Execution of windows binaries in gLite

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The main goal of the project is to extend gLite to Microsoft Compute Cluster Server
(CCS) platform, with the first phase to make CCS as the work node of gLite
infrastructure.. Heterogeneity is the beauty of Grid, but still a milestone to reach.
To integrate the large population of Windows-based resources into the Grid world
through Grid services is also essential to acquire more momentum from the industry
and from the grass-roots. In general, we successfully make CCS nodes running jobs
from gLite resource broker and Windows jobs are able to execute natively under the
control of gLite as well.

The main challenges of this project stem from the essence of Unix and Windows. For
example, gLIte makes use of plenty of shell scripts for wrapping end users'job
descriptions to meet the target environment and get dispatched and executed on the
fly, but we are short of such flexible tools in Windows. Job profiles have to be
re-compiled for Windows. For the bridge of gLite and CCS, we take advantage of gLite
CE's BLAHP interface, an abstract layer for underlying queuing systems.A set of API
and tools were developed upon BLAHP to let jobs submitted from each side. . Job
submission approach is persistent as the gLite way entirely. To demonstrate the
effectiveness of our works, BLAST and virtual screening applications were ported and
tested with success. In the future, we plan to have the proxy delegation to Windows
nodes, GSI-based data transmission in Windows, and the fully compatible storage
element could be developed in the next phase.

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