Key Benefits

Designers

- Sub-second latency for best performance and user experience
- Full Visibility into key job resources (CPU, memory & license)

Added benefits with Plus package:

- Exclusive access to "private" scheduler, allows "self-directed" flows
- High throughput for highly parallel workloads of uniform short jobs

Infrastructure

- Scalable small footprint architecture for best resource utilization
- Customizable alerts and notifications
- Fast restart without impacting running jobs

Added benefits with Plus package:

- Flexible usage models (on-demand, workload, project)
- 6-10X higher throughput without adding compute capacity

Management

- High capacity scalable architecture capable of scheduling tens of millions of jobs per day
- Manage organizational priorities with comprehensive policy management features

Added benefits with Plus package:

- Support difficult workloads (without impacting other users)/Workload isolation
- Scale out mechanism for job dispatch

Altair Accelerator™

Accelerator is an enterprise grade job scheduler designed for distributed High-Performance-Computing (HPC) environments. As a highly adaptable solution, it is capable of managing compute infrastructures from small dedicated server farms to complex distributed HPC environments.

The Plus package of Accelerator (Altair Accelerator Plus™) also includes a hierarchical scheduler architected to off-load the base scheduler, enabling greater throughput, better license and resource utilization, and more flexible scheduler usage models.
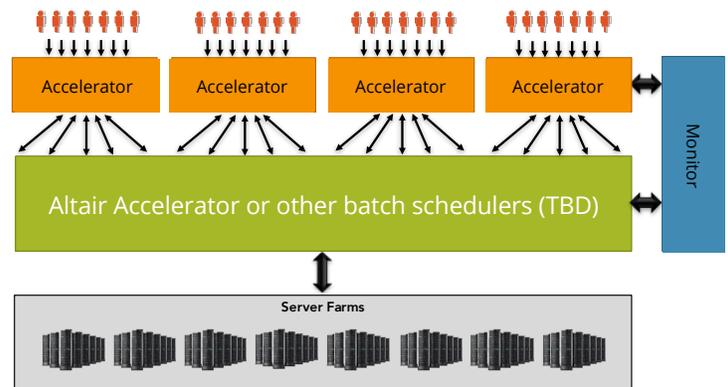

Maximizing Throughput

A full-featured, high performance job scheduler, Accelerator is designed to manage complex workload environments. Accelerator's scalable event-driven architecture combined with its small memory footprint and sub-second dispatch latency accelerates design throughput and maximizes capacity utilization capable of running billions of jobs per day.

Equipped with a comprehensive set of policy management features including FairShare and Preemption, Accelerator provides the essential controllability and observability tools to set and alter policies to optimize workload environment as needed. Accelerator enables the implementation of fair share policies for both hardware resources and software licenses to ensure that business-critical work is completed on time.

Job preemption and reservations can be used to allow urgent jobs to take precedence over less important jobs. Accelerator can suspend running jobs and resume them once higher priority jobs have been completed hence eliminating the need to set aside licenses for urgent jobs. Accelerator can achieve 100% license utilization while servicing all classes of jobs.

Accelerator Plus, which includes a hierarchical scheduler, comes with millisecond dispatch latency, which yields the most benefits for short jobs. It serves as a "personal scheduler" director, allowing users to queue short jobs sequentially on their own. This reduces the scheduling burden on the lower level scheduler by presenting a batch of short jobs as one longer job while maintaining full visibility into each individual job which is a common need for users. It can also handle all the user query, job submission and reporting functions. The offload from the base scheduler is substantial since 80% of typical scheduler loads come from these non-dispatch functions.

For highly parallel, short jobs with consistent license and computing resource needs, Accelerator Plus deployments have realized a 6-10X increase in throughput with no added compute capacity.

PLUS SCHEDULER'S IMPACT ON ACCELERATOR PERFORMANCE

Greater Productivity

Accelerator provides visualization and failure identification capabilities that provide a "big picture" view of jobs that have completed, failed, and/or waiting. This provides system administrators with greater productivity to easily identify any given job status while quickly analyzing the root cause of a failing job by bringing up relevant report files.

System administrators can easily configure Accelerator to send automatic alerts to users or administrators when situations occur.

Greater Visibility

Accelerator Plus is equipped with a comprehensive set of policy management features including FairShare and Preemption. Cross-organizational resources can be assigned and managed as users prefer - by workflow, project and on-demand.

A full-featured GUI enables full visibility into each job and compute farm statistics for queued jobs, running jobs, and allocated resources. User interfaces include web browsers, command line and an extension API.

For example, in semiconductor verification application, under a typical high-load situation of two regressions and a smoke test, Accelerator Plus manages the peak loads with ease. When combining all 3 workloads, the effective load on the base scheduler stays stable at a level that is less than any of the individual workloads.