

Despliegue del Servidor Terminológico RACSEL-LACPASS 2024

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Gestión de cambios

Fecha	User	Motivo	Versión
21-08-2024	Lucía Gründel Marcelo Cabello	Creación documento	v1.0

1. Lanzar el Servidor Terminológico

Abre dos terminales; una para lanzar el nodo y otra para ver el estado de los logs:4

En la terminal 1:

Unset

```
docker-compose up -d
```

En la terminal 2:

Unset

```
docker-compose logs -f
```

Comprueba el estado de ejecución de los contenedores **snowstorm** y **elastic**. Si no están del todo ok, vuelve a ejecutar **docker-compose up -d**.

Verifica que se ejecute el contenedor **init-script-snowstorm**. Este script lo que hace es descargar una versión de Snomed e incluirla en el contenedor respectivo.

```

root@base:/home/mcabello/apps/IPS-national-backend# docker-compose up -d
[+] Running 11/11
✔Container ips-national-backend-hapi-fhir-bundle-signer-1 Running 0.0s
✔Container resource-generation-service Running 0.0s
✔Container ips-national-backend-hapi-db-1 Running 0.0s
✔Container ips-national-backend-hapi-fhir-1 Running 0.0s
✔Container elasticsearch Healthy 0.0s
[+] Running 11/11
✔Container ips-national-backend-hapi-fhir-bundle-signer-1 Running 0.0s
✔Container resource-generation-service Running 0.0s
✔Container ips-national-backend-hapi-db-1 Running 0.0s
✔Container ips-national-backend-hapi-fhir-1 Running 0.0s
✔Container elasticsearch Healthy 0.0s
✔Container snowstorm Running 0.0s
✔Container browser Running 0.0s
✔Container ddcc-transactions-mediator Created 0.0s
✔Container ips-national-backend-init-script-snowstorm-1 Created 0.0s
✔Container ips-national-backend-database-app-1 Healthy 0.0s
✔Container ips-app Created 0.0s

```

El log debiera mostrar esto **“1. Setup Backup repository”**

[illegible]

Finalmente, si el script tuvo éxito, verifica la siguiente línea en el log con el valor **“3. Download and restore data”**

```

root@base:/home/mcabelo/z x root@base:/home/mcabelo/z x Windows PowerShell x Windows PowerShell x + x
elasticsearch {"@timestamp":"2024-08-21T13:09:32.244Z","log.level":"INFO","message":["member/bnoIAGmyQsQSEyus4RT0og]
deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snowstorm][mas
terServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "LY42gmsjQJ-kQ3uizh
glaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster"}
elasticsearch {"@timestamp":"2024-08-21T13:09:32.244Z","log.level":"INFO","message":["refset/0S21WLQ4Ta0wc28Lc9Jx8g]
deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snowstorm][mas
terServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "LY42gmsjQJ-kQ3uizh
glaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster"}
elasticsearch {"@timestamp":"2024-08-21T13:09:32.244Z","log.level":"INFO","message":["fhir-concept-map/jtzKAJWR_iQy
H-FeeF0m] deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snow
storm][masterServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "LY42gmsj
QJ-kQ3uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster"}
elasticsearch {"@timestamp":"2024-08-21T13:09:32.244Z","log.level":"INFO","message":["branch-marge/fuhamNLzSviVHLLN0
alQ5g] deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snowstor
m][masterServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "LY42gmsjQJ-k
Q3uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster"}
elasticsearch {"@timestamp":"2024-08-21T13:09:32.245Z","log.level":"INFO","message":["fhir-codesystem-version/96ATPJ
DCQZeJ3ugAPq9fgg] deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsear
ch[snowstorm][masterServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "L
Y42gmsjQJ-kQ3uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-clust
er"}
elasticsearch {"@timestamp":"2024-08-21T13:09:32.245Z","log.level":"INFO","message":["identifier/J0Q4mRYj0TW080dPEuv
cXn] deleting index", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snowstorm]
[masterServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.cluster.metadata.MetadataDeleteIndexService", "elasticsearch.cluster.uid": "LY42gmsjQJ-kQ3
uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster"}
100 21 100 21 0 0 10 0 0:00:02 0:00:02 --:--: 10
ips-national-backend-hapi-fhir-1 2024-08-21 13:10:01.559 [hapi-fhir-jpa-scheduler-cluster-d-1] INFO c.u.f.j.s.c.DatabaseSearchCacheSvcImp
l [DatabaseSearchCacheSvcImpl.java:256] Deleted 0 expired searches
ips-national-backend-init-script-snowstorm-1 {"acknowledged":true}3. Download and restore data
ips-national-backend-init-script-snowstorm-1 % Total % Received % Xferd Average Speed Time Time Time Current
ips-national-backend-init-script-snowstorm-1 Dload Upload Total Spent Left Speed
elasticsearch {"@timestamp":"2024-08-21T13:10:15.024Z","log.level":"INFO","message":["started restore of snapshot [sn
owstorm_preload_server:snowstorm_10.3.1_spain_20240331/rTsC0zmuQceZeY2CMUPexg] for indices [branch-merge-review, fhir-concept-map, classification-equivalen
t-concepts, relationship, concept, fhir-concept, identifiers-for-registration, refset, member, fhir-codesystem-version, branch-marge, semantic, description
, manual-merge-concept, admin-permission, classification, branch-review, classification-relationship-change, fhir-map-element, fhir-value-set, export-confi
g, identifier, codesystem, fhir-structure-definition, codesystem-version, branch]", "ecs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elastic
search.server", "process.thread.name": "elasticsearch[snowstorm][masterServiceUpdateTask][T#33]", "log.logger": "org.elasticsearch.snapshots.RestoreService", "
elasticsearch.cluster.uid": "LY42gmsjQJ-kQ3uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A", "elasticsearch.node.name": "snowstorm", "elasticsearch
.cluster.name": "snowstorm-cluster"}
elasticsearch {"@timestamp":"2024-08-21T13:10:15.473Z","log.level":"INFO","message":["reloading search analyzers", "e
cs.version": "1.2.0", "service.name": "ES_ECS", "event.dataset": "elasticsearch.server", "process.thread.name": "elasticsearch[snowstorm][generic][T#14]", "log.lo
gger": "org.elasticsearch.index.mapper.MapperService", "elasticsearch.cluster.uid": "LY42gmsjQJ-kQ3uizhglaQ", "elasticsearch.node.id": "ACLSJtgRsvmC-NWpgzE06A",
"elasticsearch.node.name": "snowstorm", "elasticsearch.cluster.name": "snowstorm-cluster", "tags": [" [member]"]}

```

1.1. Comprobar funcionamiento del servidor terminológico

Las URLs asociadas son:

Nota: En mi caso mi máquina tiene por nombre **mylacpass**. Reemplaza este nombre por localhost o por el nombre DNS de tu máquina

Unset

Browser de Snomed

-> <http://mylacpass:8082>

Swagger


-> <http://mylacpass:8180/swagger-ui/index.html#>

Api Fhir

-> GET <http://mylacpass:8180/fhir/metadata>

Desde el browser de Snomed haz una búsqueda por descripción, por ejemplo: “diabetes mellitus”

← → ↻ No seguro mylacpass:8082/?perspective=full&conceptid1=73211009&edition=MAIN/2024-03-31&release=&languages=es,en

SNOMED CT Browser Release: ▾ Version: 2024-03-31 ▾ Perspective: Full ▾ Feedback About ▾ 🇺🇸 

[Taxonomy](#) [Search](#) [Favorites](#) [Refset](#)

Search 🔍

Options

Search: Prefix any order ▾

Status: Active concepts only ▾

Description type: All ▾

Language Refsets ▾

☒ Group by concept

Filter results by Language

english 559

spanish 91

Filter results by Semantic Tag

☐ assessment scale 1

☐ calificador 2

☐ disorder 582

☐ entidad observable 2

☐ escala de evaluación 1

☐ finding 14

☐ hallazgo 14

☐ observable entity 2

☐ procedimiento 14

Type at least 3 characters ✓ Example: show fra

diabete mel

650 matches found in 5.421 seconds.

Diabetes mellitus	diabetes mellitus (trastorno)
FH: Diabetes mellitus	antecedente familiar de diabetes mellitus (situación)
H/O: diabetes mellitus	antecedente de: diabetes mellitus (situación)
diabetes mellitus lábil	diabetes mellitus lábil (trastorno)
Diabetes mellitus type 1	diabetes mellitus tipo 1 (trastorno)
Type 2 diabetes mellitus	diabetes mellitus tipo 2 (trastorno)
Diabetes mellitus service	servicio de diabetes mellitus (calificador)
diabetes mellitus atípica	diabetes mellitus atípica (trastorno)
Neonatal diabetes mellitus	diabetes mellitus neonatal (trastorno)
Diabetes mellitus excluded	diabetes mellitus, excluida (situación)
Secondary diabetes mellitus	diabetes mellitus secundaria (trastorno)
Diabetes mellitus screening	criado para la detección de diabetes mellitus (procedimiento)
Suspected diabetes mellitus	sospecha de diabetes mellitus (situación)
Diabetes mellitus education	educación del paciente diabético (procedimiento)
At risk of diabetes mellitus	con mayor riesgo de diabetes mellitus (hallazgo)

Concept Details 🔍 ⚙️

[Summary](#) [Details](#) [Diagram](#) [Expression](#) [Refsets](#)

[Members](#) [History](#) [References](#) Stated Inferred

Parents

- trastorno del metabolismo de la glucosa (trastorno)
- trastorno del sistema endocrino (trastorno)

diabetes mellitus (trastorno) ☆ 📄

SCTID: 73211009

73211009 | diabetes mellitus (trastorno) |

es diabetes sacarina

es diabetes mellitus

es diabetes mellitus (trastorno)

en Diabetes mellitus (disorder)

en Diabetes mellitus

en DM - Diabetes mellitus

Children (17)

- diabetes de diagnóstico reciente (trastorno)
- diabetes mellitus atípica (trastorno)
- diabetes mellitus debida a defecto genético en la acción de la insulina (trastorno)
- diabetes mellitus debida a defecto genético en la función de las células beta (trastorno)
- diabetes mellitus debida a lesión pancreática (trastorno)
- diabetes mellitus durante el embarazo, el parto y el puerperio (trastorno)

Copyright © 2024 SNOMED International User Guide Contact Us vproject_version

← → ↻ No seguro mylacpass:8180/fhir/metadata

This result is being rendered in HTML for easy viewing. You may access this content as [Raw JSON](#) or [Raw XML](#) or [Raw Turtle](#) or view this content in [HTML JSON](#) or [HTML XML](#) or [HTML Turtle](#). Response generated in 6ms.

HTTP 200 OK

Response Headers

```
X-Powered-By: HAPI FHIR 7.0.2 REST Server (FHIR Server; FHIR 4.0.1/R4)
X-Request-ID: 6jmtBWTqT3EnIDFF
```

Response Body

```
1  {
2    "resourceType": "CapabilityStatement",
3    "id": "10ed257a-31ac-44bd-b57d-27928e942352",
4    "name": "RestServer",
5    "status": "active",
6    "date": "2024-08-20T19:44:48.402+00:00",
7    "publisher": "Not provided",
8    "kind": "instance",
9    "software": {
10     "name": "Snowstorm X FHIR Server"
11   },
12   "implementation": {
13     "description": "HAPI FHIR",
14     "url": "http://mylacpass:8180/fhir"
15   },
16   "fhirVersion": "4.0.1",
17   "format": [ "application/fhir+xml", "xml", "application/fhir+json", "json", "application/x-turtle", "ttl", "html/json", "html/xml", "html/turtle" ],
18   "rest": [ {
19     "mode": "server",
20     "resource": [ {
21       "type": "CodeSystem",
22       "profile": "http://hl7.org/fhir/StructureDefinition/CodeSystem",
23       "interaction": [ {
24         "code": "read"
25       } ],
26       "code": "search-type"
27     }, {
28       "code": "delete"
29     } ],
30     "searchInclude": [ "*" ],
31     "searchParam": [ {
32       "name": "code",
33       "type": "string",
34       "documentation": "A code defined in the code system"
35     }, {
36       "name": "context",
37       "type": "token",
38       "documentation": "A use context assigned to the code system"
39     }, {
40       "name": "context-quantity",
41       "type": "quantity",
42       "documentation": "A quantity- or range-valued use context assigned to the code system"
43     }, {
44       "name": "context-type",
45       "type": "string",
46       "documentation": "A type of use context assigned to the code system"
47     } ]
48   } ]
49 }
```

1.2. Comprobar resultado del script de carga de Snomed

Si el script de carga inicial ha funcionado bien, entonces debiera verse similar al siguiente resultado:

```
{
  "resourceType": "Bundle",
  "id": "84baf6b4-c6c6-4c7b-a7e1-8fff41634b50",
  "meta": {
    "lastUpdated": "2024-08-20T20:40:48.165+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "http://mylacpass:8180/fhir/CodeSystem"
    }
  ],
  "entry": [
    {
      "fullUrl": "http://mylacpass:8180/fhir/CodeSystem/sct_900000000000207008_20240331",

```



```

    "resource": {
      "resourceType": "CodeSystem",
      "id": "sct_90000000000207008_20240331",
      "url": "http://snomed.info/sct",
      "version": "http://snomed.info/sct/90000000000207008/version/20240331",
      "name": "SNOMED_CT",
      "title": "SNOMED CT release 2024-03-31",
      "status": "active",
      "date": "2024-03-31T00:00:00+00:00",
      "publisher": "SNOMED International",
      "hierarchyMeaning": "is-a",
      "compositional": true,
      "content": "complete"
    }
  ]
}

```

2. Preparar el Servidor para carga de códigos locales

En esta actividad se cargará el Excel con las codigueras locales del país.

2.1. Importar Excel de códigos locales

Antes de instalar las siguientes librerías. El archivo **requirements.txt** contiene las versiones necesarias. Luego generar el archivo TGZ con script que se muestra a continuación, reemplazando el nombre del archivo Excel por el archivo que tu hayas creado.

Instala las librerías panda y openpyxl

Unset

```

pip3 install pandas
pip3 install openpyxl

```

Transformar el Excel a un Fhir Package

Unset

```

python3 racsel-convert-xlsx-to-fhir.py Subsets_Conectathon_Test_Data_defects.xlsx

```

Nota: Revisa los códigos locales de cada Tab en el Excel. Si hay colisión de codigos locales usar el siguiente comando:

Unset

```
python3 racsel-convert-xlsx-to-fhir.py Subsets_Conectathon_Test_Data_defects.xlsx  
-splitcs
```

2.2. Carga de recursos FHIR en el servidor terminológico

Una vez obtenido el archivo **racsel_fhir_package.tgz** realizar el upload de los datos contenidos en este archivo hacia la url del servidor terminológico.

Unset

```
curl --form file=@racsel_fhir_package.tgz --form resourceUrls="*"   
http://mylacpass:8180/fhir-admin/load-package
```

Desde la terminal de logs podrás ver el siguiente resultado:

[illegible]

2.3. Verificar carga de datos en servidor terminológico

Desde postman o navegado usar la siguiente URL. Debiera mostrarse un resultado similar a la siguiente tabla:

Unset

```
GET http://mylaccpass:8180/fhir/CodeSystem
```

```
{
  "resourceType": "Bundle",
  "id": "f48f7634-ed9a-4d81-ac48-d54c3f5dbb30",
  "meta": {
    "lastUpdated": "2024-08-20T14:22:28.089+00:00"
  },
  "type": "searchset",
  "total": 4,
  "link": [
    {
      "relation": "self",
      "url": "http://mylacpass:8180/fhir/CodeSystem"
    }
  ],
  "entry": [
    {
      "fullUrl": "http://mylacpass:8180/fhir/CodeSystem/62d94889-47d6-4174-b26f-cf9532cba22b",
      "resource": {
        "resourceType": "CodeSystem",
        "id": "62d94889-47d6-4174-b26f-cf9532cba22b",
        "url": "http://racsel.org/connectathon",

```

```

        "version": "2024",
        "name": "RACSELCodeSystem",
        "status": "active",
        "compositional": false,
        "content": "fragment"
    }
},
{
    "fullUrl": "http://mylcpass:8180/fhir/CodeSystem/dcff838b-7fb2-445f-9847-4355c4d326f4",
    "resource": {
        "resourceType": "CodeSystem",
        "id": "dcff838b-7fb2-445f-9847-4355c4d326f4",
        "url": "http://hl7.org/fhir/sid/icd-10",
        "version": "2024",
        "name": "icd-10",
        "status": "active",
        "compositional": false,
        "content": "fragment"
    }
},
{
    "fullUrl": "http://mylcpass:8180/fhir/CodeSystem/45c57929-317c-4e22-a32b-3e557b3331ff",
    "resource": {
        "resourceType": "CodeSystem",
        "id": "45c57929-317c-4e22-a32b-3e557b3331ff",
        "url": "http://id.who.int/icd/release/11/mms",
        "version": "2024",
        "name": "icd-11",
        "status": "active",
        "compositional": false,
        "content": "fragment"
    }
},
{
    "fullUrl": "http://mylcpass:8180/fhir/CodeSystem/b4b2ec75-58df-45d5-969c-1e1a4cfb923d",
    "resource": {
        "resourceType": "CodeSystem",
        "id": "b4b2ec75-58df-45d5-969c-1e1a4cfb923d",
        "url": "http://node-x.org/terminology",
        "version": "2024",
        "name": "LocalCodeSystem",
        "status": "active",
        "compositional": false,
        "content": "fragment"
    }
}
]
}

```

3. Anexos

3.1. Anexo I: Desplegar desde cero si el servidor no funciona correctamente.

Si el **docker-compose** se comporta de manera inestable, entonces comienza una nueva instalación. Para ello deberás borrar volúmenes e imágenes de la máquina, borrar el archivo de traza y comenzar de nuevo.

Para borrar todos los contenedores incluyendo sus volúmenes utilice.

Unset

```
docker rm -vf $(docker ps -aq)
```

Para borrar todas las imágenes

Unset

```
docker rmi -f $(docker images -aq)
```

Borrar archivo de tracking de carga

Unset

```
rm .snowstorm-init-status/script_executed
```

3.2. Anexo II: Usar interfaz gráfica Portainer (Opcional)

La instalación de Portainer u otro cliente GUI para administrar los contenedores es un paso opcional. Puedes usar la línea de comandos si te acomoda mejor. Ve al paso 2 si no lo requieres.

3.2.1. Crear el volumen de datos

Unset

```
docker volume create portainer_data
```

3.2.2. Descargar e instalar portainer

Unset

```
docker run -d -p 8000:8000 -p 9443:9443 --name portainer --restart=always -v  
/var/run/docker.sock:/var/run/docker.sock -v portainer_data:/data  
portainer/portainer-ce:latest
```


3.2.3. Login

Unset

```
https://localhost:9443
```

3.2.4. Crear usuario

La primera vez debes asignar una contraseña de usuario al **admin** de portainer.



✓ New Portainer installation

Please create the initial administrator user.

Username

Password

Confirm password ✓

⚠ The password must be at least 12 characters long. ✓

[Create user](#)

☒ Allow collection of anonymous statistics. You can find more information about this in our [privacy policy](#).

> Restore Portainer from backup