

Sandia National Laboratories Case Study



**Sandia
National
Laboratories**

CASE STUDY



COMPANY

NAME: Sandia National Laboratories
HEADQUARTERS: Albuquerque, NM, USA
INDUSTRY: Science and engineering for national security
PRODUCTS AND SERVICES: US national security
REVENUE: \$3.8 billion (2019)
EMPLOYEES: 10,000+
WEBSITE: sandia.gov

DATA CENTER ENVIRONMENT

For more than 60 years, Sandia has delivered essential science and technology to resolve the nation's most challenging security issues.

As a Federally Funded Research and Development Center (FFRDC), Sandia has the vision "to be the nation's premier science and engineering laboratory for national security and technology innovation." The Laboratory maintains 4 data centers with 6,000, 14,000, 27,000 and 30,000 square feet, respectively, to include High-Performance Computing (HPC) systems.

ASSESSING THE CHALLENGES

Given the volume, velocity, variety, and veracity of data collection within data centers, Sandia needs to balance information ingestion with actionable intelligence, e.g., determining which warnings, alerts, and alarms require specific attention.

- Sifting through alarms and warnings for one particular device to try to correlate the warning to a particular event
- Hours of manual labor to dig deeper into their systems
- Going onto the data center floor to investigate the equipment

Quite often, Sandia technicians recognize that alarms are not indicative of significant problem(s), but without additional insight and automated processing manual investigation is necessary.

Using Nlyte Insight, Sandia can:

- Run reports for devices or zones
- Identify which issues are simple anomalies
- Distinguish those anomalies from serious and long-lasting problems

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In addition to anomaly detection, Sandia can forecast and predict how high value assets will perform into the future, and the reports provide confidence scores in those predictions. This is Nlyte providing insight into predictive failures of critical infrastructure.

“Before we implemented Nlyte Insight, sifting through our warnings and alarms to determine where we had a machine telling us of an impending failure, was like looking for a needle in a haystack”, said Dave Martinez Manager of Computing Infrastructure at Sandia National Laboratories

NLYTE MACHINE LEARNING ENSURES COMPLIANCE TO FEDERAL MANDATES

Nlyte Machine Learning is a simple choice for Sandia as it addresses the primary strategies outlined in the National Artificial Intelligence Research and Development Strategic Plan. By choosing Nlyte, Sandia has positioned themselves on a clear and proven trajectory for success. In addition, Sandia has gained peace-of-mind knowing that compliance with key federal initiatives, legislation, and orders, e.g. National Artificial Intelligence Research and Development Strategic Plan, is tracking. Namely, Nlyte supports the following strategies:

- Make Long-term Investments in AI Research
- Ensure Safety and Security of AI Systems
- Measure and Evaluate AI Technologies through Standards and Benchmarks

Investing in proper data preparation for internal artificial intelligence projects ensures success, and Nlyte's DCOI offering delivers proven and rapid return on the investment for Sandia.

BENEFITS OF NLYTE MACHINE LEARNING

- Federal Compliance
- Risk avoidance
- Overhead reduction
- Performance optimization
- Improved maintenance strategies

THE NLYTE SOLUTION

Nlyte Insight, part of the Nlyte Machine Learning suite of applications, ingests raw, rich data captured by Nlyte Energy Optimizer and Nlyte Asset Optimizer to actively perform advanced analytics throughout the data center environment. Insight assembles a unique combination of analytical capabilities, moving up the technology stack, shifting the conventional analytics questions including ‘What happened?’ to ‘What will happen?’ and ‘Why did it happen?’. Nlyte Insight transforms the world of Descriptive Analytics into Diagnostic and Predictive Analytics.

MOVING FORWARD WITH NLYTE MACHINE LEARNING

Implementing machine learning to distill advanced analytics requires a continuous and iterative approach. The Nlyte-Sandia collaboration is producing both actionable and applied intelligence in an effort to produce a secure, sustainable, and resilient data center footprint.

Leveraging the Nlyte Insight application, Sandia proactively garners situational awareness resulting from myriad datasets to include anomaly detection, predictive operational performance forecasting, and improved

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maintenance strategies across its critical data center infrastructure.

Moreover, Nlyte Insight ensures proper operation of their data centers and greatly reduces the amount of manual labor that Sandia technicians must perform, which, in turn results in efficient data center operations.

“Working with the team at Nlyte as we implement Nlyte Insight has been a very interactive and educational process. We are learning more and more about our critical infrastructure every day” Martinez said. **“It’s this kind of interaction that makes this potentially challenging journey more rewarding.”**



FOR MORE INFORMATION

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- Visit Us: www.nlyte.com

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About Nlyte

Since 2004 Nlyte has been committed to helping organizations optimize the management of their IT assets. Nlyte automates the discovery, workflow management, and reporting across the entire technology stack, physical, virtual, and edge, including software and IoT devices. Nlyte reduces costs and risk while improving efficiency and transparency for the entire organization.

The world's most sophisticated IT organizations use Nlyte's comprehensive out-of-the-box ready software solutions. Nlyte's commitment to optimize asset management, making it easier for people to do their job more efficiently and improve agility across the global organization, continues to develop a loyal following of customers.