ECMWF

Fourteenth Workshop on Use of High Performance Computing in Meteorology
1 – 5 November 2010

Final programme

Final programme

Monday 1 November

08.30   REGISTRATION AND COFFEE

09.15   WELCOME AND OPENING

Dominique Marbouty, Director-General and Isabella Weger, Head of Computer Division

SESSION 1

09:30	Erland Källén, ECMWF	Development of the ECMWF forecasting system
10:00	Deborah Salmond and Mats Hamrud, ECMWF	IFS scalability and computational efficiency
10:30	Coffee	

SESSION 2

11:00	Richard Loft, NCAR	Recent advancements in high resolution climate modeling
11:30	Masami Narita, Japan Meteorological Agency	The next-generation supercomputer and NWP system of JMA
12:00	Bertrand Denis, Environment Canada	HPC at the Canadian Meteorological Centre
12:30	Lunch	

SESSION 3

14:00	Yannick Tremolet, ECMWF	4D-Var, scalability and code design
14:30	Vivian Lee, Environment Canada	Development of a non-hydrostatic atmospheric model on the Yin-Yang grid at CMC
15:00	James Doyle, Naval Research Laboratory	US navy mesoscale forecast system and HPC attributes
15:30	Coffee	

SESSION 4

16:00	Mark Govett, NOAA Earth System Research Laboratory	Using GPUs ro run weather prediction models
16:30	Tom Henderson, NOAA Earth System Research Laboratory	Progress on the GPU parallelization and optimization of the NIM global weather model
17:00	CLOSE	

17:10   COCKTAILS

Tuesday 2 November

SESSION 5

09:30	Per Nyberg, Cray Inc	Petascale opportunities and challenges for Earth System Modeling
10:00	Don Grice, IBM Corporation	Application scaling in an Exascale Environment
10:30	**Coffee**	

SESSION 6

11:00	David Barkai, Intel Corporation	HPC in the multi-core and heterogeneous era
11:30	Okuda Motoi, Fujitsu Limited	Fujitsu's approach for application centric Petascale computing
12:00	Michael Woodacre, SGI	Update on SGI technology for weather and climate simulation
12:30	**Lunch**	

SESSION 7

14:00	Panagiotis Adamidis, Deutsches Klimarechnenzentrum GmbH	Performance "Barriers" in Highly scaling earth-system models
14:25	Xiao Huadong, China Meteorological Administration	High performance computing at CMA
14:50	Lois Steenman-Clark, University of Reading	An Architecture Comparison Exercise (ACE)
15:15	**Coffee**	

SESSION 8

15:45	Keiko Takahashi, Earth Simulator Center, JAMSTEC	High performance computing of MSSG and its physical performance
16:10	Hirofumi Tomita, Japan Agency for Marine-Earth Science and Technology	Future activities of high performance computing in meteorology using the K-computer
16:35	George Mozdzynski, ECMWF	IFS: RAPS11 and model scaling
17:00	CLOSE	

Final programme

Wednesday 3 November 2010

| 09:15 | **George Mozdzynski**, RAPS Chairman | RAPS Update |

SESSION 9

09:30	Ulrich Schättler, Deutscher Wetterdienst	Future trends in high performance computing at DWD
10:00	Phillipe Marguinaud, Météo France	Meteo-France RAPS benchmark
10:30	**Coffee**	

SESSION 10

11:00	Tim Pugh, Australian Bureau of Meteorology	The challenges of running meteorological applications at sustained teraflops performance with resilience and consistency in a production environment
11:30	Andy Malcolm, Met Office	Scalability of the Met Office unified model
12:00	Philippe Steiner, MeteoSwiss and Michele de Lorenzi and Angelo Mangili,CSCS	Operational numerical weather prediction in Switzerland and evolution towards new supercomputer architectures
12:30	**Lunch**	

SESSION 11

14:00	Jean-Pierre Panziera, BULL	Bull's high performance computing solutions for science simulations
14:25	Dave Norton, The Portland Group	Accelerating weather models with GPGPU's
14:50	John Reid, Rutherford Appleton Laboratory	Fortran 2008: what's in it for high-performance computing?
15:15	**Coffee**	

SESSION 12

15:45	Luis Kornblueh, Max Planck Institute for Meteorology	Parallel I/O for scalable earth system modelling
16:10	Dean Stewart, , Rogue Wave Software UK Ltd	HPC Weather and Climate Code Development with Rogue Wave
16:35	Lindon Locks, Allinea Software	Debugging at scale
17:00	MEETING OF RAPS CONSORTIUM	

| **17:30** | **RECEPTION, FOLLOWED BY WORKSHOP DINNER** | |

Thursday 4 November 2010

SESSION 13

09:15	Thomas Sterling, Louisiana State University	Enabling exascale computing through the ParalleX execution model
10:00	Tuomo Kauranne, Lappeenranta University of Technology	Ensemble data assimilation as parallel minimization
10:30	**Coffee**	

SESSION 14

12:00	ZhiYan Jin, China Meteorological Administration	Parallel processing of the semi-lagrangian scheme in GRAPES
11:30	Anne Fouilloux, ECMWF	ODB (Observational DataBase): past, present and future
12:00	XiangJun Wu, China Meteorological Administration	Preliminary Results of GRAPES' Helmholtz solver using GCR and PETSc tools
12:30	**Lunch**	

SESSION 15

14:00	Annika Fuchs, Alfred Wegener Institute for Polar & Marine Research	Efficient local resorting and preconditioning techniques applied to a parallel tsunami simulation model
14:30	George VandenBerghe, NOAA/NCEP	The NCEP HPC Workload: 2010 State and Forward Challenges
15:00	John Hague, IBM and Oliver Treiber, ECMWF	I/O monitoring of 4D-Var at ECMWF
15:30	**Coffee**	

SESSION 16

16:00	Mark Richardson, Numerical Algorithms Group	GLOMAP mode on HECToR phase2b (Cray XT6)
16:30	Dieter Just, EUMETSAT	The data processing concept and performance requirements for the Meteosat Third Generation Programme
17:00	CLOSE	

Friday 5 November 2010

SESSION 17

09:30	Luis Kornblueh, Max Planck Institute for Meteorology	Optimizing a vector code for cache-based multi-core systems: Porting echam6
10:00	Martin Dillman, EUMETSAT	A cost-effective redundancy scheme for real-time data production systems through the usage of virtualization
10:30	**Coffee**	

SESSION 18

11:00   **PANEL ON EXPERIENCE OF USING HPC IN METEOROLOGY**

Chair: **Isabella Weger**, ECMWF, Head, Computer Division

12:00   CLOSE