



MATLAB and PBS Professional for Efficient Distributed Computing

Altair's PBS Professional workload management system is integrated with Parallel Computing Toolbox and MATLAB Distributed Computing Server from The MathWorks. Here's how this combination of technologies increases productivity in technical computing environments.

THE SOLUTION AT A GLANCE

Engineers and scientists who use Parallel Computing Toolbox and MATLAB® Distributed Computing Server to develop parallel applications will now be able to run jobs on PBS Professional® clusters in a highly simplified way. The combination of these tools

makes it possible to assemble the most cost-effective use of mixed environments running MATLAB. In doing so, users can easily handle complex scheduling challenges for multiple MATLAB jobs and ensure that resources are used in an extremely efficient way.

THE CHALLENGE: DEFEATING COMPLEXITY

Problem-solving is the job of MATLAB users. The problems they work with are increasingly data and compute-intensive. This has led to a trend away from the use of desktops and workstations toward a preference for high-performance computing (HPC) systems. Today, scientists and engineers often work with multiple hosts in

distributed environments, including large clusters. Manually matching compute resources with the demand for services and setting priorities is time-consuming and complex, and does not make cost-effective use of hardware investments.

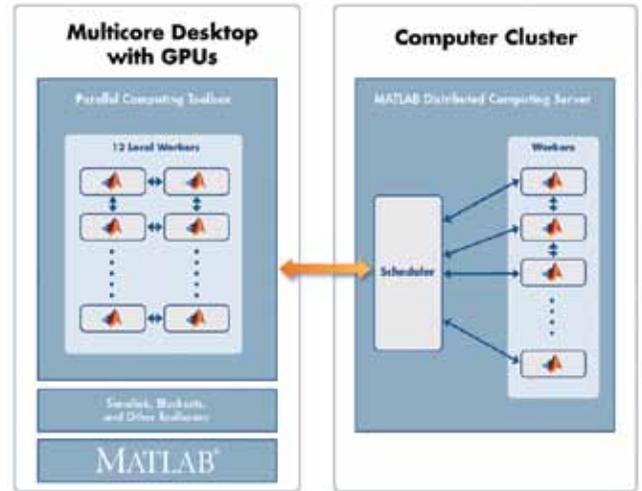
ABOUT PBS PROFESSIONAL

Highly scalable, flexible, reliable and intelligent, Altair's PBS Professional® is a workload management solution that maximizes the efficiency and utilization of high-performance computing (HPC) resources and improves job turnaround in a number of industries. By increasing the efficiency of hardware

and software resources, PBS Professional reduces total cost of ownership and provides true business value to HPC customers. PBS Professional is equally efficient at managing workloads across local and distributed Linux-, UNIX-, and Windows-based HPC environments.

HOW THE MATLAB PBS PROFESSIONAL SOLUTION WORKS

Parallel Computing Toolbox and MATLAB Distributed Computing Server integrate with PBS Professional to create a seamless, virtualized environment for running MATLAB jobs on PBS Professional clusters. MATLAB and Simulink users can program their applications on desktop and take advantage of cluster resources managed by PBS Professional right from the MATLAB environment. In addition, users can build standalone executables as well as shared software components for Java, .NET and Excel based applications from their parallel MATLAB applications for royalty-free deployment in production environments. These executables and software components can again take advantage of MATLAB Distributed Computing Server running on clusters managed by PBS Professional. Simplified workload management enables users to schedule their own jobs quickly and easily. The solution delivers guaranteed completion of mixed workloads across all enterprise resources, including desktops and workstations.



BENEFITS SUMMARY

- Simplified desktop access to resources
- Access to powerful high-level parallel MATLAB language constructs
- Reduced risk and complexity
- Use familiar MATLAB environment for access to compute resources
- Increased user productivity
- Reduced cost of ownership
- Optimized resource utilization

BOOST MATLAB PERFORMANCE WITH ADVANCED JOB SCHEDULING

The MATLAB development environment enables users to interactively analyze and visualize data, write algorithms and manage projects. Parallel Computing Toolbox and MATLAB Distributed Computing Server from The MathWorks give engineers and scientists a simplified path for developing applications and executing them on a cluster, without leaving their MATLAB development environment. Integrating the Toolbox and the Server with PBS Professional adds a unique level of intelligent workload management that increases the efficiency of hardware and software resources as well as reduces total cost of ownership.

PBS Professional is an open workload management solution for HPC environments that takes the complexity out of scheduling jobs from multiple users across applications, computing platforms and operating systems. Scientists and engineers can prototype applications in MATLAB and use Parallel Computing Toolbox functions to parallelize their applications. The MATLAB Distributed Computing Server uses the intelligent workload features of PBS Professional to schedule

and execute these applications on a policy-driven basis. The advanced technology of PBS Professional can maximize the utilization of HPC resources and is capable of harvesting idle compute cycles on servers, desktops and workstations.



Altair Engineering, Inc.
 1820 E. Big Beaver Rd., Troy, MI 48083-2031 USA
 Phone: +1.248.614.2400 • Fax: +1.248.614.2411
 www.altair.com • info@altair.com

For more information about PBS Professional, visit www.pbsworks.com to request a quote or view a demo.

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