

"I have seen the evolution of this software over the last 11 years. Honestly, it gets better and better, even when you can't raise your expectations even more" *Jordi Blasco, CTO, HPCNow!*

Interview

Since 2017, HPCNow! has been a certified gold partner of ThinkParQ and at SC18 they were awarded the 'BeeGFS Above and Beyond Award'. Earlier this month, ThinkParQ sat down with Jordi Blasco, CTO of HPCNow! to learn more about HPCNow! and their success in the community.

TPQ: Jordi, thank you for taking the time to sit with us today. To start off, can you tell us about your role at HPCNow! and also about the fantastic work HPCNow! does in the community?

Jordi: My formal role in HPCNow! is Chief Technology Officer. Besides the formal hierarchy, HPCNow! works really well under a flat hierarchy. My colleagues and I have similar experience in HPC and also a big reputation inside the HPC community, mostly thanks to our contributions to the HPC Knowledge Meeting, HPC & AI Advisory Council, EasyBuild, Singularity and Slurm. This reputation has been key for getting deals with important clients like Pfizer, Siemens, KAUST, Arianne Group, Lenovo and CRAY, among many others.

These are some great milestones. Please tell us more about HPCNow! ?

HPCNow! is a services company, founded in late 2012 by three partners with wide experience in high-performance computing, either in the administration and also in the use of scientific codes.

We help scientists and engineers in the complete journey, from the design of the solution based on the real needs; to the very end of the life cycle of the solution, by enabling cluster contention mitigation strategies like cloud bursting or job efficiency monitoring. We complement our services by delivering professional training and also providing ongoing remote administration and scientific support.

We are hardware and technology agnostics. This allows us to play a key role as an independent adviser in the platform selection.

Since 2017 HPCNow! has been a certified gold partner of ThinkParQ. Why did HPCNow! choose to become a ThinkParQ partner?

I, personally, started to work with BeeGFS in 2008, when I was in charge of the 13 HPC clusters of the XRQTC. At that time, BeeGFS was known as FhGFS. I have seen the evolution of this software over the last 11 years. Honestly, it gets better and better, even when you can't raise your expectations even more.

The product meets the needs and expectations of real HPC/AI users. In addition to that, the support is outstanding, even for a global company like us. For HPCNow! to become a ThinkParQ partner was an excellent opportunity to demonstrate our knowledge and experience with BeeGFS.



About HPCNow!

The use of supercomputing as a tool for solving problems in a variety of fields has grown exponentially in recent years. From its beginnings in the 80's and 90's when the owners of the first supercomputers were mainly public entities such as universities, research centers and the military, their use in the private sector has grown significantly over recent years. Thus HPC has become a highly valuable, even indispensable tool in many important enterprises such as the defense, pharmaceutical, chemical, automotive and aerospace industries.

This is the context in which HPCNow!! was founded by three partners with wide experience in the management of high performance computers and a thorough background in the use of scientific HPC codes. The company offers its expertise and knowledge with the aim of helping customers to get the most out of HPC technologies by providing effective and efficient supercomputer administration. HPCNow! also offers professional training and consultancy services for HPC scientists and engineers, so that they can obtain the highest level of performance and maximum security for their research.





You mentioned HPCNow! is a global company, in what regions do you represent ThinkParQ?

HPCNow! has representation in EMEA from the HQ located in Barcelona (Spain) and also in APAC from the office located in Auckland (New Zealand). The team is growing and we are planning to expand HPCNow! to the USA in order to consolidate and grow the market in that region.

For 11 years Jordi you have known and used BeeGFS. Tell us, what is your favorite feature of BeeGFS?

Only one?

I love the **metadata architecture**. While other cluster file systems can leverage similar performance in aggregated read and write, BeeGFS outperforms the metadata operations. For applications and workflows that rely on small files IO and metadata intensive operations, BeeGFS makes a difference.

"Another amazing feature is BeeOND, which has been able to re-define the way the IO is handled. Isolating the IO per job basis has been key to guarantee the expected performance and also allowed to open new scalability opportunities."

The parallel file system is like the heartbeat of the HPC cluster. We have seen situations where a single workflow could slow down the complete cluster for hours. Knowing the IO patterns in your cluster helps define the right solution, mitigate the potential issues and accelerate the time to results.

Another amazing feature is **BeeOND**, which has been able to re-define the way the IO is handled. Isolating the IO per job basis has been key to guarantee the expected performance and also allowed to open new scalability opportunities.

BeeGFS is widely used around the globe. How many deployments has HPCNow! completed with BeeGFS?

We have installed around 15 BeeGFS storage facilities in 2018, including a very large and fast solution in Saudi Arabia. We currently provide first and second level support of BeeGFS to around 30 facilities.

What excites you the most about High-Performance Computing?

HPC has evolved to an essential tool not only for science and engineering but for human progress. Thanks to HPC we have better drugs, better medical diagnosis, more reliable and faster cars, more sustainable public transport, more accurate weather forecast,...

Our mission is enabling and accelerating the research and discovery. We celebrate the clients' success as one of our own.

In June, HPCNow! is organizing the 8th HPC Knowledge Meeting in Barcelona. Can you tell our readers a little bit more about this two-day event?

The HPC Knowledge Meeting is an event aimed to share expertise and strategies in High-Performance Computing, High-Performance Data Analysis, Artificial Intelligence and Clustering.

More than 60% of attendees were coming from very large facilities in previous editions. The speakers are quite influential personalities in the HPC community and/or developers of very popular technologies.

It will be held in Barcelona from 13th and 14th June, 2019, just the week before the ISC'19.

Lastly, any predictions for the future?

In my experience, the IO capacity is often not well balanced to the CPU or memory capacity. In addition to that, the path from the CPU to the storage is relatively slow compared to the memory. As soon as the memory capacity grows either with more memory channels or higher density DIMMs, BeeOND could break any potential distributed IO related bottleneck.

We have already started to architect and develop a custom Slurm plugin to enable this functionality for IO sensitive applications, without too much storage capacity requirements. We find out that this new approach will also require to extend the current concept of Burst Buffers.