

# kubernetes 인증서 만료되어 kubectl 실행 안될 때

```
Unable to connect to the server: x509: certificate has expired or is not yet valid: current time 2023-10-18T14:59:15+09:00 is after 2023-10-17T01:26:03Z
```

위와 같은 에러 발생하며 kubectl 명령을 사용할 수 없는 상황

대충 영문 경고 해석해보면 느낌이 오겠지만, 인증서 기간이 만료된 것임

```
[root@Minhang02 pki]# kubeadm certs check-expiration
[check-expiration] Reading configuration from the cluster...
[check-expiration] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[check-expiration] Error reading configuration from the Cluster. Falling back to default configuration
```

CERTIFICATE	EXPIRES	RESIDUAL TIME	CERTIFICATE AUTHORITY	EXTERNALLY MANAGED
admin.conf	Oct 17, 2023 01:26 UTC	<invalid>	ca	no
apiserver	Oct 17, 2023 01:26 UTC	<invalid>	ca	no
apiserver-etcd-client	Oct 17, 2023 01:26 UTC	<invalid>	etcd-ca	no
apiserver-kubelet-client	Oct 17, 2023 01:26 UTC	<invalid>	ca	no
controller-manager.conf	Oct 17, 2023 01:26 UTC	<invalid>	ca	no
etcd-healthcheck-client	Oct 17, 2023 01:26 UTC	<invalid>	etcd-ca	no
etcd-peer	Oct 17, 2023 01:26 UTC	<invalid>	etcd-ca	no
etcd-server	Oct 17, 2023 01:26 UTC	<invalid>	etcd-ca	no
front-proxy-client	Oct 17, 2023 01:26 UTC	<invalid>	front-proxy-ca	no
scheduler.conf	Oct 17, 2023 01:26 UTC	<invalid>	ca	no

  

CERTIFICATE AUTHORITY	EXPIRES	RESIDUAL TIME	EXTERNALLY MANAGED
ca	Oct 14, 2032 01:26 UTC	8y	no
etcd-ca	Oct 14, 2032 01:26 UTC	8y	no
front-proxy-ca	Oct 14, 2032 01:26 UTC	8y	no

-> `kubeadm certs check-expiration` 명령어를 통해 인증서 만료 일자를 확인해보니 이미 기간이 만료되어 있었음

```
[root@Minhang02 pki]# kubeadm certs renew all
[renew] Reading configuration from the cluster...
[renew] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[renew] Error reading configuration from the Cluster. Falling back to default configuration
```

certificate embedded in the kubeconfig file for the admin to use and for kubeadm itself renewed  
certificate for serving the Kubernetes API renewed  
certificate the apiserver uses to access etcd renewed  
certificate for the API server to connect to kubelet renewed  
certificate embedded in the kubeconfig file for the controller manager to use renewed  
certificate for liveness probes to healthcheck etcd renewed  
certificate for etcd nodes to communicate with each other renewed  
certificate for serving etcd renewed  
certificate for the front proxy client renewed  
certificate embedded in the kubeconfig file for the scheduler manager to use renewed

Done renewing certificates. You must restart the kube-apiserver, kube-controller-manager, kube-scheduler and etcd, so that they can use the new certificates.

-> `kubeadm certs renew all` 명령어를 통해 인증서를 갱신할 수 있음

갱신하고 다시 인증서 정보를 확인해보면

```
[root@Minhang02 pki]# kubeadm certs check-expiration
[check-expiration] Reading configuration from the cluster...
[check-expiration] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[check-expiration] Error reading configuration from the Cluster. Falling back to default configuration
```

CERTIFICATE	EXPIRES	RESIDUAL TIME	CERTIFICATE AUTHORITY	EXTERNALLY MANAGED
admin.conf	Oct 17, 2024 06:21 UTC	364d	ca	no

apiserver	Oct 17, 2024 06:21 UTC	364d	ca	no
apiserver-etcd-client	Oct 17, 2024 06:21 UTC	364d	etcd-ca	no
apiserver-kubelet-client	Oct 17, 2024 06:21 UTC	364d	ca	no
controller-manager.conf	Oct 17, 2024 06:21 UTC	364d	ca	no
etcd-healthcheck-client	Oct 17, 2024 06:21 UTC	364d	etcd-ca	no
etcd-peer	Oct 17, 2024 06:21 UTC	364d	etcd-ca	no
etcd-server	Oct 17, 2024 06:21 UTC	364d	etcd-ca	no
front-proxy-client	Oct 17, 2024 06:21 UTC	364d	front-proxy-ca	no
scheduler.conf	Oct 17, 2024 06:21 UTC	364d	ca	no

  

CERTIFICATE AUTHORITY	EXPIRES	RESIDUAL TIME	EXTERNALLY MANAGED
ca	Oct 14, 2032 01:26 UTC	8y	no
etcd-ca	Oct 14, 2032 01:26 UTC	8y	no
front-proxy-ca	Oct 14, 2032 01:26 UTC	8y	no

-> 인증서 갱신되어 이제 364일 남았다고 뜸

```
[root@Minhang02 pkj]# kubectl get pod -o wide
NAME                READY STATUS  RESTARTS  AGE   IP           NODE       NOMINATED NODE  READINESS GATES
bookstack-77df4879c-6z2v2  1/1   Running  0         28d   10.244.1.42   minhang03  <none>          <none>
bookstack-77df4879c-hqwgp  1/1   Running  0         28d   10.244.2.45   minhang04  <none>          <none>
jupyter-66477949-jvvqk    1/1   Running  0        307d   10.244.2.31   minhang04  <none>          <none>
```

-> 이제 kubectl도 다시 정상적으로 사용됨