**Root Cause Analysis (RCA)**

**Issue:**  
Production CN-series NGFW pods showing a "delicensed" status in the Panorama Kubernetes plugin license usage page, causing the EKS cluster to go down.

[Case Detail Page (paloaltonetworks.com)](https://supportcases.paloaltonetworks.com/s/casedetail?Id=5004u000033SHzJAAW)

**Affected Systems:**

* Production CN-series NGFW Pods

**Response by Palo Alto support team**:  
-- As discussed, the CN-Series on prd-iras-eks-cluster was delicensed on 2024-09-30 20:51, after the 30 days grace period due to license token depletion.  
-- If the number of CN-NGFW pods deployed exceeds the number of allocated vCPUs, there will be a 30-day grace period to add more vCPUs to the deployment profile or delete enough CN-NGFW pods.  
-- If no corrective actions are taken, all CN-Series firewalls in that cluster will be delicensed after that grace period.  
<https://docs.paloaltonetworks.com/cn-series/getting-started/cn-series-deployment-prereq/license-the-cn-series-firewall>  
-- When the prod cluster was added, a total of 40 vCPU tokens were required (2x8vCPU on pre-prod + 2x12vCPU on prod), but total allocated was 32.  
-- This has been logged in the system log every time the k8s plugin runs the licensing audit job (in every 10 minutes) on the Panorama, like below:  
K8S\_SERVICE cluster prd-iras-eks-cluster will be de-licensed due to token depletion on 2024-09-30::20-51  
-- You scaled down the ngfw pods on pre-prod from 2 to 1, on prod to 0 and restarted the mgmt pods.  
-- Updated the pre-prod cluster credentials on the Panorama after which the license usage for that cluster was updated on the Panorama.  
-- After that scaled up the ngfw pods on prod to 2, and confirmed that they came up as expected.  
-- As discussed, the annotation '[paloaltonetworks.com/firewall](https://paloaltonetworks.com/firewall): pan-fw' can be either at the ns level or applied to individual app pods for traffic inspection.  
<https://docs.paloaltonetworks.com/cn-series/deployment/cn-deployment/deployment-modes-of-cn-series-firewalls/deploy-the-cn-series-firewall-as-a-service>

**Preventive Measures:**

To avoid a recurrence of this issue, the following steps have been implemented or recommended:

1. **Email Alerts for License Grace Period:**  
   An automated email alert system has been set up to notify the relevant teams when the CN-series NGFW pods enter the license grace period. This will ensure timely action is taken before the license expires, avoiding disruptions in service.

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