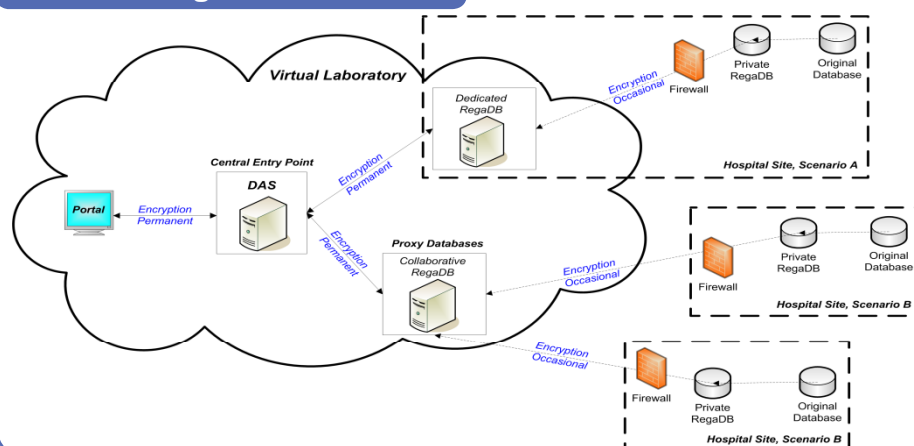


## ViroLab Data Access Services

## Objective

**Objective** The Data Access Services (DAS) let distributed and heterogeneous data resources appear transparent to virtual laboratory users by hiding them and their internals behind a layer of virtualization services that provides access in a consistent, data resource-independent, efficient and secure way.

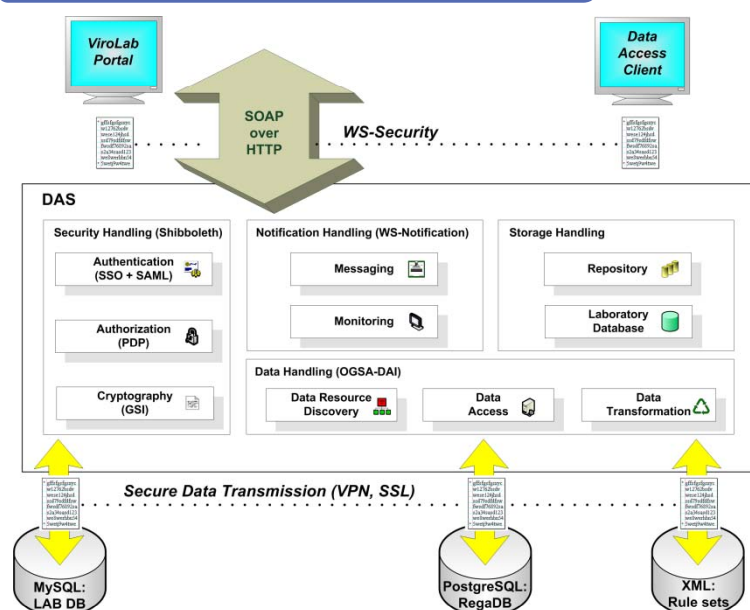
## Data Sharing within ViroLab



## Properties

- External access to the hospitals' security region is not required
- Data conversion into the RegaDB schema (with anonymization and extraction) occurs within each hospital
- Data updates within the virtual laboratory (onto the collaborative RegaDB) occur regularly
- Central access for data queries is provided via a single access point (DAS)

## Architecture of Data Access Services



## Data Handling

- Data access based on core OGSA-DAI functionality - accessors for different resources provided as web service interfaces
- Resource discovery for identifying available resources and querying schema information
- Data transformation for converting heterogeneous data sets into unified RegaDB schema
- Parallelization of distributed user queries enhancing performance and scalability

## Security Handling

- User authentication based on Shibboleth's Single-Sign On (SSO) principle and exchange of SAML tokens
- Policy Decision Point (PDP) enabling dynamic user authorization using pre-defined attribute-based access control policies
- GUI to easily manage access control policies
- Data encryption using trusted certificates (GSI)

## Storage Handling

- Application input and output data storage in central database, extended with meta information
- Intermediate results stored in central repository

## Future Plans

- Meta Query Language (MQL) to facilitate interaction between DAS, provenance system and clients
- Enhanced monitoring of relevant user interactions
- Fine-grain access control

## Development Team

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