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Approaches to Manage Computational Cluster Resources

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Managing a computational cluster is a complex task which
involves many aspects from generic hardware settings to
improving the performances of a particular software application.
But the complexity of this task is sometime underestimated:
organizations just rely on a conventional approaches and systems.
As a result cluster utilization could be inefficient.
Mistakes (in terms of performance) made during system integration
could be imposed by used approach.
That is why the choice of a correct approach to system management
is very important in many cases (especially in case of nonstandard hybrid
complexes).

This article reflects the current situation in cluster management,
describes the up-to-date approaches used to solve the mentioned
problems, analyze the advantages and disadvantages of particular
implementations and propose a convenient way to manage clusters.

Keywords:
Computational clusters, PBS, Virtualization, Grid, Single system image, Cloud.

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