

# Powered by OpenHPC: Accelerating Life Science Discovery

## Exxact Life Science Enterprise (LSE)



### Computing Infrastructure Management Made Easy

Life science research workflows increasingly demand advanced computing solutions. Achieving peak performance requires purposeful design that balances powerful infrastructure with user-friendly management tools. Exxact Life Science Enterprise, built with OpenHPC, combines custom configurable hardware and pre-installed life science applications with management tools optimized for your unique workflow to accelerate project pipelines, streamline development cycles, and enhance scientific discovery capabilities.

#### Key Benefits

- Simple turnkey deployment
- Pre-installed management & life science applications
- Computing infrastructure cohesion
- Manage processor and accelerator utilization
- Monitor and optimize computing resources
- Configure and deploy workflow managers and job schedulers

### About Exxact Life Science Enterprise

Exxact LSE, built with OpenHPC, is our layered cluster architecture for hardware monitoring, resource management, and workload scheduling enabling computing infrastructure transparency, and performance.



#### Core Management Layer

- Handles system-wide configurations with environment modules for software dependencies
- Central management point and maintaining system security and logging activity
- Includes Cluster Management Utilities



#### Resource Management Layer

- Node management distributes and allocates computing resources to balance jobs across the cluster
- Monitor and visualize real-time cluster activity
- High performance consolidated storage supports shared workflows across the cluster



#### Workload Management Layer

- Validated pre-installed scientific libraries, tools, and applications for turnkey experience
- SLURM scheduler orchestrates workloads based on priority and resource requirements
- Development tools for performance optimization and troubleshooting

Each layer of the Exxact LSE architecture stack is carefully curated to tackle your workload effectively and optimally. Each full rack cluster deployment is thoroughly tested,

burned-in, and validated through a prescriptive approach towards accelerating life science applications tailored for your unique research.

Scheduler (Slurm)

File System

Cluster Management

Configuration Management

Provisioning

Node Management

Environment Modules

Security & Node Logs

IPMI Management

Linux OS ( Rocky / )

# Powering Unique Workflows

Exxact Life Science Enterprise delivers enterprise-grade security, stability, and support while streamlining life science research workflows. Systems come pre-validated with installations of key biomolecular software such as AMBER, AlphaFold, GROMACS, LAMMPS, NAMD, OpenMM, and more, including tools for developing AI, all optimized with CUDA for accelerated performance.

To accelerate simulations and analyses, MPI libraries are installed for multi-node parallel computing. Through expert optimization and cluster management interface, researchers gain instant access to optimized frameworks, accelerated libraries, and validated research environments for a complete day-one operational solution.



cryoSPARC

GROMACS  
FAST. FLEXIBLE. FREE.



RELION

AlphaFold



AMBER MD

NAMD  
Scalable Molecular Dynamics

VMD  
Visual Molecular Dynamics

And More ...

Software Stack



Network  
Management  
CPU/GPU Compute

Storage

## Cluster Management Infrastructure

Pairing pre-configured cluster management software stack & RackEXXpress integration for a complete cluster solution.

- Centralized cluster management control
- Seamless with existing and future hardware
- Optimized workload scheduling
- Scalable management architecture
- Available for any RackEXXpress option

## Serving the Industry's Top Innovators



Connect with our sales engineers to configure a computing infrastructure powered by Exxact Life Science Enterprise tailored to your research needs. Our Exxact experts will assess your requirements and help deliver an ideal solution for accelerating your workflow.



### Contact Us

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