INFN Cloud User Support: the link between research and IT
International Symposium on Grids & Clouds (ISGC) 2024

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Outline

State of Art

• Portfolio
• Guides
• Training courses
• Numbers
• Who? And How?

Projects
INFN – Cloud working structure

Activities assigned to different Working-Packages

<table>
<thead>
<tr>
<th>WP1</th>
<th>WP2</th>
<th>WP3</th>
<th>WP4</th>
<th>WP5</th>
<th>WP6</th>
<th>WP7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Infrastructure</td>
<td>User Support &amp; Training</td>
<td>Resources &amp; Sustainability</td>
<td>Security &amp; Policies</td>
<td>Middleware &amp; New Services</td>
<td>R&amp;D</td>
<td>Legal Compliance</td>
</tr>
</tbody>
</table>

Activities assigned to different Working-Packages

- WP1: Operation & Infrastructure
- WP2: User Support & Training
- WP3: Resources & Sustainability
- WP4: Security & Policies
- WP5: Middleware & New Services
- WP6: R&D
- WP7: Legal Compliance
Services – Current portfolio

**SaaS**

- NaaS
- Harbor
- MinIO

**PaaS**

- Simple VM
- DockerCompose, Run Docker
- Elasticsearch & Kibana
- Kubernetes, Spark
- HTCondor Mini
- IAMaaS
- Jupyter with persistence
- Sync & Share

**IaaS**

- Start & Stop
- Hostname choice
- Port managed by the user
- DNSaaS

*WORK IN PROGRESS*
Services – Dashboard

Centralized Services

- No Sys-admin
- Available to all users
Services – Dashboard

On-Demand

• Sys-Admin ONLY
• WIP: deployments on private network
  - no sys-admin
  - no Floating-IP consumption
Guides – Documentation [1]

Welcome to the INFN Cloud Use Cases Documentation
You’ll find here useful information regarding INFN Cloud infrastructure.

Getting started
- Getting Started
- How To: Request the "notification to be online administrator"
- How To: Request the "notification to be online administrator" (within services)

Centralised services
- Use the INFN Cloud Registry service
- Use the INFN Cloud object storage
- Use the Notebooks as a Service solution

General-purpose guides
- Enable authenticated security scan
- Access cloud storage from a scientific environment
- Create a customized docker image for services
- Associate a FQDN to your VMs
- Request to open ports on deployed VMs

Storage solutions
- Deploy SwiftShare as an (sys-admin nomination required)

Computing solutions
- Deploy Working Station for CYSNO (sys-admin nomination required)
- Instantiate docker containers using custom docker-composer files (sys-admin nomination required)
- Instantiate docker containers using docker run (sys-admin nomination required)
- Deploy an HTCondor 8.9.9 cluster on SwiftShare (sys-admin nomination required)
- Deploy a Kubernetes cluster (sys-admin nomination required)
- Deploy an Apache Memcached cluster (sys-admin nomination required)
- Deploy a Spark cluster + Juptyer notebook (sys-admin nomination required)
- Create VM with ssh access (sys-admin nomination required)

User responsibilities

Important
The solution described in this guide consists on the deployment of a Kubernetes cluster on top of Virtual Machines instantiated on INFN-CLOUD infrastructure. The instantiation of a VM comes with the responsibility of maintaining it and all the services it hosts. In particular, be careful when updating the operating system packages, as they could incorrectly modify the current version of the cluster (v.24.12) and cause it to malfunction.

Please read the INFN Cloud AUP in order to understand the responsibilities you have in managing this service.

Kubernetes cluster configuration

Note
If you belong to multiple projects, aka multiple IAM-groups, after login into the dashboard in the upper right corner, select the one to be used for the deployment you intend to perform. All solutions are available for all projects. The resources used for the deployment will be accounted to the respective project, and impact on their available quota. See figure below.

Organised/supported training events (2022/2024)

2022
- ClueApp – 13-16/09
- 3° ML-INFN Hackaton 21-24/11
- Administration of resources provided through INFN Cloud – 29/11 – 2/12

2023
- User Course 29-30/05
- Clue App – 31/05-1/06
- 4t ML-INFN Hackathon 21-23/06
- Openstack & INFN Cloud 27-30/11

2024
- Administration of IT resources – 6-9/02
Cloud Subscriptions

IAM-Cloud

- IAM instance to perform AuthN/Z on the PaaS
- Resources allocation based on IAM Groups
- Access reserved only for INFN associates

* Planning to extend access to non-INFN users
Numbers – Cloud Subscriptions

![Graphs showing user registration and total users over time.](image-url)
Numbers – User Support

- ~1600 support tickets in over 4 years
- Only 14 tickets open right now
Who? How?

Support Team

First Level

Ahmad Alkhansia
Federica Fanzago
Daniele Lattanzio
Alessandro Pascolini
Carmelo Pellegrino
Francesco Sinisi
Stefano Stalio
Simona Stellacci
Carmen Giugliano
Alessandro Alberto Oliva
Salvatore Aurnia

NEW ENTRIES!!

Second Level

Stefano Stalio
Marica Antonacci
Giacinto Donvito
Ddaniele Spiga
Barbara Martelli
Vincenzo Ciaschini
Diego Michelotto
Daniele Cesini
Luca Giovanni Carbone
Enrico Vianello
Massimo Sgaravatto
Nadina Foggetti
And many more …

• Contacts via Service Desk
• Announcements cloud-announce@lists.infn.it
<table>
<thead>
<tr>
<th>Supported Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI_INFN</td>
</tr>
<tr>
<td>AMS-02</td>
</tr>
<tr>
<td>Cygno</td>
</tr>
<tr>
<td>Darkside</td>
</tr>
<tr>
<td>ELETBIC</td>
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<tr>
<td>EUROLABS</td>
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<tr>
<td>HERD</td>
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<tr>
<td>IXPE</td>
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<tr>
<td>KM3NeT</td>
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<tr>
<td>LHCb</td>
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<tr>
<td>MUONE</td>
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<tr>
<td>NUCS</td>
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<td>QUAX</td>
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<td>SI</td>
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<tr>
<td>TIFPA</td>
</tr>
</tbody>
</table>
Cygno

DATA and METADATA MANAGEMENT

DATA STREAMING and ONLINE RECONSTRUCTION

DATA ANALYSIS and SIMULATION

DATA and METADATA online visualisation and historization
KM3NeT

SVN repo
• A legacy SVN repo being maintained as a reference

KM3DIA
• DOM Integration Assistant (DIA)
  → database collecting all the informations from DOM integration sites
• Redundance on more sites

Owncloud
• A shared space to keep documents
NUCS – NUcleo Cyber Security

Scan-Servers

- 6 virtual-machines instantiated on INFN-Cloud alongside the previous 12 at INFN-CNAF and INFN-Firenze
Conclusions

WP2 deals with user **support** and **training**
- Interaction with projects
- Support for the adoption of Cloud-native technological solutions

**Collaboration** with other groups present in INFN Cloud

New challenges are expected as **DataCloud** begins
- Update on-boarding procedures for new non-INFN users
- Guides and training to support the evolution of services
Thanks for the attention!