

 **Welcome!**

## Deploying a Service on EDITO Datalab

Learn how to turn your script into a containerized web service and launch it on the EDITO platform.

By **Samuel Fooks**

*Flanders Marine Institute (VLIZ)*



## What You'll Learn

- ✓ Dockerize a script (R or Python)
- ✓ Push the image to a public Docker registry
- ✓ Configure a Helm chart
- ✓ Deploy the service on the EDITO playground
- ✓ Publish to production via Merge Request



## Application/Service

### view\_parquet\_service

#### view\_parquet.Rmd

The `view_parquet.Rmd` script provides an interactive tool to load, filter, and visualize Parquet datasets. It includes:

- **Interactive Table:** View and filter data using a searchable, paginated table.
- **Map Visualization:** Display geospatial data (e.g., points, polygons) on an interactive map using `leaflet`.
- **Download Filtered Data:** Export selected data as a CSV file.
- **Metadata Schema:** Display the schema of the loaded Parquet dataset.

Is not instructional (Tutorial), and doesn't only perform a specific calculation/run a model (Process).

# Dockerfile Example

```
FROM rocker/shiny:4.5.0

RUN apt-get update && apt-get install -y \
    libcurl4-openssl-dev \
    libssl-dev \
    libxml2-dev \
    libudunits2-dev \
    libgdal-dev \
    libgeos-dev \
    libproj-dev \
    libfontconfig1-dev \
    libharfbuzz-dev \
    libfribidi-dev \
    libfreetype6-dev \
    libpng-dev \
    libtiff5-dev \
    && rm -rf /var/lib/apt/lists/*

RUN R -e "install.packages(c('shiny', 'arrow', 'leaflet', 'DT', 'dplyr', 'sf', 'leaflet.extras', 'shinythemes'))"

COPY view_parquet.Rmd /srv/shiny-server/view_parquet.Rmd

EXPOSE 3838

CMD ["R", "-e", "rmarkdown::run('/srv/shiny-server/view_parquet.Rmd', shiny_args = list(host = '0.0.0.0', port = 3838))"]
```



# Make a container registry token

Working with container registry

You need your container registry token



## Build and Push Docker Image

Build and version your container using semantic versioning [docs](#)  
Not technically required, but if your new version fails, roll back easily.

```
docker build -t ghcr.io/yourusername/view_parquet:1.0.1 .  
  
export CR_PAT = mycontainerregistrytoken  
  
echo $CR_PAT | docker login ghcr.io -u yourusername --password-stdin  
  
docker push ghcr.io/yourusername/view_parquet:1.0.1
```



## Test your public image

```
docker run -p 3838:3838 ghcr.io/yourusername/view_parquet:1.0.1
```

Open your browser and navigate to:

```
http://localhost:3838
```

Your working app version is now usable by anyone, anywhere with Docker and an internet connection



# Clone the service playground, and add your service

## How to add your service, README.md

```
#clone the repo
git clone https://gitlab.mercator-ocean.fr/pub/edito-infra/service-playground.git
cd service-playground

# make your own branch
git checkout -b parquet_viewer_r
git push origin parquet_viewer_r

## Here we use the terria-map-viewer as a basis for our service
## instead of making from scratch
cp -r terria-map-viewer parquet_viewer_r
```

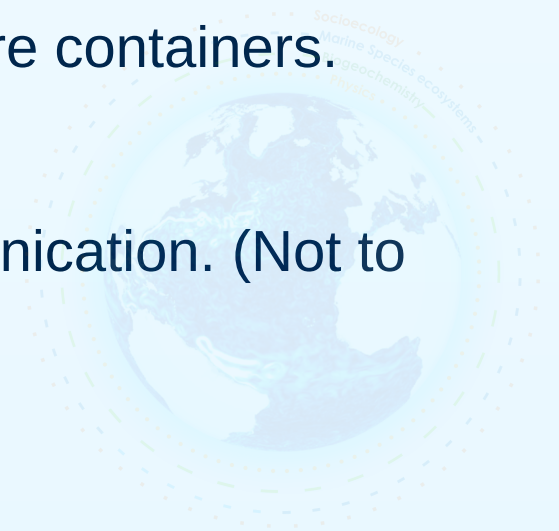




# Helm and Kubernetes Overview

## Kubernetes

- **Pods**: Smallest deployable units in Kubernetes, running one or more containers.
- **Cluster**: A group of nodes (machines) managed by Kubernetes.
- **Service**: Exposes your application to the network, enabling communication. (Not to be confused with the predefined datalab deployment services)



## Helm

- **Helm Charts**: Pre-configured Kubernetes resources packaged together.
- **Templates**: YAML files with placeholders for dynamic values.
- **Values**: Configuration file ( `values.yaml` ) to customize deployments.



# Basic Helm Template Example

## Chart.yaml

```
name: my-service
version: 1.0.0
description: A sample Helm chart
```

## values.yaml

```
image:
  repository: my-docker-repo/my-service
  tag: "1.0.0"
service:
  type: ClusterIP
  port: 8080
```

# Let's edit our Chart.yaml

Edit `Chart.yaml`:

```
name: view-parquet
description: An interactive Parquet viewer on EDITO
home: https://github.com/yourusername/view_parquet
icon: https://your.icon.url/icon.png
keywords: [shiny, r, parquet, viewer]
version: 1.0.0
appVersion: "1.0.0"
dependencies:
  - name: library-chart
    version: 1.5.16
    repository: https://inseefrlab.github.io/helm-charts-interactive-services
```



## 🔧 Let's update values.yaml

### values.yaml

```
service:  
  image:  
    version: "ghcr.io/yourusername/view-parquet:1.0.1"  
  
networking:  
  service:  
    port: 3838
```



# The additional values.schema.json

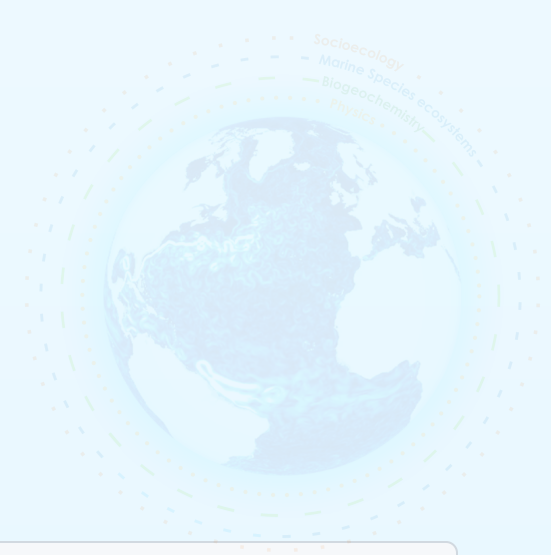
Inputs from the user interface go into here, and this goes with the Helm chart deployment into the cluster.

- app version
- resources

Ex. Let users select different versions of your app

## values.schema.json

```
"listEnum": [  
  "ghcr.io/yourusername/view-parquet:1.0.1",  
  "ghcr.io/yourusername/view-parquet:1.0.0"  
],  
"default": "ghcr.io/yourusername/view-parquet:1.0.1"
```



## Update templates/NOTES.txt

Can show the link where the service is deployed, link to sample dataset, etc.  
This will be displayed in the pop-up to the user while the service is being deployed.

### templates/NOTES.txt

Your Parquet Viewer in R is being deployed!

It will be available on this [link](http{{ if \$.Values.ingress.tls }}s{{ end }}://{{ \$.Values.ingress.hostname }}).

## Enable Ingress (Optional)

In `values.schema.json`, allow user-defined ingress:

```
"x-onyxia": {  
  "overwriteDefaultWith": "{{project.id}}-{{k8s.randomSubdomain}}-0.{{k8s.domain}}"  
}  
// Remove "hidden": true line
```

For more details, refer to the [Kubernetes Ingress documentation](#).

## Add S3 or Marine Service Secrets (Optional)

Add to `values.schema.json`:

```
"s3": {  
  "x-onyxia": { "overwriteSchemaWith": "ide/s3.json" }  
}
```

Enable secret in templates:

```
envFrom:  
- secretRef:  
  name: {{ include "library-chart.secretNameS3" . }}
```

For more details, refer to the [Kubernetes Secrets documentation](#).



# Commit your changes

First install [pre-commit](#)

Run 'make check-format' and it will make sure the formatting is ok

```
make check-format
```

## Commit your changes

```
# Stage all changes
git add .
# Commit the changes with a descriptive message
git commit -m "Added my awesome service"
# Push the changes to your branch
git push origin parquet_viewer_r
```



## Launch in Playground

- Check your commit in the [pipelines] (<https://gitlab.mercator-ocean.fr/pub/edito-infra/service-playground/-/pipelines>)
- If successful, Wait for 5–10 min
- If it fails, check the [pipeline logs](#)
- Launch from [EDITO Datalab](#) and open the 'link' to your awesome App!



## ✓ Production Release, out of the playground

Once tested and matured:

- Add yourself to `Chart.yaml` as maintainer
- Submit a Merge Request
- Ping `@pub/edito-infra/codeowners`



🙌 **Done!**

🎉 Your service is live on EDITO!

🧩 You now know how to go from script → container → Helm → Datalab.

Questions?

✉ [edito-infra-dev@mercator-ocean.eu](mailto:edito-infra-dev@mercator-ocean.eu)

Docs

- Service Playground README.md
- EDITO docs

