OpenShift Commons

What's the deal with Managed Services & Model Delivery?

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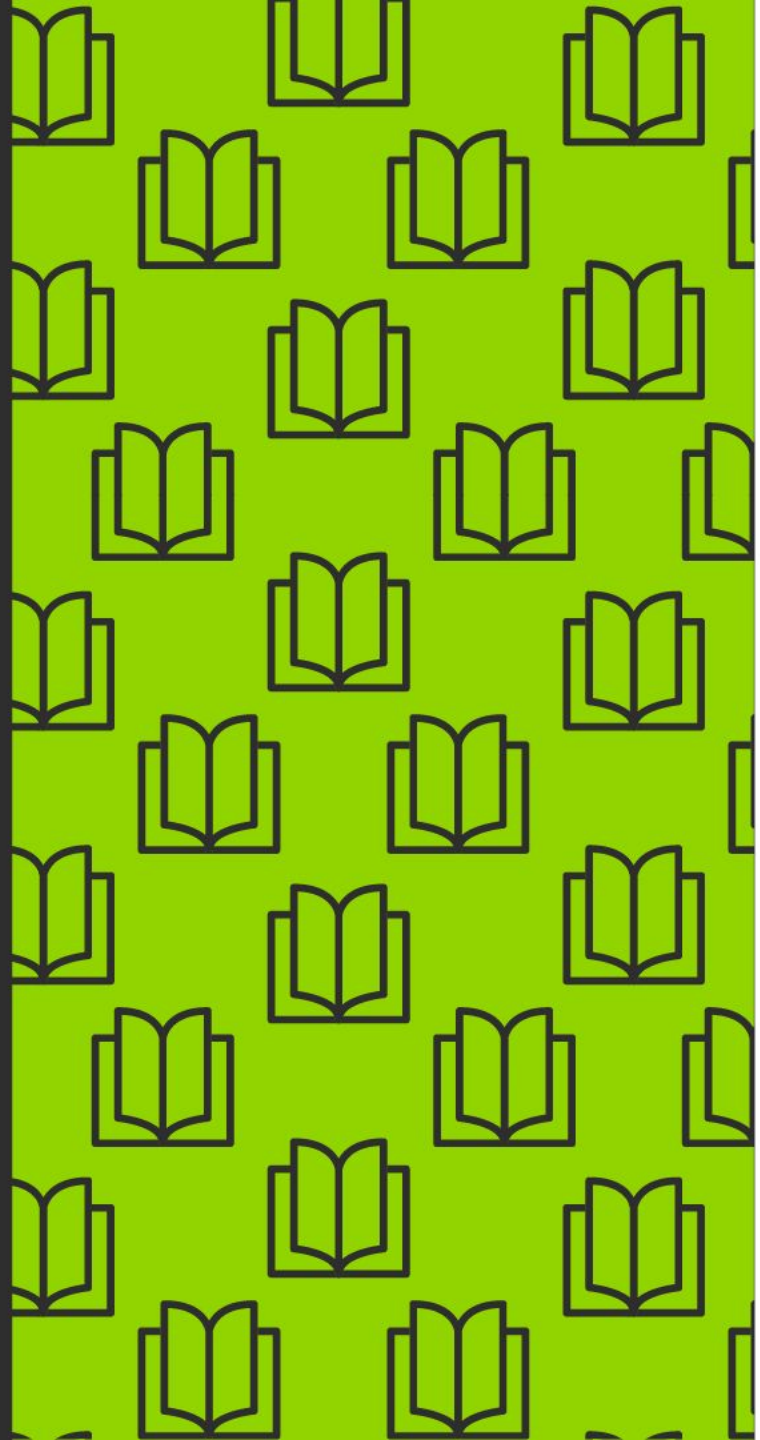
What we'll discuss today

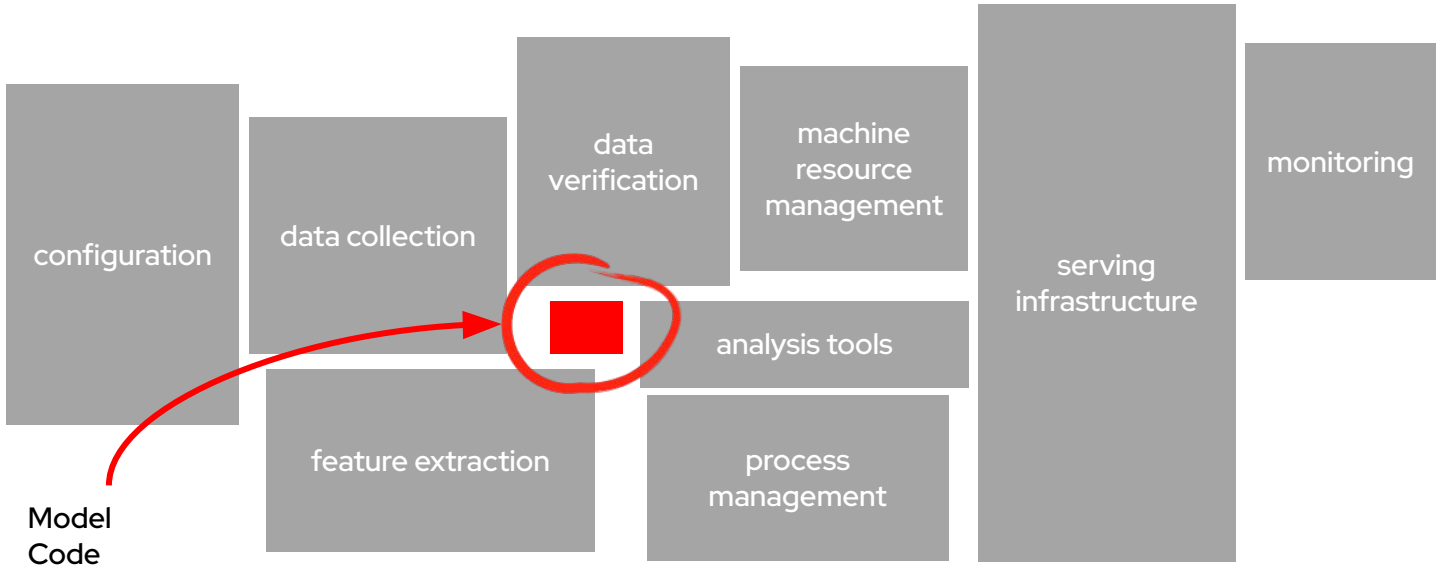
- A Model's role in an Intelligent Application
- What are Managed Services?
  - Who uses Managed Services? Hint… not only Data Scientists
- What do Managed Services have to do with Model Delivery?
- Where do I find Managed Services?
- Demo of using Red Hat OpenShift Data Science platform and it's Managed Services.



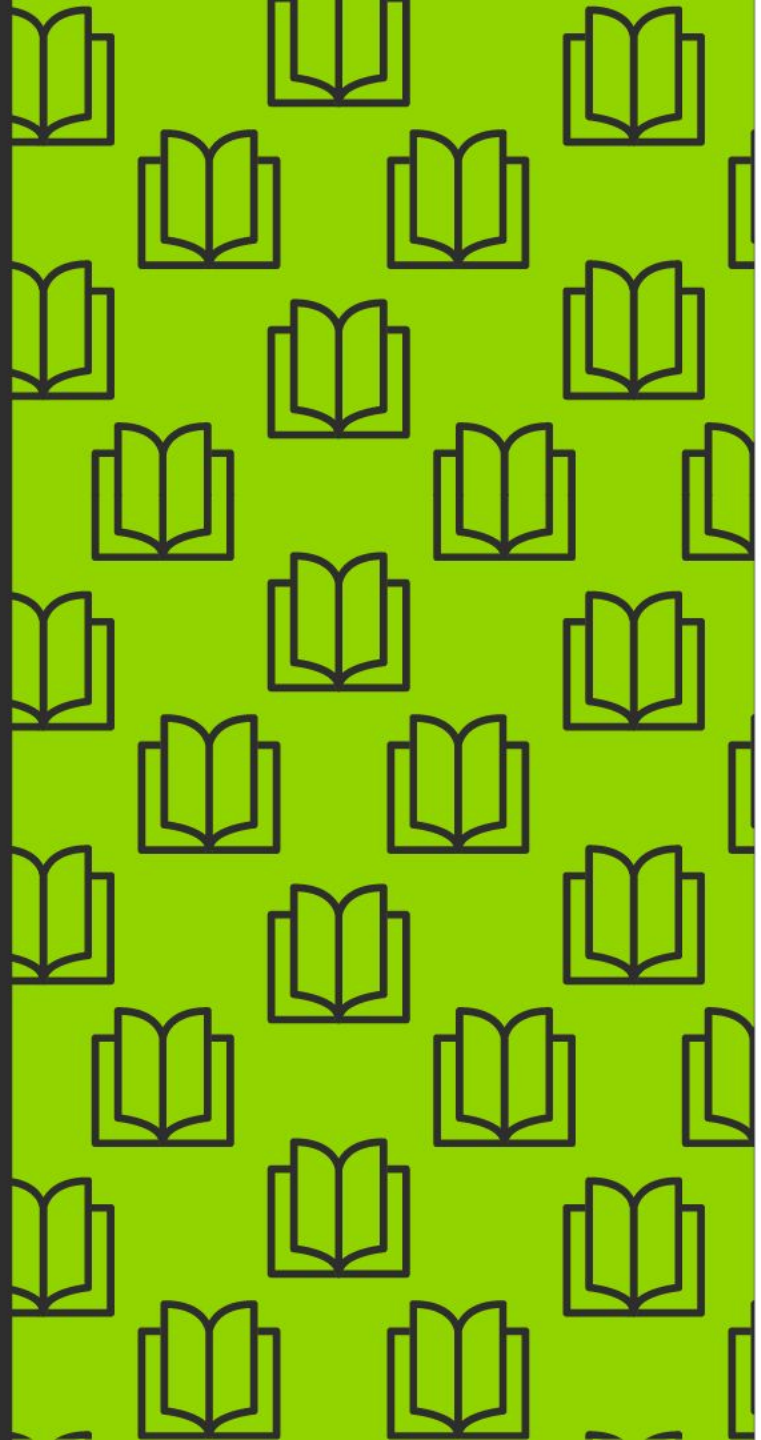
A Model's role in an Intelligent Application

A Model's role in Intelligent Applications

The model is a tiny but essential part ...



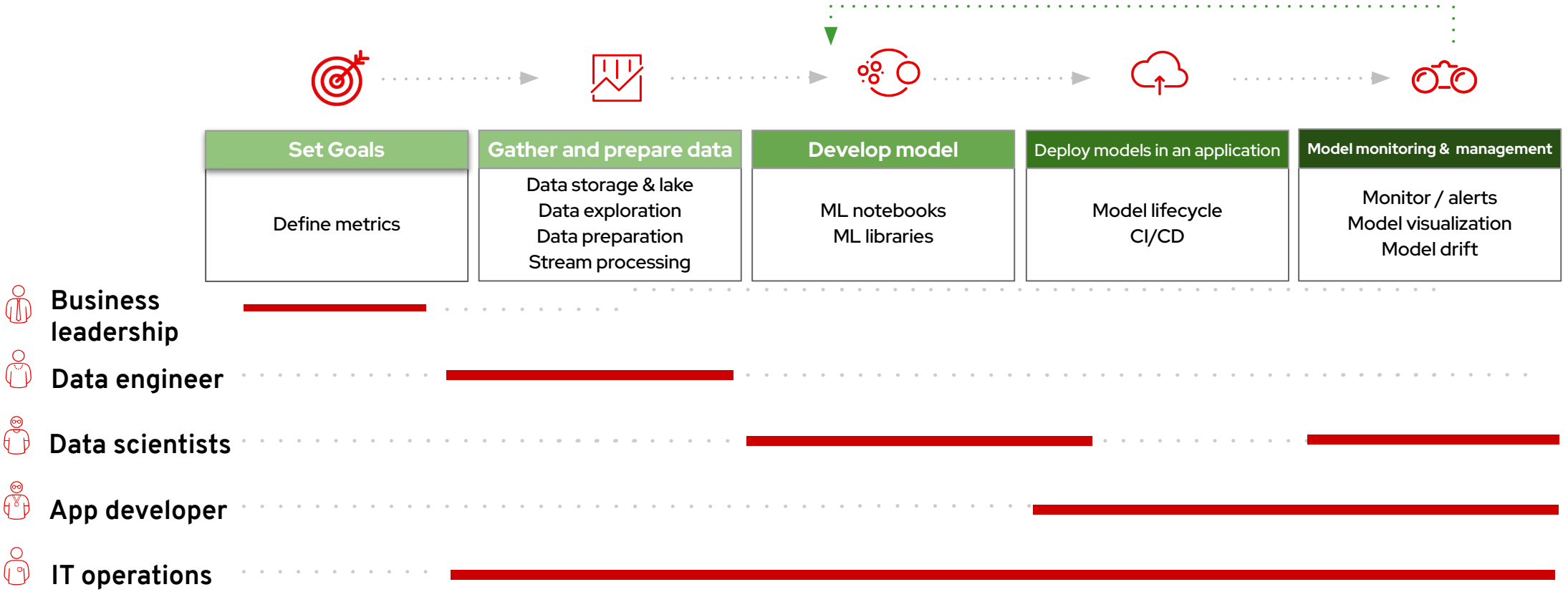
Source:
Adapted from Sculley et al, "Hidden Technical Debt in Machine Learning Systems", NIPS 2015

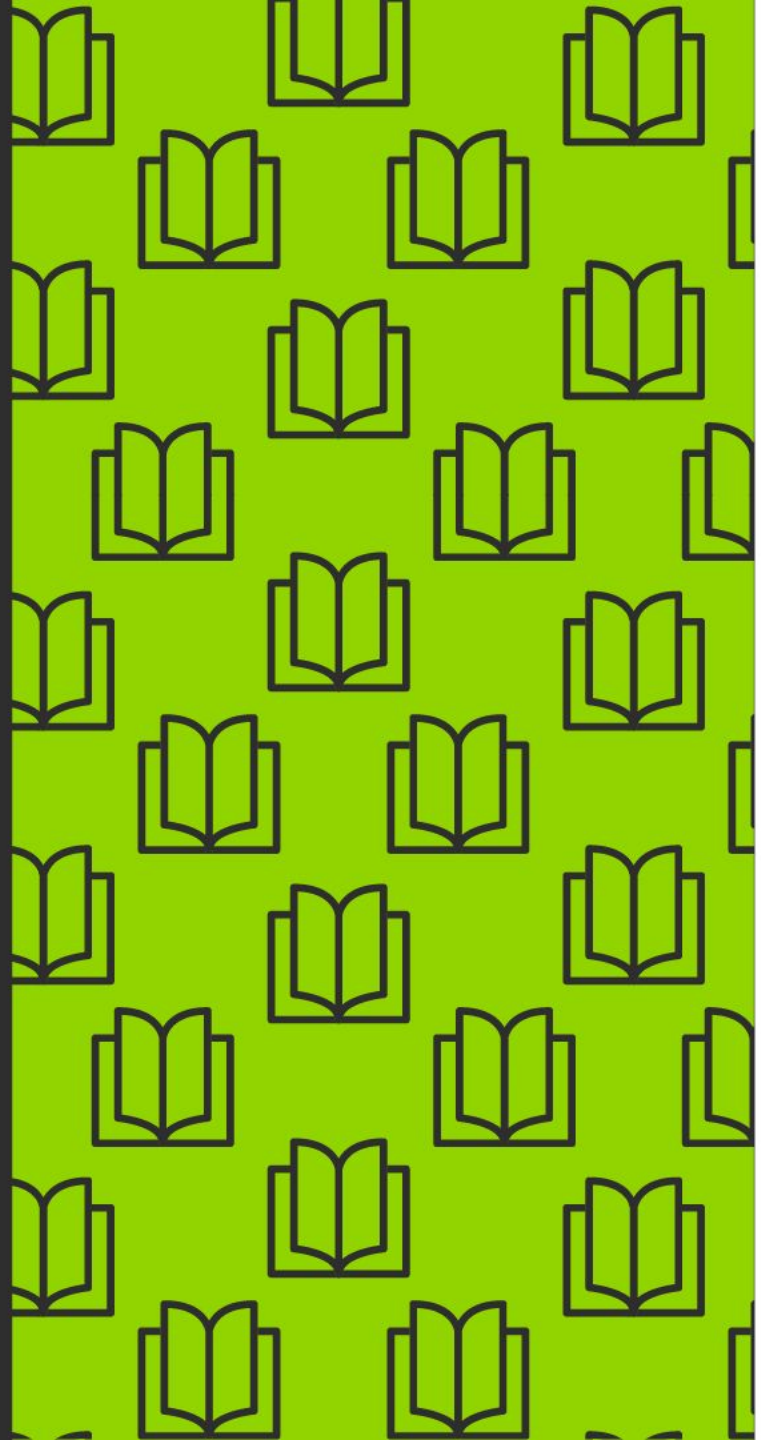


What are Managed Services ... and who uses them?

Red Hat OpenShift

Managed Services (and Personas) for a Model Lifecycle

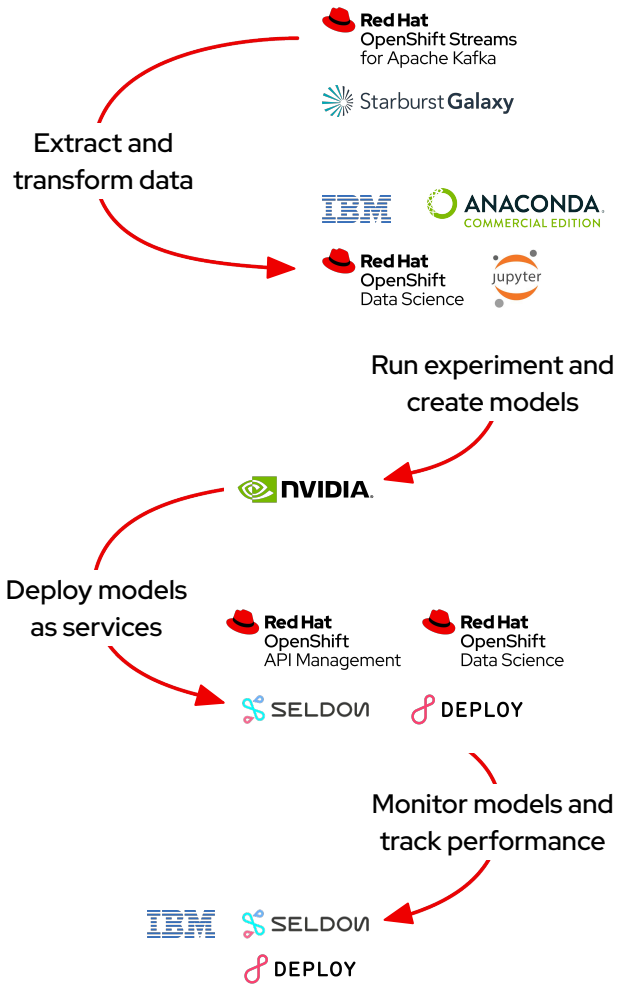




What do Managed Services have to do with Model Delivery?

Red Hat OpenShift

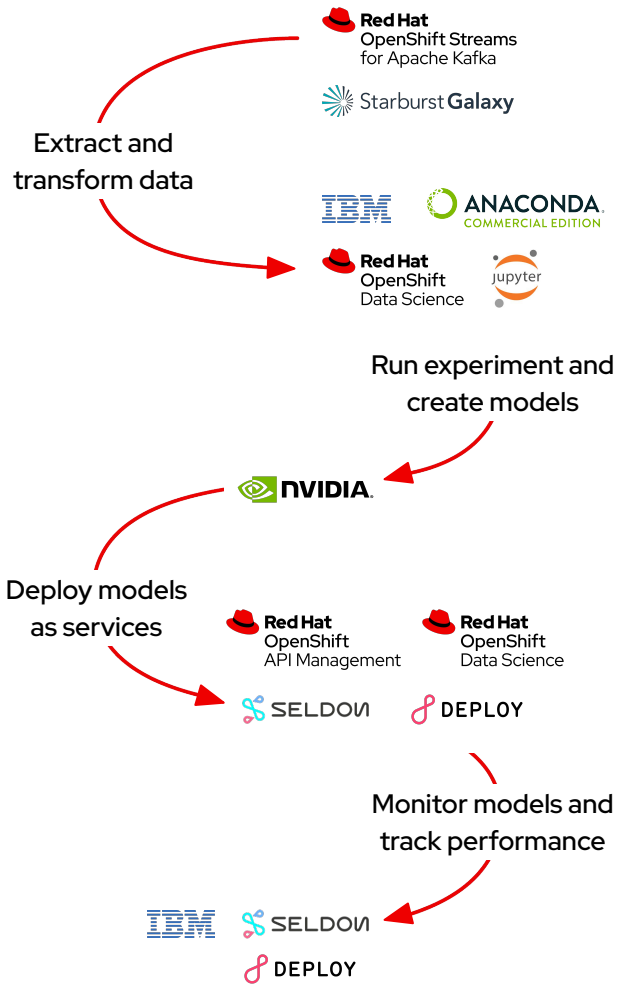
Supporting the model (operationalization) life cycle



Extract & Transform the Data - Starburst Galaxy

Unlock the value of your data by making it fast and easy to access data across hybrid cloud.

Supporting the model (operationalization) life cycle



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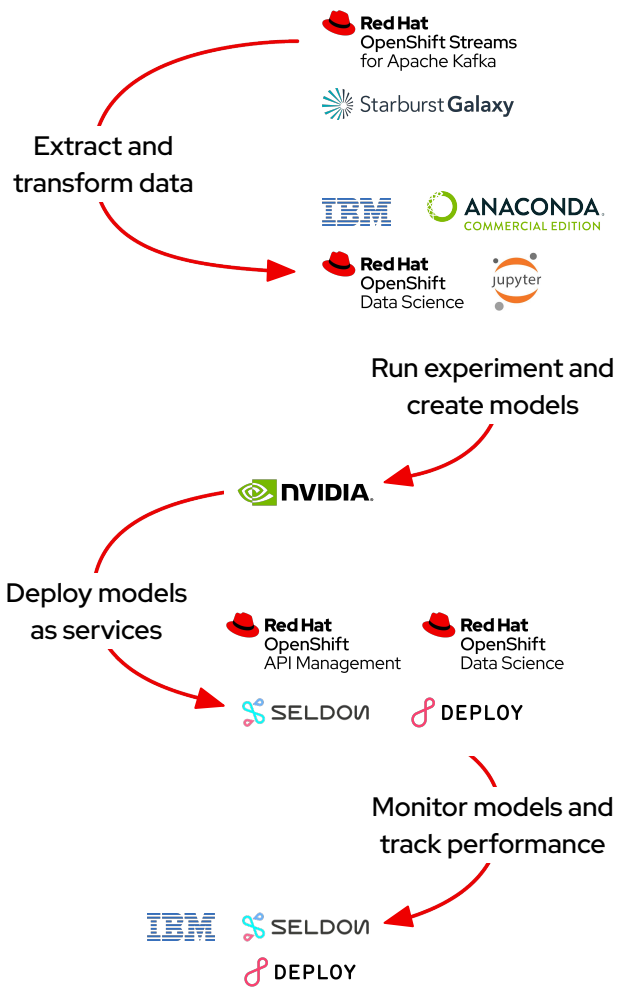
Create Models - Anaconda Commercial Edition

Curated access to an extensive set of data science packages to be used in your Jupyter projects.

Supporting the model (operationalization) life cycle



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Run Experiments - IBM Watson Studio

Build, run, and manage AI models at scale with Watson Machine Learning and Watson OpenScale.

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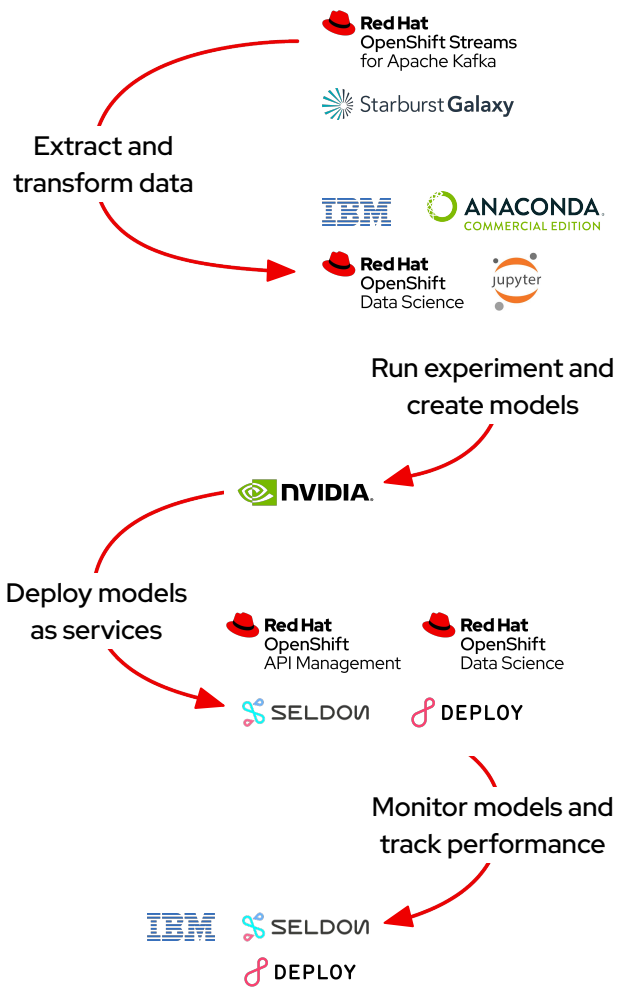

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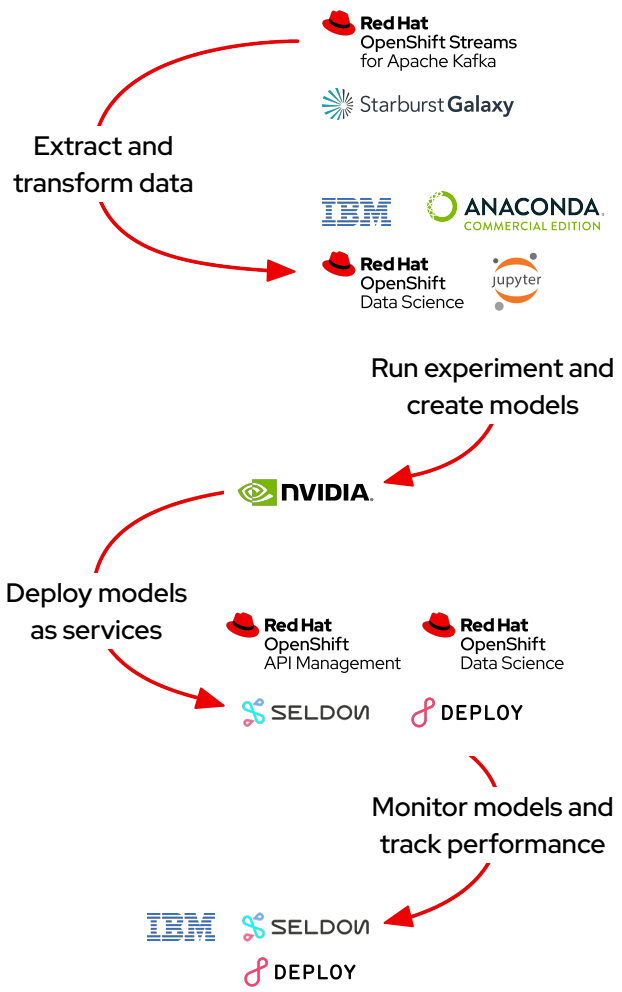
Deploy models as services - Seldon Deploy

Simplify and accelerate the process of deploying and managing your machine learning models.

Supporting the model (operationalization) life cycle



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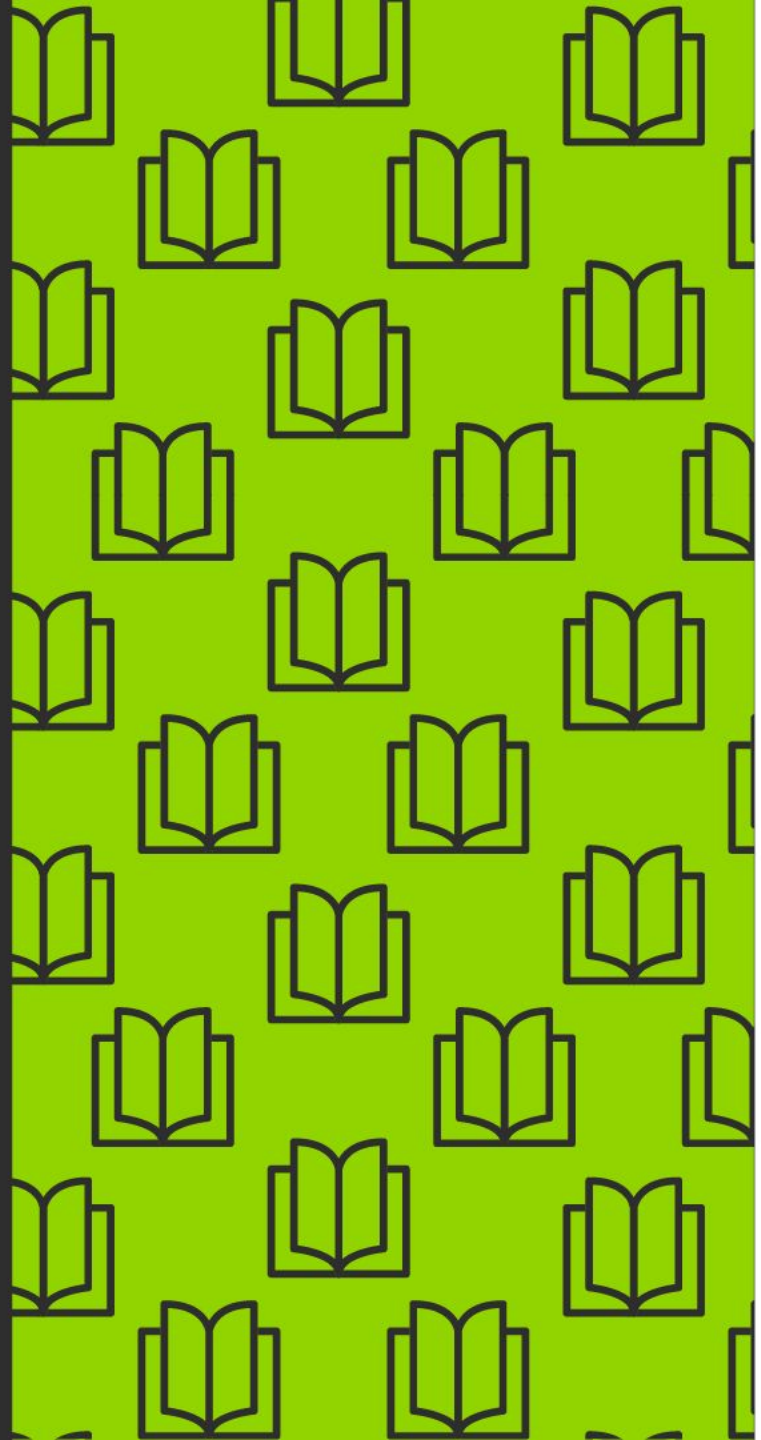
Simplify and accelerate the process of deploying and managing your machine learning models.

Monitor models & track performance - Seldon Deploy

Monitor model performance and gleam meaningful analytics from the model



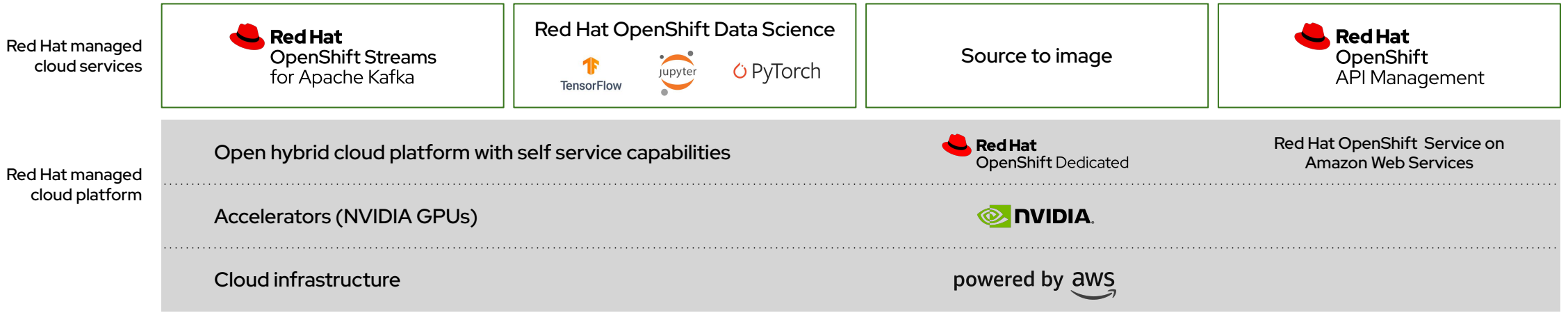
Where can I find Managed Services?

Red Hat OpenShift

Red Hat Managed Cloud Services

Red Hat managed cloud platform	Open hybrid cloud platform with self service capabilities	Red Hat OpenShift Dedicated	Red Hat OpenShift Service on Amazon Web Services
	Accelerators (NVIDIA GPUs)	NVIDIA	
	Cloud infrastructure	powered by aws	

Red Hat Managed Cloud Services



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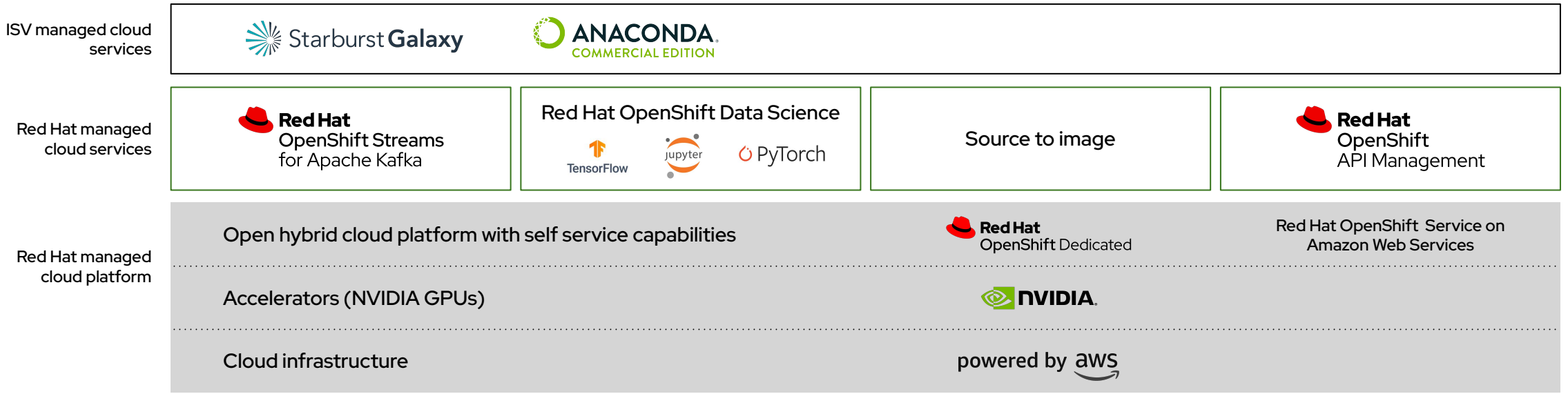
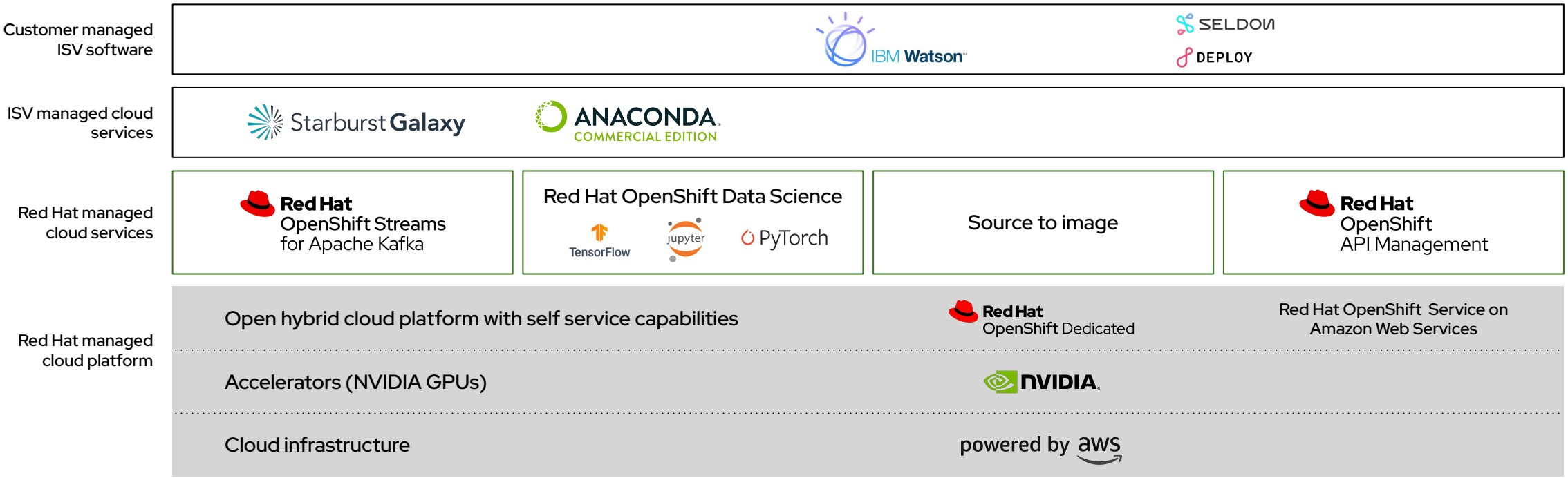
Red Hat OpenShift

Red Hat Managed Cloud Services



Red Hat Managed Cloud Services



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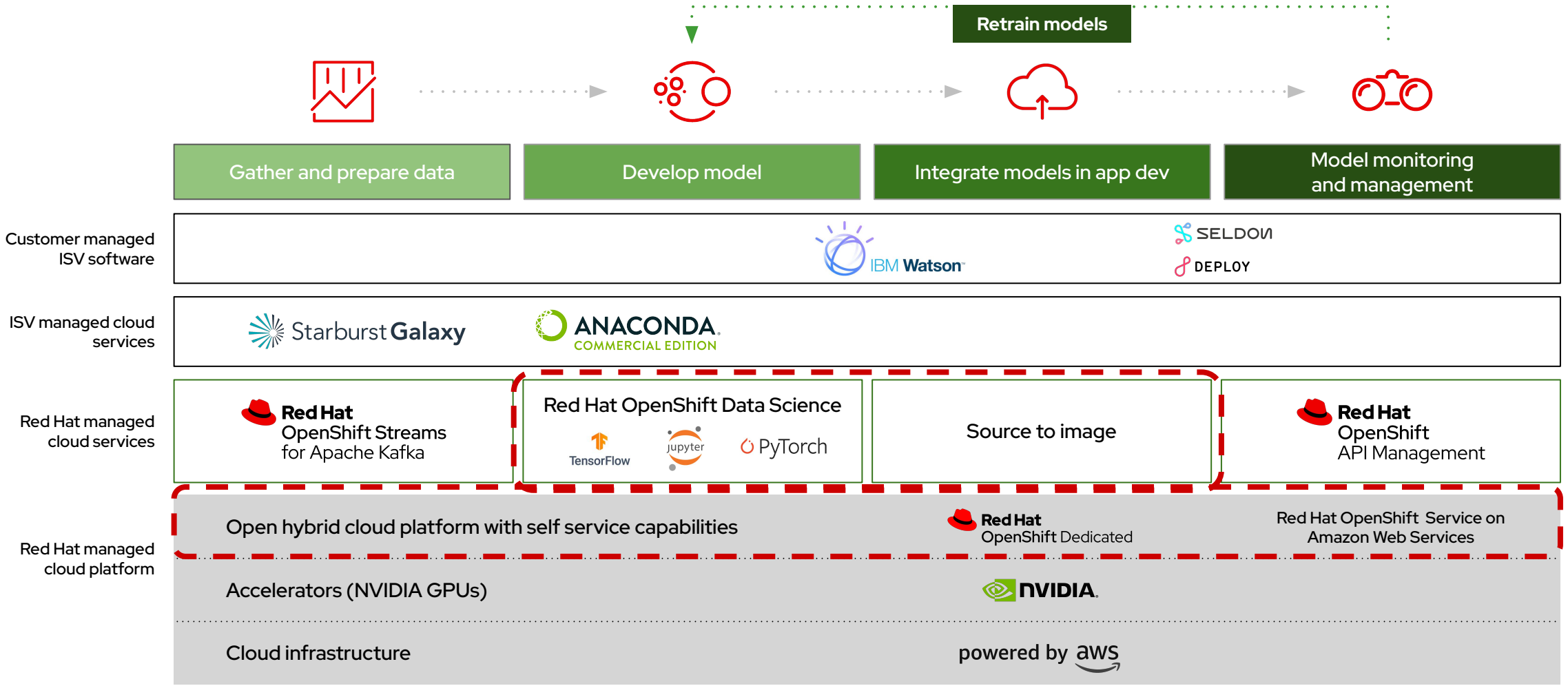
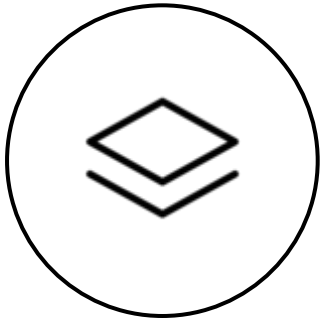
Red Hat Managed Cloud Services



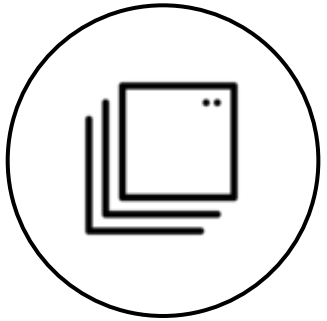
Depth and scale without lock-in

Capabilities delivered through the combination of Red Hat and partner ecosystem



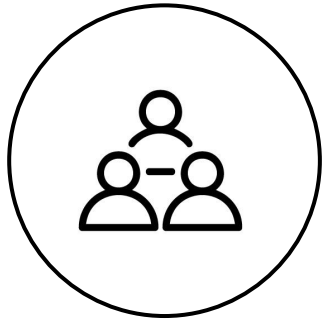
Managed cloud platform

Deployed on Red Hat OpenShift and managed on Amazon Web Services providing access to compute and accelerators based on your workload



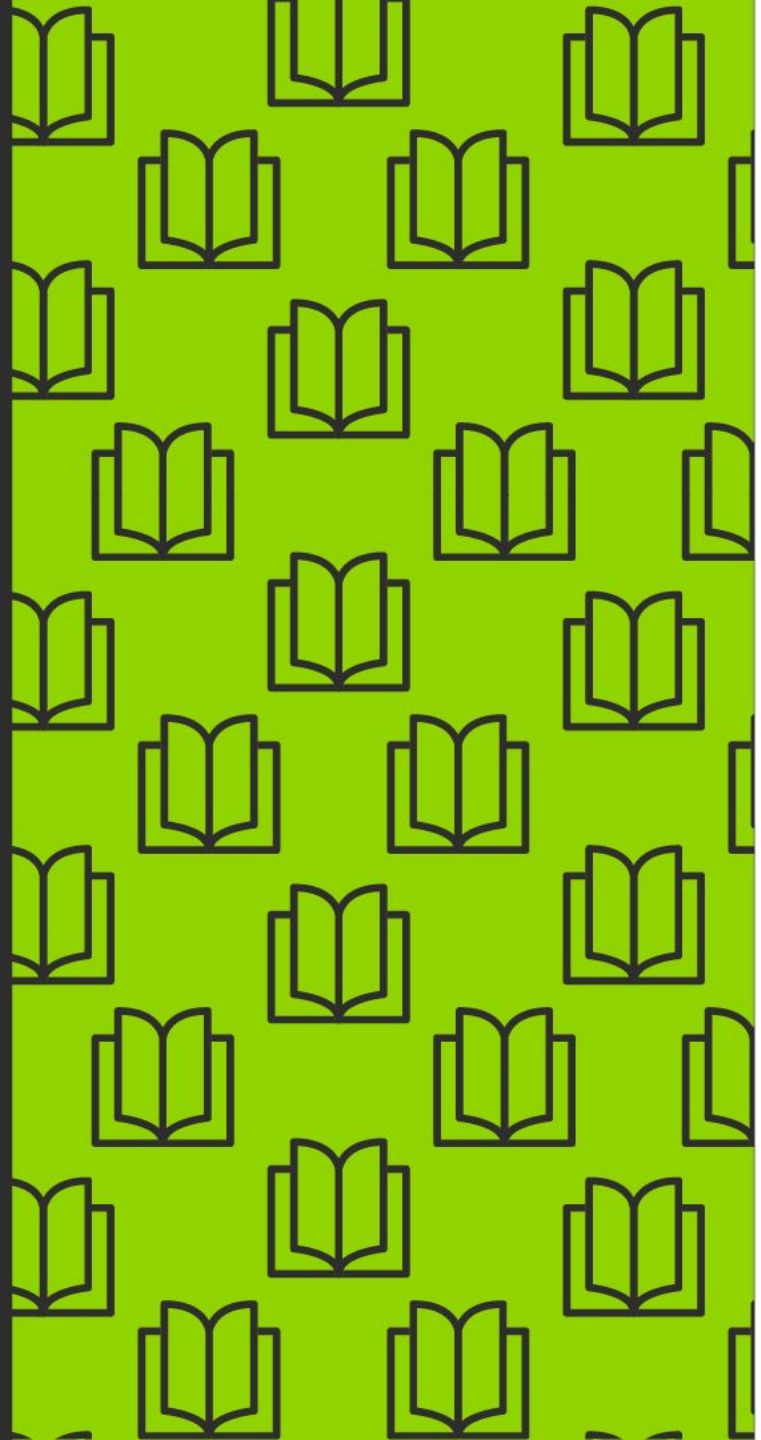
Red Hat portfolio and services

Complement common data science tools in Red Hat OpenShift Data Science with other Red Hat products and cloud services



Partner ecosystem

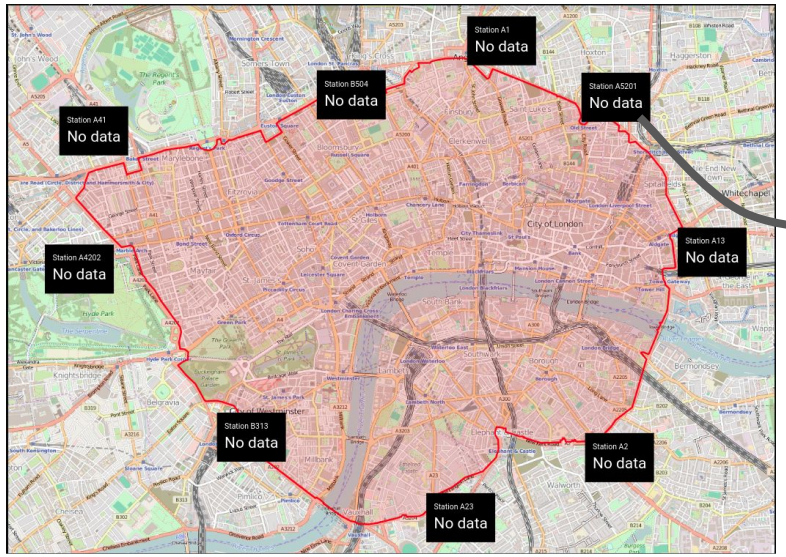
Access specialized capabilities by adding certified ISV ecosystem products and services from Red Hat Marketplace



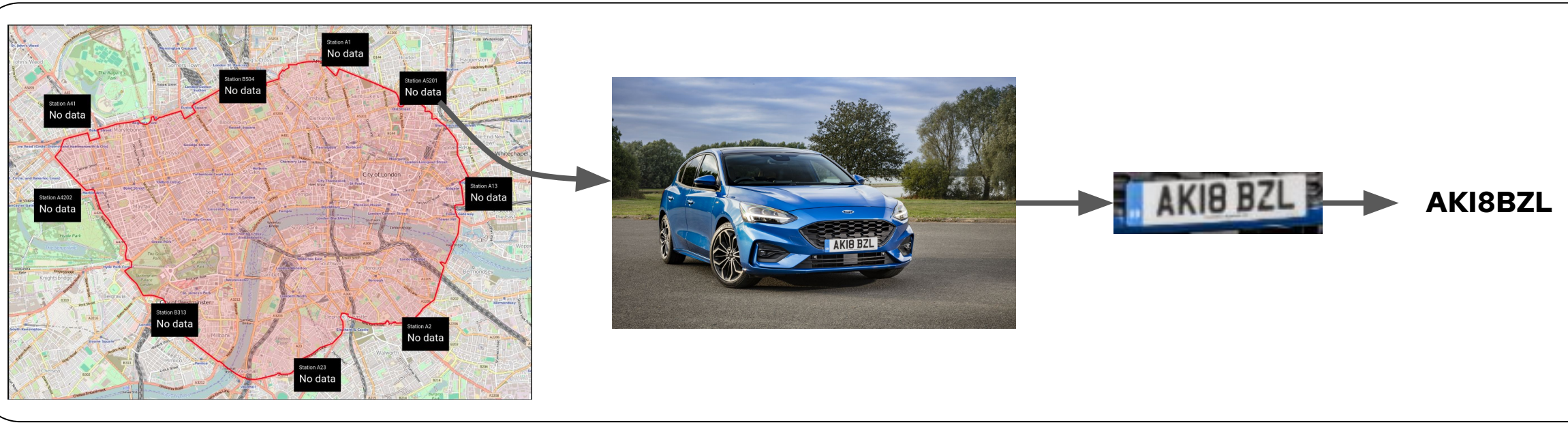
Demo - Red Hat OpenShift Data Science platform & its Managed Services

Red Hat OpenShift

License Plate Detection



License Plate Detection



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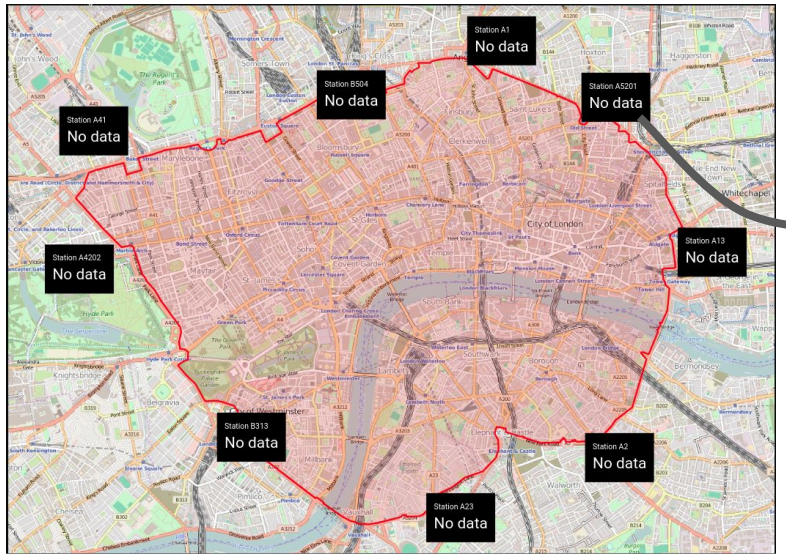

AKI8BZL

Kafka

MirrorMaker

Kafka

AMBER ALERT

Red Hat OpenShift

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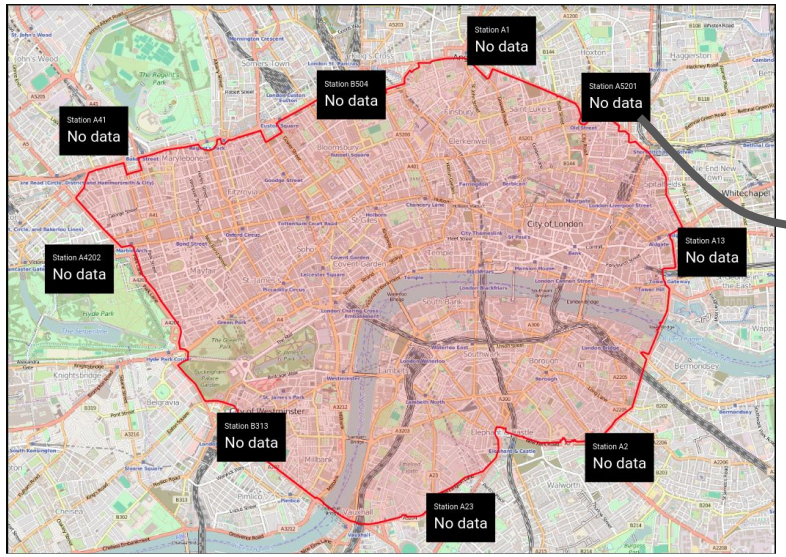

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LPR Event Consumer

Object Data Warehouse

Vehicle Registration DB

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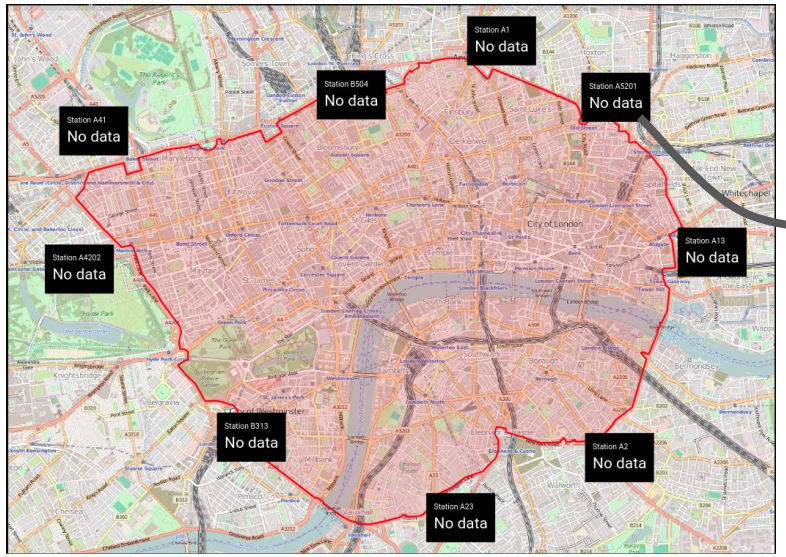

AKI8BZL

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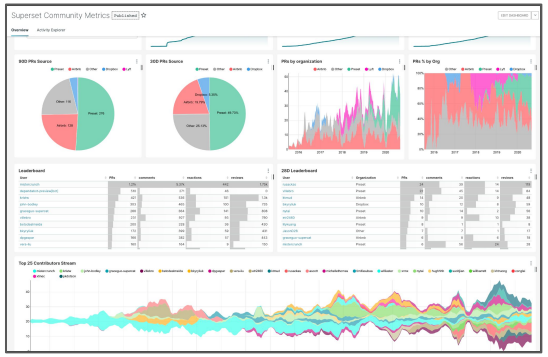
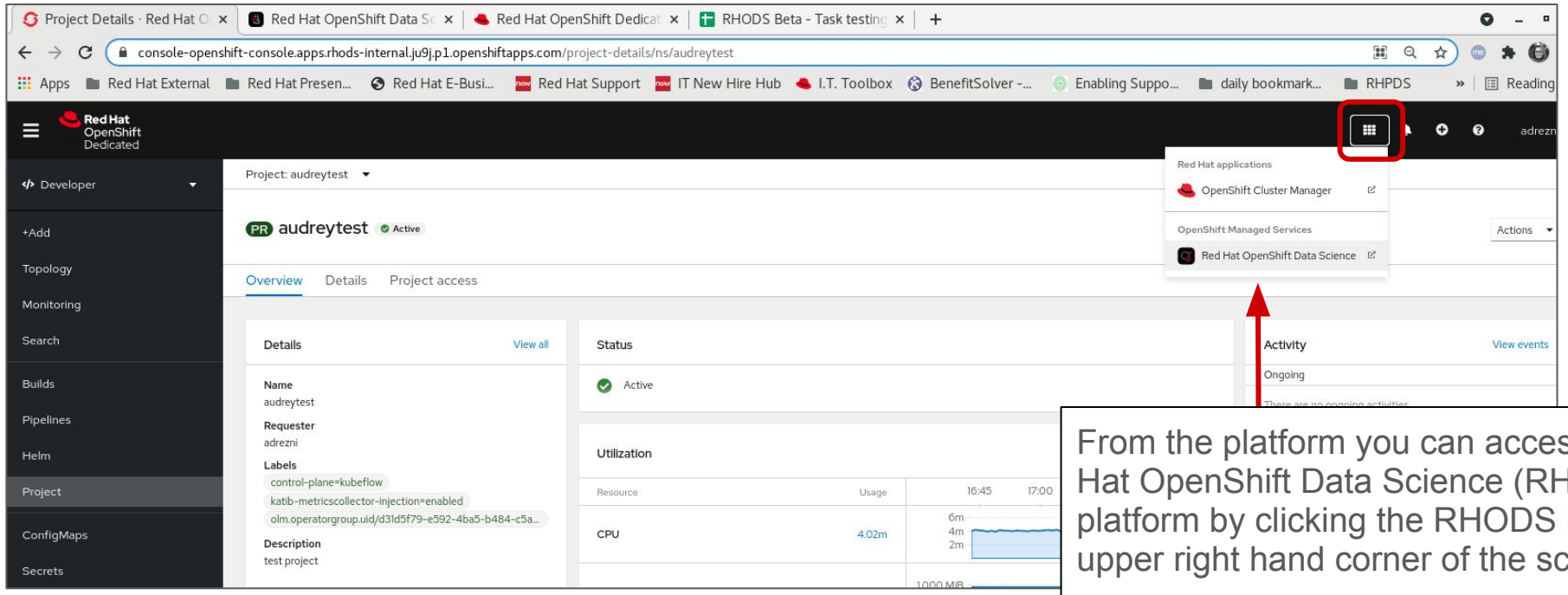
BI + Analytics Tools



AMBER ALERT

Red Hat OpenShift

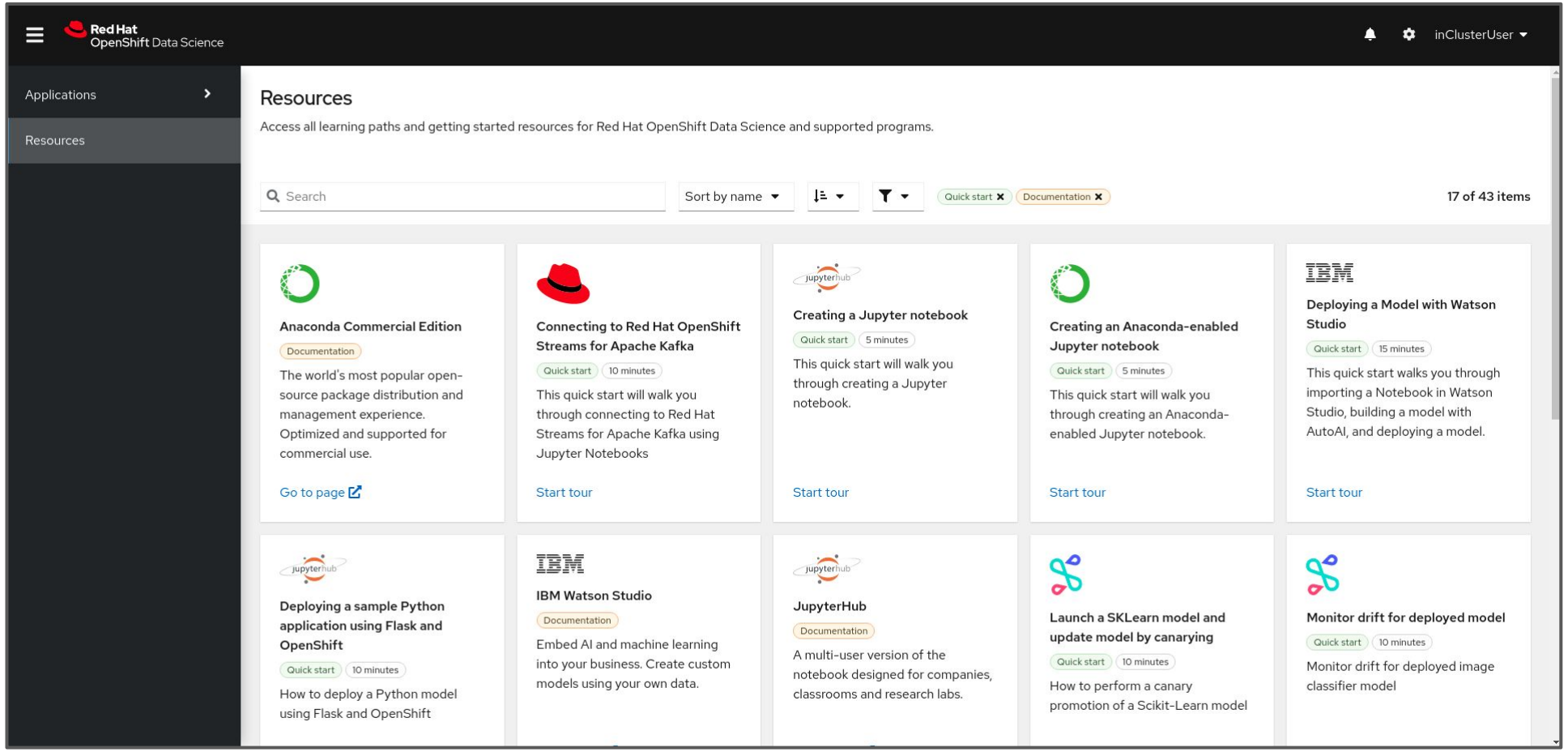
Log into the Red Hat OpenShift Dedicated platform



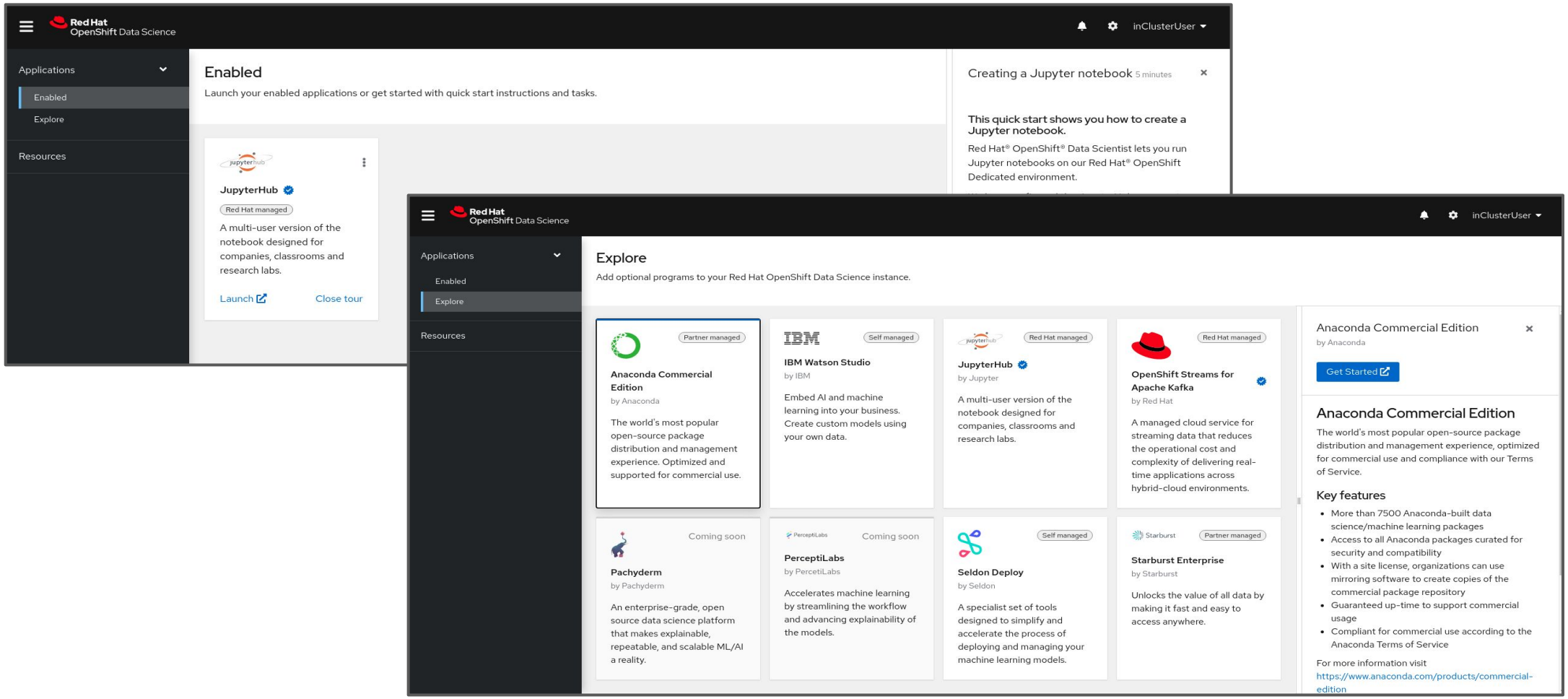
From the platform you can access your Red Hat OpenShift Data Science (RHODS) platform by clicking the RHODS icon in the upper right hand corner of the screen.

Click the “Red Hat OpenShift Data Science” menu option that appears.

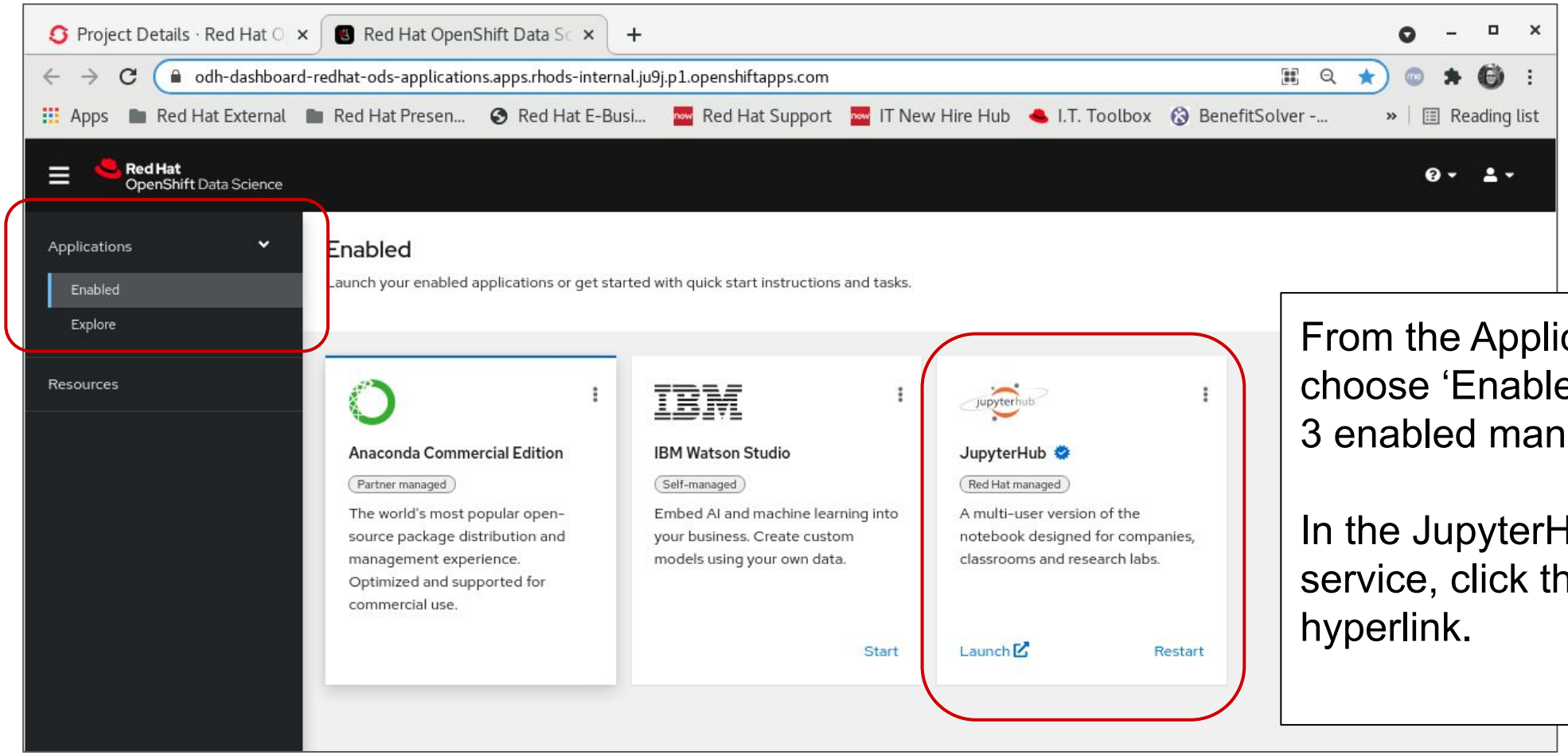
Red Hat OpenShift Data Science Managed Services



Red Hat OpenShift Data Science - Dashboard (user interface)



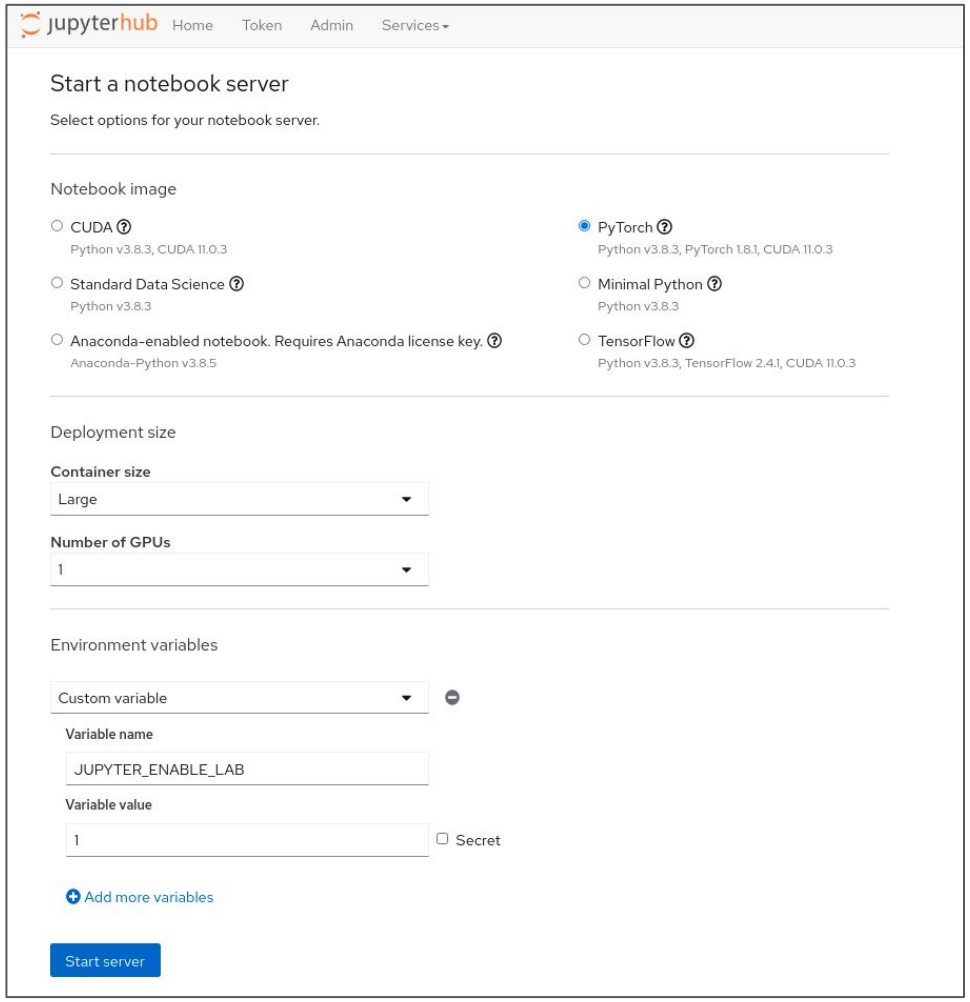
Launch (Enable) the JupyterHub Managed Service



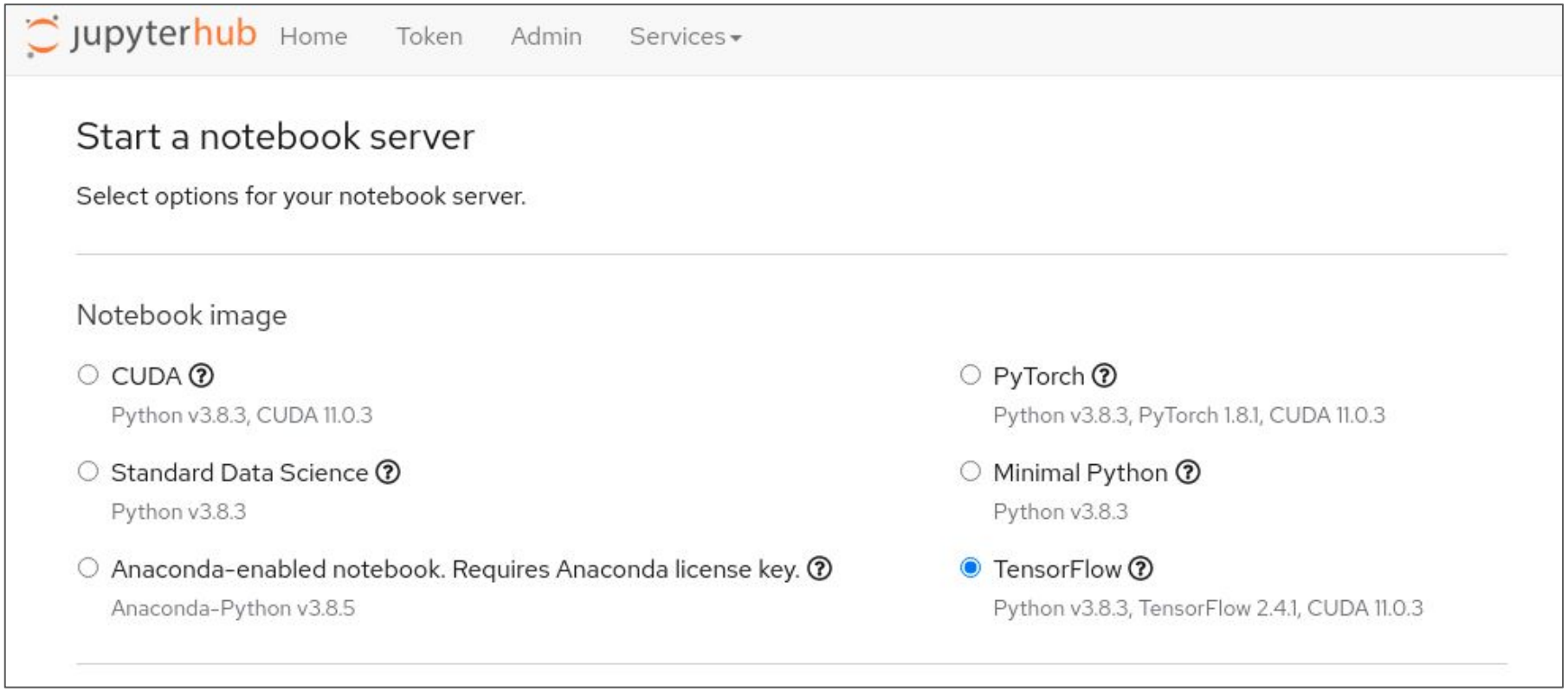
From the Applications menu, choose ‘Enabled’. You will see 3 enabled managed services.

In the JupyterHub managed service, click the ‘Launch’ hyperlink.

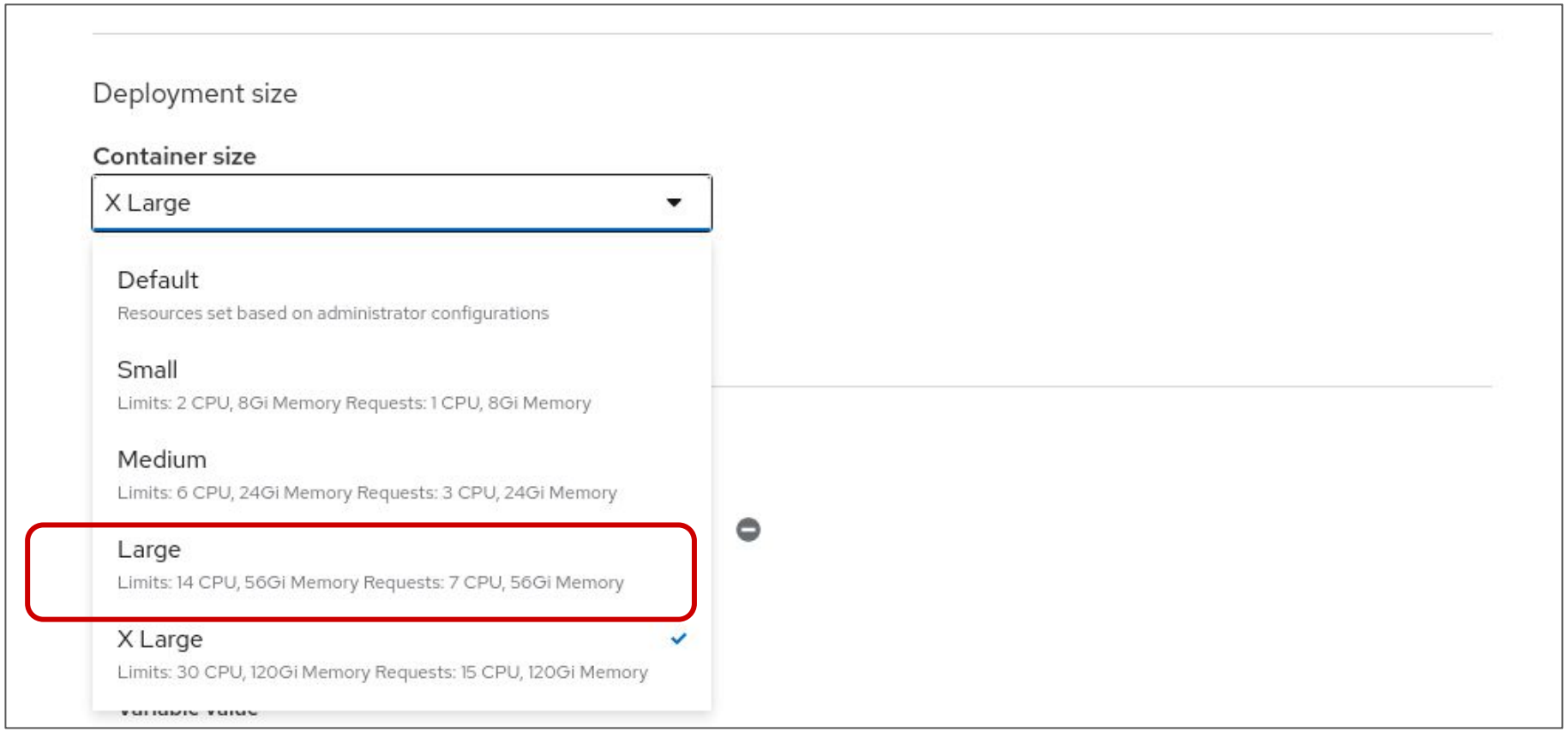
Create a JupyterHub notebook image



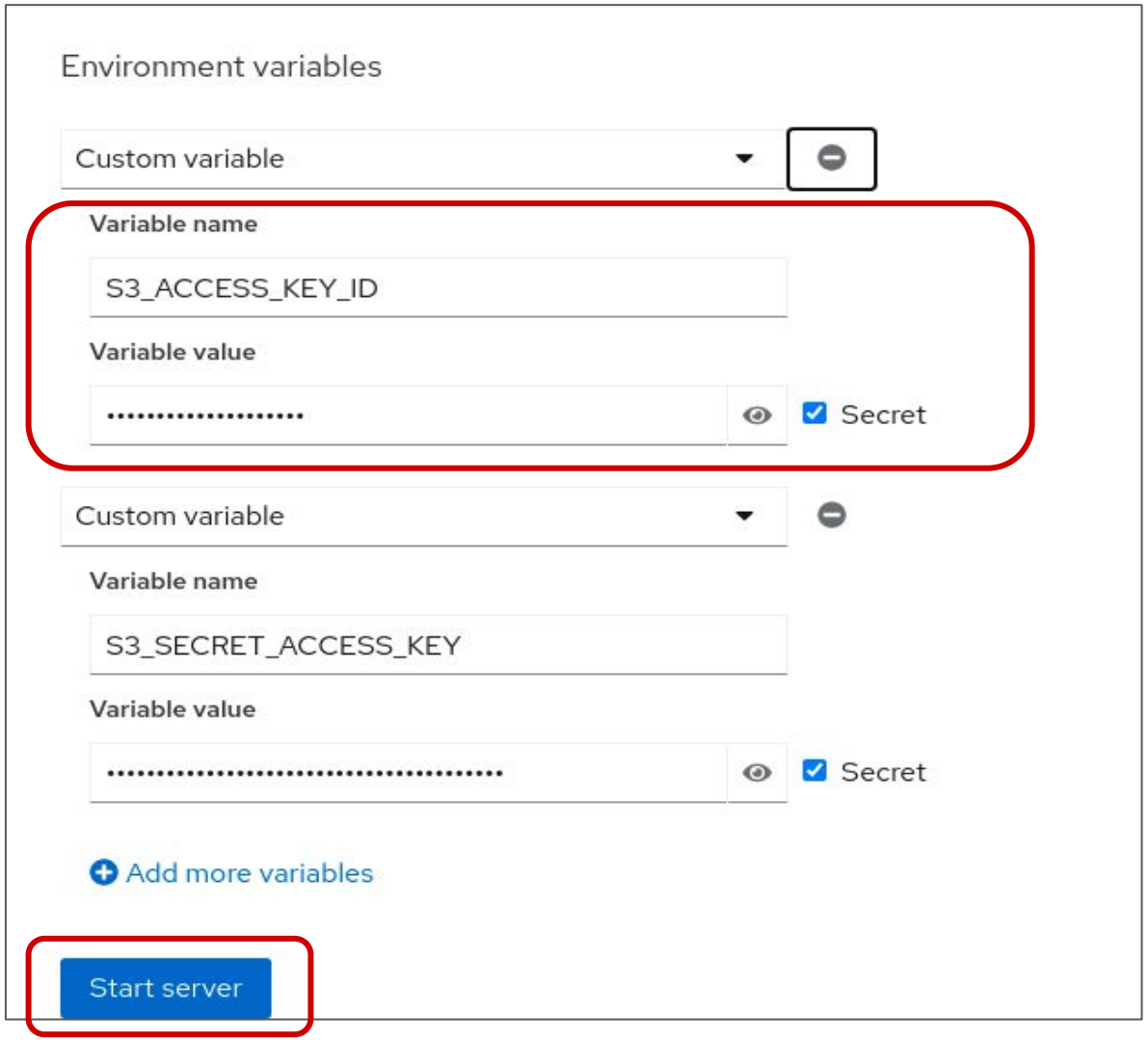
Available notebook images



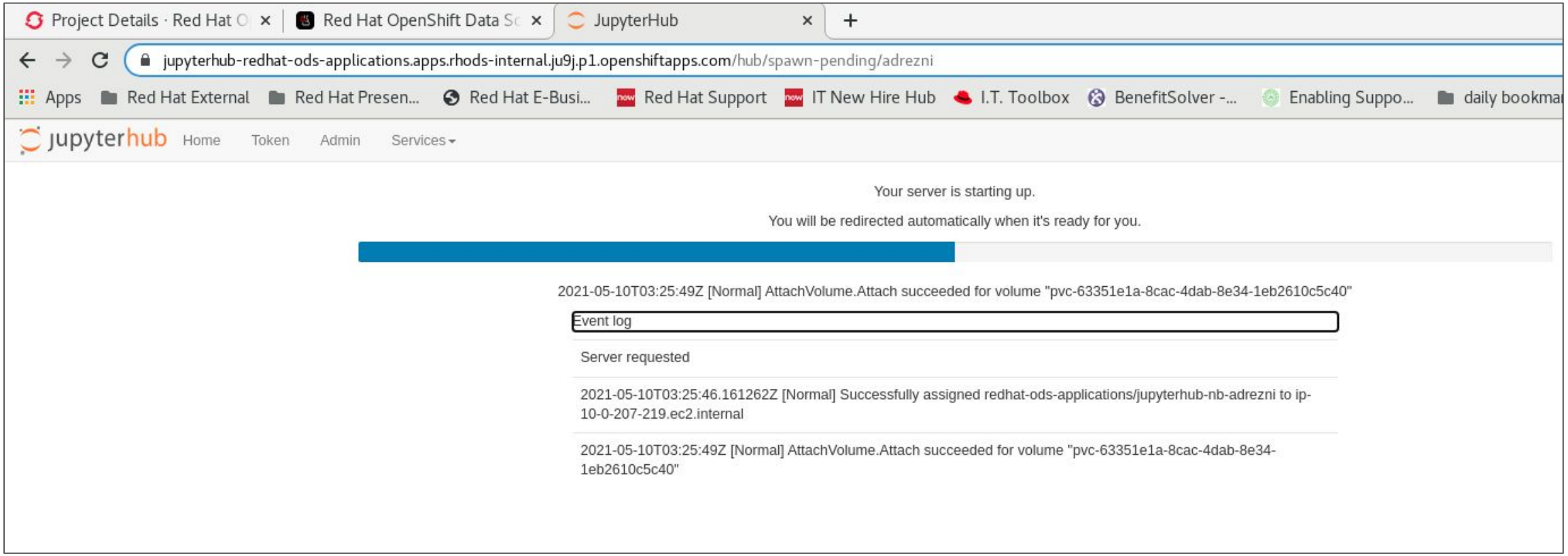
Deployment size: Choosing a Container size



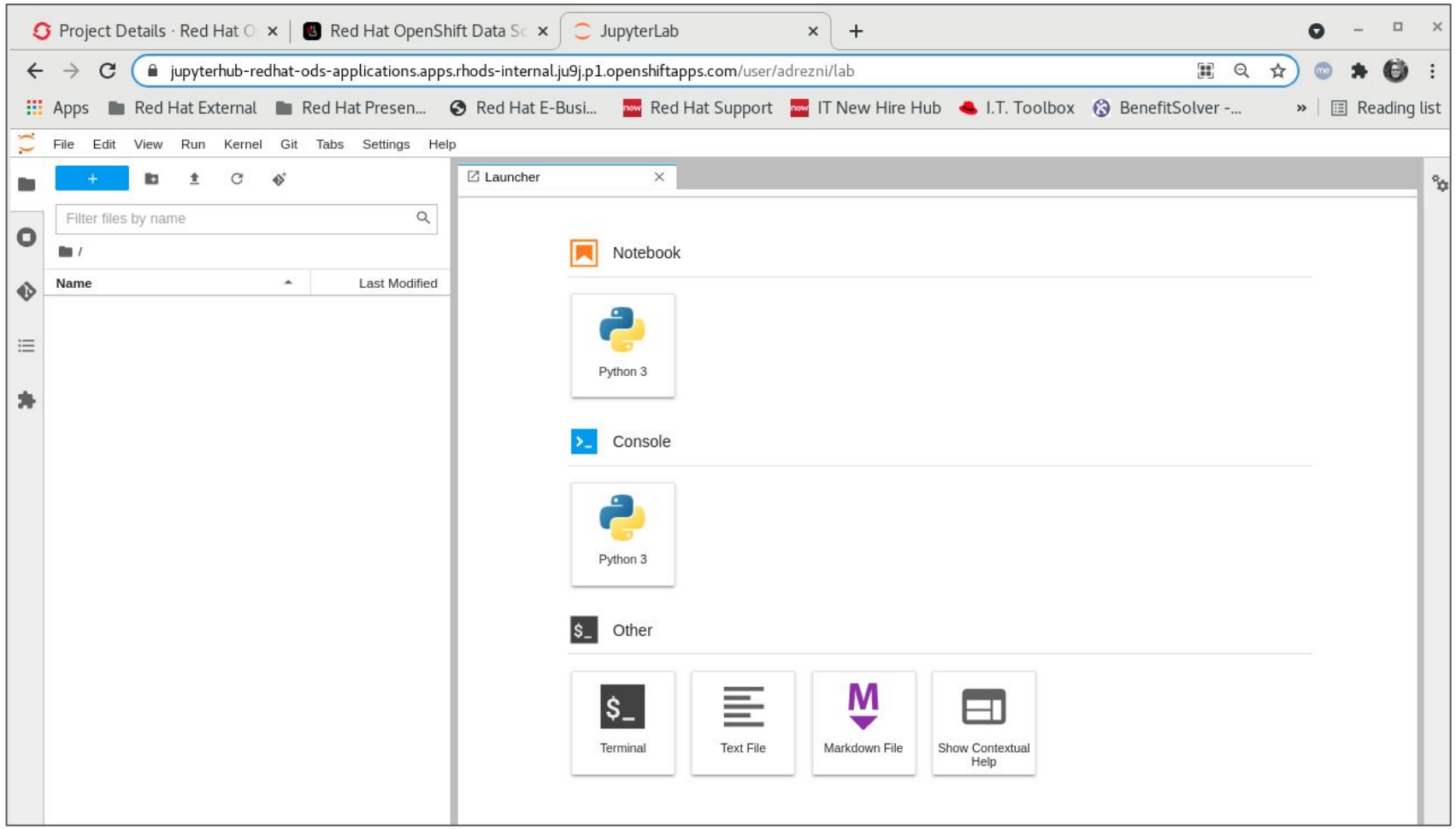
Environment Variables



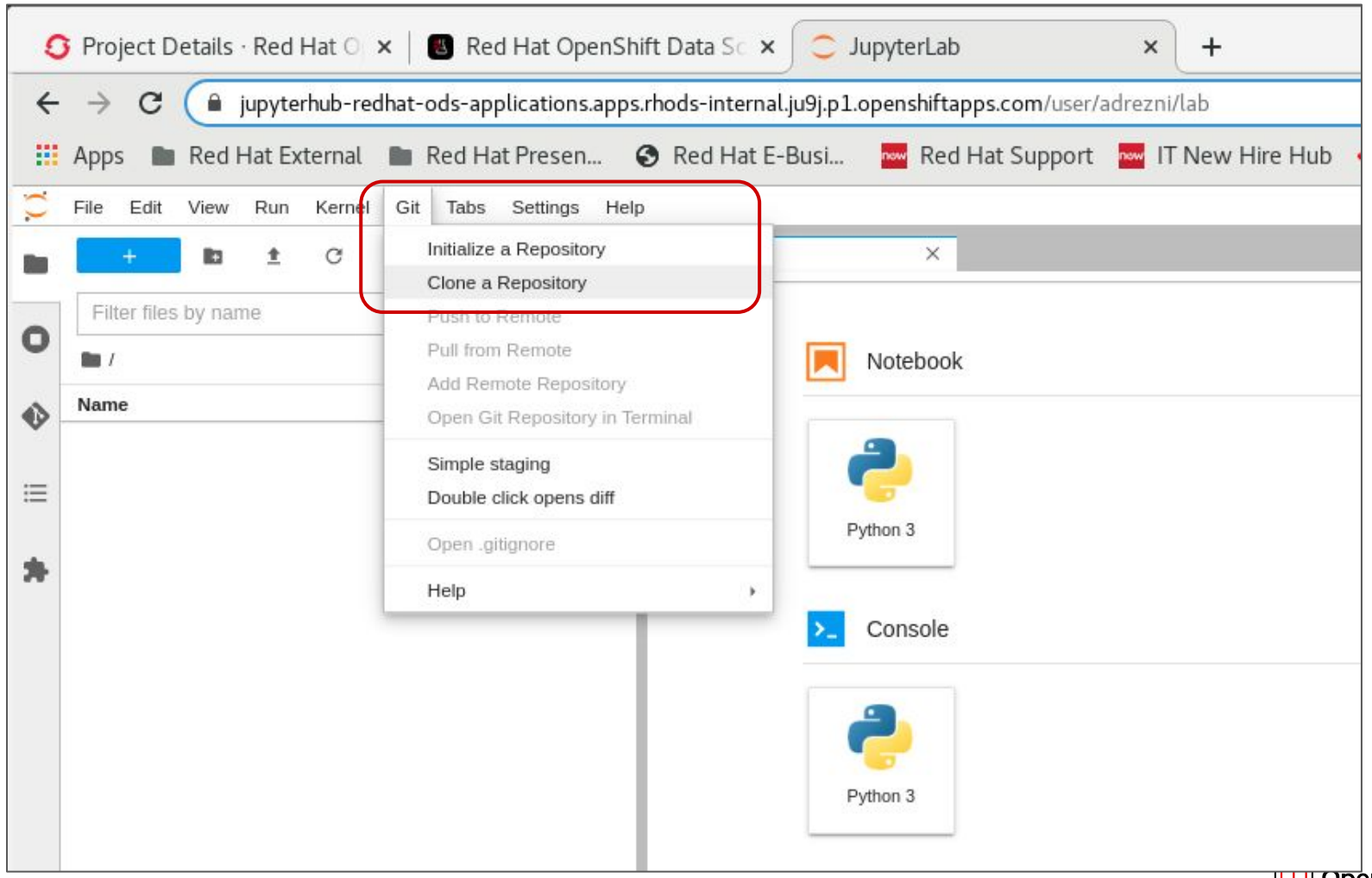
Server Start up...



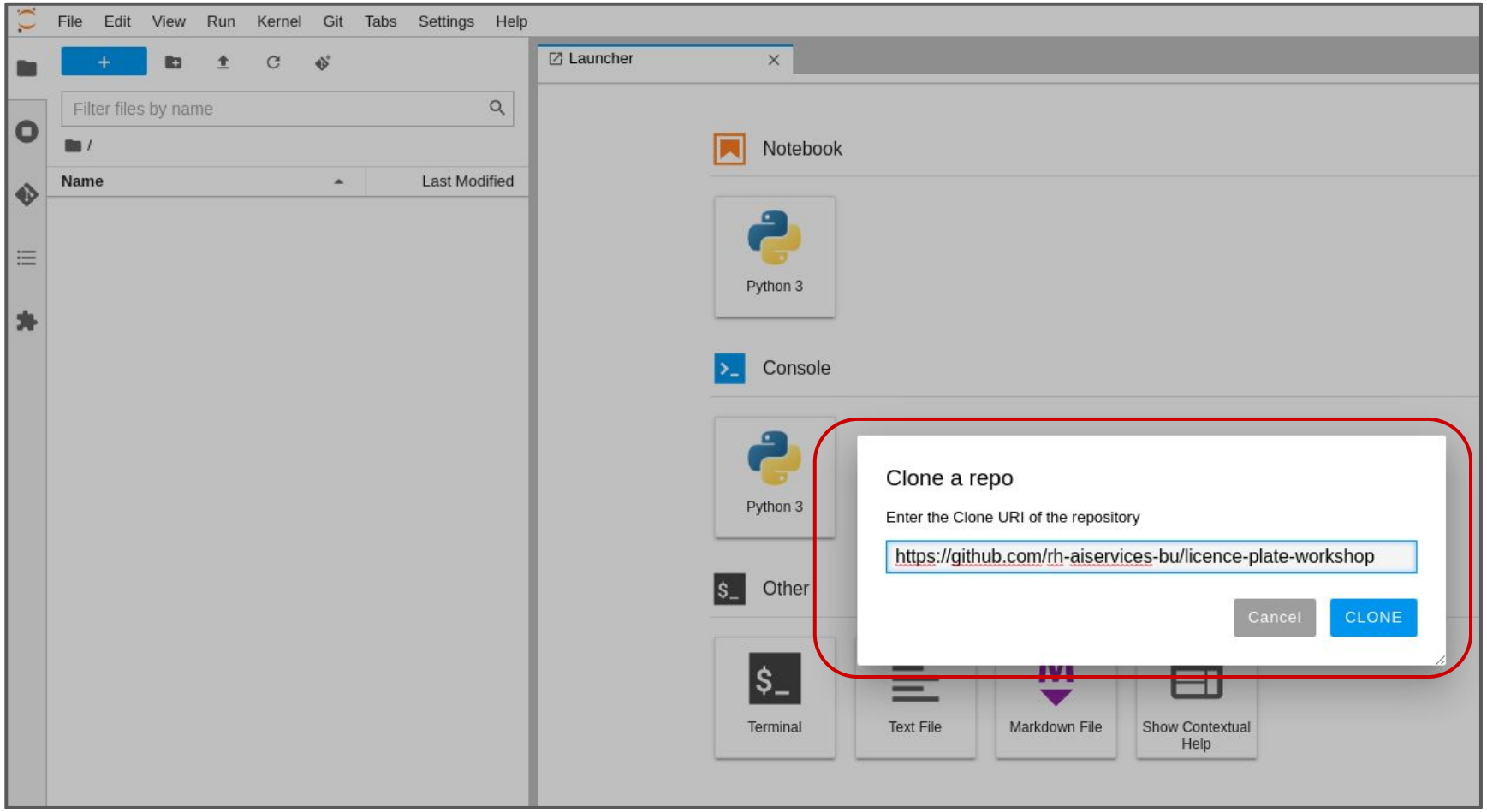
Welcome to JupyterLab!



Choose “Clone a Repository” from the “Git” menu



Clone license plate GIT repo



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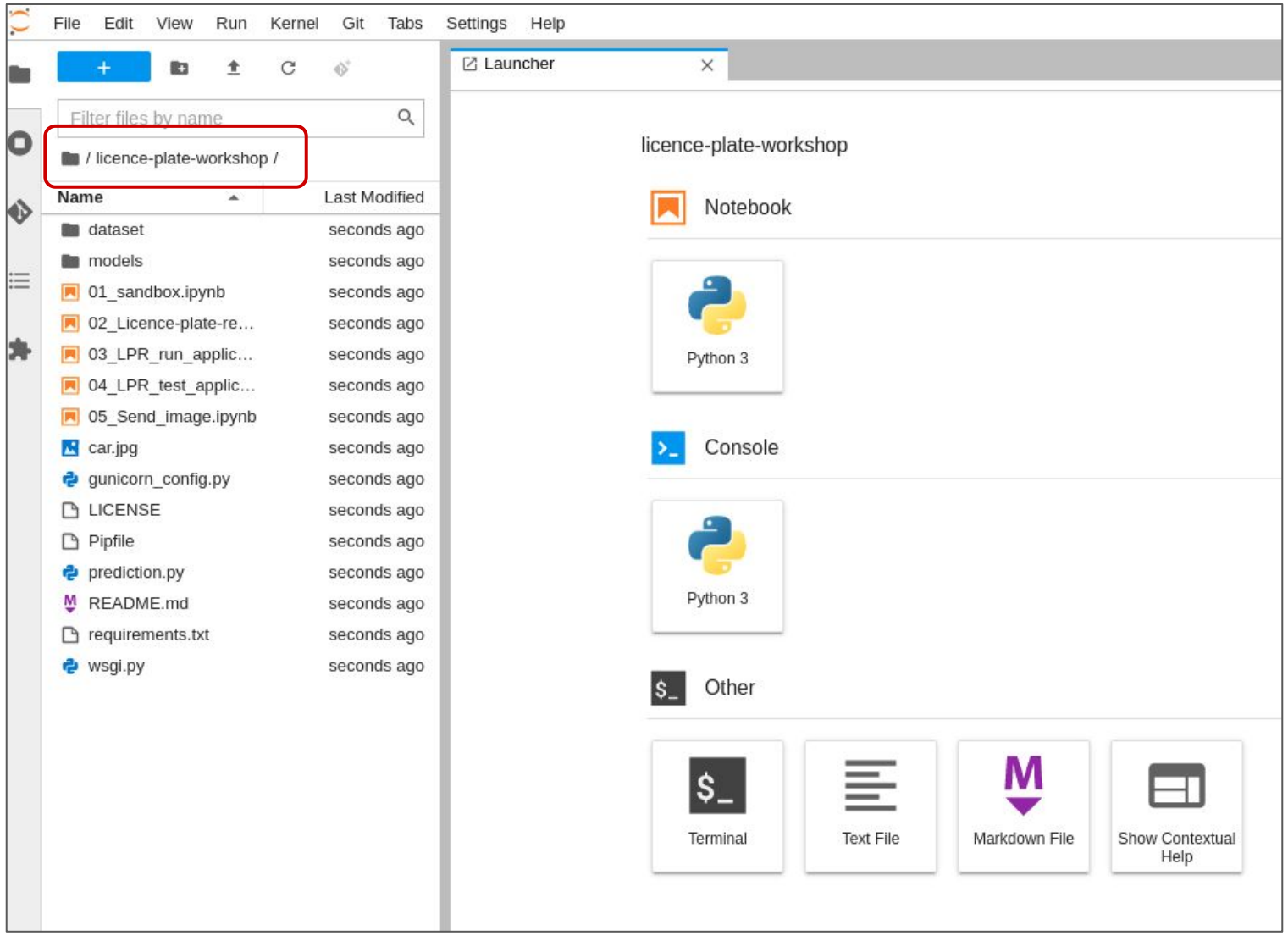
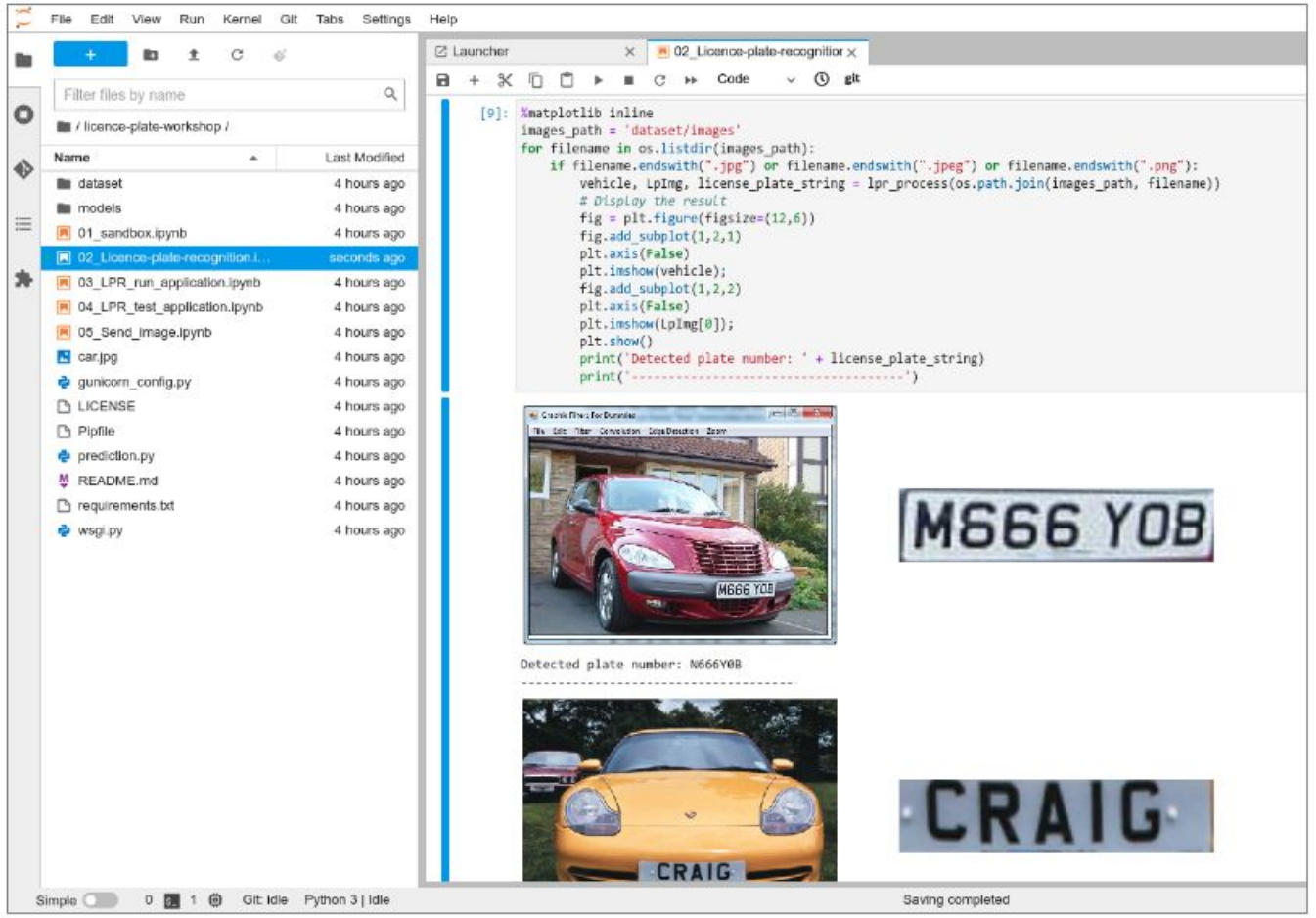
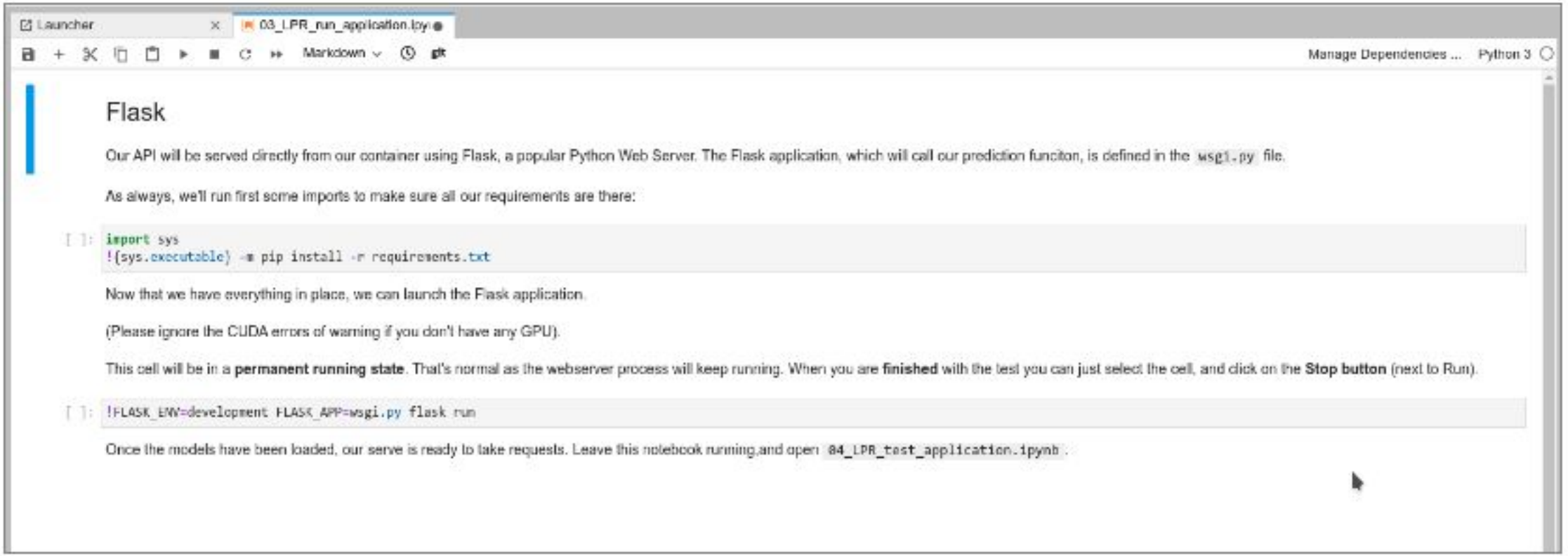
License plate repo



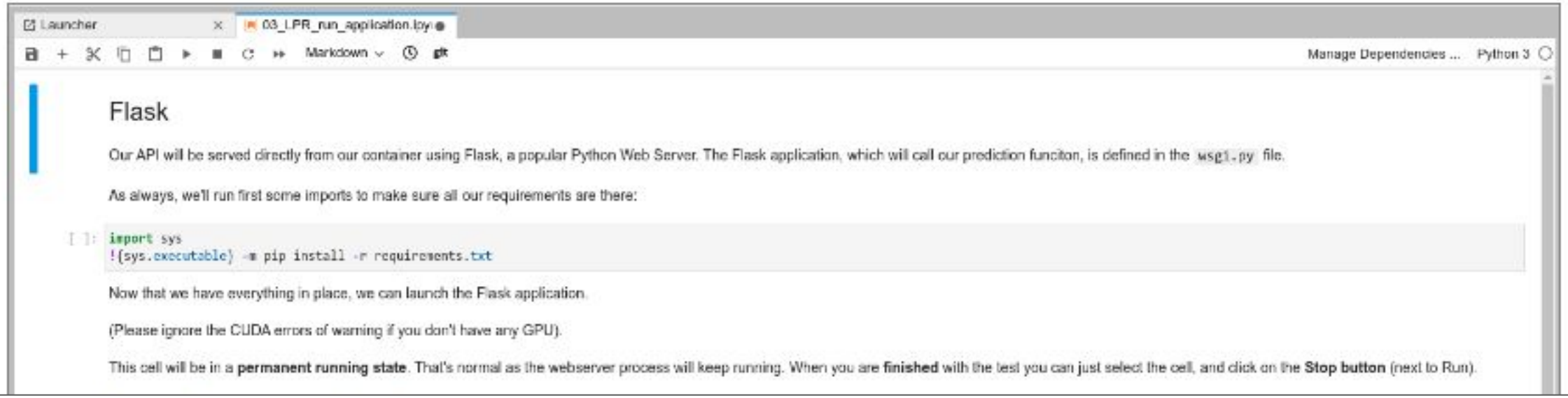
Ready to Experiment using a Jupyter Notebook



Package the Model as an API



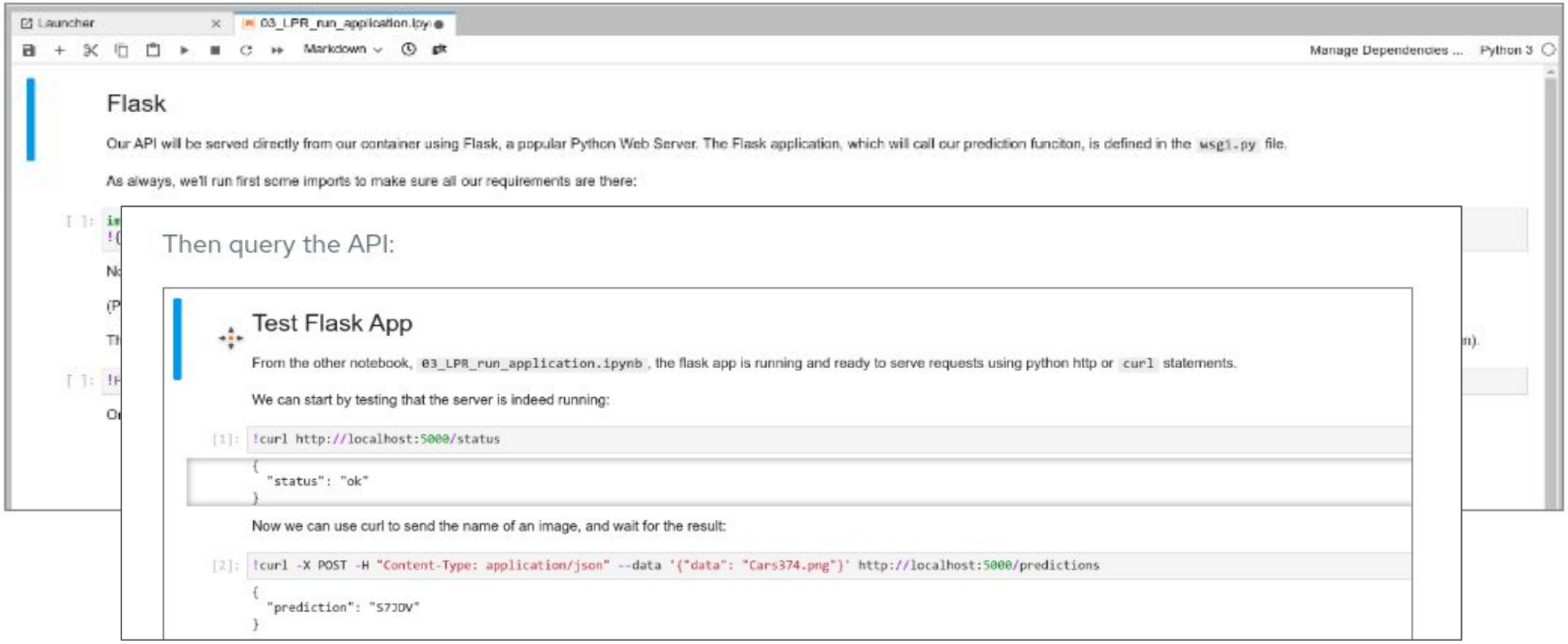
Package the Model as an API - Launch the Server



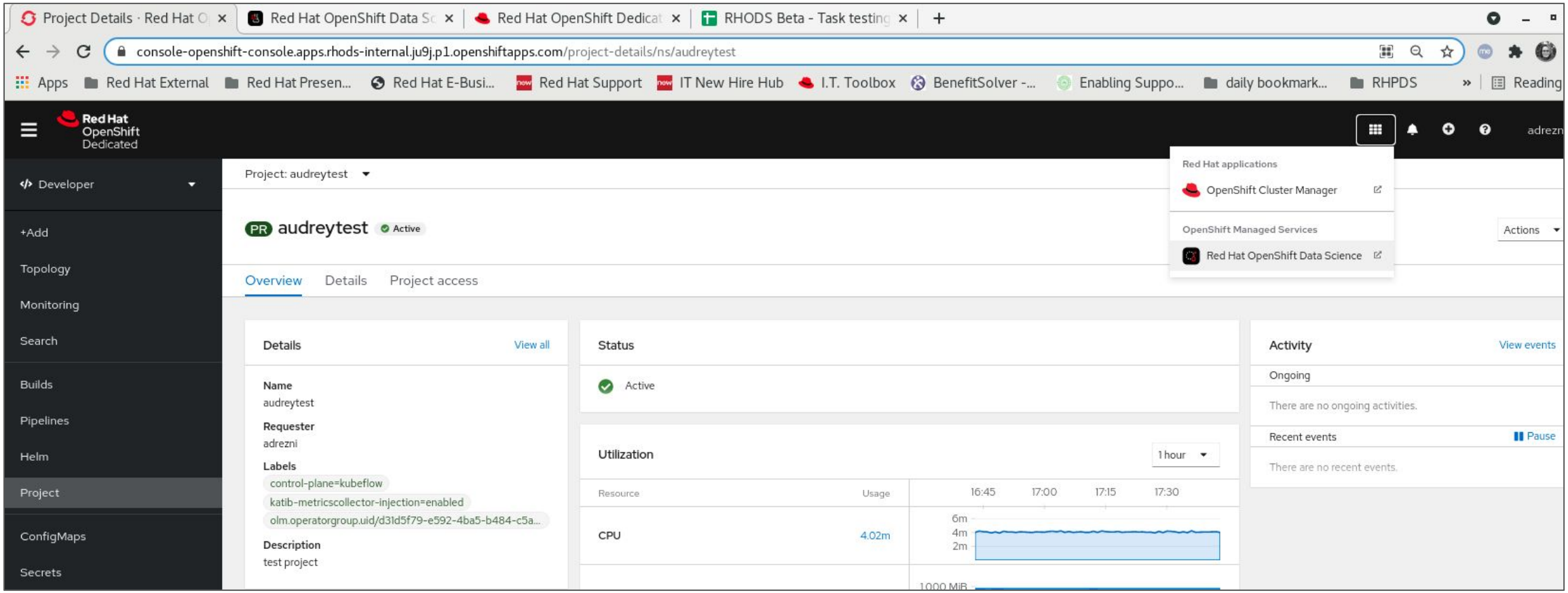
You'll first launch the Server:

```
!FLASK_ENV=development FLASK_APP=wsgi.py flask run
 * Serving Flask app "wsgi.py" (lazy loading)
 * Environment: development
 * Debug mode: on
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
 * Restarting with stat
```

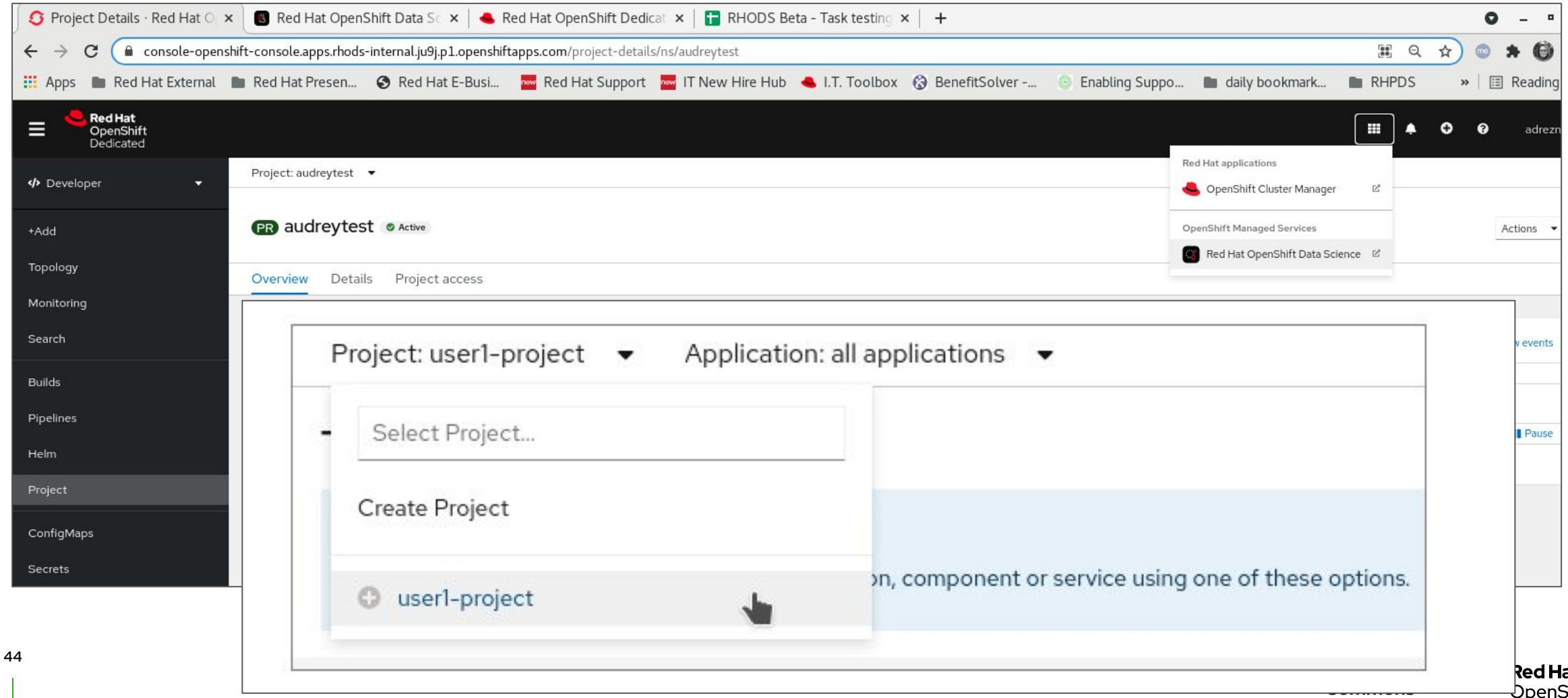
Package the Model as an API - Test the Flask App



Build the application inside OpenShift

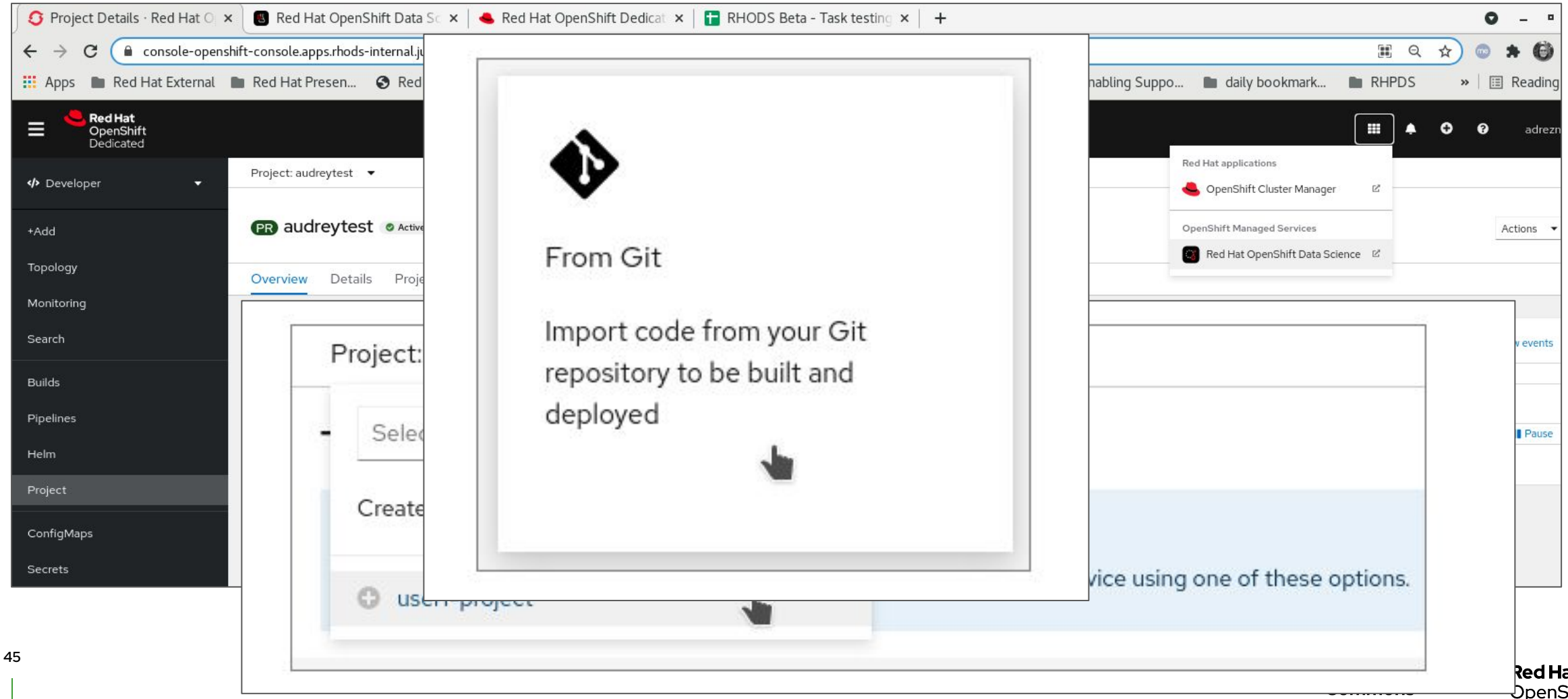


Build the application inside OpenShift

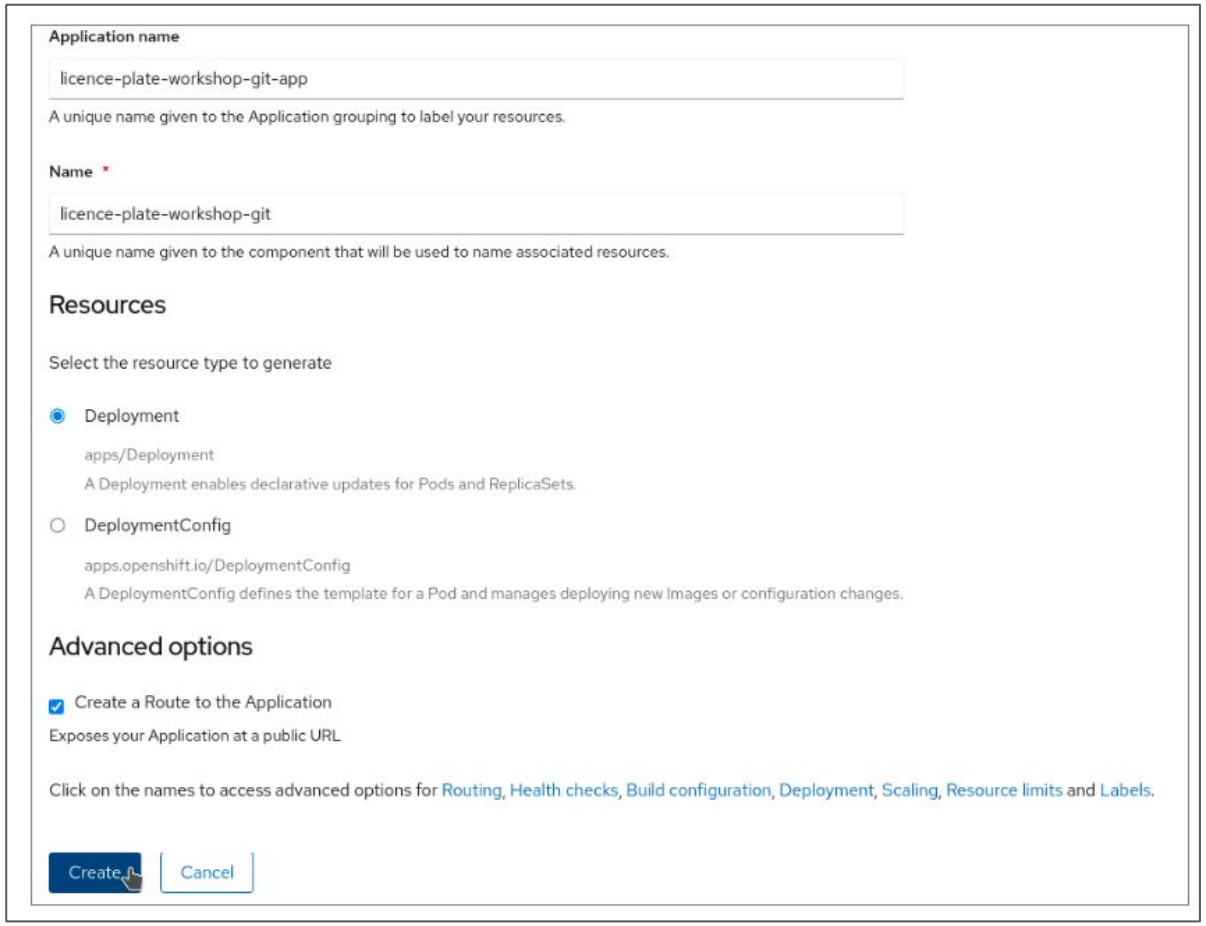


Red Hat OpenShift

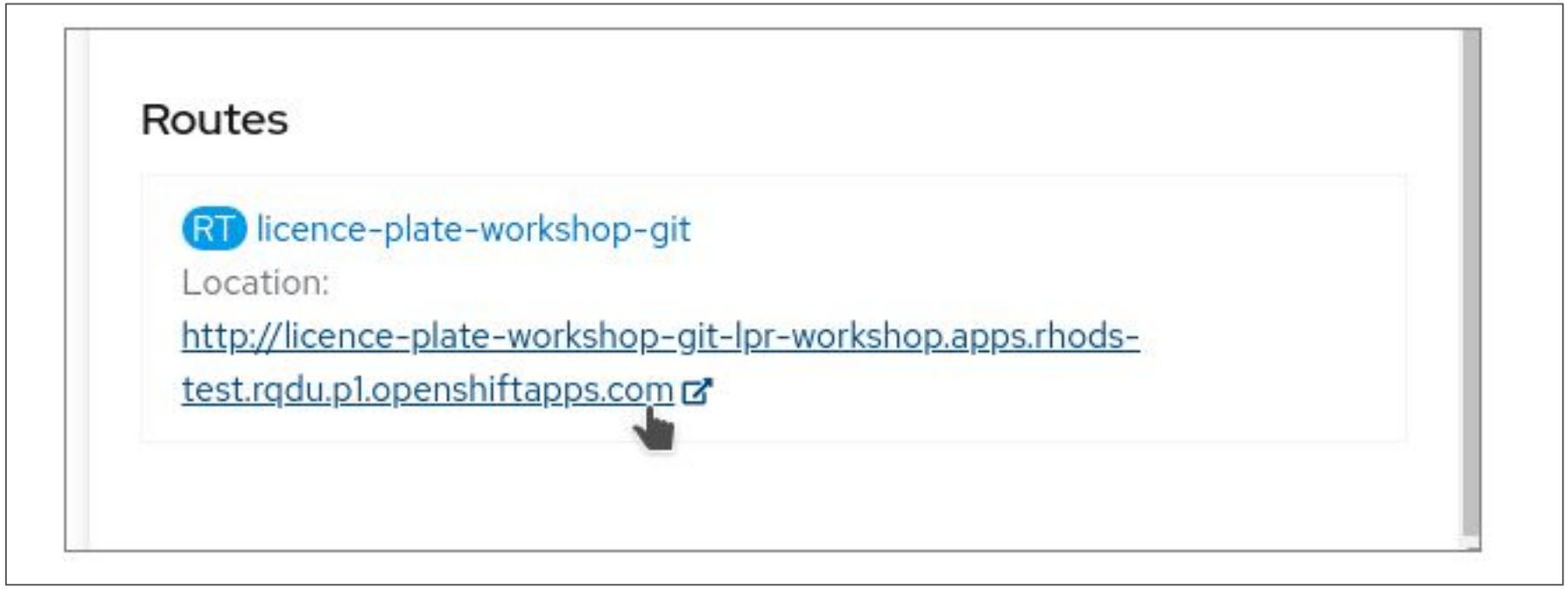
Build the application inside OpenShift



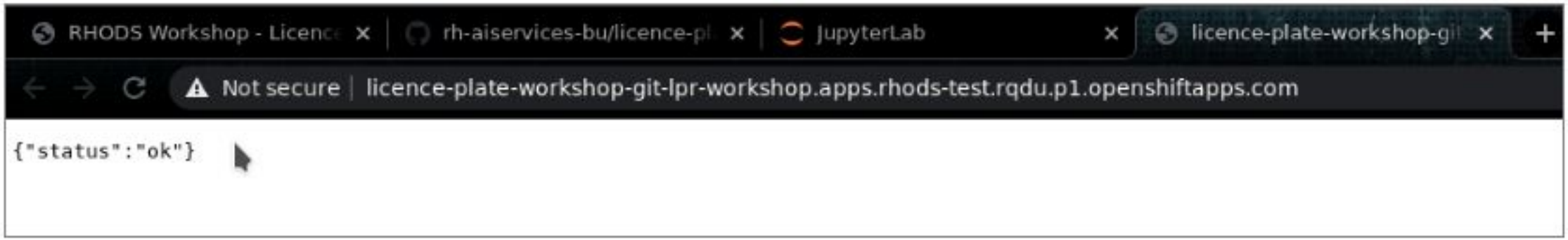
Build the application inside OpenShift



Build the application inside OpenShift



Test our Deployed AIML Application



Test our Deployed AIML Application

CURL on Linux or Mac with bash/zsh

From anywhere you have an example image like `car.jpg` (replace with the right name in the command, as well as the Route with `/predictions` at the end):

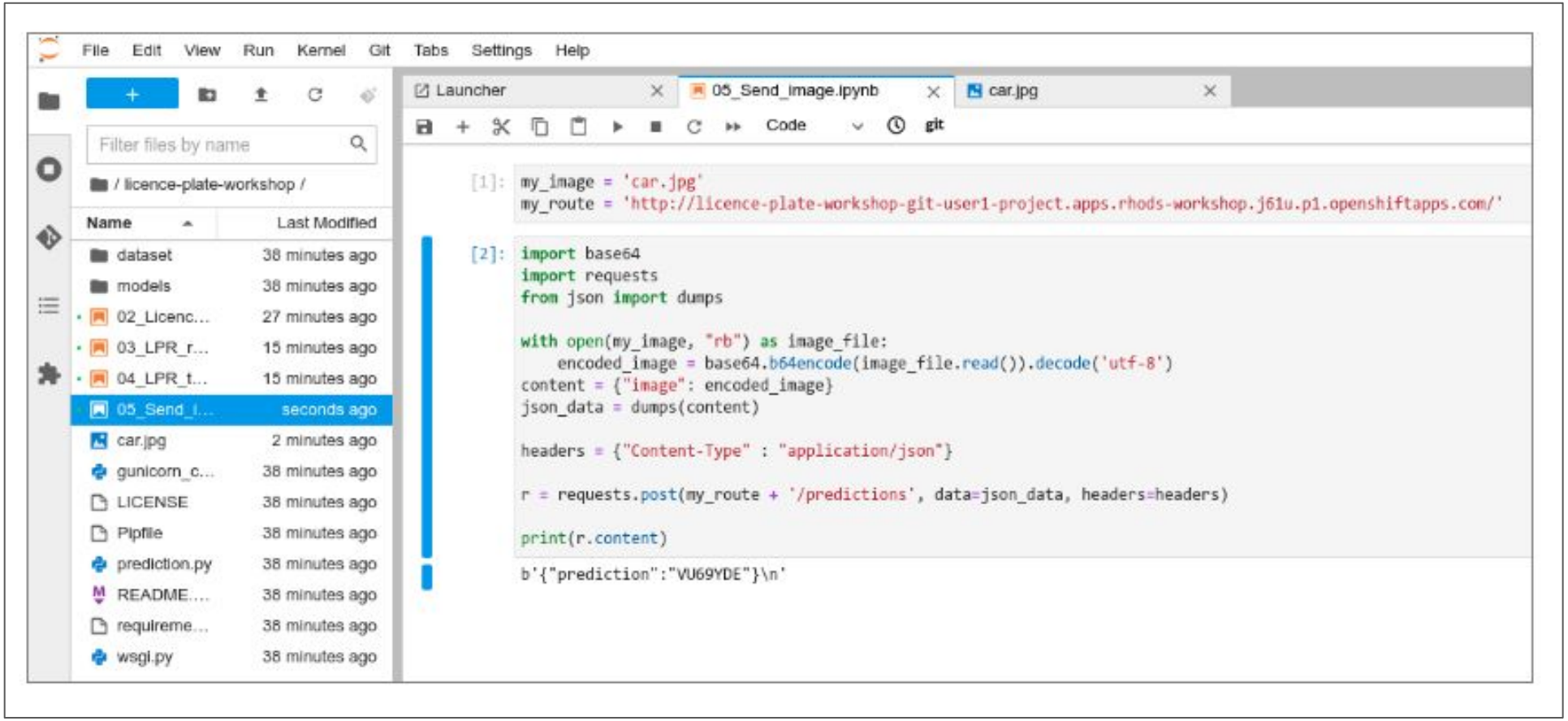
```
(echo -n '{"image": "'; base64 car.jpg; echo '"}') | curl -H "Content-Type: application/json" -
```

Invoke-WebRequest on Windows with Powershell

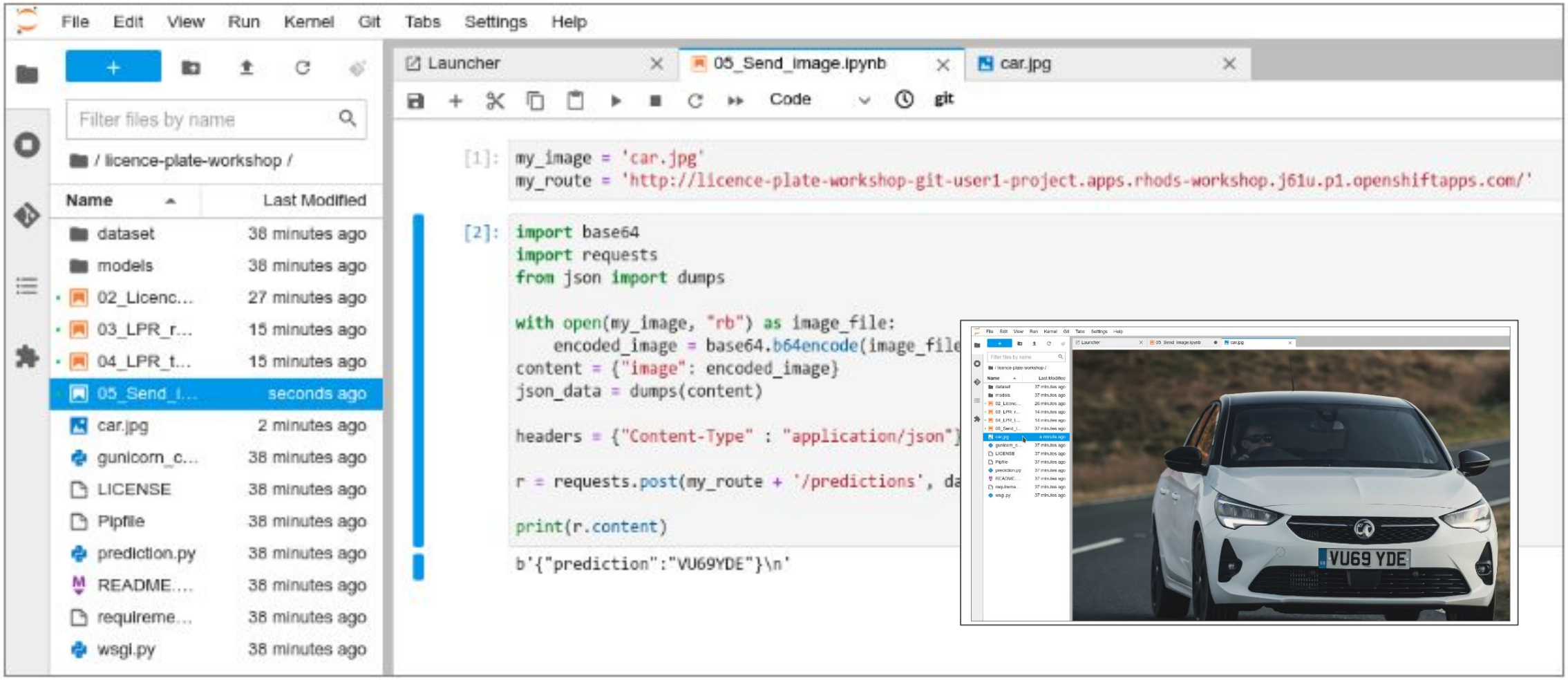
From anywhere you have an example image like `car.jpg` (replace with the complete path and name in the command, as well as the Route with `/predictions` at the end):

```
Write-Output ('{"image": "' + ([Convert]::ToBase64String([IO.File]::ReadAllBytes('C:\Users\Guil
```

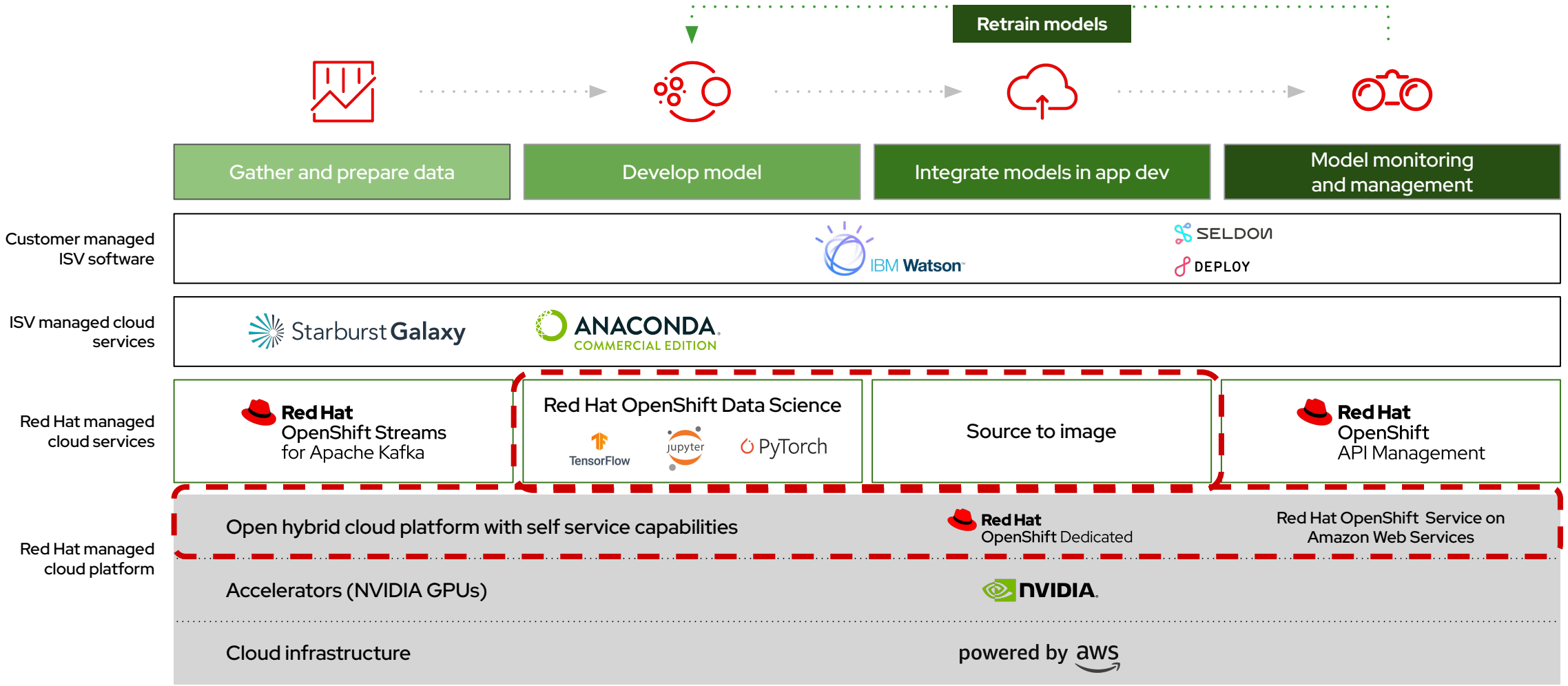
Test our Deployed AIML Application



Test our Deployed AIML Application



Red Hat Managed Cloud Services



What did we learn today?

- A Model's role in an Intelligent Application
- What are Managed Services?
  - Who uses Managed Services? Hint... not only Data Scientists
- What do Managed Services have to do with Model Delivery?
- Where do I find Managed Services?
- Demo of using Red Hat OpenShift Data Science platform and it's Managed Services.

Thank you

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