

Overview

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What is Kubeflow Pipelines?

Kubeflow Pipelines (KFP) is a platform for building and deploying portable and scalable machine learning (ML) workflows using containers on Kubernetes-based systems.

With KFP you can author [components](#) and [pipelines](#) using the [KFP Python SDK](#), compile pipelines to an [intermediate representation YAML](#), and submit the pipeline to run on a KFP-conformant backend such as the [open source KFP backend](#) or [Google Cloud Vertex AI Pipelines](#).

The open source KFP backend is available as a core component of Kubeflow or as a standalone installation. To use KFP as part of the Kubeflow platform, follow the instructions for [installing Kubeflow](#). To use KFP as a standalone application, follow the [standalone installation](#) instructions. To get started with your first pipeline, follow the [Getting Started](#) instructions.

Why Kubeflow Pipelines?

KFP enables data scientists and machine learning engineers to:

- Author end-to-end ML workflows natively in Python
- Create fully custom ML components or leverage an ecosystem of existing components
- Easily pass parameters and ML artifacts between pipeline components
- Easily manage, track, and visualize pipeline definitions, runs, experiments, and ML artifacts
- Efficiently use compute resources through parallel task execution and through caching to eliminating redundant executions
- Keep experimentation and iteration light and Python-centric, minimizing the need to (re)build and maintain containers
- Maintain cross-platform pipeline portability through a platform-neutral [IR YAML pipeline definition](#)

What is a pipeline?

A [pipeline](#) is a definition of a workflow that composes one or more [components](#) together to form a computational directed acyclic graph (DAG). At runtime, each component execution corresponds to a single container execution, which may create ML artifacts. Pipelines may also feature [control flow](#).

Next steps

- [Install Kubeflow Pipelines](#)
- [Getting Started](#)
- Learn more about [authoring components](#)

- Learn more about [authoring pipelines](#)

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Source: <https://www.kubeflow.org/docs/components/pipelines/overview/pipelines-overview/>