



Take your forecasts to a higher level
of detail

NWP
accessible
to everyone

www.iblsoft.com



OVERVIEW



Numeric Weather is a turnkey solution for limited-area meteorological prediction models, consisting of both a high performance computing hardware and modelling software tuned and configured for operational use.



HIGH PERFORMANCE COMPUTING HARDWARE

The solution includes design and implementation of the high-performance computing (HPC) system based on Linux OS and high-speed InfiniBand interconnect optimised for specific model applications.



DESIGNING COST-EFFECTIVE SYSTEM

To maximise price/performance ratio of the modelling solution, a detailed analysis is carried out first to determine the amount of computing power necessary to fulfil modelling goals. Our specialists understand the architecture of HPC systems, their limits and performance in real modelling applications. The analysis is based on our expert knowledge of hardware scalability, modelling software scalability, dimensions of the modelling domain, and temporal and spatial resolution. This allows for proposing a solution with optimal performance that fits the user's needs.



RELIABLE PERFORMANCE

The monitoring and diagnostic tools have an easy-to-use interface, allowing users to identify any possible issues instantly. Moreover, IBL provides service to assist with the administration of the whole HPC system or undertake the maintenance completely



NUMERIC WEATHER SCHEDULER

Software framework developed by IBL for operating regional and local model suites, bringing high flexibility, extensibility and robustness:

- Running models with minimum technical knowledge
- Designed for both operational production and research
- Web-based monitoring with a unified user interface for all models
- Easy failure recovery
- Support for ensemble prediction systems
- Support for multi-user environments

IBL SERVICES

- Estimation of computing power
- Hardware delivery and integration
- Guidance with infrastructure
- Assistance with license agreements and negotiations
- Customisation of forecast production
- Training, commissioning, support

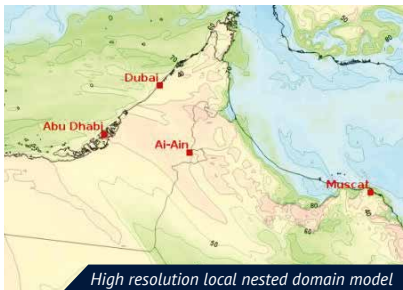
KEY STRENGTHS

- High system integration level
- Hardware designed and tuned to meet desired model performance
- Fast interconnect InfiniBand®
- Installed as ready-to-run
- Comprehensive scheduler with web management and monitoring
- Technical support for the hardware



RANGE OF PREDICTION MODELS

- Numerical Weather Prediction atmospheric models ICON, COSMO, WRF for short and medium range forecast in high-resolution (down to 1 km incl. nested domains)
- Ocean wave models WaveWatch III, WAM for shipping, oil rigs and towing, rescue operations
- Atmospheric chemistry, aerosol dynamics and dispersion models ICON-ART, WRF-Chem for pollutant propagation and deposition, sea salt, sandstorm predictions



KEY FEATURES

- Short and medium range forecast in high spatial resolution
- Integration of weather, wave and dispersion models
- Web-based workflow monitoring
- Easy to use NWP scheduler
- Choice of boundary conditions from different global models
- Data assimilation
- Probabilistic forecasting using an Ensemble Prediction System



DATA ASSIMILATION AND NOWCASTING

Models executed within the Numeric Weather system can assimilate a wide range of high-resolution observations. Leveraging the ensemble prediction system with the data assimilation procedures could significantly improve short-term weather forecasts, especially for severe weather events. This may enhance life and property-saving actions and offer valuable information for decision-makers, especially in the energy and transport industries.

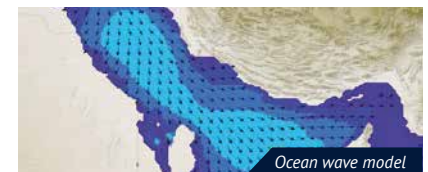
IBL SERVICES

- Estimation of computing power
- Hardware delivery and integration
- Guidance with infrastructure
- Assistance with license agreements and negotiations
- Customisation of forecast production
- Training, commissioning, support



ENSEMBLE PREDICTION SYSTEMS

While traditional deterministic models provide a single vision of future development, they do not provide information on the probability of this particular forecast. Ensemble prediction systems based on multi-model or multi-boundary approach, perturbed physics or their combinations address the likelihood of the event by analysing the instability of initial conditions. Tailored Numeric Weather solution provides design and implementation of custom ensemble predictions system (EPS) for operational forecasting. Moreover, ensemble products for parameters such as temperature, wind gusts, cloud cover, precipitation, and CAPE could be quantified as ensemble mean, minimum, maximum, interquartile range, exceedance probability (threshold) or percentile.



KEY STRENGTHS

- High system integration level
- Hardware designed and tuned to meet desired model performance
- Installed as ready-to-run
- Comprehensive scheduler with web management and monitoring
- Technical support for the hardware



Contact us:
T: +421 (0) 2 3266 2111

sales@iblsoft.com
www.iblsoft.com

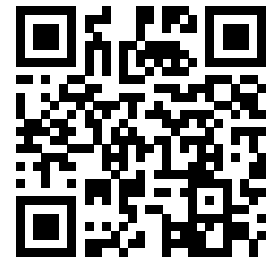
Galvaniho 17/c
821 04 Bratislava
Slovakia

IBL Software Engineering builds its reputation on 45 years of tradition in the field of Meteorological IT development. Dating from its first Automated Meteorological Message Switching Systems, the branch in Frankfurt, Germany, was established in 1988, while the branch in Bratislava, Slovakia was opened in 1997. IBL Software Engineering is employing IT specialists working exclusively in the Meteorological IT Environment with a high level of professional expertise.

IBL Software Engineering is ISO 9001:2015, ISO 27001:2022, and ISO 14001:2015 certified in the scope of development, supplying, installation, and maintenance of software for meteorological information systems. As a representative of Hydro-Meteorological Equipment Industry it is recognized by WMO and IBL's experts are participating in the number of WMO Expert Teams. IBL pays close attention to the advancements in BUFR, IWXXM, Amendment 81, GRIB3, etc. and its products fully comply to the following standards:

- WMO Manuals on Codes 306, on Global Telecommunication System 386, on Global Data Processing System 485
- ICAO Annex 3 up to Amendment 81 and ICAO Regional SIGMET Guides as of 2023
- SADIS workstation requirements 1.1 April 2021

No
meteorological
office is an
island, entire
of itself.



PRODUCT PORTFOLIO

If the integration of all meteorological data processing systems is the key factor for the effective operation of your business, then with the IBL product portfolio your integration efforts are minimized, because IBL systems are designed to closely cooperate to provide the desired synergy.

