

M3D-C1 Development

NM Ferraro

M3D-C1 Meeting

July 6, 2020

Regression Tests

- If possible, users should try to use the latest “release” version of M3D-C1 that has all the features that they need.
 - module use /p/m3dc1/modules
 - module load m3dc1/1.11
- In practice, many people are continually adding features to the master branch to give them capabilities they need. Therefore M3D-C1 now has many users who depend on the latest code in the master branch. **Breaking the code will prevent many users from getting work done.**
- **Run all the regression tests before pushing code changes (including changes to the makefile)!**
- It's easy!
 - Make sure you have the proper module loaded
 - cd \$HOME/src/M3DC1/unstructured/regtest
 - ./run [on portal, “./run greene”]
 - ./check [on portal, “./check greene”]



Proposed Improvements to M3D-C1 Development

1. **Set up a system that automatically downloads and builds the code, and runs the regression tests every night.**
2. **Set up modules for loading the appropriate supporting modules for compiling.** This is preferable to just writing down the modules in a readme file since we often don't notice when the readme file changes or forget to update the readme file.
3. **Use the same versions of all supporting software on all systems (including SCOREC libraries).** This will help us ensure that the code works and runs the same way on every system.
4. **Set up unified build system that builds both the SCOREC libraries and M3D-C1 together.** We should always be linking the latest M3D-C1 code with the latest SCOREC code.
5. **Switch to static builds, where possible.** This prevent the code from breaking when underlying software or modules are deprecated and removed.



Module System

- Previously, modules were described in the “README/readme.arch” files
- Problem: often people don’t notice when these files change, or forget to update them.
- Solution: we’re installing “development” modules that load the proper supporting modules and set environment variables correctly.

On Portal:

```
setenv M3DC1_CODE_DIR $HOME/src/M3DC1 [for example]
module use /p/m3dc1/modules
module load m3dc1/devel-1.10.3 or module load m3dc1/devel-4.0.1 or module load m3dc1/centos7
```

On Eddy:

```
setenv M3DC1_CODE_DIR $HOME/src/M3DC1 [for example]
module use /home/nferraro/modules
module load m3dc1/devel
```

- These are now described in the appropriate README/readme.arch files
- If you change the modules required for building, run the regression tests and change the module file

