

## System for Managing HPC-Services and Workflow Executions

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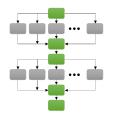
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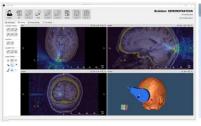
Motivation

Routine execution of scientific problems (workflows) is an everyday burden for many scientists. Efficiency of the workflow executions may be reduced due to (1) a selection of inappropriate, usually default, execution parameters, e.g., number of computing nodes, allocated time, and (2) an inappropriate handling of HPC facilities (executing heavy tasks using inappropriate nodes, etc.). These issues lead to facility overloads, outages, long waiting times in computational queues and prevents the job scheduler to work efficiently.

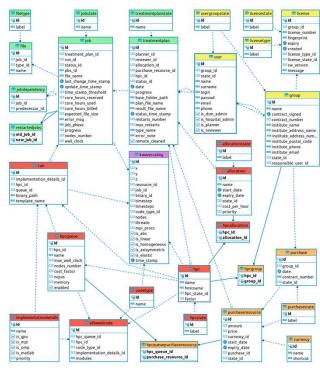
k-Dispatch

A workflow management software, k-Dispatch, provides HPC as a service and offers key features like workflow composition, execution offloading and monitoring, accounting and reporting. k-Dispatch implements approaches to find suitable execution parameters for tasks within workflows targeting different allocation options and performance constraints. k-Dispatch is involved in ultrasound neurostimulation applications and breast cancer diagnosis.









Aggregates, Trends

Alerts. Notifications

Drill-Down

Drill-Through



k-Dispatch Administrations

Although k-Dispatch implements so called plug & execute paradigm enabling easy code extensions of new computing facilities, workflows and input data, administrators need to access its database regularly for many reasons: (1) obtaining statistics about computed workflows, tasks, users, groups, etc., (2) adding new records, e.g., users, groups, licenses, (3) updating binaries and facility-related data, (4) **handling** resource allocations, and (5) reporting and informative purposes.

## Conclusions

We designed an interactive and device-aware web dashboard for administrators and regular users of k-Dispatch. Both groups of users have different capabilities and rights, therefore the dashboard content together with allowed views and actions are specific for distinct users. This piece of software was implemented under agile methodology.











