BaseX setup procedure for Kintsugi

This document covers how to install BaseX and integrate it with our project.

**Note:** Things you should type into a shell or command interpreter are styled like this.

1. Install the latest version of Java
   1. The precise URL depends on the latest Java version number, but use something like: wget --no-cookies --no-check-certificate --header "Cookie: gpw\_e24=http%3A%2F%2F www.oracle.com%2F" "http://download.oracle.com/otn-pub/java/jdk/7u40-b43/jre-7u40-linux-i586.tar.gz"
   2. Follow instructions at <http://askubuntu.com/questions/56104/how-can-i-install-sun-oracles-proprietary-java-6-7-jre-or-jdk/56119#56119>
2. Install BaseX: sudo apt-get install basex
3. Create a BaseX group and user:
   1. addgroup basex
   2. adduser --system --shell /bin/sh basex
   3. adduser basex basex
4. Isolate the BaseX executables to the basex user group
   1. Change the executables’ owner group: sudo chgrp basex /usr/bin/basex /usr/bin/X11/basex /usr/bin/basexclient /usr/bin/X11/basexclient /usr/bin/basexgui /usr/bin/X11/basexgui /usr/bin/basexserver /usr/bin/X11/basexserver
   2. Restrict the permissions to root and the basex group members: sudo chmod 750 /usr/bin/basex /usr/bin/X11/basex /usr/bin/basexclient /usr/bin/X11/basexclient /usr/bin/basexgui /usr/bin/X11/basexgui /usr/bin/basexserver /usr/bin/X11/basexserver
5. Download the CWE XML document
   1. Create a suitable directory for Kintsugi common files: sudo mkdir /usr/share/kintsugi
   2. cd /usr/share/kintsugi
   3. Download the CWE: sudo wget http://cwe.mitre.org/data/xml/cwec\_v2.5.xml.zip
   4. sudo unzip cwec\_v2.5.xml.zip
   5. sudo rm cwec\_v2.5.xml.zip
   6. The basex user should own the CWE database: sudo chown basex:basex cwec\_v2.5.xml
6. Provision database users
   1. BaseX stores all databases and settings in the directory of whichever user runs BaseX. Switch to the “basex” user to execute the commands in this step: sudo su – basex
   2. Open the standalone BaseX application: basex
   3. Change the default admin password: ALTER USER admin
      1. When prompted, type in a good admin password.
   4. Create a Kintsugi user: CREATE USER kintsugi
      1. When prompted, type in a good user password.
7. Set up indexing and full-text optimizations:
   1. Obtain the stopwords list from the BaseX official ZIP, and place at /usr/share/kintsugi/stopwords.txt
   2. Change the stopwords file’s ownership: sudo chown basex:basex stopwords.txt
   3. Open BaseX (as the admin), either by basex or basexserver
   4. Set the following options, which will apply to any databases created from this point forward:
      1. SET STEMMING TRUE
      2. SET STOPWORDS /usr/share/kintsugi/stopwords.txt
      3. SET FTINDEX TRUE
8. Set up the CWE database
   1. Open BaseX (as the admin), either by basex or basexserver
   2. Import the CWE database: CREATE DATABASE cwec\_v2-5 /usr/share/kintsugi/cwec\_v2.5.xml
   3. Allow the kintsugi user to read the database: GRANT READ ON cwec\_v2-5 TO kintsugi
9. Run basexserver on boot by creating a sysvinit script
   1. Download the script from our GitHub and place at /etc/init.d/basexserver
   2. Register as a startup script: sudo update-rc.d basexserver defaults
10. Download the BaseX Python 3 API directly to our package folder (no install necessary): sudo wget https://raw.github.com/BaseXdb/basex-api/master/src/main/python3/BaseXClient.py --output-document=/usr/local/lib/python3.3/site-packages/BaseXClient.py
11. Until we implement a keystore, BaseX’s password is stored in a restricted Python module, so other modules can import the password variable. It’s better than hard-coding the password, but a temporary measure at best.
    1. Download the Kintsugi settings file from our GitHub and place at /usr/local/lib/python3.3/site-packages/KintsugiSettings.py
    2. **TODO:** Once we set up a Python/Django/Kintsugi-specific user, change the file ownership to that user: sudo chown user:group /usr/local/lib/python3.3/site-packages/KintsugiSettings.py
    3. Restrict it so only the file owner can access it: sudo chmod 700 /usr/local/lib/python3.3/site-packages/KintsugiSettings.py
    4. Edit KintsugiSettings.py and set the value of BASEX\_KINTSUGI\_PASSWORD to the “kintsugi” BaseX user’s password.

**End.**