Case Study

On Prem HPC Delivers Cost Savings Over Cloud

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Chris Thorpe, Briggs & Stratton, LLC Engineering Manager - Simulation & Materials Lab

Their Challenge

Briggs & Stratton, LLC had been a client for about 7 years when they contacted Nor-Tech again about a new cluster. Their original Nor-Tech cluster was 6 years old and was starting to run into some issues that are typical of older technology.

Briggs & Stratton, LLC Engineering Manager - Simulation & Materials Lab, Christian (Chris) Thorpe explained, "The original cluster was a very reliable machine, it was great. The person that was working most closely with that cluster had been very, very happy it. However, we needed the new cluster for high-speed computing for our simulation team and we needed hardware that would support new software and a new operating system."

Nor-Tech Senior HPC Account Manager Bob Dreis said, "One of the reasons I think they chose us again is the turnkey nature of the original cluster; it was up and running the first day. We took all the challenges and hurdles out of the equation and made this a smooth deployment for them. They also liked that the original cluster had an extremely low failure rate and that our price was competitive. They also knew that we could explain things in terms that non-tech people could understand. This was important because they just didn't have the inhouse expertise that they had with the first cluster."

Our Solution

Chris and his colleagues at Briggs & Stratton, did consider going with cloud, but after crunching the numbers, it was clear that on prem HPC was the most logical route.

"Some companies are moving toward the cloud, but that didn't make financial sense for us," he said. "In our case, we have a lot of users without a high level of technical expertise. So, they spend a lot of time using the cluster. If we had gone with cloud, we would be constantly overrunning hours and getting billed for them. That can be really expensive."

The new cluster was expertly engineered with both AMD and Intel processors for specific applications; AMD for CFD and Intel for Ansys. "This offered a more optimal configuration to maximize their CAE software investment," Bob said. "Briggs & Stratton knew we had the expertise to make it all work harmoniously together."

Once built and integrated, Nor-Tech shipped the cluster and installed it in Briggs & Stratton's server room. As with most new clusters, there were a few minor bugs that Nor-Tech promptly took care of. "The deployment process went very smoothly," Chris said. "Nor-Tech had it fully deployed in 6 hours. In fact, we were able to launch a couple of jobs the same day."

Their Success

Chris and his team saw a significant improvement over the original cluster in terms of power, performance, and capabilities. "The customer service has been outstanding," Chris said. "The entire Nor-Tech support team has been accessible and responsive. Would I recommend Nor-Tech? Definitely. Bob and everyone else I've worked with at Nor-Tech have been doing a fantastic job."

Chris has some last words of advice for those trying to decide between cloud and on-prem HPC. "In order for cloud to work, you need to have tight control (and in some cases restrictions) over the hours those services are running. We have a large group of casual users and with on prem we don't need to worry about overrunning hours or keeping track of hours. If you have a casual user base or a group of people that don't have a lot of experience with HPC, cloud isn't a good idea. What we have now is very cost effective."

BTW: the original cluster is still up and running. It will eventually transition into a file server.

Reports/Studies/Articles: Advantages Of On Prem v. Cloud

Downloadable PDF: U.S. DOE Magellan Final Report on Cloud Computing
Downloadable PDF: NASA Technical Report Comparing Costs of Cloud v. HPC
Advantages of Cloud for Research Computing
Cloud vs. On Prem Cost Studies
Basecamp CTO on Cost Savings of Servers v. Cloud
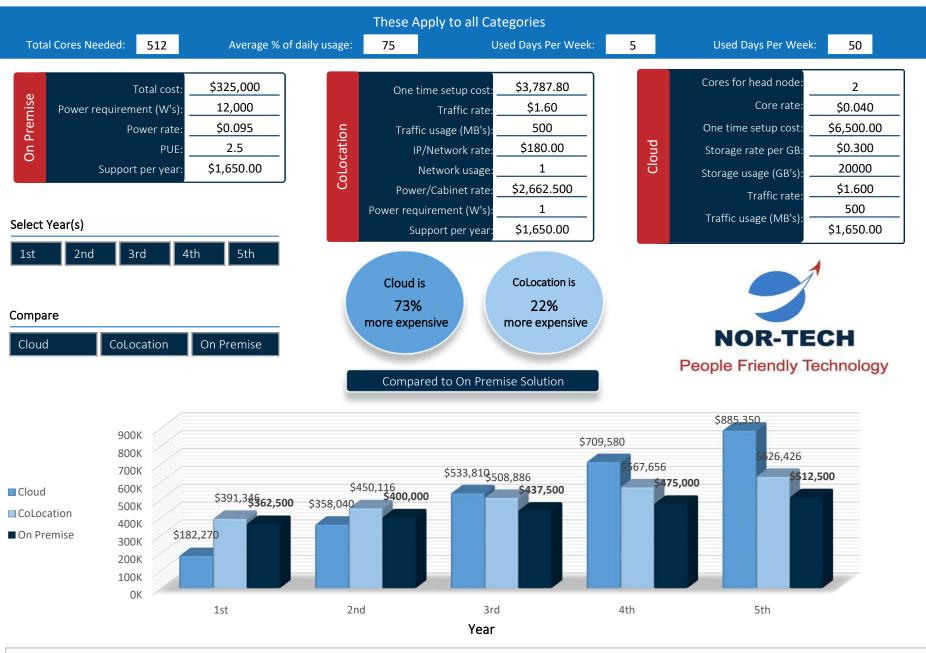HPCwire Article on Pitfalls of Cloud

About Nor-Tech

Nor-Tech built its reputation on the industry's easiest-to-deploy cluster solutions and guaranteed no wait time support. The company designed and built the HPC cluster that enabled the first detection of a gravitational wave—a discovery destined to change history. In addition to HPC clusters, Nor-Tech's custom technology includes workstations, desktops, and servers for a range of applications including CAE, CFD, and FEA. Clients include some of the most respected organizations in the world. Nor-Tech engineers average 20+ years of experience and are responsible for significant high performance computing innovations. The company has been in business since 1998 and is headquartered in Burnsville, Minn. just outside of Minneapolis. To contact Nor-Tech call 952-808-1000/toll free: 877-808-1010 or visit http://www.nor-tech.com. Full release at: http://www.nor-tech.com/category/news/

Contact us

Email: info@nor-tech.com
Call 952-808-1000; toll free: 877-808-1010.

Please see the following page for a sample cost comparison of HPC v. Cloud. If you would like a similar customized report, please contact us.

These Apply to all Categories

Total Cores Needed:	512	Average % of daily usage:	75	Used Days Per Week:	5	Used Days Per Week:	50

On Premise

Total cost:	$325,000
Power requirement (W's):	12,000
Power rate:	$0.095
PUE:	2.5
Support per year:	$1,650.00

CoLocation

One time setup cost:	$3,787.80
Traffic rate:	$1.60
Traffic usage (MB's):	500
IP/Network rate:	$180.00
Network usage:	1
Power/Cabinet rate:	$2,662.500
Power requirement (W's):	1
Support per year:	$1,650.00

Cloud

Cores for head node:	2
Core rate:	$0.040
One time setup cost:	$6,500.00
Storage rate per GB:	$0.300
Storage usage (GB's):	20000
Traffic rate:	$1.600
Traffic usage (MB's):	500
	$1,650.00

Select Year(s)

1st	2nd	3rd	4th	5th

Compare

Cloud	CoLocation	On Premise

Cloud is 73% more expensive

CoLocation is 22% more expensive

Compared to On Premise Solution

NOR-TECH
People Friendly Technology

Chart: On Premise vs CoLocation vs Cloud by Year

Year	Cloud	CoLocation	On Premise
1st	$182,270	$391,346	$362,500
2nd	$358,040	$450,116	$400,000
3rd	$533,810	$508,886	$437,500
4th	$709,580	$567,656	$475,000
5th	$885,350	$626,426	$512,500