



NOAA Modeling Portal

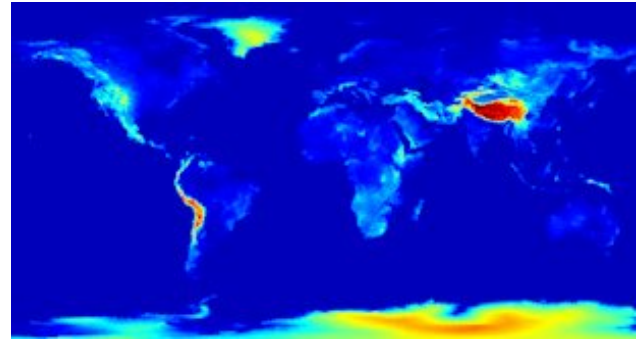
Jeff Smith and Mark Govett
Earth System Research Lab / NOAA / USA
November 6, 2008



Earth System Research Lab in Boulder, Colorado

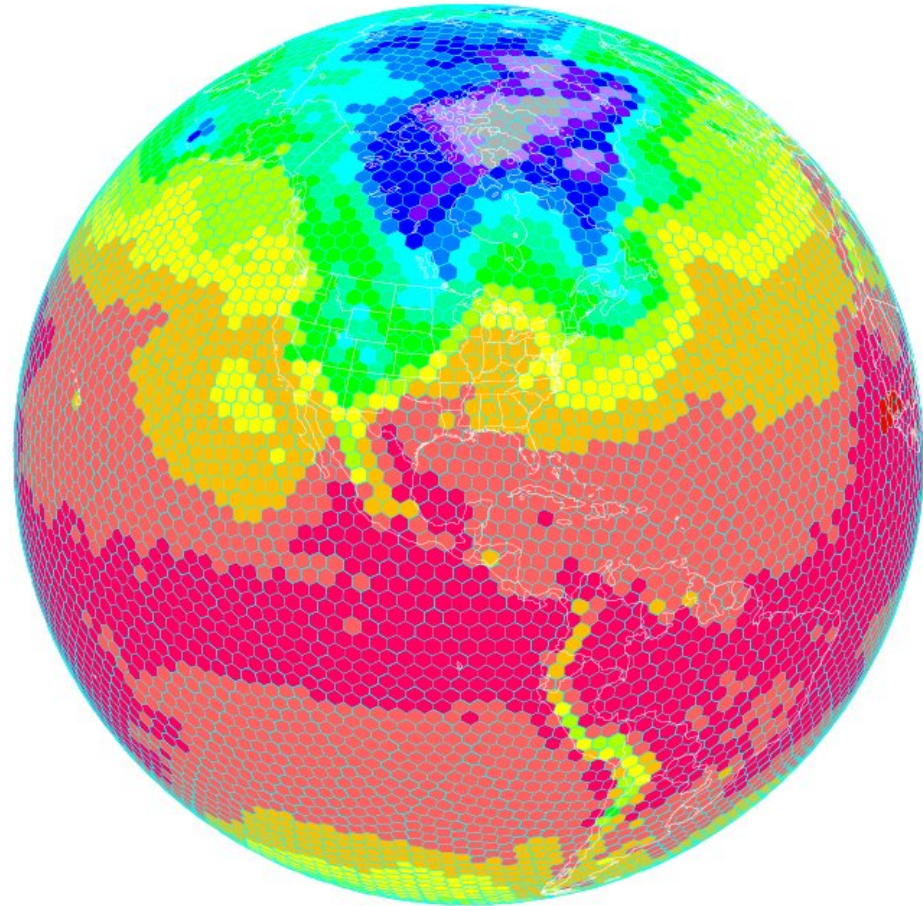
What is WRF?

- WRF is NCAR's mesoscale and global Weather Research and Forecasting model
- Designed for both operational forecasters and atmospheric researchers
- Features multiple dynamical cores, a 3-dimensional variational (3DVAR) data assimilation system, and an extensible software architecture that supports parallel computing
- WRF is currently in operational use at NCEP (National Centers for Environmental Prediction)



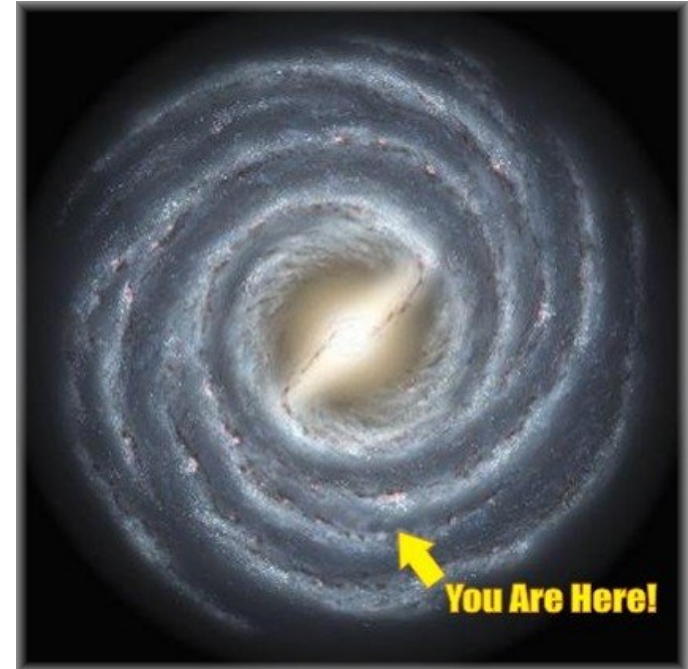
What is FIM?

- FIM (Flow-following, finite-volume, Icosahedral Model)
- NOAA's global model that employs adaptive isentropic-sigma hybrid vertical coordinate accurate finite-volume horizontal advection, and use of an icosahedral horizontal grid
- FIM was designed to run efficiently on parallel computer systems



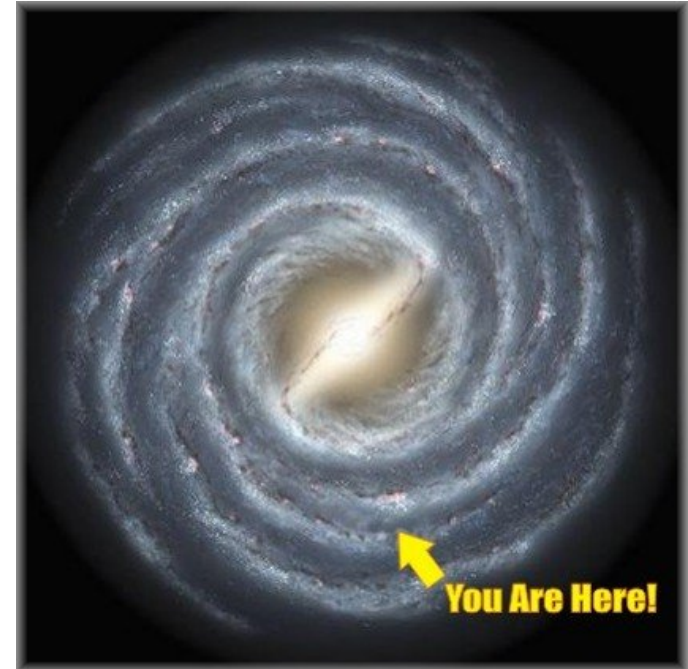
About Our Little Section of the U.S. Gov't

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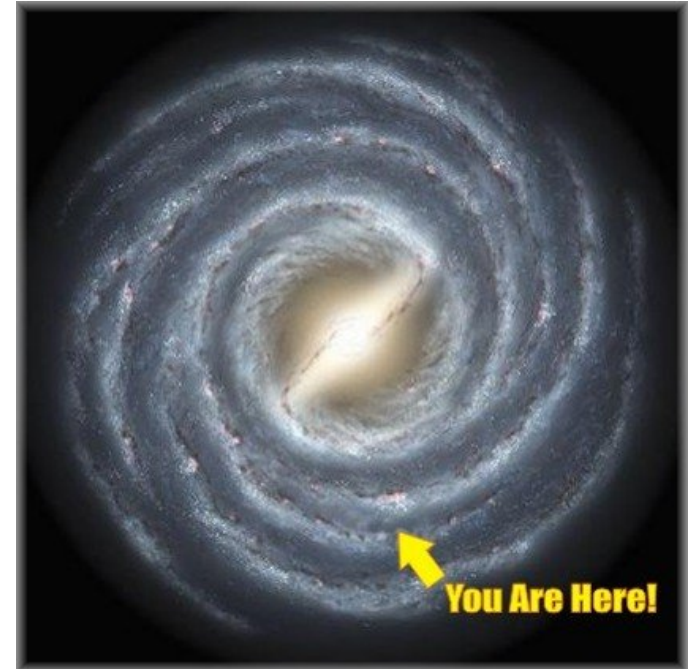
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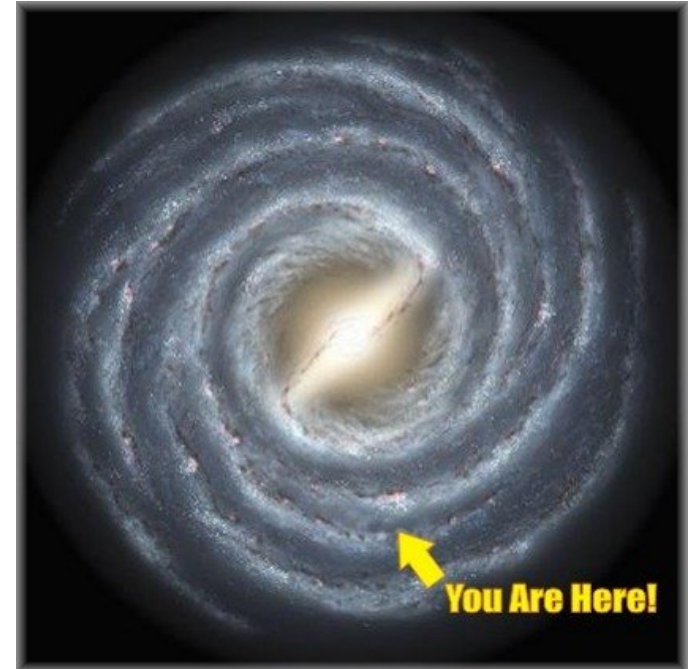
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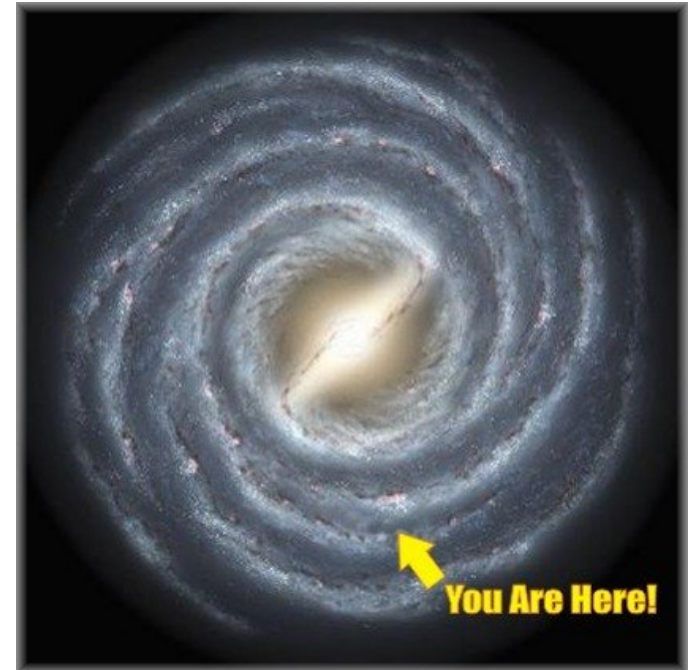
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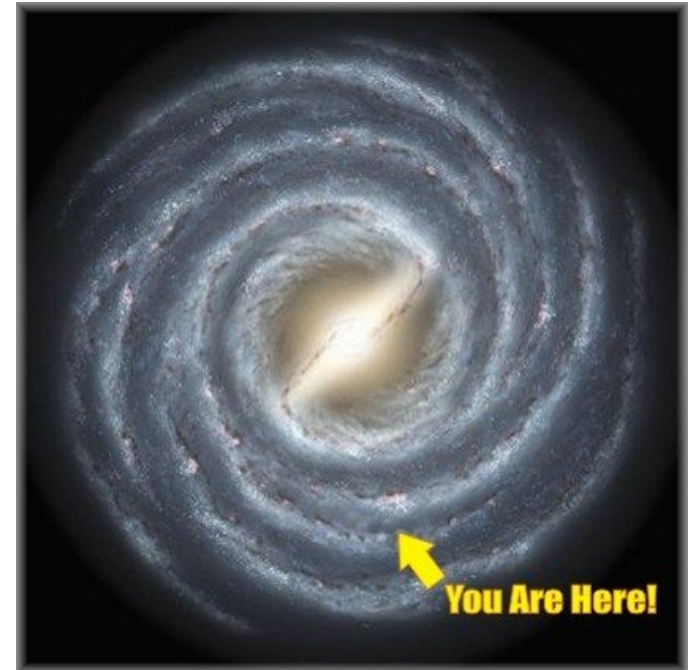
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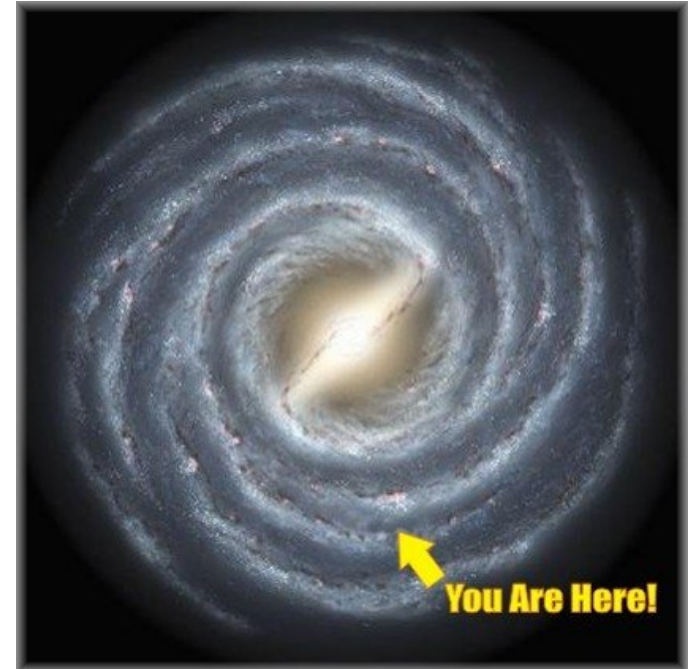


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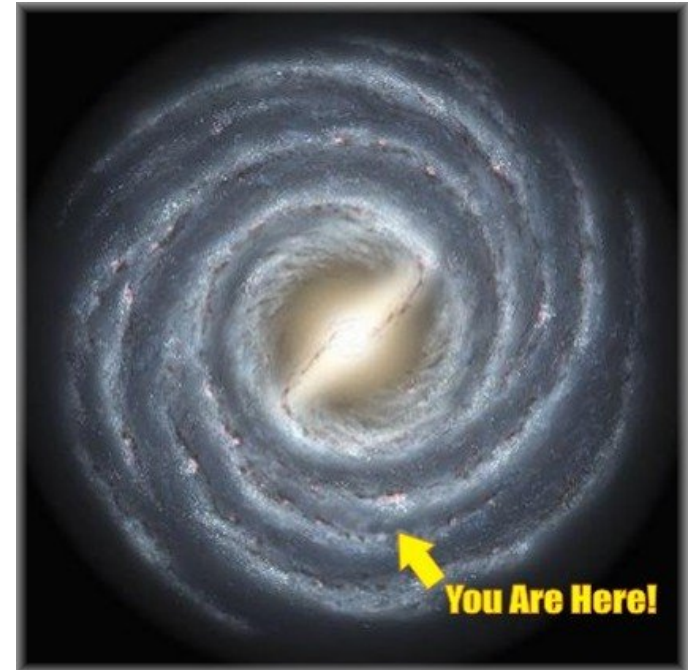


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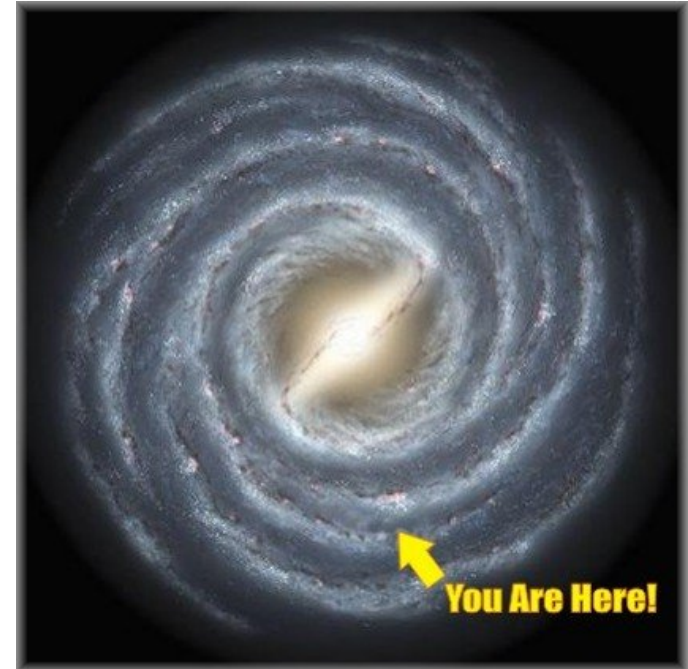
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- Or, turning it into the world's longest domain name:
`jeff@ACS.AD.GSD.ESRL.NOAA.DOC.USA.PE`

Group Activities -1

- **Code Parallelization** - the Scalable Modeling System (SMS) is a tool for directive-based code parallelization for Fortran codes. The user inserts directives which are converted into parallel code which relies both on SMS libraries and the MPI libraries

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- **Grid Computing** - explored the feasibility of using for ensembles, but security issues, and lack of maturity has hindered its use at NOAA

Group Activities -2

- **FIM Development** – FIM is being run at ESRL and producing 10 day forecasts at 30km resolution.
 - 30 km FIM runs producing 10 day forecasts were run at the Texas Advanced Computing Center (TACC) and provided to the NOAA National Hurricane Center for information on hurricane tracks. Also testing a 20 member ensemble of 60 km FIM runs (240 cores/ensemble), with plans to increase the resolution to 15 km (1680 cores)

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- **Data Locator** - an html based search engine for finding and viewing meteorological data sets (also includes web services callable from other applications)
- **NOAA Modeling Portal** - the subject of this presentation

What is NOAA Modeling Portal? -1

- A graphical user interface for running weather models such as WRF and FIM

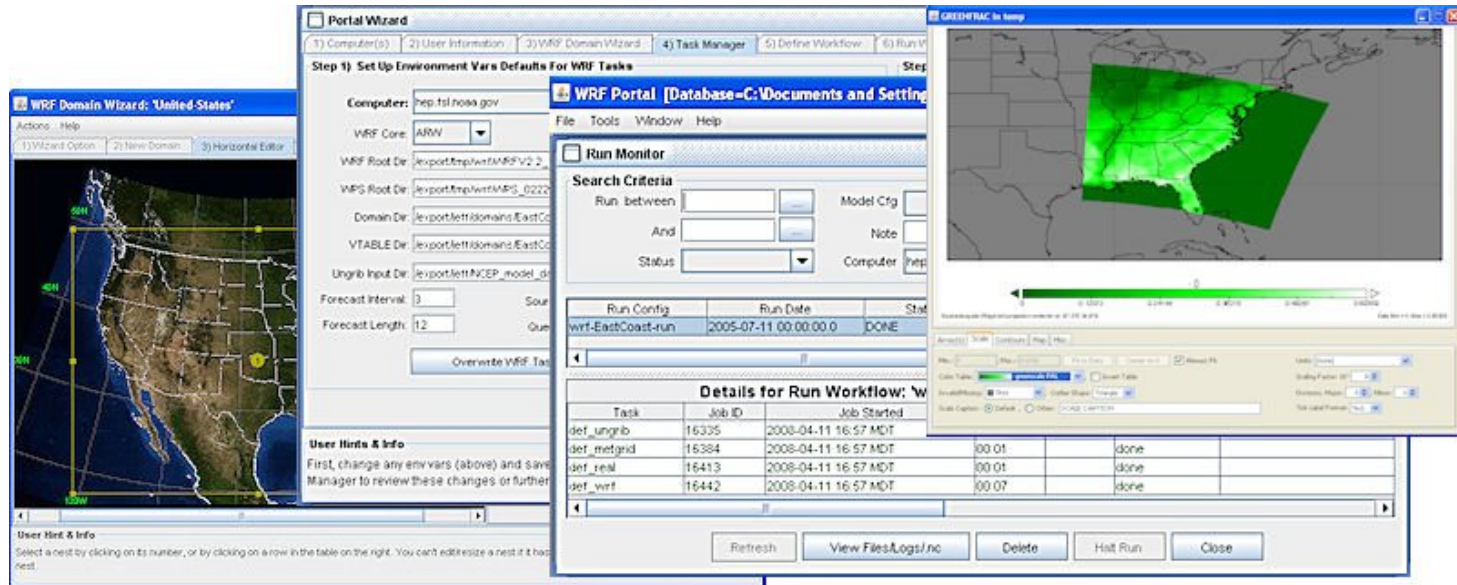
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- A graphical user interface for running weather models such as WRF and FIM
- This application runs on all platforms and can be launched from a standard web browser as a Java Web Start program
- It simplifies and automates:
 - configuring and running of model workflows
 - selection/localization of your domain (WRF)
 - launching and monitoring runs
 - Halting or canceling runs/jobs
 - visualization of your model's output

What is NOAA Modeling Portal? -2

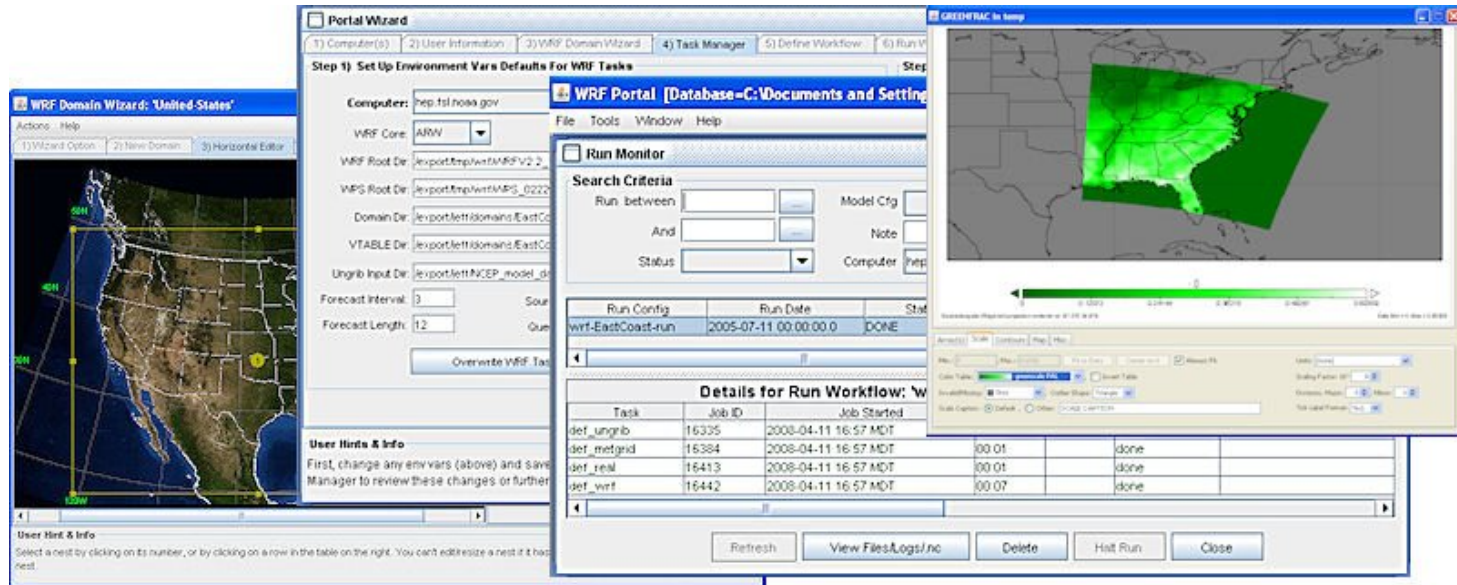


Run Config	Run Date	Stat
wrf-EastCoast-run	2005-07-11 00:00:00	DONE

Details for Run Workflow: w					
Task	Job ID	Job Started			
def_ungrib	16335	2008-04-11 16:57 MDT			
def_metgnd	16384	2008-04-11 16:57 MDT	00:01	done	
def_real	16413	2008-04-11 16:57 MDT	00:01	done	
def_wrf	16442	2008-04-11 16:57 MDT	00:07	done	

- It does not include the models (WRF and FIM) themselves—this software must be installed separately.
 - Portal is a GUI front end for running WRF or FIM models

What is NOAA Modeling Portal? -2



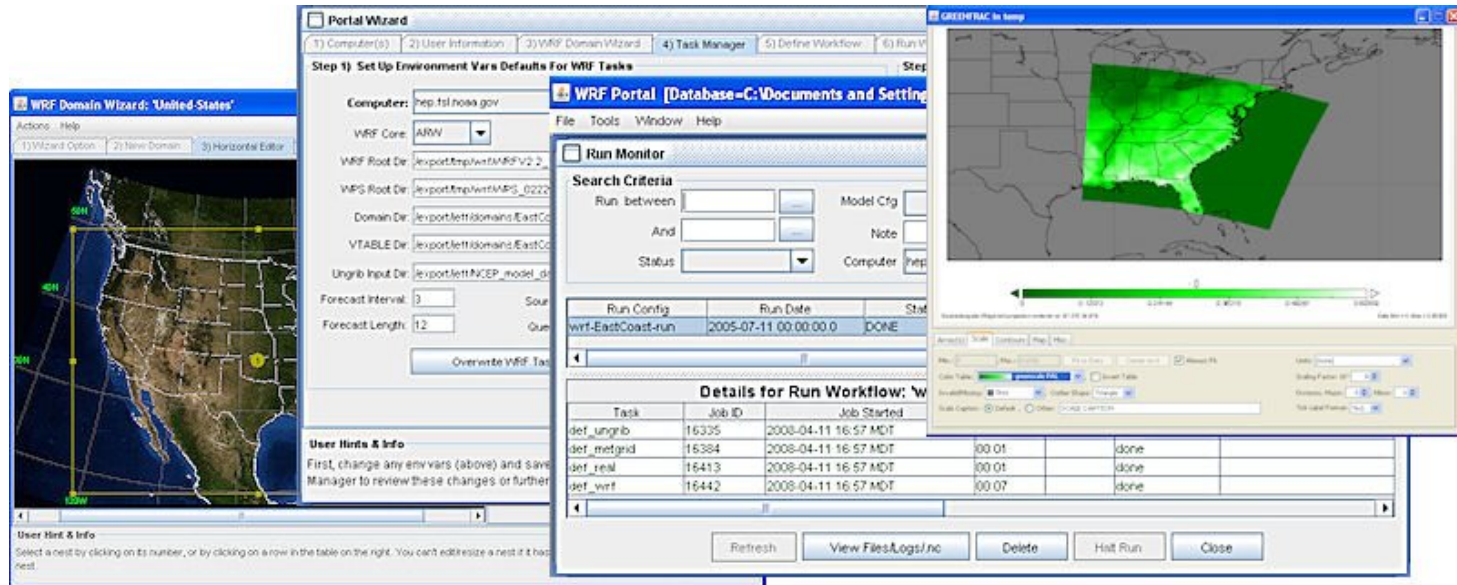
The screenshot displays the NOAA Modeling Portal interface. On the left, the 'WRF Domain Wizard: United States' window shows a map of the United States with a green rectangular domain defined over the eastern half. The main window, 'Portal Wizard', is in 'Step 1: Set Up Environment Vars Defaults For WRF Tasks'. It contains fields for 'Computer' (hep.tsl.noaa.gov), 'WRF Core' (ARW), and various directory paths for WRF, WPS, Domain, VTABLE, and Ungrib. A 'Run Monitor' window is overlaid, showing a search criteria section and a table of run configurations. The table lists a single run: 'wrf-EastCoast-run' with a 'Run Date' of '2005-07-11 00:00:00' and a status of 'DONE'. Below this, a 'Details for Run Workflow' table shows a sequence of tasks: 'def_ungrib', 'def_metgnd', 'def_real', and 'def_wrf', all with 'done' status.

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 - Portal is a GUI front end for running WRF or FIM models
- Supports batch queue systems such as LSF and SGE and includes job managers
- Version 1.00 was released on Oct 10, 2008
- Requires Java 1.5 or later, runs on most platforms

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- Robust job managers for running and managing tasks
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- Graphical file browsers to quickly locate files
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- Progress monitor for tracking the progress of runs
- Graphical netcdf viewers to visualize model input/output
- Stores its information in a database so you can easily search and retrieve your information without the tedium of hunting through a myriad of files in directories directories

Two Main Categories of NOAA Portal Users

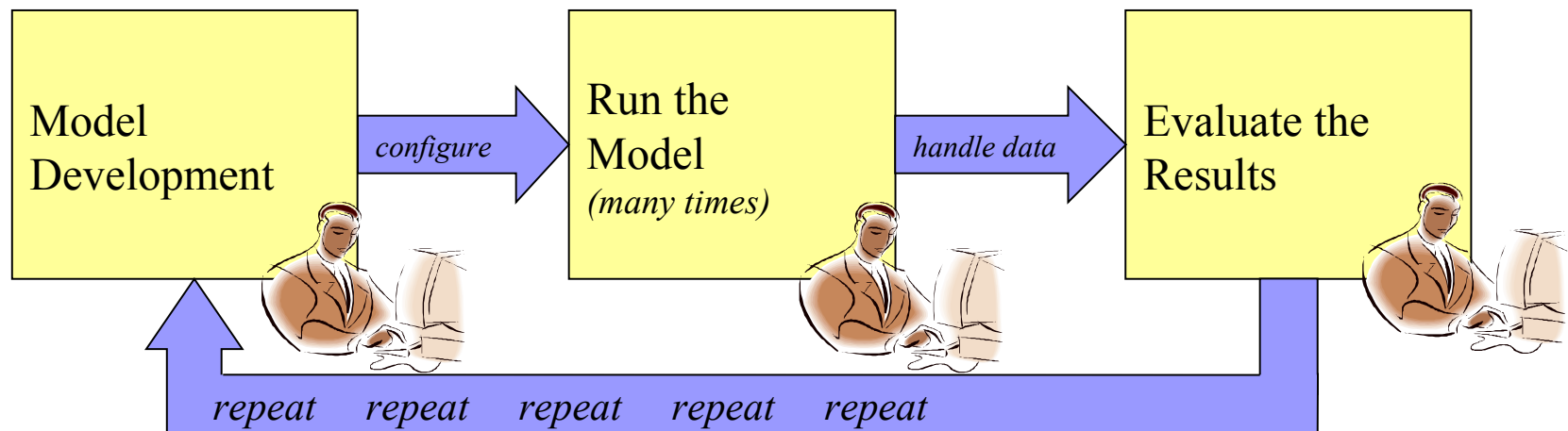
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- **Model developers and testers** who, while familiar with the details of configuring namelists and creating run scripts, want a tool to simplify the process. Managing and making dozens or hundreds of model runs can be tedious, time-consuming, and prone to error. The portal automates many tedious tasks, freeing the developer or tester to focus on the science of their model runs

Modelers and Testers

Model development is an iterative process



Configuring/Running Models is Complicated!

- Typical workflow entails editing multiple configuration files (namelist text files), setting environment variables, running executable files in the correct order, checking the output to make sure the workflow can proceed to the next step

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- Editing the configuration files by hand in a text editor such as **vi** is tedious and mistake prone
- Selecting a domain (geographic region) in WRF, for example, without visual feedback can be a frustrating exercise in trial and error

Example: WRF Workflow comparisons

WRF from command line	Hard!	WRF using portal	Easy!
Lats/Lons are looked up in an atlas, grid points are computed with a calculator, user manually types all this data into namelist text files		User draws a box around a region of the Earth on the screen, grid points are automatically calculated with minimal user input, namelists are automatically written	
Namelists and scripts are scattered in multiple directories, manually edited in vi		Namelists and scripts are stored in database and edited in WRF Portal visual editors	
New runs involve copying lots of files, editing them with vi, set environment vars, launching scripts manually.		New runs are launched from the Run Workflow window. Most of the info is already filled out for you.	
Runs are monitored by tailing certain log files in specific directories. Requires detailed knowledge of WRF.		Runs are monitored from a window which lists all tasks, how long they've been running and the estimated time to finish	
Comparing two different model runs involves viewing multiple namelists files for each model and hunting for the differences.		Comparing two different model runs is done from a "diff" window that highlights all differences between the models.	
Finding an old run involves hunting through directories on different computers/file systems		Finding an old run is done by typing in search criteria into a window	
Runs are canceled by killing jobs from the command line		Runs are canceled with a mouse click	
Visualization is done with external tools		Visualization is done within WRF Portal with a mouse click	

Graphical Editors -1

From namelist.wps configuration file (domain and nests)

```
interval_seconds = 10800,
io_form_geogrid = 2,
opt_output_from_geogrid_path = '/wrf-data/domains/UK',
debug_level = 0,
/
```

```
&geogrid
parent_id      = 1,1,1,
parent_grid_ratio = 1,3,3,
i_parent_start = 1,41,30,
j_parent_start = 1,15,76,
e_we          = 100,136,106,
e_sn          = 119,130,85,
geog_data_res = '10m','10m','10m',
dx = 11400,
dy = 11400,
map_proj = 'mercator',
ref_lat = 54.804,
ref_lon = -4.195,
truelat1 = 54.804,
truelat2 = 0,
stand_lon = -4.195,
geog_data_path = '/wrf-data/geog10m',
opt_geogrid_tbl_path = '/wrf-data/domains/UK',
ref_x = 50.0,
ref_y = 59.5,
/
```



WRF Domain Wizard: UK

Actions Help

4) Namelist Input Editor 5) Run Preprocessors 6) Visualize NetCDF

1) Wizard Option 2) New Domain 3) Horizontal Editor

Domain Nests Display Options

Nested Domain Properties

ID	PID	Ratio	Left	Right	Top	Bot	NE	NY	Res
1	1	1	1	100	119	1	100	119	10m
2	1	3	41	86	50	15	135	129	10m
3	1	3	30	65	104	76	105	84	10m

New Edit Delete Clear

User Hint & Info

Select a nest by clicking on its number, or by clicking on a row in the table on the right. You can't edit/delete a nest if it has a child nest (you must delete the child first).

< Back Next >

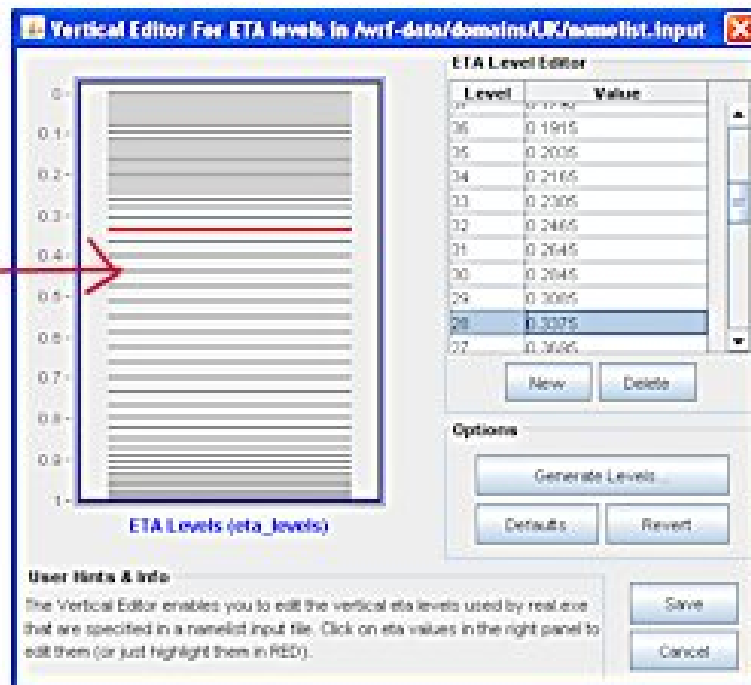
Graphical Editors -2

From namelist.input configuration file (ETA levels)

```

&domains
eta_levels = 1.000, 0.994, 0.987, 0.979, 0.97,
            0.96, 0.949, 0.937, 0.924, 0.909,
            0.892, 0.873, 0.851, 0.826, 0.798,
            0.768, 0.736, 0.702, 0.666, 0.629,
            0.5915, 0.5536, 0.5153, 0.4773, 0.44,
            0.404, 0.3695, 0.3375, 0.3085, 0.2845,
            0.2645, 0.2465, 0.2305, 0.2165, 0.2035,
            0.1915, 0.1792, 0.1667, 0.1539, 0.1407,
            0.1272, 0.1134, 0.0995, 0.0855, 0.0713,
            0.0571, 0.0429, 0.0287, 0.0145, 0.000,
time_step = 68,
time_step_fract_num = 0,
time_step_fract_den = 1,
max_dom = 3,
s_we = 1, 1, 1,
e_we = 100, 136, 106,

```



Vertical Editor For ETA levels in Awrf-data/domains/UK/namelist.input

ETA Level Editor

Level	Value
28	0.3075
26	0.1915
25	0.2005
24	0.2165
23	0.2305
22	0.2465
21	0.2645
20	0.2845
19	0.3085
18	0.3375
17	0.3695
16	0.404
15	0.44
14	0.4773
13	0.5153
12	0.5536
11	0.5915
10	0.629
9	0.666
8	0.702
7	0.736
6	0.768
5	0.798
4	0.826
3	0.851
2	0.873
1	0.892
0	0.909
-1	0.924
-2	0.937
-3	0.949
-4	0.96
-5	0.97
-6	0.979
-7	0.987
-8	0.994
-9	1.000

Options

Generate Levels ...

Defaults ... Revert ...

User Hints & Info

The Vertical Editor enables you to edit the vertical eta levels used by real.exe that are specified in a namelist.input file. Click on eta values in the right panel to edit them (or just highlight them in RED).

Save Cancel

Graphical Editors -3

From namelist.input configuration file (all parameters)

```
&dynamics
w_damping          = 0,
diff_opt           = 1,
km_opt             = 4,
base_temp          = 290.,
damp_opt           = 0,
zdamp              = 5000., 5000., 5000.,
dampcoef           = 0.01, 0.01, 0.01,
khdif              = 0, 0, 0,
kvdif              = 0, 0, 0,
smdiv              = 0.1, 0.1, 0.1,
emdiv              = 0.01, 0.01, 0.01,
epssm              = 0.1, 0.1, 0.1,
time_step_sound    = 4, 4, 4,
h_mom_adv_order    = 5, 5, 5,
v_mom_adv_order    = 3, 3, 3,
h_sca_adv_order    = 5, 5, 5,
v_sca_adv_order    = 3, 3, 3,
non_hydrostatic    = true., true., true.,
pd_moist            = true., true., true.,
pd_scalar           = true., true., true.,
pd_chem            = true., true., true.,
pd_tke             = true., true., true.,
```

WRF Domain Wizard: UK

Actions: Help

1) Wizard Option 2) New Domain 3) Horizontal Editor 4) Namelist Input Editor 5) Run Preprocessors 6) Visualize NetCDF

Add or Edit ETA Levels Reset For This Domain Help /wrf-data/domains/UK/namelist.input

GUI Editor Text Editor

Number of Domains (max_dom): 3

Parameter	Master Domain	Nest 1	Nest 2
time_step_sound	4	4	4
h_mom_adv_order	5	5	5
v_mom_adv_order	3	3	3
h_sca_adv_order	5	5	5
v_sca_adv_order	3	3	3
non_hydrostatic	true	true	true
pd_moist	true	true	true
pd_scalar	true	true	false
pd_chem	true	true	true
pd_tke	true	true	true

non_hydrostatic (max_dom) true whether running the model in hydrostatic or non-hydro mode
 pd_moist (max_dom) true Coriolis only acts on wind perturbation (idealized)
 pd_scalar (max_dom) false For diff_opt=2 only, vertical diffusion acts on full fields (not just on perturbation from 1D base_profile) (idealized)
 h_mom_adv_order (max_dom) 5 horizontal momentum advection order (5=5th, etc.)
 v_mom_adv_order (max_dom) 3 vertical momentum advection order

User Hint & Info

Edit this domain's namelist input file. The following parameters have been defaulted for this domain: max_dom, s_we, e_we, s_on, e_on, di, dy, i_parent_start, l_parent_start, time_step. Right click in the window to Copy, Paste, or Find

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- Stores most of the user's work and information in a SQL database



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- Stores most of the user's work and information in a SQL database
- Standard version of the portal (the single-user or “desktop version”) is a Java Web Start application that employs an embedded HSQL database.
 - All a user has to do is click the web link and the software downloads (if the user hasn't downloaded it before) and runs. No other installation steps are required.



NOAA Portal Design -2

- Portal also supports a MySQL database, enabling all users at a site to share the same database instance



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- Portal users are prompted for a username and password

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- Developmental Testbed Center (DTC) is using this setup
- Administrator can create users and configure the computing resources available at the site
- Portal users are prompted for a username and password
- Workflows are associated with a username
- Users can, however, open up read-only instances of other user's workflows and their runs

NOAA Portal Design -3

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 - Easy to back up the data (archive it) and query it based on multiple criteria

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- Advantages of storing this data in a SQL database instead of in multiple disk files
 - Easy to back up the data (archive it) and query it based on multiple criteria
 - Eliminated the clutter and complication of the user maintaining many files in multiple directories on potentially multiple file systems
 - Enabled the user to run NOAA Portal and access most of his data from any computer, mounted to any file system

NOAA Portal Design -4

- After creating a workflow in NOAA Portal, the user can choose to run it on the desired computer (which was previously configured in the portal software)

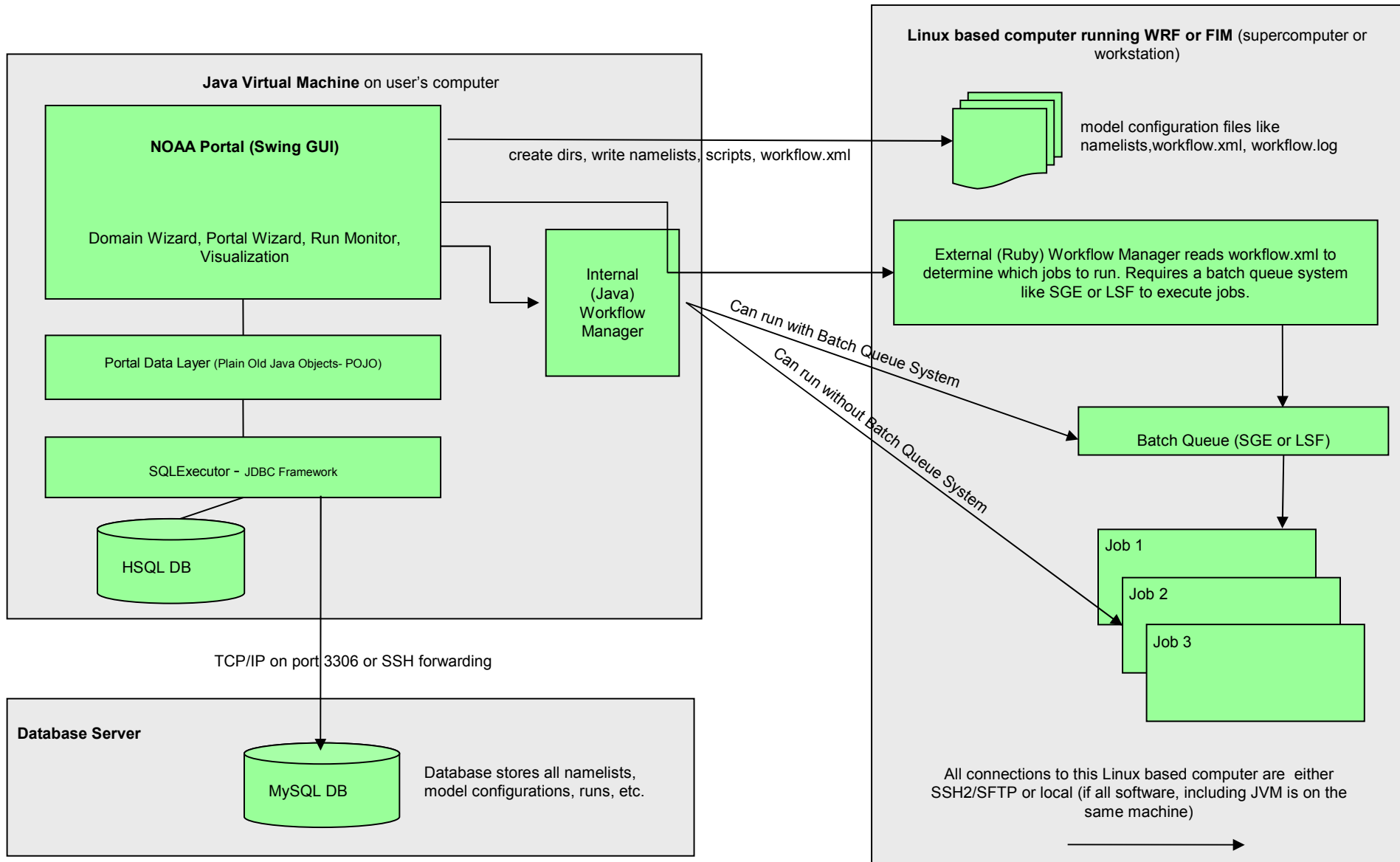
NOAA Portal Design -4

- After creating a workflow in NOAA Portal, the user can choose to run it on the desired computer (which was previously configured in the portal software)
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 - on a local computer (direct access to files and exes)
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- User can also run portal “locally” on a remote computer if they first SSH to the remote computer and then launch the portal in an X windows session.

NOAA Portal Design -5



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- Portal uses SSH2/SFTP to connect to remote computers

NOAA Portal Job Management

- Two ways to execute jobs with the portal.
 - **External (Ruby) workflow manager** developed by Chris Harrop. This workflow manager must be installed on the same computer as WRF or FIM, and it runs independently. It provides robust job management including job restart on failure, job monitoring, and supports running multiple tasks simultaneously.
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 - Requires that either SGE or LSF be present
 - **Internal (Java) workflow manager.** This workflow manager is built into the portal software, and thus runs on your desktop computer and can only monitor jobs while the portal itself is running.
 - SGE and LSF are optional

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 - DTC used this setup when using the portal to do dozens of retrospective runs for the 2007 13-km Core Test (NMM-WRF versus ARW-WRF).
- We are planning to add a more flexible group management approach in a future release of the portal software

Testing

- Testing is such a laborious process for modelers that sometimes it receives short shrift
- Setting up and re-running dozens of regression test runs for seemingly minor code changes can be so time consuming that users often do not do it.
- Since the portal makes it so easy to repeat workflow runs (or subsets of workflows), it encourages modelers to perform rigorous testing

DTC 2007 WRF Core Tests -1

- In 2007 (and into 2008), the DTC ran side by side comparison of both WRF cores: NMM and ARW
 - Tests were run on two supercomputers: 'bluevista' at NCAR (National Center for Atmospheric Research) and 'wjet' at Earth System Research Lab
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- Each run consisted of executing dozens of model tasks, including moving model data from a mass store to a network file system, using the portal's external workflow manager

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 - As a workaround solution to the problem, we had to manually change file permissions so other users could overwrite files

DTC 2007 WRF Core Tests -2

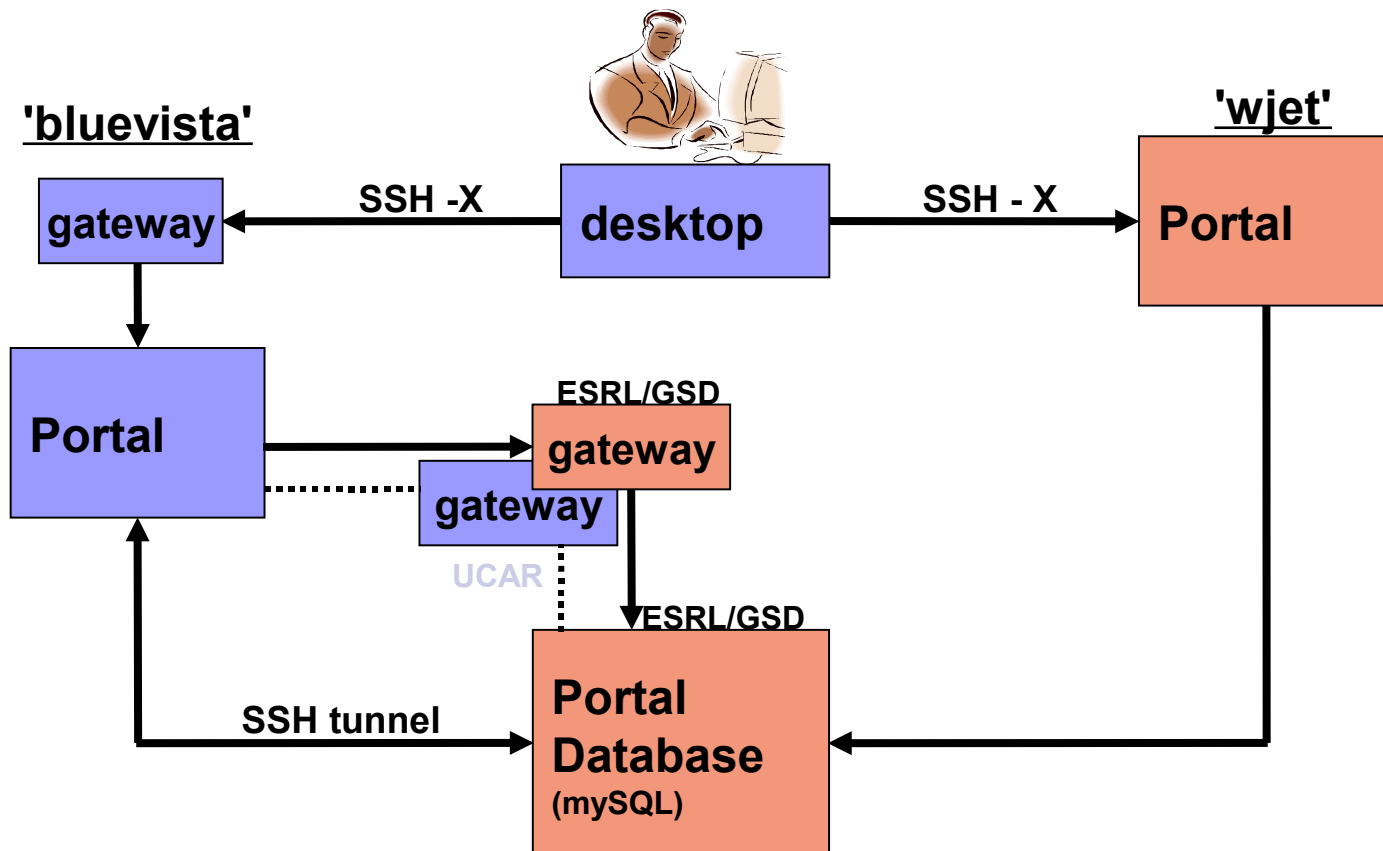
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- Each workflow took about 8 hours to run, 4 hours for WRF
 - All 120 runs launched and monitored by the portal were successfully completed within eight days

DTC 2007 WRF Core Tests -3

- Because of the complex security of 'bluevista' and 'wjet', we copied the portal software to each system and then ran the portal locally on the supercomputers, just forwarding the display back to our desktops (using the SSH -X) option



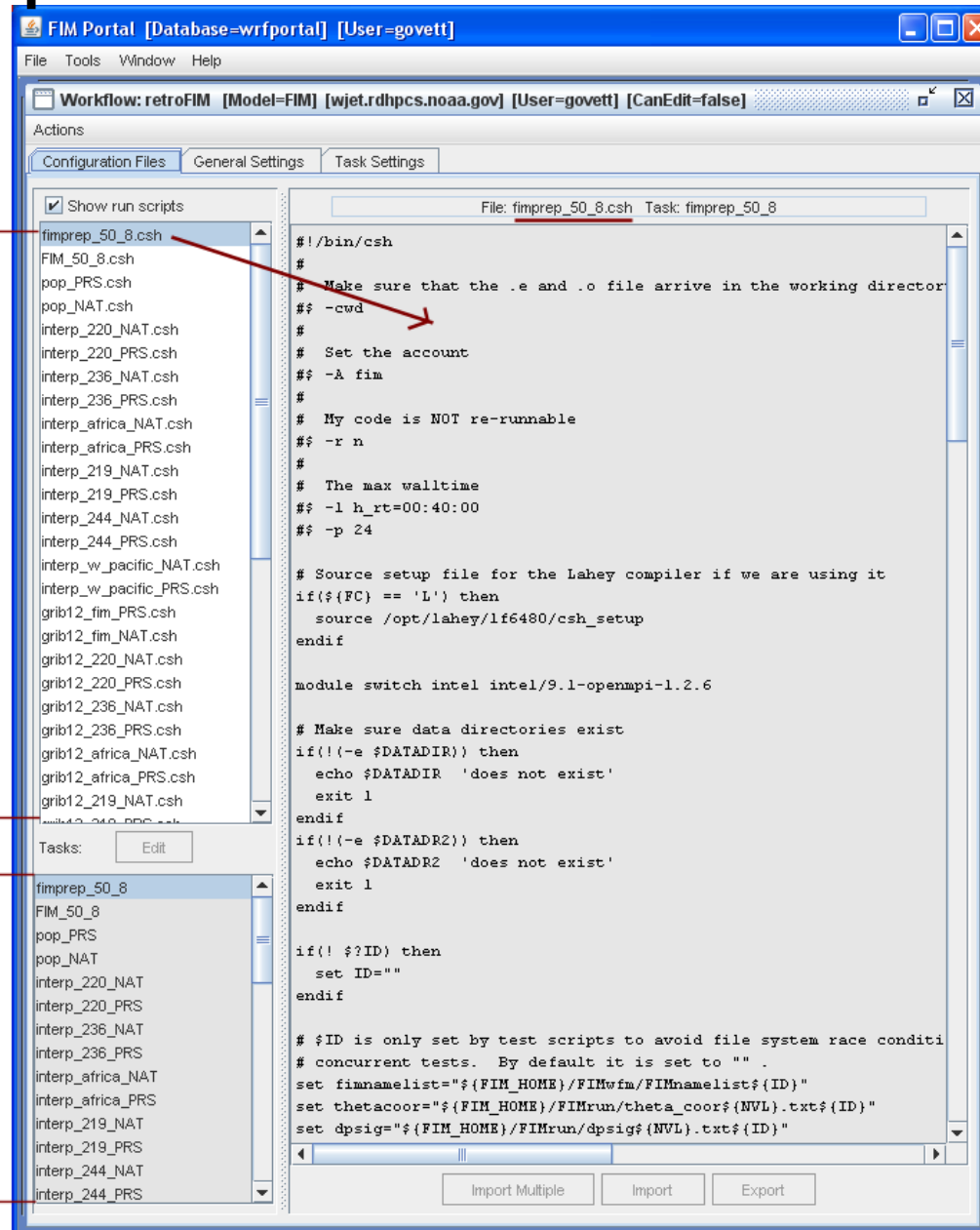
Managing Complex Workflows -1

- The portal simplifies the management of complex workflows with numerous tasks
- The next slide illustrates a FIM workflow with
 - 45 tasks (.csh and .ksh scripts)
 - 892 environment variables (under the Settings tabs) in all
 - about 20 of them were common to all tasks with around 3 unique environment variables per task
 - Note that scripts, environment variables, and settings for this large workflow can be managed from this single window

Managing Complex Workflows -2

Scripts and namelists
associated with tasks

Tasks in this
workflow



FIM Portal [Database=wrfportal] [User=govett]

File Tools Window Help

Workflow: retroFIM [Model=FIM] [wjet.rdhpcs.noaa.gov] [User=govett] [CanEdit=false]

Actions

Configuration Files General Settings Task Settings

Show run scripts

File: fimprep_50_8.csh Task: fimprep_50_8

```
#!/bin/csh
#
# Make sure that the .e and .o file arrive in the working director
## -cwd
#
# Set the account
## -A fim
#
# My code is NOT re-runnable
## -r n
#
# The max walltime
## -l h_rt=00:40:00
## -p 24

# Source setup file for the Lahey compiler if we are using it
if(${FC} == 'L') then
    source /opt/lahey/lf6480/csh_setup
endif

module switch intel intel/9.1-openmpi-1.2.6

# Make sure data directories exist
if(!( -e $DATADIR )) then
    echo $DATADIR 'does not exist'
    exit 1
endif

if(!( -e $DATADR2 )) then
    echo $DATADR2 'does not exist'
    exit 1
endif

if(! $?ID) then
    set ID=""
endif

# $ID is only set by test scripts to avoid file system race conditi
# concurrent tests. By default it is set to ""
set fimnamelist="${FIM_HOME}/FIMwfm/FIMnamelist${ID}"
set thetacoor="${FIM_HOME}/FIMrun/theta_coor${NVL}.txt${ID}"
set dpsig="${FIM_HOME}/FIMrun/dpsig${NVL}.txt${ID}"
```

Tasks: Edit

fimprep_50_8
FIM_50_8
pop_PRS
pop_NAT
interp_220_NAT
interp_220_PRS
interp_236_NAT
interp_236_PRS
interp_africa_NAT
interp_africa_PRS
interp_219_NAT
interp_219_PRS
interp_244_NAT
interp_244_PRS

Import Multiple Import Export

Connected to local computer: Jeff-M2400

Future Work

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- Supporting the visualization of additional file formats (e.g. GRIB visualization is currently under development)

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- Improve the support for groups of modelers to work together on a project (so as to avoid the file permission problems we experienced during the DTC 2007 Core Tests).
- Supporting the visualization of additional file formats (e.g. GRIB visualization is currently under development)
- Supporting a data discovery feature (through ongoing work on the Data Locator project) so the portal can automatically search for and find data required to run a model



http://wrfportal.org website

WRF Portal - Mozilla Firefox
_ □ ×

File Edit View History Bookmarks Tools Help

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- Domain Wizard
- Tutorials (HTML)
- Tutorials (Video)
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ESRL website
FSL website

Accessibility
statement

WRF Portal: A GUI For Running WRF

Version 1.01 for Linux, AIX, Mac, and Windows - released October 15, 2008

Details for Run Workflow:

Task	Job ID	Job Started		
def_ungrib	16335	2008-04-11 16:57 MDT		
def_metgrid	16384	2008-04-11 16:57 MDT	00:01	done
def_real	16413	2008-04-11 16:57 MDT	00:01	done
def_wrf	16442	2008-04-11 16:57 MDT	00:07	done

WRF Portal is the GUI that takes you through the entire process of running WRF: creating a domain (using the built-in WRF Domain Wizard component that generates your namelist.wps and namelist.input files), creating and running workflows, monitoring the progress of your runs, diffing workflows and files. Supports WRF version 2.x and the new WRF version 3.

Source Code is available [here](#).
What's new in version 1.01

Run WRF Portal using Java Web Start (recommended, no installation required)

[Click here to launch WRF Portal 1.01](#)

Done

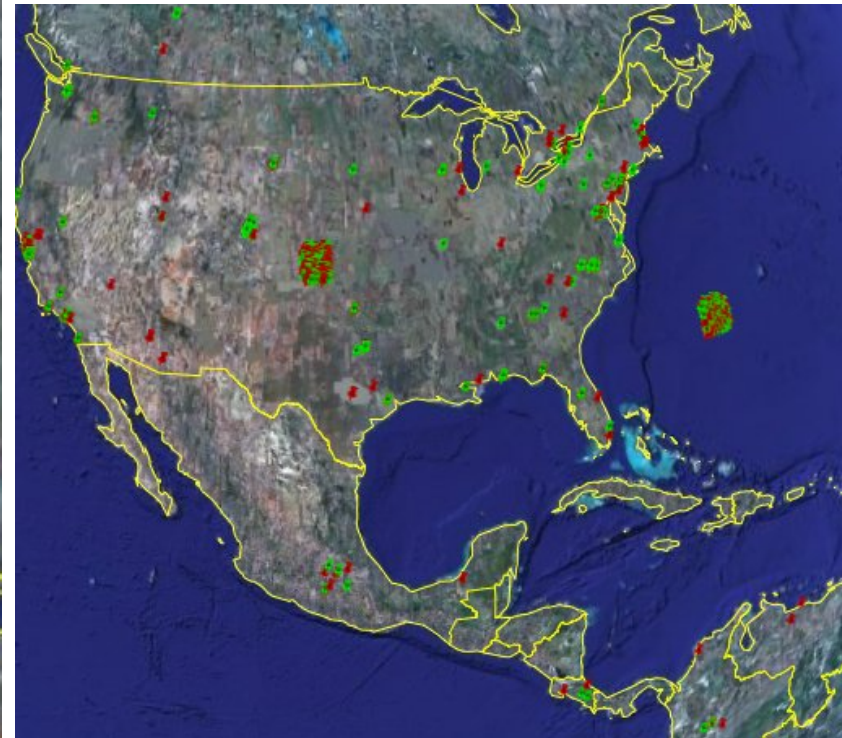
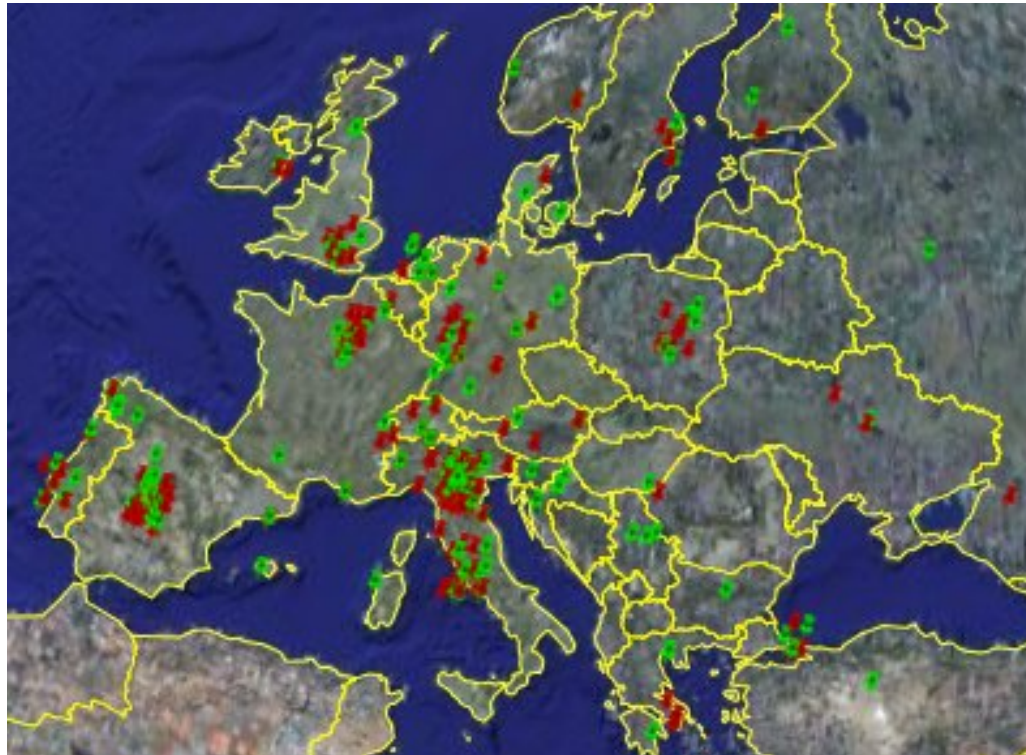
Worldwide Users Of This Software -1

Software	Est. Users	Countries	Google Earth
WRF Portal	623	58	open in Google Earth
WRF Domain Wizard	961	59	open in Google Earth
Ext. Workflow Mgr	49	14	open in Google Earth



These users have downloaded or run the software from unique IP addresses during these time spans in 2008: May 4 - July 15 and Sep 14 - Oct 20.

<http://wrfportal.org/about.html>



Worldwide Users Of This Software -2

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Portal Support

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- Tutorials on our website
 - 18 video (flash) tutorials here:
<http://wrfportal.org/flash-tutorial.html>
 - 8 html tutorials here:
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- NOAA Portal simplifies the configuration of domains, model workflows, runs, and monitoring runs, while providing many useful tools to make the modeler's life easier.

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- The software is under active development at ESRL and is fully compatible with the latest versions of FIM and WRF3.

The following slides show portal screen images...

- WRF Domain Wizard** screen enables users to easily define and localize domains (for WRF) by selecting a region of the Earth and choosing a map projection, and defining nests

The screenshot shows the 'WRF Domain Wizard: Australia' window. It features a map of Australia with a grid overlay and a 'Nests' tab. A 'New Nest' dialog box is open, showing 'Nest Properties' and 'Nest Coordinates'.

WRF Domain Wizard: 'Australia'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Domain Nests Display Options

Selected Domain Properties

ID	PID	Ratio	Left	Right	Top	Bot	NX	NY	Res
1	1	1	1	101	107	1	100	106	10m
2	1	3	6	50	73	25	133	145	10m

New Nest

Nest Properties

Parent ID: 1

Grid spacing ratio to parent: 3

Geographic data resolution: 10m

Nest Coordinates

(LL) Left: 6

(UR) Right: 50

(UR) Top: 73

(LL) Bottom: 25

OK Cancel

When you create a New nest or Edit an existing nest, this window pops up, enabling you to set nest properties and coordinates.

After projecting your domain area, click on the Nests tab to add nests to your domain.

You can also set the nest coordinates by resizing the nest by dragging the handles on the nest box.

A summary of your nests is displayed here. Clicking on a nest here highlights the nest in the map on the left.

User Hint & Info

Select a nest by clicking on its number. If a nest has a child nest (you must delete the child nest first).

resize a nest if < Back Next >

- Run Workflow window is where a user selects the workflow, computer, tasks, nbr of procs allocated to each task, & dates

WRF Portal [Database=C:\Documents and Settings\Jeff\.portal-files\portal] [User=p...]

File Tools Window Help

Run Workflow: wrf-run [User:portal]

Actions

Run Name: wrf-run

Note:

Computer: tornado.fsl.noaa.gov Status: NOT_RUN

Workflow: wrf

Workflow Mgr: Internal-SGE Acct: mapp Flow Rate:

Task	Procs	MaxTime	Queue
def_ungrib	1	06:00	make
def_metgrid	1	06:00	make
def_real	1	06:00	make
def_wrf	64	06:00	make

Edit or Reorder Tasks

Input Data

Type: NameList Directory Name W...

Use existing namelist settings to find the input data.

Output Data Directory (Data Root)

Location: /wrf-data/wrfportal-runs

Dates/Times

To Run: 2008-10-16 12:00:00

Add De...
Del D...
Del All...

Connected to local computer: Jeff-M2400

Enter A Date/Time

From Date: 2008-10-16

To Date: 2008-10-16

Initial Time(s): 12 hours (HH format in GMT)

Interval: 24 hours (HH format)

OK Cancel

Choose A Date

October 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

OK Cancel

Run Monitor enables a user to follow the progress of runs

WRF Portal [Database=C:\Documents and Settings\Jeff\.portal-files\portal] [User=portal]

File Tools Window Help

Run Monitor

Search Criteria

Run between: ... Model Cfg:
 And: ... Note:
 Status: Computer: tornado.fsl.noaa.gov

Run Config	Run Date	Status	Run Time	Date Started	Elapsed Time	Model
wrf-run1	2005-07-11 00:00:00.0	RUNNING	00:02	2008-10-16 15:25:16.0	00:02	wrf
hello-test-run1	2008-10-09 12:00:00.0	DONE	00:00	2008-10-09 17:36:21.0	00:00	hello-test
wrf-run	2008-10-16 12:00:00.0	ERROR	00:00			wrf

Details for Run Workflow: 'wrf-run1' on 2005-07-11 00:00:00.0

Task	Job ID	Job Started	Run Time	Est. Time	Status
def_ungrib	186	2008-10-16 15:25 MDT	00:01		done
def_metgrid	187	2008-10-16 15:26 MDT	00:01		done
def_real	188	2008-10-16 15:26 MDT	00:02		running
def_wrf					

File Browser

Local Files (Jeff-M2400) tornado.fsl.noaa.gov

/wrf-data/wrfportal-runs/wrf-run1/2005071100/logs/

File Name	Attr	File Size	File Date	Owner
def_metgrid_200507110000.log	-rw-r--r--	1 KB	2008-10-16 15:26:46	smith ac
def_real_200507110000.log	-rw-r--r--	7 KB	2008-10-16 15:27:30	smith ac
def_ungrib_200507110000.log	-rw-r--r--	92 KB	2008-10-16 15:25:36	smith ac
workflow.log	-rw-r--r--	1 KB	2008-10-16 15:28:17	smith ac

Connected to remote computer: tornado.fsl.noaa.gov



NetCDF Viewer

WRF Portal [Database=C:\Documents and Settings\Jeff/.portal-files/portal] [User=portal]

File Tools Window Help

File Browser

Local Files (Jeff-M2400) tornado.fsl.noaa.gov

/wrf-data/wrfportal-runs/wrf-run1/2005071100/wps-output/

File Name	Attr	File Size	File Date	Owner
namelist.wps	-rw-rw-r--	2 KB	2008-10-16 15:26:29	smith
geo_em.d01.nc	-rw-r--r--	3,146 KB	2008-10-10 16:26:25	smith
geo_em.d02.nc	-rw-r--r--	5,508 KB	2008-10-10 16:26:27	smith
NAM:2005-07-11_00	-rw-rw-r--	20,187 KB	2008-10-16 15:25:32	smith
NAM:2005-07-11_03	-rw-rw-r--	20,187 KB	2008-10-16 15:25:33	smith

View as Text View NetCDF Close

Datasets Browser

File Edit Plot Window Help

Create Plot Target

Datasets & Variables

Name	Long Name	Type
temp.nc	temp.nc	Local File
ALBEDO12M	-	[lon][lat]
CLAT	-	[lon][lat]
CLONG	-	[lon][lat]
COSALPHA	-	[lon][lat]
E	-	[lon][lat]
F	-	[lon][lat]
GREENFRAC	-	[lon][lat]
HGT_M	-	[lon][lat]
HGT_U	-	[lon][lat]

List: Only Plottable Variables

GREENFRAC in temp

File Edit Plot Window Help

Plot 1: GREENFRAC

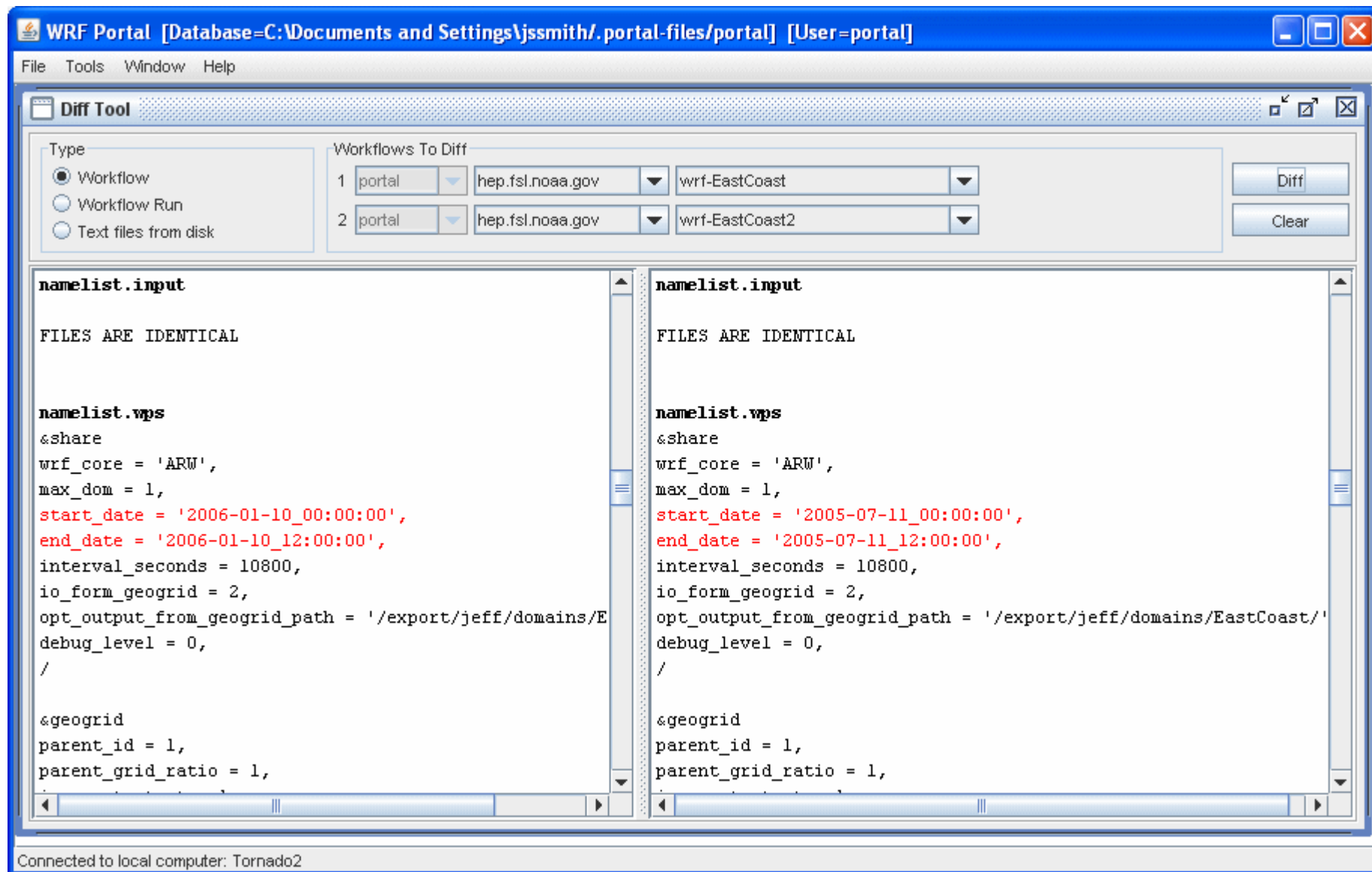
Equidistant (Polar) projection centered on 0.00E 0.00N Date Mon = 1, Max = 0.37745

Arrays Scale Map Contours Colors Captions

Plot Map of Array 1 Only Interpolate

Array 1: GREENFRAC
Synthesized time coordinate from Timesdim0: 1 of 1 = 1905-05-03 18:35:44
Month: 5 of 12 = 5 of 12

Diff Tool compares workflows, runs, text files (e.g. namelists)



WRF Portal [Database=C:\Documents and Settings\jssmith/.portal-files/portal] [User=portal]

File Tools Window Help

Diff Tool

Type

- Workflow
- Workflow Run
- Text files from disk

Workflows To Diff

1	portal	hep.fsl.noaa.gov	wrf-EastCoast
2	portal	hep.fsl.noaa.gov	wrf-EastCoast2

Diff

Clear

```
namelist.input
FILES ARE IDENTICAL

namelist.wps
&share
wrf_core = 'ARW',
max_dom = 1,
start_date = '2006-01-10_00:00:00',
end_date = '2006-01-10_12:00:00',
interval_seconds = 10800,
io_form_geogrid = 2,
opt_output_from_geogrid_path = '/export/jeff/domains/E
debug_level = 0,
/

&geogrid
parent_id = 1,
parent_grid_ratio = 1,
```

```
namelist.input
FILES ARE IDENTICAL

namelist.wps
&share
wrf_core = 'ARW',
max_dom = 1,
start_date = '2005-07-11_00:00:00',
end_date = '2005-07-11_12:00:00',
interval_seconds = 10800,
io_form_geogrid = 2,
opt_output_from_geogrid_path = '/export/jeff/domains/EastCoast/'
debug_level = 0,
/

&geogrid
parent_id = 1,
parent_grid_ratio = 1,
```

Connected to local computer: Tornado2



Thank you!