

NU-WRF Release 4 Software Definition

Document Revision 4
7 February 2012

Overview

Release Date: Beta Release March 30, 2012; Cut-Off March 16, 2012

Summary: NU-WRF Release 4 will be primarily a upgrade that incrementally builds on Release 3. It will include updated components for most items in NU-WRF, namely WRF 3.3.1 and the replacement of WPP with UPP. The release cycle for this software will be shorter with fewer new science improvements. Some enhancements will be made to support better emissions processing.

Proposed Software Components and Features Supported

- **Vendor/Third-Party**
 - WRF 3.3.1 and related packages WPS, ARWpost, RIP4
 - Replace WPP with UPP (NCEP Unified Postprocessor) (*NOTE: may need Jon Case's help to add severe weather diagnostics*)
 - MET 3.0.1
- **Emissions**
 - Updated vertical interpolation in convert_emiss (*NOTE: Forthcoming from Qian*)
 - Update to recent (Aug 2011) version of prep_chem_sources
 - Add support for QFED3 fire emissions (*NOTE: Done, but not fully tested. Qian will test use case after prep_chem_sources update*)
 - Automated end-to-end emissions processing: prep_emissions (*NOTE: Done, but needs further discussion*)
- **LIS**
 - Update to 6.2
 - Update LVT to ESMF5-based release
- **Tools**
 - MERRA2WRF updates (*NOTE: Under evaluation with GMAO*)
 - GOCART2WRF "2.0" for GEOS5 data support (*NOTE: Still requires "1.0" for GEOS4 data*)
- **Build System**
 - Move to Intel 12 compiler
 - Support KPP (*NOTE: Zhining will confirm build success in 3.3.1*)
- **Bugs/Issues:**
 - Porosity not passed in WRF-LIS-GOCART (*NOTE: May implement same patch similar to plain WRF as a temporary work-around, to be addressed further in a future release*) -- Migrate to NU-WRF Release 3 (?)