

Infrastructure WG

SIP Meeting
NCWCP - College Park
14 - 16 May 2019

SIP 2018

Infrastructure WG submitted a repository plan just prior to Aug 2018 SIP meeting

- Identified and detailed an umbrella repository structure for the applications
- Recommended use of NCAR's "manage_externals" tool for referencing authoritative repositories
- Highlighted that an umbrella repository connected not only to a code base, but to DA, workflow and post processing thereby ensuring an end to end system
- Presented use cases demonstrating an umbrella repository for two applications - weather and sub-seasonal-to-seasonal
- To ensure success, required application umbrella repositories and advocated for corresponding component repositories exist in an open development environment
- GitHub was recognized as the appropriate choice (technically recommendation made after report submission)

Since then...

- Program managers approved the Infrastructure WG plan, and charged the EIB branch at EMC with developing and exercising an implementation plan
- Meeting weekly to develop and evaluate plans and guidelines
- Brought in additional expertise and experience in community modeling

Rusty Benson, Cristina Stan, Arun Chawla, Mark Iredell, Jun Wang, Dusan Jovic, Laurie Carson, Dom Heinzeller, Ligia Bernardet, Mariana Vertenstein, Seth Underwood, Alistair Adcroft, Robert Hallberg, Cecelia DeLuca, Gerhard Theurich, Jeffrey Whitaker, Philip Pegion

Since then... (contd)

The Infrastructure WG has developed

- detailed plan for move to GitHub

https://docs.google.com/document/d/15dhnQK_eyMiI9N34TLUrDPqjxCDDY6B6H3BI8Mqxahc

- general guidelines for code management

- GitFlow for effective branching and merging

https://docs.google.com/document/d/1H5McooP-ZmDIOhcy4zJwdFVvk3DyjbJt_Nyqi4QGBRBU

- Interactions across a large community

https://docs.google.com/document/d/1limO9_BycDCMqXOs-Zw0E5hAlsKKg8ZDYVtRjouPIvQ

- Best practices for a code manager

<https://docs.google.com/document/d/1fYcbKEIiyMAkE5xCacONf5TSeACvznxcPU0GojZb3KM>

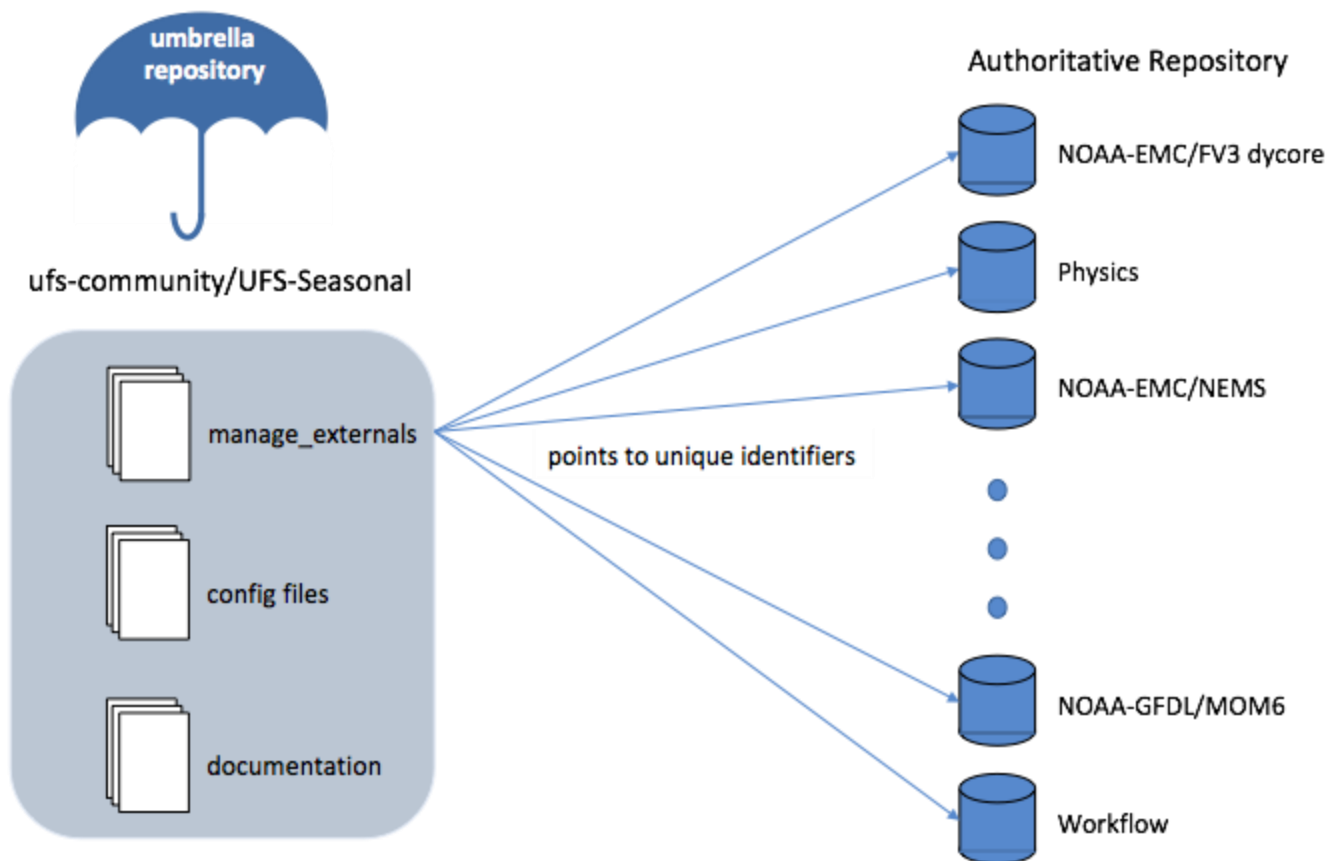
Move from VLab to Github

- Current FV3 repository in VLab contains parts that are to be used with other components and applications. Hence, the repository needs to be restructured and moved to GitHub
- GitHub migration plan developed to minimize impact to ongoing development
- Involves collaboration among UFS partners
- Plan evolves in 3 stages
 - Stage 1: Incorporating CCPP and FV3 dycore developments into the master trunk in VLAB
 - Stage 2: Separating the FV3 dycore and setting it up as its own repository on GitHub
 - Stage 3: Separating the stochastic physics into its own repository on GitHub
- At the end of stage 3, all applications are ready for move to GitHub

Status of move to GitHub

- FV3 restructuring plans are in the final parts of Stage 1
- FV3 dycore move to GitHub is in preparation
- NEMS infrastructure move to GitHub is ready (waiting for a few final commits)
- NCEPLIBS move to GitHub is in process
- Existing GitHub repositories
 - WW3
 - MOM6
 - FMS
 - CCPP repositories (CCPP Physics and Framework)
- Once remaining component repositories are moved, application umbrella repositories will be stood up (expected June/July)

UFS Umbrella Repository for S2S



Infrastructure WG Current & Future Work

- completing a series of best practices guidelines for code management and governance
- overseeing the restructuring of the FV3 repository in VLab and the transition of relevant component repositories to GitHub
- setting up the UFS community on GitHub
 - Community governance will be done by a team made up of UFS community members
 - Umbrella repositories for the UFS applications will sit in the UFS community (github.com/ufs-community - *under development*)