














Import FHIR Resource to GCP Healthcare API Guide

Prerequisite:

1. gcp-credential.json ([Authenticating to the API | Cloud Healthcare API | Google Cloud](#))
2. Create Project in GCP
3. Create Google Cloud Storage Bucket GCP -> Cloud Storage -> Name your bucket

 Cloud Storage	 Create a bucket
 Buckets	<ul style="list-style-type: none">• Name your bucket Pick a globally unique, permanent name. Naming guidelines <input type="text" value="SBH_Project"/> Tip: Don't include any sensitive information  LABELS (OPTIONAL)  CONTINUE
 Monitoring	<ul style="list-style-type: none">• Choose where to store your data Location: us (multiple regions in United States) Location type: Multi-region
 Settings	<ul style="list-style-type: none">• Choose a default storage class for your data Default storage class: Standard
	<ul style="list-style-type: none">• Choose how to control access to objects Public access prevention: On Access control: Uniform
	<ul style="list-style-type: none">• Choose how to protect object data Protection tools: None Data encryption: Google-managed key

4. Create Dataset in Healthcare API

 Healthcare	Browser 
 Browser	Datasets
 Marketplace	 Filter Filter datasets
 FHIR viewer	

5. Create Datastore in Healthcare API

Healthcare

Browser

Marketplace

FHIR viewer

Create Data Store

Datasets / SBH_CSOP MOCK (asia-southeast1)

- Choose a data store type and ID**

Data stores hold modality-specific healthcare data in the Cloud Healthcare API. Each modality has different structural and processing characteristics, but they are all backed by a standards-compliant data store that provides read, write, search, and other operations on the data.

Type *
FHIR

ID *
SBH_project

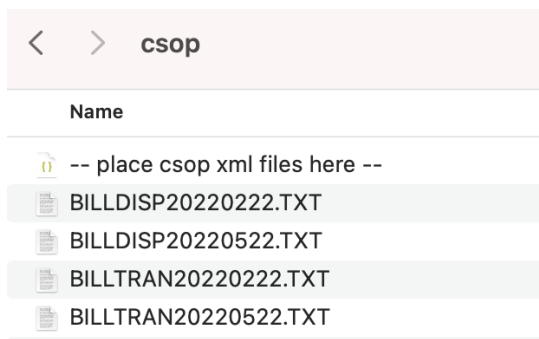
Only numbers, letters, underscores, hyphens, and periods are allowed

NEXT
- Configure your FHIR store**
 - Stream resource changes to BigQuery
 - Receive Cloud Pub/Sub notifications
 - Add labels to organize your data stores

CREATE CANCEL

Steps as follow:

1. Download Script in [cortexcloud/fhir-resource-on-cloud \(github.com\)](https://github.com/cortexcloud/fhir-resource-on-cloud)
2. Place CSOP xml files in [fhir-resource-on-cloud/tree/main/uploads/csop](https://github.com/cortexcloud/fhir-resource-on-cloud/tree/main/uploads/csop) (only support bill transaction and bill dispense)



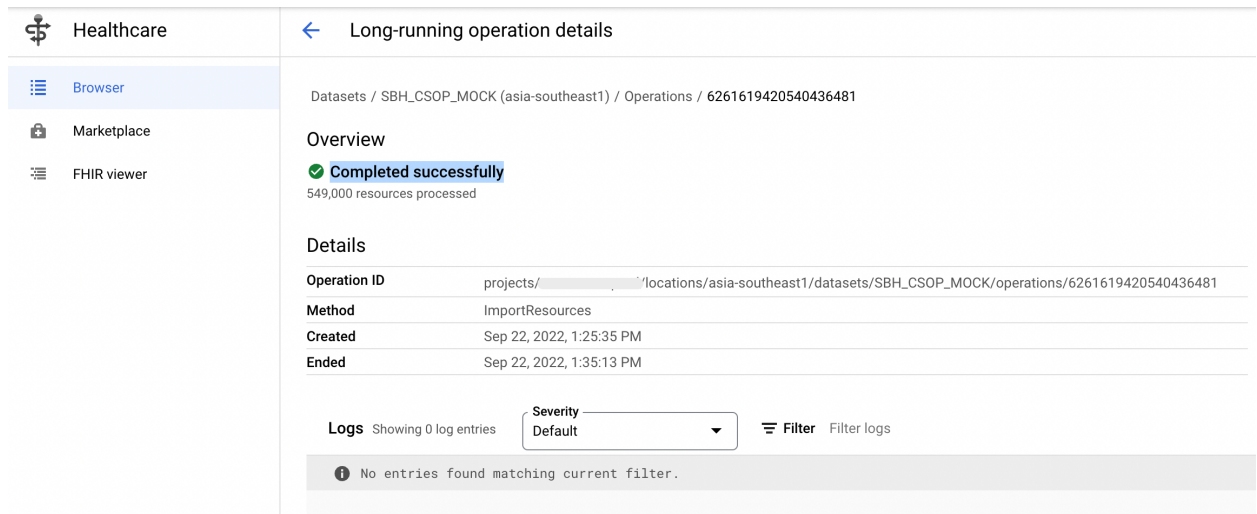
3. Place Your gcp-credential.json in [fhir-resource-on-cloud](https://github.com/cortexcloud/fhir-resource-on-cloud)/credential

4. Configure .env file (sample file -> .env.example)
 - a. project_id (replace with your GCP Project ID)
 - b. location (replace with the parent dataset's location)
 - c. dataset_id (replace with the parent dataset's ID)
 - d. fhir_store_id (replace with the fhir store ID)
 - e. version (replace with type of FHIR store)
 - f. gcp_bucket_name (replace with a cloud storage bucket name)
 - g. gcp_bucket_folder (replace with folder name in bucket)
 - h. credential_path (replace with gcp credential)
5. pip install -r requirement.txt

```
≡ requirements.txt
1  google-api-core==2.10.1
2  google-api-python-client==2.63.0
3  google-auth==2.12.0
4  google-auth-http2==0.1.0
5  google-cloud-core==2.3.2
6  google-cloud-storage==2.5.0
7  google-crc32c==1.5.0
8  google-resumable-media==2.3.3
9  googleapis-common-protos==1.56.4
10 python-dotenv==0.21.0
11 requests==2.27.1
12 webencodings==0.5.1
13 xmltodict==0.13.0
14
15
```

6. run command: python __main__.py
 - a. script will transform xml in folder uploads/csop to JSONs
 - b. JSONs file will push into Google Cloud Storage
 - c. then script will import FHIR resource to GCP healthcare (FHIR server)

7. Check the progress on Healthcare GCP -> Browser -> Operation

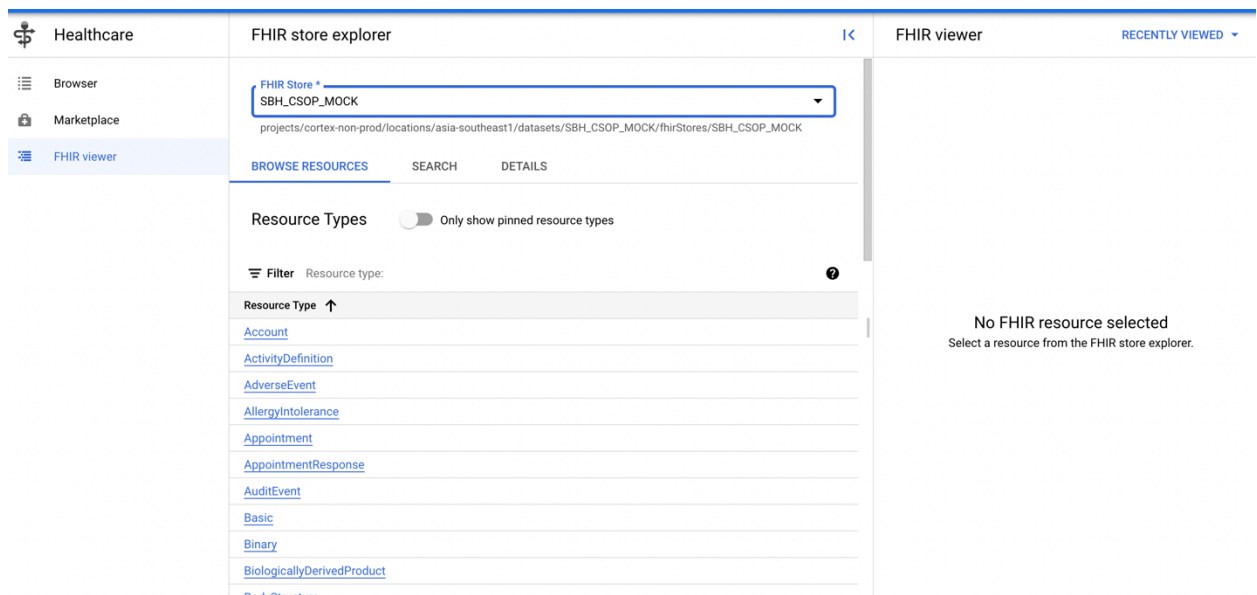


The screenshot shows the Google Cloud Healthcare console interface. On the left is a sidebar with 'Healthcare' at the top and 'Browser', 'Marketplace', and 'FHIR viewer' below it. The main panel is titled 'Long-running operation details' and shows the breadcrumb 'Datasets / SBH_CSOP MOCK (asia-southeast1) / Operations / 6261619420540436481'. Under the 'Overview' section, a green checkmark indicates 'Completed successfully' with '549,000 resources processed'. The 'Details' section contains a table with the following information:

Property	Value
Operation ID	projects/[redacted]/locations/asia-southeast1/datasets/SBH_CSOP MOCK/operations/6261619420540436481
Method	ImportResources
Created	Sep 22, 2022, 1:25:35 PM
Ended	Sep 22, 2022, 1:35:13 PM

Below the table, there is a 'Logs' section showing 'Showing 0 log entries' and a 'Severity' dropdown set to 'Default'. A message at the bottom states: 'No entries found matching current filter.'

8. For Searching the resource: Click FHIR viewer -> Choose FHIR Store -> Search -> Open Query Builder



The screenshot shows the Google Cloud Healthcare console with the 'FHIR store explorer' and 'FHIR viewer' panels. The 'FHIR store explorer' panel has a sidebar with 'Healthcare', 'Browser', 'Marketplace', and 'FHIR viewer'. The main area shows 'FHIR Store *' with 'SBH_CSOP MOCK' selected. Below this, there are tabs for 'BROWSE RESOURCES', 'SEARCH', and 'DETAILS'. The 'BROWSE RESOURCES' tab is active, showing a list of 'Resource Types' with a toggle for 'Only show pinned resource types'. The list includes: Account, ActivityDefinition, AdverseEvent, AllergyIntolerance, Appointment, AppointmentResponse, AuditEvent, Basic, Binary, BiologicallyDerivedProduct, and Device.

The 'FHIR viewer' panel on the right shows 'RECENTLY VIEWED' and a message: 'No FHIR resource selected. Select a resource from the FHIR store explorer.'

9. Select a FHIR resource and Search Parameter to get the result

✕ Query selection

NEW SEARCH

SEARCH TEMPLATES

1

Select a FHIR resource type

Resource type

Filter |Type to filter

Account

ActivityDefinition

AdverseEvent

AllergyIntolerance

Appointment

AppointmentResponse

AuditEvent

Basic

2

S

3

R

CANCEL

Query Preview

Show full path

10. Result Example

FHIR search operation

+ OPEN QUERY BUILDER

🕒 SAVED TEMPLATES

⌵

SEARCH RESULTS

JSON

102

103

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```
"fullUrl": "https://healthcare.googleapis.com/v1/projects/cortex-non-prod/locations
"resource": {
  "generalPractitioner": [
    {
      "identifier": {
        "system": "https://bps.moph.go.th/hcode/5",
        "value": "10661"
      },
      "type": "Organization"
    }
  ],
  "id": "17165880-ca16-4aa1-9b2e-8216c9bf4a32",
  "identifier": [
    {
      "system": "https://www.dopa.go.th",
      "value": "bd6e7b40-494d-4977-bdf9-5595bba3aa70"
    },
    {
      "system": "https://sil-th.org/CSOP/hn",
      "value": "17165880-ca16-4aa1-9b2e-8216c9bf4a32"
    }
  ]
}
```