Tool Paths

Overview

Providing the tool user access to input and output files is an important part of building a tool. Where can I place example files that a user will select on first use? Where can I place temporary generated files during the tool runtime? Where can I save a user's work? Where can I place simulation results for the user? Can these results be available in a future session? All these questions and more are addressed in the following sections.

Environment Variables

Environment Variables

A number of environment variables are available in a tool session. A few are discussed here. A full list can be viewed by running the "env" command from a terminal in the workspace tool.

*Note: tools are invoked by the user's account and permissions set accordingly. A tool can save files to a user's home directory because the tool runs as that user.

SESSION="session id"

This variable stores the session ID or session number that is currently active. It's the ID of the session you are currently using.

USER="username"

This variable stores the current username of the user running the tool.

SESSIONDIR=/home/"hub hostname"/"username"/data/sessions/"session id"

This variable stores the current session directory of the open tool. This session directory is a separate directory created for each new tool session. This is a good place for temporary files generated by your tool.

*This is the default path for a tool on invoke.

RESULTSDIR=/home/"hub hostname"/"username"/data/results/"session id"

This variable stores the results directory located in the user's home directory. This is a good place to place simulation results for the user to access later. This is where Rappture saves results.

*Be mindful of the user's quota limits.

PWD="present working directory"

This variable stores the present working directory.

HOME=/home/"hub hostname"/"username"

This variable stores the path of the user's home directory. This is useful if a tool provided an option to save the user's current work. Please create a directory for the tool to save files here, to prevent cluttering the user's home directory too much. A best practice would be to create a new directory for a tool in the user's data directory. For example, "$HOME/data/toolname".

Passing path variables with the Invoke Script

Overview

Passing variables for use in the runtime tool environment is a common occurrence, in particular "@tool" .

See the full invoke_app documentation.

@tool

The variable "@tool" can be passed into your tool via the invoke script. This is important information for you tool to know so that the tool can access example input files and static data files that reside in the respective directories. There are two way to pass the "@tool" location via the invoke script to the tool.

1) As an argument to the tool

```
-A @tool
```

2) As an environment variable

```
-e TOOL_REPO_PATH=@tool
```

Example Files

Small Files

Files less than 100MB, can be placed in the 'data' or 'examples' directory within the tool repository.

Large Files

Files greater than 100MB, should be placed in the appropriate /data directory outside of the tool repository. This path can be accessed directly. In typical situations /data is organized by tool and/or group. Either of these locations is suitable for maintaining large static datasets.

Note: this is by special request only, please contact your HUB administrator.

Tool Generated Files

Temporary Files at runtime

Temporary files that are generated by a tool at runtime should be written to the default session directory using the SESSIONDIR environment variable. Ideally, these temporary files should be removed when they are no longer needed. Storing temporary files in the ${SESSIONDIR} affords the user an opportunity to purge them later using the storage manager available on the member dashboard.

Temporary files can also be written to /tmp. The /tmp directory is not shared with other sessions and is cleared when a session is terminated.

Simulation Results Files

Simulation output files that are generated by a tool should be written to the results directory using the RESULTSDIR environment variable. This directory is created in the user's home directory for the user to easily find the simulation results. The tool may also read from the directory and present a list of the result files to the user.