Workshop

Container

In The MS Universe

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time cockpit
Saves the day.

Your Host

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Questions for this Session

Options, options, options
When to use what?

Demos, demos, demos
See things in action

Overview, not a deep-dive

Overview

Available Options and Tools

Microsoft ❤ Containers

Docker client on Windows

In Windows shell

In Bash shell (Bash on Ubuntu on Windows)

Demo

Docker Client

Docker Client in Windows Shell

Ubuntu subsystem for Windows

- Not Docker, not Hyper-V
- Pico processes

Bash on Ubuntu on Windows

- Advantage: Completion

Microsoft ❤ Containers

Docker client on Windows

In Windows shell
In Bash shell (Bash on Ubuntu on Windows)

Linux containers on Windows

Docker for Windows

Windows containers on Windows

Windows Server containers
Hyper-V containers
Docker support on Windows Server 2016 and Windows 10

Microsoft ❤ Containers

Ready-made containers

For Linux and Windows
See Docker Hub (e.g. Azure CLI, .NET Core, PowerShell, IIS)

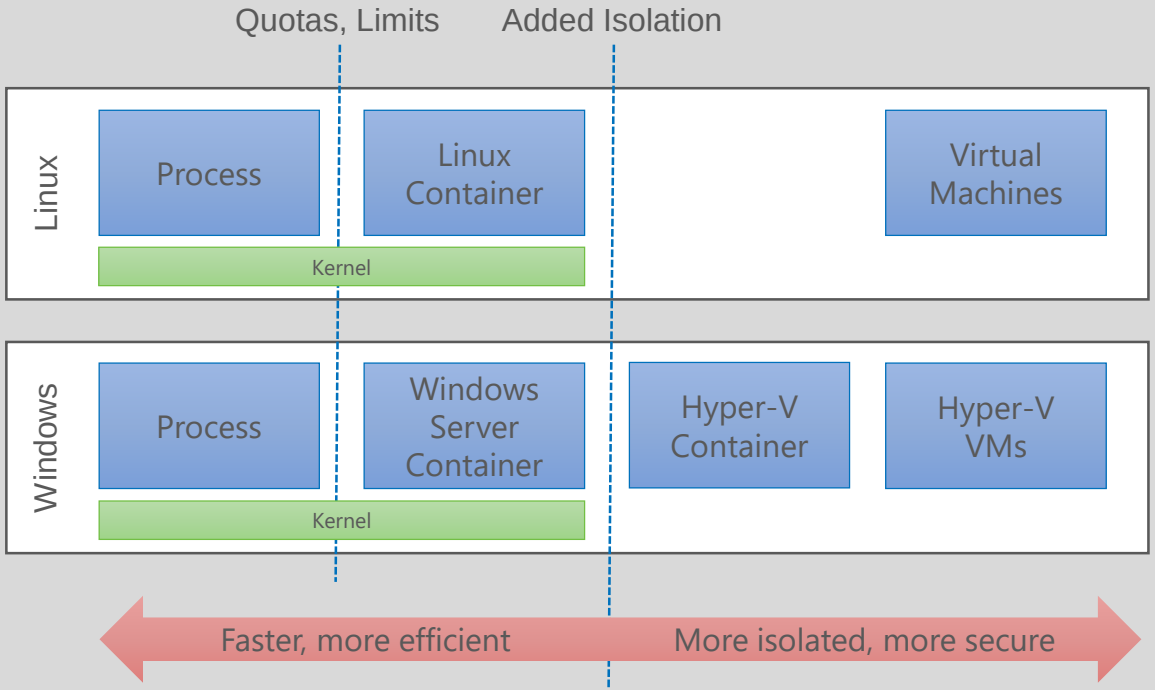
Containers on Azure

Templates (e.g. Docker on Unbuntu) and drivers from Microsoft (details later)
Docker Machine with Azure driver
Run clusters (DC/OS, Docker Swarm, Kubernetes) with Azure Container Service

Visual Studio Support

Visual Studio Tools for Docker
VSTS Docker Extension

Strengths and Limits



Windows Server vs. Hyper-V Containers

- Managed almost identically (Docker and PowerShell)
- Difference: Isolation level
- More details in MSDN

Version Compatibility

- Server Containers: Must match
- Hyper-V Containers: Need not match

Source: Mark Fussel (Microsoft), Azure Service Fabric - Build always-on, hyper-scalable, microservice-based cloud applications

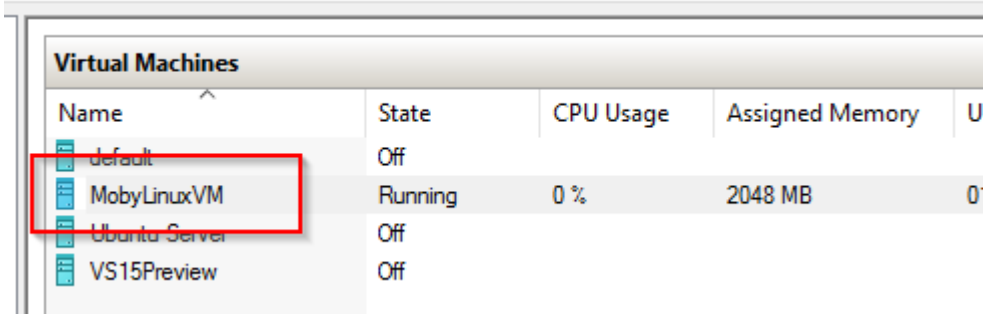
Linux on Windows

Running Linux containers on Windows

Linux on Windows

Use Docker for Windows

Uses Hyper-V to run Linux with Docker



Run Docker client on Windows or Linux

Demo

Docker for Windows

Docker for Windows UI

- Settings
- VM in Hyper-V

Container scenarios

- Interactive container
- Volume mapping
- Port mapping

Microsoft-provide image

- .NET on Linux

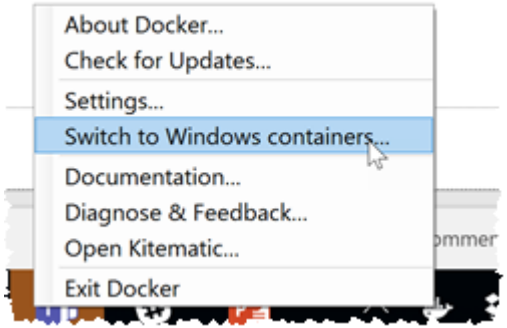
Windows on Windows

Running Windows containers on Windows

Windows on Windows

OS Support

Windows Server 2016
Windows 10 (Hyper-V Container)
Nice integration with Docker for Windows on Windows 10



Windows Server Container

Hyper-V Container

Additional isolation layer
Runs inside of Windows Nano Server VM

```
docker run -it --rm --isolation=hyperv microsoft/nanoserver
```

Demo

Windows Container

Docker on Windows 10
- Nano Server

Docker on Windows Server 2016
- Full Server
- Nano Server
- Remote Docker (Linux and Windows) client

Container scenarios
- Interactive container
- Dockerfiles on Windows
- Volume mapping
- Ready-made container (.NET)

Windows on Windows

Configuration via *daemon.json*

Details see Microsoft docs

Support for Dockerfiles

Windows shell
Powershell support
Details see Microsoft docs

Swarm-support is coming

Available to Windows 10 insiders already
Details see blog post

PowerShell for Docker

Alternative to Docker CLI

Docker on Azure

Running containers in Azure

Docker on Azure

Docker support in *Azure Resource Manager* (ARM)

Extension for Docker on Linux
Ready-made ARM-templates (e.g. Docker on Ubuntu)

Azure driver for *Docker Machine*

Azure Container Services (ACS)

Storage

Docker Volume Driver for Azure File Storage

Demo

Containers in Azure

Docker Machine
- Azure Driver

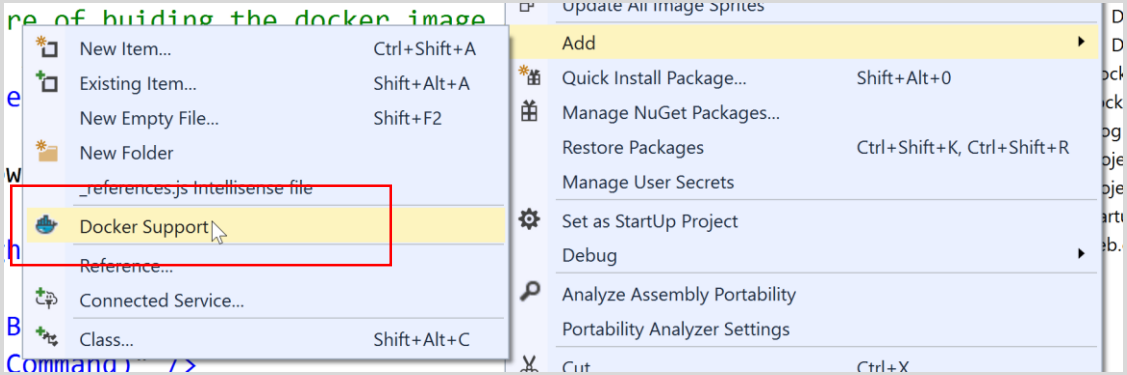
ARM with Docker
- Using Quickstart Template

Volume driver for Files

Developer Tools

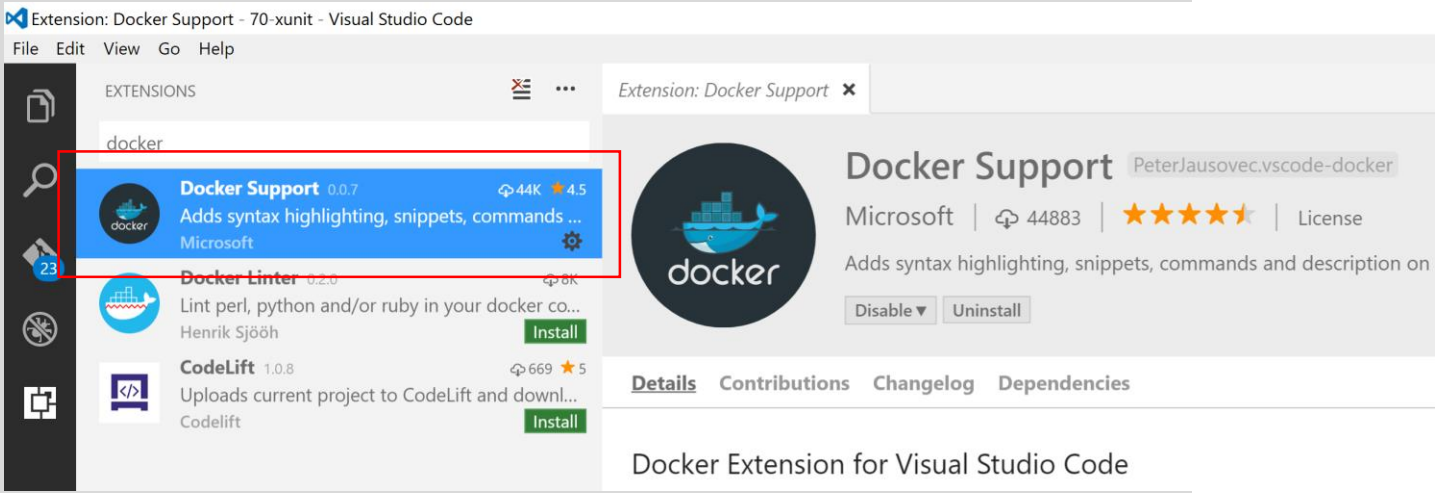
Visual Studio support

Visual Studio

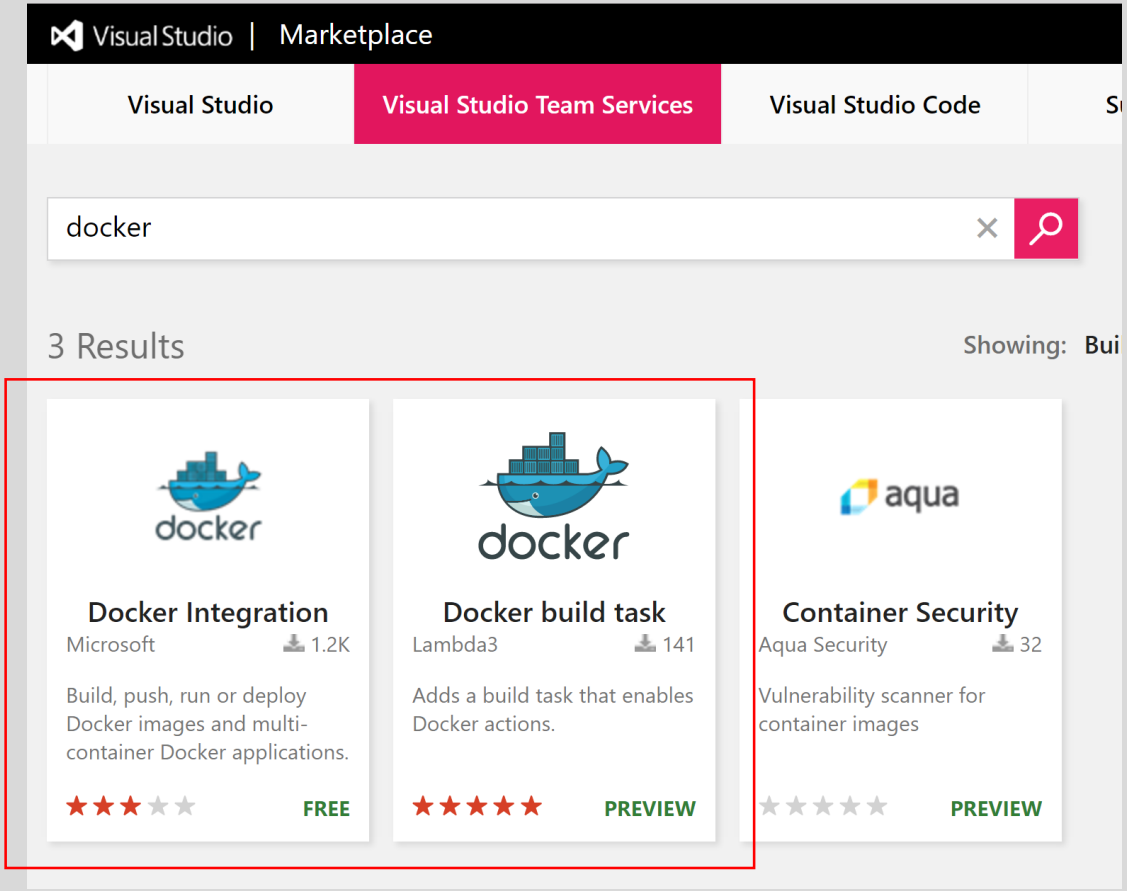


[Docker Tools for Visual Studio]

Docker support for Visual Studio Code



TFS/VSTS



[Docker extensions for TFS/VSTS]

Summary

Summary

Microsoft ♥ Linux and containers

Linux on Windows
Windows on Windows
All kinds of containers on Azure

For dev/test and prod

Containers on Windows 10 for devs
Windows Server 2016 for Windows prod
Azure Container Service for Linux prod

Q&A

Thank you for attending!

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