

TurboWorx-IBM Therapy: Bioinformatics Pain Relief

Automated workflows on high performance clusters reduce tedious manual labor so scientists can spend more time pursuing research and development.

High Performance

- Development and execution of complex automated workflows without programming
- Application and data parallelism for higher throughput
- Multi-blade distributed environment to support parallelism

Strong Bioinformatics Capabilities

- VMX-enabled applications that accelerate compute-intensive tasks
- Pre-built TurboWorx Enterprise wrappers for bioinformatics applications
- TurboWorx support and services with expertise in bioinformatics application and data sources

Scalability

- Steady TurboWorx Enterprise performance as the hardware environment scales
- BladeCenter with plug-and-play expandability

Advanced Manageability

- Intuitive tools for TurboWorx Enterprise system configuration and workflow execution management
- Comprehensive single point-of-management for BladeCenter resources, with tight integration of servers, storage, networking and applications

Integrating and Distributing Complex Applications across High Performance Clusters

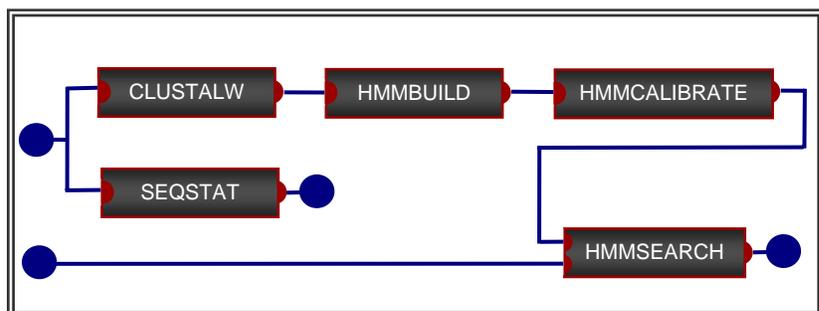
IBM and TurboWorx have a deep understanding of life science companies' need to maximize efficiency and throughput of their computational resources. TurboWorx® Enterprise™ helps achieve those goals by speeding processing and streamlining complex processes across the IBM eServer® BladeCenter™ JS20.

TurboWorx Enterprise provides a complete solution that allows researchers to describe computationally intense processes in their own terms. Using graphical wizards, users "wrap" proprietary and third-party applications into re-useable plug-and-play components. Drag-and-drop graphing tools can link components to create automated workflows that run on a distributed computing platform. And, all of this is accomplished without any scripting.

TurboWorx Enterprise taps distributed computing power through its SmartGrid™ engine, ensuring that tasks are executed in parallel and computing resources are intelligently utilized.

The IBM BladeCenter JS20 is based on IBM's award-winning POWER™ technology, and supports the AIX and RedHat Linux operating systems. It is especially well suited for compute-intensive applications and high-performance computing environments

The pairing of TurboWorx software with IBM BladeCenter JS20 clusters provides unmatched flexibility and performance to speed drug discovery. An improved ROI is achieved through greatly reduced manual and repetitive work and efficient use and allocation of computing resources.



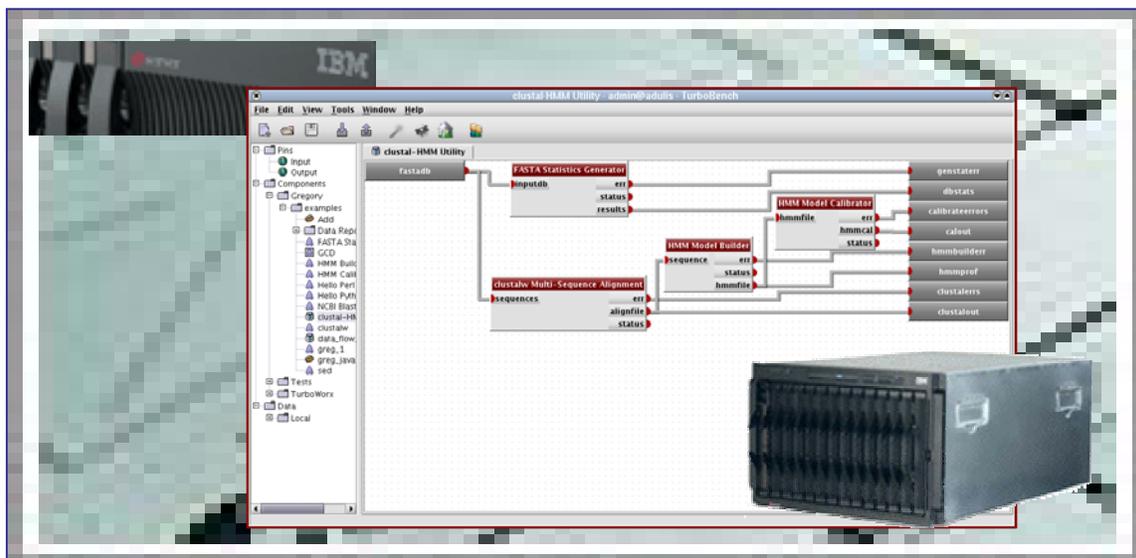
TurboWorx Enterprise links bioinformatics applications and data to create automated workflows.

TurboWorx Enterprise, powered by TurboWorx SmartGrid®, provides an unsurpassed, end-to-end solution that:

- Creates a Java-based distributed computing environment that efficiently taps an organization's existing clusters and grids and easily scales to meet new requirements.
- Facilitates the integration of diverse applications through wizard-based generation of XML wrappers.
- Simplifies the creation and maintenance of large, complex workflows through linked reusable components, without writing single-use scripts.
- Supports rich flow control patterns, such as looping, conditioning, composition, and data splitting.
- Automates workflow execution across a distributed environment with support for fault tolerance.
- Provides a seamlessly integrated framework with tailored user interfaces to allow the easy collaboration and communication of non-computer expert end-users, IT professionals, and managers.

IBM BladeCenter JS20 delivers price and performance value. It features a 64-bit PowerPC 970 processor, enhanced with 162 Single Instruction/Multiple Data (SIMD) instructions using the AltiVec/VMX technology. Bioinformatics applications are often able to effectively use these instructions to achieve 20 to 40% greater throughput through increased parallelism in execution.

- Ultra-slim and powerful, blade design delivers high density without sacrificing server processor performance.
- Flexibility to scale to 84 servers in an industry standard rack, packing more performance per square foot and saving valuable central office and/or datacenter real estate.
- Hot-swappable, designed to add or change servers without disrupting the operation of other servers in the chassis.
- The shared resources architecture of the BladeCenter means lower power consumption and heat output.



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