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User Defined Runtime Environments in UNICORE

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Users of computational resources come with a multitude of different application scenarios. It is difficult if not impossible to cater for all user requirements of a computing center at the same time and in a timely manner. Therefore, it would be beneficial if the user could provide the runtime environment and thus pose less complex requirements for the computing center. The computing center can then focus on the provision and maintenance of physical machines and the virtualization infrastructure.

The central concept behind user defined execution environments is the availability of software in a well-defined environment. Particular versions of libraries, file system layout etc. are such that the application in question can directly execute without further configuration. Thus, not all software that users may want to run needs

to be available in and maintained by computing centres. Software maintenance and updates are done in the virtual machine images, e. g. at the virtual organization~(VO) or research community level.

In order to take much of the burden of deploying virtual machines from the user, current developments in UNICORE are targeting a seamless integration of this scenario. In the simplest case, users would select virtual machine images from image repositories and deploy them in a virtualized environment. In doing so, they would still be following

the original UNICORE pattern, but providing additional information about the desired environment. The actual job submission already known from current UNICORE will remain the same. At a higher level, the selection of the concrete execution environment could even be automatically done by a service, such that the user would only have to send a request for the execution of a particular application with given input data.

Our presentation will give a status report and outlook of the ongoing developments. Furthermore, we will discuss the applicability of the UNICORE model to the above scenario.

Required Facilities

Projector

Duration (90min sessions)

20 Minutes

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