Ring of FHIR Overview

CT Medication Reconciliation Hackathon

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OHS CONNECTICUT Office of Health Strategy

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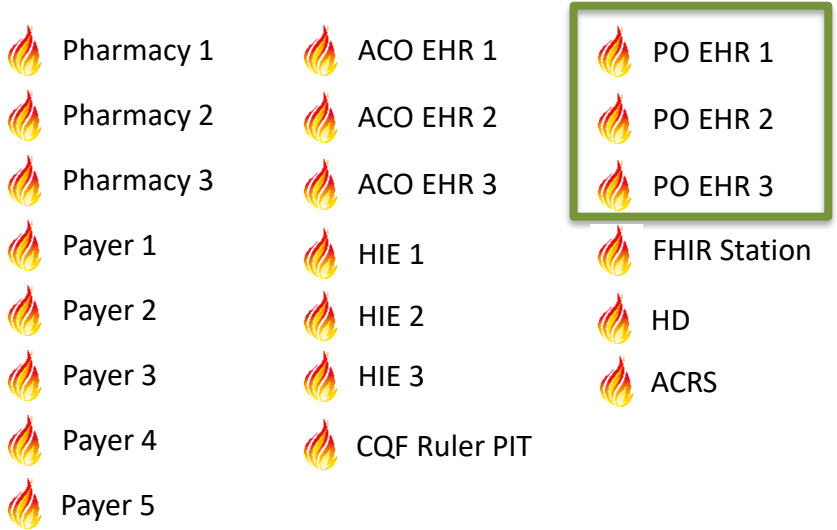
Ring of FHIR® Overview

- Composed of:
  - 18 FHIR PIT's - servers that represent real world healthcare organizations
  - Active Care Relationship Server (ACRS) that maps patient provider attributions
  - A Health Directory Server that lists endpoints for healthcare practitioners
  - A "FHIR Station" query broker
- All FHIR PIT's are populated with synthetic healthcare data
- Each FHIR PIT has a unique RESTful end point and a simple web user interface
- Each FHIR PIT is secured with basic authentication



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Synthetic FHIR Resources

Synthetic FHIR resources are mapped to FHIR PIT's based on the FHIR PIT's function (e.g. EHR, Payer, HD, ACRS, etc.)

- Observation
- Encounter
- Procedure
- Immunization
- MedicationRequest
- MedicationStatement
- Condition
- CarePlan
- Diagnostic Report
- Person
- Patient
- AllergyIntolerance
- ImagingStudy
- Organization
- Endpoint
- Practitioner
- PractitionerRole
- Basic
- Contract
- Location
- Medication

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Step 1 - Getting Started

1. Visit the Ring of FHIR Command Center in your browser to view a clickable list of all FHIR PIT's in the Ring. The URL of the Command Center is - https://fire-pit.mihin.org/FHIRCommandCenter/
2. Click the "ACRS PIT" button to navigate to the ACRS PIT web UI.

Ring of FHIR Command Center

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Step 2 – Log In

1. Sign on to the ACRS PIT using the user name and password provided prior to the event.

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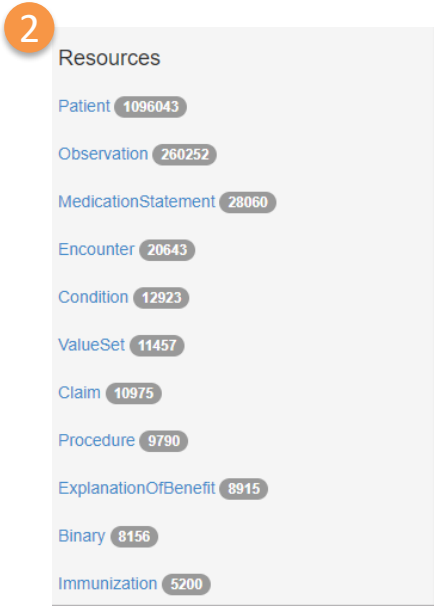
Step 3 – Explore the Web UI

1. Set options according to your preference
2. View the resources types and counts available on the server
3. View the servers conformance or capability statement



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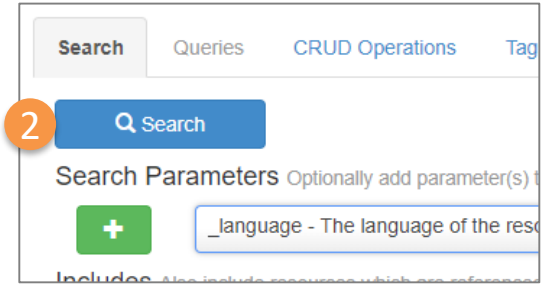
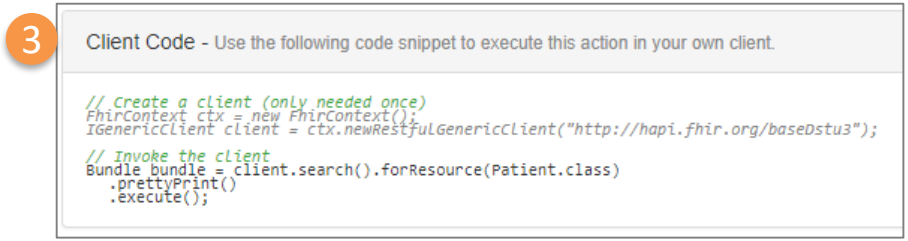
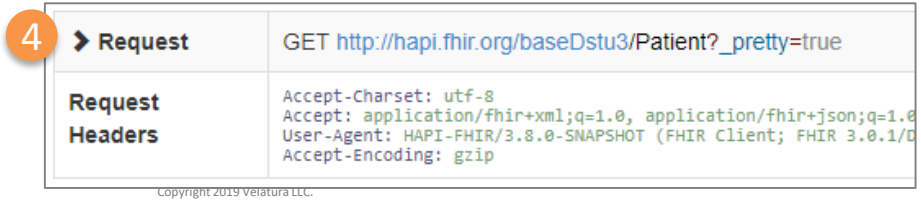
Step 4 – A Simple Query

1. Click “Patient” in the left rail “Resources” menu
2. Click “Search” to return a Bundle of Patient resources from the server
3. View the generated HAPI FHIR java client code
4. View the GET URL to return all Patient resources on the server - https://fire-pit.mihin.org/qhin-acrs/baseDstu3/Patient







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Step 4 Continued – A Simple Query

1. View the resources returned in the response bundle
2. View the raw message body content
3. Click “Read” next to a Patient in the “Result Body” section

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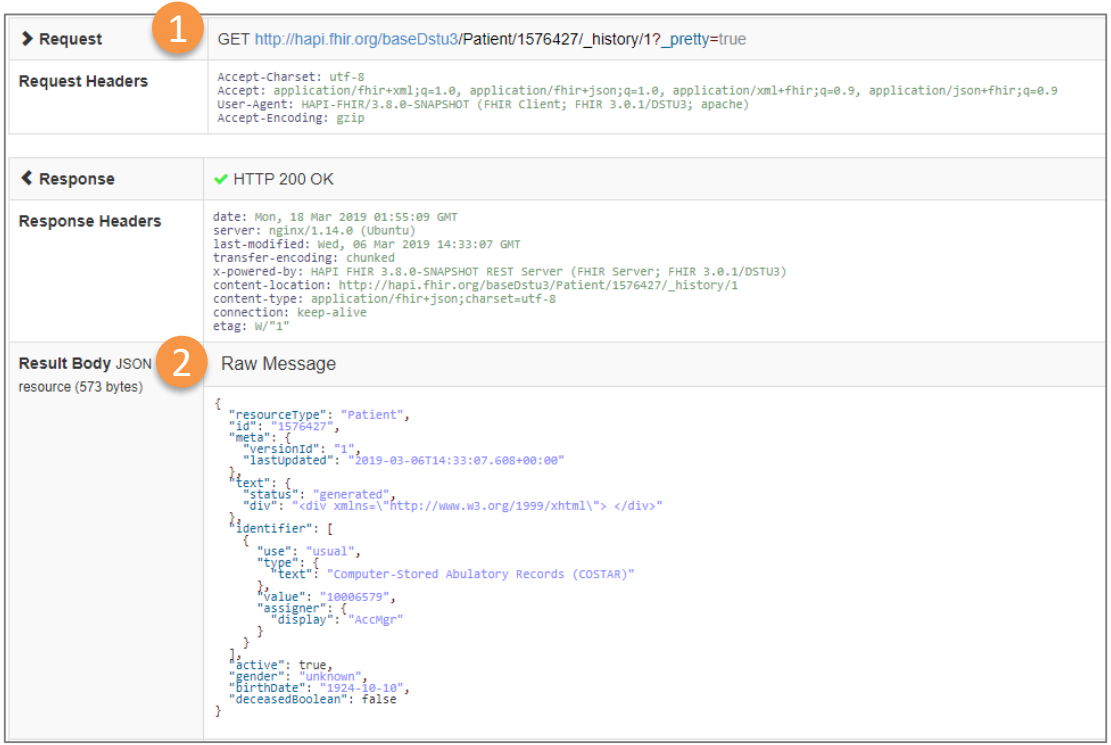
Step 4 Continued – A Simple Query

1. View the GET URL to return a specific Patient resource on the server - https://fire-pit.mihin.org/qhin-acrs/baseDstu3/Patient/318
2. View the raw message body content



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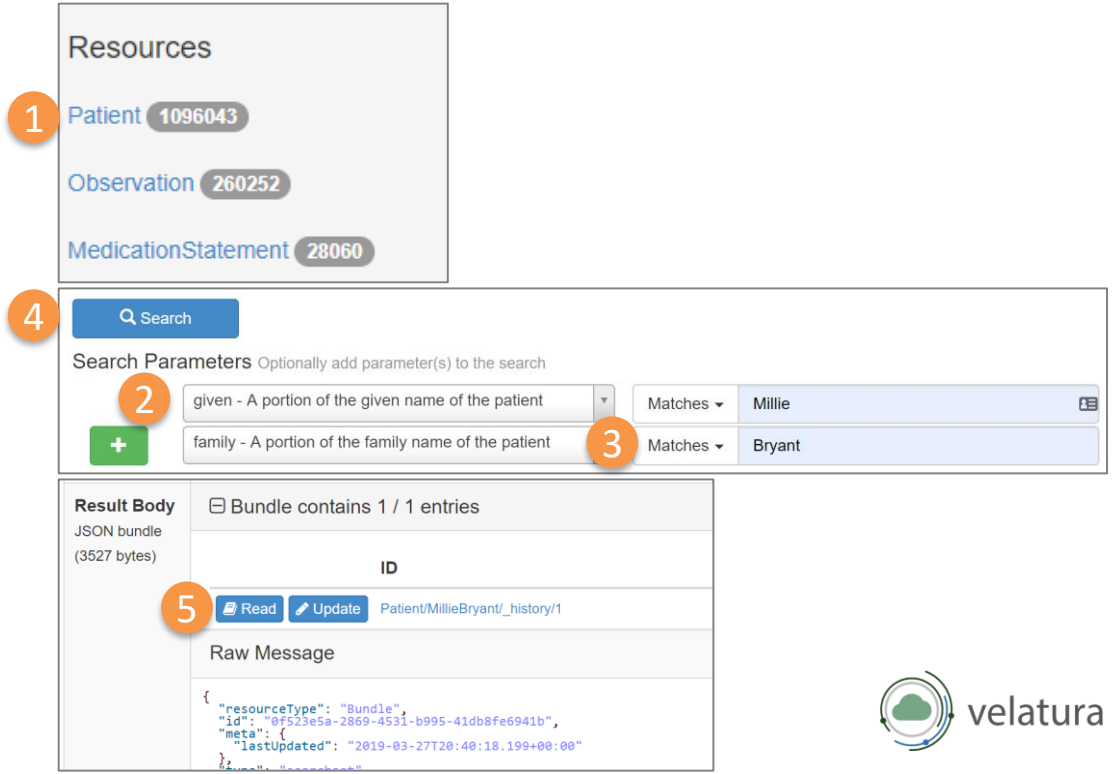
Step 5 – A More Advanced Query

1. Return to FHIR Command Center and select PO-EHR-2 PIT
2. Click “**Patient**” in the left rail “Resources” menu
3. Click “**Given**” and enter “**Millie**” in the search field.
4. Click the **+** button and add “**Family**” to search criteria and enter “**Bryant**” in search field.
5. Click “Search” to return a Patient resources from the server.
6. Click “Read” next to a Patient in the “Result Body” section.
7. View the GET URL to return Patient resources on the server – https://fire-pit.mihin.org/po-ehr-2/baseDstu3/Patient?given=Millie&family=Bryant&_pretty=true



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Step 5 Continued – Advanced Query

1. In the Raw Message section there will be more information about the Patient
2. Look for “Patient ID” - this can be used to search for more information on the Patient
    a. ID: “MillieBryant”


```
{
  "resourceType": "Bundle",
  "id": "0f523e5a-2869-4531-b995-41db8fe6941b",
  "meta": {
    "lastUpdated": "2019-03-27T20:40:18.199+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://fire-pit.mihin.org/po-ehr-2/baseDstu3/Patient?_pretty=true&family=Bryant&given=Millie"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fire-pit.mihin.org/po-ehr-2/baseDstu3/Patient/MillieBryant",
      "resource": {
        "resourceType": "Patient",
        "id": "MillieBryant",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-03-27T20:00:17.000+00:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/daf-patient"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><div class=\"hapiHeaderText\">Millie Janine <b>Bryant </b></div><table class
=\"hapiPropertyTable\"><tbody><tr><td>Identifier</td><td>19</td></tr><tr><td>Address</td><td><span>647 Kinneck Road SE  </span><br/><span>
Jackson </span><span>MI </span><span>UNITED STATES </span></td></tr><tr><td>Date of birth</td><td><span>01 July 1945</span></td></tr></tbo
dy></table></div>"
        },
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          {
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```


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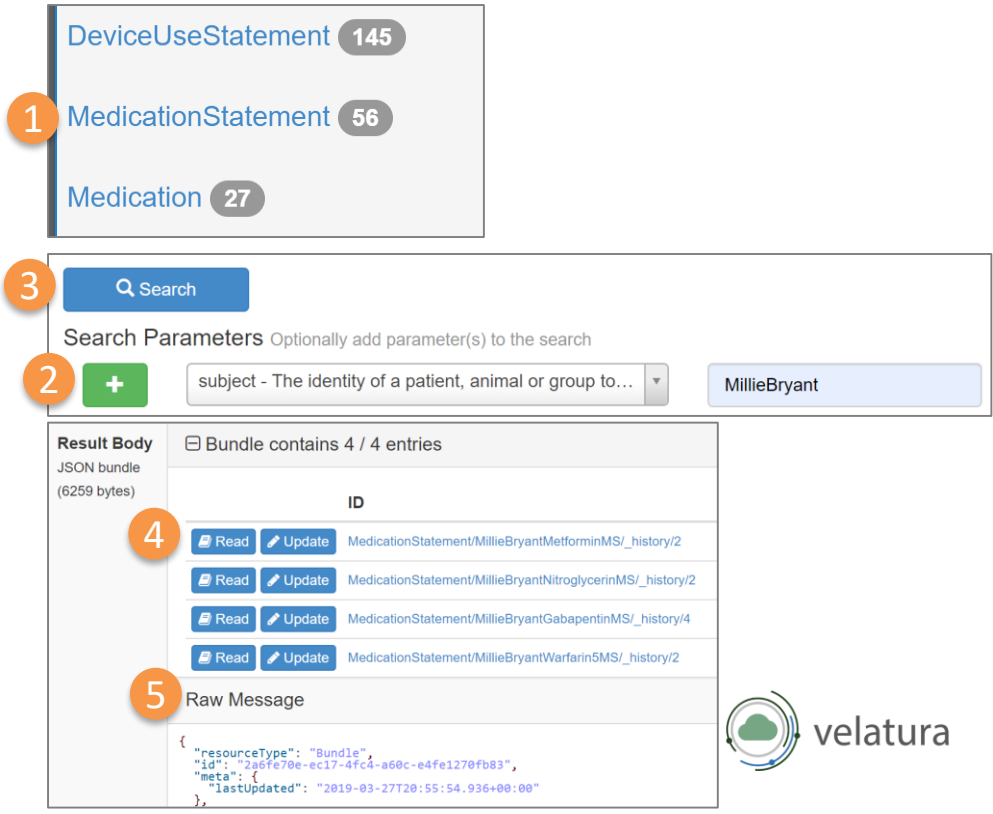
Step 6 – Find MedicationStatement

1. Click “**MedicationStatement**” in the left rail “Resources” menu
2. Click “**Subject**” and enter Patient Name – “**MillieBryant**”
3. Click “Search” to return a Bundle of MedicationStatement resources from the server.
4. Click “Read” next to a MedicationStatement in the “Result Body” section.
5. View the generated HAPI FHIR java client code.
6. View the GET URL to return all Patient resources on the server –

https://fire-pit.mihin.org/po-ehr-2/baseDstu3/MedicationStatement?subject=MillieBryant&_pretty=true



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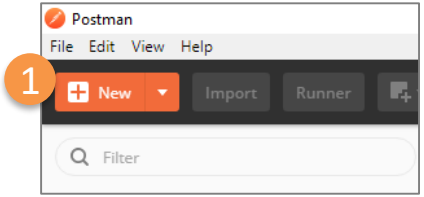
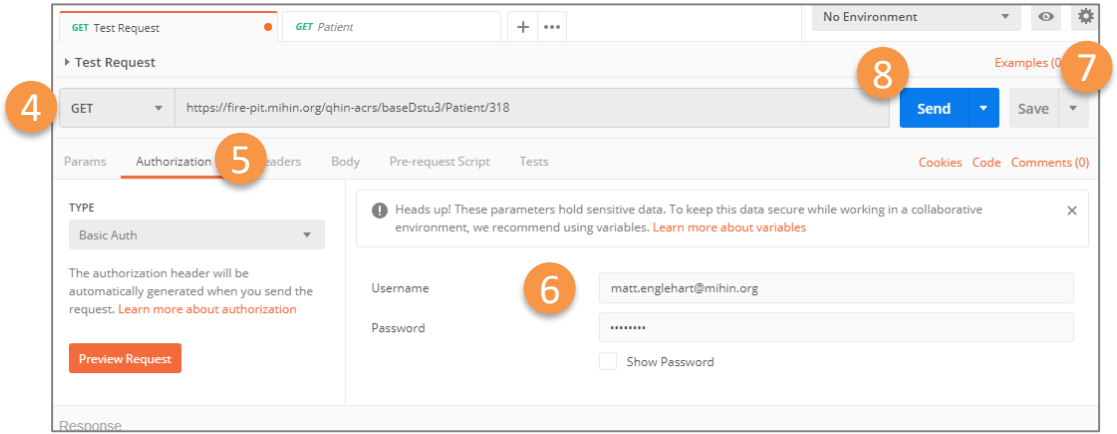
Try it with Postman

1. Download Postman - https://www.getpostman.com/downloads/
2. Click the down arrow on the orange “New” button and select “Request”
3. Create a request name like “Test Request”
4. Click “Save”
5. Select “Get” and copy the following URL into the “Enter request URL” input box - https://fire-pit.mihin.org/qhin-acrs/baseDstu3/Patient/318
6. Click “Authorization” then select “Basic Auth” from the “Type” dropdown menu
7. Enter your user name and password on the right
8. Click “Save”
9. Click “Send”





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Ring of FHIR URL's

EHR 1 (Golden Record)

https://fire-pit.mihin.org/po-ehr-1/user-login

EHR 2

https://fire-pit.mihin.org/po-ehr-2/user-login

EHR 3

https://fire-pit.mihin.org/po-ehr-3/user-login

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Med Rec Personas

Millie Bryant

George Tullison

Sarah Thompson

Christy Munson

Alex Gonzales

Santiago Morales

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Hackathon Activity

- Each of the Personas represent a Medication Reconciliation scenario that needs to be performed. Participants should identify the issue with each Persona and propose a solution(s) for Medication Reconciliation leveraging the available FHIR resources. We encourage participants to leverage all the Personas included and identify which of the following scenario(s) they match with:

    - Duplication of same medication
    - Duplication of generic and brand name medication
    - Missing medications
    - Negative Drug Interaction
    - Conflicting medication records
    - Complex medication management

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Thank you!

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