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Metview's new user interface

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Metview's new user interface

Sándor Kertész, Iain Russell

Metview is ECMWF's meteorological workstation software for accessing, manipulating and visualising meteorological data, incorporating both an interactive and a batch mode. By bringing together various software technologies developed at ECMWF, Metview provides access to the MARS archive, allows the examination and manipulation of data formats such as GRIB, BUFR and ODB, and can overlay data to generate high quality meteorological plots.

Metview's user interface was originally developed using the Motif toolkit in the early 1990s. By the year 2000, Metview had a new user interface, but was still based on the same toolkit. Today, Motif is far behind the cutting edge of user interface development and is becoming harder to install on some new systems. Also, it is laborious adding new features to code developed using Motif; this means that Metview's user interface has barely evolved in the last decade.

When the Qt application framework became available under the Open Source LGPL licence in 2009, it was assessed to be the best option for future Metview developments. Because of Metview's modular nature, some self-contained parts of the user interface, such as the Grib Examiner, the Macro Editor and the interactive Display Window were already re-written in Qt by the end of 2010, bringing new features and ease of use. However, the main user interface was not tackled until more recently due to the size of the task. Now, with the latest available versions of Metview, the new user interface is ready for use.

The new user interface

Design of the interface

Metview's new interface was designed to be familiar to existing Metview users whilst being intuitive to first-time users who are used to modern user interfaces. All the functionality of the previous interface is available in one way or another, but many additional features make it easier and quicker to work with Metview. The Metview *desktop* is still the main interface, essentially being a browser for the icons contained in a particular folder (Figure 1). As well as allowing different desktops to be open in different windows, the new interface allows multiple tabs in each window, thus reducing screen clutter.

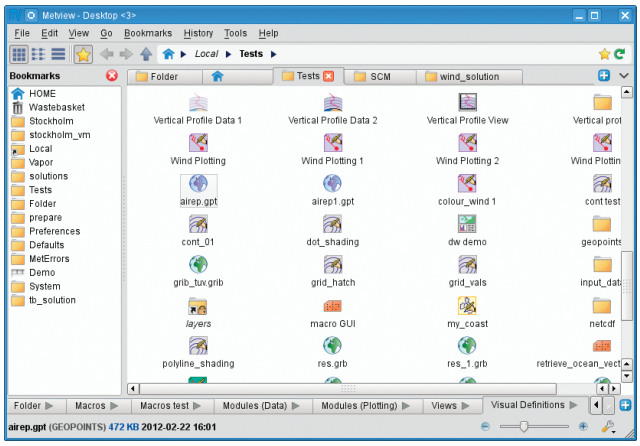

Figure 1 The main window of Metview's new user interface. The central part contains the folder views organised into a set of tabs. To the left there is the bookmarks sidebar, while the folder navigation actions together with clickable folder location bar are located in the toolbar at the top. The bottom part of the desktop, just like in the previous user interface, is occupied by the icon drawers. The status bar, at the very bottom of the desktop, displays useful information about the icon that the mouse cursor currently hovers over.

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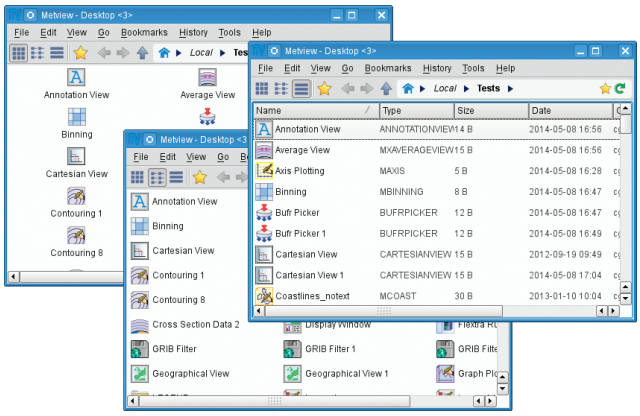

Figure 2 Users can switch between three icon view modes: there are Classic (left), Simple (middle) and Detailed (right) views available.

Layout

As shown in Figure 2, Metview now has three icon layouts: *Classic* and *Simple* emulate the views previously available, whilst the *Detailed* layout displays the icons in a table format with sortable columns such as file size and modification time. A slider in the status bar at the bottom of the desktop allows more control over the size of the icons.

Navigation

The top portion of the interface contains tools for navigating through the file system (see Figure 1). The Back, Forward, Up and Home icons, combined with the clickable folder location bar, allow for fast navigation between folders. Folders can be bookmarked, as can a whole set of tabs.

Icons

The Create New Icon dialogue (see Figure 3) has been made faster to find icons and now includes a quick filter mode, a grouped icon mode and a list of recently-used icons. The icon drawers at the bottom of the desktop are no longer updated by the system and are intended solely for user icons. When the mouse cursor hovers over an icon, useful information is displayed in the status bar. Metview now offers the ability to compress and archive icons, and to restore them later. This facility is also used when e-mailing icons to another user.

Icon editors retain their previous functionality, but with some enhanced 'helper' tools such as the colour-selection panel shown in Figure 4.

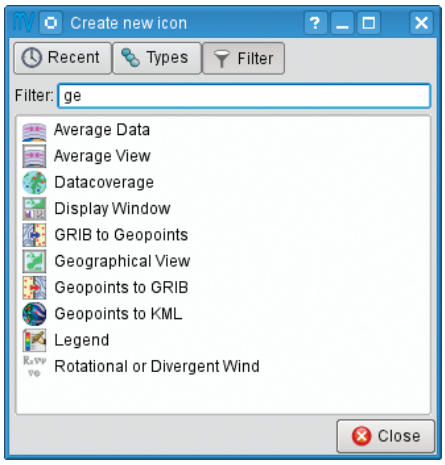

Figure 3 The Create New Icon dialogue offers various ways to quickly look up the particular icon to be created.

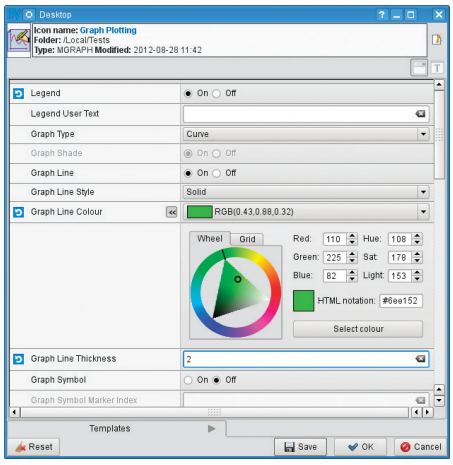

Figure 4 Although icon editors retain their original functionality, they have been completely revamped and equipped with a new set of parameter editors such as the new colour editor.

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Search

Metview users often work with folders containing hundreds (even thousands) of icons and there has always been a need for an icon search facility. The new user interface now offers the *Icon filter* toolbar enabling users to search for specific icons in cluttered desktops (Figure 5). As the filter term is being typed in, all the non-matching icons are greyed out leaving only the searched-for icons highlighted.

The *Advanced search* dialogue has also been added to find icons in subfolders according to name, type, contents and other search criteria (Figure 6). This powerful new feature can easily expose the contents of the Metview folder hierarchy to users.

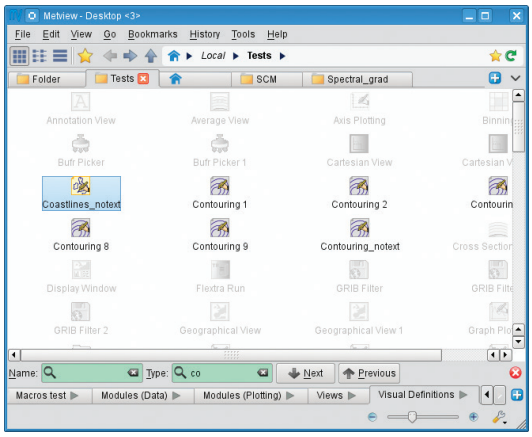

Figure 5 The Icon filter bar attached to the bottom of the folder view allows icons to be found quickly by greying out the all non-matching icons in the desktop.

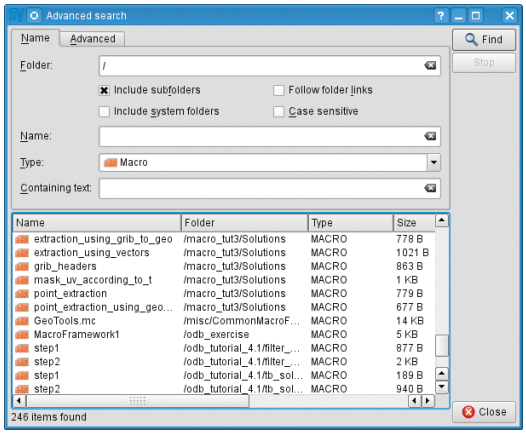

Figure 6 The Advanced search dialogue is a powerful new feature for finding icons in subfolders according to various search criteria.

Moving to the new user interface

The new interface can read settings, such as icon positions, from the previous interface but not vice-versa. This means that on starting the new interface for the first time, everything will be as expected. However, icons which have been moved within the new interface will not be seen in their new position in the previous interface; that said, we expect that users will not want to revert to the old interface!

It is planned to make the new interface the default during 2014. Until then, it can be invoked by starting Metview with the command-line option -desktop.

More information about Metview's new user interface is available at: *http://software.ecmwf.int/metview*

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