

Totalview Debugging on Columbia

Category: Program Development Tools

Columbia Phase Out:

As of Feb. 27, 2013, the Columbia21, Columbia23, and Columbia24 nodes have been taken offline as part of the [Columbia phase out process](#). Columbia22 is still available. If your script requires a specific node, please make the appropriate changes in order to ensure the success of your job.

TotalView is an advanced debugger for complex and parallel codes. It has been installed as modules. To find out what versions of TotalView are available, use the command `module avail totalview`.

You'll need to rely on the ForwardX11 feature of your `ssh`. First, you'll have to make sure that your sysadmin had turned on ForwardX11 when SSH was installed on your local system or use the `-X` or `-Y` (if available) options of `ssh` to enable X11 forwarding for your SSH session.

For Debugging on the Front-End cfe2

1. Login to the front-end cfe2
2. Compile your code with `-g`
3. Make sure that X11 forwarding works and test it with `xclock`

```
cfe2%echo $DISPLAY
cfe2:xx.0
cfe2%xclock
```

4. Load the `totalview` module

```
cfe2% module load totalview.8.9.0-1
```

5. Start TotalView. For serial jobs:

```
cfe2% totalview a.out
For MPI jobs built with SGI's MPT library:
```

```
cfe2% totalview mpirun.real -a -np xxx a.out
```

For Debugging on a Back-End Node

1. Compile your code with `-g`
2. Start a PBS session and pass in the environment variable DISPLAY. Assuming PBS assign your job to run on Columbia21:

```
cfe2% qsub -I -v DISPLAY -lncpus=8,walltime=1:00:00
```

3. Test the X11 forwarding with `xlock`

```
PBS(8cpus)columbia21% xclock
```

4. Load the `totalview` module

```
PBS(8cpus)columbia21% module load totalview.8.9.0-1
```

5. Start TotalView. For serial jobs:

```
PBS(8cpus)columbia21% totalview a.out  
For MPI jobs built with SGI's MPT library:
```

```
PBS(8cpus)columbia21% totalview mpirun.real -a -np xxx a.out
```

More information about TotalView can be found at the [Totalview online documentation website](#).

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<http://www.nas.nasa.gov/hecc/support/kb/entry/94/?ajax=1>