

Why Univa Grid Engine?

Univa Grid Engine 8.0 is our initial release of Grid Engine and is quality controlled and fully supported by Univa. This release enhances the Grid Engine open source core platform with advanced features and integrations into enterprise-ready systems as well as cloud management solutions that allow organizations to implement the most scalable and high performing distributed computing solution on the market. Univa Grid Engine 8.0 marks the start for a product evolution delivering critical functionality such as improved 3rd party application integration, advanced capabilities for license and policy management and enhanced support for software and hardware platforms. Features delivered in Univa Grid Engine 8.0 are:

- New multi-threaded interactive job support
- Simple "1 Click" on-demand HPC
- Significant patches over Grid Engine from other sources

"Throughout our business relationship Univa has proved to be an innovative company with a very strong technical capability and market vision. This announcement reinforces that fact - it's great news for Univa's customers, current and future."

– Mike Twelves, Manager KBE, Safety & IT Systems at Tata Steel, Automotive Engineering

"This is a win-win-win situation: GE users now have access to enterprise class support, Univa customers benefit from extended capabilities now available for fully optimizing data center efficiency; and the GE community can rest assured robust development will continue thanks to Univa."

– Wolfgang Gentzsch, former CEO of Genias Software which originally developed Grid Engine

Overview

Grid Engine is an industry-leading distributed resource management (DRM) system used by hundreds of companies worldwide to build large compute cluster infrastructures for processing massive volumes of workload. A highly scalable and reliable DRM system, Grid Engine enables companies to produce higher-quality products, reduce time to market, and streamline and simplify the computing environment.

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Univa Grid Engine 8.0 makes it easy to create a cluster of thousands of machines by harnessing the combined computing power of desktops, servers and clouds in a simple, easy-to-administer environment. Scheduling policies can be applied to all work submitted to the cluster, ensuring high-priority jobs are completed on time while simultaneously maintaining maximum utilization of all cluster machines. With Grid Engine, any resource or software license can be monitored, tracked and scheduled to ensure applications are automatically matched to the appropriate licenses and machines in the cluster.

Key Features and Capabilities

• Priority and Utilization Policies

Grid Engine delivers multiple scheduling policies for matching workload in the cluster to business and organizational objectives such as maximizing utilization across all machines, reducing turnaround time for jobs in the cluster, or prioritizing workload according to group, department or company affiliation.

• Dynamic Resource Management

Grid Engine continuously collects metrics from all cluster nodes, then uses scheduling strategies configured by the administrator to evaluate all pending workload and match specific job requirements to available resources.

• Resource Capacity Management

All resources in a data center or cluster are finite and must be effectively shared. Grid Engine provides powerful and flexible resource capacity control for all shared resources, including applications and licenses. Resource Quota Sets further refine the level of control for sharing resources among users, groups and departments.

• Scalability

Grid Engine can scale to a cluster of 64,000 cores and more in a single managed environment. A single Grid Engine cluster can contain more than 4,000 nodes, and additional Grid Engine clusters can also be added to extend scalability to 10,000 or more nodes in a multi-cluster environment.



Protect Your Investment

See why customers are choosing Univa Grid Engine

- Zero switching costs. Drop-in replacement
- Future development path with rich feature set that improves Grid Engine value
- Eliminate the risk of feature freeze
- Fully Supported by Univa Grid Engine Team

To find out more, contact the Grid Engine Hotline at +1-888-988-9919



Univa Grid Engine 8.0

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Get the Facts

Learn more about the future of Grid Engine:

- **For Current Grid Engine users:**
Univa Grid Engine 8.0 is a drop-in replacement complete with enterprise-class features and world-class support.
- **For users of other schedulers:**
There's no better time to switch to Univa Grid Engine. Talk to a Univa representative and find out how your business will benefit from moving to Univa Grid Engine.

"Univa has a tool that converts the scripts used in Platform Computing's Load Sharing Facility (LSF)... so they can be run on Grid Engine. The conversion tool can emulate more than 100 LSF commands and convert them to the equivalent Grid Engine functions. This tool can port about 90 per cent of the LSF commands, making it a lot easier for companies to jump from LSF to Grid Engine."

—Timothy Prickett Morgan, The Register



• Performance

With Grid Engine, performance scales seamlessly and efficiently as the cluster grows in size. Grid Engine can accept over 100 jobs per second, and using the DRMAA interface a 1,000-job/second submission rate can be achieved. The Grid Engine scheduler can be configured as the cluster grows in size and number of jobs to ensure minimal time is spent scheduling and dispatching jobs to individual cluster hosts. Performance optimization is built into every aspect of Grid Engine, from fast system startup times even with multiple 100K jobs in the system to dispatching and running extremely large-scale parallel jobs across 64K cores and more.

• Nonstop Cluster Reconfiguration

Production clusters cannot afford to stop or suspend work for cluster modification. With Grid Engine all cluster configurations and parameters can be modified and machines can be added or removed while Grid Engine continues to run.

• Flexible Workload Types

Grid Engine supports many different workload types so a wide variety of jobs can be scheduled and run efficiently in the cluster. Most applications can run in a sequential fashion; however, some specialized applications may require either a parametric workload type for simple parallel applications or full parallel workload type for applications that need message passing. Interactive jobs can be submitted to Grid Engine providing a remote shell to the user while at the same time enforcing Grid Engine scheduling and policy control.

• Multi-Core Processor Binding

With the advent of NUMA, multi-core machines scheduling effectively to a single processor requires binding the job to specific processors or cores on the machine. Grid Engine provides superior flexibility in assigning jobs to specific cores, improving the overall utilization and runtime for most jobs.

• Security

Grid Engine can be configured to encrypt all data being transferred among Grid Engine components running on the cluster nodes. Using this secure mode, Grid Engine can also verify user certificates and ensure that components have not been tampered with by potential attackers.

• Advance Reservation

Reservations can be made to reserve Grid Engine cluster resources (such as CPU, memory, job slots or applications) for a future time and date. This feature is invaluable for cluster administrators and power users to reserve portions of the cluster for maintenance, parallel jobs or very high priority workload.

• Hybrid Cloud Enablement

Univa Grid Engine is fully integrated with UniCloud, providing functionality to seamlessly extend a Grid Engine cluster to an external cloud computing service such as Amazon EC2 or Rackspace Cloud. It is fast and easy to create a Grid Engine cluster that runs in the public cloud or to establish a secure hybrid cloud that contains machines from your environment and the public cloud provider.

Supported Architecture and Operating Systems

Operating System	Version	Architecture
Red Hat Enterprise Linux®	4.4-4.8, 5.3-5.5,6	x86, x86_64
CentOS	4.4-4.8, 5.3-5.5,6	x86, x86_64
Oracle® Linux®	4.4-4.8, 5.3-5.5,6	x86, x86_64
Ubuntu Server™	10.04LTS-10.10	x86, x86_64
SUSE Linux Enterprise Server	10-11	x86, x86_64
Microsoft® Windows	Vista, HPC Server, 7, XP SP3	x86, x86_64
Oracle® Solaris	10	x86, x86_64, SPARC
HP-UX	11.0+	64bit
AIX	5.3, 6.1+	64bit

About Univa

Univa, the Data Center Optimization Company, is the leading provider of optimization and management software for traditional, dynamic and cloud data centers. Our award-winning products are used by Global 2500 companies to improve resource sharing, amplify the efficiency of people and processes, and increase application and license utilization. Univa offers the industry's broadest, most innovative and integrated product set for managing shared, high-demand data center resources. From workload management to policy-driven provisioning across physical, virtual and cloud resources, only Univa provides a proven combination of enterprise-class capabilities, industry expertise, and community sponsorship. Univa is headquartered in Lisle, Illinois with offices worldwide. Visit us at www.univa.com.