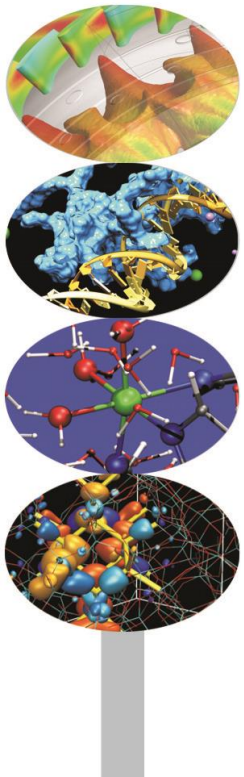
CINECA SCAI
SuperComputing Applications and Innovation

CINECA COURSES High Performance Computing 2014

Parallel I/O and managment of scientific data



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Rome, 15/16 May 2014

PRACE

CINECA

Agenda

- 15 May 2014
  - ✓ 09.15 Registration
  - ✓ 09.30 - 10.30 I/O: State of the art and Future developments (G. Amati)
  - ✓ 10:30-13:00 MPI2-IO: theory and practice (F.Salvadore)
  - ✓ 13:00-14:30 Lunch
  - ✓ 14:30-18:00 MPI2-IO: theory and practice (F.Salvadore)
- 16 May 2014
  - ✓ 09:30-10:30 Management of large scientific data (G. Mariani)
  - ✓ 10:30-13:00 HDF5: theory and practice (G.Amati)
  - ✓ 13:00-14:30 Lunch
  - ✓ 14:30-18:00 HDF5: theory and practice

Using laptop

- Switch to linux at boot
- Use module
  - ✓ **`module purge`**
  - ✓ **`module av`**
  - ✓ **`module li`**
- Using mpi
  1. **`module load gnu/4.8.2`**
  2. **`module load openmpi/1.6.5--gnu--4.8.2`**
- Using serial hdf5
  1. **`module load gnu/4.8.2`**
  2. **`module load hdf5/1.8.12_ser--gnu--4.8.2`**
- Using parallel hdf5
  1. **`module load gnu/4.8.2`**
  2. **`module load openmpi/1.6.5--gnu--4.8.2`**
  3. **`module load hdf5/1.8.12_par--openmpi--gnu--4.8.2`**

Hands-out

- Hands-out and examples can be downloaded at:

1. https://hpc-forge.cineca.it/files/CoursesDev/public/
2. go to 2014
3. go to Parallel_I_O_and_management_of_large_scientific_data/
4. go to Rome

Examples: hdf5.tar

```
├── u_00001000.h5
├── sample.h5
├── SERIAL
│   ├── exercise1.c
│   ├── RUN
│   ├── serial_ex1.c
│   ├── serial_ex1.f90
│   ├── serial_ex2.c
│   ├── serial_ex2.f90
│   ├── serial_ex3.c
│   ├── serial_ex3.f90
│   ├── serial_ex4.c
│   ├── serial_ex4.f90
│   ├── serial_ex5.c
│   ├── serial_ex5.f90
│   ├── serial_ex6.c
│   ├── serial_ex6.f90
│   ├── serial_ex7.c
│   ├── serial_ex7.f90
│   ├── serial_ex8.c
│   └── serial_ex8.f90
```

Examples: `hdf5.tar`

```
├── PARALLEL
    ├── parallel_ex1.c
    ├── parallel_ex2.c
    ├── parallel_ex3.c
    ├── parallel_ex3_column.c
    ├── parallel_ex4.c
    ├── parallel_ex5.c
    └── RUN
```