

Ensemble and Probabilistic QPF Use Cases

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Set Up Personal Environment

- Creating directories for data
- Obtaining data
- Configuring METplus for you and your environment
- Running METplus

Creating Directories for Data

- Ensure you have enough disk space
- Create separate directories for input and output
 - Data may be shared or owned by someone else
 - Don't want to accidentally wipe out input data when erasing output data to rerun

Obtaining Data - From GitHub

- Sample data tarballs available on METplus GitHub webpage under Releases
- <https://github.com/NCAR/METplus/releases>

METplus-2.0.4

 georgemccabe released this a minute ago

▼ Assets 9

-  [METplus_Users_Guide.pdf](#)
-  [sample_data-cyclone_track_feature.tgz](#)
-  [sample_data-ensemble.tgz](#)
-  [sample_data-grid_to_grid.tgz](#)
-  [sample_data-grid_to_obs.tgz](#)
-  [sample_data-mode.tgz](#)
-  [sample_data-qpf.tgz](#)
-  [Source code \(zip\)](#)
-  [Source code \(tar.gz\)](#)

Obtaining Data - Organization

- Tarballs are organized by use case corresponding to parm directory in GitHub repository

```
[mccabe@eyewall:~/METplus/parm/use_cases$ ls  
cyclone_plotter  feature_relative  grid_to_obs  hwt    qpf  
ensemble        grid_to_grid      hmt          mode   track_and_intensity
```

- **sample_data-qpf.tgz ->**
parm/use_cases/qpf/examples

```
mccabe@eyewall:~/METplus/parm/use_cases/qpf/examples$ ls  
gempak2cf_test.conf      nationalblend-vs-mmrmss-qpe.conf  phpt-vs-qpe-single-fcst.conf  
hrefmean-vs-mmrmss-qpe.conf  phpt-vs-mmrmss-qpe.conf  phpt-vs-qpe-single-obs.conf  
hrefmean-vs-qpe.conf      phpt-vs-mmrmss-qpe_mode.conf  phpt-vs-s4grib.conf  
hrefmean-vs-s4gempak.conf  phpt-vs-qpe.conf           ruc-vs-s2grib.conf
```

Obtaining Data - Downloading

- Download tarball by clicking on the link
- Or use wget from the command line
- https://github.com/NCAR/METplus/releases/download/v2.0.4/sample_data-qpf.tgz
- Untar data into input data directory
 - cp sample_data-qpf.tgz </path/to>/input/
 - cd </path/to>/input
 - tar xzf sample_data-qpf.tgz

Configuring METplus Environment

- Override configurations from default METplus install to:
 - Match the system you are using
 - Where MET is installed
 - EXE paths (wgrib2, cut, tr, rm, etc.)
 - Set up personal data area
 - Where to read input data
 - Where to write output data

Configuring METplus Best Practices

1) Copy parm directory to user location

- Users may work with a shared installation of METplus wrappers
 - Scripts are shared by all users
 - Changes to the parm (configuration) directory would affect all users – on installation, system settings should be set (location of MET version to use)
 - May not have permission to edit parm directory in shared location
- May want some settings to be static over all runs

2) Create user specific configuration files

- Used to override configuration settings for a given run
- Contains only the settings overridden from default in one place
- Preserves user settings when moving to new version of scripts

Configuring METplus

Best Practices (continued)

- Review the configuration files and look for variables with a value containing the phrase “/path/to”
- These variables will need to be set. You can either:
 - Change them directly in the base configuration files
 - Copy them into a new file and modify the values (remember to use correct headers)

```
[dir]
# This is a comment.
# Use comments to help you remember important things.

TMP_DIR = /path/to
OUTPUT_BASE = /path/to
INPUT_BASE = /path/to
MET_INSTALL_DIR = /path/to
```

Configuring METplus

What to Override?

```
[dir]
INPUT_BASE = /home/mccabe/data/input
OUTPUT_BASE = /home/mccabe/data/output-qpf
MET_INSTALL_DIR = /usr/local/met-8.0
TMP_DIR = /tmp
```

```
[config]
```

```
[exe]
```

```
WGRIB2 = /usr/local/bin/wgrib2
```

```
CUT = cut
```

```
TR = tr
```

```
RM = rm
```

```
NCAP2 = /usr/local/nco/bin/ncap2
```

```
CONVERT = convert
```

```
NCUMP = ncdump
```

```
EGREP = egrep
```

Configuring METplus

Use Case Configuration Files

- Each use case directory

(i.e. `parm/use_cases/qpf`)

has two directories:

- **met_config** - MET configuration files read by MET applications
- **examples** - METplus configuration files that are read by METplus

Configuring METplus

Ensemble Use Case

- examples/hrefmean-vs-mrms-qpe.conf
- met_config/GridStatConfig_MEAN
- HREF Mean - forecast data (NetCDF)
 - Pcp-Combine to build accumulation
- QPE observation data (NetCDF)
- Grid-Stat to compare model vs. obs

Running METplus Setup

Add METplus/ush to PATH to run
master_metplus.py from any directory

csh:

```
setenv PATH </path/to>/METplus/ush:$PATH
```

bash:

```
export PATH=</path/to>/METplus/ush:$PATH
```

Running METplus

hrefmean-vs-mrms-qpe.conf Use Case

master_metplus.py

```
-c ~/METplus/parm/use_cases/qpf/  
examples/hrefmean-vs-mrms-qpe.conf
```

```
-c  
/d1/mccabe/system.conf.mccabe.eyewall
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Time Information

[config]

```
# time looping - options are INIT, VALID, RETRO, and REALTIME  
LOOP_BY = INIT
```

```
# Format of INIT_BEG and INIT_END  
INIT_TIME_FMT = %Y%m%d%H
```

INIT: 2017-06-21_00
LEAD = 24

```
# Start time for METplus run  
INIT_BEG=2017062100
```

```
# End time for METplus run  
INIT_END=2017062100
```

```
# Increment between METplus runs in seconds. Must be >= 60  
INIT_INCREMENT = 12H
```

```
# list of forecast leads to process  
LEAD_SEQ = 24
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Field Information

```
# List of applications to run
PROCESS_LIST = PcpCombine, GridStat

# run pcp_combine on forecast data
FCST_PCP_COMBINE_RUN = True

# list of variables to compare
FCST_VAR1_NAME = APCP
FCST_VAR1_LEVELS = A06
FCST_VAR1_THRESH = gt12.7, gt25.4, gt50.8, gt76.2, gt152.4

OBS_VAR1_NAME = P06M_NONE
OBS_VAR1_LEVELS = "(0,*,*)"
OBS_VAR1_THRESH = gt12.7, gt25.4, gt50.8, gt76.2, gt152.4
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Data Information

```
[dir]
# location of configuration files used by MET applications
CONFIG_DIR={PARM_BASE}/use_cases/qpf/met_config

# input and output data directories for each application in PROCESS_LIST
OBS_GRID_STAT_INPUT_DIR = {INPUT_BASE}/qpf/MRMS_QPE_Data

FCST_PCP_COMBINE_INPUT_DIR = {INPUT_BASE}/qpf/uswrv/HREFv2_Mean/native
FCST_PCP_COMBINE_OUTPUT_DIR = {OUTPUT_BASE}/uswrv/HREFv2_Mean/bucket
FCST_GRID_STAT_INPUT_DIR = {FCST_PCP_COMBINE_OUTPUT_DIR}

GRID_STAT_OUTPUT_DIR = {OUTPUT_BASE}/uswrv/met_out/{MODEL}

[filename_templates]
# format of filenames

# HREF Mean
FCST_PCP_COMBINE_INPUT_TEMPLATE = {init?fmt=%Y%m%d}/hrefmean_{init?fmt=%Y%m%d%H}f{lead?fmt=%HHH}.nc
FCST_PCP_COMBINE_OUTPUT_TEMPLATE = {valid?fmt=%Y%m%d}/hrefmean_{valid?fmt=%Y%m%d%H}_A{level?fmt=%HH}.nc
FCST_GRID_STAT_INPUT_TEMPLATE = {FCST_PCP_COMBINE_OUTPUT_TEMPLATE}

# MRMS QPE
OBS_GRID_STAT_INPUT_TEMPLATE = {valid?fmt=%Y%m%d}/mrms_qpe_{valid?fmt=%Y%m%d%H}.nc
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Pcp-Combine

```
# Data type of forecast data read by pcp_combine  
# valid options are GRIB, NETCDF, and GEMPAK  
FCST_PCP_COMBINE_INPUT_DATATYPE = NETCDF  
  
# field name of 1 hr accumulation in forecast files  
FCST_PCP_COMBINE_1_FIELD_NAME = P01M_NONE
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Pcp-Combine

```
{MET_INSTALL_DIR}/bin/pcp_combine -name APCP_06 -add  
  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f024.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f023.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f022.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f021.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f020.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
{FCST_PCP_COMBINE_INPUT_DIR}/  
    20170621/hrefmean_2017062100f019.nc  
    "name=\"P01M_NONE\"; level=\"(0,*,*)\";"  
  
{FCST_PCP_COMBINE_OUTPUT_DIR}/  
20170622/hrefmean_2017062200_A06.nc
```

Running METplus

Environment Variables set by METplus

```
# Set to true if forecast data is probabilistic
FCST_IS_PROB = false
```

```
FCST_FIELD=
{ name="APCP_06"; level="(*,*)";
cat_thresh=[gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }
```

```
OBS_FIELD=
{ name="P06M_NONE"; level="(0,*,*)";
cat_thresh=[gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }
```

MET Configuration Files

GridStatConfig_MEAN

Uses environment variables set by METplus

```
//  
// Output model name to be written  
//  
model = "${MODEL}";  
  
//  
// Output observation type to be written  
//  
obtype = "${OBTYPE}";  
  
//  
// Forecast and observation fields to be verified  
//  
fcst = {  
    field = [ ${FCST_FIELD} ];  
};  
  
obs = {  
    field = [ ${OBS_FIELD} ];  
};
```

```
//  
// Output model name to be written  
//  
model = "HREF_MEAN";  
  
//  
// Output observation type to be written  
//  
obtype = "MRMS_QPE";  
  
//  
// Forecast and observation fields to be verified  
//  
fcst = {  
    field = [  
        { name="APCP_06"; level="(*,*)";  
            cat_thresh=[gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }  
    ];  
};  
obs = {  
    field = [  
        { name="P06M_NONE"; level="(0,*,*)";  
            cat_thresh=[gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }  
    ];  
};
```

Running METplus

Call Grid-Stat with environment set

- VALID = 2017062100, LEAD = 24

```
{MET_INSTALL_DIR}/bin/grid_stat
```

```
{FCST_GRID_STAT_INPUT_DIR}/  
20170622/hrefmean_2017062200_A06.nc
```

```
{OBS_GRID_STAT_INPUT_DIR}/  
20170622/mrms_qpe_2017062200.nc
```

```
{CONFIG_DIR}/GridStatConfig_MEAN
```

```
-outdir {GRID_STAT_OUTPUT_DIR}/201706210000/grid_stat
```

```
>> {OUTPUT_BASE}/logs/grid_stat.log_20190204
```

Configuring METplus

Probabilistic Use Case

- examples/phpt-vs-s4grib.conf
- met_config/GridStatConfig_PROB
- PHPT - probabilistic forecast data (grib2)
- StageIV observation data (grib2)
 - Pcp-Combine to build accumulation
 - Regrid-Data-Plane to map data to forecast grid
- Grid-Stat to compare model vs. obs

Running METplus phpt-vs-s4grib.conf Use Case

master_metplus.py

```
-c ~/METplus/parm/use_cases/qpf/  
examples/phpt-vs-s4grib.conf
```

```
-c  
/d1/mccabe/system.conf.mccabe.eyewall
```

METplus Configuration Files

phpt-vs-s4grib.conf: Time Information

[config]

```
# time looping - options are INIT, VALID, RETRO, and REALTIME
LOOP_BY = INIT

# Format of INIT_BEG and INIT_END
INIT_TIME_FMT = %Y%m%d%H

# Start time for METplus run
INIT_BEG=2016090412

# End time for METplus run
INIT_END=2016090412

# Increment between METplus runs in seconds. Must be >= 60
INIT_INCREMENT=60

# list of forecast leads to process
LEAD_SEQ = 6, 7
```

INIT: 2016-09-04_12
LEAD = 6

INIT: 2016-09-04_12
LEAD = 7

METplus Configuration Files

phpt-vs-s4grib.conf: Field Information

```
# List of applications to run
PROCESS_LIST = PcpCombine, RegridDataPlane, GridStat

# run pcp_combine on observation data
OBS_PCP_COMBINE_RUN = True

# run regrid_data_plane on observation data
OBS_REGRID_DATA_PLANE_RUN = True

# list of variables to compare
FCST_VAR1_NAME = APCP
FCST_VAR1_LEVELS = A06
FCST_VAR1_THRESH = gt12.7, gt25.4, gt50.8, gt76.2, gt152.4
```

```
OBS_VAR1_NAME = APCP
OBS_VAR1_LEVELS = A06
OBS_VAR1_THRESH = gt12.7, gt25.4, gt50.8, gt76.2, gt152.4
```

NOT IN
CONFIG
FILE, BUT
INFERRRED

METplus Configuration Files

phpt-vs-s4grib.conf: Data Information

```
[dir]
# location of configuration files used by MET applications
CONFIG_DIR={PARM_BASE}/use_cases/qpf/met_config

# input and output data directories for each application in PROCESS_LIST
FCST_GRID_STAT_INPUT_DIR = {INPUT_BASE}/qpf/PHPT

OBS_PCP_COMBINE_INPUT_DIR = {INPUT_BASE}/qpf/uswrp/StageIV
OBS_PCP_COMBINE_OUTPUT_DIR = {OUTPUT_BASE}/uswrp/StageIV_grib/bucket
OBS_REGRID_DATA_PLANE_INPUT_DIR = {OBS_PCP_COMBINE_OUTPUT_DIR}
OBS_REGRID_DATA_PLANE_OUTPUT_DIR = {OUTPUT_BASE}/uswrp/StageIV_grib/regrid
OBS_GRID_STAT_INPUT_DIR = {OBS_REGRID_DATA_PLANE_OUTPUT_DIR}

GRID_STAT_OUTPUT_DIR = {OUTPUT_BASE}/uswrp/met_out/{MODEL}

[filename_templates]
# format of filenames

# PHPT
FCST_GRID_STAT_INPUT_TEMPLATE= {init?fmt=%Y%m%d}/{init?fmt=%Y%m%d}_i{init?fmt=%H}_f{lead?fmt=%HHH}_HRRRTLE_PHPT.grb2

# StageIV Grib
OBS_PCP_COMBINE_INPUT_TEMPLATE = {valid?fmt=%Y%m%d}/ST4.{valid?fmt=%Y%m%d%H}.{level?fmt=%HH}h
OBS_PCP_COMBINE_OUTPUT_TEMPLATE = {valid?fmt=%Y%m%d}/ST4.{valid?fmt=%Y%m%d%H}_A{level?fmt=%HH}h
OBS_REGRID_DATA_PLANE_TEMPLATE = {OBS_PCP_COMBINE_OUTPUT_TEMPLATE}
OBS_GRID_STAT_INPUT_TEMPLATE = {OBS_REGRID_DATA_PLANE_TEMPLATE}
```

METplus Configuration Files

phpt-vs-s4grib.conf: Pcp-Combine

```
# Data type of observation data read by pcp_combine  
# valid options are GRIB, NETCDF, and GEMPAK  
OBS_PCP_COMBINE_INPUT_DATATYPE = GRIB
```

METplus Configuration Files

phpt-vs-s4grib.conf: Pcp-Combine

INITIALIZATION TIME: 2016090412

LEAD: 6

```
{MET_INSTALL_DIR}/bin/pcp_combine -name APCP_06 -add
```

```
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090418.06h 6
```

```
{OBS_PCP_COMBINE_OUTPUT_DIR}/20160904/ST4.2016090418_A06h
```

METplus Configuration Files

phpt-vs-s4grib.conf: Pcp-Combine

INITIALIZATION TIME: 2016090412

LEAD: 7

```
{MET_INSTALL_DIR}/bin/pcp_combine -name APCP_06 -add  
  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090419.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090418.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090417.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090416.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090415.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090414.01h 1  
  
{OBS_PCP_COMBINE_OUTPUT_DIR}/20160904/ST4.2016090419_A06h
```

METplus Configuration Files

phpt-vs-s4grib.conf: Pcp-Combine

INITIALIZATION TIME: 2016090412

LEAD: 6

Why did pcp_combine use the 6 hour accumulation file?

I wanted to use six 1 hour accumulation files!

[config]

OBS_PCP_COMBINE_INPUT_LEVEL = 1

Forces pcp_combine to use 1 hr accumulation files. GRIB DATA ONLY!!

METplus Configuration Files

phpt-vs-s4grib.conf: Pcp-Combine

INITIALIZATION TIME: 2016090412

LEAD: 6

```
{MET_INSTALL_DIR}/bin/pcp_combine -name APCP_06 -add  
  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090418.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090417.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090416.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090415.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090414.01h 1  
{OBS_PCP_COMBINE_INPUT_DIR}/20160904/ST4.2016090413.01h 1  
  
{OBS_PCP_COMBINE_OUTPUT_DIR}/20160904/ST4.2016090418_A06h
```

METplus Configuration Files

hrefmean-vs-mrms-qpe.conf: Pcp-Combine

RECALL (for NetCDF)

```
# Data type of forecast data read by pcp_combine
# valid options are GRIB, NETCDF, and GEMPAK
FCST_PCP_COMBINE_INPUT_DATATYPE = NETCDF

# field name of 1 hr accumulation in forecast files
FCST_PCP_COMBINE_1_FIELD_NAME = P01M_NONE

FCST_PCP_COMBINE_3_FIELD_NAME = P03M_NONE

FCST_PCP_COMBINE_6_FIELD_NAME = P06M_NONE
```

Running METplus

Environment Variables set by METplus

```
# Set to true if forecast data is probabilistic  
FCST_IS_PROB = true  
  
FCST_VAR1_THRESH = gt12.7, gt25.4, gt50.8, gt76.2, gt152.4
```

FCST_FIELD=

{ name="PROB"; level="A06";

prob={ name="APCP"; thresh_lo=12.7; } cat_thresh=[==0.1];},

{ name="PROB"; level="A06";

prob={ name="APCP"; thresh_lo=25.4; } cat_thresh=[==0.1];},

{ name="PROB"; level="A06";

prob={ name="APCP"; thresh_lo=50.8; } cat_thresh=[==0.1];},

{ name="PROB"; level="A06";

prob={ name="APCP"; thresh_lo=76.2; } cat_thresh=[==0.1];},

{ name="PROB"; level=
prob={ name="APCP";

Set [config] FCST_GRID_STAT_PROB_THRESH
to override cat_thresh

Running METplus

Environment Variables set by METplus

```
# Set to true if forecast data is probabilistic  
FCST_IS_PROB = true
```

```
OBS_FIELD =  
  
{ name="APCP_06"; level="(*,*)"; cat_thresh=[ gt12.7 ]; },  
{ name="APCP_06"; level="(*,*)"; cat_thresh=[ gt25.4 ]; },  
{ name="APCP_06"; level="(*,*)"; cat_thresh=[ gt50.8 ]; },  
{ name="APCP_06"; level="(*,*)"; cat_thresh=[ gt76.2 ]; },  
{ name="APCP_06"; level="(*,*)"; cat_thresh=[ gt152.4 ]; }
```

MET Configuration Files

GridStatConfig_PROB

Uses environment variables set by METplus

```
//  
// Output model name to be written  
//  
model = "${MODEL}";  
  
//  
// Output observation type to be written  
//  
obtype = "${OBTYPE}";  
  
//  
// Forecast and observation fields to be verified  
//  
fcst = {  
    field = [ ${FCST_FIELD} ];  
};  
  
obs = {  
    field = [ ${OBS_FIELD} ];  
};  
  
// Output model name to be written  
//  
model = "PHPT";  
  
//  
// Output observation type to be written  
//  
obtype = "STAGE4_GRIB";  
  
//  
// Forecast and observation fields to be verified  
//  
fcst = {  
    field = [  
        { name="PROB"; level="A06"; prob=[ name="APCP"; thresh_lo=12.7; } cat_thresh=[==0.1]; },  
        { name="PROB"; level="A06"; prob=[ name="APCP"; thresh_lo=25.4; } cat_thresh=[==0.1]; },  
        { name="PROB"; level="A06"; prob=[ name="APCP"; thresh_lo=50.8; } cat_thresh=[==0.1]; },  
        { name="PROB"; level="A06"; prob=[ name="APCP"; thresh_lo=76.2; } cat_thresh=[==0.1]; },  
        { name="PROB"; level="A06"; prob=[ name="APCP"; thresh_lo=152.4; } cat_thresh=[==0.1]; }]  
};  
  
obs = {  
    field = [  
        { name="APCP_06"; level="(*,*)"; cat_thresh=[ gt12.7 ] }; },  
        { name="APCP_06"; level="(*,*)"; cat_thresh=[ gt25.4 ] }; },  
        { name="APCP_06"; level="(*,*)"; cat_thresh=[ gt50.8 ] }; },  
        { name="APCP_06"; level="(*,*)"; cat_thresh=[ gt76.2 ] }; },  
        { name="APCP_06"; level="(*,*)"; cat_thresh=[ gt152.4 ] }; ]};  
};
```

Running METplus

Call Grid-Stat with environment set

- INIT = 2016091412, LEAD = 6

{MET_INSTALL_DIR}/bin/grid_stat

{FCST_GRID_STAT_INPUT_DIR}/
20160904/20160904_i12_f006_HRRRTLE_PHPT.grb2

{OBS_GRID_STAT_INPUT_DIR}/
20160904/ST4.2016090418_A06h

{CONFIG_DIR}/GridStatConfig_PROB

-outdir {GRID_STAT_OUTPUT_DIR}/201609141200/grid_stat

>> {OUTPUT_BASE}/logs/grid_stat.log_20190204

Running METplus

Call Grid-Stat with environment set

- INIT = 2016091412, LEAD = 7

{MET_INSTALL_DIR}/bin/grid_stat

{FCST_GRID_STAT_INPUT_DIR}/
20160904/20160904_i12_f007_HRRRTLE_PHPT.grb2

{OBS_GRID_STAT_INPUT_DIR}/
20160904/ST4.2016090419_A06h

{CONFIG_DIR}/GridStatConfig_PROB

-outdir {GRID_STAT_OUTPUT_DIR}/201609141200/grid_stat

>> {OUTPUT_BASE}/logs/grid_stat.log_20190204

Running METplus

Debugging

- Check output directories to see if data exists.

- Check the log file and look for errors

{OUTPUT_BASE}/logs/master_metplus.log.20190204

- If [config] LOG_MET_OUTPUT_TO_METPLUS = no

A log file for each MET app will be generated as well

{OUTPUT_BASE}/logs/grid_stat.log_20190204

- Check final configuration file for anything set incorrectly

{OUTPUT_BASE}/metplus_final.conf

- Want to rerun an app? It is easy to copy commands into terminal.

Running METplus

Rerunning Commands

- Check log output for “RUNNING:” and copy that command into a **bash** shell. (Set to output as csh, set [config] USER_SHELL = csh)
- If METplus sets environment variables for a run, look for “COPYABLE ENVIRONMENT FOR NEXT COMMAND:”
- NOTE: Skip pipe to log file to view results in terminal
- **LOOK FOR THIS, COPY THIS, DON’T COPY THIS** (no longer in logs)

```
01/17 23:56:02.157 metplus.GridStat (compare_gridded_wrapper.py:342) DEBUG: COPYABLE ENVIRONMENT FOR NEXT
COMMAND:
01/17 23:56:02.157 metplus.GridStat (command_builder.py:151) DEBUG: export MODEL="HREF_MEAN"; export
FCST_VAR="APCP"; export OBS_VAR="P06M_NONE"; export LEVEL="A06"; export OBTYPE="MRMS_QPE"; export
CONFIG_DIR="/d1/mccabe/METplus.develop/parm/use_cases/qpf/met_config"; export FCST_FIELD="{ name=\\"APCP_06\\";
level=\\"(*,*)\\"; cat_thresh=[ gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }"; export OBS_FIELD="{ name=\\"P06M_NONE\\";
level=\\"(0,*,*)\\"; cat_thresh=[ gt12.7,gt25.4,gt50.8,gt76.2,gt152.4 ]; }"; export INPUT_BASE="/home/mccabe/data/input"; export
MET_VALID_HHMM="0622"; export FCST_TIME="024";
01/17 23:56:02.157 metplus.GridStat (command_runner.py:222) DEBUG: LOG_MET_OUTPUT_TO_METPLUS log file is True
01/17 23:56:02.159 metplus.GridStat (command_runner.py:119) INFO: app_name is: grid_stat, output sent to:
/home/mccabe/data/output-qpf/logs/master_metplus.log.20190117
01/17 23:56:02.160 metplus.GridStat (command_runner.py:155) INFO: RUNNING: /usr/local/met-8.0/bin/grid_stat
/home/mccabe/data/output-qpf/uswrp/HREFv2_Mean/bucket/20170622/hrefmean_2017062200_A06.nc
/home/mccabe/data/input/qpf/MRMS_QPE_Data/20170622/mrms_qpe_2017062200.nc
/d1/mccabe/METplus.develop/parm/use_cases/qpf/met_config/GridStatConfig_MEAN -outdir /home/mccabe/data/output-
qpf/uswrp/met_out/HREF_MEAN/201706210000/grid_stat >> /home/mccabe/data/output-qpf/logs/master_metplus.log.20190117
2>&1
```

Running METplus

Live Demo

- You can try it yourself!
- Questions?