

# Testpackage documentation

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## 1 Before starting

Compile vlasiator with the testpackage flags:

```
make -j 8 testpackage
```

## 2 Using testpackage on Voima

To run the test package:

```
cd /lustre/my_folder/  
cp -r ~/vlasiator/test_package .  
cd test_package  
ln -s ~/vlasiator/vlasiator_executable .  
./small_test_voima.sh
```

## 3 Running testpackage on a local machine

Set up the test package:

```
cp small_test_voima.sh small_test_new.sh
```

Configure the sh files change the my\_test\_directory to something else:

```
sed -i 's/reference_dir=./reference_dir="\my_test_directory\small_tests"/g' small_test_
```

(Change the revision number to the current revision number (optional))

```
sed -i 's/reference_revision=./reference_revision="0a8be8ac087c2da56556e4f56fcb3e5826aa6f
```

Run the test package once to create verification files which can be used to compare different branches with the current master version:

```
cd /lustre/my_folder/  
cp -r ~/vlasiator/test_package .  
cd test_package  
ln -s ~/vlasiator/vlasiator_executable .  
sed -i 's/create_verification_files=0/create_verification_files=1/g' small_test_new.sh  
./small_test_new.sh  
sed -i 's/create_verification_files=1/create_verification_files=0/g' small_test_new.sh
```

### 3.1 Running the testpackage on local machine

Finally, similarly as in Section 2:

```
cd /lustre/my_folder/  
cp -r ~/vlasiator/test_package .  
cd test_package  
ln -s ~/vlasiator/vlasiator_executable .  
./small_test_new.sh
```

## 4 For more detailed information on the test package

Directly from the README:

Test package consists of three parts:

1. settings for different computers
2. settings for different tests
3. running the tests

for the first two parts the scripts for short and medium test are separate.

### 1. Computer settings

- files are named: short/medium\_test\_hermit.sh, this is the file that is submitted
- in these files user can define settings for running the program
- define location for reference data directory
- with variable create\_verification\_files you can define if you want to use the existing reference data
- NOTE that if you choose to run the reference data first, the reference data directory must exist

### 2. Test settings

- files are named short/medium\_test\_definitions.sh
- User can choose which tests are run. At the moment options are Fluctuations and Magnetization
- Define the vlsv file for comparison
- In arrays variables\_name and variables\_component use defines which parameters are compared
- variables\_name has the name of the variable and variables\_component have the number of components
- variables\_name and variables\_component must have same number of elements
- For example:

```
variables_name=( "rho" "rho_v" "rho_v" "rho_v" "B" "B" "B" "E" "E" "E" )
variables_components=( 0 0 1 2 0 1 2 0 1 2 )
```

-> e.g. 1st variable for comparison is variables\_name[1] variables\_component[1] = rho\_v 1  
4th is variables\_name[4] variables\_component[4] = rho\_v 4

### 3. Running tests

- writes the results of the comparison in test.o file