

Export and deploy a BigQuery Machine Learning Model for Prediction

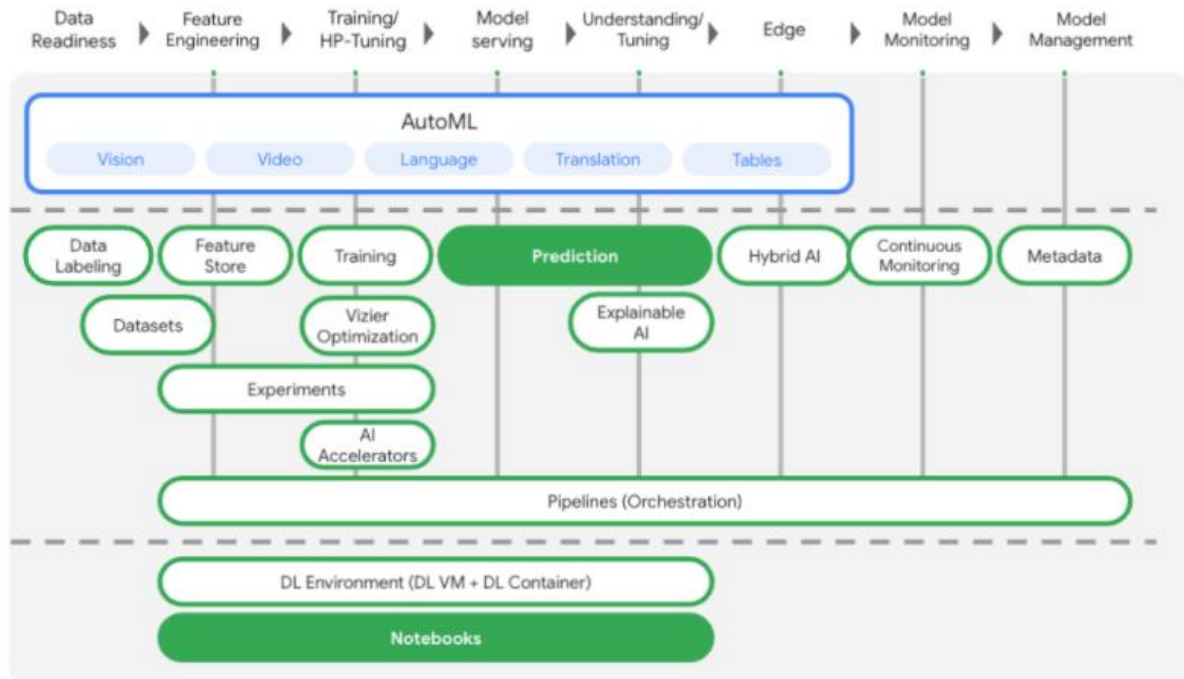
Reference: <https://codelabs.developers.google.com/codelabs/bqml-vertex-prediction#0>

Objectives:

- Train a model with BigQuery Machine Learning (BQML)
- Export your BQML model to Cloud Storage
- Deploy your trained BQML to Vertex AI
- Get predictions on your deployed model

Intro to Vertex AI

Vertex AI includes many different products to support end-to-end ML workflows. This lab will focus on the products highlighted below: Prediction and Notebooks.



Set up your environment

Enable the Compute Engine API

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Compute Engine VM instances CREATE INSTANCE IMPORT VM REFRESH START / RESUME STOP OPERATIONS HELP ASSISTANT SHOW INFO PANEL LEARN

Virtual machines

- VM instances
- Instance templates
- Sole-tenant nodes
- Machine images
- TPUs
- Committed use discounts
- Migrate for Compute Engi...

Storage

- Disks
- Snapshots
- Images
- Marketplace
- Release Notes

VM instances

INSTANCES INSTANCE SCHEDULE

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
	tensorflow-2-3-20211209-130458	us-central1-a			10.128.0.4 (nic0)	None	SSH
	tensorflow-2-7-20211208-091022	us-central1-a			10.128.0.3 (nic0)	34.133.252.113	SSH

Related actions DISMISS

- View billing report**
View and manage your Compute Engine billing
- Monitor VMs**
View outlier VMs across metrics like CPU and network
- Explore VM logs**
View, search, analyze, and download VM instance logs
- Set up firewall rules**
Control traffic to and from a VM instance
- Patch management**
Schedule patch updates and view patch compliance on VM instances

Enable the Vertex AI API

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Vertex AI Dashboard

Dashboard

- Datasets
- Features
- Labeling tasks
- Workbench
- Pipelines
- Training
- Experiments
- Models
- Endpoints
- Batch predictions
- Metadata

Get started with Vertex AI

Vertex AI empowers machine learning developers, data scientists, and data engineers to take their projects from ideation to deployment, quickly and cost-effectively. [Learn more](#)

Try an interactive tutorial to learn how to train, evaluate, and deploy a Vertex AI AutoML or custom-trained model

[VIEW TUTORIALS](#)

Region: us-central1 (Iowa)

Recent datasets

- iowa_daily 37 minutes ago

[+ CREATE DATASET](#)

Recent models

- beans-model-pipeline 3 hours ago
- beans-model-pipeline 3 hours ago

[+ TRAIN NEW MODEL](#)

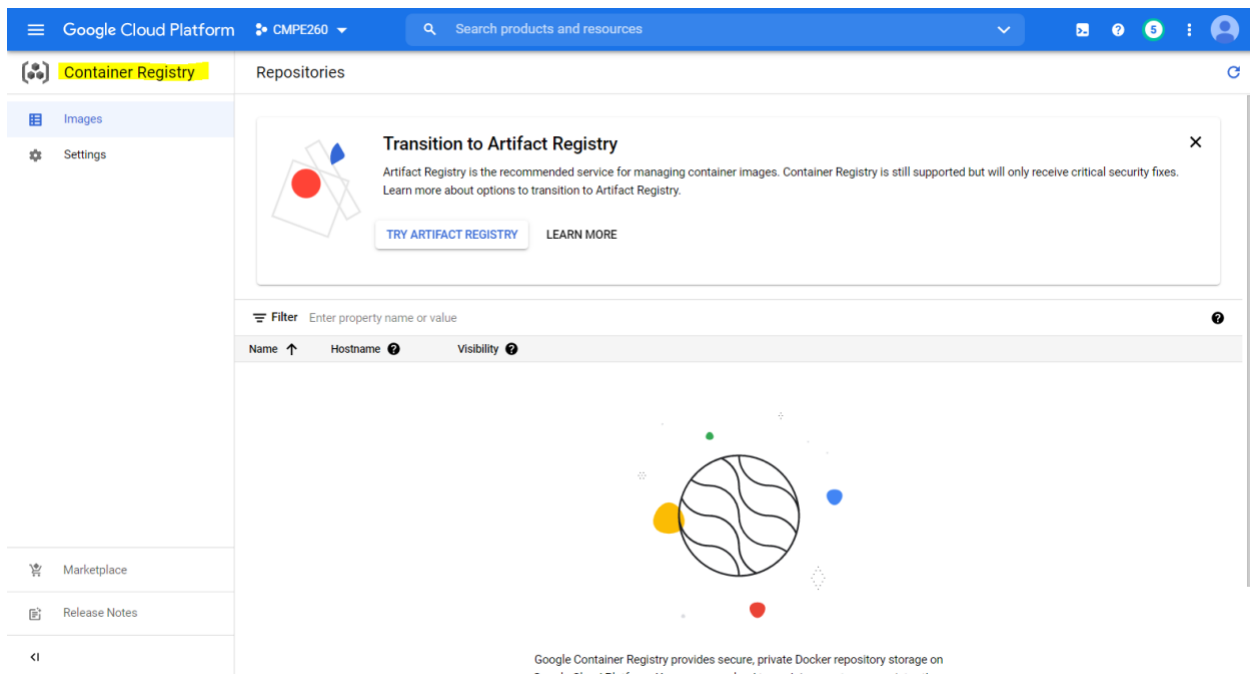
Get predictions

After you train a model, you can use it to get predictions, either online as an endpoint or through batch requests

[+ CREATE BATCH PREDICTION](#)

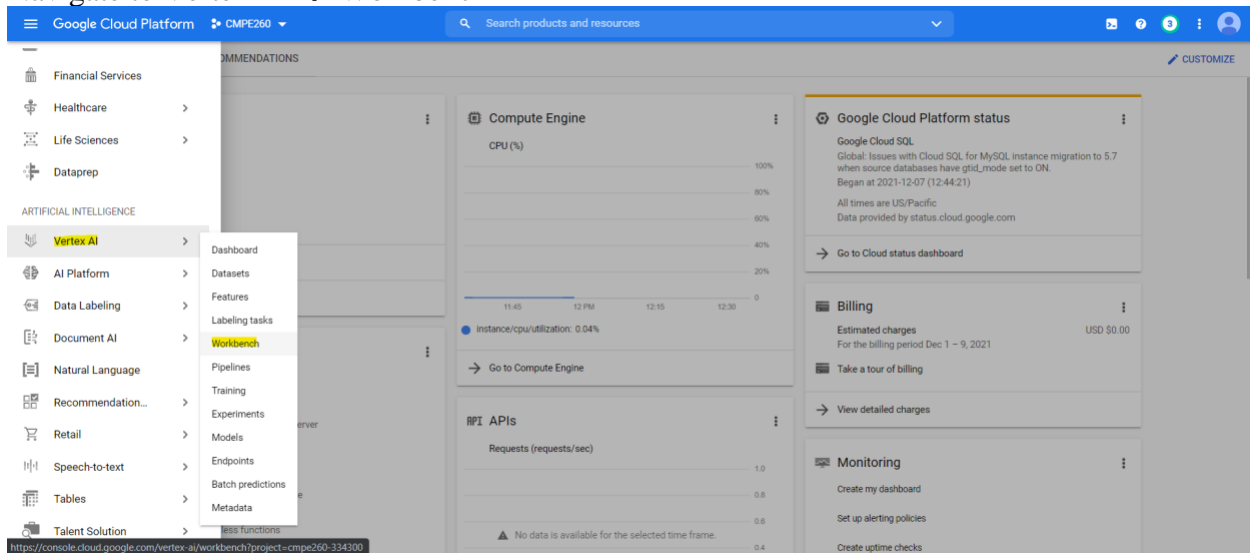
Recent notebook instances

Enable the Container Registry API

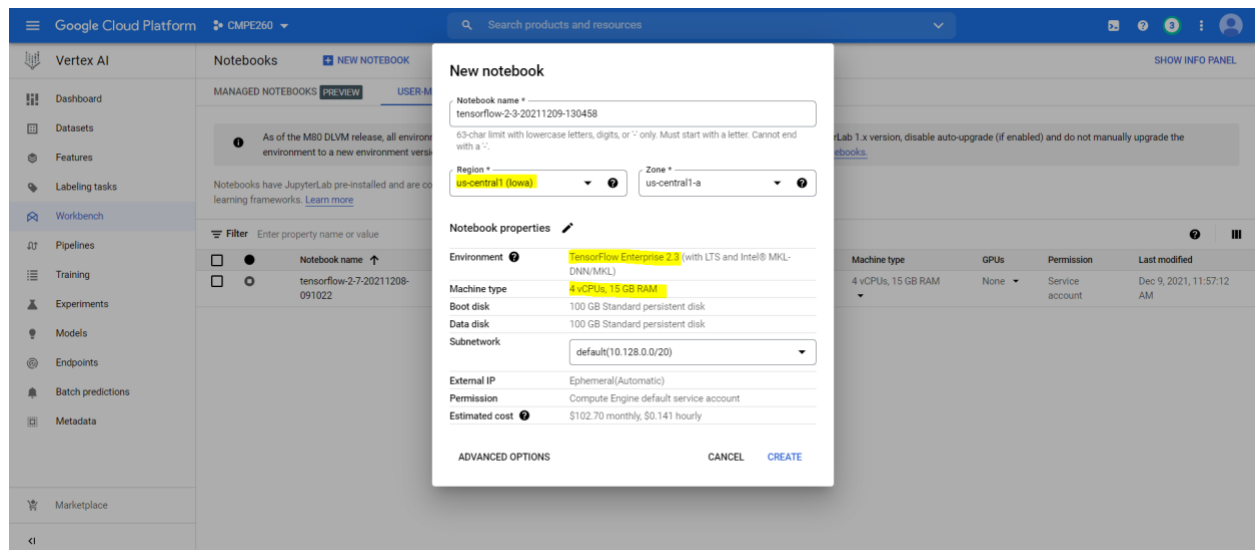
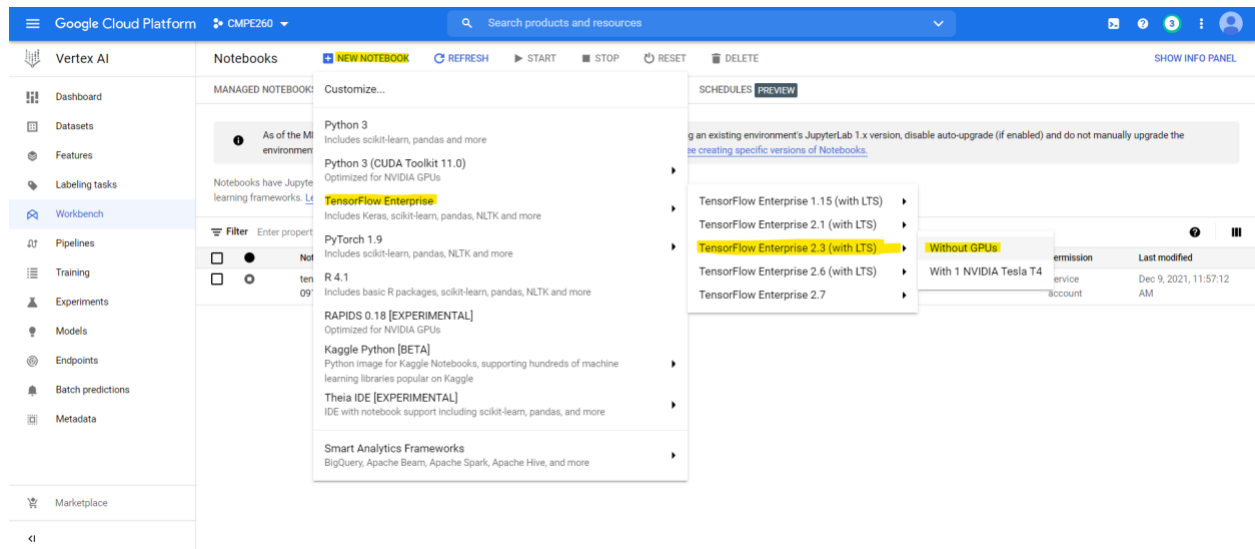


Create a Vertex AI Workbench instance

Navigate to Vertex AI → Workbench

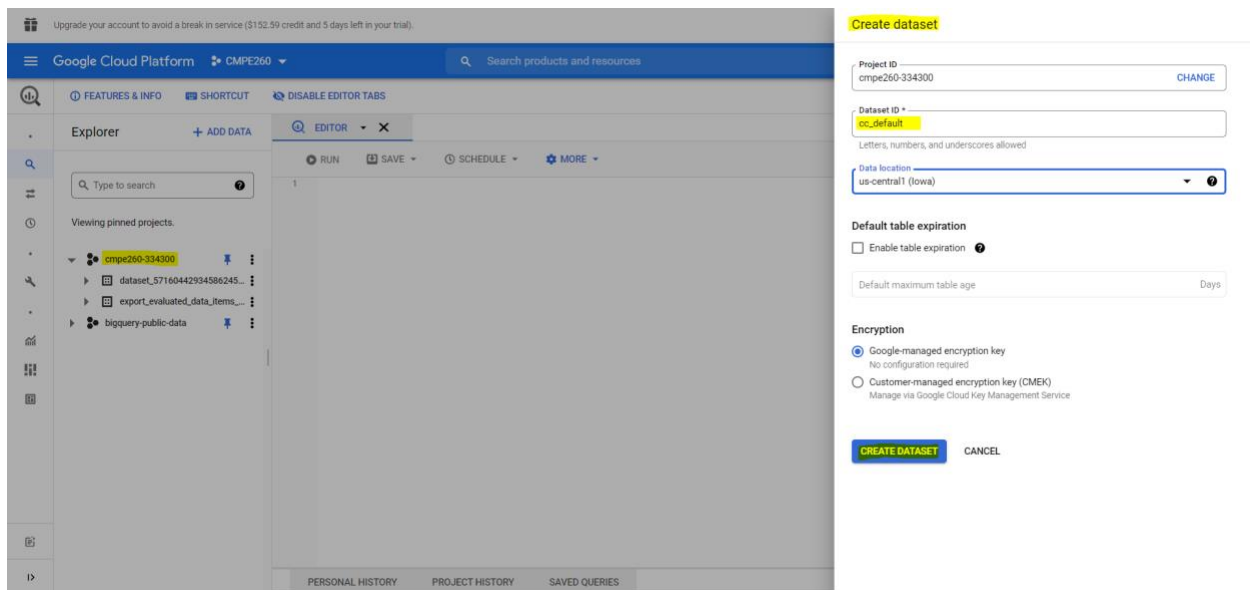


Select **TensorFlow Enterprise 2.3 (with LTS)** instance type **without GPUs**:

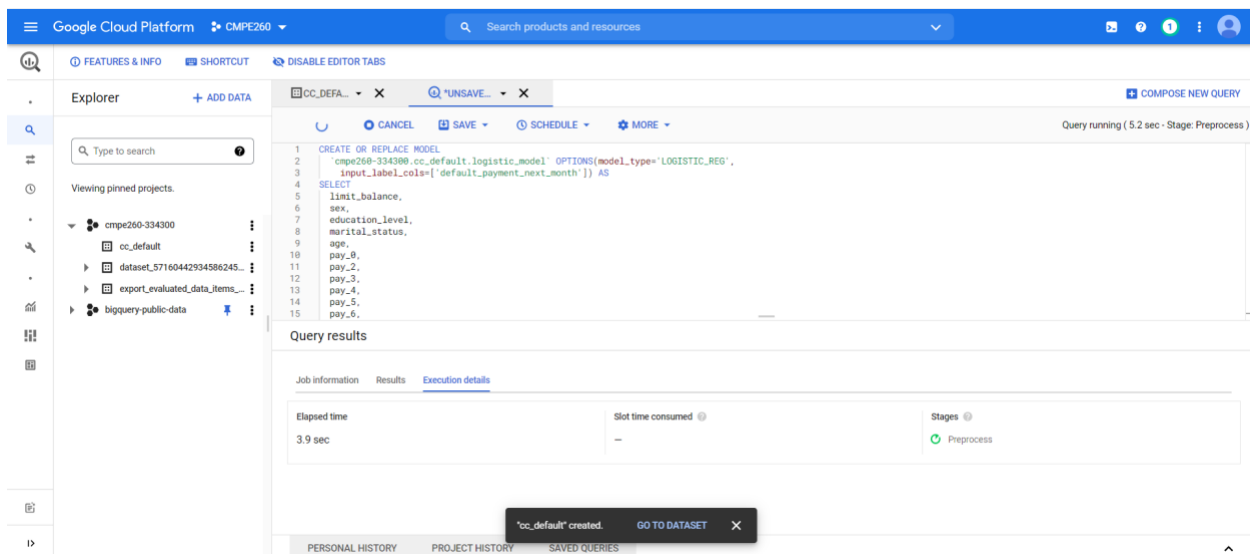


Train a BigQuery ML model

Step 1: Create a BigQuery dataset in your project



Step 2: Run a CREATE MODEL query



Check for the model created in `logistic_model`

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Search products and resources

FEATURES & INFO SHORTCUT DISABLE EDITOR TABS

Explorer + ADD DATA

Type to search

Viewing pinned projects.

- cmpe260-334300
 - cc_default
 - Models (1)
 - logistic_model

dataset_57160442934586245...
export_evaluated_data_items...
bigquery-public-data

CC_DEFA... X Q *UNSAVE... X

RUN SAVE SCHEDULE MORE

This query will process 471 KB (ML) when run.

```

1 CREATE OR REPLACE MODEL
2   `cmpe260-334300.cc_default.logistic_model` OPTIONS(model_type='LOGISTIC_REG',
3   input_label_cols=['default_payment_next_month']) AS
4   SELECT
5     limit_balance,
6     sex,
7     education_level,
8     marital_status,
9     age,
10    pay_0,
11    pay_2,
12    pay_3,
13    pay_4,
14    pay_5,
15    pay_6,

```

Query results

Query complete (41.5 sec elapsed, 471 KB (ML) processed)

Job information Results Execution details

This statement will create a new model named cmpe260-334300.cc_default.logistic_model. Depending on the type of model, this may take several hours to complete. [Go to model](#)

PERSONAL HISTORY PROJECT HISTORY SAVED QUERIES

Export your BigQuery ML model

Step 1: Create a Cloud Storage Bucket for your model

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FEATURES & INFO SHORTCUT DISABLE EDITOR TABS

Explorer + ADD DATA

Type to search

Viewing pinned projects.

- cmpe260-334300
 - cc_default
 - Models (1)
 - logistic_model

dataset_57160442934586245...
export_evaluated_data_items...
bigquery-public-data

LOGISTI... X

logistic_model

QUERY MODEL DELETE MODEL EXPORT MODEL

DETAILS TRAINING EVALUATION SCHEMA

Model type
LOGISTIC_REGRESSION

Data location
US

Model Details EDIT

Model ID
cmpe260-334300.cc_default.logistic_model

Description

Labels

Date created
Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Model expiration
Never

Date modified
Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Data location
US

Model type
LOGISTIC_REGRESSION

Loss type
Mean log loss

Training data
TEMPORARY TRAINING DATA TABLE

Evaluation data
TEMPORARY EVALUATION DATA TABLE

Training Options

PERSONAL HISTORY PROJECT HISTORY SAVED QUERIES

Upgrade your account to avoid a break in service (\$151.76 credit and 5 days left in your trial).

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Search products and resources

FEATURES & INFO

SHORTCUT

DISABLE EDITOR TABS

Explorer

+ ADD DATA

LOGIST...

X

logistic_model

DETAILS

TRAINING

EVALUATION

SCHEMA

Model type

LOGISTIC_REGRESSION

Data location

US

Model Details

EDIT

Model ID

cmpe260-334300.cc_default.logistic_model

Description

Labels

Date created

Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Model expiration

Never

Date modified

Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Data location

US

Model type

LOGISTIC_REGRESSION

Loss type

Mean log loss

Training data

TEMPORARY TRAINING DATA TABLE

Evaluation data

TEMPORARY EVALUATION DATA TABLE

Training Options

PERSONAL HISTORY

PROJECT HISTORY

SAVED QUERIES

Export model to Google Cloud Storage

X

Exporting a model allows you to use this model in other systems/applications. Please select Cloud Storage path to export this model along with all asset files. [Learn more](#)

Select GCS location *

BROWSE

SUBMIT

CANCEL

Create a Bucket:

Upgrade your account to avoid a break in service (\$151.76 credit and 5 days left in your trial).

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FEATURES & INFO

SHORTCUT

DISABLE EDITOR TABS

Explorer

+ ADD DATA

LOGIST...

X

logistic_model

DETAILS

TRAINING

EVALUATION

SCHEMA

Model type

LOGISTIC_REGRESSION

Data location

US

Model Details

EDIT

Model ID

cmpe260-334300.cc_default.logistic_model

Description

Labels

Date created

Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Model expiration

Never

Date modified

Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00

Data location

US

Model type

LOGISTIC_REGRESSION

Loss type

Mean log loss

Training data

TEMPORARY TRAINING DATA TABLE

Evaluation data

TEMPORARY EVALUATION DATA TABLE

Training Options

PERSONAL HISTORY

PROJECT HISTORY

SAVED QUERIES

Select object

< Buckets

Create new bucket

artifacts.cmpe260-334300.appspot.com

>

cloud-ai-platform-65479780-0280-46f1-a6ec-d80226927f2b

>

cmpe260-334300-bucket

>

Filename

SELECT

CANCEL

Upgrade your account to avoid a break in service (\$151.76 credit and 5 days left in your trial).

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Search products and resources

Explorer + ADD DATA

Type to search

Viewing pinned projects.

- cmpe260-334300
 - cc_default
 - Models (1)
 - logistic_model

logistic_model

DETAILS TRAINING EVALUATION SCHEMA

Model type: LOGISTIC_REGRESSION Data location: US

Model Details EDIT

Model ID	cmpe260-334300-cc_default-logistic_model
Description	
Labels	
Date created	Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00
Model expiration	Never
Date modified	Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00
Data location	US
Model type	LOGISTIC_REGRESSION
Loss type	Mean log loss
Training data	TEMPORARY TRAINING DATA TABLE
Evaluation data	TEMPORARY EVALUATION DATA TABLE

Training Options

PERSONAL HISTORY PROJECT HISTORY SAVED QUERIES

Create a bucket

Name your bucket

Pick a globally unique, permanent name. [Naming guidelines](#)

cc_logistics

Tip: Don't include any sensitive information

LABELS (OPTIONAL)

CONTINUE

Choose where to store your data

This permanent choice defines the geographic placement of your data and affects cost, performance, and availability. [Learn more](#)

Location type

☐ Multi-region
Highest availability across largest area

☐ Dual-region
High availability and low latency across 2 regions

☒ Region
Lowest latency within a single region

Location

us-central1 (Iowa)

CONTINUE

Choose a default storage class for your data

Default storage class: Standard

Upgrade your account to avoid a break in service (\$151.76 credit and 5 days left in your trial).

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Search products and resources

Explorer + ADD DATA

Type to search

Viewing pinned projects.

- cmpe260-334300
 - cc_default
 - Models (1)
 - logistic_model

logistic_model

DETAILS TRAINING EVALUATION SCHEMA

Model type: LOGISTIC_REGRESSION Data location: US

Model Details EDIT

Model ID	cmpe260-334300-cc_default-logistic_model
Description	
Labels	
Date created	Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00
Model expiration	Never
Date modified	Thursday, December 9, 2021 at 7:17:35 PM GMT-08:00
Data location	US
Model type	LOGISTIC_REGRESSION
Loss type	Mean log loss
Training data	TEMPORARY TRAINING DATA TABLE
Evaluation data	TEMPORARY EVALUATION DATA TABLE

Training Options

PERSONAL HISTORY PROJECT HISTORY SAVED QUERIES

Location

us-central1 (Iowa)

CONTINUE

Choose a default storage class for your data

Default storage class: Standard

Choose how to control access to objects

Prevent public access

Restrict data from being publicly accessible via the internet. Will prevent this bucket from being used for web hosting. [Learn more](#)

☐ Enforce public access prevention on this bucket

Access control

☒ Uniform
Ensure uniform access to all objects in the bucket by using only bucket-level permissions (IAM). This option becomes permanent after 90 days. [Learn more](#)

☐ Fine-grained
Specify access to individual objects by using object-level permissions (ACLs) in addition to your bucket-level permissions (IAM). [Learn more](#)

CONTINUE

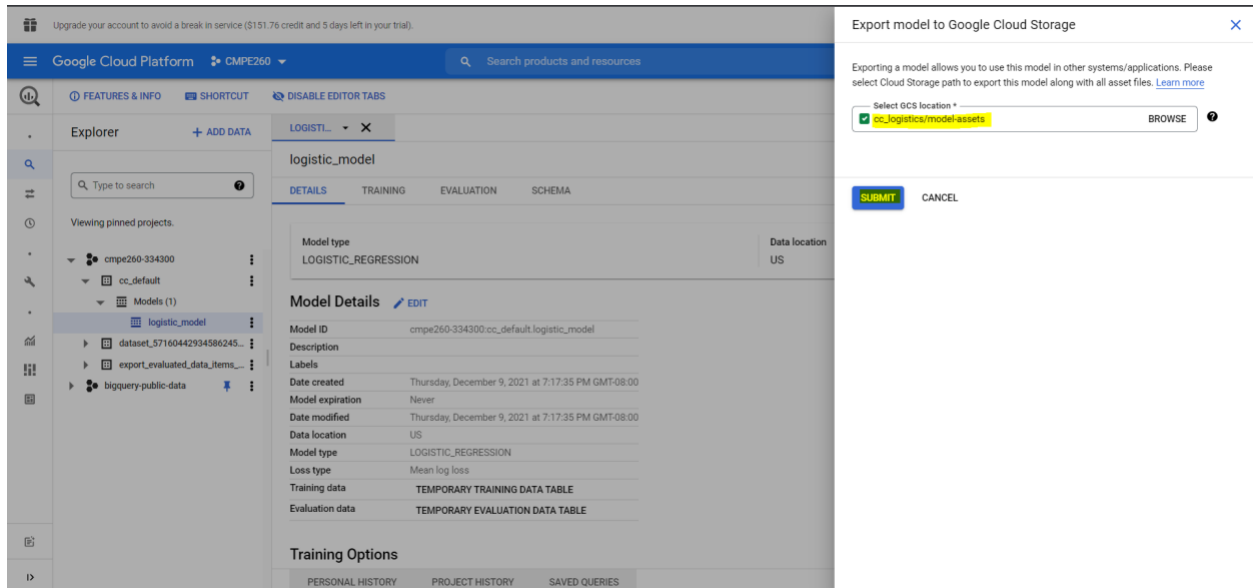
Choose how to protect object data

Protection tools: None

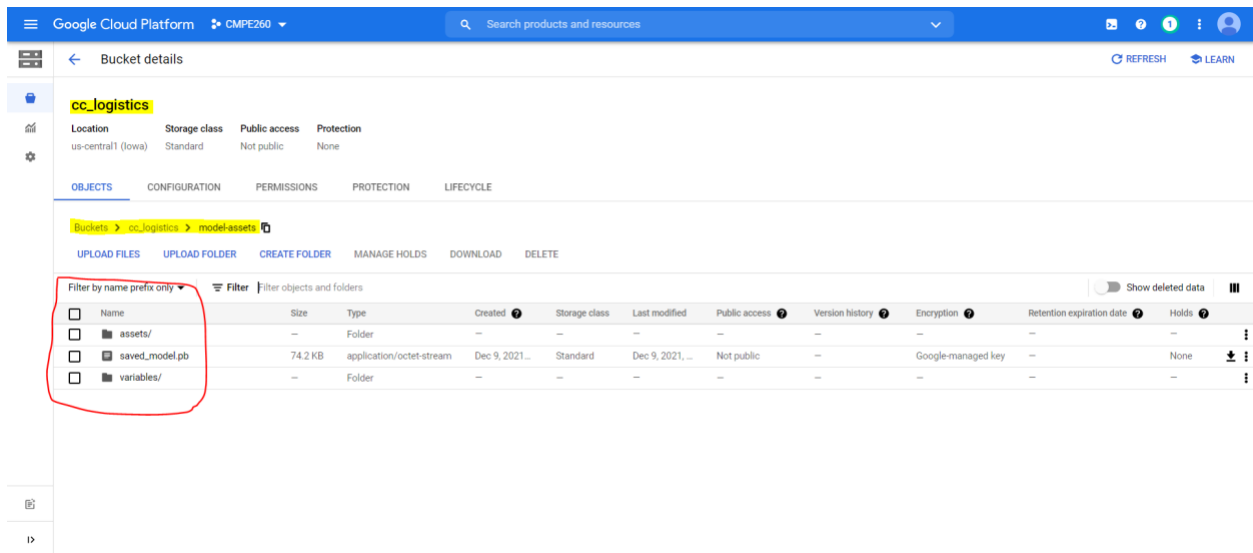
Data encryption: Google-managed key

CREATE

CANCEL



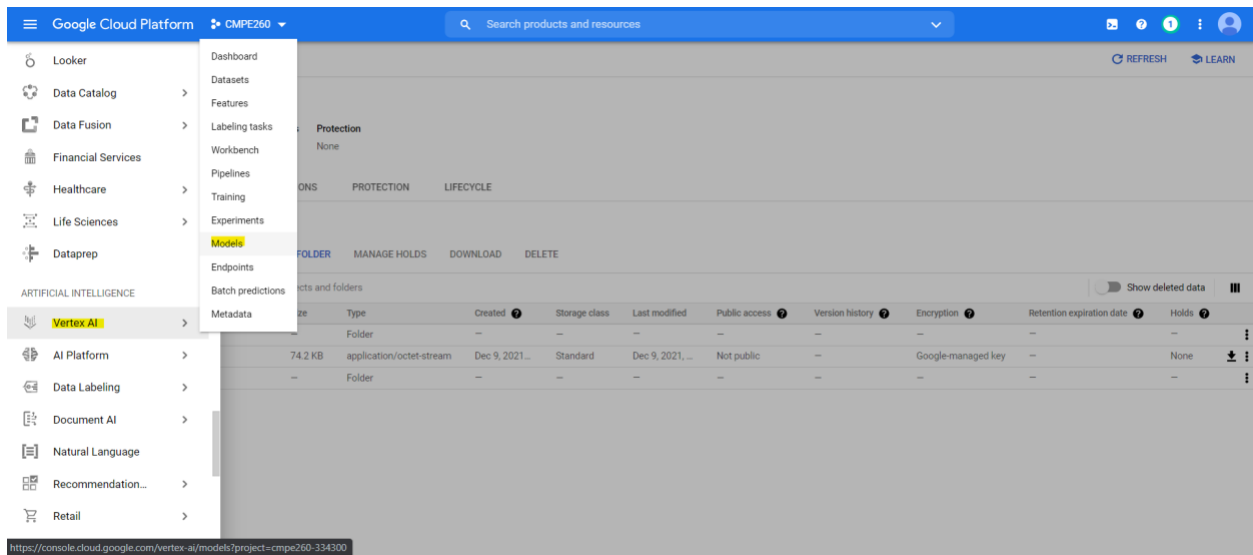
When the above job completes, the model assets gets exported to the bucket created under a **model-assets** subdirectory



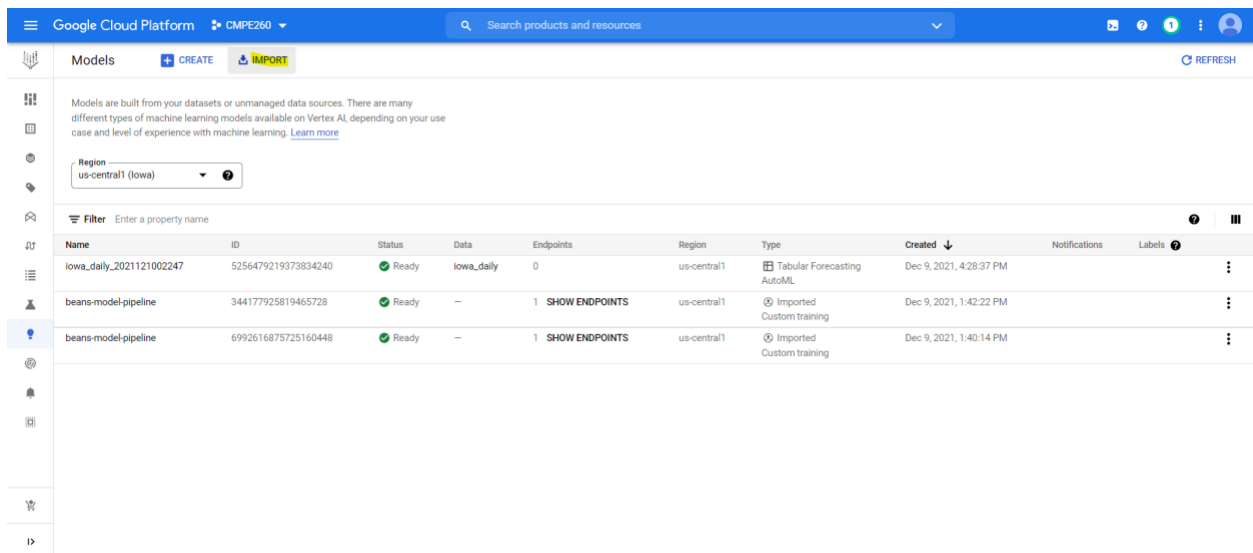
Import the model to Vertex AI

Step 1: Import the model

Navigate to Vertex AI → Models



Click on ‘Import’



Enter the ModelName and Region:

Upgrade your account to avoid a break in service (\$152.59 credit and 5 days left in your trial).

Google Cloud Platform CMPE260

Search products and services

Models

CREATE IMPORT

Models are built from your datasets or unmanaged data sources. There are many different types of machine learning models available on Vertex AI, depending on your use case and level of experience with machine learning. [Learn more](#)

Region: us-central1 (Iowa)

Filter: Enter a property name

Name	ID	Status	Data	Endpoints
iowa_daily_2021121002247	5256479219373834240	Ready	iowa_daily	0
beans-model-pipeline	344177925819465728	Ready	—	1 SHOW ENDPOINTS
beans-model-pipeline	6992616875725160448	Ready	—	1 SHOW ENDPOINTS

Import model

1 Name and region

2 Model settings

3 Explainability (optional)

IMPORT CANCEL

You can import model artifacts that have been trained outside of Google Cloud. Once your model has been imported, you can serve it for online or batch predictions and compare it against your other Cloud AI models. [More info](#)

Model name *
predict_default

Region
us-central1 (Iowa)

ADVANCED OPTIONS

CONTINUE

In **Model settings**, keep "Import model artifacts into a new pre-built container" selected. In the **Model framework** dropdown, select **TensorFlow**. Then select **2.3** as the framework version. In the Model artifact location field, click **Browse**, click into the GCS bucket you just created, and click on the **model-assets** directory:

Upgrade your account to avoid a break in service (\$152.59 credit and 5 days left in your trial).

Google Cloud Platform CMPE260

Search products and services

Models

CREATE IMPORT

Models are built from your datasets or unmanaged data sources. There are many different types of machine learning models available on Vertex AI, depending on your use case and level of experience with machine learning. [Learn more](#)

Region: us-central1 (Iowa)

Filter: Enter a property name

Name	ID	Status	Data	Endpoints
iowa_daily_2021121002247	5256479219373834240	Ready	iowa_daily	0
beans-model-pipeline	344177925819465728	Ready	—	1 SHOW ENDPOINTS
beans-model-pipeline	6992616875725160448	Ready	—	1 SHOW ENDPOINTS

Import model

1 Name and region

2 Model settings

3 Explainability (optional)

IMPORT CANCEL

☒ Import model artifacts into a new pre-built container
View the list of [supported runtimes](#) including TensorFlow, scikit-learn and XGBoost versions

☐ Import an existing custom container
Build a custom Docker container. Must be stored in [Container Registry](#) or [Artifact Registry](#)

Pre-built container settings

In order to run in a pre-built container, your code needs to be in Python 3.7

Model framework *
TensorFlow

Model framework version *
2.3

Accelerator type *
None

Model artifact location (Cloud storage path) *
gs://cc_logistica/model-assets/ [BROWSE](#)

Path to the Cloud Storage directory where the exported model file is stored (not the path to the model file itself). The model name must be one of: saved_model.pb, model.pb, model.joblib, or model.bst, depending on which library you used.

Predict schemata

Optional. [Learn more about the predict schemata](#)

gs:// Instances [BROWSE](#)

Cloud Storage location to a YAML file that defines the format of a single instance used in prediction and explanation requests.

gs:// Parameters [BROWSE](#)

Cloud Storage location to a YAML file that defines the prediction and explanation parameters.

Model is Imported

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Models CREATE IMPORT REFRESH

Models are built from your datasets or unmanaged data sources. There are many different types of machine learning models available on Vertex AI, depending on your use case and level of experience with machine learning. [Learn more](#)

Region: us-central1 (Iowa)

Filter: Enter a property name

Name	ID	Status	Data	Endpoints	Region	Type	Created ↓	Notifications	Labels
predict_default	3559748059761999872	Ready	—	0	us-central1	Imported Custom training	Dec 9, 2021, 8:57:56 PM		
iowa_daily_2021121002247	5256479219373834240	Ready	iowa_daily	0	us-central1	Tabular Forecasting AutoML	Dec 9, 2021, 4:28:37 PM		
beans-model-pipeline	344177925819465728	Ready	—	1 SHOW ENDPOINTS	us-central1	Imported Custom training	Dec 9, 2021, 1:42:22 PM		
beans-model-pipeline	6992616875725160448	Ready	—	1 SHOW ENDPOINTS	us-central1	Imported Custom training	Dec 9, 2021, 1:40:14 PM		

Deploy the model to an endpoint

Step 1: Creating an endpoint

Navigate to the Model → Deploy & Test

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predict_default EXPORT

DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ↓	API	Notification	Labels	Encryption
No active endpoints containing this model												

Test your model PREVIEW

In order to test your model, you will need to deploy it first. [Pricing guide](#)

Upgrade your account to avoid a break in service (\$152.59 credit and 5 days left in your trial).

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Search products and services

predict_default

EXPORT

DEPLOY & TEST

BATCH PREDICTIONS

MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job
No active endpoints containing this model						

Test your model PREVIEW

In order to test your model, you will need to deploy it first. [Pricing guide](#)

Deploy to endpoint

1 Define your endpoint

2 Model settings

3 Model monitoring

DEPLOY CANCEL

Create new endpoint ☐ Add to existing endpoint

Endpoint name *

Location

Region

Access

Determines how your endpoint can be accessed. By default, endpoints are available for prediction serving through a REST API. Endpoint access can't be changed after the endpoint is created.

☒ Standard
 Makes the endpoint available for prediction serving through a REST API. AutoML and custom-trained models can be added to standard endpoints.

☐ Private
 Create a private connection to this endpoint using a VPC network and [private services access](#). Only custom-trained and tabular models can be added to private endpoints. [Learn more](#)

ADVANCED OPTIONS

CONTINUE

Give your endpoint a name, like `default_pred_v1`, leave the traffic splitting settings as is, and then select a machine type for your model deployment. We used an `n1-highcpu-2` here, but you can choose whichever machine type you'd like.

Upgrade your account to avoid a break in service (\$152.59 credit and 5 days left in your trial).

Google Cloud Platform CMPE260

Search products and services

predict_default

EXPORT

DEPLOY & TEST

BATCH PREDICTIONS

MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job
No active endpoints containing this model						

Test your model PREVIEW

In order to test your model, you will need to deploy it first. [Pricing guide](#)

Deploy to endpoint

1 Define your endpoint

2 Model settings

3 Model monitoring

DEPLOY CANCEL

predict_default

Traffic split *

Compute resources

Choose how compute resources will serve prediction traffic to your model

- Autoscaling:** If you set a minimum and maximum, compute nodes will scale to meet traffic demand within those boundaries
- No scaling:** If you only set a minimum, then that number of compute nodes will always run regardless of traffic demand (the maximum will be set to minimum)

Once scaling settings are set, they can't be changed unless you redeploy the model. [Pricing guide](#)

Minimum number of compute nodes *

Default is 1. If set to 1 or more, then compute resources will continuously run even without traffic demand. This can increase cost but avoid dropped requests due to node initialization.

Maximum number of compute nodes (optional)

Enter a number equal to or greater than the minimum nodes. Can reduce costs but may cause reliability issues for high traffic.

ADVANCED SCALING OPTIONS

Machine type *

Service account

A service account determines what Google Cloud resources your service code can

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predict_default EXPORT

DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ↓	API	Notification	Labels ⓘ	Encryption
default_pred_v1	2407253165666729984	Deploying model	0	us-central1	—	—	—	Dec 9, 2021, 9:02:48 PM	Sample request			Google-managed key

Test your model PREVIEW

! Your model must be successfully deployed to an endpoint before you can test it.

Your JSON request must contain an `instances` field and an optional `parameters` field if you're using a custom container. No other fields can be present in the JSON request. [Learn how to format your JSON request.](#)

JSON request

Response

The Endpoint is created.

Google Cloud Platform CMPE260 Search products and resources

predict_default EXPORT

DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ↓	API	Notification	Labels ⓘ	Encryption
default_pred_v1	2407253165666729984	Active	1	us-central1	Disabled	—	—	Dec 9, 2021, 9:09:16 PM	Sample request			Google-managed key

Test your model PREVIEW

Your JSON request must contain an `instances` field and an optional `parameters` field if you're using a custom container. No other fields can be present in the JSON request. [Learn how to format your JSON request.](#)

JSON request

Response

Click on 'Sample Request', Copy the lines in Step 4

Upgrade your account to avoid a break in service (\$152.59 credit and 5 days left in your trial).

Google Cloud Platform CMPE260

predict_default

DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated
default_pred_v1	2407253165666729984	Active	1	us-central1	Disabled	—	—	Dec 9, 2021, 9 PM

Test your model

Your JSON request must contain an `instances` field and an optional `parameters` field if you're using a custom container. No other fields can be present in the JSON request.

[Learn how to format your JSON request.](#)

JSON request

```
{
  "instances": [
    {
      "sample_key": "sample_value"
    }
  ]
}
```

Response

Sample Request

REST PYTHON

You can now execute queries using the command line interface (CLI).

1. Make sure you have the [Google Cloud SDK](#) installed.
2. Run the following command to authenticate with your Google account.

```
$ gcloud auth application-default login
```

3. Create a JSON object to hold your data.

```
{
  "instances": [
    {
      "instance_key_1": "value", ... }, ...
    ],
  "parameters": { "parameter_key_1": "value", ... }, ...
}
```

4. Create environment variables to hold your endpoint and project IDs, as well as your JSON object.

```
$ ENDPOINT_ID="2407253165666729984"
$ PROJECT_ID="cmpe260-334300"
$ INPUT_DATA_FILE="INPUT-JSON"
```

5. Execute the request.

```
$ curl \
-X POST \
-H "Authorization: Bearer $(gcloud auth print-access-token)" \
-H "Content-Type: application/json" \
https://us-central1-aiplatform.googleapis.com/v1/projects/$PROJECT_ID/models/$ENDPOINT_ID/predict \
-d "$INPUT_DATA_FILE"
```

DONE

Copy in Notebook Cell:

File Edit View Run Kernel Git Tabs Settings Help

Filter files by name

Name	Last Modified
default-pred.json	2 minutes ago
task.py	4 hours ago
Untitled.ipynb	seconds ago

Terminal 2

Untitled.ipynb

```
[1]: %writefile default-pred.json
{
  "instances": [
    {
      "age": 39,
      "bill_amt_1": 47174,
      "bill_amt_2": 47974,
      "bill_amt_3": 48630,
      "bill_amt_4": 50803,
      "bill_amt_5": 30789,
      "bill_amt_6": 15874,
      "education_level": "1",
      "limit_balance": 50000,
      "marital_status": "2",
      "pay_0": 0,
      "pay_2": 0,
      "pay_3": 0,
      "pay_4": 0,
      "pay_5": 0,
      "pay_6": 0,
      "pay_amt_1": 1800,
      "pay_amt_2": 2000,
      "pay_amt_3": 3000,
      "pay_amt_4": 2000,
      "pay_amt_5": 2000,
      "pay_amt_6": 2000,
      "sex": "1"
    }
  ]
}

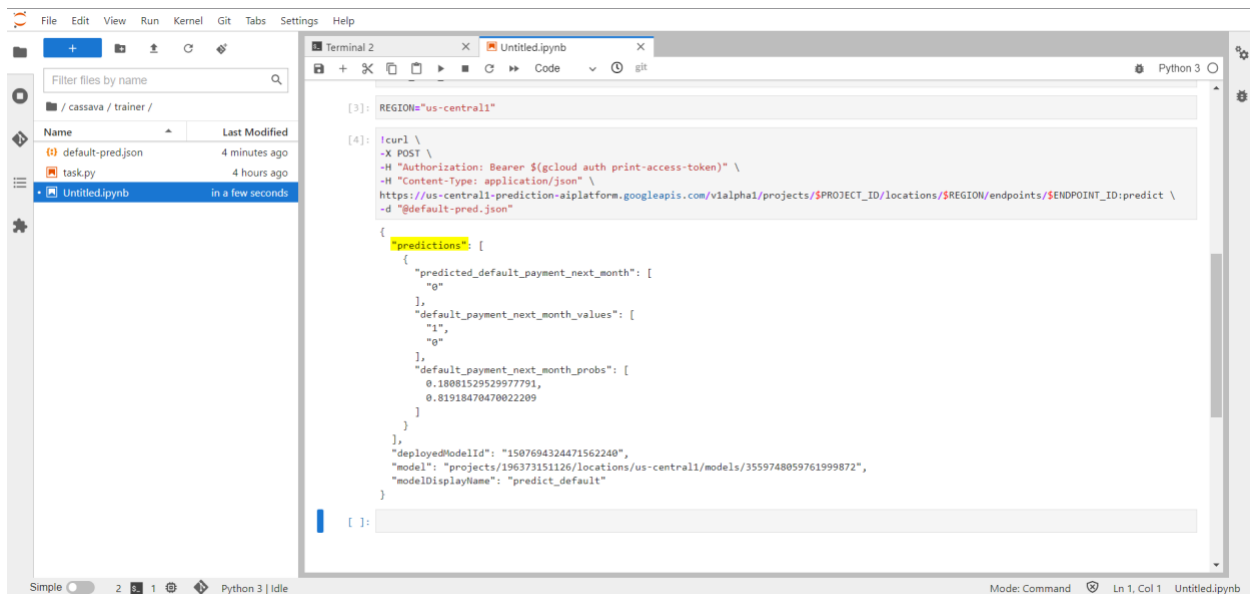
Writing default-pred.json

[2]: ENDPOINT_ID="2407253165666729984"
PROJECT_ID="cmpe260-334300"
INPUT_DATA_FILE="INPUT-JSON"
```

Simple 2 1 Python 3 | Idle

Mode: Command Ln 1, Col 1 Untitled.ipynb

Prediction Result:



Cleanup

Stop the Notebook Instance:

Google Cloud Platform CMPE260									
Notebooks									
MANAGED NOTEBOOKS PREVIEW USER-MANAGED NOTEBOOKS EXECUTIONS PREVIEW SCHEDULES PREVIEW									
<p>As of the M80 DLVM release, all environments will include JupyterLab 3.x by default. To continue using an existing environment's JupyterLab 1.x version, disable auto-upgrade (if enabled) and do not manually upgrade the environment to a new environment version. To create new Notebooks with JupyterLab 1.x installed, see creating specific versions of Notebooks.</p> <p>Notebooks have JupyterLab pre-installed and are configured with GPU-enabled machine learning frameworks. Learn more</p>									
Filter Enter property name or value									
	Notebook name	Zone	Auto-upgrade	Environment	Machine type	GPUs	Permission	Last modified	
<input type="checkbox"/>	tensorflow-2-3-20211209-130458	OPEN JUPYTERLAB	us-central1-a	TensorFlow2.3	4 vCPUs, 15 GB RAM	None	Service account	Dec 9, 2021, 3:35:42 PM	
<input checked="" type="checkbox"/>	tensorflow-2-7-20211208-091022	OPEN JUPYTERLAB	us-central1-a	TensorFlow2.7	4 vCPUs, 15 GB RAM	None	Service account	Dec 9, 2021, 3:39:09 PM	

Delete the Endpoint

Google Cloud PlatformCMPE260Search products and resources

EndpointsCREATE ENDPOINTREFRESH

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

To create an endpoint, you need at least one machine learning model. [Learn more](#)

Regionus-central1 (Iowa)

1 selectedEDIT LABELSDELETE

	Name	ID	Status	Models	Region	Monitoring	Most recent alerts	Last updated	API	Notification	Labels
<input checked="" type="checkbox"/>	default_pred_v1	2407253165666729984	Active	1	us-central1	Disabled	—	Dec 9, 2021, 9:09:16 PM	Sample request		
<input type="checkbox"/>	beans-model-pipeline_endpoint	1416461247645220864	Active	1	us-central1	Disabled	—	Dec 9, 2021, 1:50:03 PM	Sample request		
<input type="checkbox"/>	beans-model-pipeline_endpoint	3282992186957758464	Active	1	us-central1	Disabled	—	Dec 9, 2021, 1:49:59 PM	Sample request		

View logs

Edit labels

Rename endpoint

Remove endpoint