

# MLOps Foundations on Google Cloud

Take advantage of a secure, trackable, testable and repeatable way to create, train, deploy and update machine learning models across different environments.

As companies realize the value of using machine learning models to drive better outcomes, it's becoming more critical that they harness the predictive power of their data with machine learning models to remain competitive. Despite this fact, 60% of machine learning models never make it to production.

Successfully operationalizing artificial intelligence (AI) and machine learning across your organization provides a secure, trackable, testable and repeatable way to create, train, deploy and update machine learning models across different environments. This solution must combine data preprocessing, model training, deployment and model monitoring across multiple environments with strong governance and security controls to provide a foundation for successful model lifecycle management.

## The value of MLOps

With MLOps Foundations, Rackspace Technology can help you operationalize models in production, in as few as 10 steps, so you can quickly take advantage of automated machine learning lifecycle management.

Without MLOps Foundations	With MLOps Foundations
Whole lifecycle could take months with 25+ steps between Local Dev > Dev Enc > Q/A > Prod	Lifecycle reduced to just weeks with 10+ steps
Whole lifecycle could take months with 25+ steps between Local Dev > Dev Enc > Q/A > Prod	Automated deployment between environments with controlled access to data teams needed for specific steps
Cycles of troubleshooting between data scientists' local development and data engineers' development environment	One source of truth for experiment tracking and project packaging for easy source control and reproducibility

The Rackspace Technology Model Factory Framework is built using Google Cloud Platform services and open-source tools that enable rapid development, training, scoring and deployment of models. The MLOps Foundations Solution can be tailored to specific workflows and business needs through customization around the Model Factory Framework.

- **Standardized model development environment for your data science teams:** Your data science and engineering teams can develop models that support any machine learning framework.
- **Automated model deployment across dev, Q/A, and production environments:** The Model Factory Framework leverages Google Cloud automation to quickly take models from development to deployment, while addressing the production ready requirements of high availability, scalability, reliability and cost management.
- **Tools for diagnostics, performance monitoring and addressing model drift:** The Model Factory Framework provides tools for data science teams to address model drift, model performance, debugging and troubleshooting, and pipeline management.
- **Model clarity for governance and regulatory compliance:** Track and document models, data and parameters so that auditors can verify that proper protocols were employed.

## About Rackspace Technology®

Rackspace Technology is your trusted partner across cloud, applications, security, data and infrastructure.

- 2,600+ certified experts
- Hosting provider for more than half of the Fortune 100
- 20+ years of hosting experience
- Customers in 120+ countries
- Google Cloud Managed Service Provider (MSP) Partner
- Three-time Google Partner of the Year
- 400+ Google Cloud Platform certifications

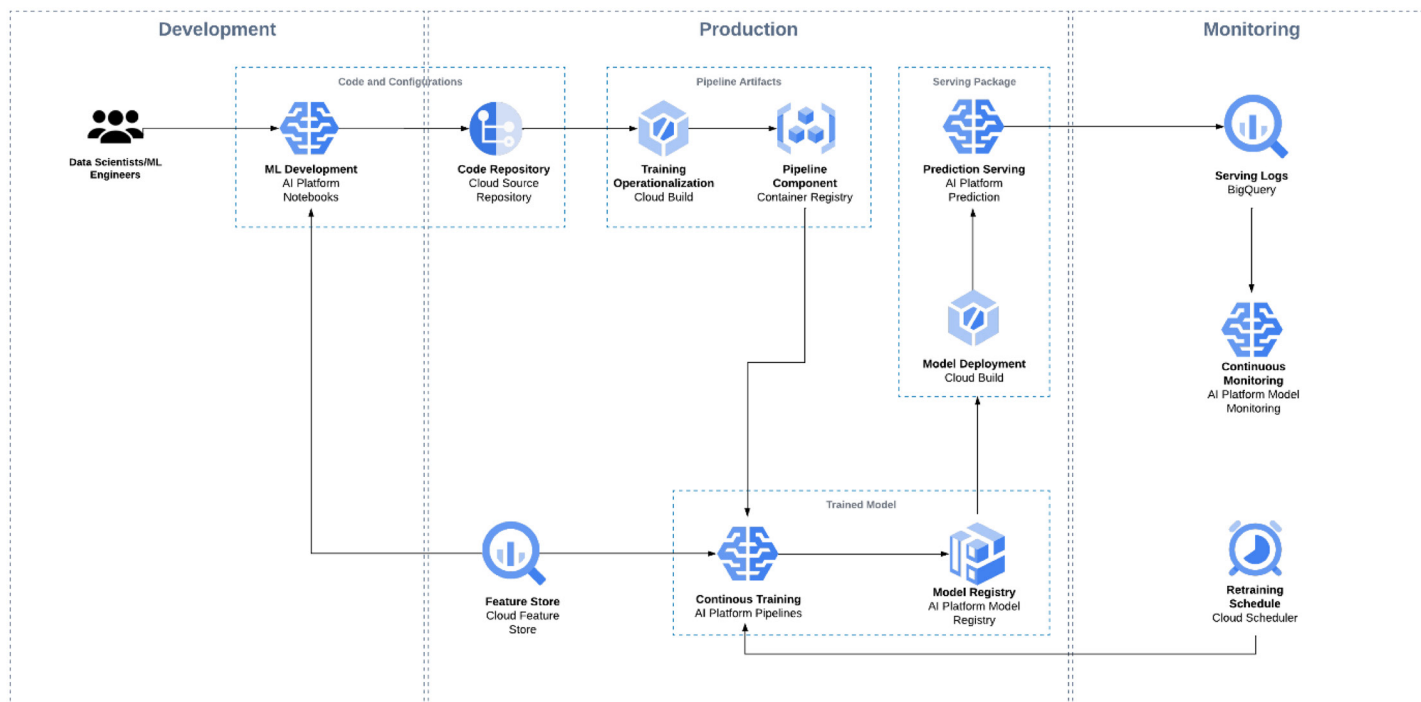
## Fanatical Experience®

Experts on your side, doing what it takes to get the job done right. From first consultation to daily operations, Rackspace Technology combines the power of always-on service with best-in-class tools and automation to deliver technology when and how you need it.

- **Platform for collaboration:** By combining DevOps tools and processes with machine learning workflows, teams can work closely to develop complex models and pipelines and manage model progression — from early stages of development to production — with respective versions, annotations and history.
- **Accelerated ROI:** Expedite operationalizing models in production and realize the benefits of an automated Vertex AI-based machine learning lifecycle management solution with a “pay-for-what-you-use” model, complete with tools and services to help you monitor and optimize your compute resources.

## Model Factory Architecture

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## Key Deliverables

MLOps Foundations is delivered through a tailored engagement. Rackspace Technology works with you to determine your infrastructure needs and tailor your solution to meet your model development, operations and compliance requirements.

- **Discovery session:** Rackspace Technology will work closely with you to understand your tooling, machine learning models and cloud landscape to define the problem space and develop a design solution.
- **Design decisions:** Based upon your discovery session, Rackspace Technology creates a detailed design for the Model Factory Framework utilizing the tooling that your team is familiar with to decrease the maintenance efforts.
- **Implementation of the Model Factory Framework:** Once a design has been finalized, the team will begin implementing your solution. The Model Factory Framework provides a CI/CD pipeline for your models with a UI to make it easy to deploy and track the models.
- **Integration of ML models:** Once the solution has been deployed, Rackspace Technology will help you integrate your models and get them into production.

### Rackspace Model Factory Framework Features

- CI/CD integration with automation and orchestration tools
- Experiment tracking
- Project packaging for easy source control and reproducibility
- Register, package, train and deploy models from anywhere
- Support for major machine learning frameworks such as TensorFlow, SCikit-Learn, Spark ML, spaCy, PyTorch, etc.
- Real-time inference endpoints
- Scalable scoring
- Model artifact storage
- Tracking user interface

### Machine Learning Model Integration and Pipeline Development

- Integration of reproducible machine learning pipelines
- Integration of reusable software environments for training and deploying models
- Automated triggering
- End-to-end QA test and performance checks
- Guidance to team collaboration and best practices

### Google Cloud Specializations

- Security
- Infrastructure
- Cloud Migration
- SAP on Google Cloud

### Google Cloud Expertise

- SAP
- SAP On Google Cloud
- GC Databases
- Modernize Legacy Applications
- App Dev and Monitoring
- GC Compute
- VM Migration
- DW Modernization

### Take the Next Step

Let's talk about how Rackspace Technology applied MLOps expertise helps you achieve your goals.

Learn more: [www.rackspace.com/data/google-cloud-data](https://www.rackspace.com/data/google-cloud-data)

Call: 1-800-961-2888