Introduction to Metview and the Single Column Model

Iain Russell
Sándor Kertész
Development Section
ECMWF
What is Metview?

- Working environment for Operational and Research Meteorologists
- Interactive user interface and batch
- Can retrieve/manipulate/visualise meteorological data
- Runs on UNIX systems
- Open Source under Apache Licence
  - since August 2012
- Metview is a co-operation project between ECMWF and INPE (Brazil)
What is Metview?

- **Data:**
  - Access
  - Examine
  - Manipulate
  - Plot
  - Overlay
  - GRIB
  - BUFR
  - NetCDF
  - ODB
  - Geopoints
  - ASCII

- Can be run interactively or in batch using powerful Macro language

- Can be easily installed and runs self-contained standalone
  - From laptops to supercomputers
  - No special data servers required (but can be easily connected to MARS or local databases)
User interface – desktops and icons

- A desktop corresponds to a directory on the file system
- Everything is represented by an icon
  - Data, settings and processes; drag and drop

![Image of Metview user interface with desktop and icons]

- Desktop containing user icons
- Tabbed icon drawers
Icons – creation

- Data: just copy your data files into ~/metview or a subdirectory
- Other: find the appropriate icon in one of the Icon Drawers and drag it onto the desktop
- Alternatively, right-click on the desktop and choose ‘New Icon’
Icons – editing

- right-click, edit an icon
- data input icons can be dropped into the editor

Hit Return after editing a text field!
Running the SCM through Metview

- Edit your copy of the Scm Run icon
- Set the path to the SCM executable
- Set the input data and namelist
- Apply, then right-click, execute
- By default, the result is stored ‘in the background’ and can be accessed via the Scm Run icon
- Editor has an option to copy the output file in order to keep a copy
Modifying an SCM input data file

- Custom editor for SCM input netCDF files
- Vertical level ‘zoom’
- Editable table and curve
Visualising data in Metview

- For most data types, just right-click the icon and select *visualise*.
- For netCDF, there is no default visualisation so this approach does not work.
- We use ‘visualiser’ icons.
- The Scm Visualiser icon has high-level options to produce different plot types and to compare two runs.
- The NetCDF Visualiser icon is available for lower-level specification of plotting from netCDF files.
SCM Visualisation in Metview

Time-value curve

Time-sliced profiles

Time-height matrix
OpenIFS support in Metview

- OpenIFS: “… to provide research institutions with a portable, easy-to-use version of the ECMWF IFS model. ”
- Presents an opportunity to extend the Metview community
- All the Metview functionality works with the OpenIFS output
- Examples icons are available from: https://software.ecmwf.int/wiki/display/OIFS/Using+MetView+with+OpenIFS
Many more features ...

- Tephigram
- Hovmöller
- Coloured Wind
- WMS with Satellite and radar by NOAA nowCOAST
- Metgrams
- Scatter plots
- Strike Probability Map
- Clusters
- Interface with FLEXTRA
- VAPOR interface
For more information ...

email us:

SMTP: metview@ecmwf.int

visit our web pages:

- https://software.ecmwf.int/metview
- Download
- Documentation and tutorials available
- Metview articles in ECMWF newsletters

Metview training course at ECMWF, 29 Apr - 02 May 2014