



## Using virtual technologies to deliver training solutions using real models

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The European Centre for Medium Range Weather Forecasts operationally produce medium range forecasts, using what is internationally acknowledged as the world leading global weather forecast model. Future development of this scientifically advanced model relies on a continued availability of experts in the field of meteorological science and with high-level software skills. ECMWF therefore has a vested interest in young scientists and University graduates developing the necessary scientific and technical competency in and related to numerical weather prediction.

The OpenIFS project at ECMWF maintains a version of the ECMWF forecast model (known as IFS) for use in education and research at Universities, National Meteorological Services and other research and education organisations. OpenIFS models can be run on HPC, desktop or laptop computers to produce weather forecasts in a similar way to the operational forecasts at ECMWF.

ECMWF also provide the Metview desktop application, a modern, graphical, and easy to use tool for analysing and visualising forecasts routinely used by scientists and forecasters at ECMWF and other institutions. The combination of Metview with the OpenIFS models has the potential to deliver classroom-friendly tools allowing students to apply their theoretical knowledge to real-world examples using a world-leading weather forecasting model.

In this presentation, we describe how the use of ‘virtualization’ technologies have been successfully used to develop and deliver training courses for user workshops with the OpenIFS & Metview applications. By using ‘virtual machines’ we are able to include data, runnable applications and training course documents in a package that is tested in-house and deployed at another site. Virtual technologies provide a technically easy and safe way of providing ‘classroom’ learning environment that can be shipped on USB ‘sticks’ or transferred by file.

We welcome discussions with interested parties. Demonstrations would be possible in the companion poster presentation by Siemen et al.