

Impact of Advanced Virtualization Technologies on Grid Computing

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Virtualization offers Grid computing centers means to consolidate services and hence to increase the utilization level. At present this is achieved by using platform virtualization only. Not considered are other types like storage, network, and I/O virtualization. The combination of the various virtualization types is under development and will result in new possibilities in the area of resource provisioning and scheduling. E.g. batch systems capable of scheduling Grid virtual machines as well as normal Grid jobs are already under development. Existing approaches could be extended by integration of network virtualization. As a result of this guaranteed network bandwidths on a per-virtual machine basis are possible. This is of importance in context of SLA (service level agreements) enforcement. Benefits and also problems created by the combination of different virtualization types will be pointed out from resource providers and users point of view.

