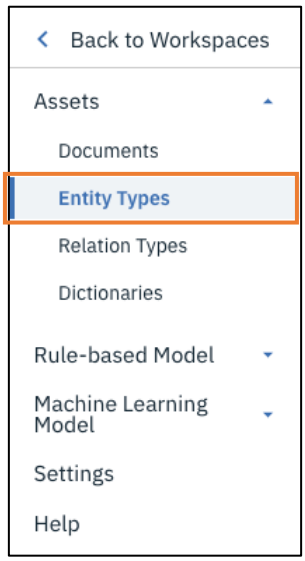
WKS Rule Lab Appendix – Deploying to NLU

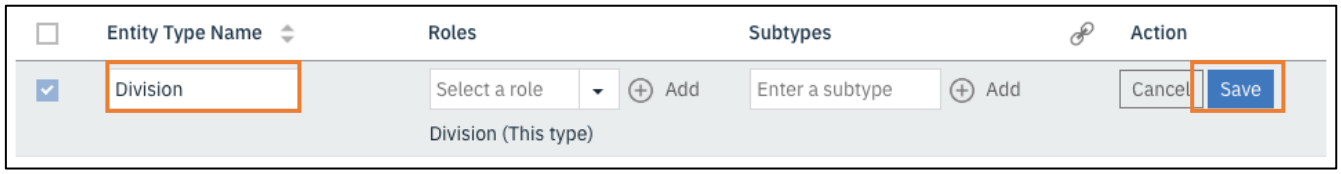
We pick up precisely where WKS Rule lab ended
We assume that you have provisioned an NLU instance

Step 1: Defining entity types

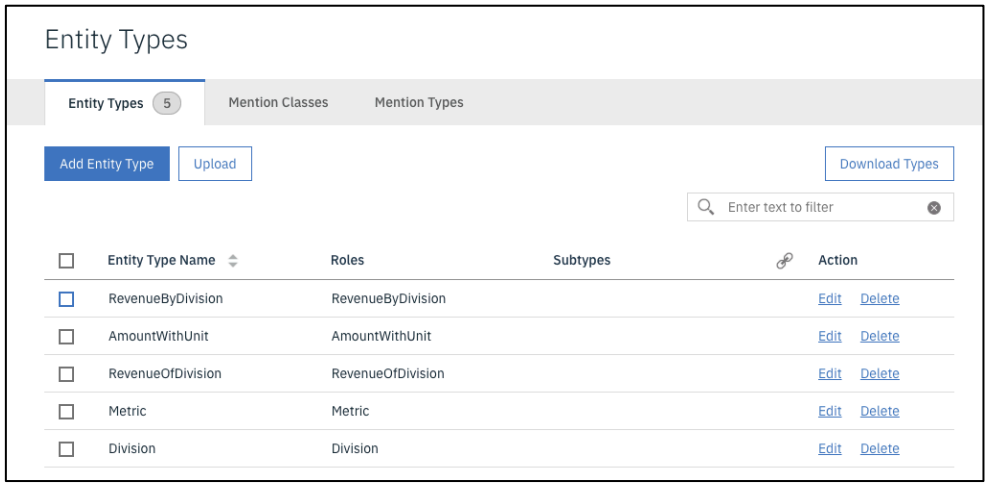
1. Select [Assets] – [Entity Types] in left navigation pane to open Entity types page.



2. Click **Add Entity Type** button and enter "**Division**" in the Entity Type Name field, then click **Save** button.

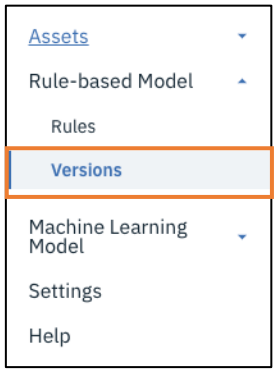


3. Repeat Step 2 for "**Metric**", "**RevenueOfDivision**", "**AmountWithUnit**", and "**RevenueByDivision**". In the end, your screen should look like below.

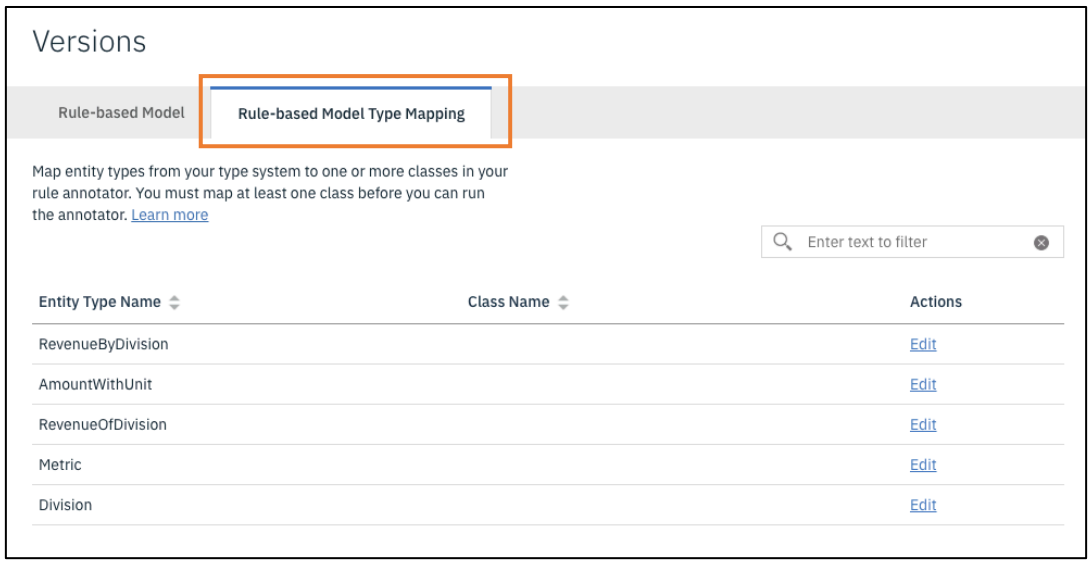


Step 2: Create entity type / rule class mapping

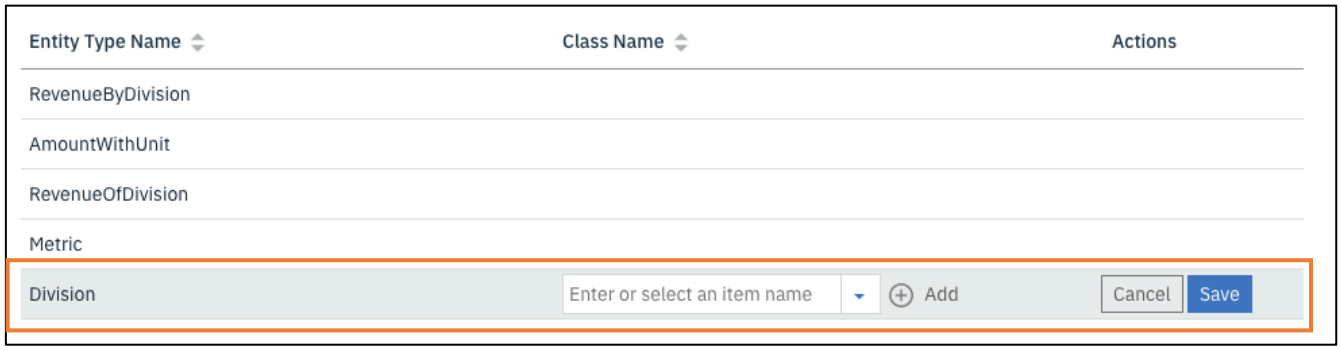
1. Select [Rule-based Model] – [Versions] in left navigation pane to open Rules versions page.



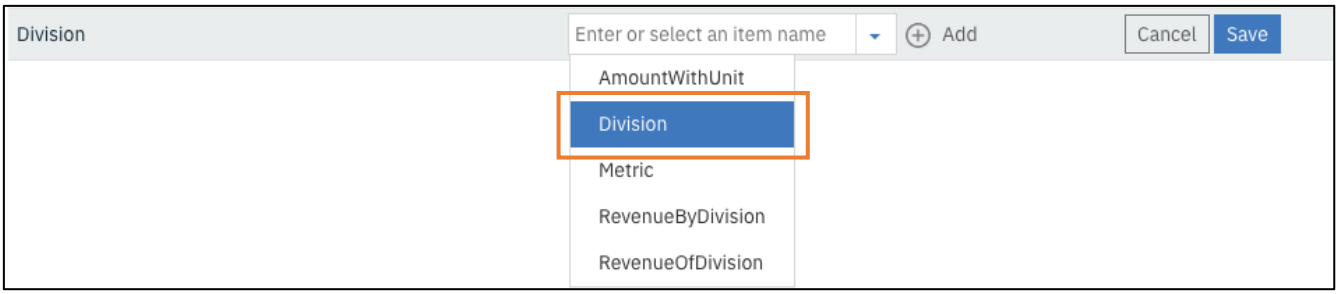
2. Select **Rule-based Model Type Mapping** tab.



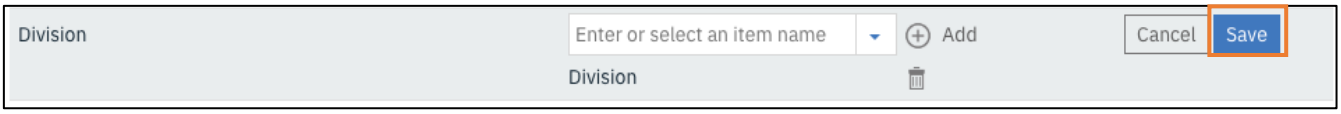
3. Click **Edit** button in the "**Division**" row.



4. Click dropdown icon ▾ or enter "**Division**" in the Class Name field. Then select "**Division**" from the dropdown menu.



5. Click **Save** button



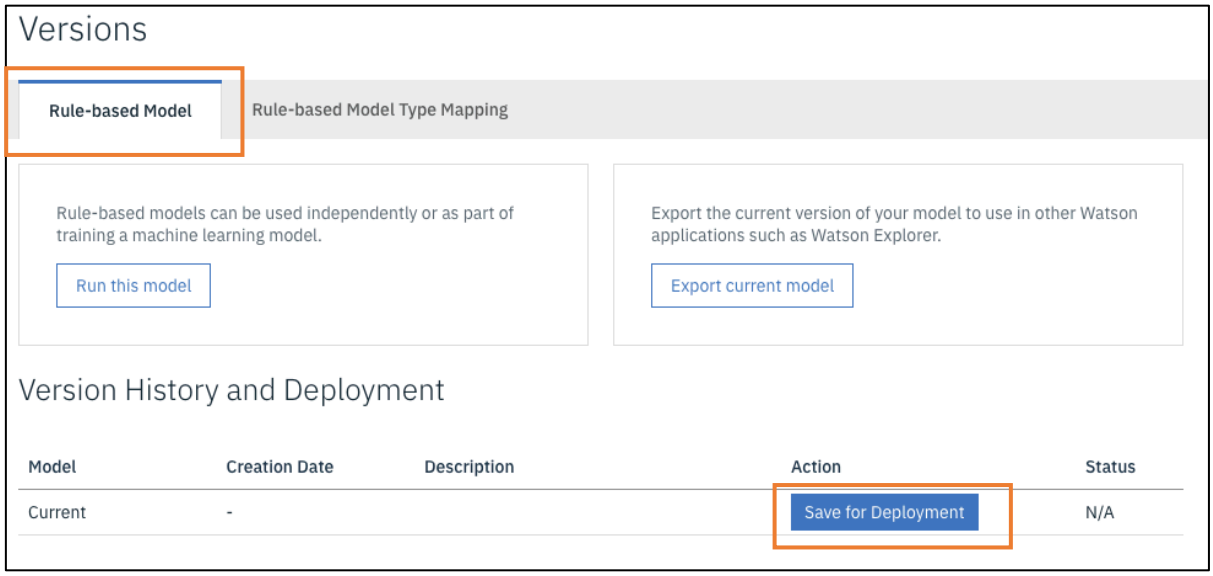
6. Repeat 3~5 above for "**Metric**", "**RevenueOfDivision**", "**AmountWithUnit**", and "**RevenueByDivision**". In the end, your screen should look like below.

Entity Type Name	Class Name	Actions
RevenueByDivision	RevenueByDivision	Edit
AmountWithUnit	AmountWithUnit	Edit
RevenueOfDivision	RevenueOfDivision	Edit
Metric	Metric	Edit
Division	Division	Edit

Note: These steps are necessary because the rule model will actually extract **Entity Types** not **Rule Classes**. Therefore, in the end your model outputs labels based on entity type names. In this lab, both are named the same and all rule class are extracted, but it is possible to choose and edit which rule labels to extract in the actual model.

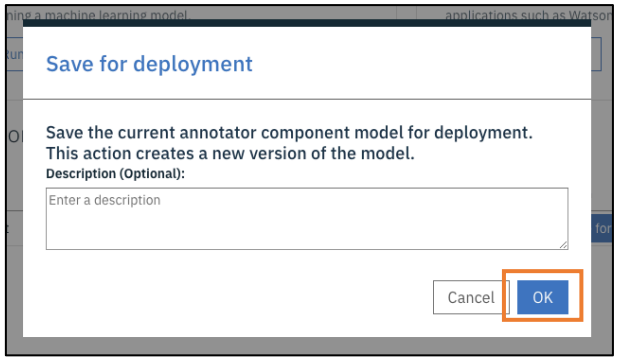
Step 3: Deploy model to NLU

1. Still in the same rule versions page, select **Rule-based Model** tab.

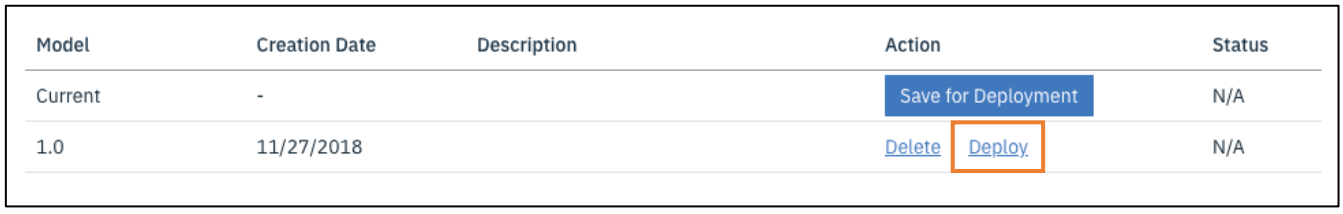


2. Click **Save for Deployment** button.

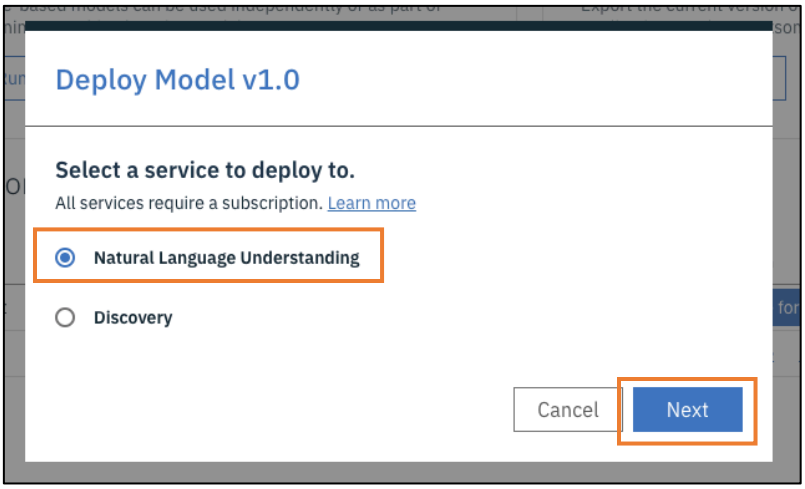
3. Click **OK** button. (Entering description is optional)



4. After saving is finished, click **Deploy** button.

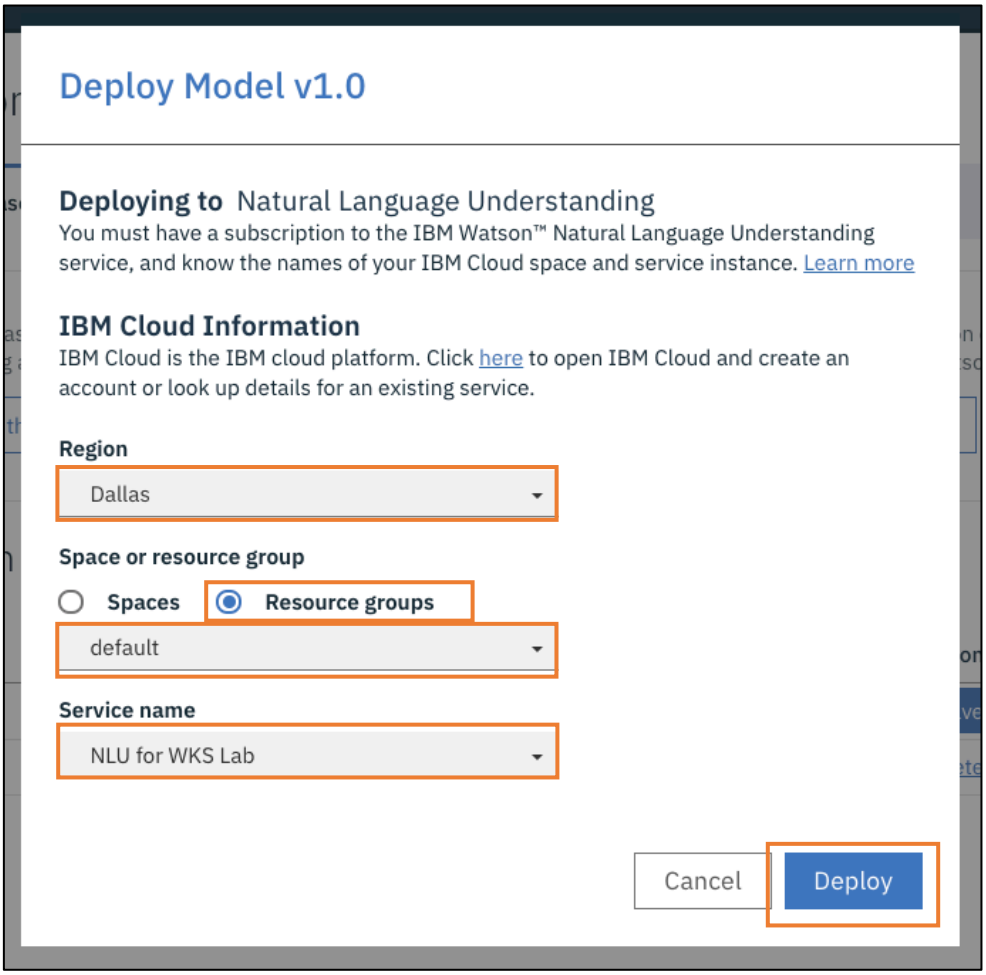


5. Select "**Natural Language Understanding**" and click **Next** button.

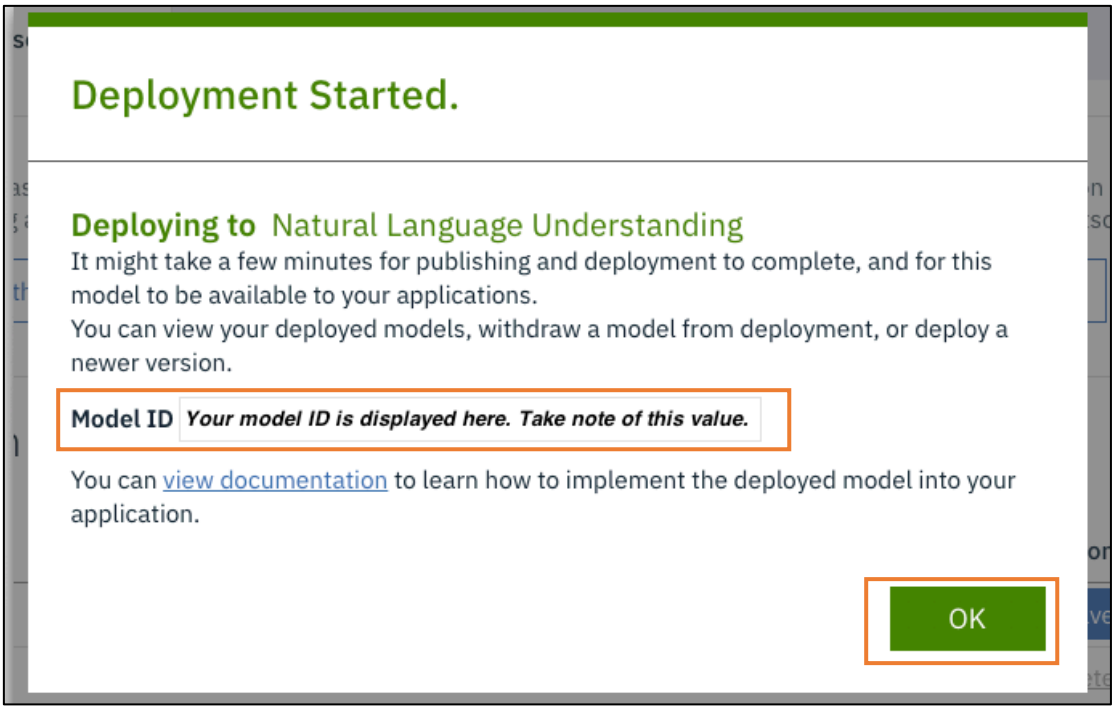


6. Select "**Dallas**" region, "**Resource groups**" radio button, "**default**" resource group of your account, and "**NLU for WKS Lab**" instance that you've created in **WKS-GettingAccess.pdf**

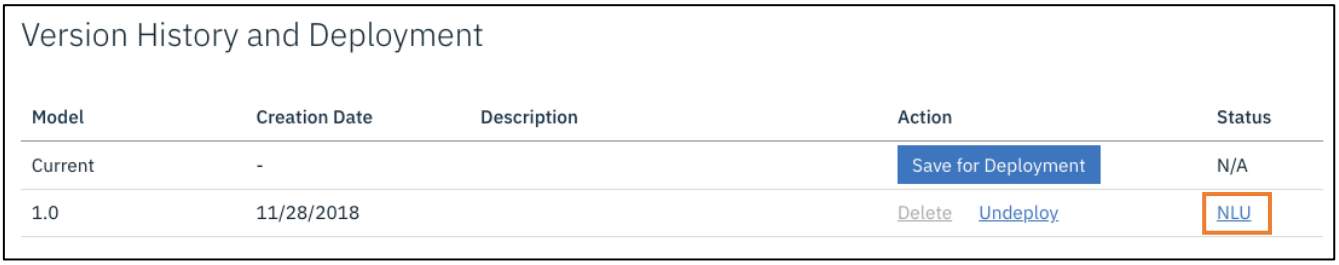
   Note: If you chose different region, resource group, or service name when you created NLU instance in **WKS-GettingAccess.pdf**, then replace the values as appropriate.



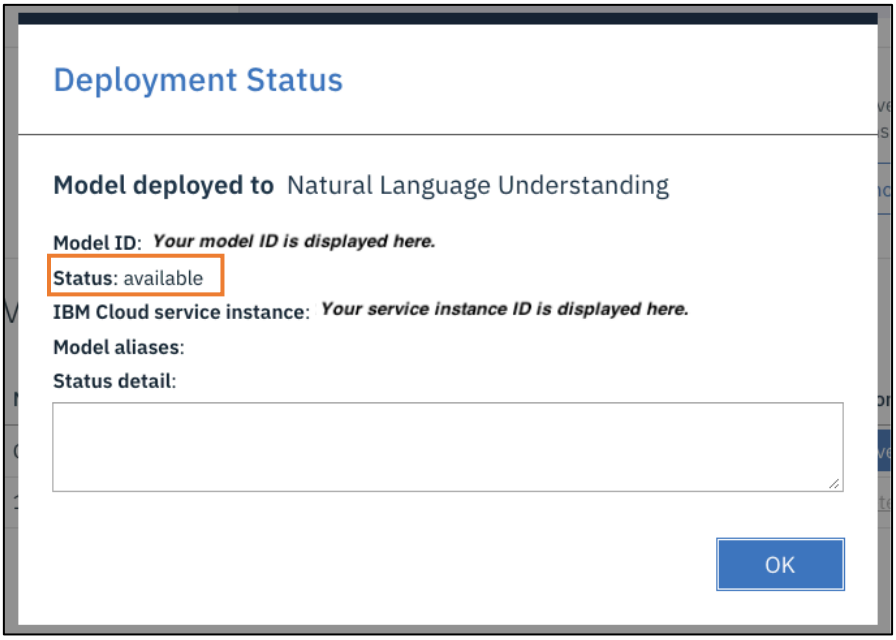
7. Click **Deploy** button. Wait for a while and you will see the deployment is started. Copy the **Model ID** displayed in the dialog. We will use this value in Step 13.



8. Click **OK** button to close the dialog. Status shows that the model is deployed to **NLU**.



9. Click **NLU** button to check the status of model. Verify the model status is **available**.



Step 4: Call NLU API

Now, let's try the Entity extraction feature with the sample text using the model that we've just created.

- **text** : "Revenues from the Software segment were $6.3 billion, an increase of 12 percent (6 percent, adjusting for currency) compared with the fourth quarter of 2006; pre-tax income increased 21 percent. Revenues from IBM's middleware products, which primarily include WebSphere, Information Management, Tivoli, Lotus and Rational products, were $5.0 billion, up 13 percent versus the fourth quarter of 2006. Operating systems revenues of $664 million increased 3 percent compared with the prior-year quarter."
- **features** : { "entities": { "model": "***your model ID***"} }

Note: model ID is the ID that we've copied from step 12.7.

Here is roughly what the sample curl command and its execution result should look like:

[Command]

```
curl -X POST -u "apikey:your API key" -H "Content-Type: application/json" -d '{  "text": "Revenue
from the Software segment were $6.3 billion, an increase of 12 percent (6 percent, adjusting for
currency) compared with the fourth quarter of 2006; pre-tax income increased 21 percent. Revenues
from IBM''s middleware products, which primarily include WebSphere, Information Management, Tivoli,
Lotus and Rational products, were $5.0 billion, up 13 percent versus the fourth quarter of 2006.
Operating systems revenues of $664 million increased 3 percent compared with the prior-year
quarter.",  "features": { "entities": { "model": "your model ID"} }}'
"https://gateway.watsonplatform.net/natural-language-understanding/api/v1/analyze?version=2018-03-19"
```

[Result]


```
{
  "usage": {
    "text_units": 1,
    "text_characters": 500,
    "features": 1
  },
  "language": "en",
  "entities": [
    {
      "type": "Metric",
      "text": "Revenue",
      "count": 1
    },
    {
      "type": "AmountWithUnit",
      "text": "$5.0 billion",
      "count": 1
    },
    {
      "type": "Metric",
      "text": "revenues",
      "count": 1
    },
    {
      "type": "AmountWithUnit",
      "text": "$6.3 billion",
      "count": 1
    },
    {
      "type": "RevenueOfDivision",
      "text": "Revenue from the Software segment",
      "count": 1
    },
    {
```

```
      "type": "Division",
      "text": "Software",
      "count": 1
    },
    {
      "type": "Metric",
      "text": "Revenues",
      "count": 1
    },
    {
      "type": "RevenueByDivision",
      "text": "Revenue from the Software segment were $6.3 billion",
      "count": 1
    }
  ]
}
```


Entities are now extracted based on the rule we've created. You can try other texts by replacing the value in the text field.