Canon

CANON MEDICAL SYSTEMS DO BRASIL

CELEBRATING SCIENCE AND INNOVATION

35 YEARS LIKA

1986-2021 Laboratório de Imunopatologia Keizo Asami

VIRTUS IMPAVIDA

UNIVERSIDADE FEDERAL DE PERNAMBUCO

DCM Uploader: um sistema de informação para garantia de confidencialidade, integridade e disponibilidade no tráfego de imagens médicas baseadas no padrão DICOM

Resultados da Sprint 04

11/04/2023

Time Greenfield
Contexto da Sprint 04

- Ampliação dos cenários de testes
- Construção de uma base de testes baseada nos cenários propostos
- Realização de testes comparativos (Sonador vs. DCM uploader) para os cenários propostos
- Implantar um servidor de autenticação na AWS

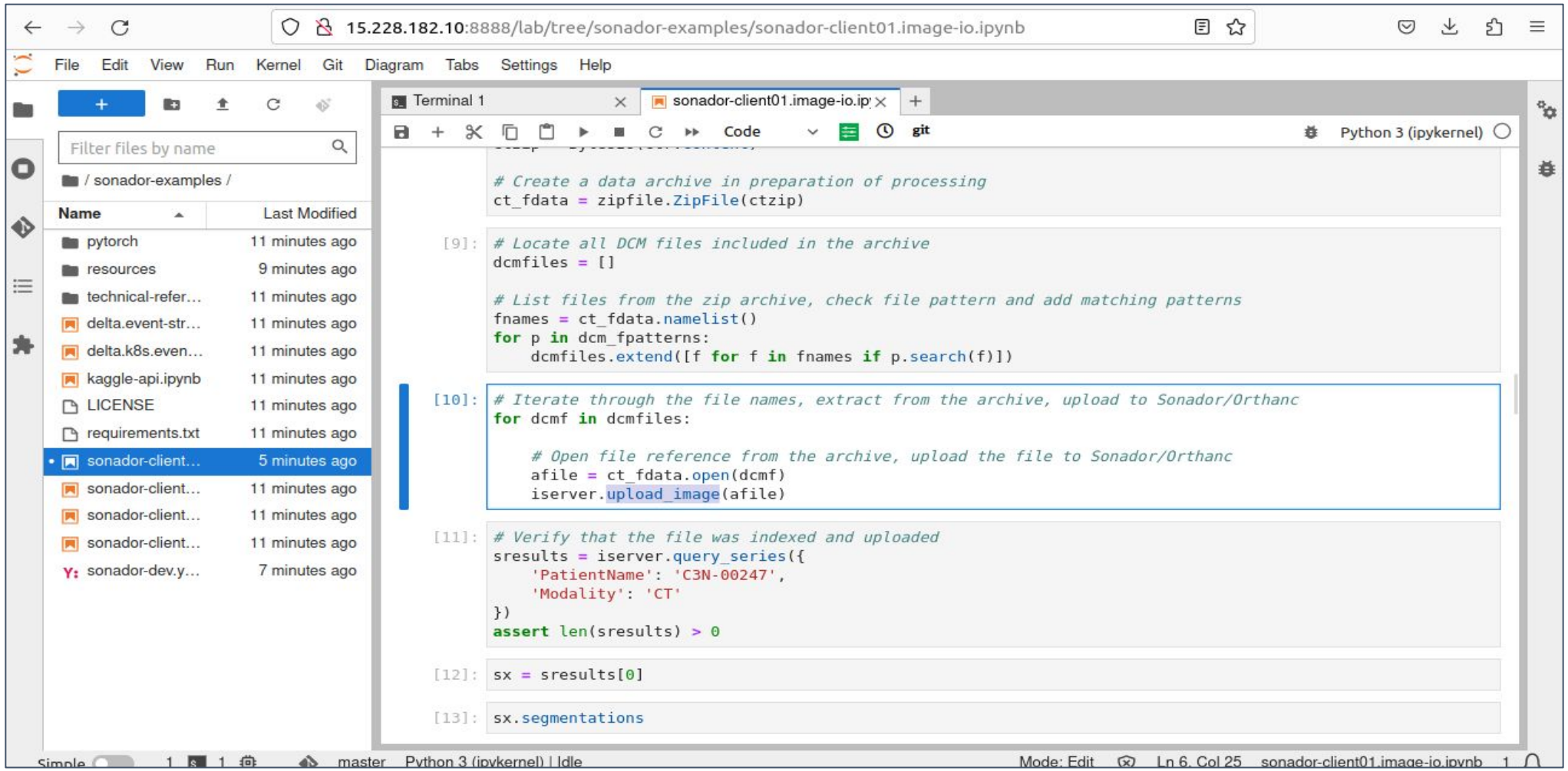
Time Greenfield

Resultados

- Colocamos a infraestrutura para funcionar na AWS
- Configuração do servidor de autenticação (Cognito na AWS e Acorn)
- Transferência de estudos para a nuvem através da API do Sonador utilizando um *Jupyter Notebook*.
- Transferência de estudos para a instância Sonador do Orthanc na nuvem através do Horos.
- Identificamos a necessidade de fazer um deploy do Sonador em https
- Estudo do deploy em K8s
  - necessidade de um domínio
  - portar parte do deploy de GCP para AWS

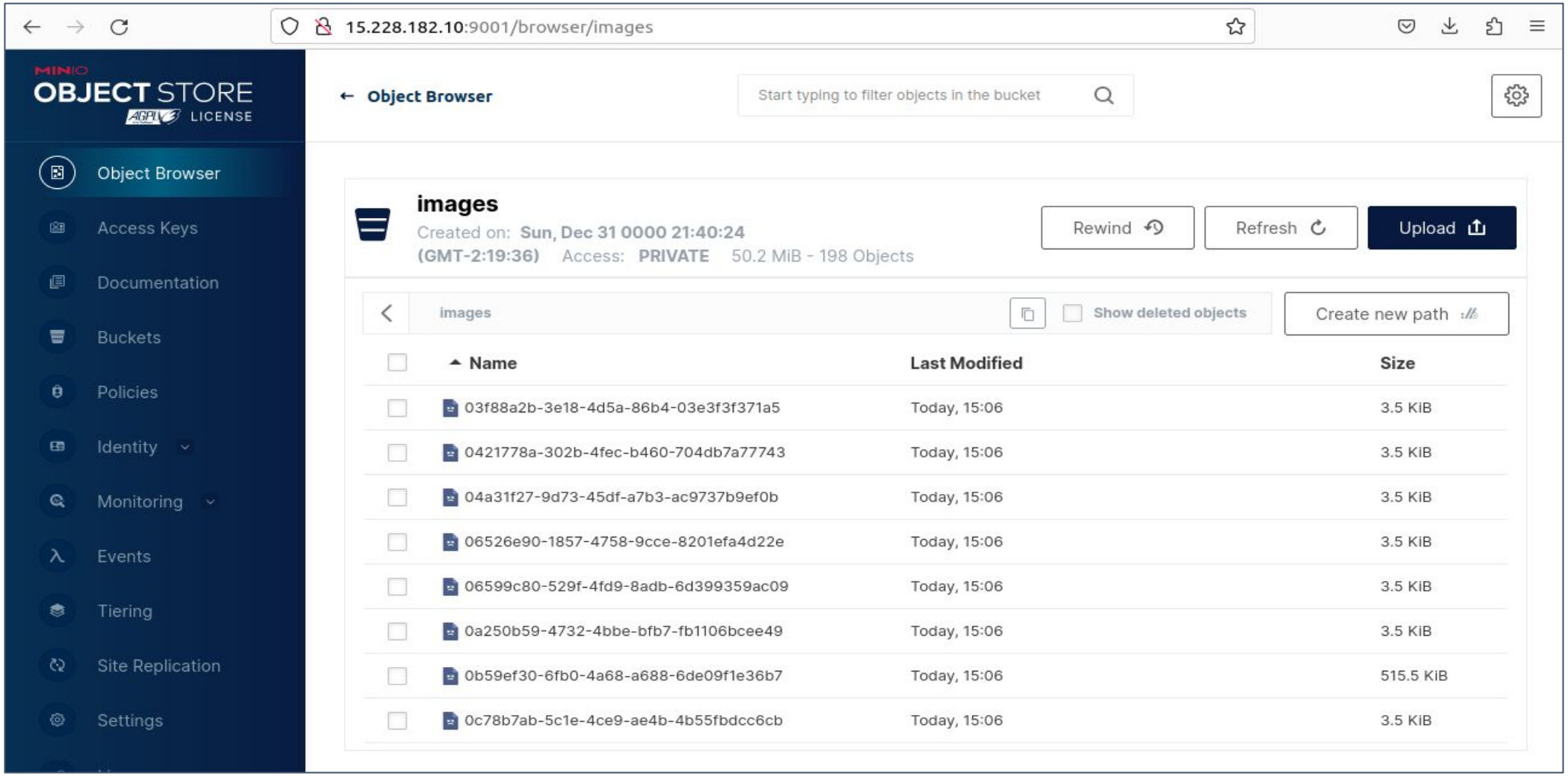
Time Greenfield

Resultados



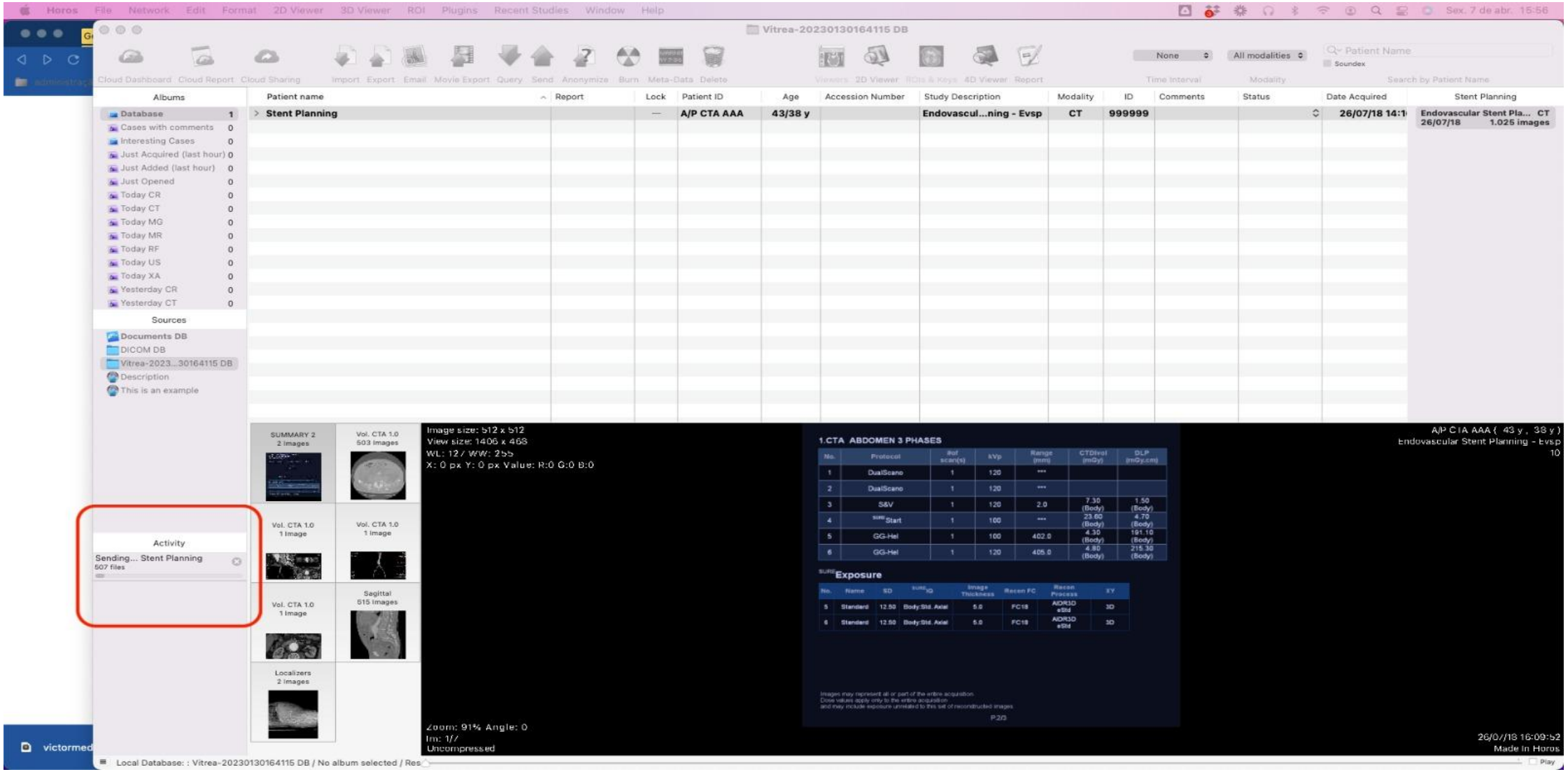
Time Greenfield

Resultados



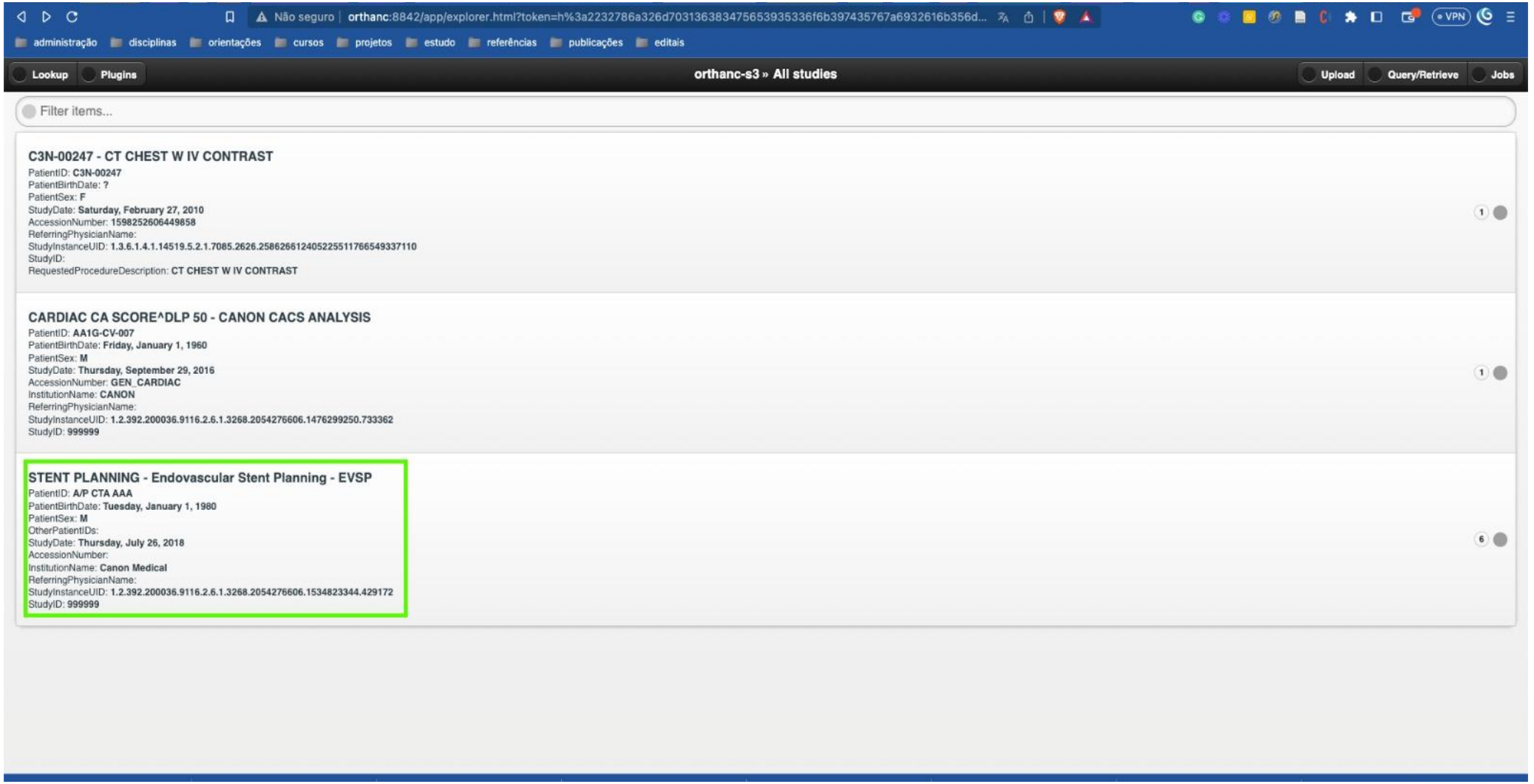
Time Greenfield

Resultados



Time Greenfield

Resultados



Time Greenfield
Próximos Passos

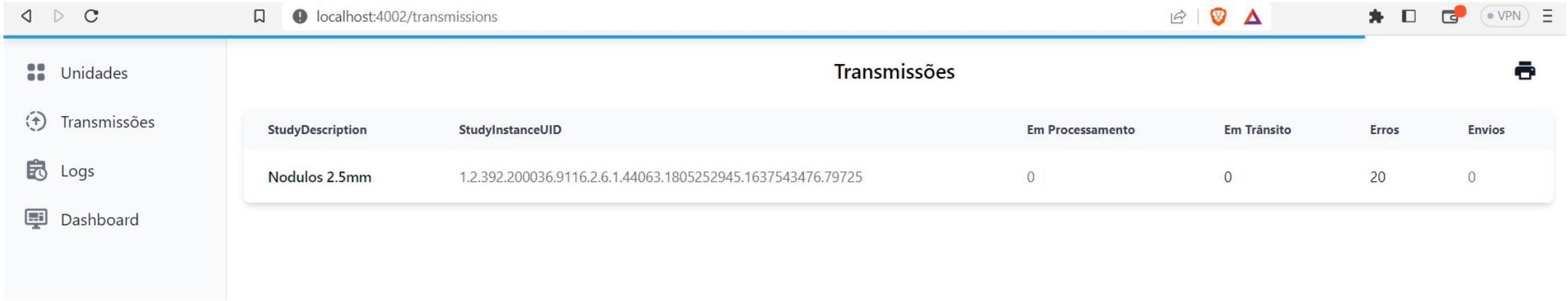
- Analisar e aplicar a melhor alternativa para fazer deploy via docker que responda com HTTPS
- Realizar o deploy via k8s

Time Brownfield

Contexto da Sprint 04

11/04/2023

Reunião técnica 03/04/2023



Time Brownfield

Contexto da Sprint 04

11/04/2023

Debug

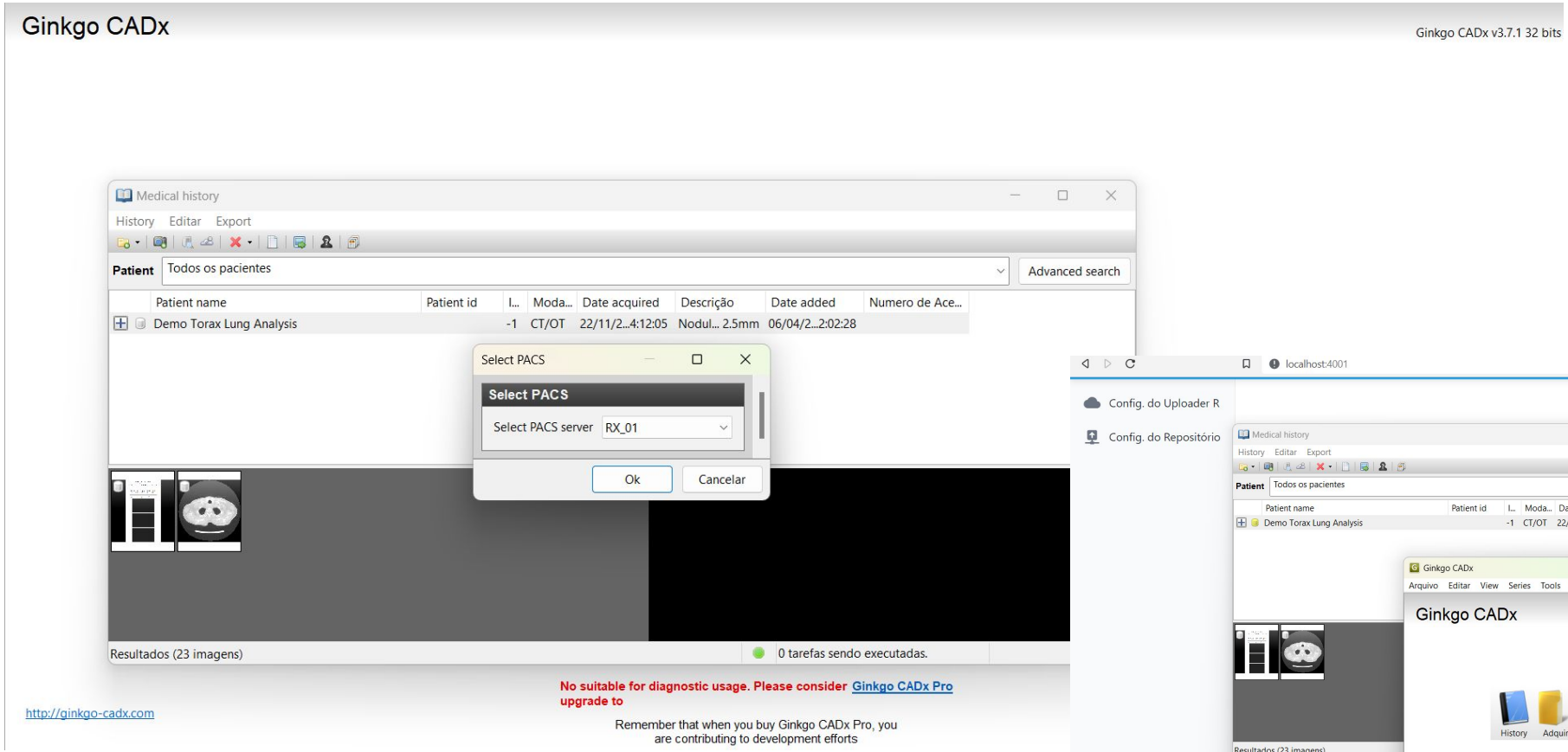
```
phoenix_1  | ssh: connect to host localhost port 3022: Cannot assign requested address
phoenix_1  | rsync: connection unexpectedly closed (0 bytes received so far) [sender]
phoenix_1  | rsync error: unexplained error (code 255) at io.c(228) [sender=3.2.3]
phoenix_1  | [debug] emqtt(emqtt-f3a49724607f-d9897f6698a305db5dfb): SEND Data: {:mqtt_packet, {:mqtt_packet_header, 3, false, 2, false}, {:mqtt_packet_publish, "transmission", 11, %{}},
"{\"end\":\"2023-04-05T01:07:24.792729Z\",\"status\":\"T - ERROR\",\"uuid\":\"775DE522116548AAB1F5185D6068BB81\"}"}
phoenix_1  | "Error while storing file"
phoenix_1  | "Input Path: /app/observable/SC.1.2.840.113747.6377327108688.11704.13.215938450104910.2"
phoenix_1  | [debug] emqtt(emqtt-f3a49724607f-d9897f6698a305db5dfb): RECV Data: <<80, 2, 0, 11>>
phoenix_1  | [debug] emqtt(emqtt-f3a49724607f-d9897f6698a305db5dfb): SEND Data: {:mqtt_packet, {:mqtt_packet_header, 6, false, 1, false}, {:mqtt_packet_puback, 11, 0, :undefined}, :undefined}
phoenix_1  | Traceback (most recent call last):
phoenix_1  |   File "/app/lib/uploader_t/core/py/get_ae_title.py", line 10, in <module>
phoenix_1  |     dcm = pydicom.dcmread(filename)
phoenix_1  |   File "/usr/local/lib/python3.9/dist-packages/pydicom/filereader.py", line 993, in dcmread
phoenix_1  |     fp = open(fp, 'rb')
phoenix_1  | FileNotFoundError: [Errno 2] No such file or directory: 'observable/SC.1.2.840.113747.6377327108688.11704.13.215938450104910.2'
```

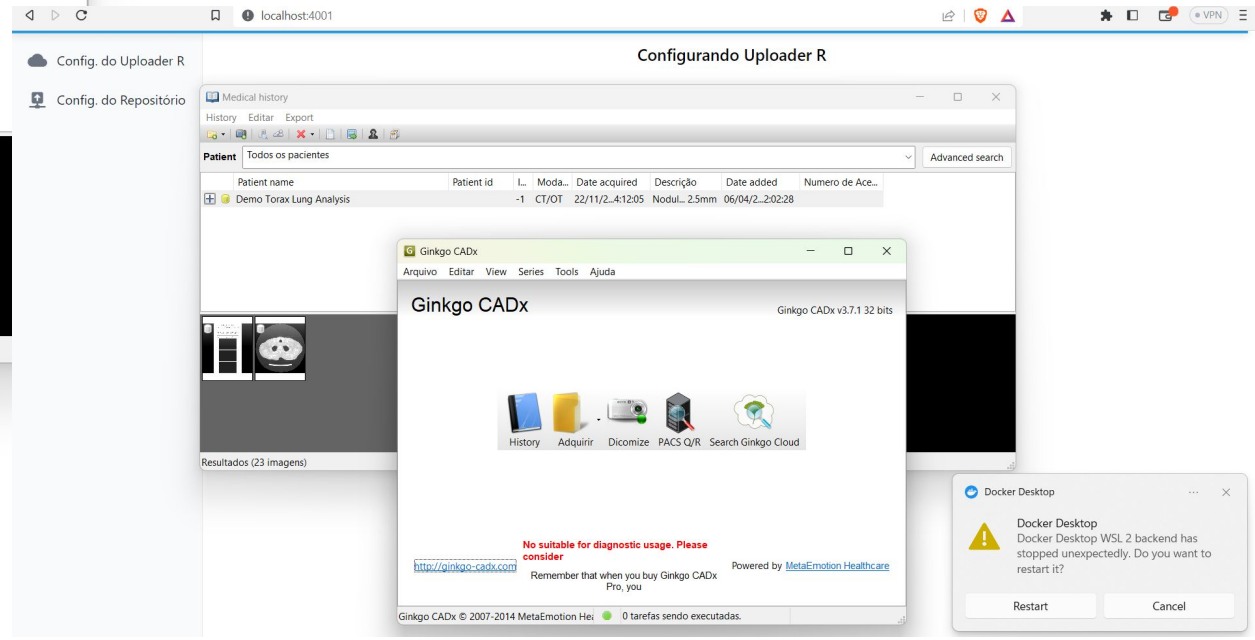
```
root@447a39a95a88:/app# ssh -p 3022 uploader_t_1@localhost
ssh: connect to host localhost port 3022: Cannot assign requested address
root@447a39a95a88:/app# ssh -p 22 uploader_t_1@localhost
ssh: connect to host localhost port 22: Cannot assign requested address
```

Time Brownfield

Contexto da Sprint 04

11/04/2023





Time Brownfield

Contexto da Sprint 04

11/04/2023

Retomamos após duas horas e não foi enviado todos os estudos.

Um de 502 deu certo.

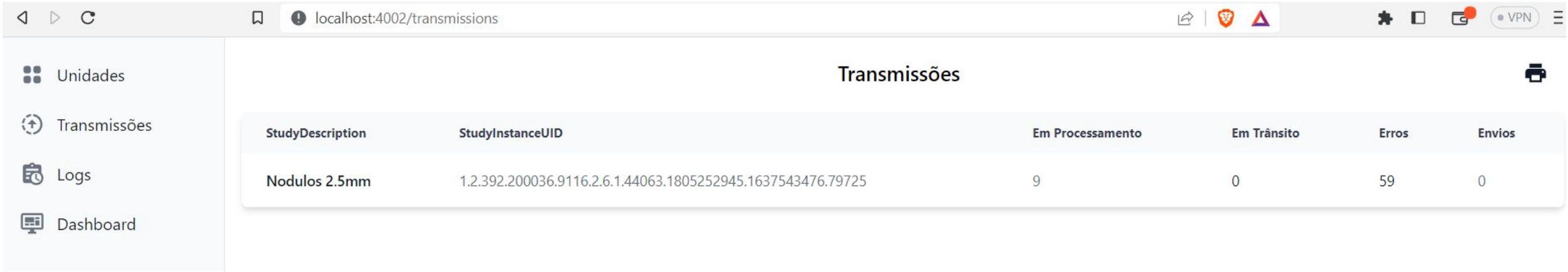
1.839 não deu certo – travou o sistema:

5039", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.1637544153.34658", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1
805252945.1637544153.304841", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.1637544152.832219", :pending}, {"observable/CT.1.2.392.2
00036.9116.2.6.1.44063.1805252945.1637544154.501972", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.1637544152.739108", :pending}, {
"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.1637544153.459143", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.16375441
54.551147", :pending}, {"observable/SC.1.2.840.113747.6377327108688.11704.13.215938450104910.2", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.
1805252945.1637544153.171013", :pending}, {"observable/CT.1.2.392.200036.9116.2.6.1.44063.1805252945.1637544152.874705", :pending}], watcher_pid: #PID<0.855
.0>}], [file: 'lib/uploader_t/core/core_list.ex', line: 75]}, {:gen_server, :try_dispatch, 4, [file: 'gen_server.erl', line: 695]}, {:gen_server, :handle_ms
g, 6, [file: 'gen_server.erl', line: 771]}, {:proc_lib, :init_p_do_apply, 3, [file: 'proc_lib.erl', line: 226]}]}}
phoenix_1 | State: %{port: #Port<0.214>, worker_pid: #PID<0.855.0>}
phoenix_1 | [notice] Application uploader_t exited: shutdown

Time Brownfield

Contexto da Sprint 04

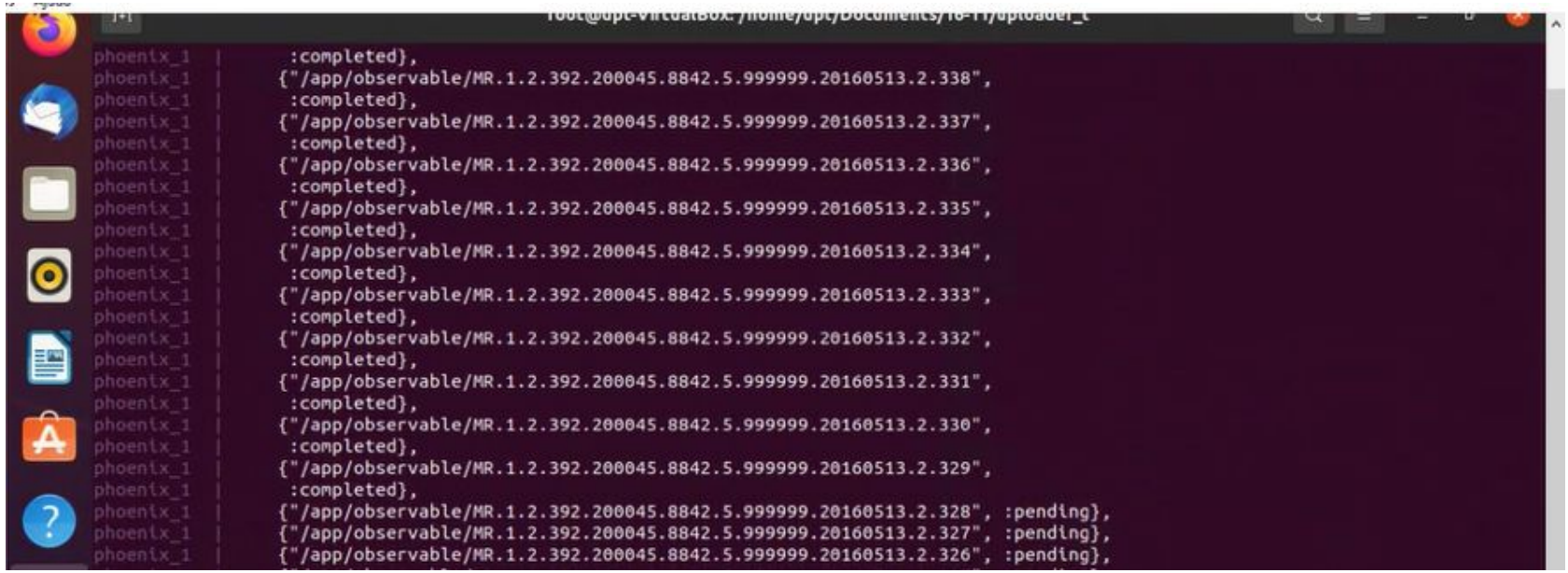
11/04/2023



Time Brownfield

Contexto da Sprint 04

11/04/2023

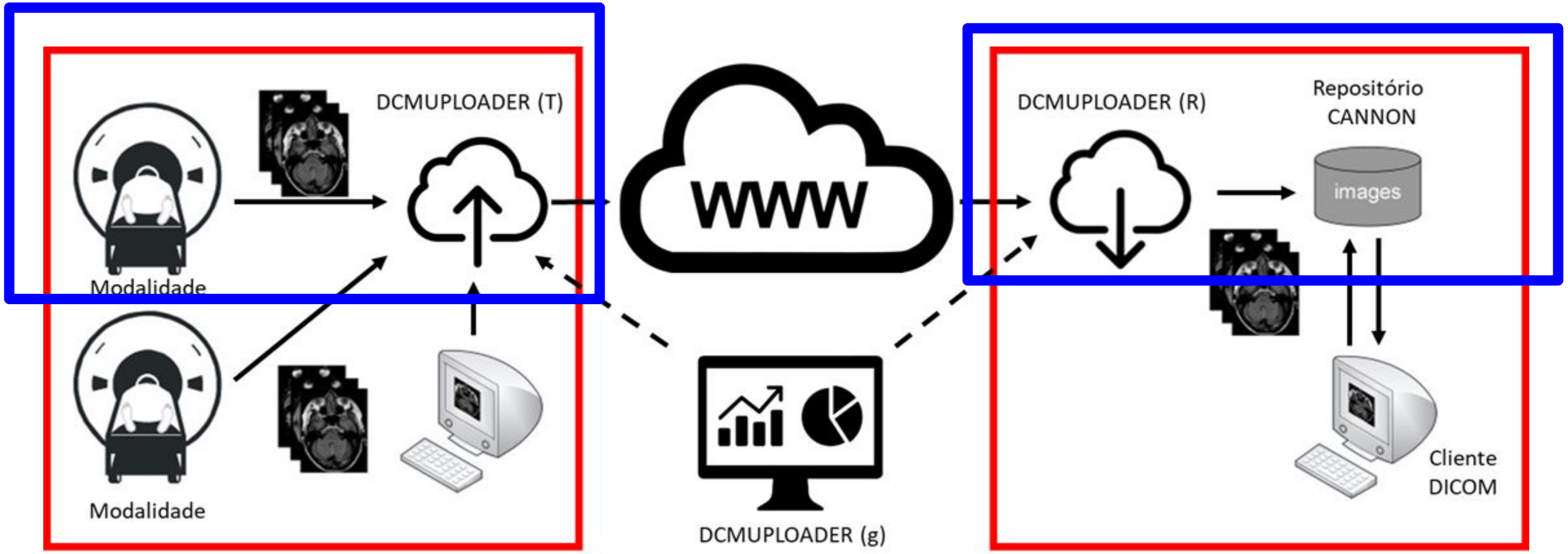


phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}
phoenix_1 | {"/app/observable/SC.1.2.840.113747.6377327108784.11704.8.215938450104910.3",
phoenix_1 | [:modified]}

Time Brownfield

Contexto da Sprint 04

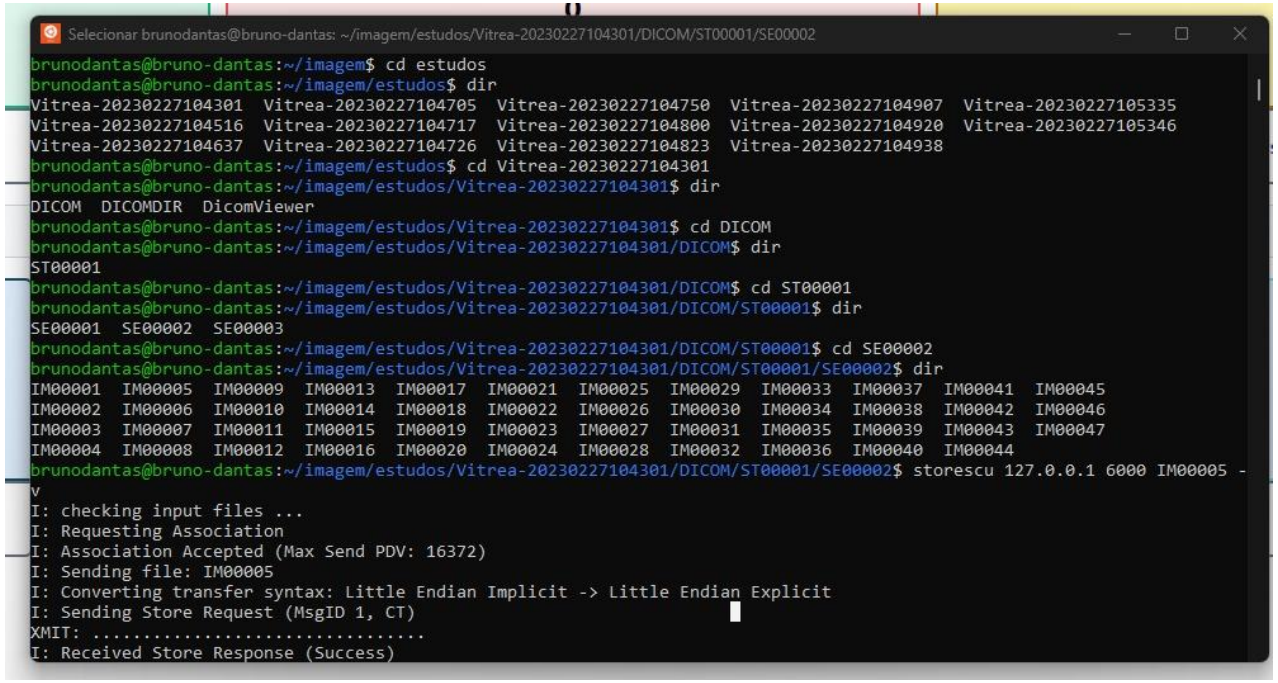
11/04/2023

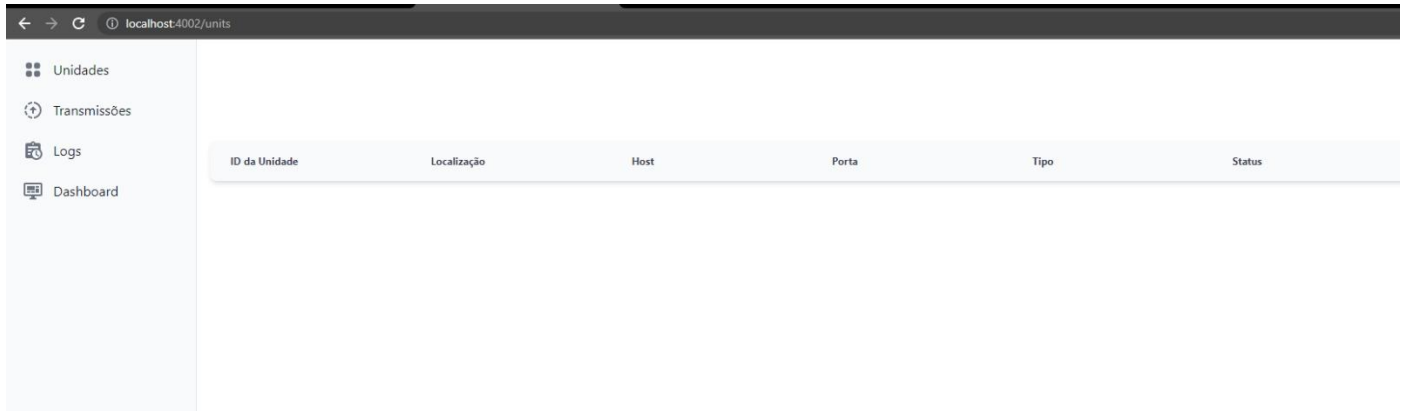


Time Brownfield

Contexto da Sprint 04 - Ambiente de testes 2

11/04/2023

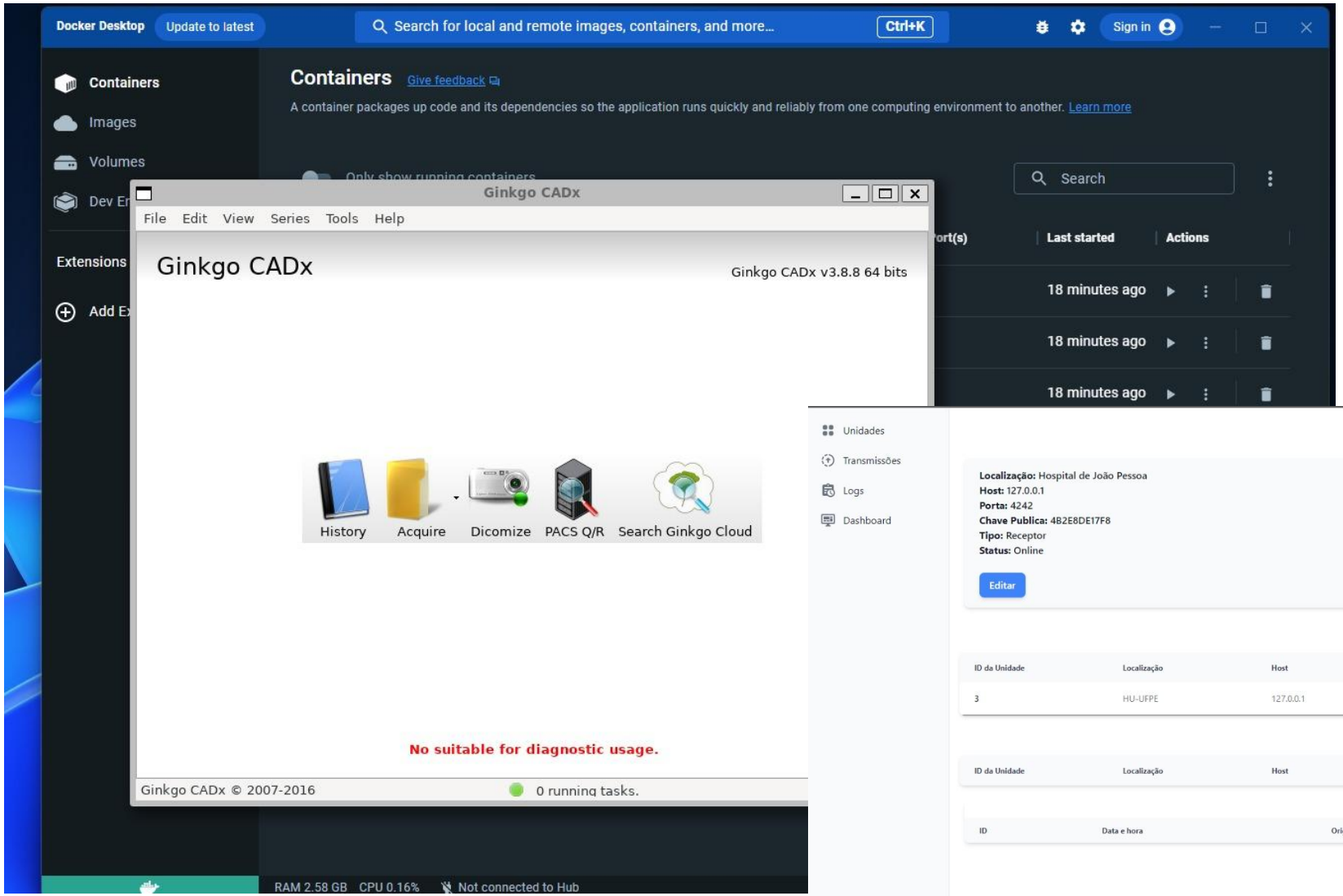


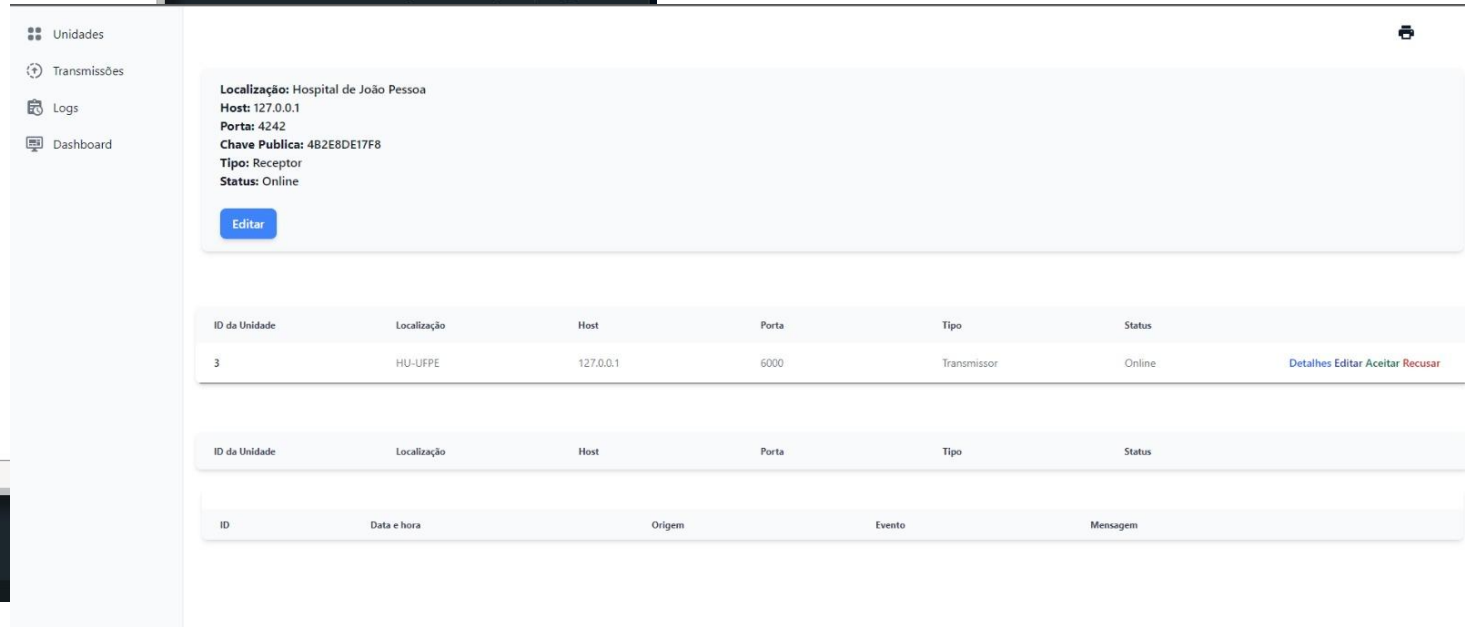


Time Brownfield

Contexto da Sprint 04 - Ambiente de testes 2

11/04/2023





Configuração Utilizada:

- Uploader R:
  - Porta 4242
- Uploader T:
  - Origem: 6000
  - Destino: 3022

Time Brownfield

Contexto da Sprint 04 - Ambiente de testes 2

11/04/2023

```
brunodantas@bruno-dantas:~/imagem/estudos$ dir
Vitrea-20230227104301  Vitrea-20230227104705  Vitrea-20230227104750  Vitrea-20230227104907  Vitrea-20230227105335
Vitrea-20230227104516  Vitrea-20230227104717  Vitrea-20230227104800  Vitrea-20230227104920  Vitrea-20230227105346
Vitrea-20230227104637  Vitrea-20230227104726  Vitrea-20230227104823  Vitrea-20230227104938
brunodantas@bruno-dantas:~/imagem/estudos$ cd Vitrea-20230227104301
brunodantas@bruno-dantas:~/imagem/estudos/Vitrea-20230227104301$ dir
DICOM  DICOMDIR  DicomViewer
brunodantas@bruno-dantas:~/imagem/estudos/Vitrea-20230227104301$ cd DICOM
```

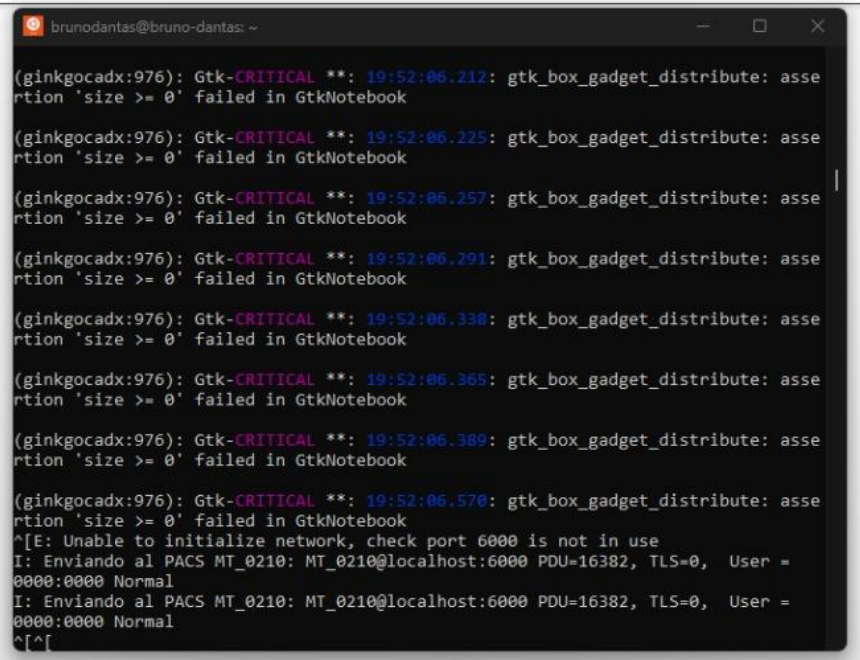
Time Brownfield

Contexto da Sprint 04 - Ambiente de testes 2

11/04/2023

- Unidades
- Transmissões
- Logs
- Dashboard

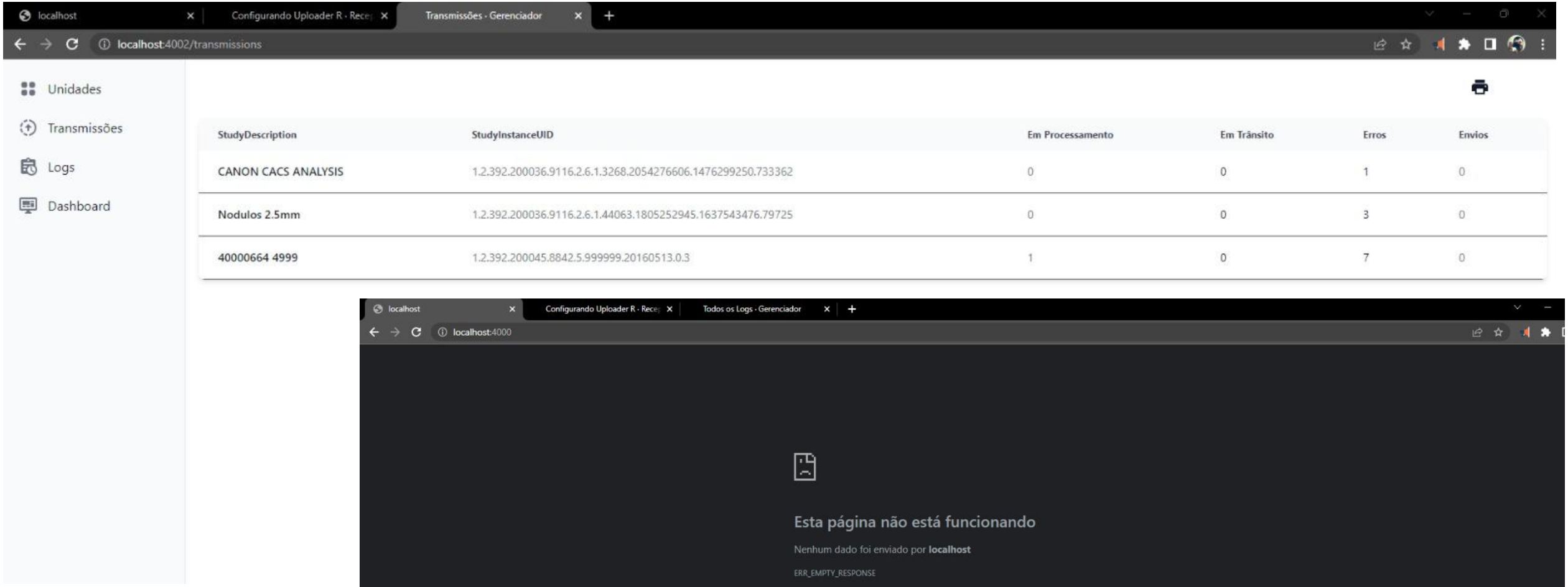
StudyDescription	StudyInstanceUID	Em Processamento	Em Trânsito	Erros
CANON CACS ANALYSIS	1.2.392.200036.9116.2.6.1.3268.2054276606.1476299250.733362	0	0	1
Nodulos 2.5mm	1.2.392.200036.9116.2.6.1.44063.1805252945.1637543476.79725	0	0	3
40000664 4999	1.2.392.200045.8842.5.999999.20160513.0.3	0	0	3



Time Brownfield

Contexto da Sprint 04 - Ambiente de testes 2

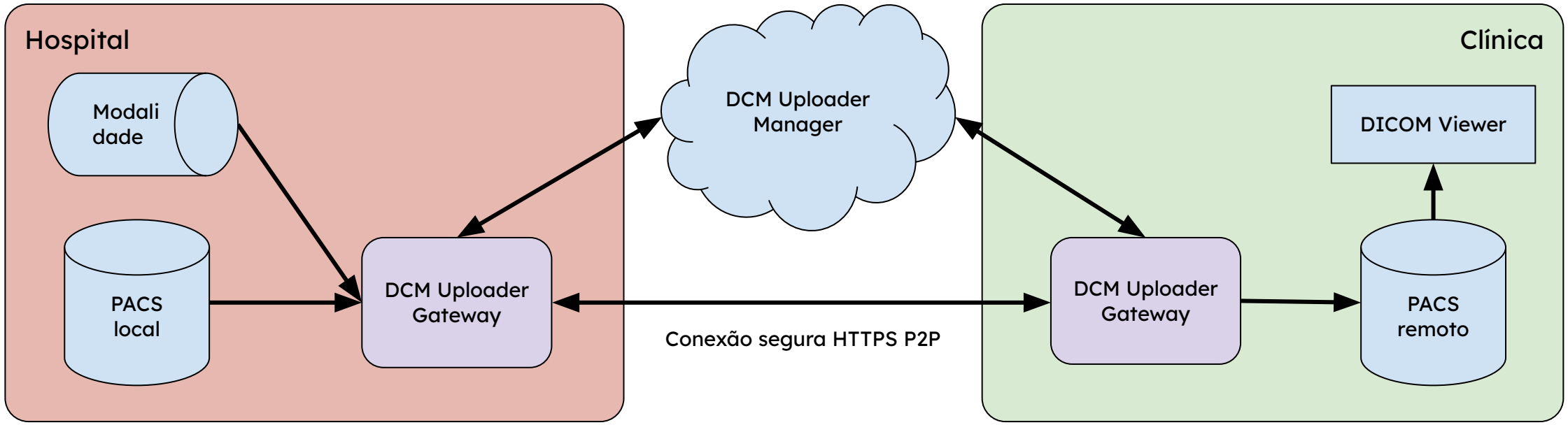
11/04/2023



Time Integrado
Resultados

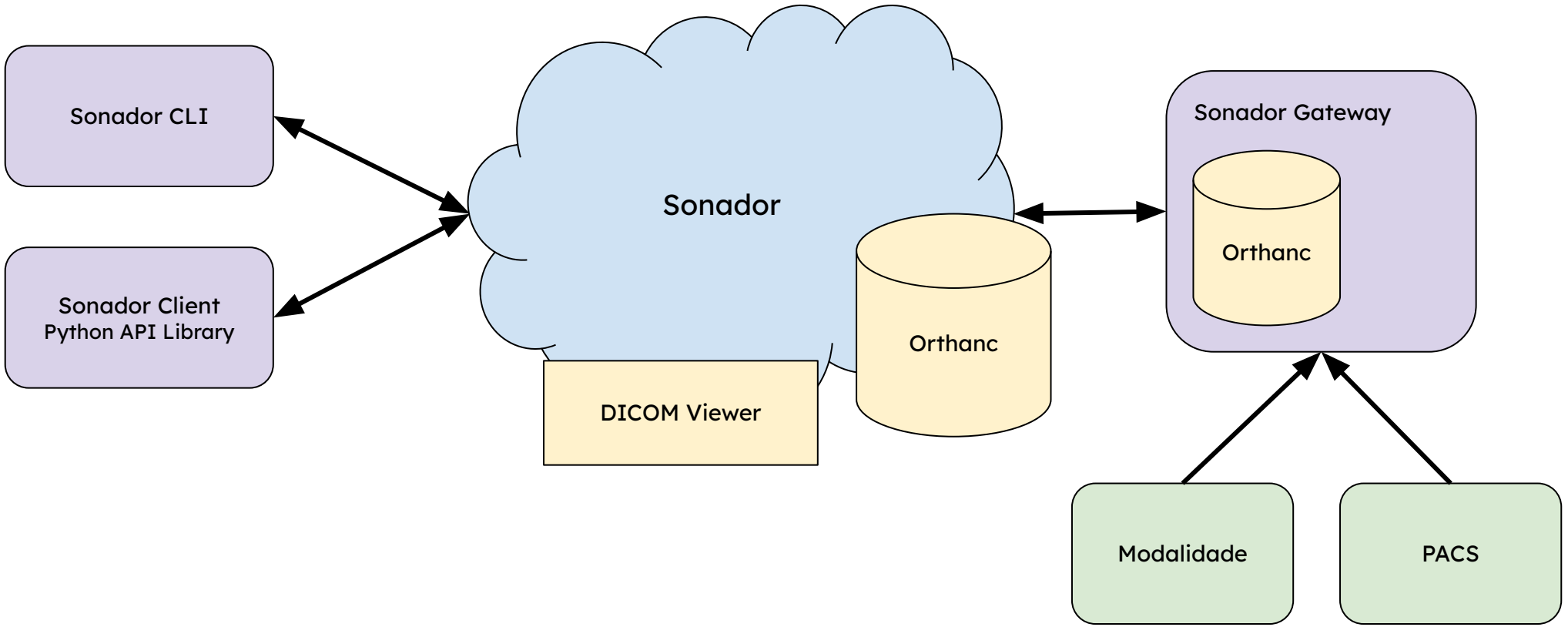
- Abandonar implementações no contexto do DCM Uploader legado
- Compreensão mais detalhada das potencialidades, limitações e desafios do uso do Sonador

Time Integrado
Resultados



Time Integrado
Resultados

- Arquitetura do Sonador



Time Integrado
Próximos Passos

- Fundir as equipes e alocá-las na definição das tecnologias empregadas na na arquitetura proposta
- Alguns dos integrantes da equipe irão atuar na busca e teste de alternativas
- Definir perfis dos novos contratados