

Merger of regional_workflow into ufs-srweather-app

Code managers for ufs-srweather-app and regional_workflow, with input from EPIC, NOAA, and other interested parties, have decided on a merger of the [ufs-srweather-app](#) and [regional_workflow](#) git repositories. Specifically, the develop branch of regional_workflow will be merged into the develop branch of ufs-srweather-app at the top level, resulting in a combined repository containing the history of both develop branches. This is necessary in order to fulfill NCO requirements for future operational products, but it comes with added benefits:

- Simplifies development and reduces duplication of effort, by eliminating one external repository that must be tested and kept in sync with the top-level ufs-srweather-app repo
- Reduces confusion about where documentation and code issues should be stored

Technical details

There is no native GitHub feature for merging two repositories, especially repositories without common history. So the “merger” of these two repositories must be planned and executed manually. The process is not difficult, but we must plan and document each step of the process so that developers (present and future) can understand the history of the repository.

This merger will be achieved by bringing in the relevant files, folders, and changelog from the regional_workflow repository into the ufs-srweather-app repository. The old regional_workflow repository will continue to exist, but in a read-only archived state.

Because there is no significant ongoing development in either repository outside of the respective develop branches, it is only necessary to merge those two branches together. Old branches will remain in the archived regional_workflow repository in case they are needed.

Merger of regional_workflow develop branch with ufs-srweather-app develop branch

This merger will be achieved in four steps

1. A copy of regional_workflow will be made locally, and the following files and directories removed entirely from the history (making use of the [git filter-repo](#) tool):
 - a. ecflow/
 - b. fix/
 - c. gdas.v15.0.0/
 - d. gempak/

- e. gfs.v15.0.0/
 - f. gfs_workflow.v15.0.0/
 - g. global_shared.v15.0.0/
 - h. src/
 - i. util/
2. A `git merge` operation will be performed locally from the develop branch of the trimmed regional_workflow to the develop branch of ufs-srweather-app.
 3. The build system and various runtime scripts will be modified to account for the new, combined directory structure
 4. The final product will be pushed manually to the authoritative copy of ufs-srweather-app on GitHub

The deleted directories no longer exist in the top of the develop branch, but can be found in the early history of the regional_workflow repository. Currently the regional_workflow repository is ~40MB in size, which is not incredibly large, but is not ideal and can represent a significant obstacle to users needing to clone on a frequent basis. Removing these directories—that consist mostly of copies of external repositories from the vlab days and unnecessary data and executable files that were improperly committed to the repository very early in its existence—will reduce that size by more than 70%. The history of those deleted directories will still be available in the archived regional_workflow repository in the unlikely event they are needed in the future.

The final directory structure of the develop branch of ufs-srweather-app will appear as follows after the merge (new files and directories in bold):

```

|— .github/
|— CMakeLists.txt
|— Externals.cfg
|— LICENSE.md
|— README.md
|— devbuild.sh
|— docs
|— environment.yml
|— etc
|— hpc-stack-mod
|— jobs
|— manage_externals
|— modulefiles
|— scripts
|— src
|— test
|— tests
|— ufs_srweather_app.settings.in
|— ufs_srweather_app_meta.h.in
|— ush
```

Resolving conflicts

There are several files which exist in both repositories that must be manually resolved after this merge. The specifics of these conflicts are listed below:

- .github/CODEOWNERS
 - Only whitespace differences
- .github/ISSUE_TEMPLATE/bug_report.md
 - Ufs-srweather-app version will be kept
- .github/ISSUE_TEMPLATE/feature_request.md
 - Ufs-srweather-app version will be kept
- .github/PULL_REQUEST_TEMPLATE
 - Ufs-srweather-app version will be kept
- LICENSE.md
 - Both versions will be kept (minus redundant information)
- README.md
 - For informational text, ufs-srweather-app version will be kept; will discuss with testing team which items might need to be brought over from regional_workflow

Issue migration

Github issues are currently used in both repositories to track known problems, features in development, and other documentation related to current and future work. Issues in regional_workflow that are not closed or resolved prior to the merge will be manually copied to the ufs-srweather-app repository, with a line included referencing the original issue in regional_workflow repository. After copying, the original issue will be closed.

Timeline of merger process:

Thursday Aug 18

Comments on the procedure described in this document due. If no revisions or objections, the following timeline will be adopted.

Friday Aug 19

- Email will be sent to all contributors to the regional_workflow and ufs-srweather-app repositories detailing the plan

Thursday Aug 24

- Final day to open new PRs in regional_workflow

Aug 25 – September 6

Sunset period for regional_workflow

- No new pull requests will be accepted

- New issues can be opened if necessary; they will be migrated over after the merge
- Existing pull requests should be merged ASAP
- Testing on forked repositories to ensure all procedures will go smoothly when the time comes

Thursday September 1

- An email reminder about upcoming merge will be sent to all contributors, and those with open PRs will be contacted individually to ensure they are in the loop
 - Email will include further information about migrating existing work and forks to the new, merged UFS SRW App repository.

Wednesday September 7, noon EST

- Regional_workflow repository will be put into read-only mode.
- Any still-open PRs will be closed, and a message left pointing to this document for further information

Thursday September 8, 11-am – noon EST

- The develop branch of regional_workflow will be merged into develop branch of ufs-srweather-app
- Ufs-srweather-app will temporarily be put into read-only mode during this time to avoid any disruption of the process.
- An email will be sent to all contributors when this process is complete

Thursday September 8, afternoon

- README.md for regional_workflow will be updated to indicate the repository's retired status, with links to more information
- Issues from regional_workflow closed and migrated to ufs-srweather-app

Into the future

- Existing pull requests may see merge conflicts, and this may lead to complex conflicts if certain files are affected. Michael Kavulich (kavulich@ucar.edu) will assist with problems that may occur in the following weeks.
 - This process will **not** result in any loss of data; if any existing development has been left behind in the old repository, it can always be recovered. Do not hesitate to reach out for assistance.
- Issues should be opened and addressed detailing any cleanup needed after the fact
 - Merger of 'test' and 'tests' directories
 - Consolidation of modulefiles

A copy of this document for public release can be found here:

Public notice: merger of regional_workflow and ufs-srweather-app repositories

