



WhamTech SmartData Fabric® Healthcare Configurable FHIR REST APIs

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(Best viewed in slideshow mode)

Challenges facing interoperability in healthcare

- Multiple vendors have multiple ways to represent common data
- HL7 standard data model has helped a lot, but (i) too complex and extensive for full adoption, (ii) typically, a relational or hierarchical implementation, requiring additional transformation, and (iii) there are a number of implementation variations
- HL7-based FHIR (Fast Health Interoperability Resources) REST APIs are a recent attempt to standardize access to data sources, but most vendor systems not anywhere close, as it is a different way of representing data from most vendor schemas, i.e., object vs relational
- Some FHIR REST APIs need access to multiple tables in a data source or multiple data sources
- A popular approach is to copy and transform data into FHIR-friendly data stores and enable data services on top, but this introduces problems, including latency, security, privacy, no interactivity, e.g., no write back to operational systems, additional storage and systems, and time and cost to implement
- Alternative frameworks bridge the gap between the FHIR object model and data source schemas (relational, hierarchical or flat), but have other shortcomings (no federation, poor data quality, lack of master data management/patient, etc.)



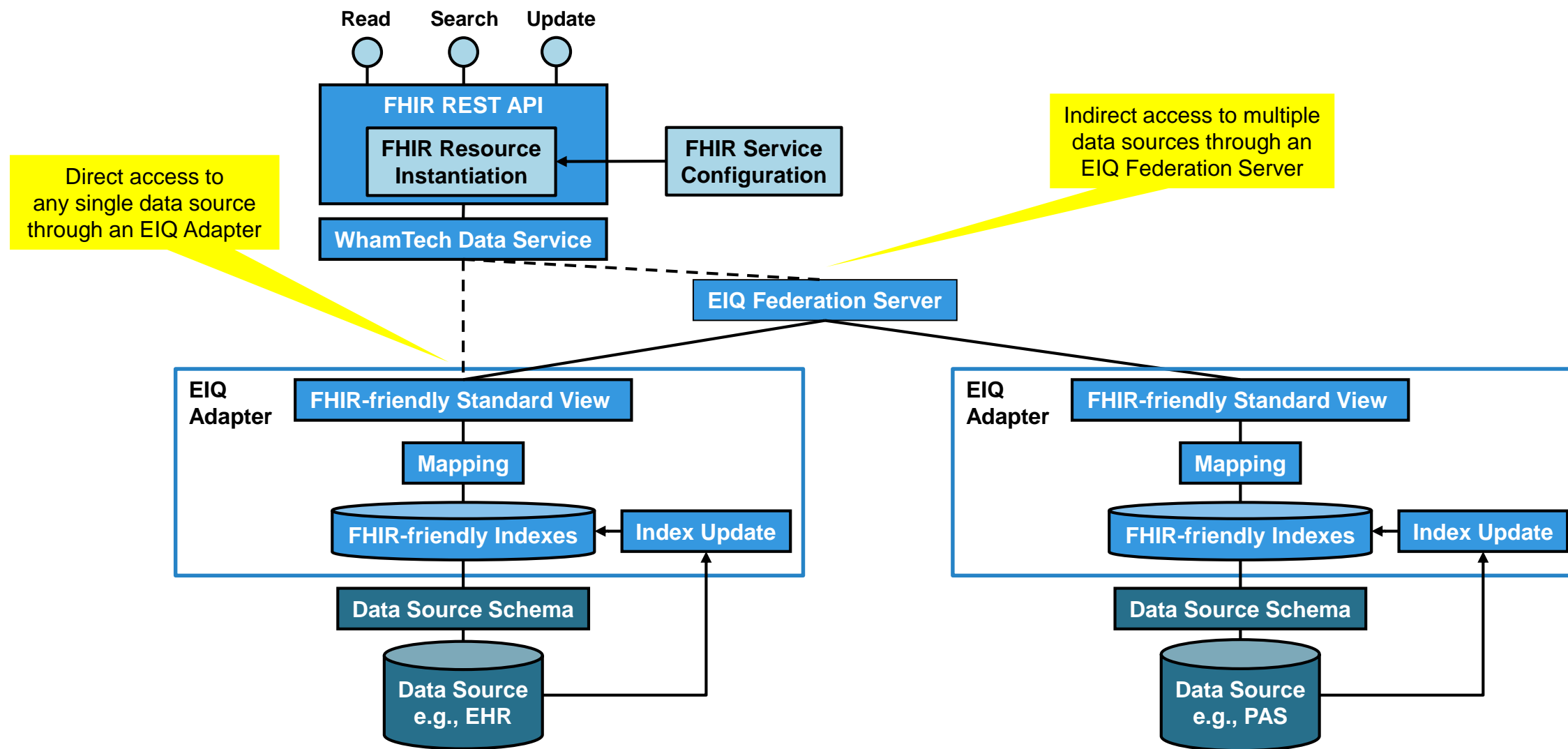
WhamTech SDF configurable FHIR REST APIs meet challenges

- Enable applications to access almost any and all healthcare data sources via FHIR REST API services
- Provide easy-to-use configuration tools that avoid/minimize coding
- Data stays in sources
- Bridge the gap between the standard FHIR model and multiple disparate data source models, e.g. enable legacy data sources to be seen as modern FHIR resources, at two levels:
 - At the data source adapter level:
 - FHIR-friendly indexes and indexed views bridge the gap
 - Data discovery, quality, security, privacy, transformation and standardization addressed upfront in indexes
 - Additional derived data, indexed views, event processing and other capabilities
 - At the FHIR-friendly model view level:
 - Makes it easy to understand the meaning of data
 - Hides the query complexity (SuperSchema)
 - Allows for federation across multiple data sources based on the common FHIR-friendly model

WhamTech SDF FHIR REST APIs functionality

- Can be deployed at the federation level or directly on adapters
- FHIR REST API configuration determines how FHIR resources are generated/instantiated in response to FHIR REST API calls
 - Allows for retrieving resource attribute values from data sources using one or more queries to adapters/federation (against a FHIR-friendly view)
 - Allows for additional data manipulation while assembling FHIR resources/attributes
 - Allows for configuring FHIR extensions
- Can validate the results for FHIR conformance
- Use HAPI (HL7 Application Programming Interface) open source library
- Provide MDM for a single, comprehensive view of data such as associated with patients (MPI), both within a single data source adapter and across multiple data sources at the federation level

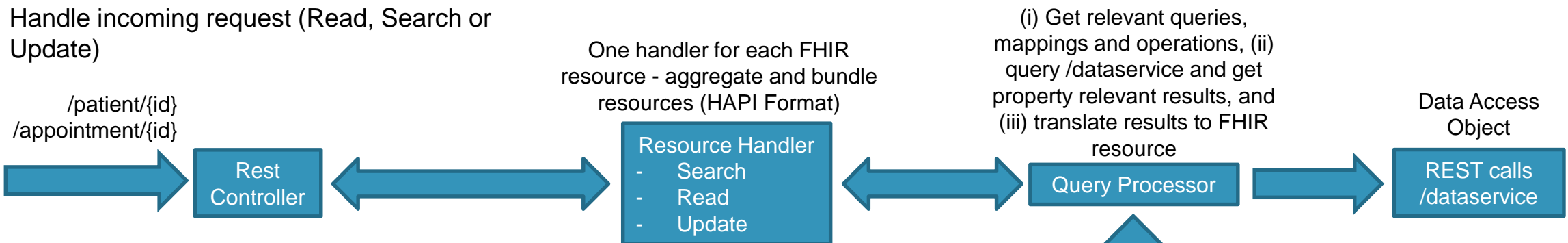
WhamTech SDF configurable FHIR REST APIs as a data service



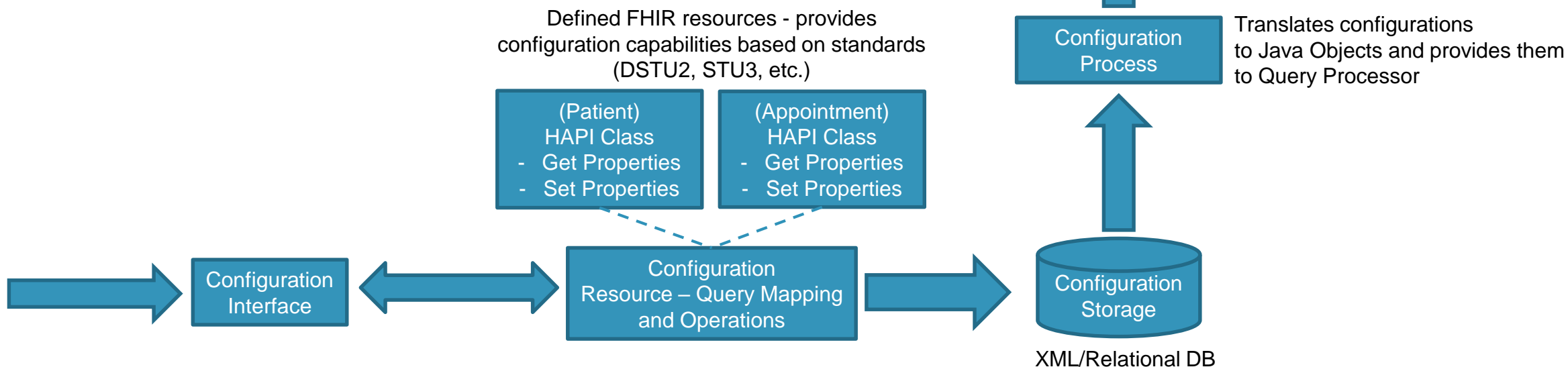
WhamTech FHIR REST API data service configuration internals

FHIR REST API Service

Handle incoming request (Read, Search or Update)



FHIR REST API Service Configuration





The End