

Technical Talk

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The ExPaNDs project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857641.
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Calipsoplus Portal



Overview:

- Infrastructure
- Calipsoplus Helm Chart development
- Portal deployment



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Rancher

Deploy Kubernetes easily

- Nodes on Openstack
- Configure once, scale with 1 click
- Integration of Metrics / Analytics
- Authentication for Kubernetes

Manage Multiple Cluster

- Separate Users' workloads
- Integration with HPC nodes: current research



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Kubernetes Stack

Towards a full Cloud at DESY

- Kubernetes API only one part
- Tools provided on cluster level:
 - LoadBalancer
 - Ingress Controller
 - Certificate Management
 - Block Storage

→ Components for modern micro services now available for users!



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Helm + GitLab

Managing Apps

- Package Kubernetes Definition files
- Template engine
- Restore defined state
 - Upgrade / Rollback

GitLab for deployment integration

- Version control for configuration
- CI job runs deployment



"Manage the release cycle of charts that have been installed with Helm"



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Portal Helm Chart

From Code to Deployment

- Automated installation of app components
- Make universally usable package
 - Use site specific values to install on kubernetes
- Separate config from code
- Re-usability of chart



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kube-cluster1
Data-Analysis

Resources

Apps

Namespaces

Members

Tools

Try Dashboard




Apps

Manage Catalogs

Launch

Search




calipsoplus-portal

Up to date (0.8.4) Active

/guac, /oidc, /services(/!\$)(*), 443/https

6




dask-gateway

Up to date (0.8.0) Active

80/tcp

3




project-monitoring

Up to date (0.1.2) Active

/index.html, /index.html

2




dask

Up to date (4.5.1) Active

443/https, 30310/tcp, 30730/tcp

5




jupyterhub

Up to date (0.9.1) Active

443/https

24



spark-pure

Up to date (3.0.2) Active

443/https

6

Forums Slack File an Issue

English



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Portal Helm Chart

Publicly available

- Chart repository hosted at DESY
 - `helm repo add desy` <https://charts.desy.de/desy-it>

Gitlab repositories:

- Helm chart:
<https://eosc-pan-git.desy.de/calipsoplus/calipsoplus-portal-helm>
- Docker Images:
<https://eosc-pan-git.desy.de/calipsoplus/portal-kubernetes>



The Calipsoplus Portal Architecture test experience

What we have:

<https://calipsoplus.desy.de>

- Deployed to Kubernetes
- Letsencrypt Certificate
- Integrate with Keycloak SSO
- Link to other kubernetes hosted services

Missing:

- Metadata Catalog / Scicat [WIP]
- Scientific data in the Cloud [WIP]



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Partners involved

ALBA Light Source



ALBA is a 3rd generation Synchrotron Light facility located in Cerdanyola del Val...

DESY



DESY is one of the world's leading accelerator centres. Researchers use the larg...

Diamond Light Source



Diamond Light Source is the UK's national synchrotron. It works like a giant mic...

Elettra and FERMI Lightsource



Elettra Sincrotrone Trieste is a multidisciplinary international research center...

European Synchrotron Radiation Facility



The ESRF is the world's most intense X-ray source and a centre of excellence for...

European XFEL



The European XFEL is a research facility of superlatives: It generates ultrashor...

Helmholtz-Zentrum Berlin (HZB)



Energy materials comprise more than just solar cells. Energy materials also incl...

Paul Scherrer Institute



The Paul Scherrer Institute, PSI, is the largest research institute for natural ...

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