

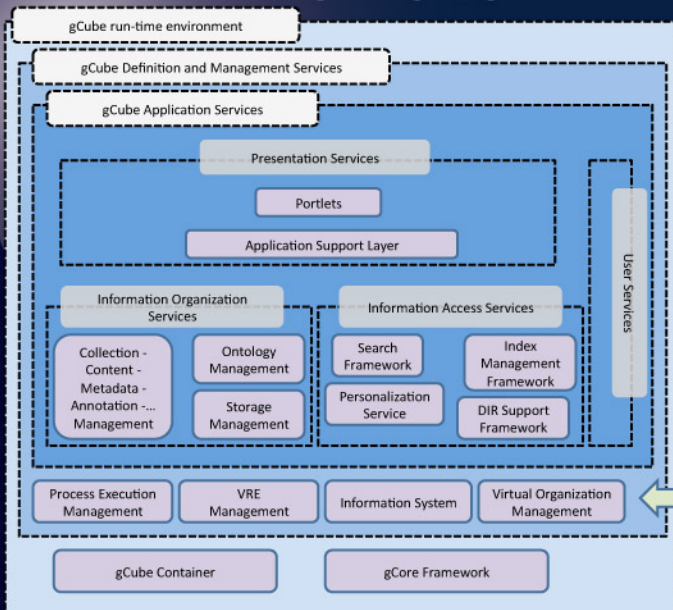
gCube is a software platform to enable e-infrastructures for the creation, hosting and maintenance of dynamic virtual environments capable of satisfying complex research and collaboration needs of distributed scientific communities organized in Virtual Organizations.

gCube extends the e-Infrastructure concept by enabling the organisation of community resources into on-demand, transient Virtual Research Environments, effectively promoting sharing and collaboration among scientific and administrative domains, while enforcing policies for resource exploitation. With a rich set of services and components it supports the full cycle of knowledge generation and sharing and enables the exchange of data and information within and across disciplinary and technological boundaries.

gCube architecture follows the Service Oriented Paradigm. It is logically organized in 4 layers, populated by 4 service Groups while an underlying layer of runtime software provides fundamental facilities to service implementation and execution.

The lower layer is formed by gCore Framework (gCF) and gCube Hosting Node (gHN): gCF is an entire software development framework that

facilitates the implementation of software services that exploit and integrate with the gCube infrastructure. The gHN is the environment that hosts gCube services on a system and essentially acts as the gateway of a computer resource (cpu, storage etc) into a gCube-powered e-infrastructure.



The services logical basis is formed by the **Infrastructure Definition and Management Services** that cover the areas of:

- Infrastructure Management, Monitoring and Self-reorganisation
- Virtual Research Environment Management
- Virtual Organisation and Security Support Services
- Process Execution

This service group, along with the Runtime software, are collectively called the "enabling layer".

Two service groups related to data, information and knowledge management build on top of the enabling components. **Information Organisation Services** cover aspects such as:

- Storage Provision
- Collection, Content, Metadata and Annotation Management
- Archive Import
- Content and Metadata Transformation
- Ontology Management

Information Access Services enable the efficient retrieval of information managed in Information Organisation Services, by providing services such as:

- Metadata Indexing
- Content Indexing
- Personalisation
- Distributed Information Retrieval (Content Source Description & Selection and Data Fusion)
- Search

On the logical top, **Presentation Services** exist, consisting of the following types of components:

- Application Support Layer
- Portals
- User Portlets
- Administrative Portlets
- Desktop clients

Beside these 4 service groups, **User Services** can be implemented on top or beside other gCube services for extending or complementing existing functionality.