HWRF Code Management and Support

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(a collaboration between DTC, EMC, and HWRF Developers)

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HFIP Telecon
Traditional HWRF code and support

- Yearly HWRF releases are made available at dtcenter.org
  - Corresponding to operational HWRF code of the year
    - Release HWRF v3.3a August 2011 corresponds to 2011 operational code
    - Release HWRF v3.4a Fall 2012 will correspond to 2012 operational code
  - Extensively tested
- Users’ Guide and Scientific Documentation
- Datasets and test cases
- Known issues and bugs are posted
- Helpdesk at wrfhelp@ucar.edu
- Stable, not-changing code
- Benchmarks available (HWRF Reference Configuration)
Needs not met by code release

- Access to the latest and greatest developmental code, e.g.,
  - Three-domain HWRF
  - Three-domain HWRF initialization
- A simple path for researchers to return developments to the HWRF code
Additional path to HWRF code

For HWRF friendly developers, DTC/EMC now provide

- Access to the unified HWRF code repository hosted by DTC
- Access to the latest experimental codes (e.g., 3-domain)
- Ability to create your own branch, with a clear path to incorporate development in the centralized code
- Mechanism to keep developmental HWRF codes synchronized with the outside community codes to
  - prevent HWRF development code from aging off
  - benefit from work done by others
The eight components of HWRF are “links” to the community repositories • Provides a safe and straightforward way to transfer code between HWRF developers and the outer community
Every HWRF component (WRF, GSI etc) has a community repository where the general community makes the development
HWRF Repository Overview

The HWRF repository has a “main branch” which DTC keeps in sync with the trunk.
Developers use hwrf-main branch to branch off and return their contributions. Tests are run before developments are propagated: hwrf-developers committee.
HWRF Repository Overview

Community Development

2011 HWRF

HWRF v3.3a

HWRF v3.4a

comm trunk

code for operations

hwrf-main branch

developer 1

Development also able to branch off other branches; but that should be kept to a minimum

Responsibilities
DTC
HWRF developers
Others

developer 2

2012 Baseline (3-domain)
Community release or repository code????

- I am a developer. I want my code changes to feed into HWRF
  - You need access to the repository
- I am a user. I need to get code.
  - My application requires the latest experimental code
    - You need access to the repository
  - My application does not require the latest code
    - You will benefit from using the stable HWRF release
- I don’t know
  - Talk to DTC

Release code is stable and well-documented.
Experimental code is volatile, requires a friendly and experienced user, and has limited support from DTC.
Access to the HWRF Repository

- Request access to DTC. Send brief description of intent
  - ligia.bernardet@noaa.gov, stark@ucar.edu
- Obtain usernames/passwords
- Review information on repository structure and access
- If developer
  - ask DTC to create branches of components for development
  - Review information on keeping your branches up-to-date and on how to send your code back to hwrf-main branch
Repository Access

Number of scientists

DTC/JNT: 10
ESRL: 4
EMC: 15
GFDL: 1
HRD: 5
PSU: 1
URI: 4

Branches

Examples of developmental work

• S. Trahan (2012 HWRF Baseline)
• Y. Kwon (HWRF physics)
• E. Aligo (Microphysics)
• M. Tong (GSI)
• D. Iredell (HYCOM)
• R. Yablonsky (POM-TC)
• Q. Liu/X. Zhang (Vortex Init)
• J-W Bao (Idealized HWRF)

HWRF Registered Users that get code from website: 330
Average number of emails sent by DTC per month: 30