👋 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.

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For all the PDFs and code, check out the workshop GitHub repository

🎯 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

The `view_parquet_service/app`:

- `ui.R`
- `server.R`
- `global.R`

These files collectively provide an interactive tool to load, filter, and visualize Parquet datasets

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

We should add it as a service

Dockerfile Example

```
FROM rocker/shiny:4.5.0

# Install system dependencies
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/*

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

# Create app folder and copy files
RUN mkdir -p /srv/shiny-server
COPY app/ui.R app/server.R app/global.R /srv/shiny-server/

# Copy the startup script
COPY app/start_app.sh /start.sh
RUN chmod +x /start.sh

# Expose port
EXPOSE 3838

# Start Shiny server
CMD ["/start.sh"]
```

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

Test the public image before adding it as a service

```
docker run -p 3838:3838 ghcr.io/edito-infra/view_parquet:1.0.4
```

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: 3838
```

Let's edit our Chart.yaml

Edit `Chart.yaml`:

```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: "1.0.3"
dependencies:
  - name: library-chart
    version: 1.5.16
    repository: https://inseefrlab.github.io/helm-charts-interactive-services
```

🛠️ Let's update values.yaml

`values.yaml`

```yaml
service:
  image:
    version: "ghcr.io/yourusername/view-parquet:1.0.3"

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:1.0.3",
    "ghcr.io/yourusername/view-parquet:1.0.1"
],
"default": "ghcr.io/yourusername/view-parquet:1.0.3"
```

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?

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Docs

- Service Playground README.md
- EDITO docs