



Customer Case Study

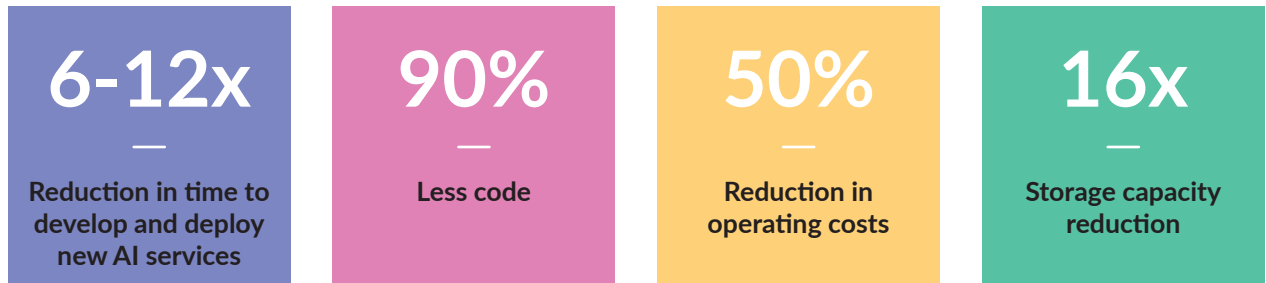


Summary

- NetApp is a leading provider of hybrid cloud data services, helping organizations build unique data fabrics that unleash the full potential of their data, accelerate innovation, and digitally transform operations. NetApp designed Active IQ to automate the support and optimization of its customers' storage controllers by providing actionable intelligence and predictive maintenance.
- To expand its capabilities and boost the infrastructure behind its Active IQ solution, NetApp needed a way to incorporate an AI-driven digital advisor — one that uses AI to gain intelligent insights into its customers' storage controllers and deliver prescriptive guidance, as well as automates “best actions” to achieve predictive maintenance on said devices.
- Iguazio provided NetApp with a serverless, cloud-native data science platform that uses AI at scale to analyze 10 trillion data points (per month) from storage sensors worldwide and harnesses this data to generate actionable intelligence and run real-time predictive maintenance.

Results

NetApp successfully deployed Iguazio's Data Science Platform at the core of Active IQ, driving the following gains in operational efficiency, cost reduction, and accelerated time to market:



Iguazio's platform allowed NetApp to run predictive maintenance on storage controllers globally and modernize Active IQ's service infrastructure to reduce the cost of running large-scale analytics and the complexities of deploying new AI services. It also enabled NetApp to abstract platform deployment, allowing Active IQ to run on-premise or multi-cloud seamlessly via NetApp's Cloud Volumes and NetApp's All-Flash Storage.

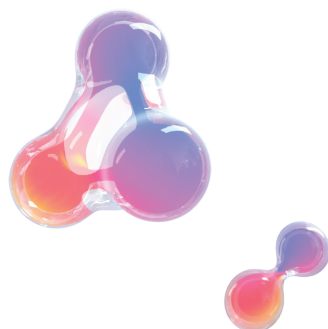
Business Background

NetApp is a leading provider of hybrid cloud data services. Its solutions secure and simplify hybrid multi-cloud deployment for enterprises across the globe, enabling them to leverage their data, core business applications, and service infrastructures to accelerate digital transformation.

NetApp is one of the first storage management vendors to offer its products and data services across the world's largest cloud providers, helping enterprises to digitally transform and accelerate their core business apps with simplicity, speed, and automation across edge, core, and cloud.

Active IQ was developed to help deliver actionable intelligence that facilitates optimal data management and predictive maintenance across NetApp's environment. Essentially, it provides enterprises with simple and secure visibility into the health of their NetApp systems.

Active IQ uses predictive analytics to generate intelligent insights, prescriptive guidance, and automated actions to improve system health, ensure higher system availability, and automate the proactive, predictive maintenance of storage controllers owned by NetApp customers around the globe.



Challenges

To assist customers in predicting, preventing, and protecting their environments from failures, NetApp needed an end-to-end solution that could seamlessly facilitate the entire data science lifecycle. Because of the volume and disparate nature of the data involved, it was imperative to have a solution which would reduce the complexities of MLOps.

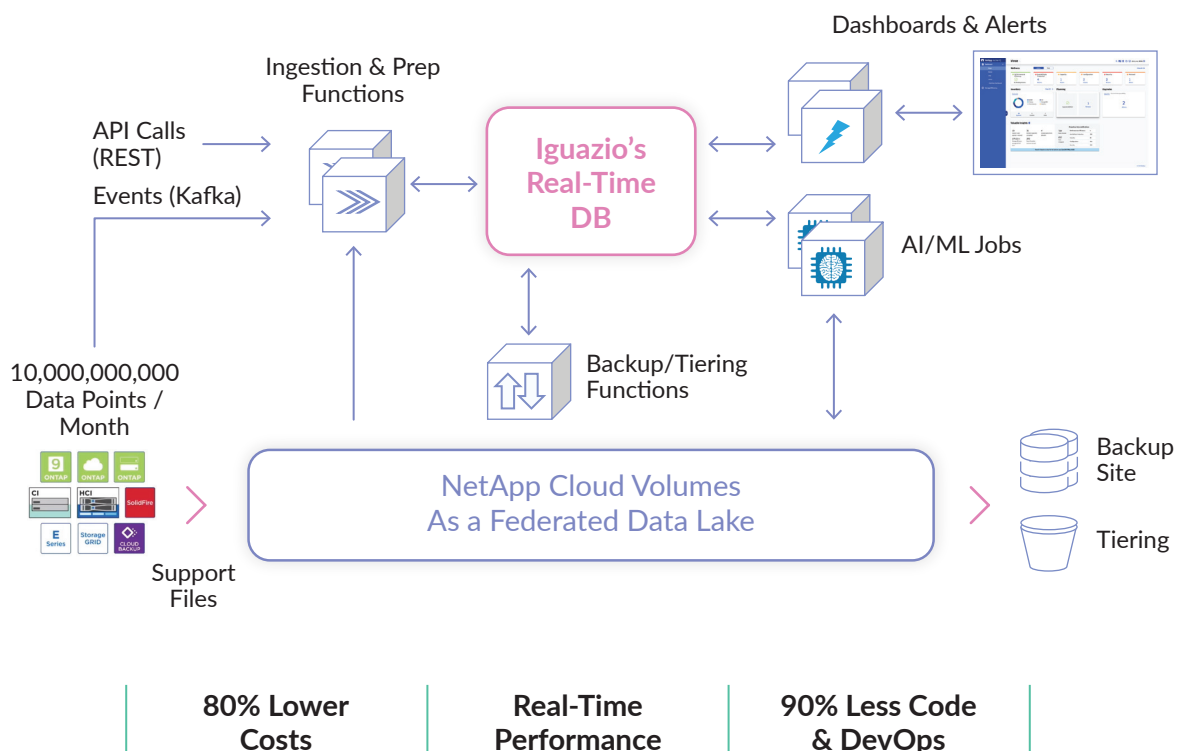
This would enable NetApp to analyze the massive amounts of telemetry data it receives from hundreds of thousands of assets around the globe and draw on trillions of historical and real-time diagnostic records and known risk signatures to identify potential problems before they impact customers' systems and businesses.

Prior to deploying Iguazio, Active IQ was built on Hadoop. Its service infrastructure was unable to cost-effectively enable real-time predictive AI, run large-scale analytics, or deploy new AI services at scale. When paired, Active IQ's traditional data warehouse and Hadoop-based data lake were unable to efficiently process the trillions of data points collected from storage controllers at the speed required to derive actionable intelligence needed for real-time predictive maintenance.

Also, there was no way to abstract deployment in a way that allowed Active IQ to seamlessly run across whichever environment customers preferred, whether on-premises or multi-cloud. NetApp needed the power of a data science platform that could analyze mountains of data in real time, especially for Active IQ's multi-petabyte data lake that had to process trillions of data points each month.

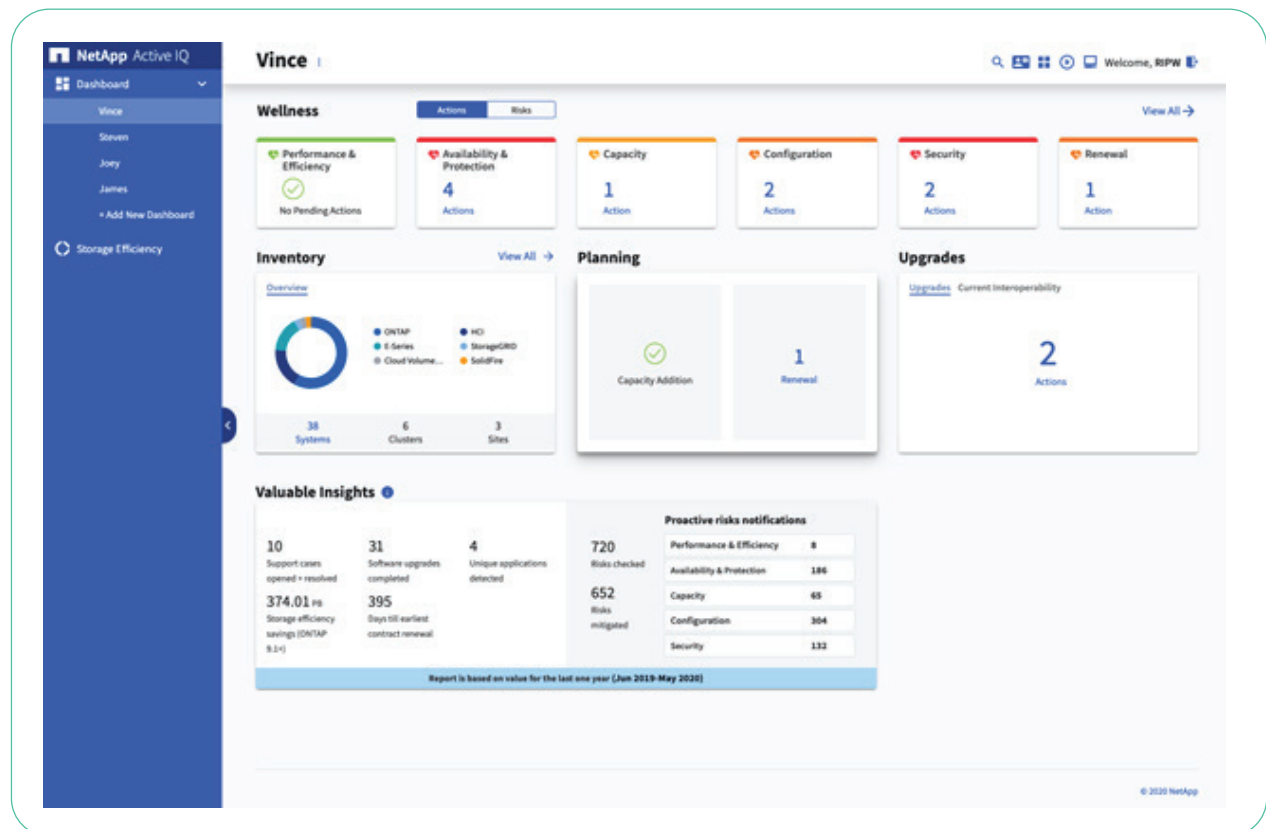
Solution

Iguazio's Data Science Platform at the Core of Active IQ



NetApp turned to Iguazio to replace its traditional data warehouse and Hadoop-based data lake with a cloud-native, Kubernetes-powered, serverless data science platform. This enabled NetApp to upgrade Active IQ's service infrastructure and build highly accessible end-to-end ML pipelines through native integration with Iguazio's Data Science Platform.

As a result, NetApp transformed Active IQ into a digital advisor that could cost-efficiently run large-scale analytics and leverage AI at scale to gain intelligent insights into NetApp assets around the globe and proactively protect and optimize customers' infrastructures through real-time predictive maintenance.



"Iguazio reduces the complexities of MLOps at scale and provides us with an end-to-end solution for the entire data science lifecycle, with enterprise support, which is exactly what we were after."

Shankar Pasupathy, Senior Director for Active IQ at NetApp

Benefits

Iguazio's data science platform enabled NetApp to:

Leverage a prescriptive approach to protecting and optimizing NetApp systems while enabling its customers to make smarter decisions about storage

NetApp used Iguazio to achieve real-time processing of the massive and growing streams of data delivered by its storage arrays. Leveraging Iguazio's ability to analyze trillions of historical and real-time diagnostic records, Active IQ can continuously perform risk assessments and detect patterns in incoming data streams to identify potential and actual anomalies such as hardware defects, pending capacity shortages, and performance slowdowns.

Essentially, Iguazio simplified the orchestration and management of the AI data pipeline, enabling NetApp to analyze this data, generate actionable intelligence in real time, and relay predictive maintenance messages back to the arrays.

Automate the data science pipeline with serverless functions and build highly accessible end-to-end ML pipelines

Partnering with Iguazio provided NetApp with access to one of the fastest open-source serverless frameworks in the world, Nuclio, to automate its data science pipeline. This solution leverages KubeFlow to speed up the running of ML pipelines and enables a layer of automation and monitoring for popular ML and analytics frameworks on top of Kubernetes. With its serverless functions, NetApp was able to build highly accessible end-to-end ML pipelines and achieve full automation and CI/CD for its ML and analytics workloads.

Speed up the development and deployment of new AI services

By providing a data abstraction layer, Iguazio's Data Science Platform enabled NetApp to minimize development and maintenance overhead and speed up the development and deployment of new AI services for Active IQ. NetApp used the platform's friendly pipeline orchestration tools and extremely fast multi-model data layer to facilitate end-to-end machine learning pipeline automation while enabling real-time MLOps for incoming data streams.

Seamlessly enable full data analytics and seamless AI/ML lifecycles on a single, secure platform

Iguazio reduces the complexities of MLOps at scale, providing NetApp with an end-to-end solution for the entire data science lifecycle with enterprise support. Its data science platform facilitated seamless collaboration between NetApp's developers by streamlining the integration of traditional data analytics tools into the AI pipeline and simultaneously providing access to several big data and AI microservices. This enabled them to collaborate efficiently on one secure self-service platform, avoid tedious integrations, and focus on building applications to meet business demands.

Achieve Active IQ's core mission to "Predict. Prevent. Protect."

Above all, partnering with Iguazio enabled NetApp to deliver an even more robust set of capabilities for organizations looking to secure, optimize, and automate the maintenance of their data fabrics and associated infrastructure.

"We have successfully implemented the Iguazio Data Science Platform at NetApp and are already seeing results beyond expectation."

Biren Fondekar, Chief Transformation Officer at NetApp

Listen to Shankar Pasupathy, Sr Director, Active IQ AI and Data Engineering at NetApp and Yaron Haviv, Co-Founder and CTO at Iguazio, discuss the project in depth:

[Tune in to the NetApp Tech ONTAP podcast](#)

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