Research Cloud Infrastructure Status & Support

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Highlights

- Infrastructure
  - Backbone
  - Federation
  - Evolution
- Access & Support
  - Documentation & Training
  - Support System

INFN Cloud - background

Starting from INFN experiences in international projects and from those developed internally (e.g. in CCR), with INFN Cloud we have built and defined:

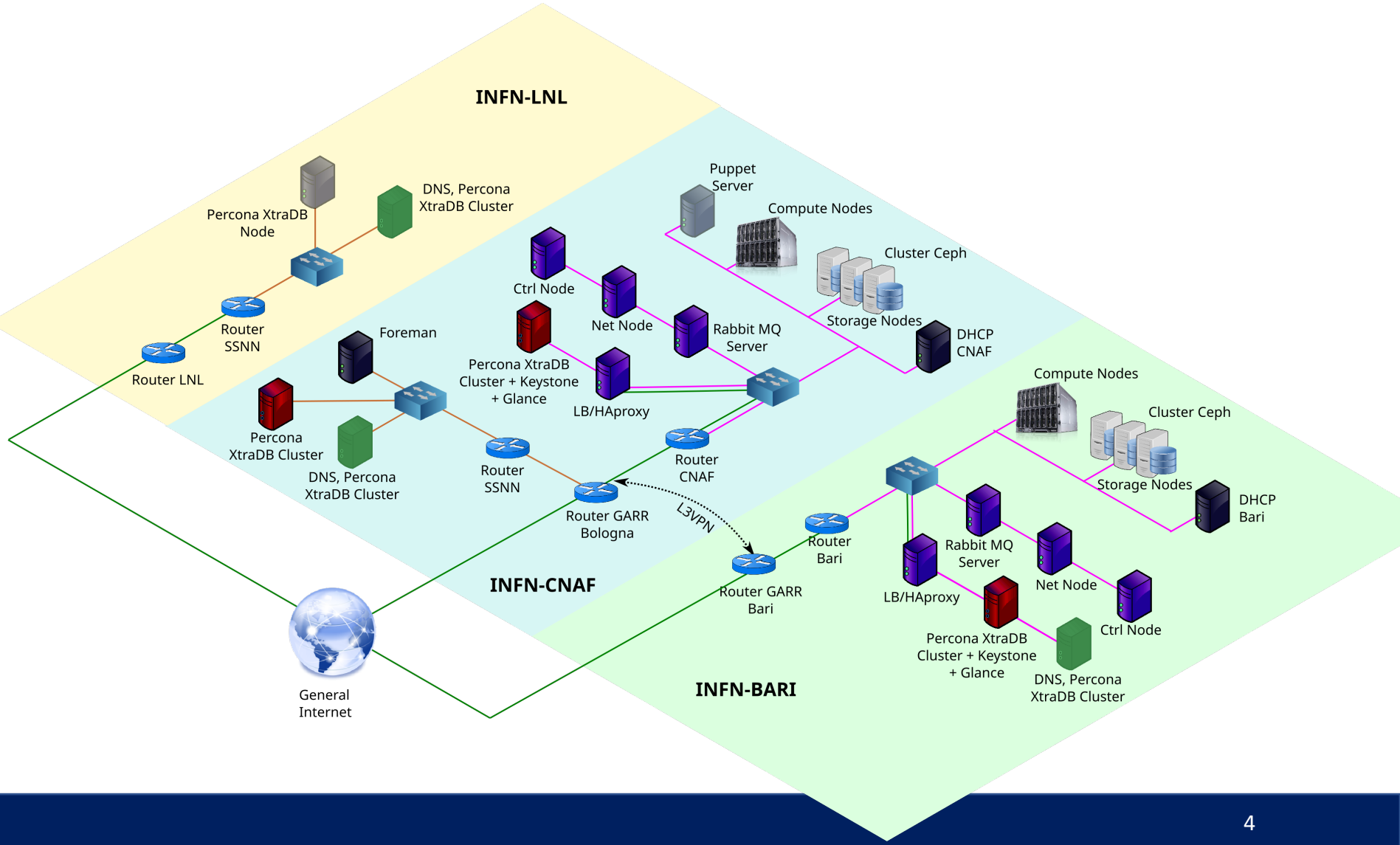
- A **multi-site federated** Cloud infrastructure.
- A **set of services** available through a portal, from a terminal or with a set of APIs.
- A "high-level" **mechanism** for the **adaptation** and **evolution** of the service portfolio according to the **needs and requests of users**.
- A **fully distributed** intra-INFN **organization** for the support and management of infrastructure and services.
- A series of **rules for access** and **management policies** of INFN Cloud resources that incorporate INFN regulations and the more general national ones.

Backbone: IaaS & Paas layers

The **INFN Cloud Backbone** is a distributed cloud infrastructure running both **INFN Cloud Core Services** and **user resources**

The topology of the INFN Cloud Backbone eases the implementation of **geographic HA or failover** for its Core Services

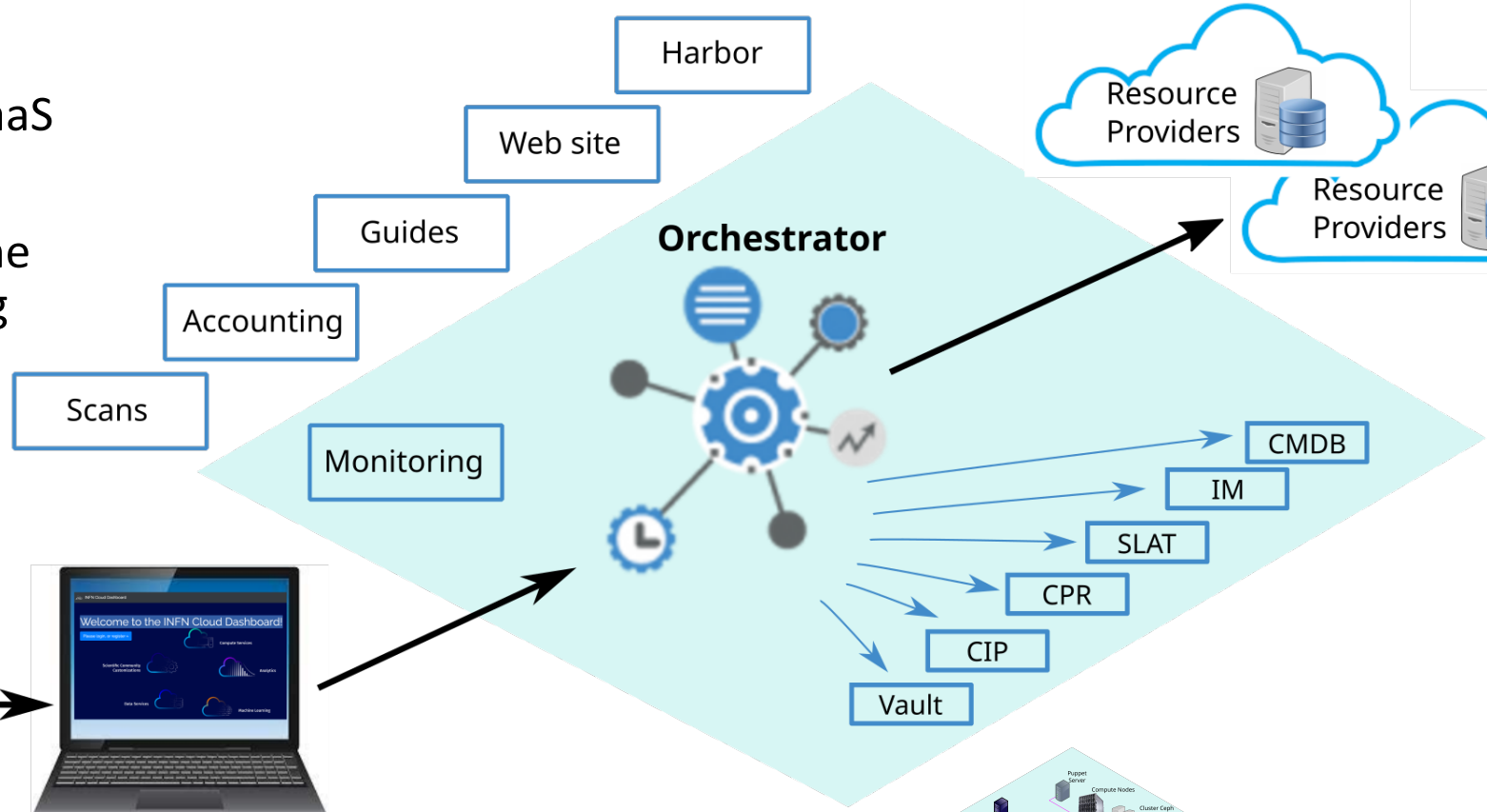
The infrastructure is managed by the INFN Cloud Team with **large use of infrastructure automation tools**.

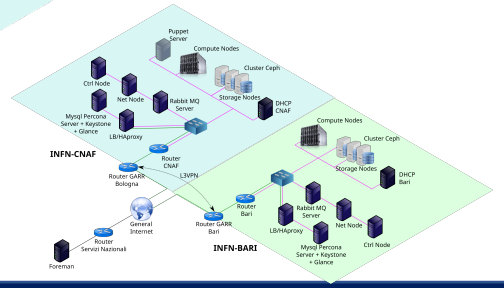


Backbone: IaaS & Paas layers

The **INFN Cloud Backbone** – PaaS layer

- the common entry point, the glue element for interacting with federated resources



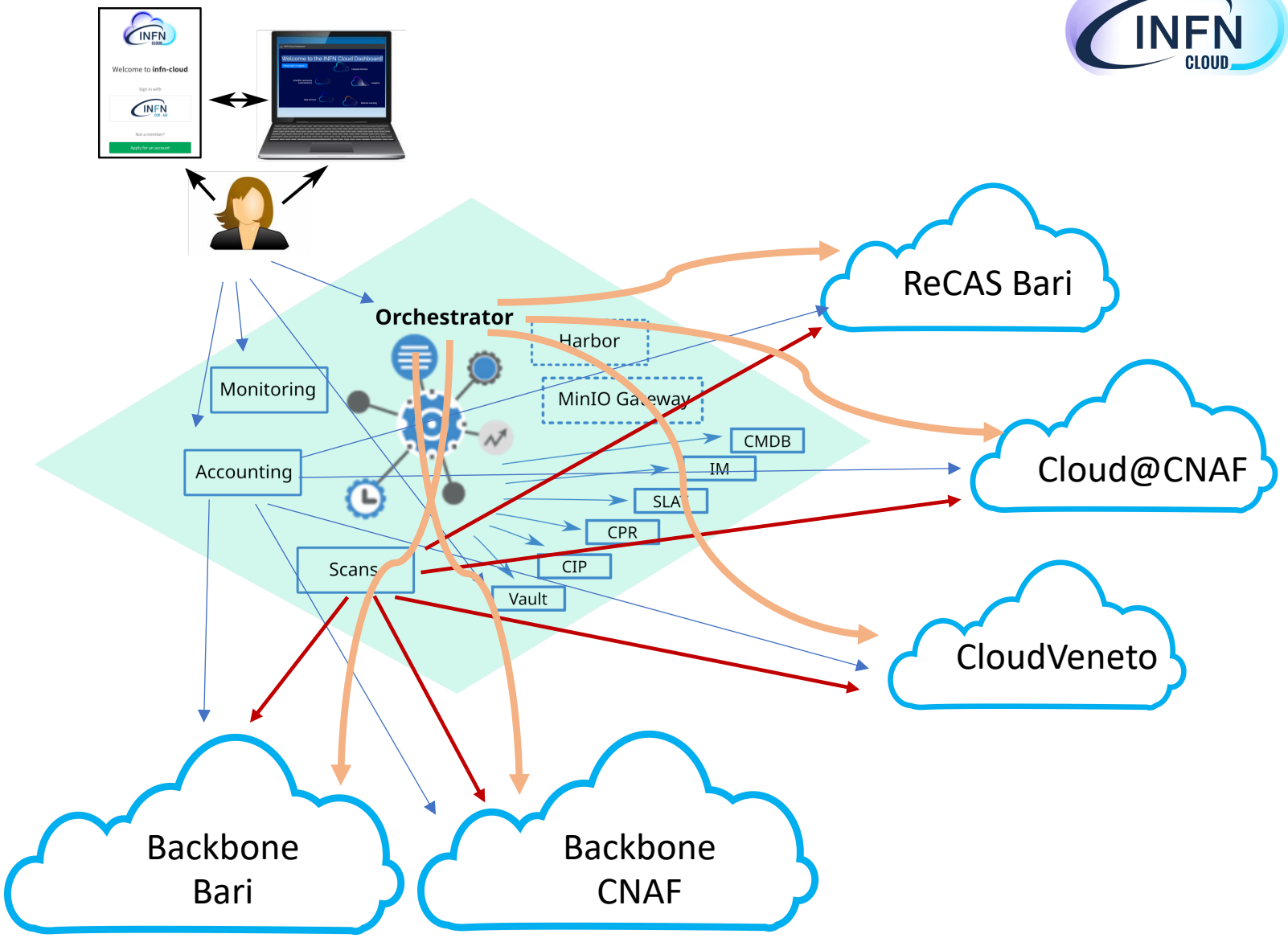


Federation

Federation of heterogeneous resources is a key point in the INFN Cloud architecture.

- **INFN Cloud** can take advantage of resources
  offered by federated infrastructures
- **Users** can transparently access federated resources
- **Federated infrastructures** can take advantage of high-level services offered by the INFN Cloud PaaS

Federation happens thanks to the common authentication/authorization layer provided by IAM and to the PaaS services. End users transparently access resources exposed by different cloud providers.

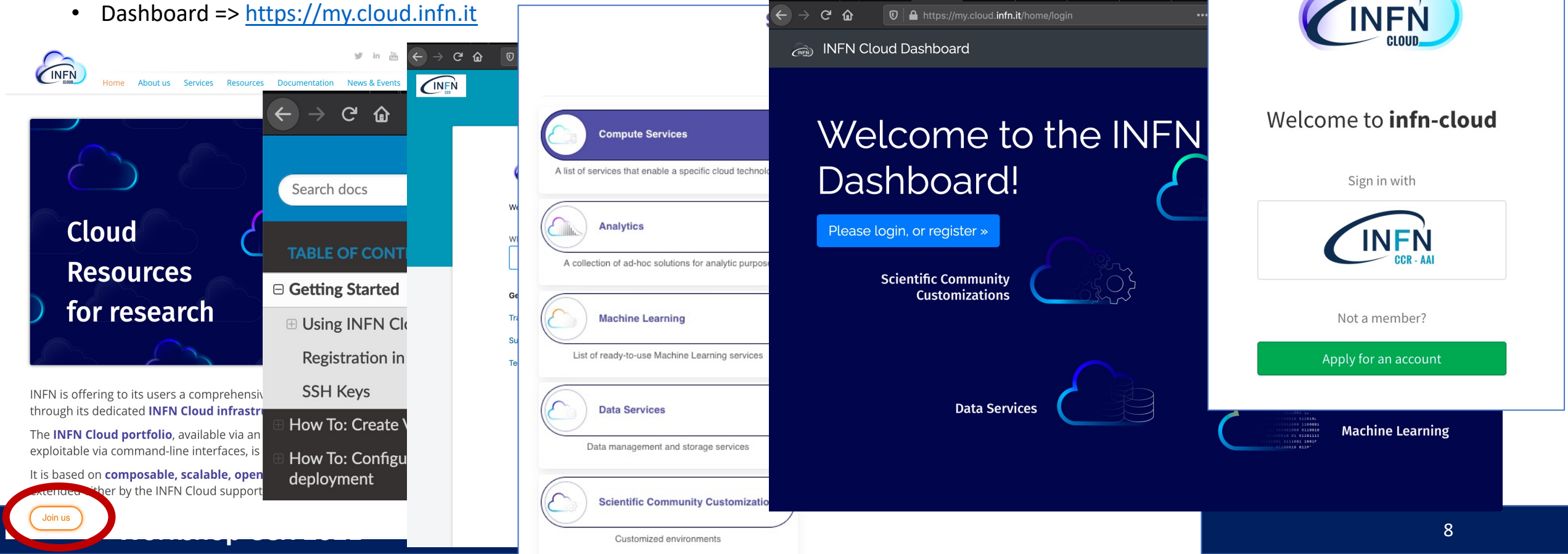


Evolution

- Consolidation of existing services
  - New hardware
  - New software versions
- New services
  - “release” MinIO Gateway & Harbor
  - DNSaaS
- New federated cloud infrastructures

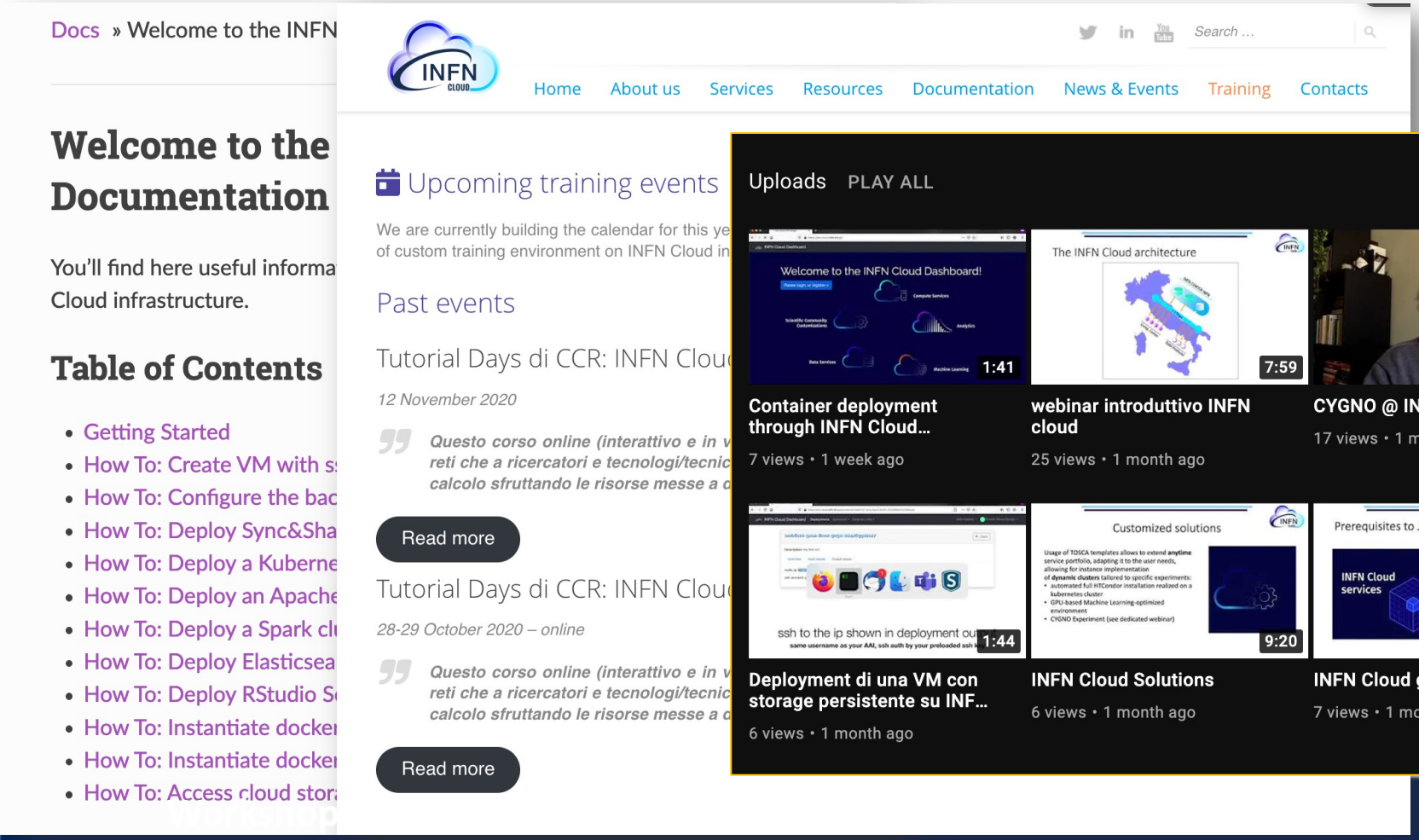
Access to INFN Cloud services

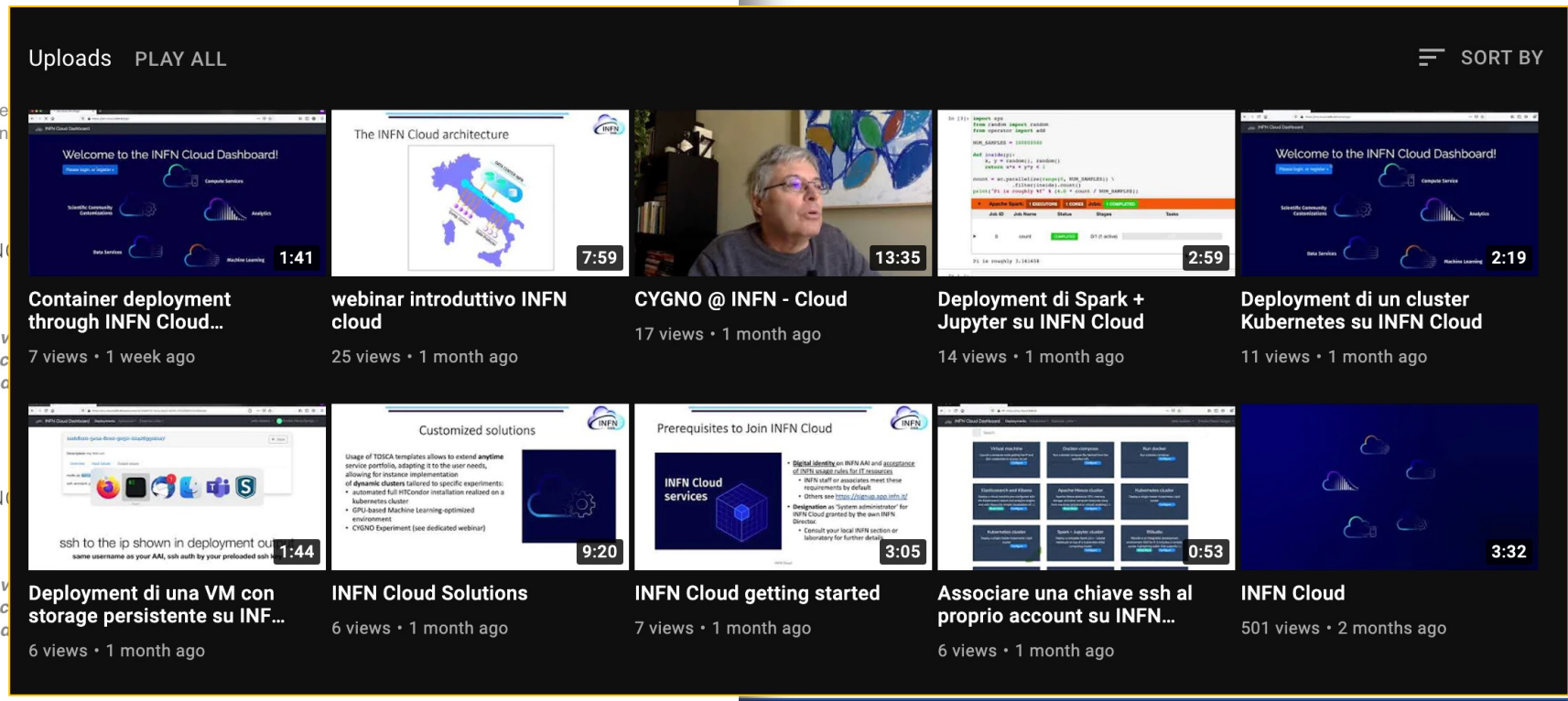
- **Several ways** to access services:
  - INFN Cloud web site => www.cloud.infn.it
    - **Users Guides**: https://guides.cloud.infn.it/docs/users-guides/en/latest/
  - Helpdesk => https://servicedesk.cloud.infn.it
  - Services Catalogue => https://www.cloud.infn.it/service-catalogue/
  - Dashboard => https://my.cloud.infn.it



Training

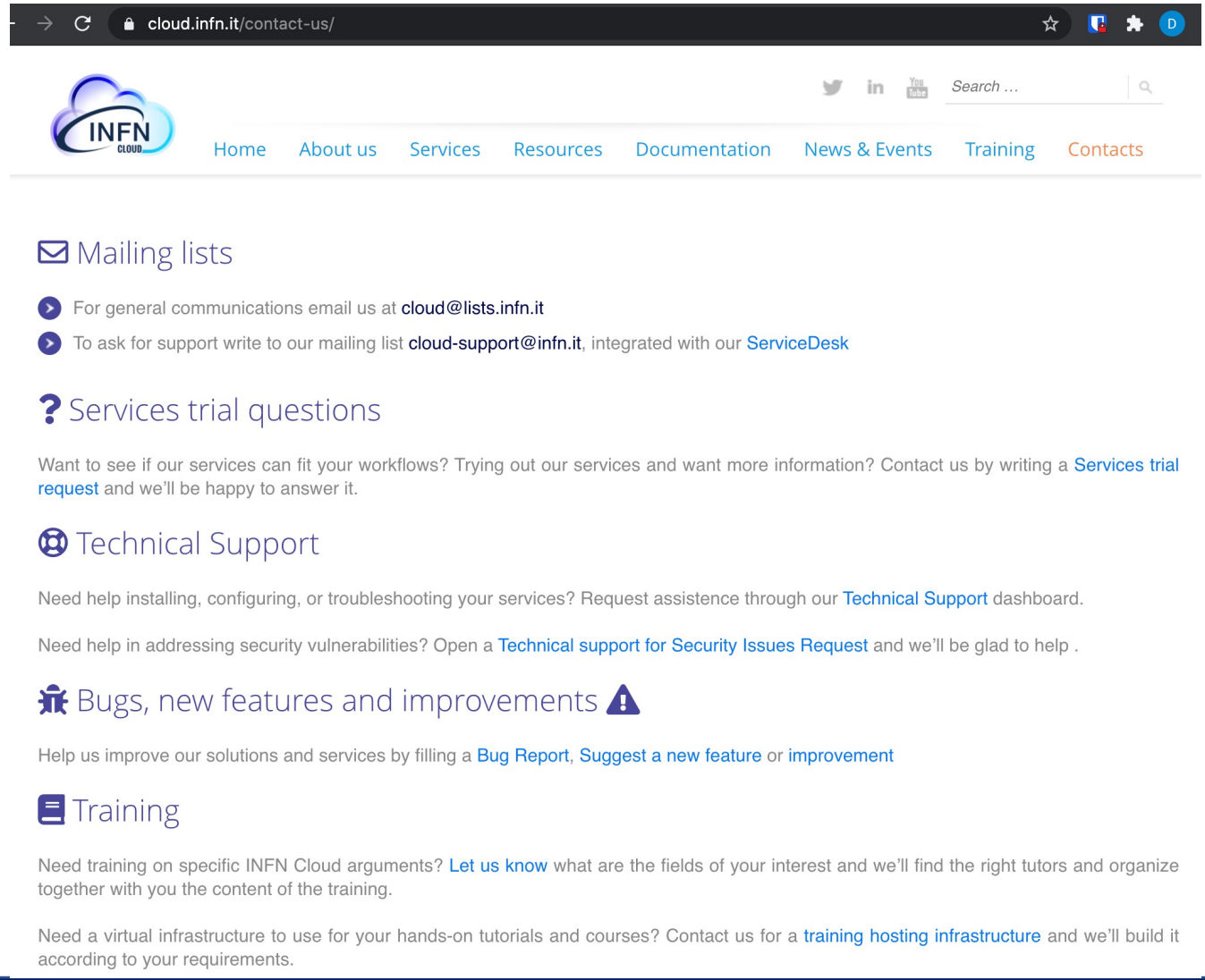
- Documentation
- Courses
  - https://www.cloud.infn.it/training/
  - "INFN Cloud Users and application" => https://l.infn.it/survey2021
- Webinar/mini-tutorials
  - YouTube Channel





Support System

- Contact for support requests:
  - https://servicedesk.cloud.infn.it/
  - cloud-support@infn.it
- Activities are grouped in first and second level of support
  - Weekly shifts
  - Shifters dedicated channel & documentation



Some numbers & details

- **Registered** users are ”enrolled” in a **catch-all** group with access to a **limited quota** of resources to try the solutions available in the Service Catalogue => 2 VMs (max. 4 vCPUs / 8GB RAM)
  - Resources available for ~ 100 users
- **Resources** available:
  - 2000 vCPUs, more than 1.2 PB on Backbone
    - Plus several thousand cores, some GPUs and O(PB) disk in the federated clouds
- **Users**:
  - Registered 76
  - Pending 74

…and More Details

- **26/05**
  - INFN Cloud: monitoring and accounting services
  - INFN Cloud: servizi utenti
  - CloudVeneto joins the INFN-Cloud federation
  - What's new in the INDIGO PaaS
  - La European Open Science Cloud: come interconnettere risorse e servizi
- **27/05**
  - Il progetto ML_INFN
  - CYGNO @ INFN – Cloud
- **28/05**
  - From AMS to HERD: status and exploration of CLOUD solutions for cosmic ray data analysis
  - … and more

Last BUT not least - People

- Bari
  - Marica Antonacci
  - Giacinto Donvito
  - Nadina Foggetti
  - Alessandro Italiano
  - Vincenzo Spinoso
  - Roberto Valentini
- CNAF
  - Alessandro Costantini
  - Andrea Ceccanti
  - Vincenzo Ciaschini
  - Doina Cristina Duma
  - Barbara Martelli
  - Diego Michelotto
  - Davide Salomoni
  - Francesco Sinisi
  - Riccardo Veraldi
  - Stefano Zani
- Padova
  - Federica Fanzago
  - Sergio Traldi
  - Massimo Sgaravatto
  - Marco Verlato
- Perugia
  - Diego Ciangottini
  - Mirco Tracolli
  - Daniele Spiga
- Bologna
  - Gianluca Peco
  - Paolo Veronesi
- LNGS
  - Stefano Stalio
- LNS
  - Emidio Giorgio
- Torino
  - Luciano Gaido
- Trieste
  - Lucio Strizzolo

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