



## Case Study

### Complex Password-Cracking Technology that's Truly Turnkey

*With the new cluster, the time it takes to crack an 8-digit password has gone from 5 days to 5 minutes<sup>1</sup>.*

#### Their Challenge

Faced with increasingly complex passwords that need cracking, a large U.S. organization needed more power than their current technology could provide. They started by looking for a solid HPC integrator online. Ultimately, they found Nor-Tech, went to their website and liked what they saw.

Nor-Tech Senior HPC Account Executive Bob Dreis said, "They were looking for a powerful solution that would be straightforward to deploy and manage. Nor-Tech has built a reputation for handling complex integration projects that are, at the same time, easy to deploy and maintain."

One of the organization's Subject Matter Experts explained, "We try to stay on the cutting edge of technology. With increasingly sophisticated devices come stronger and longer passwords and encryption, accordingly, we needed more computing power."

To uncover an 8-digit password with the technology the client was using, it could take up to five days. A 13-digit password could take up to 14 years—making the current technology nearly obsolete.<sup>2</sup>

In addition, the client's facility was having occasional power issues and they wanted a system that wouldn't shut down every time the power went out for even a second.

#### Our Solution

Nor-Tech designed a 2-node/8 GPU cluster. The client needed an unusually complex configuration with both Windows and Linux operating systems to maximize speed for their purposes.

Bob explained, "Password cracking systems are usually workstations, but they wanted better performance and flexibility to work with Windows and Linux applications. It was pretty unique what we put together for them and required us to leverage our HPC knowledge and experience. While the final system was unusually complex our engineers made sure that it was also as automated as possible. We wanted the customer to be able to easily manage the system themselves"

"I was also impressed that when Nor-Tech was developing the system, they consulted in-depth with some of their supply chain partners to ensure we were getting the best possible system," the client said. "Nor-Tech put in the extra effort."

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<sup>1</sup> All password speeds reflect NTLM (Microsoft New Technology LAN Manager) security protocols.

## **Their Success**

The client noted that, while the cluster was ready to deploy right away, it needed to go through extensive security vetting before putting it into service. Now, their new cluster is essentially unaffected by power outages. “Ultimately we wanted something where the system keeps running and that’s what we received, a system with no downtime,” the client added.

This client was also pleased with the support. “Nor-Tech has been great—especially Bob and Kyle,” he said. “They have been very, very responsive. On a couple of occasions, we needed a proposal in a very short period of time and Nor-Tech’s turnaround time was great.”

Now, with the new cluster and future additions, the client will be able to crack an 8-digit password in five minutes or less and a 13-digit password in 3.5 days—considerably less than 14 years. The additional speed is even more important for passwords such as BitLocker and FileVault since the speed to crack these passwords is considerably slower.<sup>3</sup>

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For more information about Nor-Tech’s password-cracking technology, visit: <https://www.nor-tech.com/solutions/password-cracking-clusters/>

## **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](mailto:info@nor-tech.com)

Call 952-808-1000; toll free: 877-808-1010.

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<sup>3</sup> The 13-digit NTLM passcode speed is for a typical formatted passcode and does not try every possible combination; therefore, cracking the passcode is not guaranteed.