

PTF Quick Installation on Taurus Machine

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1 PTF Installation

This quick installation guide will describe how to checkout or download PTF source and install it and how to do this for Score-P on Taurus Machine. The installation requires to load some mandatory dependencies as modules or compile from source. The steps should be followed in order as given below:

1 To checkout PTF source from Git, the git module needs to be loaded on Taurus machine:

```
module load git
```

2 Clone the PTF repository with the following command:

```
git clone https://periscope.in.tum.de/git/Periscope.git
```

3 Autotools are used to bootstrap and configure PTF. Autotools consist of Libtool, Autoconf, Automake and M4 macro system. The Score-P developer tool wrapper provides these tools which can be loaded by executing:

```
module load scorep-dev
```

4 Lexer and parser generators have to be loaded by executing:

```
module load flex/2.5.39 bison/3.0.4
```

5 Taurus has compiler modules which can be loaded by executing:

```
module load gcc/4.6.2
```

6 Load the ace module (v6.1+):

```
module load ace
```

7 The boost can be loaded by executing:

```
module load boost/1.54.0-gnu4.6
```

8 Bootstrap has to be executed in the source directory of Periscope:

```
./bootstrap
```

9 Create a separate directory where the installed PTF binary will be located. For example:

```
mkdir $HOME/install/periscope
```

9 After bootstrapping, you have to configure PTF by selecting which options to use and compile. Create a build folder in the home directory of PTF and go to that directory:

```
mkdir build && cd build
```

10 Execute:

```
../configure --prefix=$HOME/install/periscope && make all -j 16  
&& make install
```

11 Specify the binary location of installed PTF by following command:

```
export PATH=$HOME/install/periscope/bin:$PATH
```

2 Score-P Installation

The instructions for compiling and installing Score-P is described below:

- 1 The svn module has to be loaded as bootstrapping has dependency on it:
`module load svn`
- 2 Score-P with tuning support source can also be downloaded from Periscope web site: http://periscope.in.tum.de/?page_id=67
- 3 Taurus already have modules for Score-P developer tools which can be loaded by executing: `module load scorep-dev`
- 4 Lexer and parser generators have to be loaded by executing:
`module load flex/2.5.39 bison/3.0.4`
- 5 Taurus has compiler modules which can be loaded by executing:
`module load gcc/4.6.2`
- 6 Taurus also has an MPI, OpenMPI based, module which can be loaded by executing:
`module load bullxmpi`
- 7 Create a separate directory where the installed Score-P binary will be located. For example:
`mkdir $HOME/install/scorep`
- 8 Bootstrap is done by executing the command in the source directory of Score-P:
`./bootstrap`
- 9 create a build folder inside the home of Score-P source folder.
`mkdir build && cd build`
- 10 Configure Score-P with component headers and library if necessary:
`../configure --prefix=$HOME/install/scorep --enable-debug
--with-nocross-compiler-suite=gcc --enable-backend-test-runs
--with-mpi=bullxmpi --without-gui && make all -j 16 && make install`
- 11 Specify the binary location of installed Score-P by following command:
`export PATH=$HOME/install/scorep/bin:$PATH`

3 Running PTF

The configuration of Periscope can be loaded from a configuration file. Its name is `.periscope`. Copy a sample of configuration to your home directory:

```
cp Periscope/templates/periscope.sample .persicope
```

An example named "add" will be configured for CFS plugin to execute with PTF.

The example can be found in `testcases` folder.

Build the application:

```
make clean && make
```

Copy a sample configuration file `cfs_config.cfg` and `add.exe` to Taurus folder:

```
cp cfs_config.cfg add.exe Taurus
```

The example can be executed with `psc_frontend --apprun=./add.exe --mpinumprocs=1`

```
--tune=compilerflags --force-localhost --phase="mainRegion" instruction
```

```
--cfs-config="cfs_config.cfg"
```

Copy the above instruction to `psc_batch_cfs.slurm` file in Taurus folder and submit the job.

```
sbatch psc_batch_cfs.slurm
```