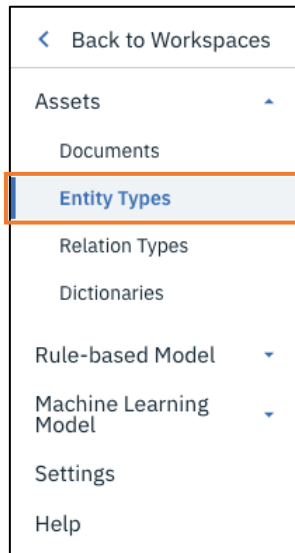


WKS Rule Lab Appendix – Deploying to NLU

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.

The screenshot shows the 'Add Entity Type' form. It has a table with columns: 'Entity Type Name', 'Roles', 'Subtypes', and 'Action'. The first row has a checked checkbox, the name 'Division' (highlighted with an orange box), a role dropdown set to 'Select a role', and a 'Subtypes' field with 'Enter a subtype' and an 'Add' button. The 'Action' column has 'Cancel' and 'Save' buttons (the 'Save' button is highlighted with an orange box). Below the table, it says 'Division (This type)'.

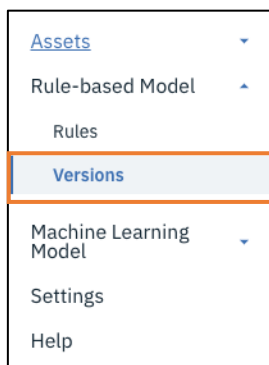
3. Repeat Step 2 for “**Metric**”, “**RevenueOfDivision**”, “**AmountWithUnit**”, and “**RevenueByDivision**”. In the end, your screen should look like below.

The screenshot shows the 'Entity Types' page. At the top, there are tabs for 'Entity Types' (5), 'Mention Classes', and 'Mention Types'. Below the tabs are buttons for 'Add Entity Type', 'Upload', and 'Download Types'. A search bar says 'Enter text to filter'. Below is a table with columns: 'Entity Type Name', 'Roles', 'Subtypes', and 'Action'.

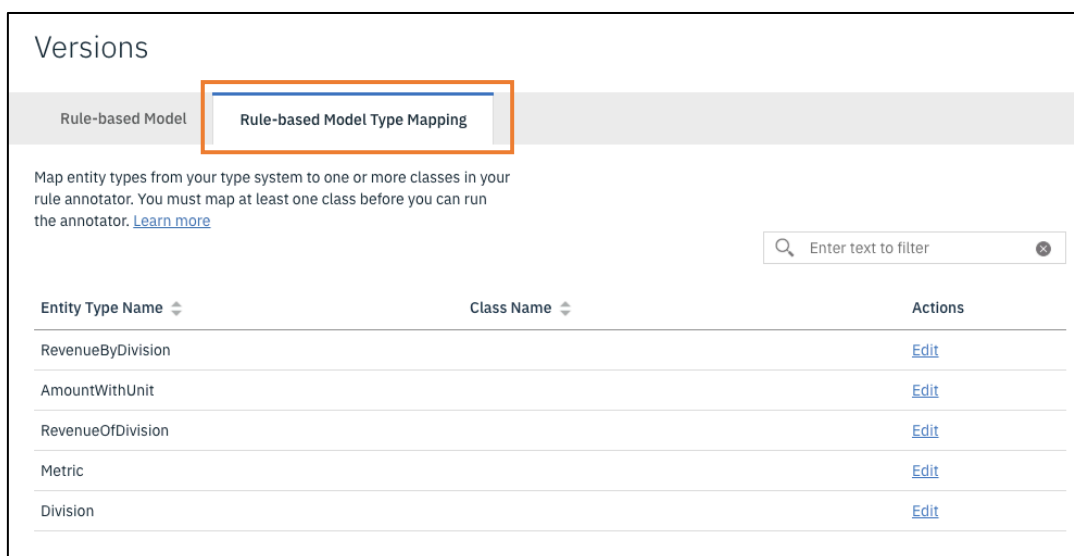
<input type="checkbox"/>	Entity Type Name	Roles	Subtypes	Action
<input checked="" type="checkbox"/>	RevenueByDivision	RevenueByDivision		Edit Delete
<input type="checkbox"/>	AmountWithUnit	AmountWithUnit		Edit Delete
<input type="checkbox"/>	RevenueOfDivision	RevenueOfDivision		Edit Delete
<input type="checkbox"/>	Metric	Metric		Edit Delete
<input type="checkbox"/>	Division	Division		Edit Delete

Step 2: Create entity type / rule class mapping

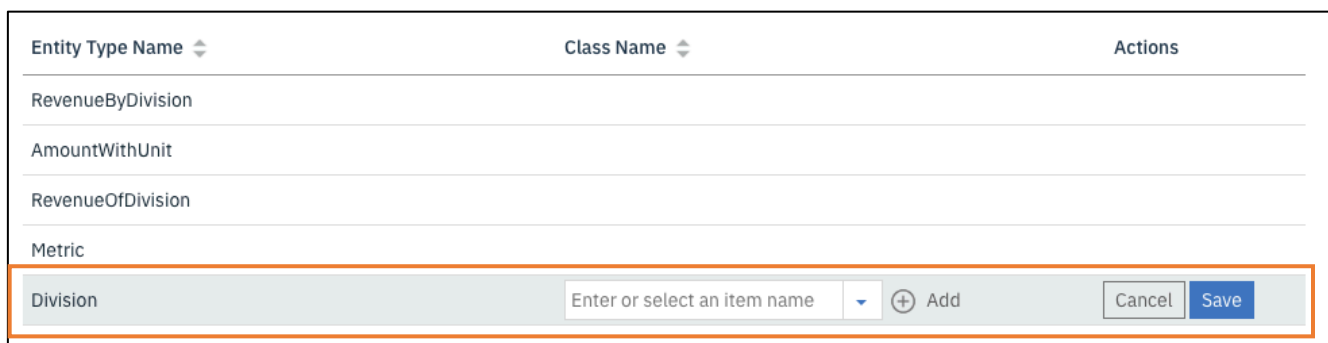
1. Select [Rule-based Model] – [Versions] in left navigation pane to open Rules versions page.



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.

Division

Enter or select an item name

+

Add

Cancel
Save

AmountWithUnit

Division

Metric
RevenueByDivision
RevenueOfDivision

5. Click **Save** button

Division

Enter or select an item name

+

Add

Cancel

Save

Division

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.

Versions

Rule-based Model Rule-based Model Type Mapping

Rule-based models can be used independently or as part of training a machine learning model.

[Run this model](#)

Export the current version of your model to use in other Watson applications such as Watson Explorer.

[Export current model](#)

Version History and Deployment

Model	Creation Date	Description	Action	Status
Current	-		Save for Deployment	N/A

2. Click **Save for Deployment** button.
3. Click **OK** button. (Entering description is optional)

Save for deployment

Save the current annotator component model for deployment. This action creates a new version of the model.

Description (Optional):

Enter a description

[Cancel](#) [OK](#)

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

Model	Creation Date	Description	Action	Status
Current	-		Save for Deployment	N/A
1.0	11/27/2018		Delete Deploy	N/A

5. Select “**Natural Language Understanding**” and click **Next** button.

Deploy Model v1.0

Select a service to deploy to.

All services require a subscription. [Learn more](#)

☒ Natural Language Understanding

☐ Discovery

Cancel Next

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.

Deploy Model v1.0

Deploying to Natural Language Understanding

You must have a subscription to the IBM Watson™ Natural Language Understanding service, and know the names of your IBM Cloud space and service instance. [Learn more](#)

IBM Cloud Information

IBM Cloud is the IBM cloud platform. Click [here](#) to open IBM Cloud and create an account or look up details for an existing service.

Region

Dallas

Space or resource group

☐ Spaces ☒ Resource groups

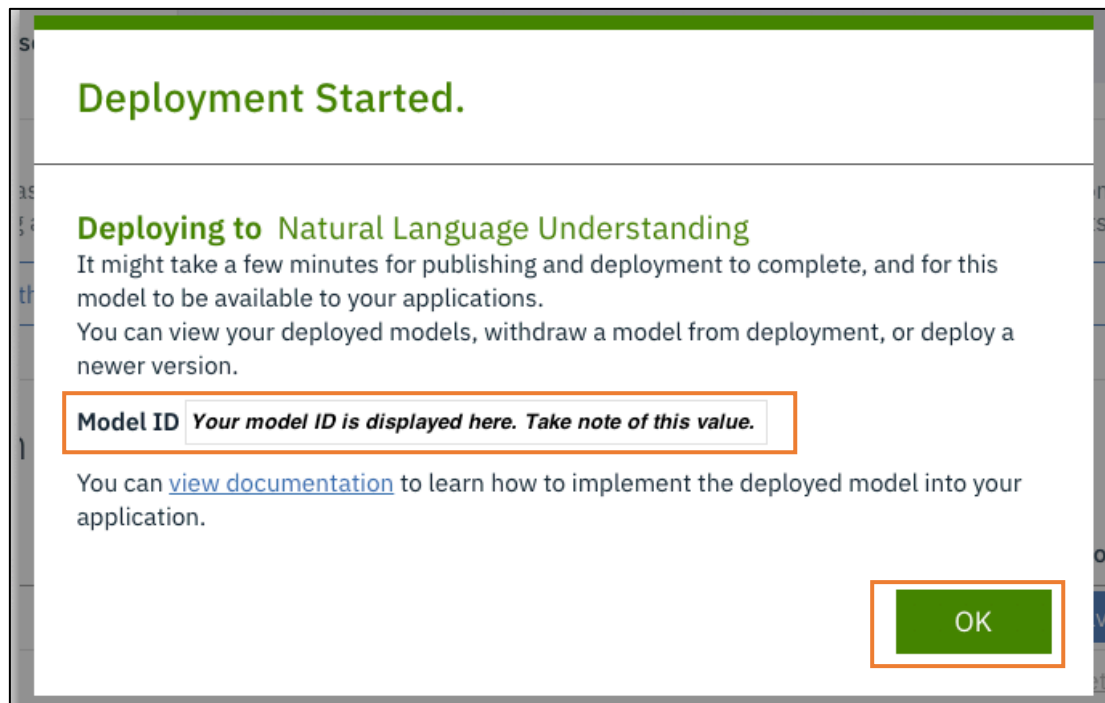
default

Service name

NLU for WKS Lab

Cancel Deploy

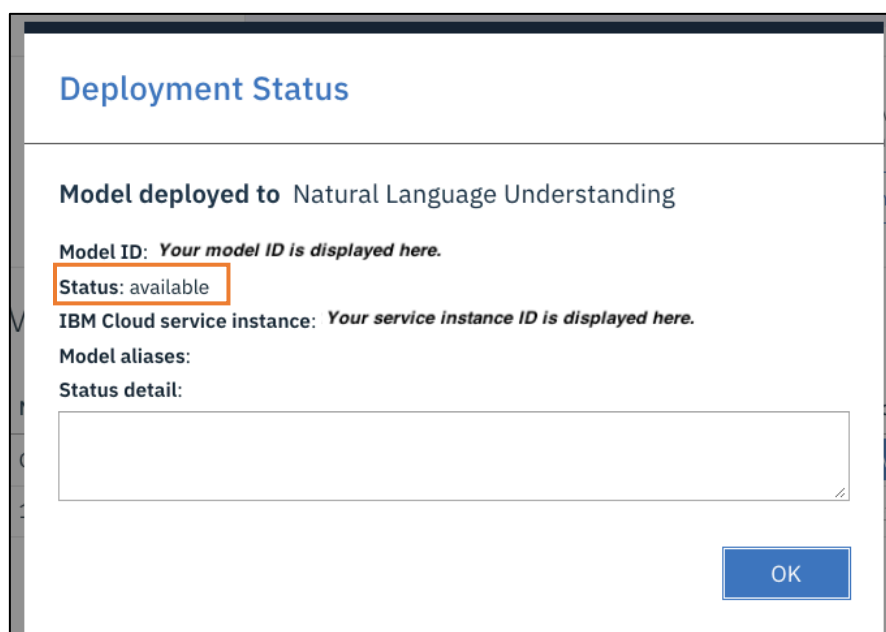
7. Click **Deploy** button. Wait for a while and you will see the deployment is started. Copy the **Model ID** displayed in the dialog. We will use this value in Step 13.



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

Version History and Deployment				
Model	Creation Date	Description	Action	Status
Current	-		Save for Deployment	N/A
1.0	11/28/2018		Delete Undeploy	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.