Domino Compared with Google Cloud Vertex AI

Google Cloud Platform (GCP) is a great cloud compute option for data science workloads. Domino runs natively on Google Kubernetes Engine (GKE) and can connect seamlessly with GCP-based data sources such as Big Query. Vertex AI has some good tools for data scientists, especially in smaller organizations, and for developers building applications on Google. However, Vertex AI is not a complete solution for an enterprise data science organization. Some customers use both solutions together — some of Vertex AI tools (e.g., AutoML) along with Domino as their centralized data science platform.

This document elaborates on four ways Domino provides unique value compared to Vertex AI.

KEY DIFFERENCE	GOOGLE CLOUD VERTEX AI	DOMINO
Force Multiplier for Data Scientists In large enterprises, Domino unleashes productivity, innovation and impact — with more flexible access to tools, data, and ways to deploy work.	• Introduced in 2021 at Google I/O developer conference. • Walled garden limited to data in GCP and Jupyter/Python. • Focused on model training and inference API deployment.	• **Used by Global 2000 data science organizations since 2014.** In production at scale for years at J&J, BNP, Allstate, Bristol Myers Squibb, and many more. • **Open & flexible** platform for data scientists to innovate using their preferred tools, languages, packages, and data sources. • Supports **broader computational research** (e.g., descriptive statistical, simulation) needs, "production" workloads and deploying interactive apps (e.g., Shiny, Dash).
Built for Teams Enables collaboration and reuse of work which are critical to accelerating R&D at scale.	• Limited to individual data scientists' development use cases and experience.	• **Supports team use cases,** collaboration, knowledge management, project management and governance.
Serves Enterprise IT Needs Consolidates data science tools, governs assets and reduces compute spend.	• Good for data science in small companies without enterprise IT complexity. • Drives cloud spend on GCP.	• Centralized platform for IT to **consolidate, govern, and secure data science tools and assets** in one place. • Offers many ways to **reduce and manage cloud compute spend.**
Enables Faster and Smoother Cloud Migrations Offers more flexibility to transition gradually and consistently across clouds.	• Supports only GCP data, tools, and cloud infrastructure.	• Unique Kubernetes-native, open and modern architecture and unified portal **bring legacy analytics tools to the cloud** and enable incremental cloud migration.

Domino is a Force Multiplier for Data Scientists

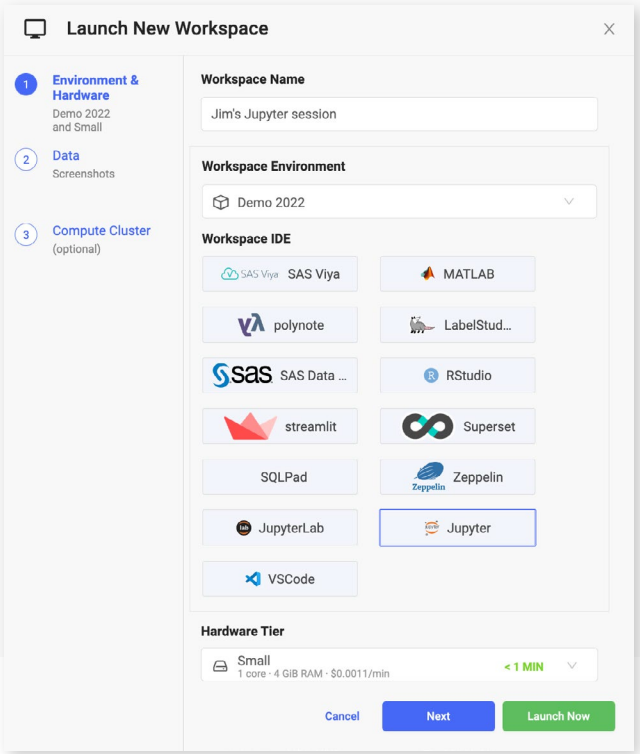
Data scientists are different from software engineers with unique workflows and needs. Domino is focused entirely on accelerating these workflows to make data scientists more productive. That means faster progress on your critical efforts, less turnover among your data science teams, and more output with the same resources.

Even Google's Chief Decision Scientist has lauded Domino for its value to data scientists:

> "Domino is making the data science experience incredible, lovable."
>
> **CHIEF DECISION SCIENTIST | GOOGLE**

Domino Advantages vs Vertex AI

- **Compute Environments** allow data scientists to customize the packages and tools they use. This unlocks innovation with sandboxes that can be secured, audited, and shared.
- Support for **more data science development tools,** not just Jupyter. Domino supports Jupyter, JupyterHub, RStudio, SAS, MATLAB, Visual Studio Code, etc.
- **Access to data wherever it lives,** including but not limited to Big Query and other GCP sources, Snowflake, on-premises NFS, Microsoft SQL Server, Amazon S3, and more.
- Turnkey **elastic distributed compute clusters** in Spark, Ray, Dask, and MPI that let data scientists speed up computationally intensive work by factors of 10 to 100 or more.
- More ways to **publish data science work to deliver faster business impact,** including interactive apps (Shiny, Dash, Streamlit) and self-serve templates for non-technical stakeholders to interact with data science work.



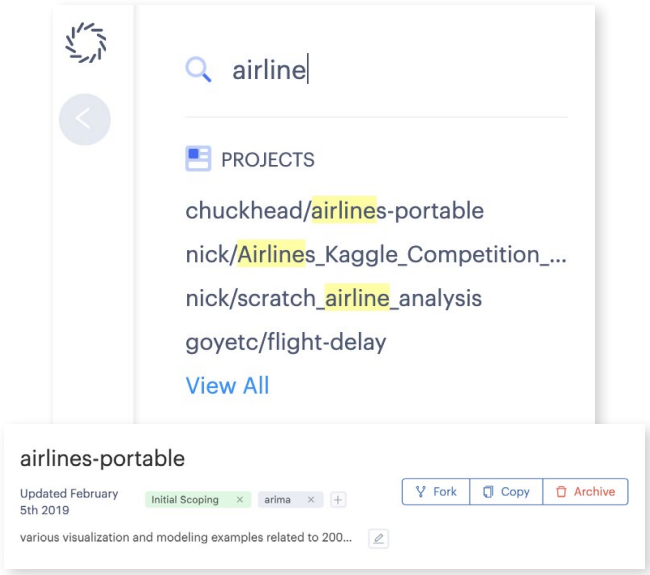
> "Domino is a core asset for us and it's part of that tech ecosystem for data scientists that they love."
>
> **ENTERPRISE CIO | JOHNSON & JOHNSON**

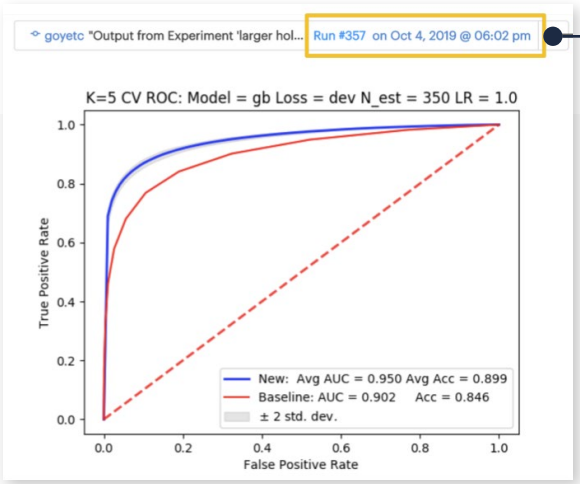
Domino is Built for Teams

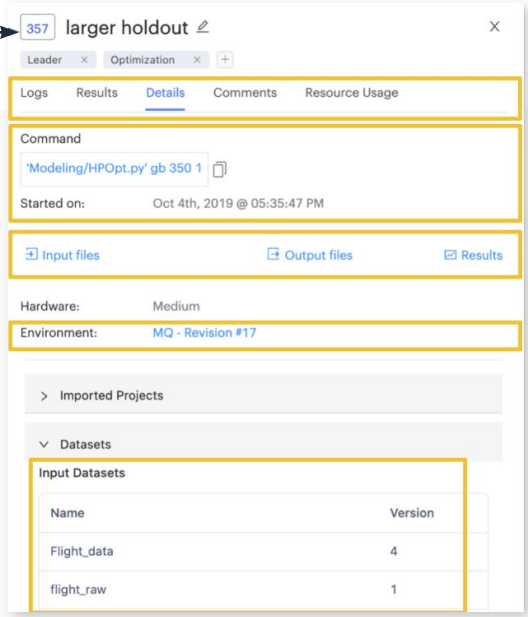
Collaboration and reuse of work unlock innovation at scale, preventing diminishing returns as you grow your team. While Vertex AI makes it easy for data scientists to "spin the meter" in their own workspaces, Domino is uniquely focused on helping teams work better together.

Domino Advantages vs Vertex AI

- **A "Project" organizational unit** lets teams collaborate, share context, and implement project management workflows.
- A **searchable system of record** across all artifacts enables discovery of past work to avoid reinventing the wheel.
- **Automatic tracking of code, data, and results** enables reuse of work and auditability for compliance.





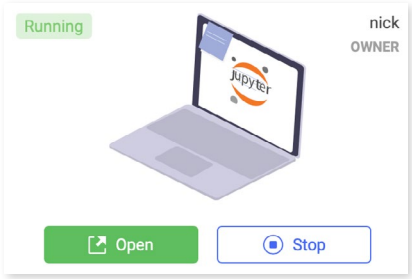


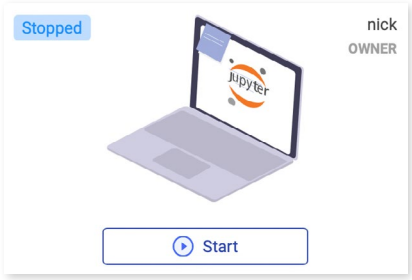
"Domino centralizes assets required to build data models, reducing the costs of ML and AI projects by $20 million a year."

CDAO OF ENTERPRISE OPERATIONS | LOCKHEED MARTIN

Domino Serves Critical Enterprise IT Needs

Domino is the only MLOps platform that centralizes data science tools (e.g., Jupyter, RStudio, even MATLAB and SAS). That enables IT to **consolidate disparate stacks, govern data science infrastructure, simplify architecture, reduce support burden, and accelerate cloud migration.** And while other vendors use their MLOps tools to drive compute spend, Domino helps you reduce and manage that spend.





Domino Advantages vs Vertex AI

Cloud cost management with Domino

- Pause and resume work easily so **machines don't run constantly.** Vertex AI notebooks must be shut down manually and managed notebook controls can be overridden, running up costs.
- **Automatically shut down long-running workloads** to reduce wasted spend.
- **Use commodity instances with no markup,** whereas Google marks up compute ~20%.
- **Set limits** on who can use each type of hardware, and how many machines can run concurrently.
- **Forecast and report costs more precisely.** Vertex AI costs are complex and hard to predict. Domino charges fixed fees for licenses and provides reports to help you manage your compute spend.

Infrastructure consolidation with Domino

- **Simplify cloud architectures** with Domino acting as a unified compute orchestration layer for Python/Jupyter, R/RStudio, MATLAB and SAS.
- Provide self-serve sandboxes to data scientists to **reduce IT support burden,** especially in a cloud environment, while enabling IT to enforce controls and limits that keep infrastructure and assets secure.
- **Control access to disparate software tools and data sources.**

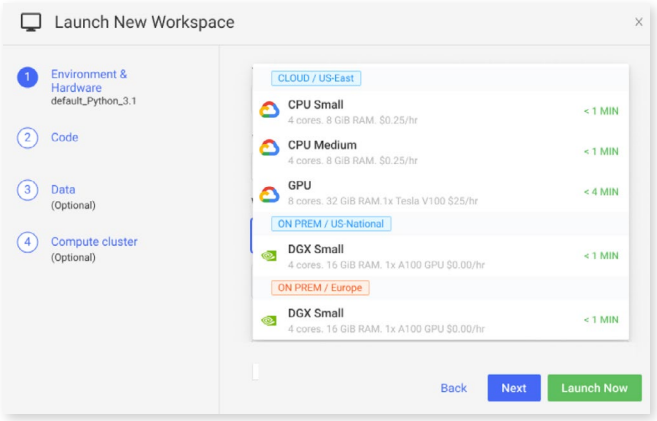
"We were able to **reduce our per-user infrastructure costs by over 40%** by taking advantage of Domino's new cost control features and functionality."

EXECUTIVE DIRECTOR, IT | GLOBAL PHARMA COMPANY

DOMINO

dominodatalab.com

Domino Enables Faster and Smoother Cloud Migrations



Domino's unique Kubernetes-native, open architecture is the foundation for a modern cloud-based computational research platform.

Most enterprises have legacy analytics tools such as MATLAB or SAS. **Domino makes it seamless to move these tools to the cloud,** without needing to build a new cloud stack for them. With Domino, teams across the enterprise using different tools get a unified portal with turnkey, self-serve infrastructure that's easy to govern and secure.

Domino allows you to **migrate incrementally.** Because Domino runs in GCP or on-premise — and connects to any data source — it gives you a unified interface to your cloud resources and your on-premise compute and data sources. Even "all in" cloud transitions take time, and the vast majority of organizations plan on hybrid and multi-cloud infrastructure due to acquisitions or for security and cost constraints.

We are Here to Help!

Reach out to your Domino account or customer success team to learn more about how GCP and Domino can be used together to help you scale data science and AI. You'll have access to powerful cloud infrastructure and an Enterprise MLOps platform that delivers the flexibility you need in an increasingly hybrid and multi-cloud world.

LEARN MORE

DOMINO