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BIOGRID: A generic framework of federated brokers applied to life sciences services

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BIOGRID:

A generic framework of federated brokers applied to life sciences services

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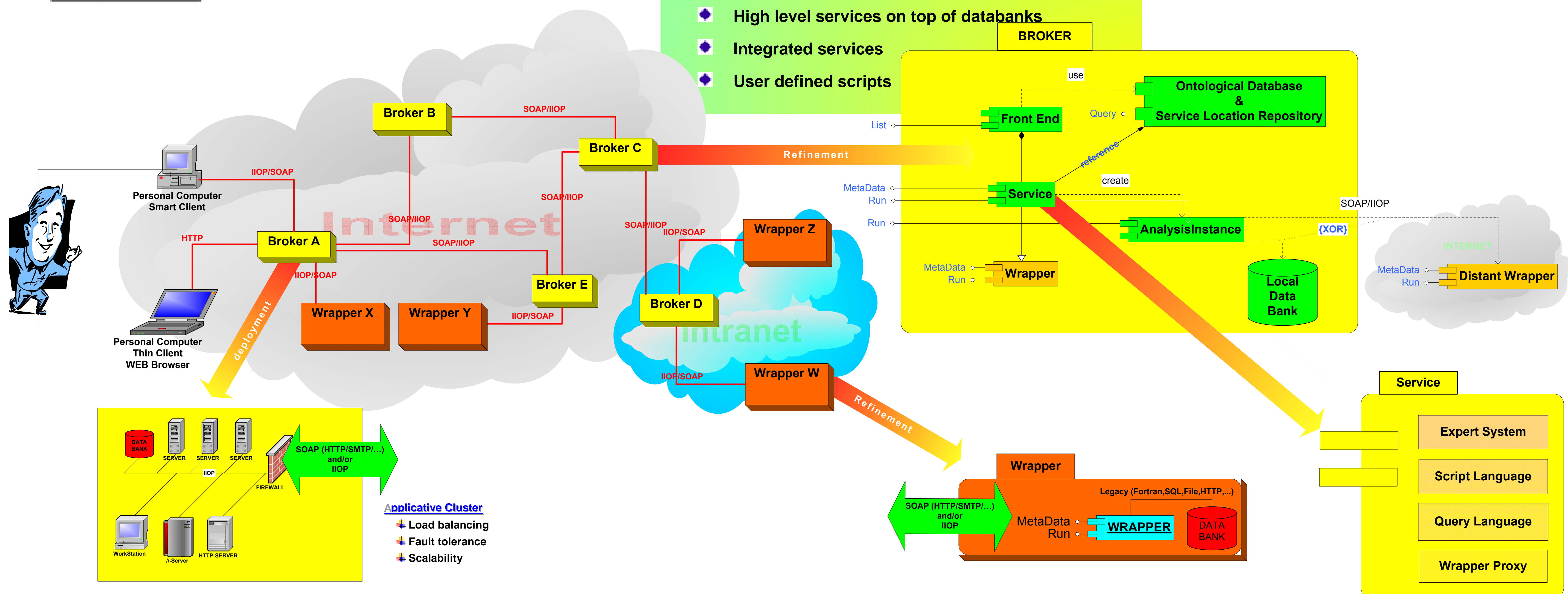


Belgian EMBnet Node



Broker Responsibilities :

- ✚ To match queries and services between components
- ✚ To cache databanks
- ✚ To hide geographical distribution, faults, legacy system
- ✚ To manage a common ontology of services
- ✚ To audit every transaction
- ✚ To charge users for services
- ✚ To host add-value services
- ✚ High level services on top of databanks
- ✚ Integrated services
- ✚ User defined scripts



OBJECTIVE

- ✚ Transparency
- ✚ One unified environment for a large community of users
- ✚ One common grid for most legacy systems (EMBOSS suite, BLAST ...)
- ✚ General and specialised DBs accessible through the federation
- ✚ DB mirrors when needed
- ✚ Duplication of services when needed

ADDED VALUE

- ✚ The Grid is much more than the “sum” of resources.
- ✚ Beside the evident “plus” of giving access to a wide community of users to the most up-to-date databases and maintained legacy systems
- ✚ It offers new brand possibilities as joining databases, adding new services (e.g. on top of legacy systems) and generating user interfaces from the meta data for old fashioned systems.

PROPOSED INFRASTRUCTURE

- ✚ Resources are described by meta data stored in a distributed catalogue and are incarnated into components that are distributed transparently among all the systems participating on the Grid, with appropriate relocation and replication mechanisms to guarantee seamless access.
- ✚ The Grid provides transparent distant access to data and services resulting in a new federated information system of LS resources. Legacy resources can be easily wrapped into the new system allowing monolithic LS systems to evolve into an accretive, distributed, federated environment. Moreover, it proposes functionalities such as audit, debug, accounting and security.
- ✚ The Grid is organized in layers with the possibility to add user-defined upper layers like query processors, script interpreters and expert systems.