Operationalizing machine learning (ML) models for DevOps and ML engineers

There’s no single way to build and operationalize ML models, but there is a consistent need to gather and prepare data, develop models, turn models into intelligent applications, and derive revenue from those applications. Adopting MLOps practices means there’s no time wasted building or deploying a model and keeping it up to date. Red Hat® OpenShift®, a leading Kubernetes hybrid cloud platform¹, includes key capabilities to enable MLOps in a consistent way across datacenters, public cloud computing, and edge computing.


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**Step 1 | Model training**
ML models are trained on Jupyter notebooks on Red Hat OpenShift.

**Step 2 | Automate more secure containerization**
Red Hat OpenShift Pipelines is an event-driven, continuous integration capability that helps package ML models as container images.

**Step 3 | More securely deploy ML models anywhere**
Declarative configuration managed by Red Hat OpenShift GitOps automates the deployment of ML models at scale anywhere.

**Step 4 | Monitor model drift**
Monitor models for reliability, speed, scale, etc. with the tooling from one of our ecosystem partners, and update with retraining and redeployment, as needed.
Model training
ML models are trained on Jupyter notebooks on Red Hat OpenShift.

Automate containerization with security
Red Hat OpenShift Pipelines, is an event-driven, continuous integration capability that helps package ML models as container images by:

- Saving the models ready for deployment in a model store.
- Converting the saved models to container images with Red Hat OpenShift build.
- Testing the containerized model images to ensure they remain functional.
- Storing the containerized model images in a private, global container image registry like Red Hat Quay where the images are analyzed to identify potential issues, mitigating security risks and geo replication.

More securely deploy models anywhere
Declarative configuration managed by Red Hat OpenShift GitOps automates the deployment of ML models at scale, anywhere, by:

- Configuring Red Hat OpenShift environments for artificial intelligence (AI) inferencing, anywhere, via Git repositories. These configuration requirements are recorded and can be versioned at the source, reducing the propensity for errors and increasing developer and data scientist productivity.

Monitor model drift
Monitor models for reliability, speed, scale, etc. with the tooling from one of our ecosystem partners, and update with retraining and redeployment, as needed.

Learn more
Webinar:
Accelerate MLOps and deliver intelligent apps

Architecture blueprint:
Industrial manufacturing for edge computing

Get started:
Red Hat OpenShift interactive learning portal