

UNOWHY

OpenText™ Vertica™ in Eon Mode fuels UNOWHY’s explosive growth with AI-Powered predictive analytics.



Who Is UNOWHY?

UNOWHY focuses on digital empowerment. They pioneered QOOQ FoodTech and now lead in eLearning with SQOOL, an all-in-one platform designed for teachers and students, proudly assembled in France, making it a top choice for the French education sector.

Challenge

Explosive Company Growth Prompts New Data Management Approach

UNOWHY underwent rapid growth following the launch of its SQOOL platform. With a national presence in over 350 French cities, the company has delivered over 500,000 devices equipped with its educational software solutions. The devices interact with data from

a variety of sources, such as central device management, student rollcall, device delivery details, and usage facts such as battery charging status, application downloads, etc.

As the number of managed devices steadily grows, it becomes more challenging to manage and cross-reference these dataflows. As Simon Mazurier, Integration Project Director at UNOWHY, explains: “We need to unify, exploit, and expose our data appropriately. In recent years we recognized we needed to improve our data management. To meet our operational data challenges, we felt a cloud environment would be best suited for us. However, as we are active in state education, we need to consider institutional and regulatory constraints. This led us to the choice for an OVH cloud infrastructure, which is completely compliant with relevant European regulations, allowing us to provide data governance within French jurisdiction. The next step was to select a sophisticated data warehouse to seamlessly consolidate and cross-reference our data against historical data, which is then visualized through responsive dashboards.”

Solution

UNOWHY achieved explosive growth with Vertica in Eon Mode by OpenText, integrating AI-powered predictive analytics to resolve data silos, reduce costs, and deliver real-time

“We are delighted with Vertica’s AI-driven computational capabilities and the flexibility it gives us to consolidate and visualize the data in user-friendly real-time dashboards that benefit our internal stakeholders and our customers.”

STÉPHANE OZBOYACI

Software Development Director
UNOWHY

At a Glance

- **Industry**
Technology
- **Location**
France
- **Challenge**
Need for data integration, including historical data to improve trend analysis and insights
- **Products and Services**
Vertica in Eon Mode
- **Success Highlights**
 - + Accelerated data processing and visualization.
 - + Reduced processing time and costs.
 - + Boosted customer service and data-driven decisions

dashboards, simplifying data management and enhancing decision-making.

Vertica in Eon Mode and AI Capabilities Align Perfectly with UNOWHY Vision

Vertica was one of the solutions considered for a comprehensive proof-of-concept (POC). The team was particularly interested in Vertica deployed in Eon Mode, which is designed for the cloud and provides a flexible, efficient way to expand, contract, and manage resources as needs change. Vertica's InDatabase machine learning capabilities, such as pattern matching and predictive analytics, ensure that the data is managed and stored according to the necessary regulations and standards. AI plays a vital role in Vertica to enhance performance, scalability, real-time insights, and predictive analytics. It enables the execution of complex analytical tasks directly within the database environment, allowing businesses to derive more actionable insights from their data more quickly and efficiently.

During the POC, the UNOWHY team validated that, as with all their existing cloud-native software, Vertica can be containerized and orchestrated using Kubernetes, the container orchestration system, allowing for seamless portability and simplified operations". Stéphane Ozboyaci, Software Development Director for UNOWHY, comments on the other findings during the POC: "Vertica is equipped with a very advanced SQL function library for data engineering. This provides an in-database library of machine learning algorithms to completely transform the infrastructure of big data platforms. The data is stored and processed in the same place, without the need for large data transfers from one location to another for analysis. When we compare this with Hadoop, another alternative we explored, the data must be stored in a distributed storage system and then transferred to Spark for processing. This complicates infrastructure maintenance and negatively impacts performance."



The centralized nature of Vertica in Eon Mode also makes for easy monitoring, managing, and optimizing of system resources, including memory and disks. It reduces processing time, delivering faster query results, and thus lowering data management costs. Vertica in Eon Mode is designed for horizontal scalability with its separation of compute and storage resources. It is easy to add additional nodes to increase processing capacity allowing for a sudden increase in demand or changing business requirements in a cost-effective and flexible model.

VerticaPy Key for Machine Learning Capabilities and Data Exploration

VerticaPy is a Python library that is used for machine learning and data science tasks in conjunction with the Vertica database. It provides a Pythonic interface to interact with and leverage the power of Vertica for analytical and predictive modelling tasks. UNOWHY leverages VerticaPy for data ingestion, pipeline creation, data exploration, and machine learning.

VerticaPy allows data scientists and analysts to perform machine learning tasks, such as regression, classification, clustering, and more, directly within the Vertica database. This means they can build and deploy machine learning models on large datasets without needing to extract and preprocess data separately. UNOWHY also leverages VerticaPy to explore and analyze data within the Vertica database using Python's familiar data manipulation and

visualization libraries. This simplifies the data exploration and preparation process. The combination of trusted Vertica capabilities, layered with VerticaPy makes it the right match for UNOWHY.

Advanced Analytics Deliver Improved User Experience and Accurate Device Assignment UNOWHY's central device management solution sends tracked dataflows every 20 minutes from every device, representing a huge volume of data. UNOWHY's previous database was transactional and struggled with the large volume. It could not provide data cross-reference, nor did it store a history of data to be used for predictive analytics. The Vertica in Eon Mode implementation leverages the S3 bucket as its main data repository, using a pipeline coded with VerticaPy. This enables the team to store all historical data from the last three years. "Thanks to Vertica's data processing speed, the data stream that is triggered every 20 minutes is ingested, unified, logged, and cross-referenced in less than 10 minutes," says Bilel Ouali, Freelance Analyst Engineer, working closely with UNOWHY. "This ensures that we can proactively improve the user experience and identify and address device issues early before they cause user problems."

VerticaPy is used to develop different inDatabase algorithms that enable predictive analytics. Python scripts import VerticaPy and apply machine learning so that the models can be built and deployed directly within the database, speeding up the process by eliminating the need to move data.

UNOWHY had established a device assignment process that connects a regional user ID to a device with a unique serial number. However, sometimes users have several user IDs in the database, and this would potentially trigger delivery of an additional device to an existing user. Or a user whose device had been transferred to another user would run the risk

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BILEL OUALI

Freelance Analyst Engineer
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of ending up without a device. “We realized we could leverage inDatabase machine learning to help us manage our user process more effectively,” comments Ouali. Cross-referencing four key data sources, “Vertica’s machine learning capability can identify a unique device owner, even when that owner has multiple IDs within the system.” We can now easily identify the real device user and determine whether they are compliant or whether we need to take corrective action.”

Results

The next priority with Vertica in Eon Mode was to improve reporting and dashboard capabilities within UNOWHY so that management, business teams, and service desk agents have better visibility into their specific KPIs. Vertica is designed to integrate with leading BI solutions and UNOWHY chose Apache Superset, an open-source solution for data exploration and visualization, designed to handle large volumes of data. “Integrating Superset with Vertica is a real innovation in big data visualization,” says Ouali. “The responsive, real-time dashboards enable our teams to monitor and assist customers. Our service agents have visibility of the full history and, using Vertica’s AI-driven geo-spatial analysis capability, can follow the data-flows of any of our 500,000 devices, tracking

downloaded applications and user adherence to GDPR regulations.”

The project transformed UNOWHY’s data management landscape. It facilitated data-driven decision-making, improved device-user assignments and customer support, enabled predictive maintenance, and enhanced data visualization. The innovative solution eliminated data silos, empowered efficient analysis, and opened new avenues for strategic planning.

Ozboyaci concludes: “Our data management project, spearheaded by Vertica in Eon Mode, has been rich in innovation, involving the very core of our IT infrastructure. We are delighted with Vertica’s computational capabilities and the flexibility it gives us to consolidate and visualize the data in user-friendly real-time dashboards that benefit our internal stakeholders and our customers. We have drastically simplified our data management, reduced our costs, and improved our performance and flexibility. By leveraging Vertica’s AI models, we have collectively driven efficiency, accuracy, and value, positioning UNOWHY as a pioneer in data-driven EdTech innovation.”

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