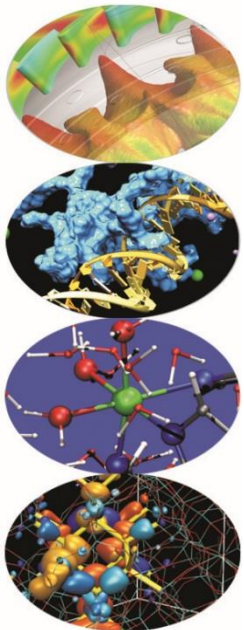


Parallel I/O and management of scientific data

Giorgio Amati, Gianni Morelli,
Luca Ferraro
CINECA

Rome, 14/15 May 2015



Real Agenda

14 May 2015

- ✓ 09.30 Registration
- ✓ 09.45 -10.30 I/O: State of the art and Future developments (G. Amati)
- ✓ 10:30-13:00 HDF5: theory and practice (G. Amati)
- ✓ 13:00-14:15 Lunch
- ✓ 14:15-16:30 HDF5: theory and practice (G. Amati)
- ✓ **16:45-18:00 Management of large scientific data (G. Morelli)**

15 May 2015

- ✓ **09:30-10:30 HDF5: theory and practice (G. Amati)**
- ✓ 10:30-13:00 MPI2-IO: theory and practice (L. Ferraro)
- ✓ 13:00-14:15 Lunch
- ✓ 14:15-18:00 MPI2-IO: theory and practice (L. Ferraro)

Using laptop

- Switch to linux at boot
- Use module
 - ✓ `module purge`
 - ✓ `module av`
 - ✓ `module li`
- Using mpi
 1. `module load gnu/4.9.2`
 2. `module load openmpi/1.8.4--gnu--4.9.2`
- Using serial hdf5
 1. `module load gnu/4.9.2`
 2. `module load hdf5/1.8.14_ser--gnu--4.9.2`
 3. `module load szip/2.1-gnu-4.9.2`
- Using parallel hdf5
 1. `module load gnu/4.9.2`
 2. `module load openmpi/1.8.4--gnu--4.9.2`
 3. `module load hdf5/1.8.14_par--openmpi--gnu--4.9.2`
 4. `module load szip/2.1-gnu-4.9.2`

Hands-out

- Hands-out and examples can be downloaded at:
 1. <https://hpc-forge.cineca.it/files/CoursesDev/public/>
 2. go to [2015](#)
 3. go to [Parallel I O and management of large scientific data/](#)
 4. go to [Rome](#)

exampleHDF5.tar

```
|— u_00001000.h5
|— sample.h5
|— SERIAL
|   |— exercisel.c
|   |— RUN
|   |— serial_ex1.better.c
|   |— 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
```



exampleHDF5.tar

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