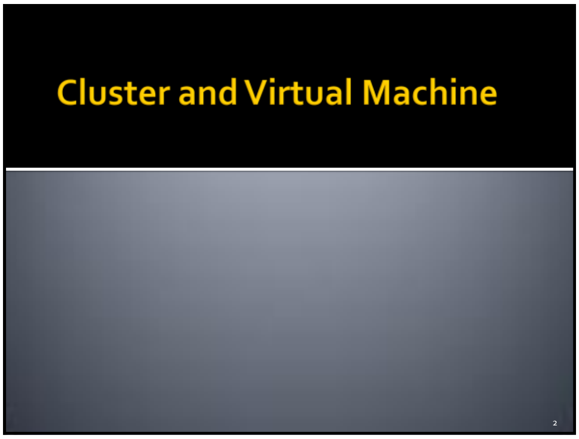
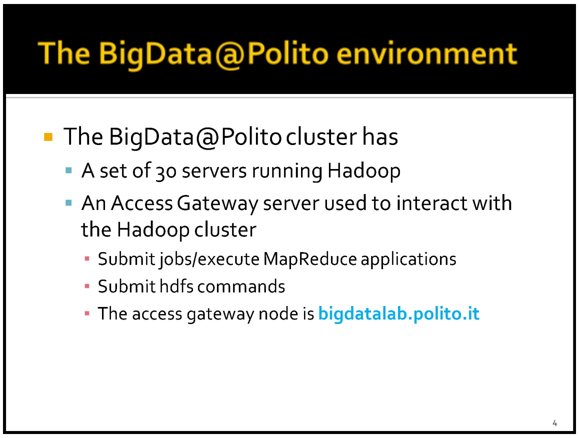
Big data: architectures and data analytics



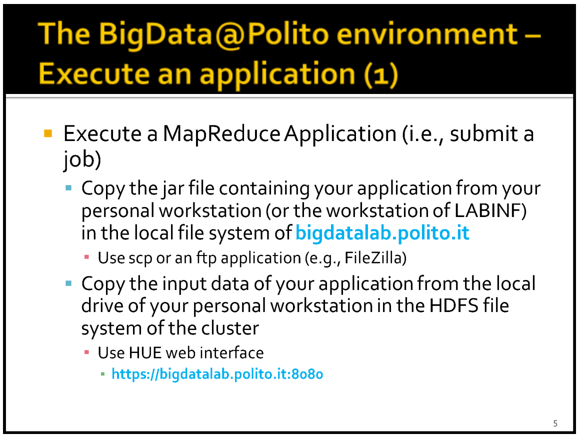
Cluster and Virtual Machine

The BigData@Polito environment



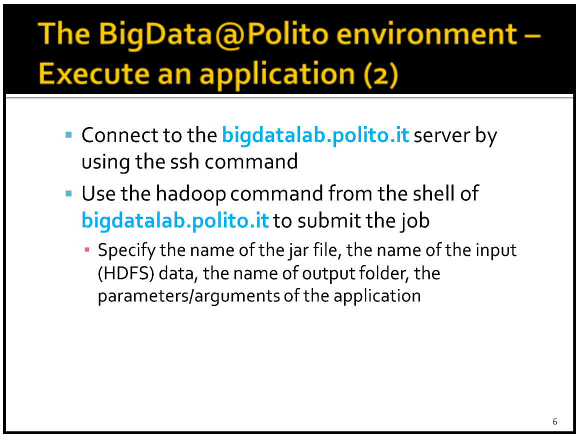
The BigData@Polito environment

- The BigData@Polito cluster has
  - A set of 30 servers running Hadoop
  - An Access Gateway server used to interact with the Hadoop cluster
    - Submit jobs/execute MapReduce applications
    - Submit hdfs commands
    - The access gateway node is bigdatalab.polito.it



The BigData@Polito environment – Execute an application (1)

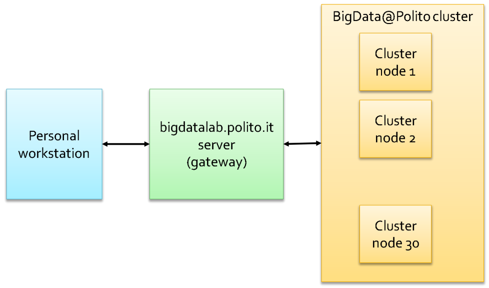
- Execute a MapReduce Application (i.e., submit a job)
  - Copy the jar file containing your application from your personal workstation (or the workstation of LABINF) in the local file system of bigdatalab.polito.it
    - Use scp or an ftp application (e.g., FileZilla)
  - Copy the input data of your application from the local drive of your personal workstation in the HDFS file system of the cluster
    - Use HUE web interface
      - https://bigdatalab.polito.it:8080



The BigData@Polito environment – Execute an application (2)

- Connect to the bigdatalab.polito.it server by using the ssh command
- Use the hadoop command from the shell of bigdatalab.polito.it to submit the job
  - Specify the name of the jar file, the name of the input (HDFS) data, the name of output folder, the parameters/arguments of the application

The BigData@Polito environment



Virtual machine

Virtual machine

- The Virtual machine
  - Contains a pseudo-distributed instance of Apache Hadoop
    - One single node but a pseudo-distributed setting
  - Is at the same time
    - The personal developer workstation
    - The gateway node with hadoop and hdfs commands
    - The cluster
  - Useful for running MapReduce programs on small data sets

Virtual machine – Execute an application

- Execute an application (i.e., submit a job)
  - Copy the input data of your application from the local file system in the HDFS file system
    - Use hdfs command line
    - HUE is not available
  - Use the hadoop command from the shell of the virtual machine to submit the job/the applications