

ANUPAM Atulya Supercomputer

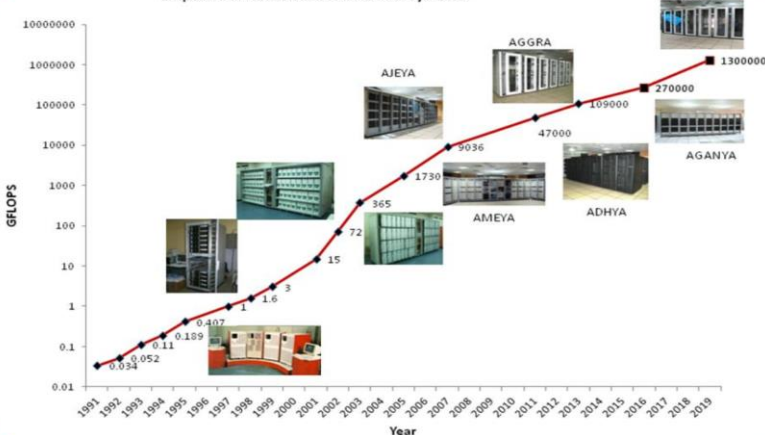
Bhabha Atomic Research Centre, Mumbai



Computer Division, BARC has been developing supercomputers for past 28 years, to cater the computational requirements of scientists & engineers. Anupam Atulya is the latest supercomputer in ANUPAM series with sustained LINPACK performance of 1.35 PFLOPS . Its salient features are :

- 14720 Cores in 368 Compute nodes
- 128 V100 GPUs Accelerators
- 141 TB Memory
- 1500 Terabytes of Storage Space
- 100 Gbps Infiniband Interconnect
- 2.0 PFLOPS Peak Performance

Linpack Performance of ANUPAM systems



Current ANUPAM systems:

Atulya: 1.35 PFLOPS (14720 cores, 2019)

Aganya: 270 TFLOPS (6440 cores, 2016)

Aggrya: 109 TFLOPS (8160 cores, 2013)

Adhya: 47 TFLOPS (4608 cores, 2010)

Siddhi: 26 TFLOPS (640 cores, 2018)

Software Platform

OS: CentOS Linux release 7.6

Resource Manager: Torque Resource Manager, Maui Scheduler

Compilers (C, C++, Fortran): GNU, Intel, PGI-Community Edition

Debuggers: GDB, Intel Vtune

Profilers: Gprof, Intel Trace Collector and Analyzer

MPI: Intel, Openmpi, Mvapich

BLAS and LAPACK: Intel-MKL, OpenBLAS, Intel-TBB

Machine Learning: CUDA, CuDNN, CuML, Python (Tensorflow, Keras etc)

IO Libraries: HDF5, NETCDF

Math And Scientific Libraries: Libint, Libxc, Libxsmm, Elpa, Eigen, FFTW

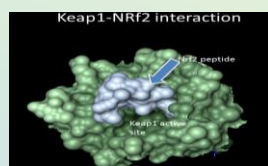
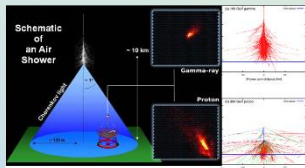
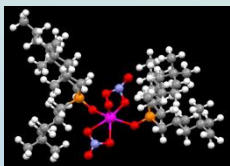
User Application:

Quantum Espresso, Gromacs, Plumed, Cp2k, ELK, ORCA

OpenMC, Metis, Moab, Orca, VMD, Wannier, OpenFOAM, LAMMPS

Commercial User Applications:

VASP, Quantum ATK, WIEN2K, ADF, Turbomole, Molcas, CFD-ACE



Available JOB Queues: atulya, atulya_gpu, atulya_ml

Connecting Atulya from BARC Intranet: `ssh -X atulya.compunet.barc.in`

Proxy: Type: HTTP, Host: compunetgw.barc.gov.in, Port: 8080

Common Commands on Anupam systems:

List available modules: `module avail`

Import module: `module load <module-name>`

List imported modules: `module list`

Import Python packages: `pip install <package-name>`

For more information: <http://wiki.megh.barc.gov.in/wiki/view/ANUPAM/>