# Create Deployment Pipeline using Azure DevOps

## Introduction

In this demo, we will be creating a deployment pipeline which will deploy a trained model to web service. The steps of this pipeline includes:

1. Trigger: Azure Machine Learning Model Registry. It will be triggered by a new model in “production” model registry
2. Call a published pipeline which create Azure Machine Learning deployment from model registry

## Steps

1. Create a new “Service Connection” under “Settings”, select “Azure Resource Manager”

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1. Select “Service Principal”

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1. Select “Machine Learning Workspace” under “New Azure service connection” and select the “Subscription”, “Resource group” and “Machine Learning Workspace”. Select “Grant access permission to all pipelines” then click “Save” button

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1. In Azure portal navigate to Azure ML workspace and add a “**Azure Service Deploy Release Management Contributor**” role to newly created service principal
2. Log into Azure DevOps portal and go to “Repos”🡪Releases🡪”+ Add” to add a trigger. Click on “Show more” to show all artifacts and select “AzureML Mode Registry”

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1. Select created service endpoint from step 1, then select the Model Registry and latest version:

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1. In “New release pipeline”, click on the “…” to add an agentless job

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1. Click on “+” button on “Agentless job” to add a new task. On the right pane, search for “AzureML Published Pipeline” and click on “Add”

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1. Fill in following items:
   1. Display name
   2. AML Workspace
   3. Pipeline Id
   4. Experiment Name
   5. Pipeline parameters (Optional)

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## CI+CD pipelines (optional lab)

1. Split ML pipeline into 2 parts, Training pipeline and Deployment pipeline
2. Create Build pipeline in Azure DevOps that train and register a new model
3. Create a Release pipeline that is triggered when new version of model is registered and deploys the model as a web-service

*Creating a build pipeline:*

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1. In “Model Release” page, enable “Continuous deployment trigger” to allow automatic deployment

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1. Another stage can be added with user approval:

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