

# Tool Paths

## Overview

Providing the tool user 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 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 create for each new tool session that the tool can write to. 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.

\*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 variable for use in the runtime tool environment are typically necessary, in particular the "@tool" .

See the full `invoke_app` documentation here:

<https://hubzero.org/documentation/1.3.1/tooldevs/invoke>

## @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 SVN repository.

#### **Large Files**

Files greater than 100MB, should be placed in the appropriate /data directory outside of the SVN repository. This path can be accessed directly.

\*Note: this is by special request only, please contact your HUB Liaison.

### **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 the tool no longer need them.

#### **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 that directory and present a list of the resulting files to the user.