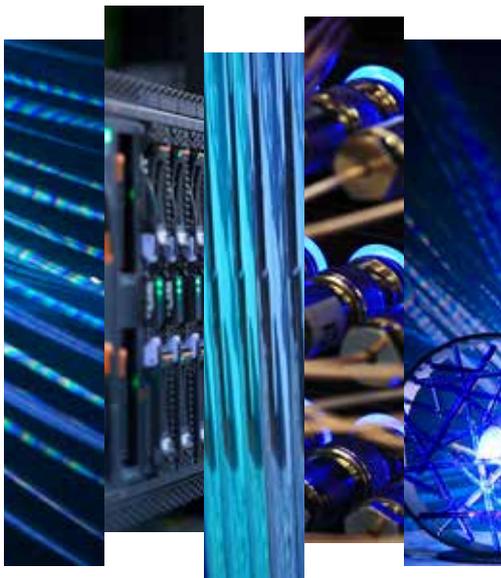




ANALYZE IT

Simulation is strategic, it provides competitive advantages to industries, it helps moving scientific research forward and with the explosion of data and artificial intelligence, it is becoming essential to our lives... Its democratization is a major challenge, but there are a lot of obstacles to it. Basically, in order to run simulations, young engineers and researchers have to become computer scientists, at the expense of their core expertise. Reasons are more historical than technical: HPC pushed science to its limits and has been built by computer scientists for computer scientists. There have been a lot of good reasons for that but it's now time to evolve.

UCit have packaged its HPC and machine learning expertise in a software tool which assist HPC system administrators to be even more effective.



BENEFITS



Identify "atypical" user behaviors

- Did you spot that novice user submitting bursts of jobs in the last 2 days?
- Or that user who has less than 10% of his jobs that end correctly?



Improve Cluster Quality of Service

- How long do your jobs spend in queue compared to their actual runtime?
- Do you have a high proportion of failed/cancelled/timeout jobs?



Percentage of consumed core-hours per job status



Limit waste of Compute Resources

- How many of your jobs do not require high-speed network and could run on cheaper nodes?
- What resources are left unused, while requested by your users?

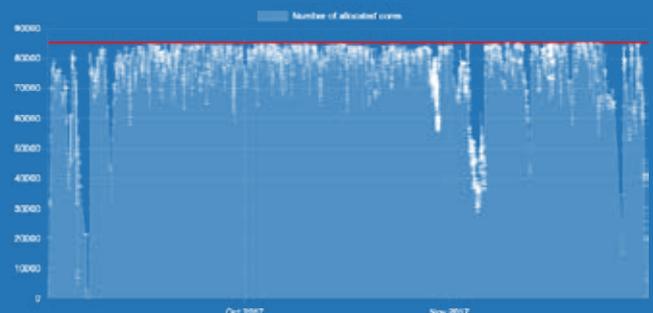


Plan future resource needs

- When do you have peak capacity needs?
- How do you dimension your future cluster's size?



Cluster congestion analysis: running vs. waiting core hours



Cluster Load allocated cores

Functionalities

Analyze logs through insightful KPIs/metrics* available in the following plugins:



Job Status: Number of jobs and core-hours consumed per job status



Resources: number of cores & core-hours, memory and nodes consumed by the jobs



Load: Allocated cores through time, and number of jobs allocated per node



Consumers: grouping of jobs per Group, User, JobName, Queue/Partition, QoS, Parallel Environment. For each, details about number of cores & core-hours, execution & waiting time, slowdown...



Throughput: submission frequency, slowdown, inter-arrival...



Resubmission: detection of resubmitted jobs, and analysis of the resubmitted jobs

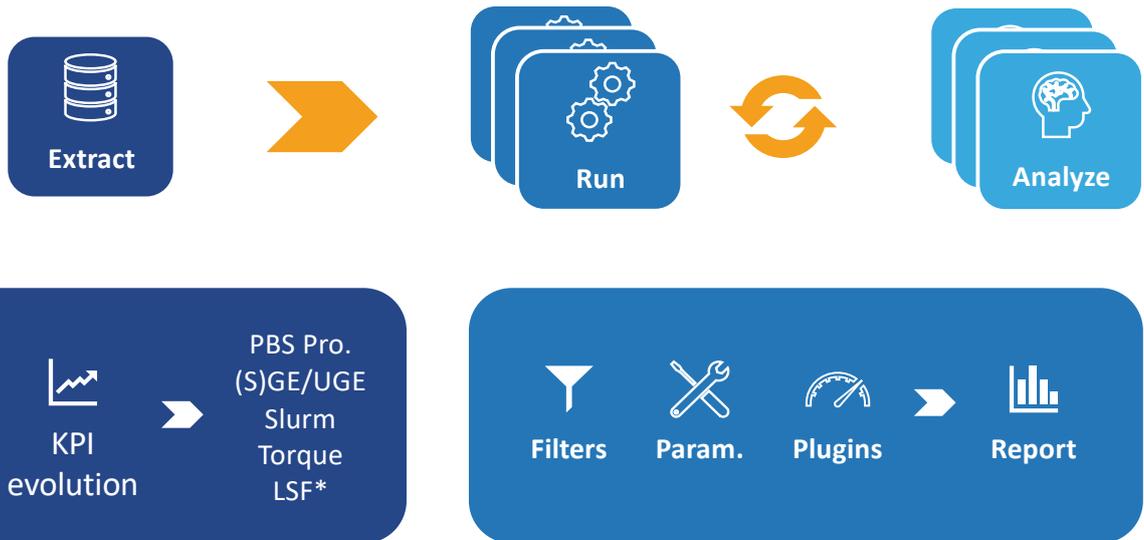


Concurrent users: active users per period



Congestion: Cluster state (Optimal, Acceptable, Contention, Congestion) through time, and jobs life cycle

*Most of the KPIs/metrics can be aggregated with various levels of details (per 10 minutes/hour/day/week/month/year), and statistical information is also provided (min/max/percentiles/avg/std...)



Analyze-IT: How it Works

Specifications	
Supported Job Schedulers	Slurm (>= 14.11.6)
	Torque (>=5.0)
	Altair® PBS Professional (>=13.0)
	Open Grid Engine (>=6.0u6)
	Univa® Grid Engine® (>=5.8.4)
	IBM® Spectrum LSF (2H19)
Supported OS	RHEL/CentOS (6, 7), Ubuntu (16.04,18.04)
Data Filtering	Select data respecting conditions: <, <=, >, >=, ==, !=, regex, on all available parameters
Customization	Report Look & Feel, Content
	Interactive graphs
	Support Analysis Profiles
	Extensible Architecture (custom plugins)



Contact us:



contact@ucit.fr



+33(0) 499 13 83 15



www.ucit.fr

