### Overview

This page provides a short overview of a non-exhaustive list of possible logical HL7 FHIR-based deployment architectures that communities could consider allowing the discovery and access to FAIR data by using HL7 FHIR API. Described architectures varying from a simple case with a well-known FHIR server acting as registry and repository for data and metadata, up to the case where repository endpoints are not known a-priori and needs to be discovered.

Implementers could also consider Hybrid FHIR/non-FHIR solutions not described here.

It is assumed that a proper privacy and security layer is realized to assure that all the access and usage conditions specified by the data sources are properly enforced (not shown in the pictures).

Future versions of this guide envision to analyze the described architectures more in details and provide specifications to support them.

### Case 1: FHIR Server acting as Registry/Repository

All data sources store FHIR resources representing data and metadata to be shared in a FHIR server. All potential clients belonging to this community know the endpoint of this FHIR server.

Client uses FHIR API to search and get FHIR resources representing data and/or metadata.

<div>

<img src="deployment-1.png" alt="Well-known Registry/Repository "

style="width:60%;padding-bottom: 25px;padding-top: 25px" />

</div>

**Figure 1 FHIR Sever acting as Registry/Repository**

### Case 2: FHIR Sever acting as metadata registry

A set of FHIR Servers are used as Data Repository by data sources. A community FHIR server acting as metadata registry is used to publish appropriate FHIR resources representing metadata.

All potential clients belonging to this community know the endpoint of this metadata registry FHIR server.

Client uses FHIR API to search and get FHIR resources representing metadata; data references provided by the retrieved resources are then used to get data from the proper data repository (not known a -priori).

<div>

<img src="deployment-2.png" alt="Well-known metadata registry"

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**Figure 2 FHIR server acting as metadata registry**

### Case 3: Registries/repositories discovering.

The client doesn’t know the end point of the server where metadata and data are stored; it queries then a FHIR server to discover the endpoint fulfilling specific search criteria. This information is then used to search and access data and metadata as described for case 1 and 2.

<div>

<img src="deployment-3.png" alt="Registries/repositories discovering "

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**Figure 3 Registries/repositories discovering.**