

故障排除無法連線到伺服器X509證書已過期

目錄

[簡介](#)

[問題](#)

[解決方案](#)

簡介

本檔案介紹用於解決 `Unable to connect to the server: x509: certificate has expired or is not yet valid` 錯誤。

問題

連線到Ultra Cloud核心使用者微服務基礎架構(SMI)的Kubectl會引發錯誤。

Kubernetes控制平面節點通過SSL隧道進行通訊。SSL隧道通常依靠一組受信任的第三方證書頒發機構來建立證書的真實性。

證書過期時，控制平面節點通訊停止。

要檢查證書過期，請執行以下操作：`kubectl get secrets --all-namespaces | grep 'kubernetes.io/tls' | awk '{print $2, $1}' | xargs -n2 sh -c 'echo container $0 namespace $1;kubectl -n $1 get secret $0 -o jsonpath="{.data.tls.crt}" | base64 -d | openssl x509 -noout -enddate; echo -----'`

```
cloud-user@k8-rcdn-primary-1:~$ kubectl get secrets --all-namespaces | grep 'kubernetes.io/tls'
| awk '{print $2, $1}' | xar
gs -n2 sh -c 'echo container $0 namespace $1;kubectl -n $1 get secret $0 -o
jsonpath="{.data.tls.crt}" | base64 -d | open
ssl x509 -noout -enddate; echo -----'
container cert-cli-cee-k8-rcdn-ops-center-ingress namespace cee-k8-rcdn
notAfter=May 1 16:54:39 2023 GMT
-----
container cert-docs-cee-k8-rcdn-product-documentation-ingress namespace cee-k8-rcdn
notAfter=May 1 16:56:04 2023 GMT
-----
container cert-grafana-ingress namespace cee-k8-rcdn
notAfter=May 1 16:56:06 2023 GMT
-----
container cert-restconf-cee-k8-rcdn-ops-center-ingress namespace cee-k8-rcdn
notAfter=May 1 16:54:40 2023 GMT
-----
container cert-show-tac-cee-k8-rcdn-ops-center-ingress namespace cee-k8-rcdn
notAfter=May 1 16:54:40 2023 GMT
-----
container cert-show-tac-cee-k8-rcdn-smi-show-tac-ingress namespace cee-k8-rcdn
notAfter=May 1 16:56:07 2023 GMT
-----
container cert-cli-smf-rcdn-ops-center-ingress namespace smf-rcdn
notAfter=May 1 16:54:56 2023 GMT
-----
```

```
container cert-restconf-smf-rcdn-ops-center-ingress namespace smf-rcdn
notAfter=May 1 16:54:57 2023 GMT
-----
container cert-show-tac-smf-rcdn-ops-center-ingress namespace smf-rcdn
notAfter=May 1 16:54:57 2023 GMT
-----
container cert-cli-smf-rcdn1-ops-center-ingress namespace smf-rcdn1
notAfter=May 1 16:55:07 2023 GMT
-----
container cert-restconf-smf-rcdn1-ops-center-ingress namespace smf-rcdn1
notAfter=May 1 16:55:08 2023 GMT
-----
container cert-show-tac-smf-rcdn1-ops-center-ingress namespace smf-rcdn1
notAfter=May 1 16:55:08 2023 GMT
-----
container cert-cli-smf-rcdn2-ops-center-ingress namespace smf-rcdn2
notAfter=May 3 18:11:26 2023 GMT
-----
container cert-restconf-smf-rcdn2-ops-center-ingress namespace smf-rcdn2
notAfter=May 3 18:11:28 2023 GMT
-----
container cert-show-tac-smf-rcdn2-ops-center-ingress namespace smf-rcdn2
notAfter=May 3 18:11:27 2023 GMT
-----
container cert-cli-smf-rcdn3-ops-center-ingress namespace smf-rcdn3
notAfter=May 3 18:11:41 2023 GMT
-----
container cert-restconf-smf-rcdn3-ops-center-ingress namespace smf-rcdn3
notAfter=May 3 18:11:43 2023 GMT
-----
container cert-show-tac-smf-rcdn3-ops-center-ingress namespace smf-rcdn3
notAfter=May 3 18:11:42 2023 GMT
-----
```

解決方案

1. 驗證apiserver.crt是否顯示正確的結束日期。

```
ubuntu@labnode-cnat-cnat-core-primary1:~$ cd /data/kubernetes/pki
ubuntu@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki$ sudo su
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki# sudo cat
/data/kubernetes/pki/apiserver.crt | openssl x509 -enddate -noout
notAfter=Feb 17 08:22:04 2022 GMT
```

2. 檢查SSL中的結束日期。

```
ubuntu@labnode-cnat-cnat-core-primary1:~$ echo | openssl s_client -showcerts -servername
gnupg.org -connect localhost:6443 2>/dev/null | openssl x509 -inform pem -noout -text
Certificate:
Data:
Version: 3 (0x2)
Serial Number: 44335566778899aabba (0xabcdef0123456789)
Signature Algorithm: sha256WithRSAEncryption
Issuer: CN = kubernetes
Validity
Not Before: Mar 17 11:59:23 2020 GMT
Not After : Mar 19 10:37:35 2021 GMT
```

3. 檢查docker容器狀態。

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki# docker ps -f "name=k8s_kube-apiserver"
```

```
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
f988867819ed c2c9a0406787 "kube-apiserver --ad..." 12 months ago Up 12 months k8s_kube-apiserver_kube-apiserver-labnode-cnat-cnat-core-primary1_kube-system_00112233445566778899aabbccddeeff_0
```

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki#
```

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki# docker ps -f "name=k8s_kube-controller"
```

```
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
929a8f1ef716 6e4bffa46d70 "kube-controller-man..." 3 days ago Up 3 days k8s_kube-controller-manager_kube-controller-manager-labnode-cnat-cnat-core-primary1_kube-system_112233445566778899aabbccddeeff00_2
```

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki# docker ps -f "name=k8s_kube-scheduler"
```

```
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
32783a2c3a71 ebac1ae204a2 "kube-scheduler --au..." 12 months ago Up 12 months k8s_kube-scheduler_kube-scheduler-labnode-cnat-cnat-core-primary1_kube-system_2233445566778899aabbccddeeff0011_1
```

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki#
```

4. 在所有三個控制平面節點上重新啟動kubernetes的docker容器。

```
docker ps -f "name=k8s_kube-apiserver" -q | xargs docker restart  
docker ps -f "name=k8s_kube-scheduler" -q | xargs docker restart
```

5. 確認apiserver.crt顯示正確的結束日期。

```
root@labnode-cnat-cnat-core-primary1:/data/kubernetes/pki# sudo cat  
/data/kubernetes/pki/apiserver.crt | openssl x509 -enddate -noout  
notAfter=Feb 17 08:22:04 2022 GMT
```

6. 驗證在SSL中更新了結束日期並且其結束日期正確。

```
echo | openssl s_client -showcerts -servername gnupg.org -connect localhost:6443 2>/dev/null |  
openssl x509 -inform pem -noout -text
```

7. 驗證群集是否正常

有關操作的詳細資訊，請參閱[思科Ultra雲核心 — 使用者微服務基礎設施指南](#)。

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。