

Solucionar problemas de grupos de nombres de registro en el estado ImagePullBackOff

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Introducción

Este documento describe el problema y la solución de los grupos de dispositivos del Registro en el estado `ImagePullBackOff`.

Problema

Los grupos de dispositivos del registro en el Administrador de clústeres (CM) de la infraestructura de microservicios de suscriptor de núcleo de nube Ultra (SMI) se encuentran en el 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>
```

El implementador de Common Execution Environment (CEE) muestra el cero por ciento del sistema preparado porque la sincronización del sistema pendiente es verdadera.

```
[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.

Utilice el protocolo Secure Shell (SSH) para conectarse a CEE; se informa del error 404 no encontrado.

```
[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)
```

Análisis

1. Verifique la configuración del repositorio de helm en 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 index.yaml de la dirección URL del Administrador de clústeres principal para asegurarse de que se envía la respuesta 404.

```
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. Consultar lista de imágenes con el `kubectl describe pod` comando. No hay ninguna imagen basada en el error de descripción.

```
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
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@sha256:01234567890123456789012345678901234567890123456789012345678901234567890123
```

4. Ejecute el `kubectl describe pod` para el registro del estado del nombre.

5. Ejecute el `kubectl get pods -A -o wide | grep -v "Running"` para verificar el estado de los pods en todos los espacios de nombres del clúster de 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 los archivos en el implementador de clústeres.

```
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
```

Solución

Se considera que el problema se debe a un error en la sincronización del clúster. La solución es ejecutar una sincronización de clúster desde el servidor de inicio hasta la alta disponibilidad de CM (HA).

1. Utilice SSH para conectarse al servidor de inspección.
2. Utilice SSH para conectarse al puerto central de operaciones 2022.

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

3. Compruebe que el clúster está en el servidor de inicio.

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

4. Verifique y confirme que la configuración del clúster es correcta. En este ejemplo, el nombre del clúster es lab-deployment.

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

5. Ejecute la sincronización del clúster.

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

6. Supervise los registros de sincronización.

```
[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. Utilice SSH para conectarse al Administrador de clústeres y asegúrese de que las vainas se encuentran en el estado "en ejecución".

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

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