

The “OMOPisation” of cancer data at *Cliniques universitaires Saint-Luc* has reached a milestone, enabling the participation in a first network study.

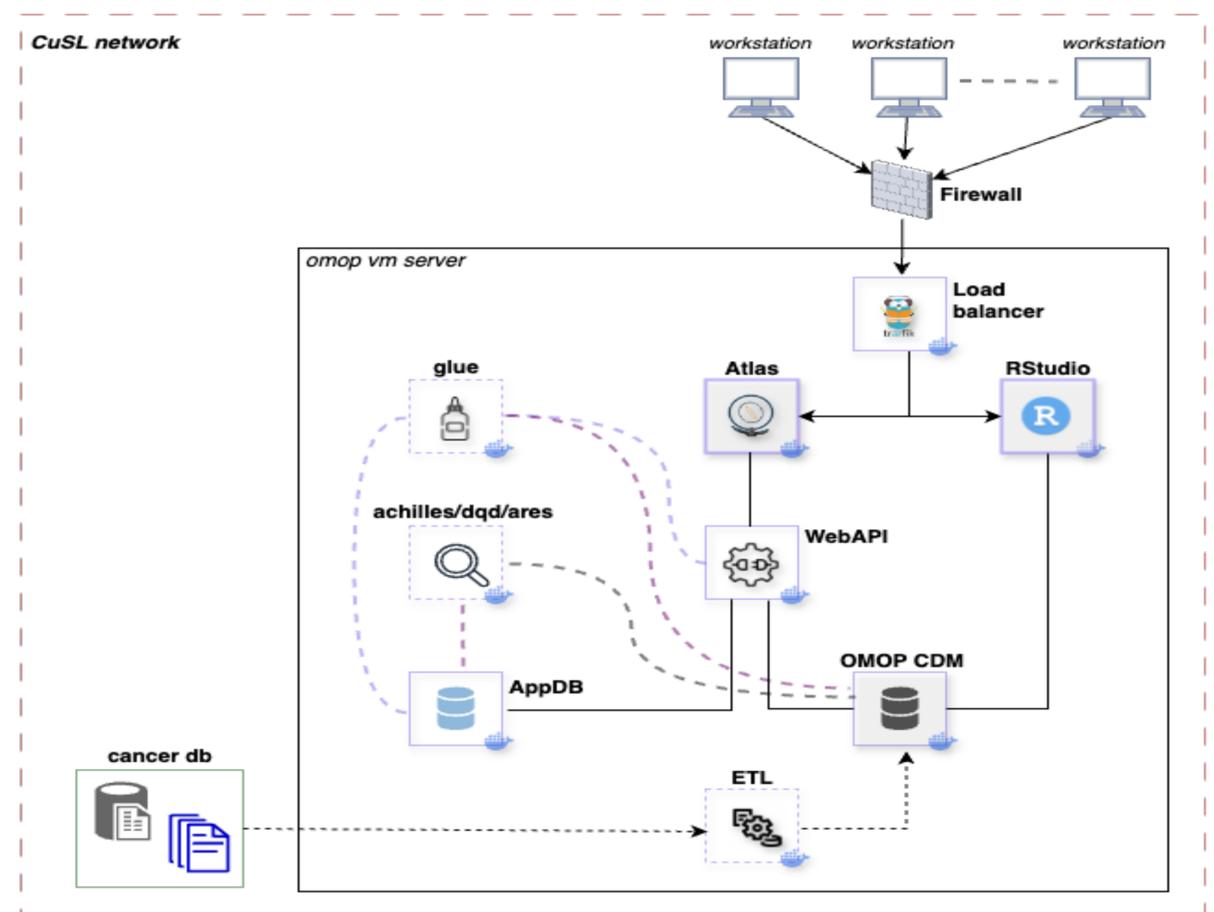
Title: Deployment approach for first phase of OMOP CDM harmonization and network study participation at CuSL

Background: The Cliniques universitaires Saint-Luc (CuSL) has been working to set up an on-premise OMOP CDM data warehouse (DWH) as a member of the European DigiONE project supported by the Digital Institute for Cancer Outcomes Research (DIGICORE) consortium^{1,2}. We have now reached a milestone by having an initial deployment in place for participation in a first network study, with the processes in place to extend the data set further for additional upcoming network studies.

Methods:

- A secure, access-controlled server has been implemented on the hospital infrastructure, initially set up on a Virtual Machine (VM) using dummy data for test/validation, and now validated and prepared for replication on a production VM.
- To ensure security and control, the entirety of the deployment configuration is maintained within a private GitHub repository. When setting up the deployment, it is cloned directly onto the server, where the copied Git working directory assumes a pivotal role, acting as the workspace for Docker Compose operations.
- The core components are encapsulated within open-source Docker containers⁴. Management of the deployment lifecycle is conducted using docker compose commands, which provides a convenient interface for starting, stopping, and updating the various components of the toolkit. The deployment methodology is designed with collaboration and revision management in mind.
- Technical challenges, such as Atlas configuration and R repository access, were resolved. Since all components are managed via Docker, updates and configurations can be systematically scripted to maintain consistency in future deployments.

Figure 1: CuSL phase 1 deployment architecture.



Results:

- The OMOP CDM database and related tools have been successfully deployed on a secured server within the hospital infrastructure.
- The ETL pipeline processes data from a cancer database, incorporating an initial subset from the 36 MEDOC (Minimal Essential Description Of Cancer) variables³ in view of performing 2 to 3 initial network studies.
- Out of 2309 ICD-O3 morphology/topology definitions, 1991 were mapped to OMOP condition concepts, with the remainder unaligned due to gaps in the OMOP vocabulary or imprecise source coding.
- The current setup is prepared for expansion to include additional data types like treatments and biomarkers for future network studies.

Conclusion: The deployment strategy strikes a balance between openness and control, providing a comprehensive, transparent, and secure analytical environment for OHDSI's tools. With the first milestone reached, being the successful set up and deployment of an OMOP'ed dataset, it will enable the participation in a first network study, as well as the expansion of the OMOP CDM data set to allow participation in additional studies, and to allow further usage of OMOP CDM for other projects at CuSL.



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