

# HIGH PERFORMANCE COMPUTING, ALIGNMENT AND STORAGE CLUSTER (HPC)

Hassle-free, and turnkey, range of high performance computing clusters for genetics labs

## HPC SYSTEM HIGHLIGHTS

### Turnkey Solution, Ready for Immediate Use

The BioSoft range of HPC systems are designed to be immediately used in even the most compute-heavy genetics lab environment.

### Class-Leading Performance

Compute hardware that matches or beats any available HPC cluster for genetics applications.

### Analysis Integration Supported

BioSoft Integrators will integrate any 3rd party analysis package.

### Best Value Available

Equivalent performance and support of other systems at a fraction of the price.

## TURNKEY COMPUTING INFRASTRUCTURE PLATFORM

Even the most minor interruptions of service in modern next-generation sequencing (NGS) labs represent a significant hit to productivity. The BioSoft Integrators' HPC range of products are specifically designed to minimize downtime by pre-configuring support for all major sequencing platforms. Your analysis pipeline will be installed and up and running in the least amount of time, ensuring that you maintain productivity.

All the settings for the most common sequencers, such as Illumina, Life, PacBio, and Roche, are pre-installed, pre-configured and pre-tested on the BioSoft HPC system. This approach makes deployment of the system plug-and-play. It takes the install team only one day to deploy, setup communications with sequencer(s), and test.

The BioSoft HPC eliminates the need for time consuming setup and configuration of the compute infrastructure for genetics labs. More importantly, if not configured properly, the computing backbone of an NGS lab becomes a choke point, severely limiting output and productivity. With the

TABLE 1 | BioSoft HPC System Options

	FOUNDATION	96 CORE	128 CORE
Cores	48*	96	128
RAM	128GB	256GB	512GB
Raw Storage	10TB**	48TB	144TB
10GB Ethernet	NO	Yes	Yes
Head Node Cores	12	12	8
Head Node RAM	32GB	48GB	48GB
Head Node Storage	10TB***	2TB***	2TB***
Number of Compute Nodes	3	7	10
Compute Cores	12	12	12
Compute RAM	32GB	48GB	48GB
Compute Storage	250GB	250GB	250GB
Storage Node Cores	8	8	8
Storage Node RAM	128GB	128GB	128GB
Storage Node Storage	10TB**	4x2TB 6Gbps Raid 5 w/1 Hot Spare	24x2TB 6Gbps Raid 5 w/1 Hot Spare, 2xJBOD connected to NAS via SAS Cables 24x2TB 6Gbps Raid 5 w/1 Hot Spare
Storage Node OS Drives	2TB***	2TB***	2TB***
High Speed Switch	N/A	24 Port 10Gb E	24 Port 10Gb E
General Comm Switch	10/100/1000 Base T Gigabit	24 Port GigE	24 Port GigE
KVM	iKVM Network	Yes	Yes
LCD	NONE	17"	17"
UPS	Head Node & NAS	Head Node & NAS, Switches along with monitoring card	Head Node & NAS, Switches along with monitoring card
PDU	For compute nodes	For compute nodes	For compute nodes
Spare Parts	HDD, RAM	Maintenance Kit	Maintenance Kit
Rack Enclosure	12U	15U	15U

\*64 Hyperthreaded cores | \*\*Upgradable to 28TB | \*\*\*2 TB Drives Raid 1

BioSoft HPC, lab and Information Technology (IT) managers can feel confident that the system comes ready for use, without any risks of information bottlenecks.

**FIGURE 1 | Compact Design HPC**

BioSoft Integrators' compact, yet powerful, HPC design make it one of the most efficient solutions available.

## FOUNDATION HPC, IN-LAB CLUSTER DEPLOYMENT

Our Foundation platform's unique design combines both alignment and data storage in just 1U of rack space. There is no backplane or shared power supply. This allows BioSoft Integrators to configure the solution that best meets variable needs with only half the rack space. The entire system can fit under a lab workbench, eliminating the need for costly server room build-outs. The Foundation system's cabinet comes with sound insulation that isolates 80% of fan and hard drive noise, so lab workers are not at risk.

Our green design uses 55% recyclable/reusable chassis metal and features an industry leading 90% Plus Efficiency rating.

## BEST IN CLASS PERFORMANCE

BioSoft Integrators offers a truly unique design resulting in superior performance and increases flexibility. In recent testing on competitive clusters from sequencing appliance companies, BioSoft Integrators equaled or outperformed the competition at a lower cost.

All three of the available configurations are truly high performance clusters, even the Foundation system is enough to keep up with the needs of a mid-sized lab. The ability to upgrade the number of processor cores and storage space provides the necessary flexibility and platform evolution as needs grow.

## FULLY SUPPORTED PLATFORM

BioSoft Integrators offer industry-leading warranty on all HPC systems. New installs come with 30 days of Remote Assist login support, World-Wide onsite support, 7/24

**FIGURE 2 | Data Center Rack**

software, IT and hardware support. BioSoft also offers onsite technical training and troubleshooting.

For labs that do not already have a sequencing IT team with solid UNIX/Linux expertise, the optional Remote IT Support from BioSoft is ideal. All your IT support needs, including problem fixes, software updates and patch installs, and NGS required software and configuration updates, will be handled by the BioSoft team of experienced staff.

## SEQUENCING PLATFORM AGNOSTIC

The BioSoft HPC clusters are not limited to serving any one sequencing system. Each cluster comes ready to support the following systems:

- Illumina HiSeq, MiSeq, GA
- Life IonTorrent, SOLiD
- PacBio RS
- Roche 454

With the BioSoft HPC cluster you never have to worry about falling behind as new standards are established, in sequencing. It is the only future-proofed genetics HPC solution.

## CUSTOM INTEGRATION OF ANALYSIS

BioSoft Integrators will integrate any 3rd party or internally developed analysis package that a lab chooses to utilize. With this service you will never have to worry about the sometimes-painful task of integrating analysis software.

When this service is combined with the optional LabOptimize™ LIMS, analysis runs can be automatically initiated after an instrument run, minimizing down time and the overall time to results. Lab managers can also track samples each step of the way when using LabOptimize.

## BEST VALUE AVAILABLE

The performance features and benefits of BioSoft HPC clusters make them class-leading in most categories, including the price. However, the real benefit of the BioSoft HPC offering is the peace of mind offered by such a focused solution.

- **Increases productivity**  
Focus on laboratory tasks and research.
- **Maximizes ROI**  
Extend the life of your computing equipment with our proactive and regular maintenance.
- **On-site IT support without on-site costs**  
BioSoft experts are on call 24/7 to remotely access your environment.

## BioSoft HPC Clusters

	Catalog No.
<b>HPC, Analysis and Storage Clusters</b>	
Foundation	HC-100-1001
96 Cores	HC-100-1002
128 Cores	HC-100-1003
Compute Node Cluster	HC-201-1001
Storage Cluster Node 36TB	HC-301-1001
Storage Cluster Node 72TB	HC-301-1002
Storage Cluster Node 144TB	HC-301-1003
Storage Cluster Node 500TB	HC-301-1004
<b>Optional Remote IT</b>	
6-month Remote IT Support Contract	IT-101-1001
12-month Remote IT Support Contract	IT-101-1002

## Additional Information

To learn more about the whole line of HPC, Analysis and storage, visit [www.biosoftintegrators.com](http://www.biosoftintegrators.com).



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