



Science Software on Demand

Data Analytics Clinic no. 3 @ EGI Conference 2020

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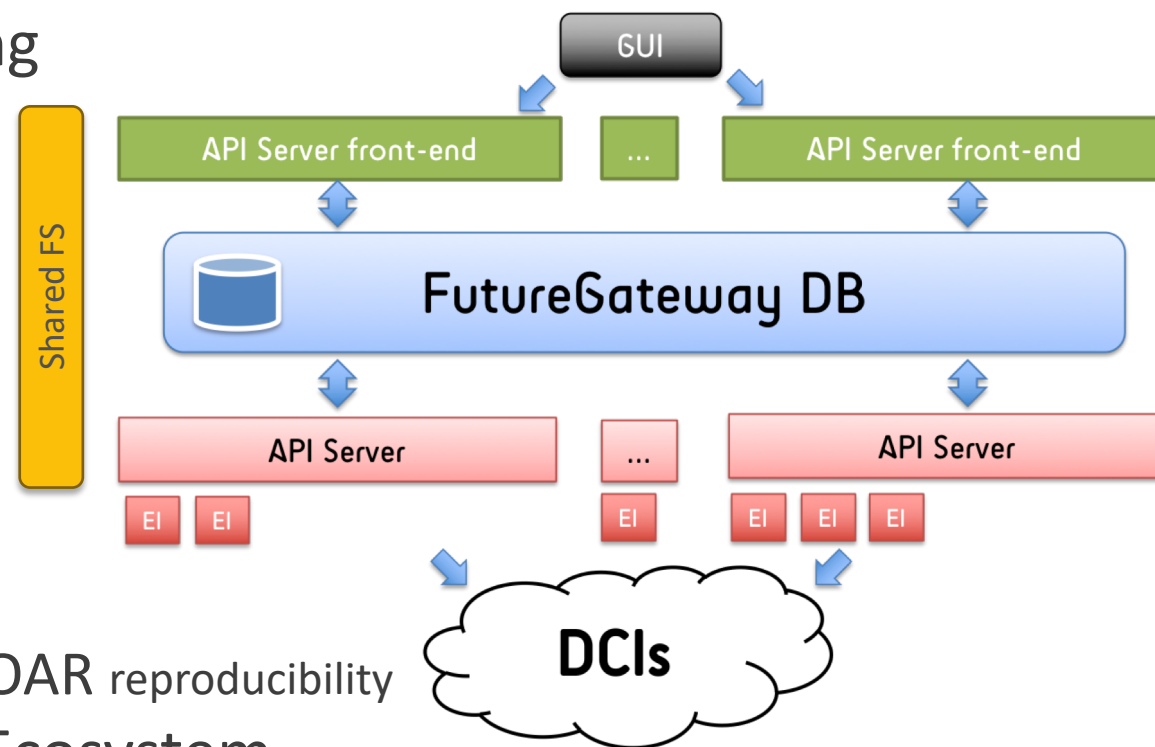
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- General purpose **Science Gateway** aiming to demonstrate the capabilities of the  **FutureGateway Framework**
 - It also replaces an older Science Gateway instance based on a previous Science Gateway Framework.
- Hosted by a Software/Hardware environment:
 -  **FutureGateway Science Gateway**
 - Based on Docker containers, compose configurations and scalable through Docker Swarm if necessary
 - It also provides internal scripts to manage docker instances, network ports assignments, allow/deny resources to Science Gateway users
 - Provide a solution to safely backup containers on the fly (SSOD only)
 - It also hosts a Dropbox based job submission engine (Not related to SSoD)

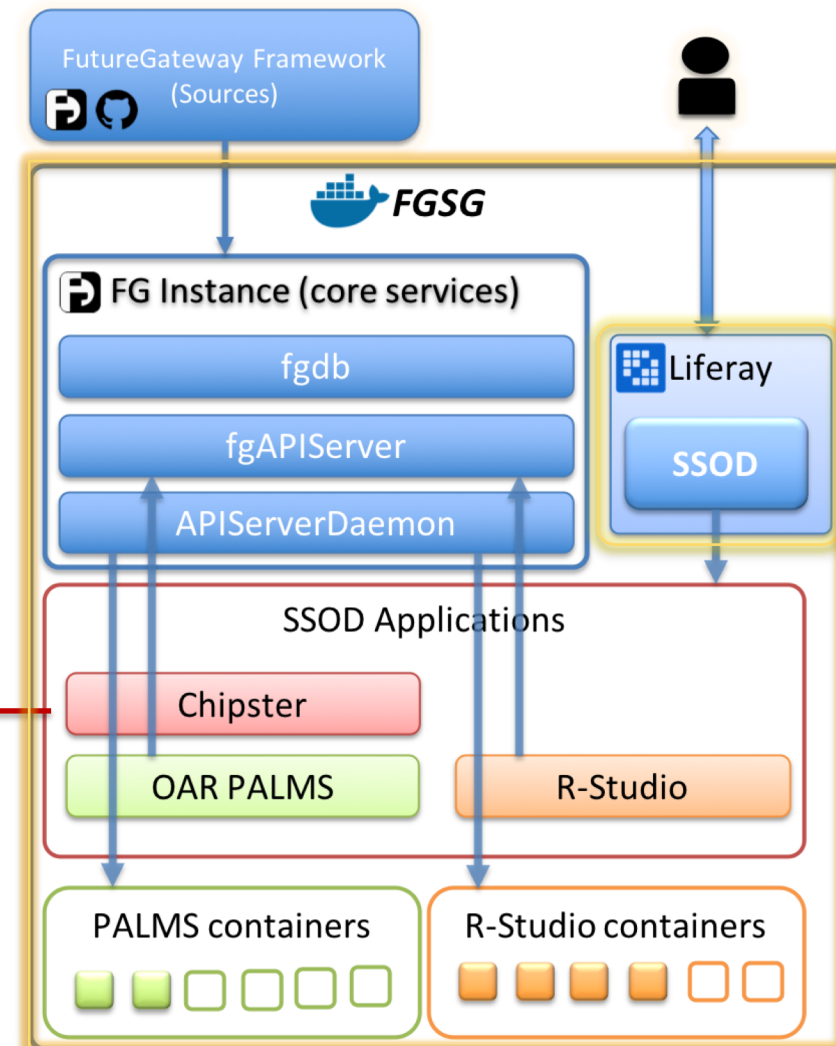
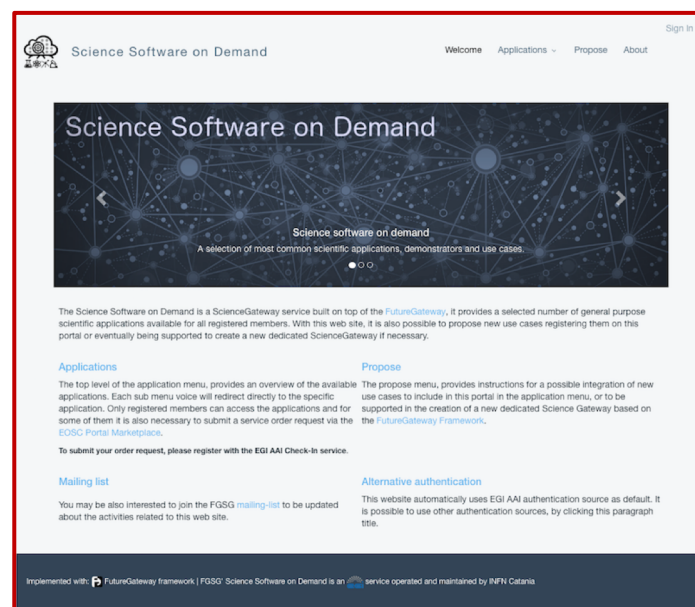
- **Software environment** aiming to build **quickly** and **securely** well structured Science Gateways
- Use a set of **REST APIs** to control everything
- Components:
 - API Specifications fgapis.docs.apiary.io
 - GUI (User interaction)
 - API Server-front-end
 - Database
 - [API Server + Executor Interfaces] -> DCI
- Applies successfully to:
 - Grid, Clouds, HPC, Workflow engines, IoT, OAR reproducibility
- Totally based on well knoww OpenSource Ecosystem



- Three families of **APIs**
 - **IAT**; Infrastructures, Applications and Tasks (Original set from [INDIGO-dc](#))
 - **UGR**; Users Groups and Roles (Recently developed with [EOSC-hub](#) for SSoD)
 - **AAA**; Authorizing, Auditing and Accounting (Under design, possible via DB)
- **IAT** Are designed to perform **any kind** of activity into a distributed computing infrastructure (DCI)
 - **Infrastructure**, configures how access a given DCI
 - **Application**, configures the application characteristics (input/output, files, ...)
 - **Tasks**, application instances sent to DCI
- API usage **tutorial** available on FG web site (IAT + UGR)
 - <https://futuregatewayframework.github.io/resources/>



- Powered by **Liferay 7.1** hosted by **FGSG**
 - Customised third party **Oauth2 module**
 - **EGI Check-In** Federated authentication
 - **Indigo Authorisation Management (IAM)**
 - **App. Authorization**
 - **EGI Marketplace**
 - **IAM**
(PaaS Orchestrator)
 - **User/Password**
(Maintenance)





● R-Studio

- First integrated application operating as SaaS solution, it has limited resources in terms of computing and storage, it operates as a **proof of concept**.

● **Chipster Accounts; (!) soon deprecated**, see Chipster topic in its related Clinic session

- Application migrated from the older Science Gateway, it just manages users credentials for the [Chipster JNLP applet](#).

● Optimal Design

- This is a community driven GUI capable to share computed results of different simulations among researchers. It only uses **UGR APIs** to restrict access to team members.

● FAIR Science Examples Science Gateway integration to the [INFN Open Access Repositories](#) ([INVENIO](#) + [Zenodo](#) -> [INVENIO-RDM](#))

- [PALMS](#) (Physical Activity Lifelong Modelling and Simulation)



● Join your app to the SSoD portal

- Very simple use cases, may be easily included into the SSoD portal
- [GUI Tutorial](#) in FGF web site may be really useful for SSoD integration
- Fastest integration possibility

● Create a new Science Gateway in *FGSG*

- Community driven portals may be hosted inside *FGSG* environment
- Small communities, fast creation, different portal technology

● Create a community hosted FG instance

- From FutureGateway Framework sources and script develop a new Science Gateway

● E-mail contact available in the page link



- **SSOD** Right today **published** in the [EOSC Marketplace](#)
 - Improve awareness, till now limited to local-based initiatives
 - Good visiting statistics
- **FGSG** ensured stability and fault tolerance
 - Very stable and reliable
 - Liferay recovered from its backup, 4th April 2020
 - Scalable
 - Resource demand can be improved through Docker Swarm
- **FGF** Currently maintained in best effort basis,
 - Next year (national and regional funds), will cover till 2023
 - Reproducibility





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**Thank you
for your attention!**

Questions?



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