true
#encryption.connection.context=oracle
# add for encryption.connection.context=oracle-ods
#encryption.connection.datasource.oracle.connectionCaching=true
#encryption.connection.datasource.oracle.fastConnectionFailover=false
#encryption.connection.datasource.oracle.onsConfig=
# add for encryption.connection.context=oracle-ods with RAC
#encryption.connection.datasource.oracle.connectionCaching=true
#encryption.connection.datasource.oracle.fastConnectionFailover=true
#encryption.connection.datasource.oracle.onsConfig=nodes=racnode1:6200,racnode2:
6200

# encryption connection settings (DB UNSPECIFIC)
encryption.connection.datasource.initialSize=2
```

```
encryption.connection.datasource.minActive=0
encryption.connection.datasource.maxActive=5
encryption.connection.datasource.minIdle=0
encryption.connection.datasource.maxIdle=5
encryption.connection.datasource.tcpConnectTimeout=60000
encryption.connection.datasource.maxConnectionAge=120000
encryption.connection.validation=true
encryption.connection.jdbc.batch.size=30

#
# database settings for upgrade and encryption
#

# to indicate if there are multiple database instance deployed on Oracle.
# Valid values are: true or false.
connection.multiple.databases=false

# type is used by database related tasks
database.type=oracle

# oracle specific settings (for database.type=oracle)
database.oracle.sid=PHR7DB
database.oracle.base=/oracle
database.oracle.home=$ORACLE_BASE/product/10gR2
database.oracle.nls.lang=.AL32UTF8

#
# other infrastructure components
#

# URLs for accessing external services (only used when adapter.context=external)
adapter.mmi.pzn.port.address=http://89.106.65.21:9080/services/GL100000
adapter.terminology.icd.port.address=http://ts-deploy-
release.dev.intercomponentware.com/terminology-server/services/v1-1-
0/TerminologyWebService

# proxy settings (currently only used when adapter.context=external)
adapter.proxy.host=proxy.proxy.intercomponentware.com
adapter.proxy.port=3128

# Pipe separated list of hosts to be excluded
adapter.proxy.exclude=localhost|172.31.20.144|ts-deploy-
release.dev.intercomponentware.com

localization.codesystem.language=de
localization.codesystem.country=

masterkeyprovider.url=https://ehf-deploy-trunk.de.icw.int/mkp-
assembly/requestkey

# Postpone context shutdown for given milliseconds
context.postpone.shutdown.millis=1500

# Audit user used for writing audit events
audit.user.uuid=030781f0-d294-11de-8a39-0800200c9a66
audit.session.uuid=382cdab0-d294-11de-8a39-0800200c9a66

# Audit
audit.batch.size=100
audit.batch.timeout=1000
audit.processor.concurrency=2
```

```
# ATNA Auditor configuration
atna.audit.repository.host=localhost
atna.audit.repository.port=514
```