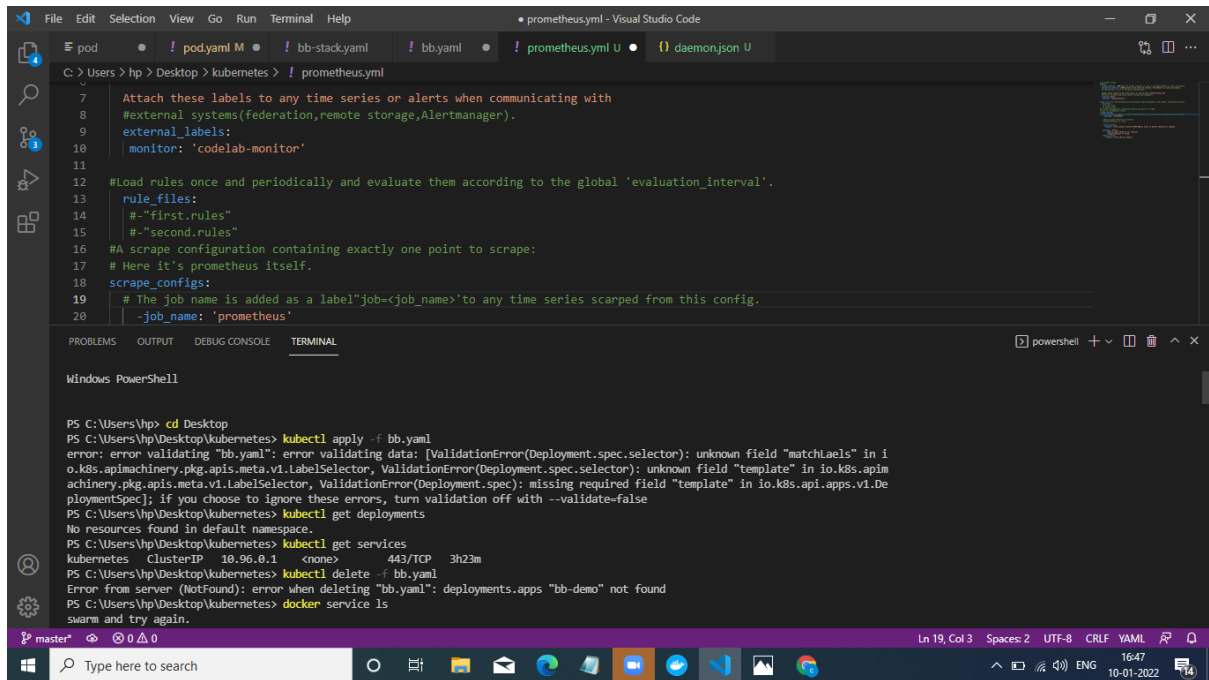


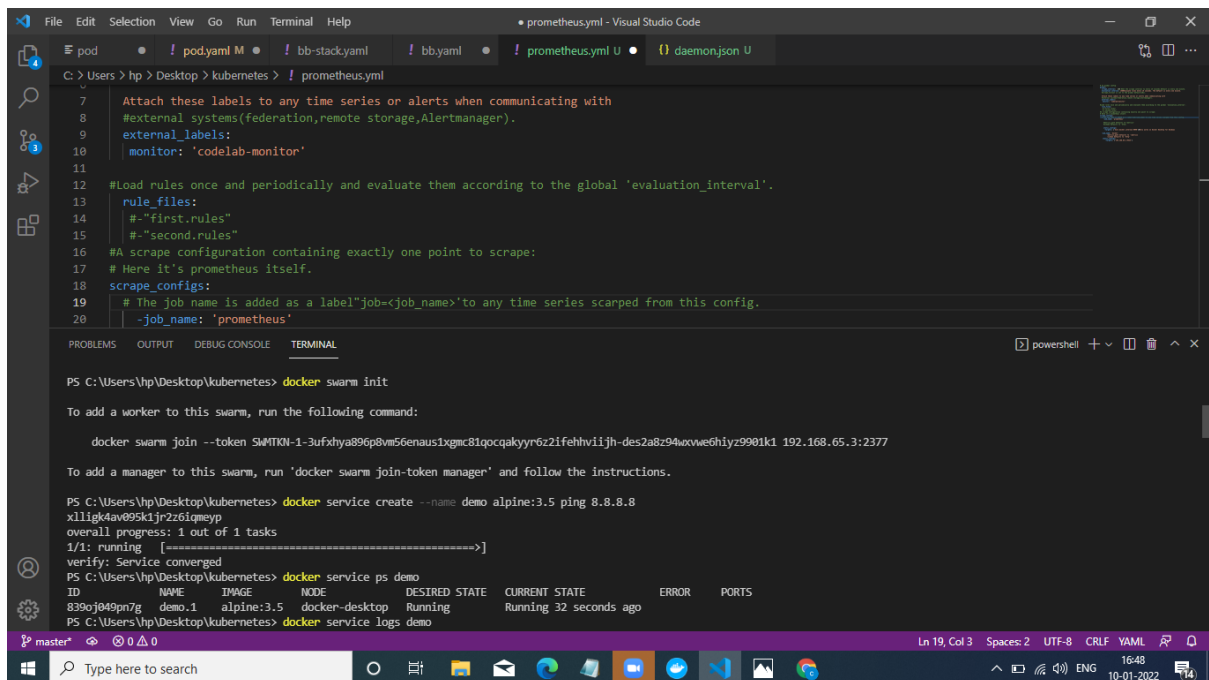
KUBERNETES

1.ENABLING KUBERNETES



The screenshot shows the Visual Studio Code editor with a file named `prometheus.yml` open. The file contains a Prometheus configuration for monitoring Kubernetes. The terminal window shows the following commands and output:

```
PS C:\Users\hvp> cd Desktop
PS C:\Users\hvp\Desktop\kubernetes> kubectl apply -f bb.yaml
error: error validating "bb.yaml": error validating data: [ValidationError(Deployment.spec.selector): unknown field "matchLabels" in io.k8s.api.core.v1.LabelSelector, ValidationError(Deployment.spec.selector): unknown field "template" in io.k8s.api.core.v1.LabelSelector, ValidationError(Deployment.spec): missing required field "template" in io.k8s.api.apps.v1.DeploymentSpec]; if you choose to ignore these errors, turn validation off with --validate=false
PS C:\Users\hvp\Desktop\kubernetes> kubectl get deployments
No resources found in default namespace.
PS C:\Users\hvp\Desktop\kubernetes> kubectl get services
kubernetes   ClusterIP   10.96.0.1   <none>      443/TCP    3h23m
PS C:\Users\hvp\Desktop\kubernetes> kubectl delete -f bb.yaml
Error from server (NotFound): error when deleting "bb.yaml": deployments.apps "bb-demo" not found
PS C:\Users\hvp\Desktop\kubernetes> docker service ls
swarm and try again.
```



The screenshot shows the Visual Studio Code editor with the same `prometheus.yml` file. The terminal window shows the following commands and output:

```
PS C:\Users\hvp\Desktop\kubernetes> docker swarm init

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-3ufxhya896p8m56enau1xgmc81qcqakyyr6z2ifehviihj-des2a8z94wawwehiz9901k1 192.168.65.3:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

PS C:\Users\hvp\Desktop\kubernetes> docker service create --name demo alpine:3.5 ping 8.8.8.8
xlllgk4av095ki9r2z6iqmep
overall progress: 1 out of 1 tasks
1/1: running [=====]
verify: Service converged
PS C:\Users\hvp\Desktop\kubernetes> docker service ps demo
ID            NAME      IMAGE      NODE      DESIRED STATE   CURRENT STATE      ERROR      PORTS
839oj849pn7g  demo.1    alpine:3.5  docker-desktop  Running          Running 32 seconds ago
PS C:\Users\hvp\Desktop\kubernetes> docker service logs demo
```

The screenshot shows the Visual Studio Code editor with a file named `prometheus.yml` open. The file contains a Prometheus configuration for a monitoring system. The configuration includes labels for external systems, rule files, and a scrape configuration for the Prometheus service itself. The terminal window at the bottom shows the output of the command `docker service logs demo`, which displays a series of ping results from the Prometheus service to the demo service.

```
7 Attach these labels to any time series or alerts when communicating with
8 #external systems(federation,remote storage,Alertmanager).
9 external_labels:
10   monitor: 'codelab-monitor'
11
12 #Load rules once and periodically and evaluate them according to the global 'evaluation_interval'.
13 rule_files:
14   #-"first.rules"
15   #-"second.rules"
16
17 #A scrape configuration containing exactly one point to scrape:
18 # Here it's prometheus itself.
19 scrape_configs:
20   # The job name is added as a label"job=<job_name>"to any time series scraped from this config.
21   -job_name: 'prometheus'
```

ID	NAME	IMAGE	MODE	DESIRED STATE	CURRENT STATE	ERROR	PORTS
839oj049pn7g	demo.1	alpine:3.5	docker-desktop	Running	Running 32 seconds ago		

PS C:\Users\hp\Desktop\kubernetes> docker service logs demo

```
demo.1.839oj049pn7g@docker-desktop | PING 8.8.8.8 (8.8.8.8): 56 data bytes
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=0 ttl=37 time=270.460 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=1 ttl=37 time=111.335 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=2 ttl=37 time=32.205 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=3 ttl=37 time=260.822 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=4 ttl=37 time=181.658 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=5 ttl=37 time=103.603 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=6 ttl=37 time=24.872 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=7 ttl=37 time=253.273 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=8 ttl=37 time=184.707 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=9 ttl=37 time=110.748 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=10 ttl=37 time=20.686 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=11 ttl=37 time=19.307 ms
demo.1.839oj049pn7g@docker-desktop | 64 bytes from 8.8.8.8: seq=12 ttl=37 time=170.849 ms
```

2.DEPLOY TO SWARM

The screenshot shows the Visual Studio Code editor with the same `prometheus.yml` file. The terminal window at the bottom shows the output of the command `docker service create --replicas 1 --name my-prometheus --mount type=bind,source=C:/tmp/prometheus.yml,destination=etc/prometheus/prometheus.yml --publish published=9090,target=9090,protocol=tcp prom/prometheus`. The output indicates that the service is being created with 1 replica and is currently running.

```
PS C:\Users\hp\Desktop\kubernetes> docker service create --replicas 1 --name my-prometheus --mount type=bind,source=C:/tmp/prometheus
.yml,destination=etc/prometheus/prometheus.yml --publish published=9090,target=9090,protocol=tcp prom/prometheus
nautozioe3abedwiczbsnpnr
overall progress: 0 out of 1 tasks
1/1: Invalid mount target, must be an absolute path: etc/prometheus/prometheus...
Operation continuing in background.
Use 'docker service ps nautozioe3abedwiczbsnpnr' to check progress.
PS C:\Users\hp\Desktop\kubernetes> docker service ls
ID NAME MODE REPLICAS IMAGE PORTS
nautozioe3ab my-prometheus replicated 0/1 prom/prometheus:latest *:9090->9090/tcp
2t8hgy4a4vflab0i2l4yphk5
overall progress: 10 out of 10 tasks
1/10: running [=====>]
2/10: running [=====>]
3/10: running [=====>]
4/10: running [=====>]
5/10: running [=====>]
```

```
File Edit Selection View Go Run Terminal Help • prometheus.yml - Visual Studio Code
pod • ! pod.yaml M • ! bb-stack.yaml • ! bb.yaml • ! prometheus.yml • ! daemon.json U
C:\Users\hp\Desktop\kubernetes> ! prometheus.yml
7 Attach these labels to any time series or alerts when communicating with
8 #external systems(federation,remote storage,Alertmanager).
9 external_labels:
10   monitor: 'codelab-monitor'
11
12 #Load rules once and periodically and evaluate them according to the global 'evaluation_interval'.
13 rule_files:
14   #- "first.rules"
15   #- "second.rules"
16 #A scrape configuration containing exactly one point to scrape:
17 # Here it's prometheus itself.
18 scrape_configs:
19   # The job name is added as a label 'job=<job_name>' to any time series scraped from this config.
20   - job_name: 'prometheus'
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
4/10: running [=====]>
5/10: running [=====]>
6/10: running [=====]>
7/10: running [=====]>
8/10: running [=====]>
9/10: running [=====]>
10/10: running [=====]>
verify: Service converged
PS C:\Users\hp\Desktop\kubernetes> docker service ps nauotzoie3abedwclzbssnp1r
no such service: nauotzoie3abedwclzbssnp1r
PS C:\Users\hp\Desktop\kubernetes> docker service ps nauotzoie3abedwclzbssnp1r
ID NAME IMAGE NODE DESIRED STATE CURRENT STATE ERROR PORTS
zcc6kiza6j33 my-prometheus.1 prom/prometheus:latest docker-desktop Ready Assigned less than a second ago
t6153z2su1pn \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 6 seconds ago "invalid mount target, must be..."
n6chg6b32nd1 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 11 seconds ago "invalid mount target, must be..."
o7lrswnj819 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 16 seconds ago "invalid mount target, must be..."
tuz5uc61cc93 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 21 seconds ago "invalid mount target, must be..."
```

master 0 0 0 0 Ln 19, Col 3 Spaces: 2 UTF-8 CRLF YAML 16:43 10-01-2022

```
File Edit Selection View Go Run Terminal Help • bb-stack.yaml - Visual Studio Code
• ! bb-stack.yaml • ! bb.yaml • ! prometheus.yml • ! kustamatization.yml U ! daemon.json C:\kubernetes U • JS daemon.js • ! daemon.json C:\daemon.json U
C:\Users\hp\Desktop\kubernetes> ! bb-stack.yaml
1 version: '3.7'
2
3
4 services:
5   bb-app:
6     image: bulletinboard:1.0
7     ports:
8       - :8000:8000
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL

```
05e324559e3b: Waiting
178620261a59: Waiting
ec35f5996032: Waiting
5509173eb788: Waiting
docker: error pulling image configuration: Get "https://registry-1.docker.io/v2/prom/prometheus/blobs/sha256:a3d385fc29f926eed67f0d60ffa72d199f3f9c24af5d5cd1802f2dc1dc9b4b": net/ht
tp: TLS handshake timeout.
See 'docker run --help'.
PS C:\Users\hp\Desktop\kubernetes> docker run -p 9090:9090 prom/prometheus:latest
Unable to find image 'prom/prometheus:latest' locally
docker: Error response from daemon: Get "https://registry-1.docker.io/v2/": net/http: TLS handshake timeout.
See 'docker run --help'.
PS C:\Users\hp\Desktop\kubernetes> docker service ls
ID NAME MODE REPLICAS IMAGE PORTS
x1l1gk4av095 demo replicated 1/1 alpine:3.5
nauotzoie3ab my-prometheus replicated 0/1 prom/prometheus:latest *:9090->9090/tcp
2t8hgy4a4v1f ping_service replicated 10/10 alpine:latest
PS C:\Users\hp\Desktop\kubernetes> []
```

master 0 1 0 0 Ln 5, Col 27 Spaces: 2 UTF-8 CRLF YAML 17:17 10-01-2022

```
File Edit Selection View Go Run Terminal Help prometheus.yml - Visual Studio Code
! bb-stack.yml M ! prometheus.yml C:\prometheus.yml U x ! bb.yml ! prometheus.yml C:\kubernetes U • ! kustamatization.yml U ! daemon.json C:\kubernetes

C:\tmp> prometheus.yml > ! prometheus.yml
18 scrape_configs:
19   # The job name is added as a label 'job=<job_name>' to any time series scraped from this config.
20   - job_name: 'prometheus'
21
22   #metrics_path defaults to '/metrics'
23   #scheme defaults to 'http'.
24
25   static_configs:
26     - targets: ['host.docker.internal:9090'] #Only works on Docker Desktop for Windows
27
28   - job_name: 'docker'
29     - metrics_path defaults to '/metrics'
30     - scheme defaults to 'http'
31   static_configs:
32     - targets: ['192.168.65.1:9323']

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL powershell + - x x
zcc6k1za6j33 my-prometheus.1 prom/prometheus:latest docker-desktop Ready Assigned less than a second ago
t615322su1pn \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 6 seconds ago "invalid mount target, must be..."
n6cng6b32nd1 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 11 seconds ago "invalid mount target, must be..."
o71rsaynj819 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 16 seconds ago "invalid mount target, must be..."
tuz5uc61cc93 \ my-prometheus.1 prom/prometheus:latest docker-desktop Shutdown Rejected 21 seconds ago "invalid mount target, must be..."
PS C:\Users\hvp\Desktop\kubernetes> helm search
PS C:\Users\hvp\Desktop\kubernetes> docker run -dp 9090:9090 prom/prometheus
Unable to find image 'prom/prometheus:latest' locally
3cb635b6aa2: Pulling fs layer
34f699d6f6e0: Download complete
33dc69635e0f: Pulling fs layer
c16675a6a294: Waiting
827843f6afe6: Waiting
3d272942eeaf: Waiting
7e785cfa34da: Waiting
05e324559e3b: Waiting
178626261a59: Waiting
```

```
File Edit Selection View Go Run Terminal Help prometheus.yml - Visual Studio Code
! bb-stack.yml M ! prometheus.yml C:\prometheus.yml U x ! bb.yml ! prometheus.yml C:\kubernetes U • ! kustamatization.yml U ! daemon.json C:\kubernetes

C:\tmp> prometheus.yml > ! prometheus.yml
18 scrape_configs:
19   # The job name is added as a label 'job=<job_name>' to any time series scraped from this config.
20   - job_name: 'prometheus'
21
22   #metrics_path defaults to '/metrics'
23   #scheme defaults to 'http'.
24
25   static_configs:
26     - targets: ['host.docker.internal:9090'] #Only works on Docker Desktop for Windows
27
28   - job_name: 'docker'
29     - metrics_path defaults to '/metrics'
30     - scheme defaults to 'http'
31   static_configs:
32     - targets: ['192.168.65.1:9323']

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL powershell + - x x
05e324559e3b: Waiting
178626261a59: Waiting
ec35f5996032: Waiting
5509173eb788: Waiting
docker: error pulling image configuration: Get "https://registry-1.docker.io/v2/prom/prometheus/blobs/sha256:a3d385fc29f926eed67f0d60ffa72d199f3f9c24af5d55cd1802f2dc1dc9b4b": net/ht
tp: TLS handshake timeout.
See 'docker run --help'.
PS C:\Users\hvp\Desktop\kubernetes> docker run -dp 9090:9090 prom/prometheus:latest
Unable to find image 'prom/prometheus:latest' locally
docker: Error response from daemon: Get "https://registry-1.docker.io/v2/": net/http: TLS handshake timeout.
See 'docker run --help'.
PS C:\Users\hvp\Desktop\kubernetes> docker service ls
ID NAME MODE REPLICAS IMAGE PORTS
x11gk4av095 demo replicated 1/1 alpine:3.5
naoutoi0ie3ab my-prometheus replicated 0/1 prom/prometheus:latest *:9090->9090/tcp
2t8hgy4a4vlf ping-service replicated 10/10 alpine:latest
PS C:\Users\hvp\Desktop\kubernetes>
```