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Providing a Single View of Heterogeneous Clusters using Platform LSF

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Universus refers to an extension to Platform LSF that provides a secure, transparent, one-way interface from an LSF cluster to any foreign cluster. A foreign cluster is a local or remote cluster managed by a non-LSF workload management system. Universus schedules work to foreign clusters as it would to any other execution host.

Beyond its ability to interface with foreign workload management systems, the two most important features of Universus are its security and its transparency. Universus leverages the LSF Kerberos 5 integration to provide user and daemon authentication, and a Kerberized Secure Shell implementation to perform encrypted file transfers and to securely execute commands on remote systems.

Transparency can best be described as making jobs that are actually executing within a foreign cluster ³look and feel² like native LSF jobs from the end users perspective. Universus provides transparency on both the command line and the LSF Web UI level. Universus also provides transparency to the LSF system by obtaining accurate exit status from foreign jobs, even when the foreign cluster provides no such functionality.

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