



XENON Delivers High Performance Compute Cluster with Managed Services for Energy Company's Next Phase of Growth

BACKGROUND

A leading energy company in New Zealand operating onshore natural gas fields in as well as international offshore joint ventures required additional compute and storage resources as well as managed services to manage the cluster and cope with growing business needs.

CHALLENGE

Two years ago, the customer began exploring how a High Performance Compute (HPC) cluster and Managed Service might address four key business challenges: **growth, performance, governance and data processing.**

Growth

Following the acquisition of a new gas asset, the customer reviewed the integration of this reservoir into its existing operations. Notably, this new asset required additional compute intensive modelling and simulations to be run by its engineering team to establish how much gas exists in the asset and how to extract it most efficiently.

Performance

This coincided with the challenge of ongoing technology infrastructure performance issues. With some grey areas of who was most appropriately skilled in the organisation to support the existing infrastructure, it tended to fall on the shoulders of one reservoir engineer due to his operational experience of working within the highly specialised environment. This diverted a core resource away from key business operations.

Governance

Governance requirements are always front of mind in any large organisation, especially in the energy sector. The customer wanted to consider how its computing infrastructure could provide audit trails and greater transparency of their resource management.

Data Processing

Finally, there was a clear ongoing requirement to process more complex data, larger data sets, and at greater speeds. A growing team meant the customer forecast exponential growth in computing demands and wanted to explore its options for future growth of their infrastructure.



XENON DELIVERS

- A strategic plan for HPC addressing the four strategic areas of concern.
- An expanded HPC Cluster integrated into existing infrastructure.

SOLUTION

The customer commissioned XENON to review, test and benchmark the existing system in a consulting project. Also, XENON was asked to provide recommendations for solutions going forward which would maximise available HPC compute within tight budget constraints. Australia-based XENON is a high performance computing consultancy and solution provider. XENON provides solutions to research, science, academic organisations and other industries with highly specialised technical requirements and complex datasets. XENON works with customers across Australia, New Zealand and South-East Asia and has been delivering HPC solutions for over 20 years.

XENON delivered a comprehensive report on how to improve infrastructure resilience and redundancy and also improve performance. The report addressed the specific challenges of Growth, Performance, Governance and Data Processing. The report included strategic recommendations to optimise the customer's engineering business processes as they related to compute resources.

The core recommendations comprised a three-phase strategy which included an HPC cluster expansion project with the goal to provide increased resources for its reservoir modelling, simulations and other workloads. It also provided for the integration of the customer's existing HPC cluster to maintain ongoing value from its existing infrastructure.

XENON then provided the equipment and services as the second stage of the three-phase strategy. XENON's methodology is to integrate, test, and pre-configure all systems and components and pre-install the applications at XENON's own lab. Users then run and test their applications and workloads via remote access before the systems are delivered to the customer for on-site installation. This approach ensures business continuity, minimises the time spent on-site and thus delivers cost and efficiency savings for XENON's clients.



XENON DELIVERS

- A 4x increase in capacity and capability within budget.
- Managed services free up key personnel from IT support.

BENEFITS

First and foremost, the HPC cluster designed by XENON exceeded foundational requirements, and resulted in a more cost-effective, higher capacity, better performing HPC cluster, with increased storage and redundancy. By integrating the customer's existing system into the new HPC cluster, XENON was able to leverage their prior tech investment meaningfully.

The new HPC cluster has been redesigned to provide four times the storage capacity of the old cluster. The old storage system has been repurposed to keep a copy of important data. Additional resiliency has been designed into the new architecture with redundant networking components and cluster management servers in a high availability configuration. The new cluster can effectively run 24x7x365 and has doubled compute capacity which allows the customer's engineers to perform more complex simulations, faster. They can also scale out the system easily and incrementally, which is important when planning asset acquisitions for the future.

Importantly, the third stage of the engagement is that XENON now manages the whole platform which allows the customer to focus on their core business. XENON is providing a complete managed service including user management, data and storage management, application installation, upgrade, configuration and various other tasks to keep the entire HPC cluster running optimally.

This HPC Managed Service offering delivers an easy to use, easy to maintain, and easy to expand platform, which XENON manages proactively day-to-day. And support is just a phone call or email to the experienced XENON team away.. The HPC Managed Service also means the knowledge of the system and processes is shared. It eliminates support falling to just one person whose core job is not actually IT support and provides a deep bench of support for the customer into the future.

XENON has increased efficiency, capacity, and delivered high performance in a collaborative manner. Pro-actively reviewing future needs such as hybrid cloud strategies, XENON delivers industry and infrastructure expertise that compliments the customer's team.

XENON is a strategic partner who is helping the customer define what expanded operations require, which is critical for business planning and sustainability. XENON partners with the customer in a whole of business manner, providing strategic IT support and planning to ensure that compute resources facilitate the growth of the business.

NEXT STEPS

[Contact us](#) today to discuss how XENON managed services and HPC consultancy could assist your organisation.

[Read more about HPC Services.](#)

[Talk to a Solutions Architect](#)