XWiki

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1 Introduction

XWiki is a platform for developing collaborative web applications using the wiki paradigm. XWiki Enterprise is the primary implementation of the XWiki Platform. XWiki Enterprise is implemented using servlet and JavaServer Pages (JSP) container technology.

1.1 Overview

The overview of the steps below gives a roadmap for experienced users. Newer users will want to read the more detailed instructions found in the following sections to help fill in the gaps.

1. Informix
   (a) Download and install Informix 11.50 database software.
   (b) Two options: Use the included script xwiki_restore.sh or manually do the following:
      i. Touch files for root chunk of: root data space, a data space with non-default page size (8 KiB - 16 KiB), and a SmartLOB space.
      ii. Configure sqlhosts for SQLI connection via soctcp.
      iii. Configure onconfig to use default SmartLOB space via SBSPACE-NAME.
      iv. Start the Informix instance.
      v. Use onspaces to create the non-default page size space and the SmartLOB space.
   (c) Create an xwiki user in the operating system.
   (d) Create an xwiki database in the non-default page size space.
   (e) Grant the resource role to the xwiki user.
2. Hibernate
   (a) Download Hibernate 3.2.6 source code

(b) Apply the patch file for Informix to Hibernate.

(c) Compile Hibernate.

3. XWiki

(a) Download and install XWiki Enterprise 2.2.5.

(b) Copy "ifxjdbc.jar" from "${INFORMIXDIR}/jdbc/lib" to the XWiki "lib" directory "${XWIKI}/webapps/xwiki/WEB-INF/lib/".

(c) Copy the patched Hibernate 3.2.6 to the XWiki 'lib' dir and overwrite the existing "hibernate-3.2.6.ga.jar" file.

(d) Edit "${XWIKI}"/webapps/xwiki/WEB-INF/hibernate.cfg.xml". Comment out the other database references and put in the Informix values.

2 Informix

If you have not already installed Informix, please do so now. These instructions assume you are familiar with bringing up a basic Informix instance including configuration of the onconfig and sqlhosts files and creation of a suitable root database space (rootdbs).

2.1 Data Space

Because of the generic nature, Hibernate may often define columns of type VARCHAR(255) and use them in composite keys. If the data space is using the default 2k or 4k page size, this may lead to error -550, "Total length of columns in constraint is too long.". The solution is to use a non-default page size for the data space. The formula to compute the maximum length of a constraint in Informix based on the page size is:

```
((pageSize - 93) / 5) - 1 = maximumConstraintLength
```

Below are a few example maximum constraint length calculations.

```
For 2k pages: ((2048 - 93) / 5) - 1 = 390 bytes
For 4k pages: ((4096 - 93) / 5) - 1 = 799 bytes
For 8k pages: ((4096 - 93) / 5) - 1 = 1618 bytes
For 16k pages: ((16384 - 93) / 5) - 1 = 3257 bytes
```

Once you have decided on a page size, you can create a new space:

```
onspaces -c -d <spaceName> -p <pathToSpaceStorage> -o <offsetIntoStorage> -s <sizeInKiB> -k <pageSizeinKiB>
```

For example, to create a new dataspace named "space0" of size 200,000 KiB with page size 8 KiB at "${INFORMIXDIR}/tmp/ids0.space0":

```
touch "${INFORMIXDIR}/tmp/ids0.space0"
chmod 660 "${INFORMIXDIR}/tmp/ids0.space0"
chown informix:informix "${INFORMIXDIR}/tmp/ids0.space0"
onspaces -c -d space0 -p "${INFORMIXDIR}/tmp/ids0.space0" -o 0 -s 200000
-k 8
```

2.2 CLOB/BLOB Data Type Support

If your instance already contains a SmartLOB space and has the default storage space configured in the onconfig, you may skip this section.

2.2.1 SmartLOB Space Creation

The enhanced Informix Hibernate dialect provided as a patch file makes use of of CLOB/BLOB data types. This requires a SmartLOB space be available as the default SmartLOB space. A SmartLOB space named "slspace0" with size 200,000 KiB stored in a file at "${INFORMIXDIR}/tmp/ids0.slspace0" can be created with the following commands.

```
touch "${INFORMIXDIR}/tmp/ids0.slspace0"
chmod 660 "${INFORMIXDIR}/tmp/ids0.slspace0"
chown informix:informix "${INFORMIXDIR}/tmp/ids0.slspace0"
onspaces -c -S slspace0 -p "${INFORMIXDIR}/tmp/ids0.slspace0" -o 0 -s
200000
```

2.2.2 Default SmartLOB Space

To make sure all CLOB/BLOB data is stored to the new SmartLOB space, set the instance's default CLOB/BLOB storage space to be the new space. This is on my setting the SBSPACENAME parameter to the name of the new SmartLOB space.

```
SBSPACENAME slspace0
```

2.3 Transaction Isolation Level

2.4 Database Creation

As the Informix administrative user, create the database "xwiki" in the data space created earlier. Using dbaccess, this can be accomplished with:

```
$ dbaccess - -
> create database xwiki in space0 with buffered log;
```

2.5 Database Security

It is probably best to use a user that does not have the "dba" role as the primary user accessing the database. Create a new user "xwiki" on your operating system. As the Informix administrative user, grant the "resource" role to the user "xwiki".

```
# dbaccess - -
> grant resource to xwiki;
```

3 Hibernate

XWiki 2.2.x ships with Hibernate 3.2.6. Although this version of Hibernate includes an Informix dialect, it contains defects that render it unable to properly generate the necessary DDL. We have produced and included a patch file for Hibernate 3.2.6 that will allow you to use this release with Informix.

Note: Although we have patch files for more modern versions of Hibernate, due to changes introduced in Hibernate 3.3.0 and above, XWiki 2.2.x will not work with Hibernate versions greater than 3.2.x.

3.1 Download

Hibernate 3.2.6 can be downloaded from http://sourceforge.net/projects/hibernate/files/. Download either "hibernate-3.2.6.ga.tar.gz" or "hibernate-3.2.6.ga.zip".

3.2 Patch

1. Extract the contents of the Hibernate archive. The extracted folder should be named "hibernate-3.2".

2. Change to the "hibernate-3.2" directory extracted from the archive.

3. Test the patch file with a dry run and verify that the output looks like that shown below.

```
$ patch –dry-run -p1 -i ../hibernate-3.2.6-informix.patch
patching file src/org/hibernate/dialect/Cache71Dialect.java
patching file src/org/hibernate/dialect/Dialect.java
patching file src/org/hibernate/dialect/InformixDialect.java
patching file src/org/hibernate/dialect/MySQLDialect.java
patching file src/org/hibernate/dialect/SAPDBDialect.java
patching file src/org/hibernate/mapping/ForeignKey.java
```

4. If you receive any messages similar to those below, there may be something awry with either the Hibernate downloaded or the application of the patch.

```
Hunk #1 FAILED at 391.
Hunk #2 FAILED at 404.
2 out of 2 hunks FAILED – saving rejects to file
src/org/hibernate/dialect/Cache71Dialect.java.rej
```

5. Once satisfied with the results of the dry run, run the patch command without the "–dry-run" flag.

```
$ patch -p1 -i ../hibernate-3.2.6-informix.patch
```

Note: The patch file was created with "diff -C 5 -rBN". Using the default three lines of context was not enough to avoid hunk errors, but using five lines provides enough context to avoid this.

3.3 Build

Building Hibernate requires an IBM or Sun JDK 1.5 be locatable via PATH. Hibernate cannot be built with JDK 1.4.2 (lacks generics) or 1.6.0 (JDBC4 abstract methods are not implemented in Hibernate sub-classes). However, you can use JRE 1.6.0 when running Hibernate and XWiki if desired.

In the extracted "hibernate-3.2" directory, run build.sh (*NIX) or build.bat (Windows). The output will be placed in the "build" folder and will be named "hibernate3.jar".

4 XWiki

After installing XWiki, a few simple additions and modifications are necessary to use XWiki with Informix.

4.1 Patched Hibernate

XWiki's Hibernate 3.2.6 jar is located at "${XWIKI}/webapps/xwiki/WEB-INF/lib/hibernate-3.2.6.ga.jar". Copy the patched JAR file built earlier over this file. From the directory where Hibernate's build.sh/build.bat are located, run:

```
cp build/hibernate3.jar "${XWIKI}/webapps/xwiki/WEB-INF/lib/hibernate-3.2.6.ga.jar"
```

4.2 Informix JDBC Driver

Copy the Informix JDBC driver (ifxjdbc.jar) to "${XWIKI}/webapps/xwiki/WEB-INF/lib/"

4.3 Configure hibernate.cfg.xml

Using the included hibernate-informix.cfg.xml file as a reference, edit "${XWIKI}/webapps/xwiki/WEB-INF/hibernate.cfg.xml". Comment out the default database and add in the Informix database connection information.

The key values changed from the defaults are:

1. connection.driver_class = com.informix.jdbc.IfxDriver
2. dialect = org.hibernate.dialect.InformixDialect
3. mapping resource = xwiki.db2.hbm.xml

And, modify these to fit with the installation environment:

1. connection.url - host name, port number, database name, INFORMIXSERVER property
2. connection.username
3. connection.password

5 Usage

You should now be able to run the start_xwiki.sh script (.bat on Windows). After starting the XWiki server, the xwiki database will not be initialized until you visit the site for the first time. The default site is at http://localhost:8080/xwiki/bin/view/Main/WebHome. Most users will want to install the XWiki Enterprise Wiki application via an xar file. Documentation on this and other topics can be found at http://www.xwiki.org.