

# Plotly's Dash Enterprise accelerates digital innovation in Uniper's trading business

*Uniper now develops and deploys energy trading analytics in hours rather than weeks*

# Executive Summary

- Uniper's business users are equipped to develop trading decision-support tools and advanced analytics data apps in a collaborative Python Databricks notebook environment.
- Analysts and traders have greater agency to respond to market changes when app deployment times are reduced from weeks to minutes.
- Dash Enterprise facilitates the development of decision-support tools that comply with Uniper's production deployment requirements, Kubernetes standards, and the industry's security regulations.

## Volodymyr Sorokoumov

*Digital Trading - Lead Platform Design & Operations, Uniper*

Time-to-market is crucial in our ever-changing market environment. With help of Dash Enterprise we were able to accelerate deployment of new apps from weeks to minutes without compromising on governance aspects and security.

## Introduction

Uniper, one of the largest European traders of natural gas and electricity, prioritizes the digitalization of its trading activities to strengthen its position in the algorithmic trading space as global energy markets evolve.

Part of this digitalization includes a unique mission to scale advanced analytics, automation, and other technologies within the Uniper trading organization and maximize the value from its data and technology investments.

By integrating Dash Enterprise with its modern, cloud-based technology stack, Uniper has accelerated the velocity with which it is accomplishing that mission.

# Challenge

Radical market changes in commodity trading and competitor behavior require Uniper to accelerate the development of market-leading digital and algorithmic trading tools to adapt to the markets and stay ahead of the competition.

Cross-functional teams established within Uniper's digital trading organization manage these tools' design, development, and operation. In addition, analysts and traders must be empowered to develop their own decision-support tools and leverage data assets and modern technology in a secure, yet collaborative, environment.


Achieving this “democratization” of analytics demands a solution that can support Uniper's modern, cloud-based landscape and preferred workflows while reducing time-to-delivery, based on requirements that include:

**Accommodating varied Python workflows:** Analysts and traders were beginning to build more data apps with Plotly's Dash Open Source Python framework to share models and analytics, while also collaborating using Azure Databricks notebooks for up-front data exploration.

**Centralizing app management:** Uniper's data analytics operations are standardized on Azure AKS (Kubernetes), which supports containerized application deployment. However, each Dash app was being deployed independently with dedicated resources, leading to redundancies. Without centralized management and monitoring tailored for the Dash applications, Uniper's digital trading organization lacked an overview and oversight mechanism.

**Reducing multi-week deployment lead times:** Deploying each Dash app independently also involved up to four-week lead times, reducing the agency of the trading team to respond to market changes.

**Maintaining security compliance:** The energy trading industry is highly regulated and presents stringent security, authentication, and authorization requirements — all complex developments that are undesirable to repeat on an individual app basis.



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*Digital Trading - MLOps Engineer, Uniper*

Dash Enterprise has enabled us to achieve multiple economies and efficiencies of scale. It integrates with our tech stack and centralizes several functions and tasks that we can manage in one place instead of individually for each and every data app we deploy.

## Solution

Plotly's Dash Enterprise is a centralized, fully-featured platform for developing, deploying, and managing Python Dash apps in an enterprise environment. It integrates with the existing internal and external technologies of Uniper's systems with features that include:



*Figure 1 - Data apps deployed in Dash Enterprise can consume data from Databricks, Snowflake, and other internal or external sources. Deployment leverages CI/CD automation.*

**User autonomy:** Once Uniper's Dash Enterprise installation was configured, analysts and traders could deploy their own apps via an automated CI/CD pipeline without lead times associated with infrastructure provisioning and configuration.

**Cloud-native Kubernetes architecture:** Each app is deployed to its own container, conforming to Uniper standards. Further, Dash Enterprise provides platform observability at the cluster down to the individual app level, granting greater power for administrators to track and control resource usage.

**Enterprise features:** Dash Enterprise integrates with Uniper's existing [CI/CD pipelines](#) and single sign-on for [user authentication](#).

**Databricks-Dash:** Dash Enterprise's licensed databricks-dash library enables Uniper's analysts and traders to create their own interactive dashboards [within Databricks notebooks](#), further aided by Dash Enterprise licensed libraries like [Dash Design Kit](#) for low-code app styling.

## Results

**Empowerment of business users:** Uniper analysts and traders are now able to develop data apps on their own for broad usage, and can incrementally collaborate with peers without leaving the Databricks Python notebook environment, resulting in a growing user base and an increasing number of data apps.

**9-minute deployment:** When a new app is ready for wider adoption, it can be deployed in minutes, completely circumventing infrastructure provisioning and configuration (previously a four-week lead time). Most notably, Dash Enterprise is compatible with Uniper's standard app deployment process for production releases through automated CI/CD pipelines, without involving manual deployment operations by the team.

**Streamlined operations:** Dash Enterprise integrates well into Uniper's landscape, enabling the team to monitor and manage all data apps from one single place. They can keep incremental efforts for onboarding and running new products low and scale further with the existing DevOps team.

**Security:** Through deployment within Uniper's corporate network and integration with Uniper's Azure Active Directory, Dash Enterprise ensures that data apps remain protected from unauthorized access while enabling easy access to all relevant internal and external data assets.

## About Uniper

Düsseldorf-based Uniper is an international energy company with activities in more than 40 countries. With around 7,000 employees, it makes an important contribution to security of supply in Europe. Uniper's core businesses are power generation in Europe, global energy trading, and a broad gas portfolio. Uniper procures gas – including liquefied natural gas (LNG) – and other energy sources on global markets. The company owns and operates gas storage facilities with a capacity of more than 7 billion cubic meters. Uniper plans for its 22.5 GW of installed power-generating capacity in Europe to be carbon-neutral by 2035. The company already ranks among Europe's largest operators of hydroelectric plants and intends to further expand solar and wind energy, which are essential for a more sustainable and autonomous future.

Uniper is a reliable partner for communities, municipal utilities, and industrial enterprises for planning and implementing innovative, lower-carbon solutions on their decarbonization journey. Uniper is a hydrogen pioneer, is active worldwide along the entire hydrogen value chain, and is conducting projects to make hydrogen a mainstay of the energy supply.

## About Plotly

Plotly is a software company whose mission is to enable every company, around the world, to build data apps. Our product, Dash Enterprise, is a platform of best-in-class development tools to quickly and easily visualize data in Python from virtually any data source. With customers across the Fortune 500, Plotly is a category-defining leader in enabling data-driven decisions from advanced analytics, machine learning, and artificial intelligence. For more information, visit <https://plotly.com>.