

CHANGES IN OPERATIONAL SUITE OF ALADIN-BG

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Several changes occurred in operational suite of ALADIN-BG between the workshops in Oslo and Brussels:

In 2007 we obtain new machine. Due to very long reconstruction of the computing hall of our institute the real work with this machine started in December 2007.

The machine is LINUX cluster, containing four nodes, each node has two processors Intel Glovertown E.5310 at clock rate 1.8 GHz, Quad core. So we have eight kernels per node. Each node has 4144787456 bytes memory and 250 GB disk storage.

There is additional server with four processors and 1.4 TB disk storage. There are several servers running on it - DNS, DHCP, NFS, http (web) and the software managing the RAID controller. The common file system is made visible and accessible for the front end machine and the nodes. The front end machine is virtual one running on two processors of this server. The nodes are connected via Infini Band switch for MPI exchange, inside nodes shared memory is used, and 1GB switch for NFS. For MPI is used mvapich2-0.9.8-15 release of MPI2. Compilers are Intel FORTRAN and C 10.1.012, 64 bit release. The operating system is 64 bit LINUX 2.6.18-53.1.13.el5xen#1 SMP.

Cycle 31t1op1 was ported to the cluster. There some bugs fixed in calls to “fa” routines. Fixes were sent to Toulouse system support team. Routine sueqlimsat.F90 was modified with the aim to be used under B level parallelization. Compilations were done on front end machine, using gmckpack. LAPACK, BLAS and EMOS library 2.63 also were ported. Integration of 72 hours forecast is performed for 13 minutes on cluster , using 32 processors on A level of parallelization, which is 9.8 times faster, then the integration on the two processors LINUX PC. B level of parallelization gave better performance, but it is bugged (at least at this cycle) and caused unpredictable crashes.

In early spring operations switched to the cluster.

During the January this year was created new high resolution telecom domain for SELAM (Many thanks to Martin Janousek for the help). A set of coupling files for tests from 15.01.2008 to 25.01.2008 00 UTC run up to 54 hours forecast range on three hours coupling. The tests were run in two versions 60 to 46 levels and 60 to 60 levels. All the tests were successful.

A set of GRIB files for using in SYNERGIE in Bulgaria was prepared.

The plan is to introduce new coupling files in operations during the third week of April. ALADIN CLIMAT 4.6 was ported on the cluster for the purposes of the regional climate simulations. The run from 1958 to 200 was performed and results are under investigation.