Kubectl get nodes


```
student@ds-student4:~/NTHU-Scheduler-Plugin$ kubectl get nodes
NAME                STATUS    ROLES           AGE     VERSION
kind-control-plane  Ready     control-plane   2d5h    v1.30.0
kind-worker         Ready     <none>          2d5h    v1.30.0
kind-worker2        Ready     <none>          2d5h    v1.30.0
student@ds-student4:~/NTHU-Scheduler-Plugin$
```

Unit test Screenshot


```
?       my-scheduler-plugins/cmd/scheduler      [no test files]
=== RUN   TestCustomScheduler_PreFilter
=== RUN   TestCustomScheduler_PreFilter/pod_is_accepted
finish adding2024/06/09 13:37:07 Pod  is in Prefilter phase.
=== RUN   TestCustomScheduler_PreFilter/pod_is_just_accepted
finish adding2024/06/09 13:37:07 Pod  is in Prefilter phase.
=== RUN   TestCustomScheduler_PreFilter/pod_is_rejected
finish adding2024/06/09 13:37:07 Pod  is in Prefilter phase.
--- PASS: TestCustomScheduler_PreFilter (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_accepted (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_just_accepted (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_rejected (0.00s)
=== RUN   TestCustomScheduler_Score
=== RUN   TestCustomScheduler_Score/least_mode
2024/06/09 13:37:07 Custom scheduler runs with the mode: Least.
2024/06/09 13:37:07 Pod  is in Score phase. Calculate the score of Node m1.
2024/06/09 13:37:07 Pod  is in Score phase. Calculate the score of Node m2.
=== RUN   TestCustomScheduler_Score/most_mode
2024/06/09 13:37:07 Custom scheduler runs with the mode: Least.
2024/06/09 13:37:07 Pod  is in Score phase. Calculate the score of Node m1.
2024/06/09 13:37:07 Pod  is in Score phase. Calculate the score of Node m2.
--- PASS: TestCustomScheduler_Score (0.00s)
    --- PASS: TestCustomScheduler_Score/least_mode (0.00s)
    --- PASS: TestCustomScheduler_Score/most_mode (0.00s)
=== RUN   TestCustomScheduler_NormalizeScore
=== RUN   TestCustomScheduler_NormalizeScore/scores_in_range
=== RUN   TestCustomScheduler_NormalizeScore/scores_out_of_range
=== RUN   TestCustomScheduler_NormalizeScore/negative_score
--- PASS: TestCustomScheduler_NormalizeScore (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/scores_in_range (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/scores_out_of_range (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/negative_score (0.00s)
PASS
ok      my-scheduler-plugins/pkg/plugins        0.037s
root@bef50f0d7356:/go/src/app#
exit
student@ds-student4:~/NTHU-Scheduler-Plugin$
```

3 Scenarios

第一種: 只有一個 pod, minAvailable = 3

因為 pod 數量小於 min available 所以會沒有通過 prefileter


```
0 UTC))"
I0609 13:59:39.208040        1 log.go:194] Pod nginx is in Prefilter phase.
I0609 13:59:39.208345        1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/nginx" err="0/3 nodes are available: Not enough pods available in the group. pree
mption: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
```

```
Unschedulable:        false
Lease:
  HolderIdentity:  kind-worker2
  AcquireTime:     <unset>
  RenewTime:       Sun, 09 Jun 2024 14:19:22 +0000
Conditions:
  Type             Status  LastHeartbeatTime
  ----             ------  -----------------
  MemoryPressure   False   Sun, 09 Jun 2024 14:14
  DiskPressure     False   Sun, 09 Jun 2024 14:14
  PIDPressure      False   Sun, 09 Jun 2024 14:14
  Ready            True    Sun, 09 Jun 2024 14:14
Addresses:
  InternalIP:  172.19.0.3
  Hostname:    kind-worker2
Capacity:
  cpu:                6
  ephemeral-storage:  50620216Ki
  hugepages-2Mi:      0
  memory:             6063048Ki
  pods:               110
Allocatable:
  cpu:                6
  ephemeral-storage:  50620216Ki
  hugepages-2Mi:      0
  memory:             1868744Ki
  pods:               110
System Info:
```

```
  Ready            True    Sun, 09 Jun 2024 14:14:43 +0000
  Addresses:
    InternalIP:  172.19.0.2
    Hostname:    kind-worker
  Capacity:
    cpu:                6
    ephemeral-storage:  50620216Ki
    hugepages-2Mi:      0
    memory:             6063048Ki
    pods:               110
  Allocatable:
    cpu:                6
    ephemeral-storage:  50620216Ki
    hugepages-2Mi:      0
    memory:             1344456Ki
    pods:               110
  System Info:
    Machine ID:                  7e02872057ca497a80252d121e04282
```

第二種 least mode

```
I0609 14:14:25.163564      1 named_certificates.go:55] Loaded SNI cert [index 0 certName "self-signed loopback certbetul" [apiserver-loopback-client@171
ngFor=[apiserver-loopback-client] issuer=\"apiserver-loopback-client-ca@1717942465\" (2024-06-09 13:14:25 +0000 UTC to 2025-06-09 13:14:25 +0000 UTC (now=202
00 UTC))"
I0609 14:14:26.163767      1 log.go:194] Pod nginx2 is in Score phase. Calculate the score of Node kind-worker.
I0609 14:14:26.163788      1 log.go:194] Pod nginx2 is in Score phase. Calculate the score of Node kind-worker2.
I0609 14:14:26.163954      1 log.go:194] Pod nginx3 is in Prefilter phase.
I0609 14:14:26.164142      1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker.
I0609 14:14:26.164204      1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker2.
I0609 14:14:26.169381      1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx1" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0609 14:14:26.170645      1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx3" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0609 14:14:26.171149      1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx2" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
```

因為 worker 1 的 allocatable memory 比較少 所以分配給 worker 1(因為先創 pod 再 deploy scheduler 所以三個都可以)

第三種 most mode

因為 worker 2 的 allocatable mem 比較多 所以分配給 worker 2 (因為先 deploy scheduler 所以只有第三個達到 min available 才被分配)

```
I0609 14:27:38.521050      1 log.go:194] Pod nginx1 is in Prefilter phase.
I0609 14:27:38.521397      1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/nginx1" err="0/3 nodes are available: Not enough pods available in the group. pre
emption: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
I0609 14:27:38.530041      1 log.go:194] Pod nginx2 is in Prefilter phase.
I0609 14:27:38.530234      1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/nginx2" err="0/3 nodes are available: Not enough pods available in the group. pre
emption: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
I0609 14:27:38.536832      1 log.go:194] Pod nginx3 is in Prefilter phase.
I0609 14:27:38.537453      1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker2.
I0609 14:27:38.537483      1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker.
I0609 14:27:38.543850      1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx3" node="kind-worker2" evaluatedNodes=3 feasibleNodes=2
```