

Solucionar problemas de pods de namespace do Registro no estado ImagePullBackOff

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Introduction

Este documento descreve o problema e a solução dos pods de registro no estado ImagePullBackOff.

Problema

Os pods de registro no Cluster Manager (CM) do Ultra Cloud Core Subscriber Microservices Infrastructure (SMI) estão no estado ImagePullBackOff.

```
cloud-user@lab-deployer-cm-primary:~$ kubectl get pods -A -o wide | grep -v "Running"
NAMESPACE          NAME                                READY
STATUS             RESTARTS   AGE    IP              NODE                                NOMINATED NODE
READINESS GATES
registry           charts-cee-2020-02-2-1-1-0          0/1
ImagePullBackOff  0          100d   10.10.10.178    lab-deployer-cm-primary           <none>
<none>
registry           charts-cluster-deployer-2020-02-2-35-0 0/1
ImagePullBackOff  0          100d   10.10.10.180    lab-deployer-cm-primary           <none>
<none>
registry           registry-cee-2020-02-2-1-1-0        0/1
ImagePullBackOff  0          100d   10.10.10.198    lab-deployer-cm-primary           <none>
<none>
registry           registry-cluster-deployer-2020-02-2-35-0 0/1
ImagePullBackOff  0          100d   10.10.10.152    lab-deployer-cm-primary           <none>
<none>
registry           software-unpacker-0                 0/1
ImagePullBackOff  0          100d   10.10.10.160    lab-deployer-cm-primary           <none>
<none>
```

O implantador de Common Execution Environment (CEE) mostra zero por cento do sistema pronto porque a sincronização do sistema pendente é verdadeira.

```
[deployer/cee] cee# show system
system uuid 012345678-9abc-0123-4567-000011112222
system status deployed true
system status percent-ready 0.0
system ops-center repository https://charts.10.192.1.1.nip.io/cee-2020.02.2.35
system ops-center-debug status false
system synch running true
system synch pending true.
```

Use o protocolo SSH para se conectar ao CEE, o erro 404 não encontrado é relatado.

```
[deployer/cee] cee#
Message from confd-api-manager at 2022-05-05 01:01:01...
Helm update is ERROR. Trigger for update is CHANGE. Message is:
WebApplicationException: HTTP 404 Not Found
com.google.common.util.concurrent.UncheckedExecutionException:
javax.ws.rs.WebApplicationException: HTTP 404 Not Found
at com.google.common.cache.LocalCache$Segment.get(LocalCache.java:2052)
at com.google.common.cache.LocalCache.get(LocalCache.java:3943)
at com.google.common.cache.LocalCache.getOrLoad(LocalCache.java:3967)
at com.google.common.cache.LocalCache$LocalLoadingCache.get(LocalCache.java:4952)
at
com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO.getChartVersion(HelmRepositoryDAO.java:638
)
at
com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO.installRelease(HelmRepositoryDAO.java:359)
at
com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO.sendConfiguration(HelmRepositoryDAO.java:2
54)
at
com.broadhop.conf.d.config.proxy.service.ConfigurationSynchManager.run(ConfigurationSynchManager.
java:233)
at java.util.concurrent.Executors$RunnableAdapter.call(Executors.java:511)
at java.util.concurrent.FutureTask.runAndReset(FutureTask.java:308)
at
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.access$301(ScheduledThreadP
oolExecutor.java:180)
at
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.run(ScheduledThreadPoolExec
utor.java:294)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
at java.lang.Thread.run(Thread.java:748)
Caused by: javax.ws.rs.WebApplicationException: HTTP 404 Not Found
at
com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO.retrieveHelmIndex(HelmRepositoryDAO.java:6
20)
at com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO$2.load(HelmRepositoryDAO.java:114)
at com.broadhop.conf.d.config.proxy.dao.HelmRepositoryDAO$2.load(HelmRepositoryDAO.java:112)
at com.google.common.cache.LocalCache$LoadingValueReference.loadFuture(LocalCache.java:3524)
at com.google.common.cache.LocalCache$Segment.loadSync(LocalCache.java:2273)
at com.google.common.cache.LocalCache$Segment.lockedGetOrLoad(LocalCache.java:2156)
at com.google.common.cache.LocalCache$Segment.get(LocalCache.java:2046)
```

Análise

1. Verifique a configuração do repositório de leme no CEE Deployer.

```
[deployer/cee] cee# show running-config helm
helm default-repository base-repos
helm repository base-repos
url https://charts.10.192.1.1.nip.io/cee-2020.02.2.35
exit
```

2. Consulte o index.yaml da url no Cluster Manager primário para certificar-se de que a resposta 404 seja enviada.

```
cloud-user@deployer-cm-primary:~$ curl -k https://charts.10.192.1.1.nip.io/cee-2020.02.2.35/index.yaml
default backend - 404
```

3. Consulte a lista de imagens com o comando `kubectl describe pod` comando. Não há imagem baseada no erro de descrição.

```

cloud-user@lab-deployer-cm-primary:~$ kubectl describe pod ops-center-cee-labcluster-ops-
center-df69975c7-gzszg -n cee-labcluster | grep Image
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-apps/cee-ops-
center/2020.02.2/confd_init:0.7.0-00001111
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.33/smi-apps/cee-ops-
center/2020.02.2/confd_init@sha256:01234567890123456789012345678901234567890123456789012345
67890123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/crd_registry:0.7.1-00002222
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.27/smi-libraries/ops-
center/2020.02.2/crd_registry@sha256:012345678901234567890123456789012345678901234567890123
4567890123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/local_storage_init:0.7.1-00003333
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.27/smi-libraries/ops-
center/2020.02.2/local_storage_init@sha256:012345678901234567890123456789012345678901234567
8901234567890123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/confd:0.7.1-00004444
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.27/smi-libraries/ops-
center/2020.02.2/confd@sha256:0123456789012345678901234567890123456789012345678901234567890
123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/confd_api_bridge:0.7.1-00005555
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.33/smi-libraries/ops-
center/2020.02.2/confd_api_bridge@sha256:01234567890123456789012345678901234567890123456789
01234567890123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-apps/cee-ops-
center/2020.02.2/product_confid_callback:0.7.0-00006666
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.27/smi-apps/cee-ops-
center/2020.02.2/product_confid_callback@sha256:01234567890123456789012345678901234567890123
45678901234567890123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/ssh_ui:0.7.1-00007777
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/ssh_ui@sha256:012345678901234567890123456789012345678901234567890123456789
0123
Image: docker.10.192.1.1.nip.io/cee-2020.02.2.35/smi-libraries/ops-
center/2020.02.2/confd_notifications:0.7.1-00008888
Image ID: docker-pullable://docker.10.192.1.1.nip.io/cee-2020.02.2.27/smi-libraries/ops-
center/2020.02.2/confd_notifications@sha256:01234567890123456789012345678901234567890123456
78901234567890123

```

4. Execute o comando `kubectl describe pod` para o registro de estado de nome.

5. Execute o comando `kubectl get pods -A -o wide | grep -v "Running"` para verificar o estado dos pods em todos os namespaces no cluster do Kubernetes.

```

cloud-user@lab-deployer-cm-primary:~$ kubectl describe pod charts-cee-2020-02-2-1-1-0 -n
registry
Volumes:
charts-volume:
Type: HostPath (bare host directory volume)
Path: /data/software/packages/cee-2020.02.2.1.1/data/charts
HostPathType: DirectoryOrCreate
Events:
Type Reason Age From Message
-----
Normal BackOff 9m3s (x104861 over 16d) kubelet Back-off pulling image
"dockerhub.cisco.com/smi-fuse-docker-internal/smi-apps/distributed-
registry/2020.02.2/apache:0.1.0-abcd123"
Warning Failed 3m59s (x104884 over 16d) kubelet Error: ImagePullBackOff

```

```

cloud-user@lab-deployer-cm-primary:$ kubectl describe pod charts-cluster-deployer-2020-02-

```

2-35-0 -n registry

Name: charts-cluster-deployer-2020-02-2-35-0
Namespace: registry
Priority: 1000000000
Priority Class Name: infra-critical
Node: lab-deployer-cm-primary/10.192.1.1
Start Time: Thu, 01 Jan 2022 13:05:03 +0000
Labels: chart-app=charts-cluster-deployer-2020-02-2-35
component=charts
controller-revision-hash=charts-cluster-deployer-2020-02-2-35-589fdf57b8
registry=cluster-deployer-2020.02.2.35
statefulset.kubernetes.io/pod-name=charts-cluster-deployer-2020-02-2-35-0
Annotations: cni.projectcalico.org/podIP: 10.10.10.180/32
cni.projectcalico.org/podIPs: 10.10.10.180/32
sidecar.istio.io/inject: false
Status: Pending
IP: 10.10.10.180
IPs:
IP: 10.10.10.180
Controlled By: StatefulSet/charts-cluster-deployer-2020-02-2-35
Containers:
charts:
Container ID:
Image: dockerhub.cisco.com/smi-fuse-docker-internal/smi-apps/distributed-registry/2020.02.2/apache:0.1.0-abcd123
Image ID:
Port: 8080/TCP
Host Port: 0/TCP
State: Waiting
Reason: ImagePullBackOff
Ready: False
Restart Count: 0
Environment: <none>
Mounts:
/var/run/secrets/kubernetes.io/serviceaccount from default-token-qcmhx (ro)
/var/www/html/cluster-deployer-2020.02.2.35 from charts-volume (rw)
Conditions:
Type Status
Initialized True
Ready False
ContainersReady False
PodScheduled True
Volumes:
charts-volume:
Type: HostPath (bare host directory volume)
Path: /data/software/packages/cluster-deployer-2020.02.2.35/data/charts
HostPathType: DirectoryOrCreate
default-token-qcmhx:
Type: Secret (a volume populated by a Secret)
SecretName: default-token-qcmhx
Optional: false
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 30s
node.kubernetes.io/unreachable:NoExecute op=Exists for 30s
Events:
Type Reason Age From Message

Normal BackOff 118s (x104949 over 16d) kubelet Back-off pulling image
"dockerhub.cisco.com/smi-fuse-docker-internal/smi-apps/distributed-
registry/2020.02.2/apache:0.1.0-abcd123"

cloud-user@lab-deployer-cm-primary: /data/software/packages/cluster-deployer-2020.02.2.35/data/charts\$

```
cloud-user@lab-deployer-cm-primary:~$ kubectl get pods -A -o wide | grep -v "Running"
NAMESPACE NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
registry charts-cee-2020-02-2-1-1-0 0/1 ImagePullBackOff 0 100d 10.10.10.178 lab-deployer-cm-primary <none> <none>
registry charts-cluster-deployer-2020-02-2-35-0 0/1 ErrImagePull 0 100d 10.10.10.180 lab-deployer-cm-primary <none> <none>
registry registry-cee-2020-02-2-1-1-0 0/1 ErrImagePull 0 100d 10.10.10.198 lab-deployer-cm-primary <none> <none>
registry registry-cluster-deployer-2020-02-2-35-0 0/1 ImagePullBackOff 0 100d 10.10.10.152 lab-deployer-cm-primary <none> <none>
registry software-unpacker-0 0/1 ImagePullBackOff 0 100d 10.10.10.160 lab-deployer-cm-primary <none> <none>
```

6. Confirme os arquivos no implantador de cluster.

```
cloud-user@lab-deployer-cm-primary:/data/software/packages$ cd cluster-deployer-2020.02.2.35/
cloud-user@lab-deployer-cm-primary:/data/software/packages/cluster-deployer-2020.02.2.35$ ll
total 12
drwxrwxr-x 3 303 303 4096 Jan 1 2021 ./
drwxrwxrwt 5 root root 4096 Mar 1 11:39 ../
drwxrwxr-x 5 303 303 4096 Jan 1 2021 data/
cloud-user@lab-deployer-cm-primary:/data/software/packages/cluster-deployer-2020.02.2.35$ cd data/
cloud-user@lab-deployer-cm-primary:/data/software/packages/cluster-deployer-2020.02.2.35/data$ ll
total 20
drwxrwxr-x 5 303 303 4096 Jan 1 2021 ./
drwxrwxr-x 3 303 303 4096 Jan 1 2021 ../
drwxr-xr-x 2 303 303 4096 Mar 1 12:55 charts/
drwxr-xr-x 4 303 303 4096 Aug 10 2021 deployer-inception/
drwxr-xr-x 3 303 303 4096 Aug 10 2021 docker/
cloud-user@lab-deployer-cm-primary:/data/software/packages/cluster-deployer-2020.02.2.35/data$ cd charts/
cloud-user@lab-deployer-cm-primary:/data/software/packages/cluster-deployer-2020.02.2.35/data/charts$ ll
total 116
drwxr-xr-x 2 303 303 4096 Mar 1 12:55 ./
drwxrwxr-x 5 303 303 4096 Jan 1 2021 ../
-rw-r--r-- 1 303 303 486 Aug 10 2021 index.yaml
-rw-r--r-- 1 303 303 102968 Mar 1 12:55 smi-cluster-deployer-1.1.0-2020-02-2-1144-210826141421-15f3d5b.tgz
cloud-user@lab-deployer-cm-primary:/tmp$
cloud-user@lab-deployer-cm-primary:/tmp$ ls /tmp/k8s-* -al
-rw-r--r-- 1 root root 2672 Sep 7 2021 /tmp/k8s-offline.tgz.txt
```

Solução

O problema é considerado como causado pela falha de sincronização do cluster. A solução é executar uma sincronização de cluster a partir do servidor inicial para o CM High Availability (HA).

1. Use SSH para se conectar ao Servidor de inspeção.
2. Use SSH para se conectar à porta do centro de operações 2022.

```
cloud-user@all-in-one-vm:~$ ssh admin@localhost -p 2022
```

3. Verifique se o cluster está no servidor de início.

```
[all-in-one-base-vm] SMI Cluster Deployer# show clusters
```

4. Verifique e confirme se a configuração do cluster está correta. Neste exemplo, o nome do cluster é lab-deployer.

```
[all-in-one-base-vm] SMI Cluster Deployer# show running-config clusters lab-deployer
```

5. Execute a sincronização do cluster.

```
[all-in-one-base-vm] SMI Cluster Deployer# clusters lab-deployer actions sync run debug
```

6. Monitore os logs de sincronização.

```
[all-in-one-base-vm] SMI Cluster Deployer# monitor sync-logs lab-deployer
```

Successful cluster sync logs example below :

```
Wednesday 01 December 2021 01:01:01 +0000 (0:00:00.080) 0:33:08.600 ****
```

```
=====
```

```
2021-12-01 01:01:01.230 DEBUG cluster_sync.ca-deployer: Cluster sync successful
```

```
2021-12-01 01:01:01.230 DEBUG cluster_sync.ca-deployer: Ansible sync done
```

```
2021-12-01 01:01:01.231 INFO cluster_sync.ca-deployer: _sync finished. Opening lock
```

7. Use SSH para se conectar ao Cluster Manager e verifique se os pods estão no estado "em execução".

```
cloud-user@lab-deployer-cm-primary:~$ kubectl get pods -A -o wide | grep -v "Running"
```

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