Developers in Databases Getting Docker

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Running my first SQL Server container

- ✓Instant instances for dev, test, & CI/CD
- ✓Pre-configure database(s) and server to share across your team
- ✓Run different instances/versions side by side
- ✓Create new clean instances as needed
- ✓Save resources: shut down SQL Server without losing data

Why?

SQL Server in a Container?

SQL Server for Linux

As of SQL Server 2017

Enterprise, Standard, Web (Cloud only),
Developer, Express

Runs on

Red Hat Enterprise (RHEL), SUSE,
Ubuntu, **Docker**

SQL Server Windows Containers

2017: Beta released

July 2021: “we have decided to suspend the SQL Server on Windows Containers beta program for the foreseeable future. ”

One Image, 5 Editions

- Developer (default, no license)
- Express (no license)
- Standard (license if in production)
- Enterprise (license required)
- Enterprise Core (license required)

*MSSQL_PID parameter on docker run

All MS images on mcr.microsoft.com

```
docker pull mcr.microsoft.com/mssql/server
```

Image details are still on Docker Hub

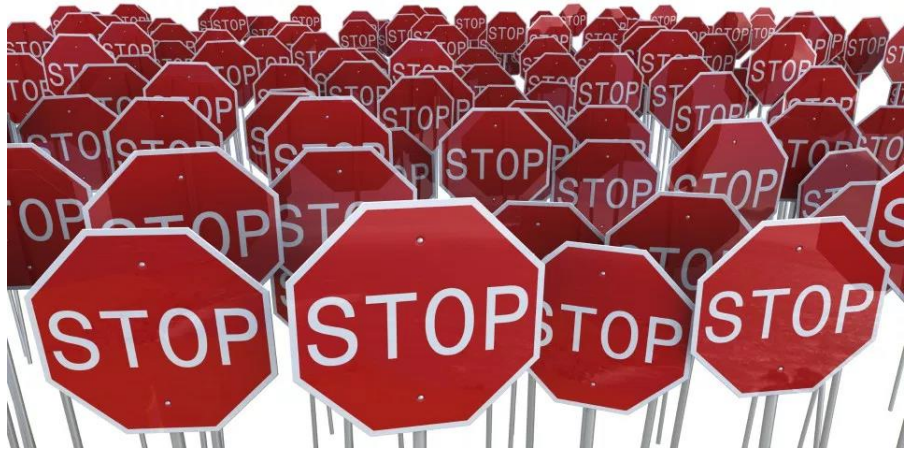
hub.docker.com/_/microsoft-mssql-server

Support: github.com/Microsoft/mssql-docker/issues

Required Environment Variables on run

```
docker run
     -e “ACCEPT_EULA=Y”
     -e “SA_PASSWORD=P@ssw0rd1”
     -p 1433:1433
     -d
      mcr.microsoft.com/mssql/server
```

Data Persistence Considerations



docker stop

PERSISTED

docker rm

NOT PERSISTED

Creating and Binding to a Data Volume

```
docker run
  -e 'ACCEPT_EULA=Y'
  -e 'SA_PASSWORD=P@ssword1'
  -p 1433:1433
  -d
  --name ServerWithVolume
  -v sqlvolume:/var/opt/mssql
  -d
  mcr.microsoft.com/mssql/server:2019-latest
```

Copy files into and out of containers/volumes

```
docker cp /tmp/mydb.mdf d6b75213ef80:/var/opt/mssql/data
```

Build Your Own Image

docker build

docker run

Dockerfile

```
1  # using vNext image
2  FROM microsoft/mssql-server-linux
3
4  # set environment variables
5  ENV SA_PASSWORD=Passw0rd
6  ENV ACCEPT_EULA=Y
7
8  COPY entrypoint.sh entrypoint.sh
9  COPY SqlCmdStartup.sh SqlCmdStartup.sh
10 COPY SqlCmdScript.sql SqlCmdScript.sql
11
12 # Grant permissions for the SqlCmdStartup.sh
13 # script to be executable
14 RUN chmod +x ./SqlCmdStartup.sh
15 #start the waterfall of commands
16 #when started via docker run
17 CMD /bin/bash ./entrypoint.sh
```

Coordinate with other containers using docker-compose

See my DockerCon Live 2020 session:
Dev & Test Agility for Your Database with Docker: bit.ly/sqldocker

Resources

This deck is at **github.com/julielerman/sqldocker**

Data Points - On-the-Fly SQL Servers with Docker
msdn.microsoft.com/magazine/mt784660

Pluralsight: Cross-Platform SQL Server Management for Developers:
bit.ly/PS_MSSQL

Run the SQL Server 2017 container image with Docker
docs.microsoft.com/en-us/sql/linux/quickstart-install-connect-docker

Docker Volumes:
docs.docker.com/engine/admin/volumes/volumes/

KataCoda hands on walkthrough on data volumes:
katacoda.com/courses/docker/persisting-data-using-volumes

Dev & Test Agility for Your Database with Docker: bit.ly/sqldocker

Contact

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