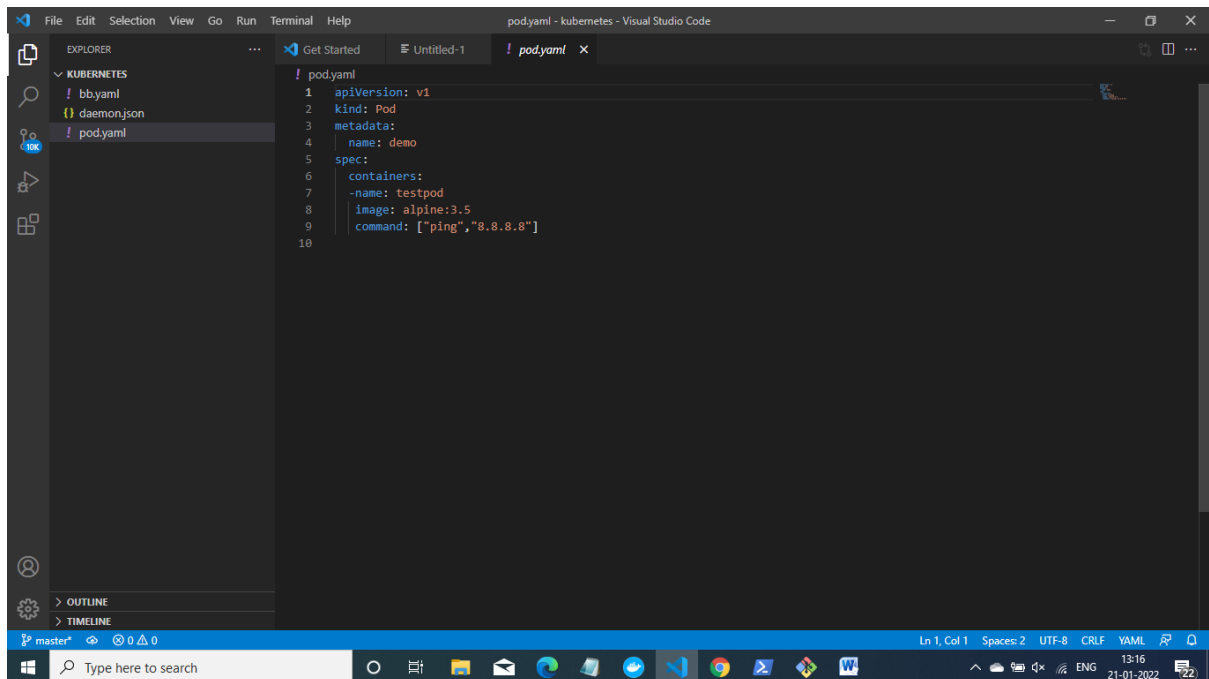


KUBERNETES

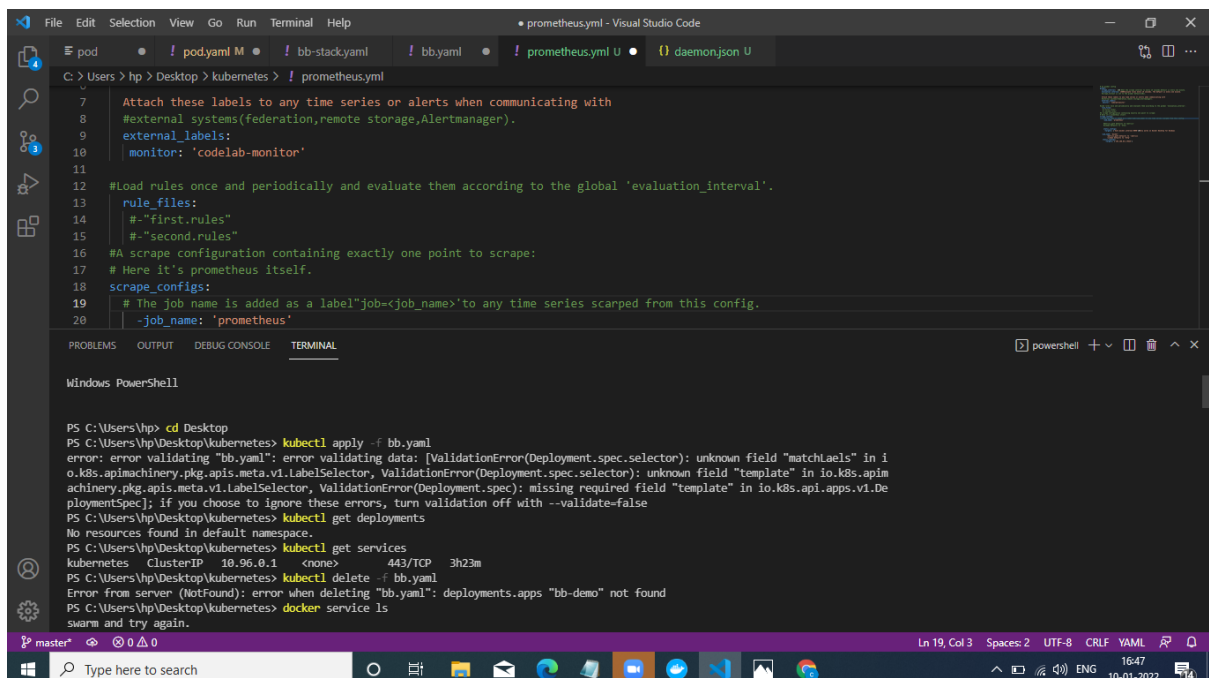
1. ENABLING KUBERNETES



The screenshot shows the Visual Studio Code interface with a file explorer on the left displaying a directory named 'KUBERNETES' containing files 'bb.yaml', 'daemon.json', and 'pod.yaml'. The 'pod.yaml' file is open in the editor, showing the following YAML content:

```
1 apiVersion: v1
2 kind: Pod
3 metadata:
4   name: demo
5 spec:
6   containers:
7     -name: testpod
8       image: alpine:3.5
9       command: ["ping", "8.8.8.8"]
10
```

The status bar at the bottom indicates the cursor is at line 1, column 1, in a UTF-8 CRLF YAML file.



The screenshot shows the Visual Studio Code interface with a file explorer on the left displaying a directory named 'KUBERNETES' containing files 'pod', 'pod.yaml', 'bb-stack.yaml', 'bb.yaml', 'prometheus.yaml', and 'daemon.json'. The 'prometheus.yaml' file is open in the editor, showing the following YAML content:

```
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'
```

The terminal window at the bottom shows the following commands and output:

```
PS C:\Users\hnp> cd Desktop
PS C:\Users\hnp\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.apimachinery.pkg.apis.meta.v1.LabelSelector, ValidationError(Deployment.spec.selector): unknown field "template" in io.k8s.apimachinery.pkg.apis.meta.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\hnp\Desktop\kubernetes> kubectl get deployments
No resources found in default namespace.
PS C:\Users\hnp\Desktop\kubernetes> kubectl get services
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 3h23m
PS C:\Users\hnp\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\hnp\Desktop\kubernetes> docker service ls
swarm and try again.
```

The status bar at the bottom indicates the cursor is at line 19, column 3, in a UTF-8 CRLF YAML file.

The screenshot shows the Visual Studio Code editor with the file `prometheus.yml` open. The configuration file contains the following content:

```
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'
```

The terminal output shows the following commands and their results:

```
PS C:\Users\hp\Desktop\kubernetes> docker swarm init
To add a worker to this swarm, run the following command:
    docker swarm join --token SWMTKN-1-3ufxhya896p8m56enaus1xgmc8iqccqakyr6z2ifehviihj-des2a8z94wvwehiz9901k1 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\hp\Desktop\kubernetes> docker service create --name demo alpine:3.5 ping 8.8.8.8
overall progress: 1 out of 1 tasks
1/1: running [=====>]
verify: Service converged
PS C:\Users\hp\Desktop\kubernetes> docker service ps demo
ID            NAME      IMAGE      NODE      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
```

The screenshot shows the Visual Studio Code editor with the file `prometheus.yml` open. The configuration file contains the following content:

```
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'
```

The terminal output shows the following commands and their results:

```
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=32.295 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

```
File Edit Selection View Go Run Terminal Help • prometheus.yml - Visual Studio Code
pod • ! pod.yaml M • ! bb-stack.yaml ! bb.yaml • ! prometheus.yml U • {} 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

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

nautozioe3abedw1zbssnp1r
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 nautozioe3abedw1zbssnp1r' to check progress.

PS C:\Users\hp\Desktop\kubernetes> docker service ls

ID	NAME	MODE	REPLICAS	IMAGE	PORTS
nautozioe3abedw1zbssnp1r	my-prometheus	replicated	0/1	prom/prometheus:latest	*:9090->9090/tcp

2t8hgy4a4v1flab0i2l4yphk5
overall progress: 10 out of 10 tasks
1/10: running [=====>]
2/10: running [=====>]
3/10: running [=====>]
4/10: running [=====>]
5/10: running [=====>]

Ln 19, Col 3 Spaces: 2 UTF-8 CRLF YAML 16:48 10-01-2022

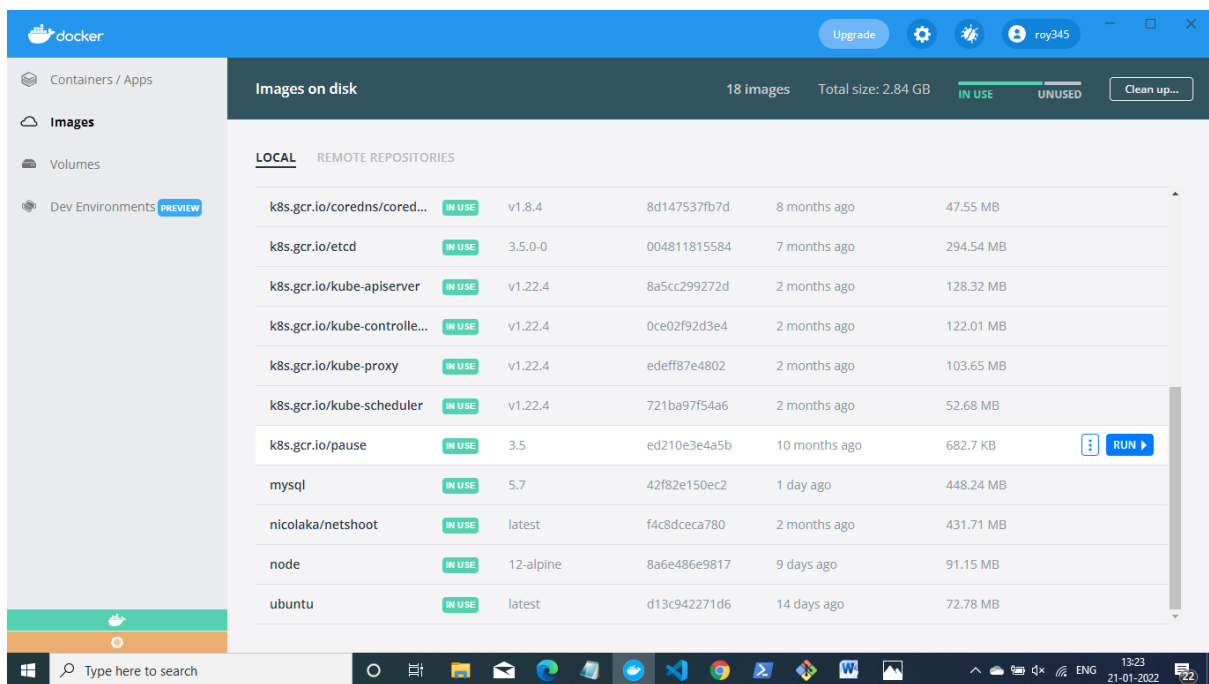
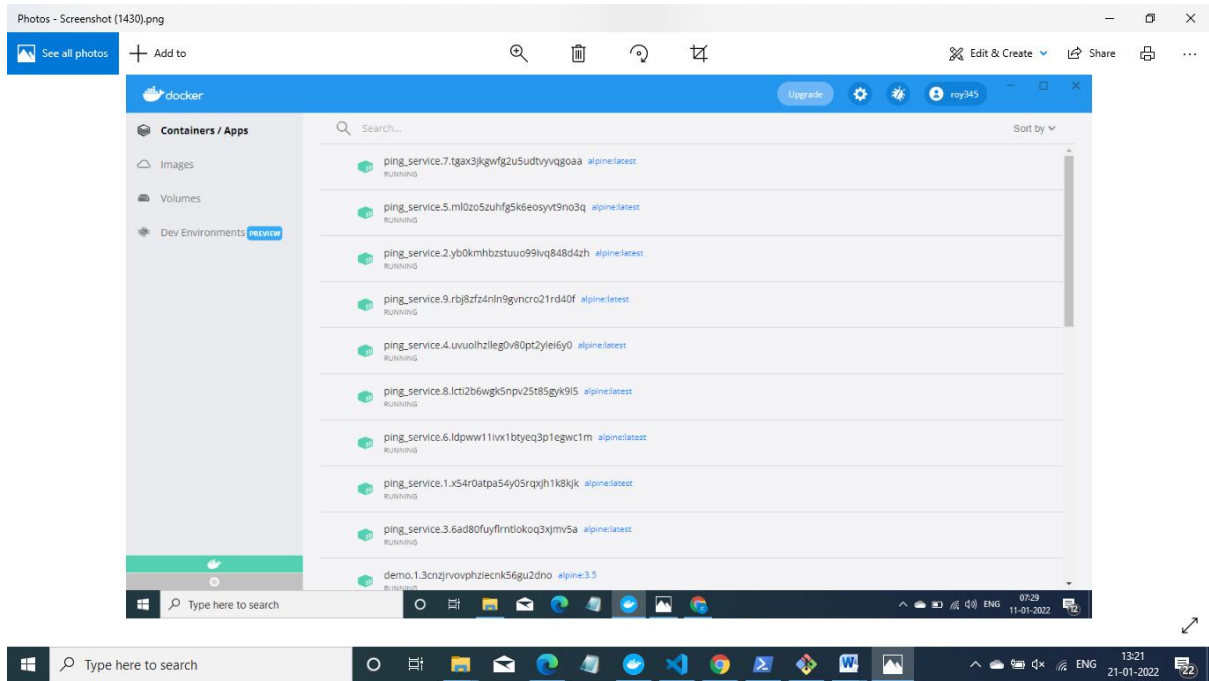
```
File Edit Selection View Go Run Terminal Help • prometheus.yml - Visual Studio Code
pod • ! pod.yaml M • ! bb-stack.yaml ! bb.yaml • ! prometheus.yml U • {} daemon.json U
C:\Users\hp\Desktop\kubernetes> ! prometheus.yml
7 Attach these labels to any time series or alerts when communicating with
8 #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 nautozioe3abedw1zbssnp1r
no such service: nautozioe3abedw1zbssnp1r
PS C:\Users\hp\Desktop\kubernetes> docker service ps nautozioe3abedw1zbssnp1r

ID	NAME	IMAGE	MODE	DESIRED STATE	CURRENT STATE	ERROR	PORTS
zcc0kiza6j33	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..."	
n6chg6b32n4l	my-prometheus.1	prom/prometheus:latest	docker-desktop	Shutdown	Rejected 11 seconds ago	"invalid mount target, must be..."	
o7lrsaynj819	my-prometheus.1	prom/prometheus:latest	docker-desktop	Shutdown	Rejected 16 seconds ago	"invalid mount target, must be..."	
tuz5uc6icc93	my-prometheus.1	prom/prometheus:latest	docker-desktop	Shutdown	Rejected 21 seconds ago	"invalid mount target, must be..."	

Ln 19, Col 3 Spaces: 2 UTF-8 CRLF YAML 16:48 10-01-2022



The screenshot shows a Windows 10 desktop with a Visual Studio Code editor open. The editor has a dark theme and displays a file named `prometheus.yml` in the `C:\Users\master\OneDrive\Documents` directory. The file contains a Prometheus configuration for scraping metrics from a Docker container. The configuration includes a `scrape_configs` section with a job named `prometheus` and a `static_configs` section with targets for a Docker container and a host.

```
18 scrape_configs:
19   # The job name is added as a label `job=cjob_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
32   static_configs:
33     -targets: ['192.168.65.1:9323']
```

The terminal window at the bottom shows the output of the `docker run` command. It displays the error message: `Unable to find image 'prom/prometheus:latest' locally` and `docker: Error response from daemon: Get "https://registry-1.docker.io/v2/": net/http: TLS handshake timeout.` The terminal also shows the output of the `docker service ls` command, which lists the services running on the Docker Desktop.

ID	NAME	MODE	REPLICAS	IMAGE	PORTS
xlligk4av895	demo	replicated	1/1	alpine:3.5	
nautozoe3ab	my-prometheus	replicated	0/1	prom/prometheus:latest	*:9090->9090/tcp
2t0hgv4a4vlf	ping-service	replicated	10/10	alpine:latest	