

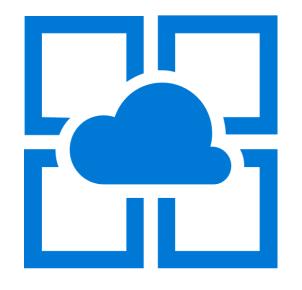
### Who am I?

- Guy Barrette
- Dev/Coach/Trainer
- Based in Montreal, Canada
- @GuyBarrette
- @K8s\_Online
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# Azure App Service

### **App Service**







Web Apps For Containers



### **App Service Benefits**

- Windows or Linux
- Automatic OS patching
- High availability
- Automated scale out/in
- Built-in load balancing
- Compliance: ISO, SOC, PCI, etc



### Web App for Containers

- All App Service benefits plus...
- Integration with
  - Docker Hub
  - Azure Container Registry
- Single Docker image
- Multi containers
  - Docker compose
- Windows containers
  - Install drivers, tools, COM objects



Let's create a Web App for Containers



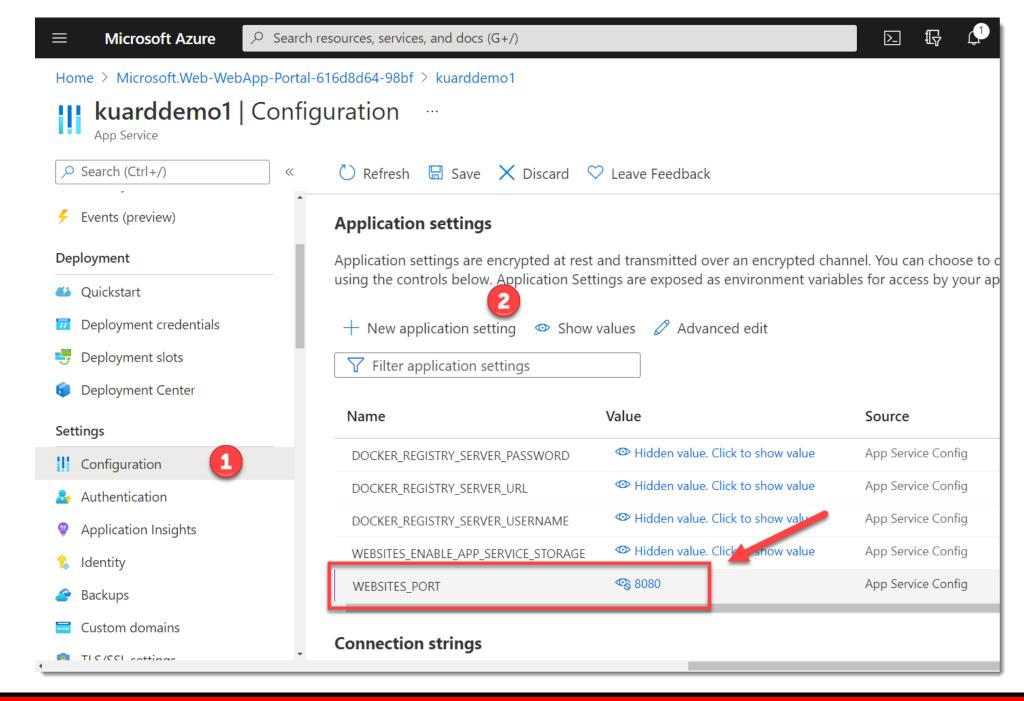
My container does not listen on port 80!





Map a port different then the default port 80





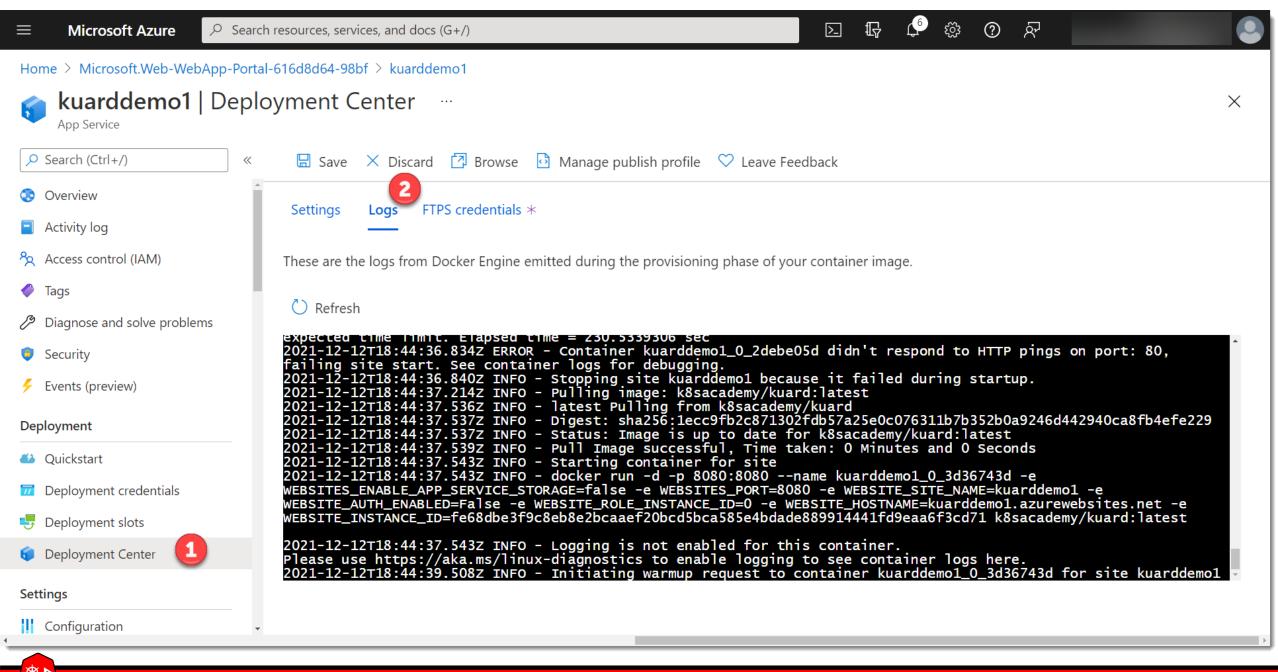
# My container does not start!





Troubleshoot startup events using the startup logs





```
2021-12-12T18:44:37.214Z INFO - Pulling image: k8sacademy/kuard:latest 2021-12-12T18:44:37.536Z INFO - Iatest Pulling from k8sacademy/kuard 2021-12-12T18:44:37.537Z INFO - Digest: sha256:lecc9fb2c871302fdb57a25e0c076311b7b352b0a9246d442940ca8fb4efe229 2021-12-12T18:44:37.537Z INFO - Status: Image is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.539Z INFO - Pull Image successful, Time taken: 0 Minutes and 0 Seconds 2021-12-12T18:44:37.543Z INFO - Starting container for site 2021-12-12T18:44:37.543Z INFO - docker run -d -p 8080:8080 --name kuarddemo1_0_3d36743d -e WEBSITES_ENABLE_APP_SERVICE_STORAGE=false -e WEBSITES_PORT=8080 -e WEBSITE_SITE_NAME=kuarddemo1 -e WEBSITE_AUTH_ENABLED=False -e WEBSITE_ROLE_INSTANCE_ID=0 -e WEBSITE_HOSTNAME=kuarddemo1.azurewebsites.net -e WEBSITE_INSTANCE_ID=fe68dbe3f9c8eb8e2bcaaef20bcd5bca585e4bdade889914441fd9eaa6f3cd71 k8sacademy/kuard:latest
```

```
2021-12-12T18:44:37.214Z INFO - Pulling image: k8sacademy/kuard:latest 2021-12-12T18:44:37.536Z INFO - latest Pulling from k8sacademy/kuard 2021-12-12T18:44:37.537Z INFO - Digest: sha256:lecc9fb2c871302fdb57a25e0c076311b7b352b0a9246d442940ca8fb4efe229 2021-12-12T18:44:37.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.539Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.543Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:27.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:27.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:27.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:27.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.537Z INFO - Status: Tmage is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.537Z INFO - St
```

```
2021-12-12T18:44:37.214Z INFO - Pulling image: k8sacademy/kuard:latest 2021-12-12T18:44:37.536Z INFO - latest Pulling from k8sacademy/kuard 2021-12-12T18:44:37.537Z INFO - Digest: sha256:lecc9fb2c871302fdb57a25e0c076311b7b352b0a9246d442940ca8fb4efe229 2021-12-12T18:44:37.537Z INFO - Status: Image is up to date for k8sacademy/kuard:latest 2021-12-12T18:44:37.539Z INFO - Pull Image successful, Time taken: 0 Minutes and 0 Seconds 2021-12-12T18:44:37.543Z INFO - Starting container for site 2021-12-12T18:44:37.543Z INFO - docker run -d -p 8080:8080 --name kuarddemo1_0_3d36743d -e WEBSITES_ENABLE_APP_SERVICE_STORAGE=false -e WEBSITES_PORT=8080 -e WEBSITE_NAME=kuarddemo1 -e WEBSITE_AUTH_ENABLED=False -e WEBSITE_ROLE_INSTANCE_ID=0 -e WEBSITE_INSTANCE_ID=fe68dbe3f9c8eb8e2bcaaef20bcd5bca585e4bdade889914441fd9eaa6f3cd71 k8sacademy/kuard:latest
```

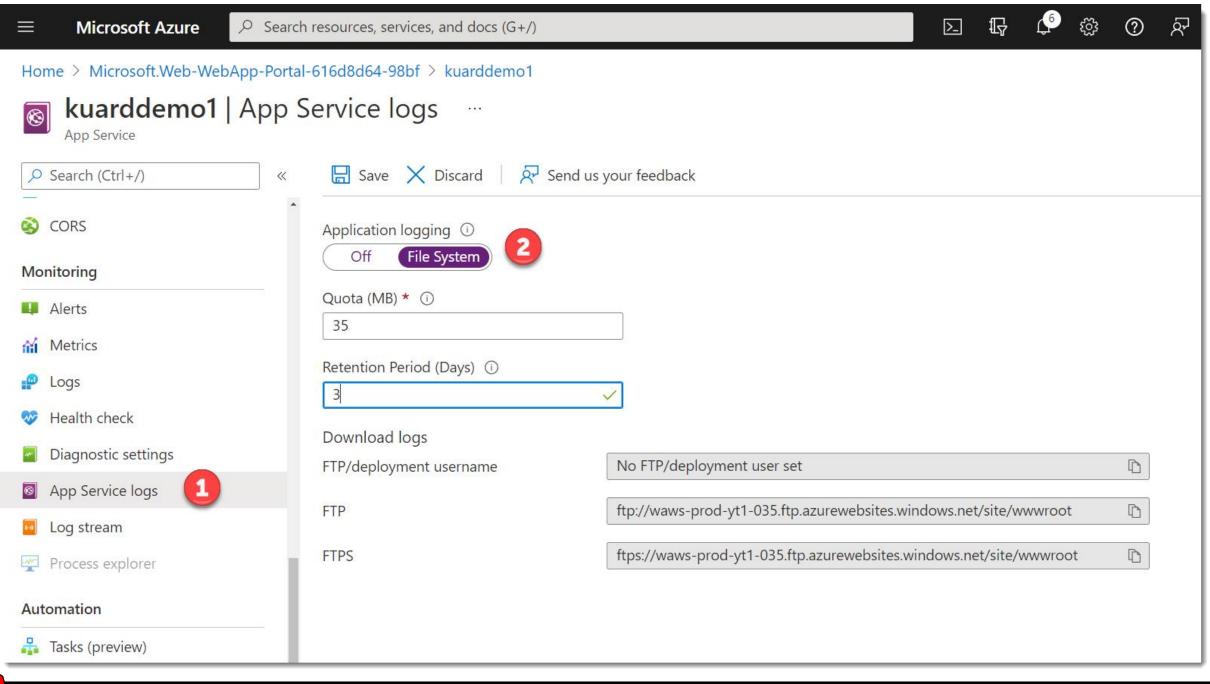
Where are the application logs?





Enable and stream the application logs





### az webapp log tail -n kuarddemol -g devmeetupdigitaltour

```
PowerShell
2021-12-12T19:07:55.553422694Z 2021/12/12 19:07:55 169.254.130.1:43225 GET /mem/api
2021-12-12T19:07:56.666335048Z 2021/12/12 19:07:56 169.254.130.1:43231 GET /mem/api
2021-12-12T19:07:57.557218702Z 2021/12/12 19:07:57 169.254.130.1:43233 GET /mem/api
2021-12-12T19:07:58.553041841Z 2021/12/12 19:07:58 169.254.130.1:43241 GET /mem/api
2021-12-12T19:07:59.558471362Z 2021/12/12 19:07:59 169.254.130.1:43253 GET /mem/api
2021-12-12T19:08:00.552605569Z 2021/12/12 19:08:00 169.254.130.1:43255 GET /mem/api
2021-12-12T19:08:01.570222321Z 2021/12/12 19:08:01 169.254.130.1:43265 GET /mem/api
2021-12-12T19:08:04.102451250Z 2021/12/12 19:08:04 169.254.130.1:43297 GET /env/api
2021-12-12T19:08:06.914872418Z 2021/12/12 19:08:06 169.254.130.1:43305 GET /mem/api
2021-12-12T19:08:07.929342532Z 2021/12/12 19:08:07 169.254.130.1:43325 GET /mem/api
2021-12-12T19:08:08.907286755Z 2021/12/12 19:08:08 169.254.130.1:43337 GET /mem/api
2021-12-12T19:08:09.237025800Z 2021/12/12 19:08:09 169.254.130.1:43339 GET /healthy/api
2021-12-12T19:08:10.240451305Z 2021/12/12 19:08:10 169.254.130.1:43345 GET /healthy/api
2021-12-12T19:08:11.234694936Z 2021/12/12 19:08:11 169.254.130.1:43347 GET /healthy/api
2021-12-12T19:08:12.242017414Z 2021/12/12 19:08:12 169.254.130.1:43353 GET /healthy/api
2021-12-12T19:08:31.382822500Z 2021/12/12 19:08:31 169.254.130.1:43489 GET /mem/api
2021-12-12T19:08:32.390833395Z 2021/12/12 19:08:32 169.254.130.1:43495 GET /mem/api
2021-12-12T19:08:33.384297114Z 2021/12/12 19:08:33 169.254.130.1:43505 GET /mem/api
```



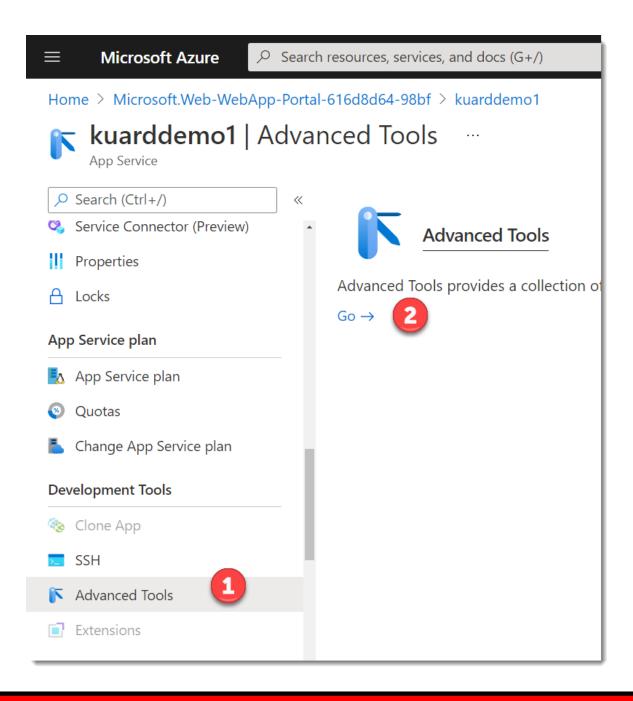
I need to troubleshoot App Service!

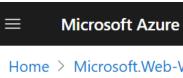




Troubleshoot using the Advanced Tools







∠ Search resources, services, and docs (G+/)

#### Home > Microsoft.Web-WebApp-Portal-616d8d64-98bf > kuarddemo1

 $\ll$ 



App Service



Service Connector (Preview)



A Locks

#### App Service plan

App Service plan

Quotas

Change App Service plan

#### **Development Tools**

Clone App

SSH

Advanced Tools



**Extensions** 



#### **Advanced Tools**

Advanced Tools provides a collection of







Azure App Service Environment SSH Bash Log stream

#### Environment

Build 1.0.0.7 (e59ed50ca2)

Site up time 00.00:04:46

Site folder /home

Temp folder /tmp/

#### REST API (works best when using a JSON viewer extension)

- App Settings
- Deployments
- · Source control info
- Files
- Current Docker logs (Download as zip)

#### **Browse Directory**

- Deployment Logs
- Site wwwroot

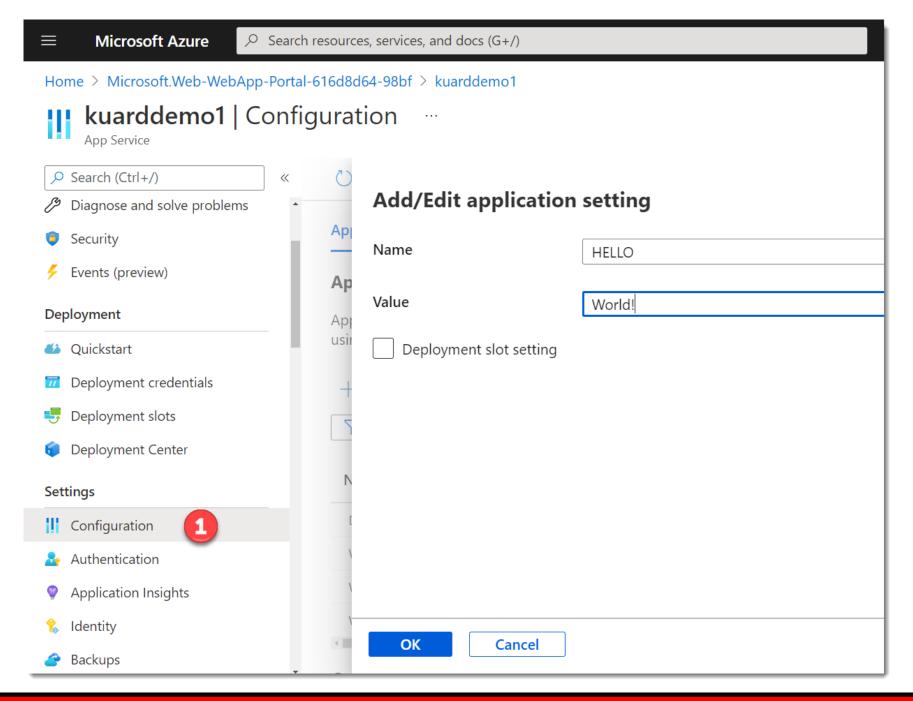
More information about Kudu can be found on the wiki.

I need to set some environment variables!



Set environment variables using Application Settings





I need to set some environment variables from Key Vault secrets!





Set environment variables from Key Vault





Create a Managed Idestity















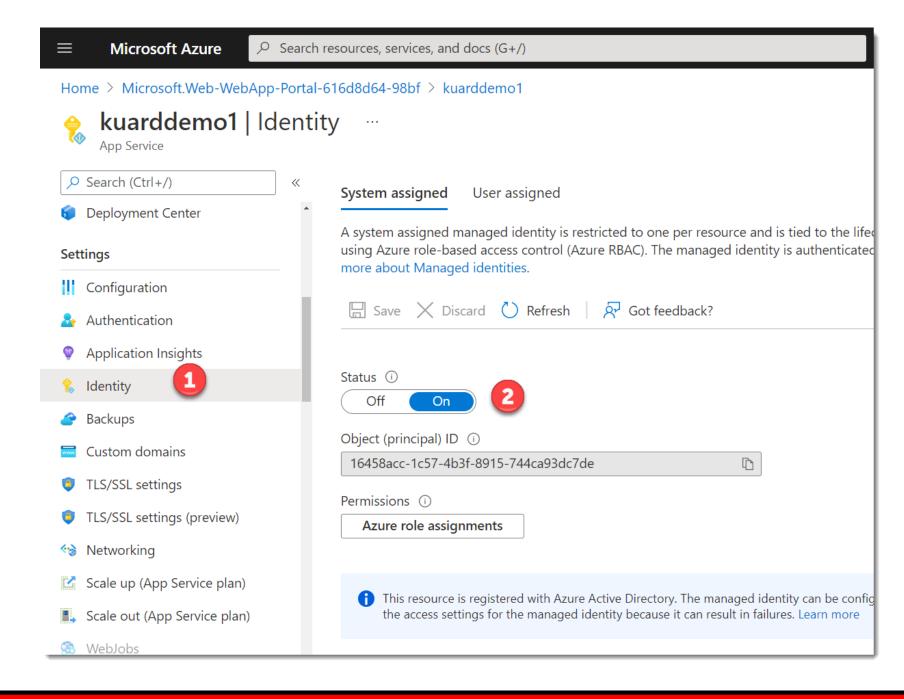


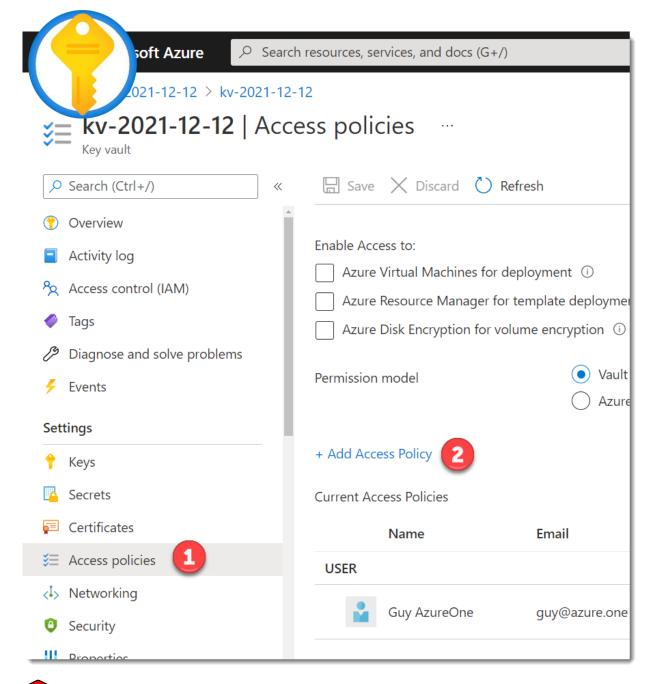


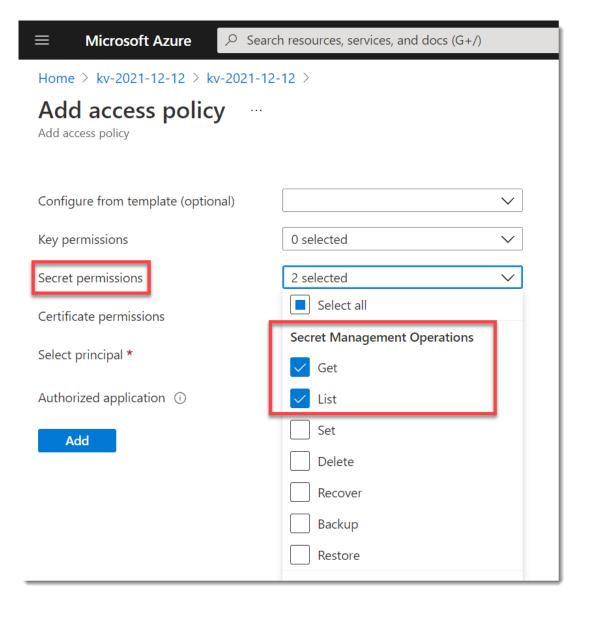


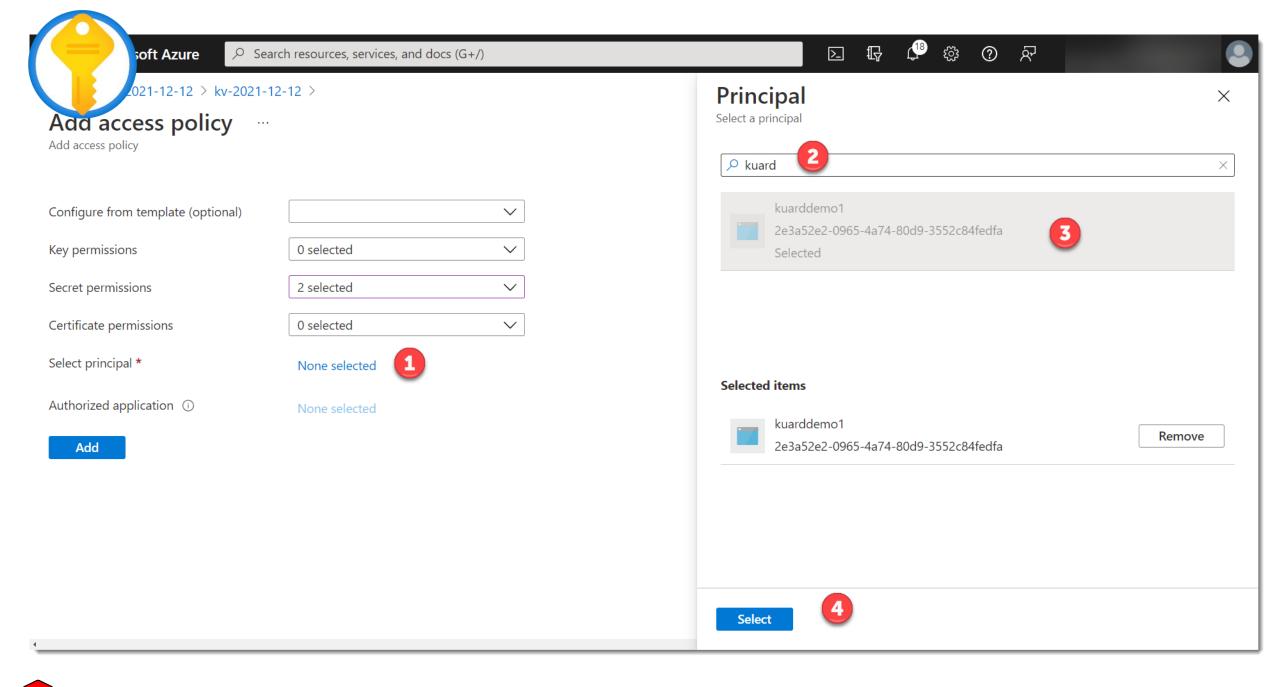






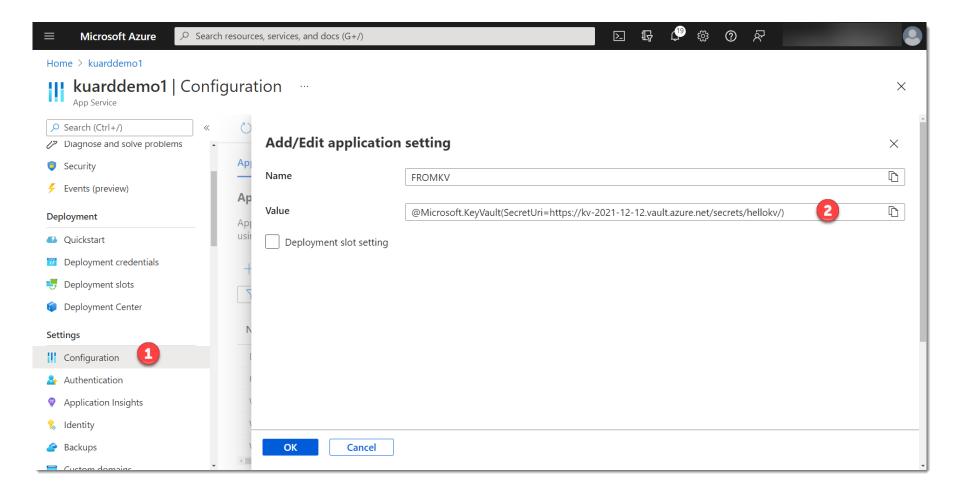








### @Microsoft.KeyVault(SecretUri=https://keyvaultname.vault.azure.net/secrets/hellokv/)



Deploying just one container is a waste of resources!

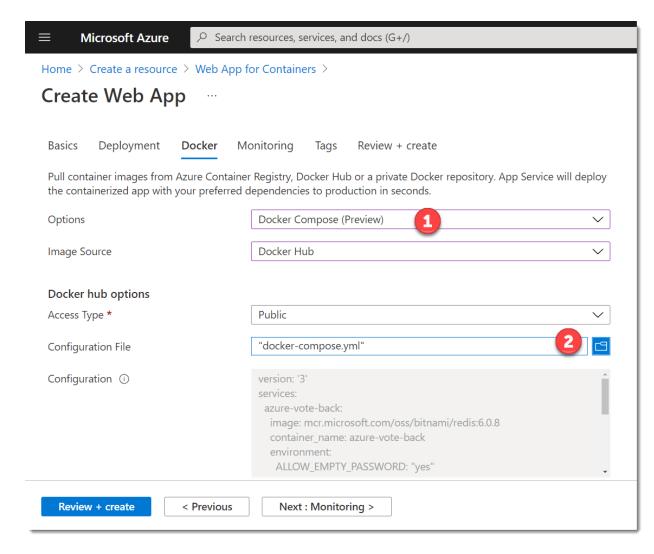




Pack more containers using Docker Compose



```
version: '3'
services:
  azure-vote-back:
    image: redis:6.0.8
    container_name: azure-vote-back
    environment:
      ALLOW_EMPTY_PASSWORD: "yes"
    ports:
        - "6379"
  azure-vote-front:
    image: azure-vote-front:v1
    container_name: azure-vote-front
    environment:
      REDIS: azure-vote-back
    ports:
        - "80:80"
```



I need to expose the other containers on the Web!

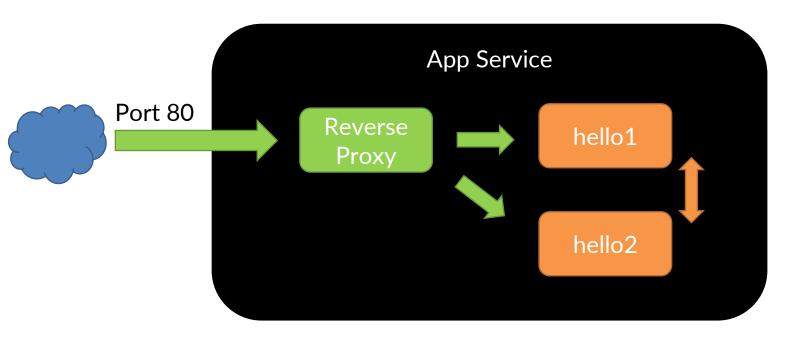




Using Nginx as a reverse proxy



#### Reverse Proxy as the Point of Entry



```
version: "3.5"
services:
  hello1:
    depends_on:
                             hello1
      reverseproxy
    image: "nginxdemos/hello"
    restart: always
  hello2:
                             hello2
    depends_on:
      - reverseproxy
    image: "nginxdemos/hello"
    restart: always
                            Reverse
                             Proxy
 reverseproxy:
    image: k8sacademy/reverseproxy
    ports:
      - "80:80"
    restart: always
```

I need to persist files outside the containers!





Persist data inside the App Service VM



#### App Service Persistent Storage

- Set WEBSITES\_ENABLE\_APP\_SERVICE\_STORAGE to true in the application settings
  - Persists data on app restarts
  - Share across multiple instances
- WEBAPP\_STORAGE\_HOME env variable mapped to persistent storage at /home



#### \${WEBAPP\_STORAGE\_HOME} = /home

I need to read and write files to Azure Storage!

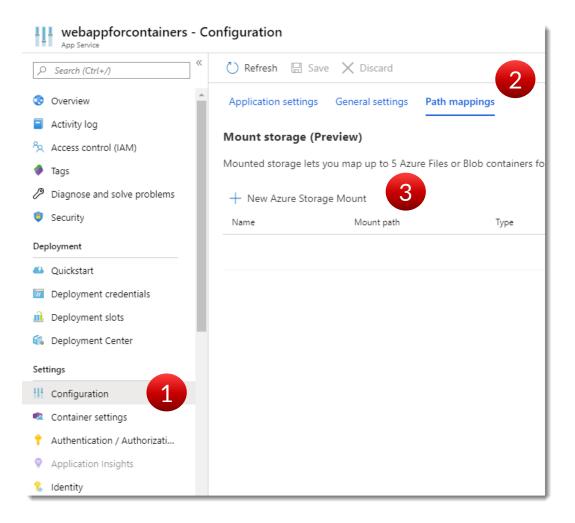




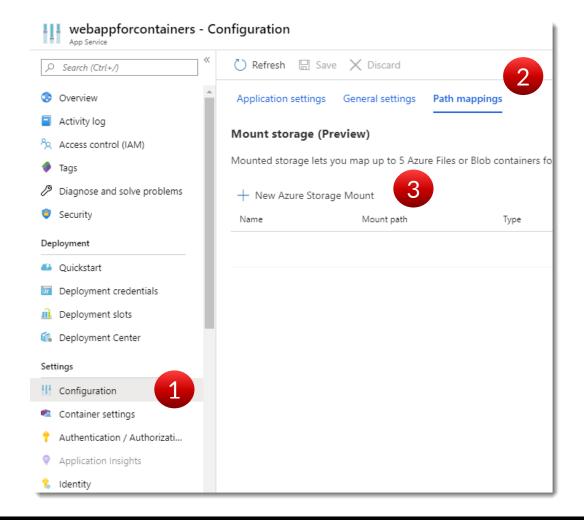
Map a path to Azure Storage - Blobs and Files

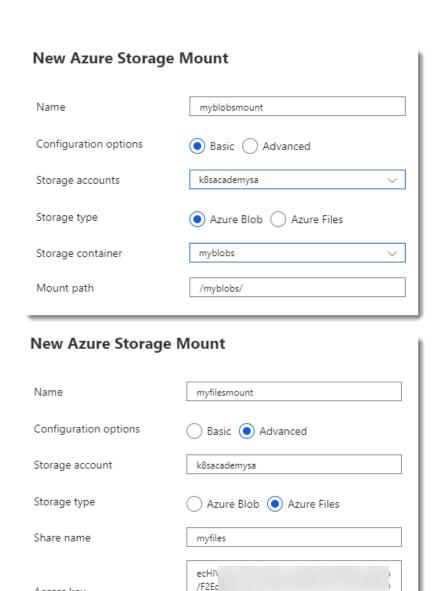


### Add Path Mappings



### Add Path Mappings





xajYZ

/myfiles/

Access key

Mount path

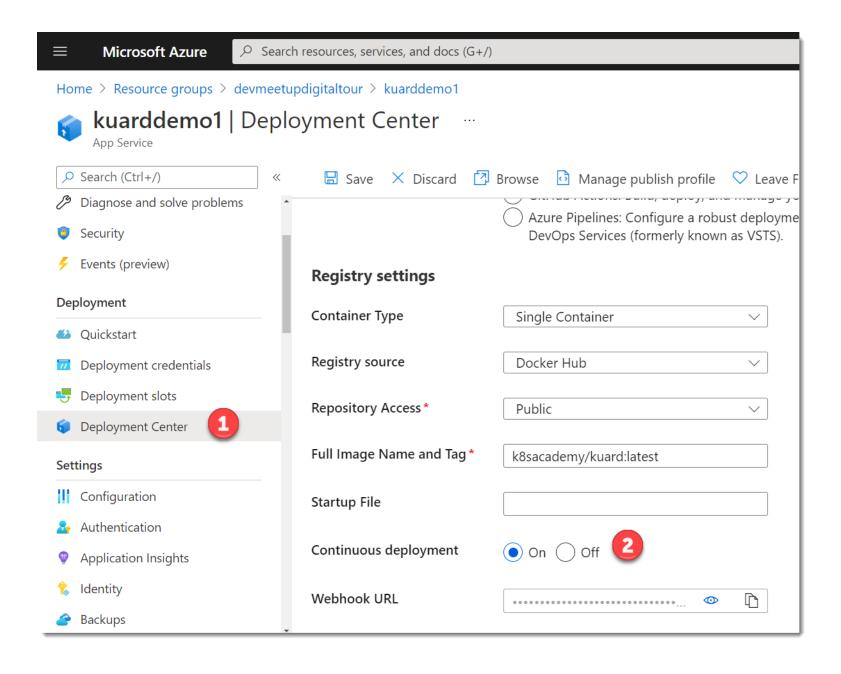
How can I easily deploy new versions of my containers?





Enable continuous deployment





How can I connect using SSH?





Open an SSH session using a secure tunnel





Install an SSH service in your container



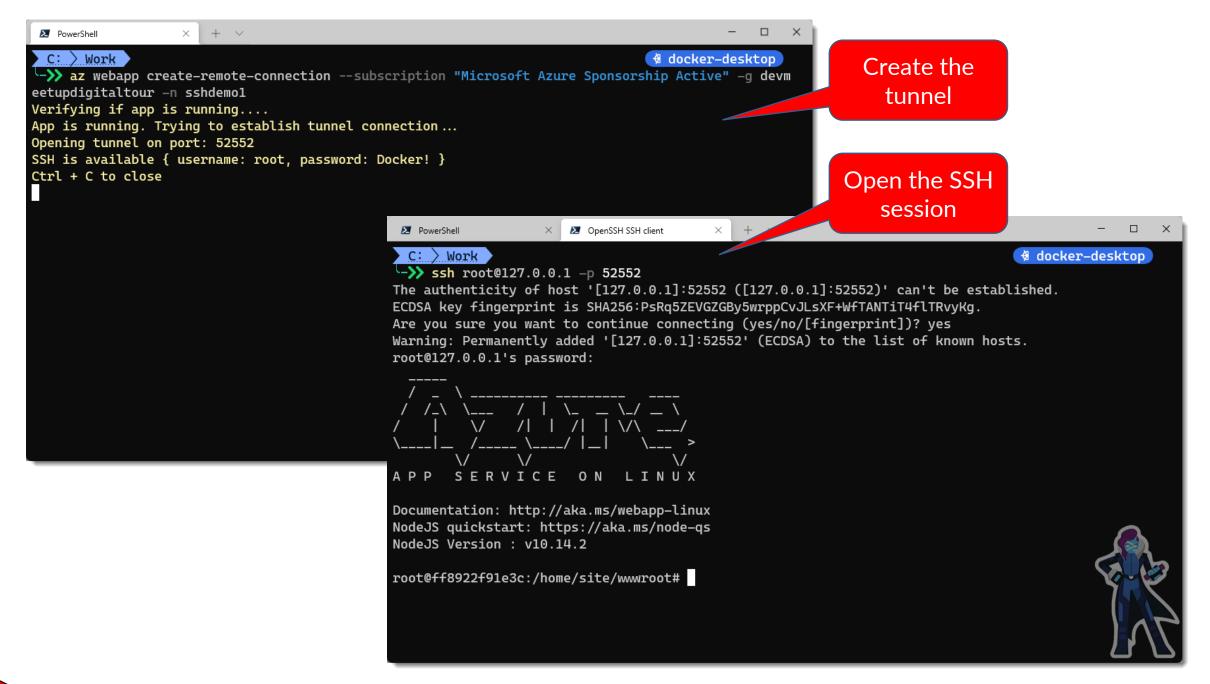
Configuration



#### Open a session

- Using the Advanced Tools
- Open a secure tunnel using the Azure CLI

```
# Create the secure tunnel
az webapp create-remote-connection --subscription <name> -g <rg-name> -n <app-name>
# Open a session using the port number returned by the previous command
ssh root@127.0.0.1 -p <port>
```



#### That's it!

12 cool App Service tips & tricks!



## Thank You!

# Q&A