

Specs

VMWARE VM::

Redhat 9.5

Minikube v1.35.0

Docker Version 28.1.1

Kubectl

Client version: v1.33.0

Kustomize Version: v5.6.0

Server Version: v1.32.0

Accounts Needed:

Azure DevOps

Docker Hub

Pre-requisites:

Azure DevOps Agent already installed and running

```
[ronslim@ansiblec azdevops]$ sh run.sh
Scanning for tool capabilities.
Connecting to the server.
2025-05-04 00:06:03Z: Listening for Jobs
```

Kubernetes service account already setup in Azure DevOps

Service Account Requirements:

Created Service Account

Created Token

Created Secrets and added token, and ca.crt to secrets

Associated Secrets on Service Account

Created Role

Created Role Binding and associated Service Account and Role

dockerfile already created

My sample dockerfile:

```
[ronslim@ansiblec dockerfiles]$ cat dockerfile
FROM ubuntu:22.04
RUN apt-get update
RUN apt-get install -y nginx
COPY index.html /var/www/html
EXPOSE 80
CMD ["/usr/sbin/nginx", "-g", "daemon off;"]
[ronslim@ansiblec dockerfiles]$ |
```

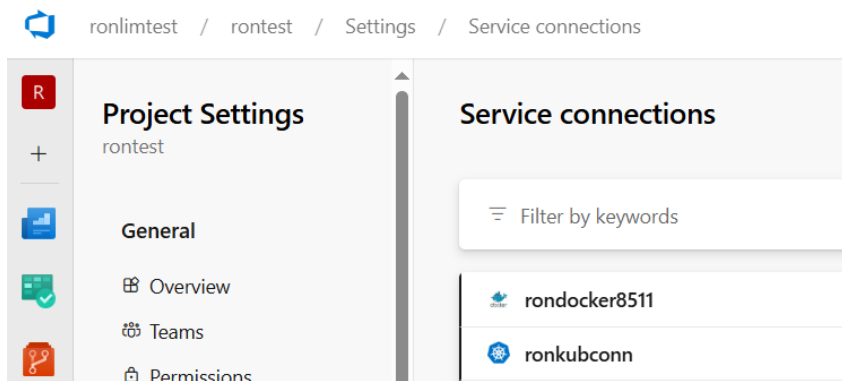
My sample index.html

```
[ronslim@ansiblec dockerfiles]$ cat index.html
<html>
<body>

<h1>This is my NGINX from Docker Image</h1>
<p>My first NGINX from Docker Image to Kubernetes Deployment</p>

</body>
</html>
[ronslim@ansiblec dockerfiles]$ |
```

Docker Registry service account created in Azure DevOps



Kubernetes proxy running (Retrieve first cluster-info to get the port to use in proxy).

```
[ronslim@ansiblec ~]$ kubectl cluster-info
Kubernetes control plane is running at https://192.168.58.2:8443
CoreDNS is running at https://192.168.58.2:8443/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
[ronslim@ansiblec ~]$ kubectl proxy --port 8443
Starting to serve on 127.0.0.1:8443
```

Created docker registry secret

```
[ronslim@ansiblec ~]$ kubectl get secrets rondocksecret -n ronns
NAME                TYPE                                DATA  AGE
rondocksecret        kubernetes.io/dockerconfigjson      1      44s
[ronslim@ansiblec ~]$
```

Associate docker registry secret to service account

```
[ronslim@ansiblec ~]$ kubectl get serviceaccount ronsa -n ronns -o yaml
apiVersion: v1
imagePullSecrets:
- name: rondocksecret
kind: ServiceAccount
metadata:
  creationTimestamp: "2025-05-01T11:04:11Z"
  name: ronsa
  namespace: ronns
  resourceVersion: "18971"
  uid: 9aa25173-bbbd-424d-8009-8544e9dca0fa
secrets:
- name: ronsectoken
[ronslim@ansiblec ~]$
```

Run the Azure DevOps Pipeline

Pipeline Script:

trigger:

- main

pool:

- name: <agent pool name>

jobs:

- job: DockerJob

steps:

- task: Docker@2

inputs:

containerRegistry: 'rondocker8511'
repository: 'rondocker8511/rondockerrep'
command: 'buildAndPush'
Dockerfile: '/home/ronslim/dockerfiles/dockerfile'
tags: 'rondockerimage'
addPipelineData: false
addBaseImageData: false

- job: KubernetesJob

dependsOn: DockerJob

steps:

- task: Kubernetes@1

displayName: Kubernetes Deployment Task

inputs:

connectionType: 'Kubernetes Service Connection'
kubernetesServiceEndpoint: 'ronkubconn'
namespace: 'ronns'
command: 'create'
arguments: 'deployment ronddep --port 80 -r 2 -

-image rondocker8511/rondockerrep:rondockerimage'

secretType: 'dockerRegistry'
containerRegistryType: 'Container Registry'
dockerRegistryEndpoint: 'rondocker8511'
forceUpdate: false

- task: Kubernetes@1

displayName: Kubernetes Expose Task

inputs:

connectionType: 'Kubernetes Service Connection'
kubernetesServiceEndpoint: 'ronkubconn'
namespace: 'ronns'

```
command: 'expose'
arguments: 'deployment rondop --type=NodePort --port=80'
secretType: 'dockerRegistry'
containerRegistryType: 'Container Registry'
dockerRegistryEndpoint: 'rondocker8511'
forceUpdate: false
```

#20250508.2 • Update dockkub-pipelines.yml for Azure Pipelines

dockerkubtest

Cancel

Summary

Code Coverage

Manually run by

RL

 Ronald Lim

Repository and version

rontest

main

c5212166

Time started and elapsed

Just now

-

Related

0 work items

0 artifacts

Tests and coverage

Get started

View change

Jobs

Name	Status	Duration
<div>DockerJob</div>	Queued	
<div>KubernetesJob</div>	Queued	

#20250508.2 • Update dockkub-pipelines.yml for Azure Pipelines

dockerkubtest

Run new

This run is being retained as one of 3 recent runs by main (Branch).

View retention leases

Summary

Code Coverage

Manually run by

RL

 Ronald Lim

Repository and version

rontest

main

c5212166

Time started and elapsed

Just now

1m 1s

Related

0 work items

0 artifacts

Tests and coverage

Get started

View change

Warnings 1

No data was written into the file /home/ronslim/azdevops/_work/_temp/task_outputs/build_1746637726561.txt
DockerJob • Docker

Jobs

Name	Status	Duration
<div>DockerJob</div>	Success	32s
<div>KubernetesJob</div>	Success	5s

Check if Docker Image in Docker Hub

rondocker8511/rondockerrep

Last pushed 1 minute ago • Repository size: 91.1 MB

Ron's Docker Hub Repository

Add a category

General Tags **Image Management** BETA Collaborators Webhooks Settings

Search by tag (tag:abc...) or digest (sha256:abc...)

Filter by

Preview and delete (0)

[Where to start?](#) [Report an issue](#)

<input type="checkbox"/>	Digest	Tags	Media type	OS/ARCH	Size	Last pushed	Last pulled	Status
<input type="checkbox"/>	sha256:92c0f86bcbb7	rondockerimage	Image	linux/amd64	91.1 MB	1 minute	less than 1 day	Active

Check Kubernetes Deployment

```
[ronslim@ansibleec dockerfiles]$ kubectl get deployment rondep -n ronns
```

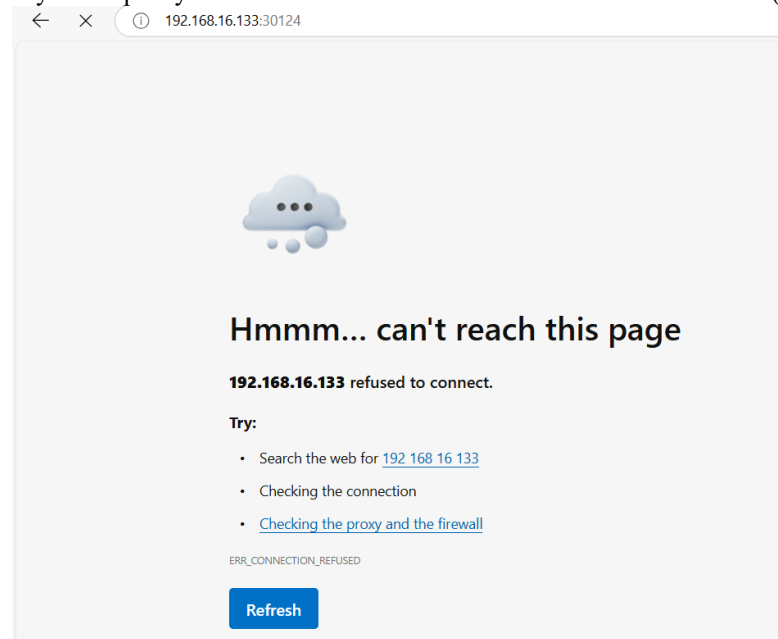
NAME	READY	UP-TO-DATE	AVAILABLE	AGE
rondep	2/2	2	2	109s

Get node port

```
[ronslim@ansibleec dockerfiles]$ kubectl get svc rondep -n ronns
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
rondep	NodePort	10.106.95.160	<none>	80:30124/TCP	2m21s

Try the `http://<your VM IP>:<Node Port>` in the browser outside VM (It is not working)



Then perform the port forward

```
kubectl port-forward --address localhost,<IP Address of VM> deployment/<deployment name> -n <namespace> <node port>:<deployment port>
```

Sample: `kubectl port-forward --address localhost,192.168.16.133 deployment/rondep -n ronns 30124:80`

```
[ronslim@ansiblec ~]$ kubectl port-forward --address localhost,192.168.16.133 deployment/rondep -n ronns 30124:80
Forwarding from 127.0.0.1:30124 -> 80
Forwarding from 192.168.16.133:30124 -> 80
Forwarding from [::1]:30124 -> 80
```

Try again the `http://<your VM IP >:<Node Port>` in the browser outside VM (It is now working)

← ↻ ⚠ Not secure | 192.168.16.133:30124

This is my NGINX from Docker Image

My first NGINX from Docker Image to Kubernetes Deployment