

# ATLAS LVPS Datafile Analysis Userguide for the Perl Scripts

## Introduction:

This is a Userguide for using the Perl scripts developed for the analysis of the datafiles generated by the testing of LVPS bricks.

## Location of scripts:

All scripts mentioned in this document are present in the SVN repository (**name of repository**) at ANL. One can check-out the latest revision of scripts with this command:

```
svn co .....
```

## Prerequisites before using the scripts:

- All the datafiles should be categorized by brick-types in separate folders. These folders will have names exactly in this manner:
  - DIG\_P3, DIG\_P5, HV\_N15, HV\_P5, HV\_P15, MB\_N5, MB\_P5 and MB\_P15.
- All these folders will be sub-folders of folder BrickRecords/
- Copy BrickRecords/ folder to the same location where all scripts are present.
- Create an empty folder csvFiles/ where all output files are generated.
- If configuration parameters (maximum and minimum values for given test-output) are to be extracted, a file which contains these parameters in expected format should be present. Typically, this file is named as "FlattenedParameters.txt"

## Description of Scripts:

### initialTest.pl

This script extracts the first (initial) occurrence of any test in the datafile for a brick and its corresponding parameter values. These are the values in the first run of the brick. Even if the testing was incomplete (say only test 1-4 were run) and testing was restarted from test-1 again, we consider the values for test-1 from the initial incomplete run of test 1-4. The purpose of this script is to understand how many bricks work correctly the first time they are tested, with no modifications made to make them work correctly.

Usage:

```
perl initialTest.pl <filename>
```

filename → the name of the datafile.

## finalTest.pl

This script extracts the last (final) occurrence of any test in the datafile for a brick and its corresponding parameter values. Under normal circumstances, this means that these are the values with which the brick passed all tests. Otherwise, these are the values of for test-outputs when testing was stopped. The purpose of this script is to extract the final test-output values for the brick.

Usage:

```
perl finalTest.pl <filename>
```

filename → the name of the datafile.

## processFilesBatch.pl

This script is a top level wrapper which processes all the files in a given folder and generates 2 output CSV (Comma Separated Value) files. First file lists all the *initial* test outputs for the bricks in the folder. Second file lists all the *final* test outputs for the bricks in the folder. It will also print out the headers for these parameters in the CSV files. Advantage of generating CSV files is that they can be opened with any application that works with spreadsheets (MS Excel, OpenOffice etc.) and can be processed efficiently.

Usage:

```
perl processFilesBatch.pl <folder> <initCSV> <finalCSV>
```

folder → name of the folder relative to current location. Folder name should end with forward slash (/).

initCSV → File name for output CSV file which contains *initial* values.

finalCSV → File name for output CSV file which contains *final* values.

## batchScript

This is a batch-processing file which processes all 8 types of bricks in one shot. But, for this script to work correctly, prerequisites mentioned above must be fulfilled. It will process all 8 folders under BrickRecords/ folder and generate 16 CSV files under csvFiles/ folder.

Usage:

```
./batchScript
```

## extractConfig.pl

This script will extract the maximum and minimum values of different test output parameters. Values are output in following format:

- Each line has 8 output values, corresponding to 8 bricks; in the order of DIG\_P3, DIG\_P5, MB\_N5, MB\_P5, MB\_P15, HV\_N15, HV\_P5, HV\_P15.
- First minimum values are printed. Next line is the maximum value for this parameter.

Usage:

*perl extractConfing.pl <filename>*

filename → the name of the FlattenedParameters.txt file.