cPath Installation Notes

Introduction

This document describes the procedure for installing cPath locally.
System Requirements. To install cPath, you must have the following installed locally:

- mySQL: Information available at: http://www.mysql.com/.
- Apache Tomcat Server, 4.1X or above: Information available at: http://jakarta.apache.org/tomcat/ Note that cPath has not been tested on Apache Tomcat, 5.X or above.
- Apache Ant: Information available at: http://ant.apache.org/.
- Perl 5.0 (or later): Required for running the cPath Administrator Command Line Tools.

Step-By-Step Instructions

1. If you have not already done so, install mySQL, Apache Tomcat, and Ant locally. Once you have verified that the installations are working correctly, proceed to step 2.
2. Create a mysql user for cPath. For easiest installation, use the following:

   user: tomcat@localhost
   password: kitty

   If you choose a different user/password combination, see Appendix A below.

   Instructions on adding new mySQL users is available online at: http://www.mysql.com/doc/en/Adding_users.html.

Make sure this user has permission to update the database.

3. Load the cPath Tables. To do so:

```
cd [CPATH_ROOT]/dbData
mysql -u tomcat -p < cpath.sql
```

You will be prompted for a password. Enter the value: "kitty".

4. Load a Demo Set of Sample data

```
cd [CPATH_ROOT]/dbData
mysql -u tomcat -p < demo.sql
```

You will again be prompted for a password. Enter the value: "kitty".

5. Copy dist/cpath.war to [JAKARTA_TOMCAT_DIR]/webapps and restart Apache Tomcat.

   Note: On certain platforms, you may not even need to restart Tomcat. For example, if you are running Tomcat 5 on Windows, Tomcat will immediately detect the new WAR file, and load it automatically.

6. Open a web browser, and go to: http://localhost:8080/cpath

   Verify that you can see the cPath Home Page.

7. As a final step, you must run the full text indexer.
   - Go to: http://localhost:8080/cpath/adminHome.do
   - When prompted, enter the following:

   user: admin
   password: cpath

   - Select the link: "Run Full Text Indexer" -- full indexing of the demo set takes approximately 30 seconds.

Appendix A: Creating a CPath MySQL User

If you choose a mySQL user other than user=tomcat/password=kitty, you must update two configuration files:

- [CPATH_ROOT]/config/config-JDBC.properties; and
- [CPATH_ROOT]/web/WEB-INF/web.xml

Replace the words tomcat/kitty with your own username/password.

Appendix B: Running Pre-Computed Queries

Depending on your data set, some cPath queries may take several seconds to execute. For example, if a user requests all interactions from the DIP database via the Advanced Search page, this query may take several seconds (perhaps even 10-20 seconds) to complete. To address this situation, cPath includes a generalized framework for pre-computing queries. You simply create a text file with your designated queries, add it to a cron job, and cPath will automatically pre-compute these queries on a regular schedule. If a user executes a query which matches one of the pre-computed queries, the result is returned immediately, resulting in very fast performance.

Here is a sample configuration file with two pre-computed queries (see testData/precompute_junit.txt for the full text.)

```
# Relative URLs for Sample Pre-Computed Queries
# URLs Must be specified as name / value pairs separated by &
character.

# Retrieve all Human Data
version=1.0&cmd=get_by_interactor_tax_id&q=9606&q=&maxHits=unbounded&fo
rmat=psi

# Retrieve all DIP Data
version=1.0&cmd=get_by_interaction_db&q=DIP&maxHits=unbounded&format=ps
i
```

Each query is specified as a Web Service API call (see /cpath/webservice?cmd=help for complete details on the Web Service API.) In the example above, we have specified two queries: the first retrieves all Human data; the second retrieves all DIP data.

To run the pre-computed queries:

- Set a CPATH_HOME environment variable to point to the root CPATH directory. For example, on Linux/Mac OS X:

  export CPATH_HOME=/Users/cerami/dev/sander/cpath

- Run the perl script: bin/admin.pl and specify the query file.

For example:

bin/admin.pl pre_compute testData/precompute_junit.txt

If you want to schedule pre-computed queries with a cron job, a sample cron file is provided in config/crontab.cron. Make sure that your crontab file specifies a CPATH_HOME environment variable (see crontab.cron for details.)

Appendix C: Monitoring cPath for Constant Uptime

Once installed, it is useful to monitor cPath on a periodic basis, and verify that it is running correctly. A recommended tool is TinyMonitor, available from: http://www.glug.com/projects/TinyMonitor/. From the Glug.com site:

> "TinyMonitor was written out of pure necessity for a simple monitoring program that watched the actual content of returned pages rather than simply checking to see if the httpd service was running. (Experience has proven that the web server running doesn't necessarily mean it's reporting the content you want.)”

This program can be used for simple web server monitoring (i.e. is it actually delivering content?) or can be used to verify a page is returning what you expect (i.e. a 200 rather than a 404). This is an excellent choice for someone who doesn't want to spend thousands on a program that will do actual http content monitoring (i.e. SiteScope or HP OpenView Internet Services)."

A copy of TinyMonitor (along with a sample config file for monitoring cPath) is available in bin/tinymonitor.

Appendix D: Where to Look When Things Go Wrong

If you experience difficulty with cPath or notice unusual errors, there are two places you should look first:

- Real-time Web Diagnostics: Each time cPath generates a web page, it can generate real-time web diagnostics, which are appended to the bottom of the page. To activate web diagnostics, go to the Admin page, and click the "Activate" link under Web Diagnostics. If the page generates an error, the web diagnostics section will include detailed error information, which would not normally be shown. This may help track down the source of the error.

- Servlet Engine Logs: In the event of an error, cPath will also write the error to the standard servlet engine log. For example, when using Apache Tomcat, error messages are written to catalina.out

Appendix E: Troubleshooting

Known Issue #1: PacketTooBigException

Symptoms: You attempt to import a very large data file, and receive the following error message: PacketTooBigException.

Diagnosis: This error occurs because cPath stores the complete contents of all imported records in the MySQL database. If the imported record exceeds the MySQL max_allowed_packet setting, you will receive a PacketTooBigException.

Solution: To fix this problem, increase the MySQL setting for max_allowed_packet.

The simplest way to do so is to update (or create) a my.cnf configuration file. For example, the following file (/etc/my.snf) increases the max_allowed_packet to 65M:

```
[mysqld]
max_allowed_packet=65M
```

Resources:

- Complete details regarding the “Packet too Large” issue is available at: http://dev.mysql.com/doc/mysql/en/Packet_too_large.html.
- Complete details regarding “Using Option Files”, and configuring MySQL settings, see: http://dev.mysql.com/doc/mysql/en/Option_files.html.