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Streamlit on Azure

Guide to deploying Streamlit on Azure App Service.

🕐   May 07, 2021

Guide to Streamlit on Azure

Streamlit is a python library that allows for quick WebApp development for relatively simple applications. It provides common widgets and simple procedural logic.

In this guide, we will deploy a barebone app that I recommend using as your starting point if you want to deploy to Azure App Service. I have found the deployment to be a little tempremental so I hope this can help you.

I've taken information from here, though that alone did not work for me. Cloning and deploying this worked, but I then simplified it and updated versions to get this guide.

Downloading the barebone app

I've prepared all the files you'll need to get a start here

Creating Azure Resources

The following resources have to be created:

- resource group
- azure container registry
- app service

You can create basic level of them using the azure cli as shown below. I will assume you are using bash. I usually prefer setting the variables once and using them in all future commands. The ones you will need are:

```
export LOCATION="xxx"
export RESOURCE_GROUP="xxx"
export CONTAINER_REGISTRY="xxx"
export IMAGE_NAME="xxx"
export WEBAPP_NAME="xxx"
export SERVICE_PLAN_NAME="xxx"
```

To see all possible locations use `az account list-locations`

Remember that *WEBAPP_NAME* will go in the url (https://*WEBAPP_NAME*.azurewebsites.net) so it needs to be unique across all azurewebsites.

The resource-creating commands are:

- resource group: `az group create -l $LOCATION -n $RESOURCE_GROUP`
- azure container registry: `az acr create --name $CONTAINER_REGISTRY --resource-group $RESOURCE_GROUP --sku basic --admin-enabled true`
- app service: `az appservice plan create -g $RESOURCE_GROUP -n $SERVICE_PLAN_NAME -l $LOCATION --is-linux --sku B1`

If you get authorisation errors, make sure you are logged in (`az login` and `az acr login -n $CONTAINER_REGISTRY`)

Once those resources are set-up, we move on to building the image (remotely) and creating the web app based on it

```
az acr build --registry $CONTAINER_REGISTRY --resource-group $RESOURCE
az webapp create -g $RESOURCE_GROUP -p $SERVICE_PLAN_NAME -n $WEBAPP_N
```

Local Development

In order to speed up development it is usually better to build and test the image by using docker locally

```
# locally build the test image
docker build -t tst .

# test the image locally
docker run --rm -it -p 80:80 tst
```

Pushing the image to the Container Registry

Pushing the image will trigger an update of the WebApp on the next request.

```
# re-tag the image and push it to the repository
docker image tag tst $CONTAINER_REGISTRY.azurecr.io/$IMAGE_NAME:latest
docker push $CONTAINER_REGISTRY.azurecr.io/$IMAGE_NAME:latest
```

The update can be a bit fiddly, so I usually prefer restarting the app from the Azure Web UI to be sure and monitor the Log Stream.
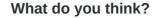
Futher Considerations

There are a couple of things to bear in mind:

- The way the webapp defaults, it will be available to the internet unless authorisation is specified.
- The Dockerfile is in its simplest form. When opening the website to the internet there are security concerns to address, here is a nice overview.

azure   streamlit

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Name

Saumitra Chaskar • 7 months ago

Hi Gabe, I am trying to deploy the webapp on azure, but it gets stuck on the "Please wait ..." message. The web browser console shows,

WebSocket connection to 'wss://<my_app_name>.azurewebsites.net/stream' failed ,

followed by this message

Uncaught Error: Unsupported state transition.
State: PINGING_SERVER
Event: CONNECTION_TIMED_OUT

are there any specific changes that should be done in the streamlit toml file ?

Stuck on this issue from a long time and have tried most of the solutions on streamlit discussion board.

Any help will be appreaciated, Thanks !

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Built with Hugo, Theme **Stack** designed by Jimmy