CANON MEDICAL SYSTEMS DO BRASIL





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 08 06/06/3023

Contexto da Sprint 8

- Otimização das soluções (Dcm4chee e Orthanc) para os cenários validados
- Testes de desempenho considerando toda a estratégia estabelecida durante a implementação das soluções

Contexto da Sprint 8 - Otimização das soluções para os cenários validados

- Criação de um ambiente de configuração mínima para validação.
 - Configuração do Wireguard para ser utilizado dentro do Docker, permitindo que apenas o Docker com as soluções do Orthanc e Dcm4chee estejam conectados à VPN
 - Integração dos diferentes scripts de configuração e execução
 - Dockerização do Dcm4chee
 - Ambiente automatizado porém ainda instável
 - Gargalos: Demora na inicialização devido ao script integrado ao container

Resultados - Orthanc - Testes Funcionais

Direto*

- localhost
- +local -> aws (sp1, sp2 e usa)
- o aws -> local
- aws -> aws (sp1 -> usa)

VPN

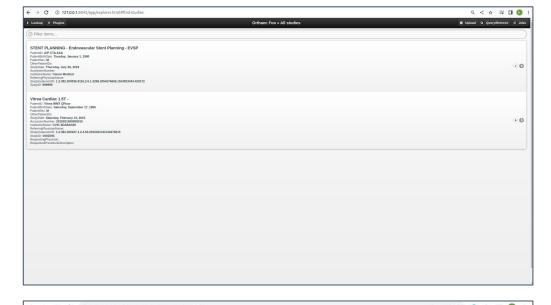
- localhost
- local -> local
- local -> aws
- aws -> aws (sp1 -> usa) **★** FALTA

^{*:}Perdendo e retornando a conexão

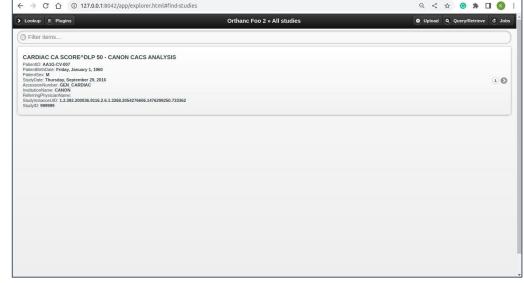
^{+:} Uma e mais de uma máquinas locais

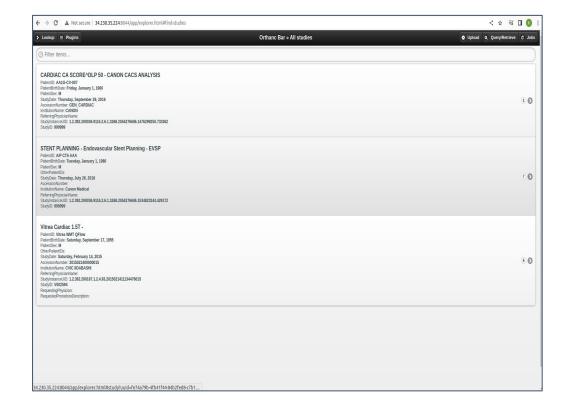
Orthanc - Cenário: +Local > AWS(USA)

Foo 1



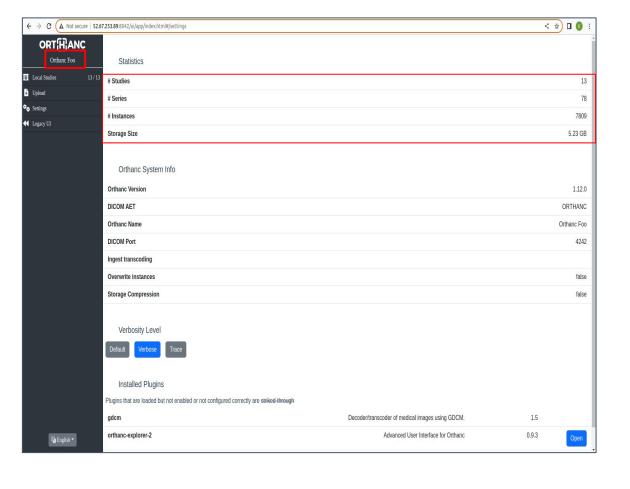
Foo 2

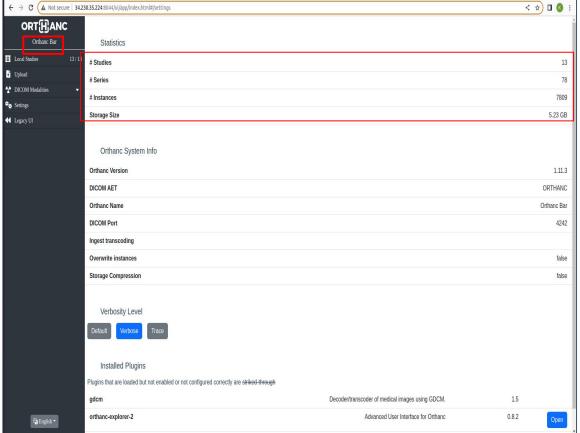




Bar

Orthanc - Cenário: AWS(SP1) > AWS(USA)





Cenários de Teste para o Orthanc

- Cenário: +Local > AWS(USA)
 - 1+ Máquina local para máquina da AWS (USA) 13 min

- Cenário: AWS(SP1) > AWS(USA)
 - AWS (SP1) para máquina da AWS (USA) sem a VPN 9 min 30 seg

Resultados - DCM4chee - Testes Funcionais

Direto

- localhost
- local -> aws (sp1, sp2 e usa)
- o aws -> local
- aws -> aws (sp1 -> usa)

Mirror

- localhost
- local -> local
- local -> aws
- o aws -> local
- aws -> aws (sp1 -> usa)

VPN

- localhost
- local -> local
- local -> aws ★ FALTA
- aws -> aws (sp1 -> usa) **★** FALTA

Resultados - DCM4chee - <u>SEM</u> Criptografia

```
E@(=@ääp██9ë>)sOPpi ?u1.2.840.10008.5.1.4.1.1.2>1.2.392.200036.9116.2.6.1.3268.2055265415.1475112959.109161.1?T
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103530.3503
103559.203PF GEN CARDIAC `CTpTOSHIBA CANON ØCANON CACS ANALYSIS 2ÿÿÿÿÿÿöPPME NON CORONARY FINDINGS FOR CTÞŸ
àbÿÝà>Cardiac 3.000 🖪 Aguilion ONEÿÿÿÿbÿàÿÿÿP1.2.840.10008.5.1.4.31U 1.3.6.1.4.1.14301.53.4.1568778.1bÿ
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111500.000@D20160929@E
103306.000@`ÿÿÿÿbÿäÿÿÿÿNCPME 1 NON CORONARY FINDINGS FOR CTbÿ
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-1596.3750 R>1.2.392.200036.9116.2.6.1.3268.2055265415.1475112798.784860.1 @ 4FFTOSHIBA ICF 4
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MultiView k00010k 70.000ñ¤V∏ñTOSHIBA MEC 1.0 ñTOSHIBA MEC CT 1.0ñTOSHIBA MEC CT 2.0ññIMG ñ1.10ÿÿã¥Û>ã¥Û>L P àÿ?×EùQÚBùÛBÇD¿¿ÿÿàÿ(∰þÜ(|ññ4535ñ1558ññ ñ
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Resultados - DCM4chee - COM Criptografia

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YvcCvKF0J%ÞQujáÓwí§¢·US-HQ-Íçb-,®,2ÿÙ»ðÆ'"VTMÌ«c@´Øúò=áW|ù£¬å«¹ls¶-Īsûü0
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```

Resultados - DCM4chee - Testes de Performance

```
ilika-03@ilika03-Dell-G15-5520: ~/... ×
                                                                    ilika-03@ilika03-Dell-G15-5520: ~/... ×
                                   ilika-03@ilika03-Dell-G15-5520: ~/... ×
medscantrack 1 | 19:47:12 0|medscan | httpmirror error on GET: Error: connect EHOSTUNREACH 34.230.35.2
24:8383
medscantrack 1 | 19:47:12 0 | medscan |
                                            at TCPConnectWrap.afterConnect [as oncomplete] (node:net:149
4:16) {
medscantrack 1 |
                 19:47:12 0|medscan
                                          errno: -113,
medscantrack 1
                 19:47:12 0|medscan
                                          code: 'EHOSTUNREACH',
medscantrack 1 |
                 19:47:12 0|medscan
                                          syscall: 'connect',
medscantrack 1
                 19:47:12 0|medscan
                                          address: '34.230.35.224',
medscantrack 1
                 19:47:12 0|medscan
                                          port: 8383
medscantrack 1
                 19:47:12 0|medscan
medscantrack 1
                 19:52:32 0|medscan
                                        Notified -> 103 files from http://34.230.35.224:8383
medscantrack 1
                 19:52:32 0|medscan
                                        missing 103
                                        Done receiving mirror file: /scp/sw22d8l/sw22d8l.zip
medscantrack 1
                 19:52:43 0|medscan
medscantrack 1
                 19:52:43 0|medscan
                                        SELF SCU /scp/sw22d8l --> LOCAL@127.0.0.1:6000
medscantrack 1
                                        SELF SCU done
                  19:52:43 0|medscan
                 19:52:43 0|medscan
medscantrack 1
                                        Done processing mirror file
medscantrack 1
                 19:53:02 0|medscan
                                        Notified -> 38 files from http://34.230.35.224:8383
medscantrack 1
                                        missing 38
                 19:53:02 0|medscan
medscantrack 1
                 19:53:05 0|medscan
                                        Done receiving mirror file: /scp/4r8b5o9/4r8b5o9.zip
medscantrack 1
                  19:53:05 0|medscan
                                        SELF SCU /scp/4r8b5o9 --> LOCAL@127.0.0.1:6000
medscantrack 1
                 19:53:05 0|medscan
                                        SELF SCU done
medscantrack 1
                                        Done processing mirror file
                 19:53:05 0|medscan
medscantrack_1
                  19:53:20 0 medscan
                                        Metadata [141 new files]
```

local -> local:

Estudo: fatty liver

Mirror: **33**s

VPN: 8s

Resultados - DCM4chee - Testes de Performance

```
15:38:01 0 medscan
                                       SCU /scp/34.230.35.224_6060 --> LOCAL@34.230.35.224:6060 [7767 files]
medscantrack_1
                 15:46:09 0 medscan
medscantrack_1
                                      done in 08m7.59s
medscantrack_1
                 15:46:09 0 medscan
                                      Notify http://34.230.35.224:8383/notify -> 7767 files
medscantrack-medscantrack-1
                              15:24:34 0|medscan
                                                   | SCP started at LOCAL:6000
medscantrack-medscantrack-1
                                                    API is running on port 8080
                              15:24:34 0|medscan
medscantrack-medscantrack-1
                              15:46:12 0|medscan
                                                    Notified -> 7767 files from http://34.230.35.224:8383
medscantrack-medscantrack-1 |
                              15:46:12 0|medscan
                                                  | missing 7767
medscantrack-medscantrack-1
                              15:56:56 0|medscan
                                                    Done receiving mirror file: /scp/nip7v6o/nip7v6o.zip
medscantrack-medscantrack-1 | 15:58:28 0 | medscan
                                                    SELF SCU /scp/nip7v6o --> LOCAL@127.0.0.1:6000
medscantrack-medscantrack-1
                                                   | Metadata [1760 new files]
                              15:59:13 0|medscan
medscantrack-medscantrack-1
                              16:00:40 0|medscan
                                                    SELF SCU done
medscantrack-medscantrack-1
                                                    Done processing mirror file
                              16:00:40 0|medscan
                                                    Metadata [6007 new files]
medscantrack-medscantrack-1
                              16:00:59 0 | medscan
```

aws (sp1) -> aws (usa): Direto: 8 min

Estudo: todos Mirror: **16 min**

VPN: KALTA

Próximos Passos

- Estudo de técnicas de compactação mínima para ambas as soluções, Orthanc e Dcm4chee
- Continuação dos testes de desempenho e performance
- Continuação do desenvolvimento do cenário "zero configuration"
- Validação das soluções com CMB