

Connecting with Kabré

Establishing an SSH session	<p>Open a terminal program and type:</p> <pre>\$ ssh user@kabre.cenat.ac.cr</pre> <p>Then press enter three times when requesting the creation of SSH keys.</p> <p>Exit session:</p> <pre>\$ exit</pre>
Deploying SSH keys	<p>In your computer, open a terminal and type:</p> <pre>\$ ssh-keygen -t rsa -C "your_email@example.com"</pre> <pre>\$ ssh-copy-id user@kabre.cenat.ac.cr</pre> <p>From your computer to Kabré:</p> <pre>\$ scp files [user]@kabre.cenat.ac.cr:[path]</pre> <p>From Kabré to your computer:</p> <pre>\$ scp [user]@kabre.cenat.ac.cr:[files] [path]</pre> <p>These commands must be executed in your computer.</p> <pre>\$ scp -r user@host:[directory] [directory]</pre> <p>Copy all files and directories recursively.</p>
Change your password	<pre>\$ ssh user@kabre.cenat.ac.cr</pre> <pre>\$ passwd</pre>

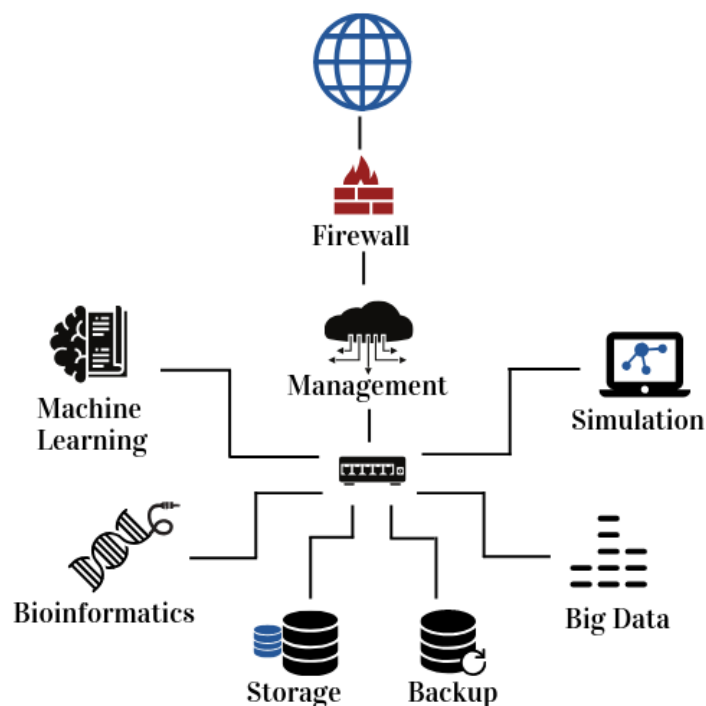
Kabré's Queues System

Writing a SLURM job file	<pre>#SBATCH -job-name=<job_name></pre> <pre>#SBATCH -output=<result_name></pre> <pre>#SBATCH -partition=<partition_name></pre> <pre>#SBATCH -ntasks=<multiply X*Y></pre> <pre>#SBATCH -time=<HH:MM:SS></pre> <p>execute your program here</p>
Submitting your job	<pre>\$ sbatch job.slurm</pre>
Monitoring your jobs	<p>In Kabré, type:</p> <pre>\$ watch -n 5 squeue</pre>
Retrieving results	<p>All jobs will generate an output file:</p> <pre><result_name></pre>
Interactive jobs on a Nu node	<pre>\$ salloc</pre>
Interactive jobs on an Andalan, Dribe or Nukwa node. Remember to substitute [node] with the debug queue you will use.	<pre>\$ srun -partition=[node] -pty -preserve-env \$SHELL</pre>

Environment Modules

List loaded modules	\$ module list
List available modules	\$ module avail
Load a module	\$ module load module_name
Unload a module	\$ module unload module_name

Kabré's composition



Virtualization	Just don't mess up here! Don't execute programs here! These nodes are a shared-working area, use them to:
Login-nodes	<ul style="list-style-type: none">▶ Create and edit files▶ Create directories and move files▶ Copy files to and from your computer▶ Compile code▶ Submit jobs▶ Manage your active jobs
Nu (Simulation)	Each blade has 20 Intel Xeon Phi KNL nodes with 64 cores @ 1.3 GHz, 96 GB and 2 AVX
Nukwa (Machine Learning)	Nvidia Tesla K40. Hoster has an Intel Xeon with 4 cores @ 3.2 GHz and 16 GB, 2 extra nodes with Nvidia Tesla V100 GPU. 24 cores @ 2.20GHz, 2 threads per core, 32 GB.
Andalan (Big Data)	Each blade has 2 Intel Xeon nodes with 24 cores @ 2.20 GHz, 2 threads per core and 64 GB; one node with 16 cores, 2 threads per core @ 2.10 GHz, 64 GB; one node with 24 cores, 2 threads per core @ 2.40 GHz and 128 GB, and one last node with 10 cores 2 threads per core @ 2.20 GHz and 32 GB.
Dribe (Bioinformatics)	Each blade features two nodes, both with Intel Xeon, one with 36 cores, 2 threads per core @ 3.00 GHz and 1024 GB, the other with 18 cores, 2 threads per core @ 3.00 GHz and 512 GB.

Available Queues

Name	Platform	Number of nodes	Time slot (in hours)
nu	Xeon Phi KNL	1	72
nu-debug	Xeon Phi KNL	1	8
nu-wide	Xeon Phi KNL	12	24
nu-long	Xeon Phi KNL	1	744
nukwa	GPU	1	72
nukwa-debug	GPU	1	8
nukwa-wide	GPU	2	24
nukwa-long	GPU	1	168
andalan	Xeon	1	72
andalan-debug	Xeon	1	8
dribe	Xeon	1	72
dribe-debug	Xeon	1	8