

Release History

- **METv0.9**: Beta release – July, 2007
- **METv1.0**: First official release – January, 2008
- **METv1.1**: Incremental upgrades – July, 2008
- **METv2.0**: Current release – April, 2009
 - Pre-installed on tutorial machines
 - 500+ registered users from 66 countries
 - 50/50 University/Non-University users
 - On-line tutorial updated for METv2.0
 - Hands-on tutorial offered with the WRF-Tutorial

Downloading MET

- Download MET release and compile locally.
 - Register and download: www.dtcenter.org/met/users
- Language:
 - Primarily in C++ with calls to a Fortran library
- Supported Platforms and Compilers:
 1. Linux with GNU compilers
 2. Linux with Portland Group (PGI) compilers
 3. Linux with Intel compilers
 4. IBM machines with IBM compilers

www.dtcenter.org/met/users

Model Evaluation Tools | DTC

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Model Evaluation Tools

Welcome

Welcome to the users page for the Model Evaluation Tools (MET) verification package. MET was developed by the National Center for Atmospheric Research (NCAR) Developmental Testbed Center (DTC) through the generous support of the U.S. Air Force Weather Agency (AFWA) and the National Oceanic and Atmospheric Administration (NOAA).

Description

MET is designed to be a highly-configurable, state-of-the-art suite of verification tools. It was developed using output from the Weather Research and Forecasting (WRF) modeling system but may be applied to the output of other modeling systems as well.

MET provides a variety of verification techniques, including:

- Standard verification scores comparing gridded model data to point-based observations
- Standard verification scores comparing gridded model data to gridded observations
- Spatial verification methods comparing gridded model data to gridded observations using neighborhood, object-based, and intensity-scale decomposition approaches
- Probabilistic verification methods comparing gridded model data to point-based or gridded observations

User Survey

Please take a minute to complete our short [User Survey](#) and help shape the future of MET! The survey is open until July 2, 2009.

Joint Numerical Testbed Projects

Developmental Testbed Center (DTC)

Weather Research and Forecasting (WRF) Model Support

Model Evaluation Tools (MET)

Data Assimilation Testbed Center (DATC)

Joint Numerical Testbed Events

WRF Summer Tutorial 2009

07.13.2009 to 07.24.2009

Location: NCAR, Boulder, CO

WRF User's Workshop 2009

06.23.2009 to 06.26.2009

Location: NCAR, Boulder, CO

WRF v3.1 release

04.09.2009

MET v2.0 release

04.07.2009

MET Announcements


MET [User Survey](#) is now open!

Current release: [METv2.0](#) (04.07.2009)


[Online Tutorial](#) updated for METv2.0

MET SPONSORS

U.S. Air Force Weather Agency (AFWA)



National Oceanic and Atmospheric Administration (NOAA)



Dependencies

- REQUIRED:
 - GNU Make Utility
 - C++/Fortran Compilers (GNU, PGI, Intel, or IBM)
 - NetCDF version 3 Library
 - BUFRLIB Library
 - GNU Scientific Library (GSL)
 - F2C Library (f2c or g2c, only for some compilers)
- RECOMMENDED:
 - WRF Post-Processor
 - COPYGB (included with WRF-Post)
 - R statistics and graphics package

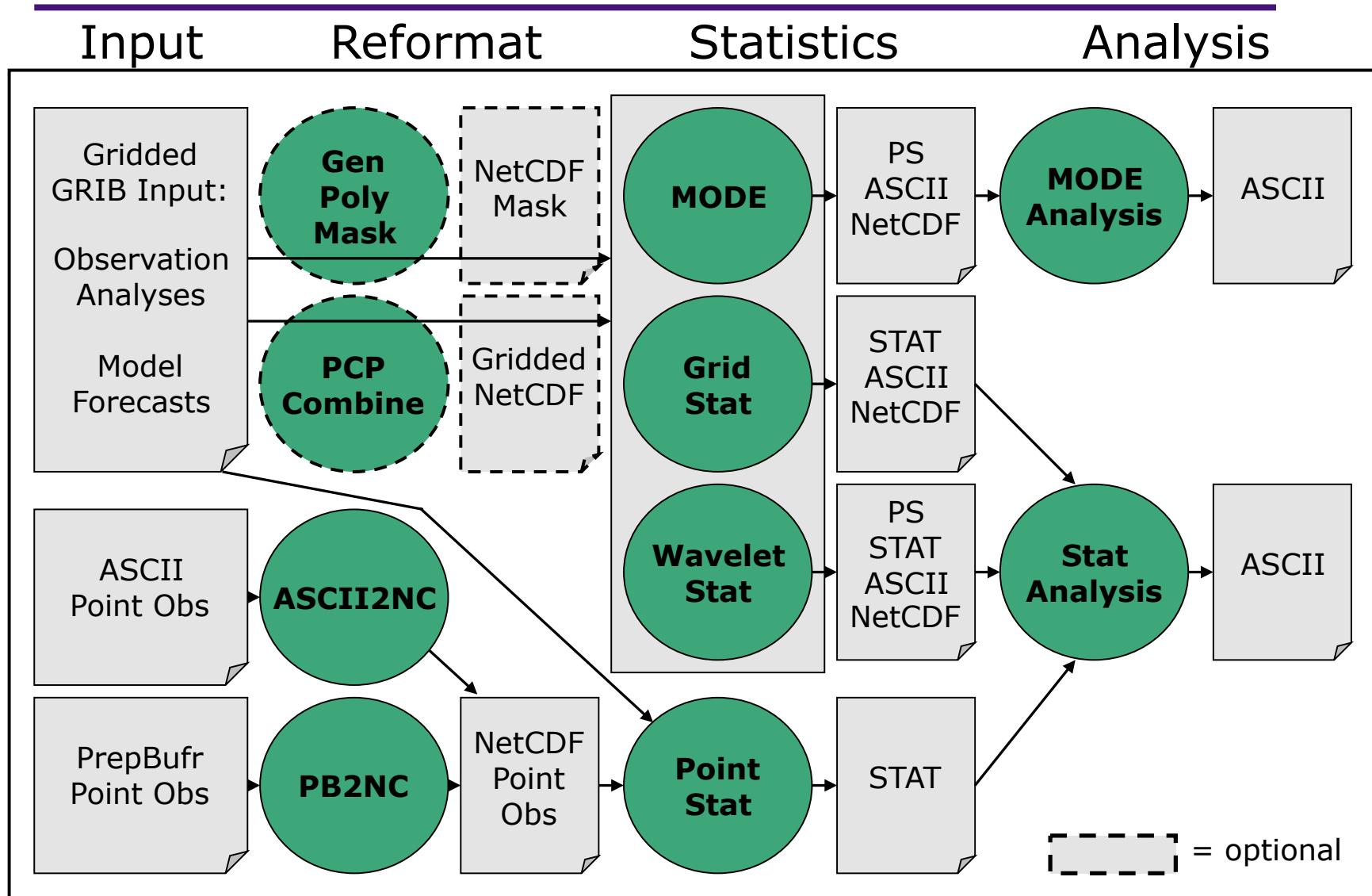
Directory Structure

File or Directory	Contents
README	Installation instructions and release notes.
Makefile_gnu (pgi, intel, ibm)	Top-level Makefile to be configured prior to building MET.
lib/	Source code for internal MET libraries.
src/	Source code for the MET applications.
doc/	MET User's Guide.
bin/	Built MET executables.
scripts/	Test scripts to be run after building MET.
data/	Sample data used by the test scripts.
out/	Output generated by the test scripts.

Building MET

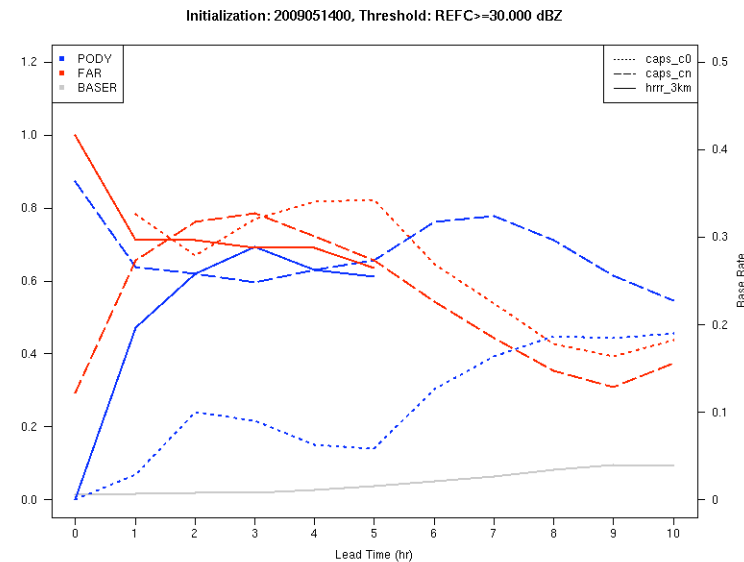
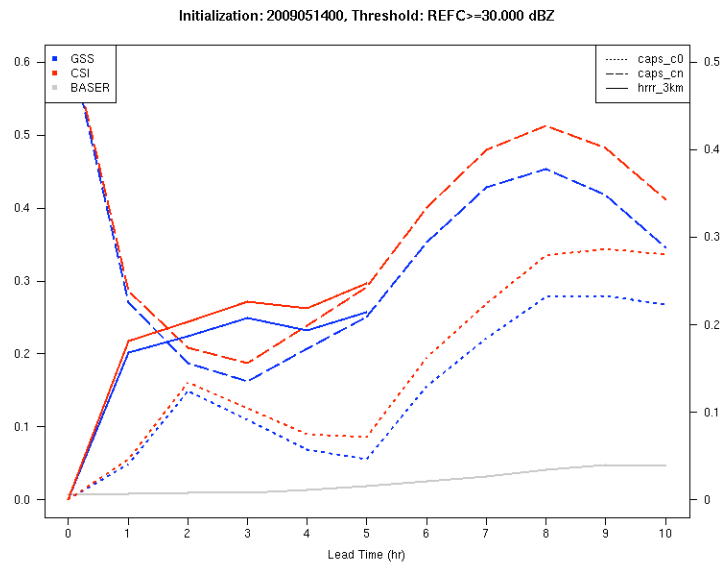
- Steps for building MET:
 1. Build required **libraries**.
 - Same family of compilers for MET
 2. Select the appropriate **Makefile**.
 - GNU, PGI, Intel, or IBM
 3. **Edit** the Makefile.
 - C++ and Fortran compilers
 - Paths for NetCDF, BUFRLIB, GSL, and F2C libraries
 4. Run **Make** to build all of the MET tools.
 5. Run the **test script** and check for runtime errors.
 - Runs each of the MET tools at least once.
 - Uses sample data distributed with the tarball.

MET v2.0 Flowchart



Graphics

- Limited graphics incorporated into MET
- Options for plotting MET statistical output
 - R, NCL, IDL, GNUPlot, and many others
- Submit your own plotting and/or analysis scripts for posting to the MET website.



R Statistics and Graphics

- The R Project for Statistical Computing (www.r-project.org)
 - Powerful statistical analysis and plotting tools
 - Large and growing user community
 - Freely available and well supported for Linux/Windows/Mac
- Sample R plotting and analysis scripts posted on the MET website
- Use R to plot data in the practical sessions

Configuration Files

- MET tools controlled using command line options and ASCII configuration files
 - Well commented and documented in MET User's Guide
 - Easy to modify
 - Distributed with the tarball
- Configuration files control things such as:
 - Fields/levels to be verified
 - Thresholds to be applied
 - Interpolation methods to be used
 - Verification methods to be applied
 - Regions over which to accumulate statistics