

Workshop

Container

in the Microsoft Universe



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time cockpit
Saves the day.

Your Host

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Questions for this Session

Why?

Docker is great on Linux, why do we need it on Windows?

Options, options, options

When to use what?

Demos, demos, demos

See things in action

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](#), [SQL Server on Linux](#), etc.)

Containers on Azure

Templates (e.g. [Docker on Ubuntu](#)) 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 \(VS2017\)](#)

[VSTS Docker Extension](#)

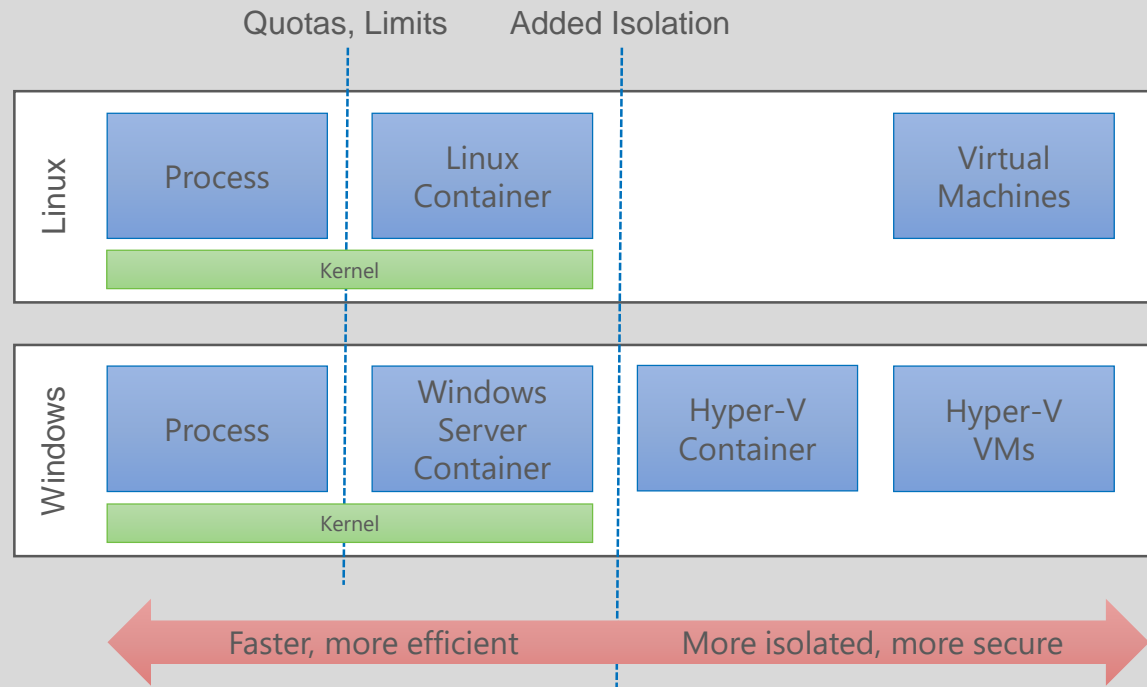
Demo

SQL Server

Linux

Windows

Strengths and Limits



Windows Server vs. Hyper-V Containers

Managed almost identically
(Docker and PowerShell)

Difference: Isolation level

More details in [docs](#)

Version Compatibility

Server Containers: Must match

Hyper-V Containers: Need not
match

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

Demo

Isolation

Windows Hyper-V Containers

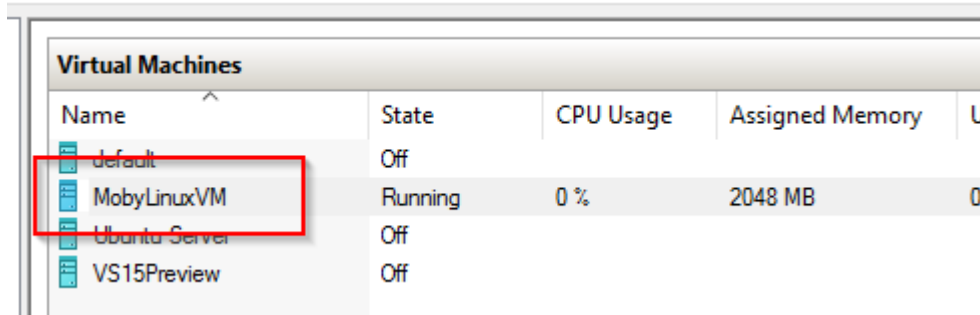
Linux on Windows

Running Linux containers on Windows

Linux on Windows

Use Docker for Windows

Uses Hyper-V to run Linux with Docker



The screenshot shows the 'Virtual Machines' section of the Windows Hyper-V management console. A table lists the installed virtual machines. The 'MobyLinuxVM' entry is highlighted with a red rectangular box, indicating it is the active or selected VM.

Virtual Machines				
Name	State	CPU Usage	Assigned Memory	U
default	Off			
MobyLinuxVM	Running	0 %	2048 MB	0
Ubuntu Server	Off			
VS15Preview	Off			

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

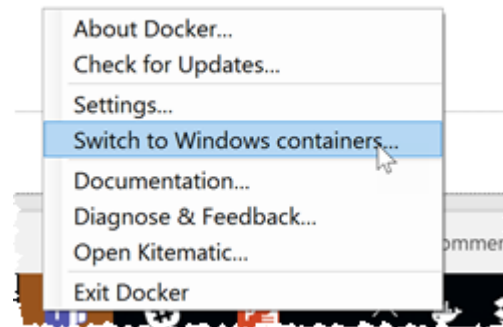
Windows on Windows

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](#)

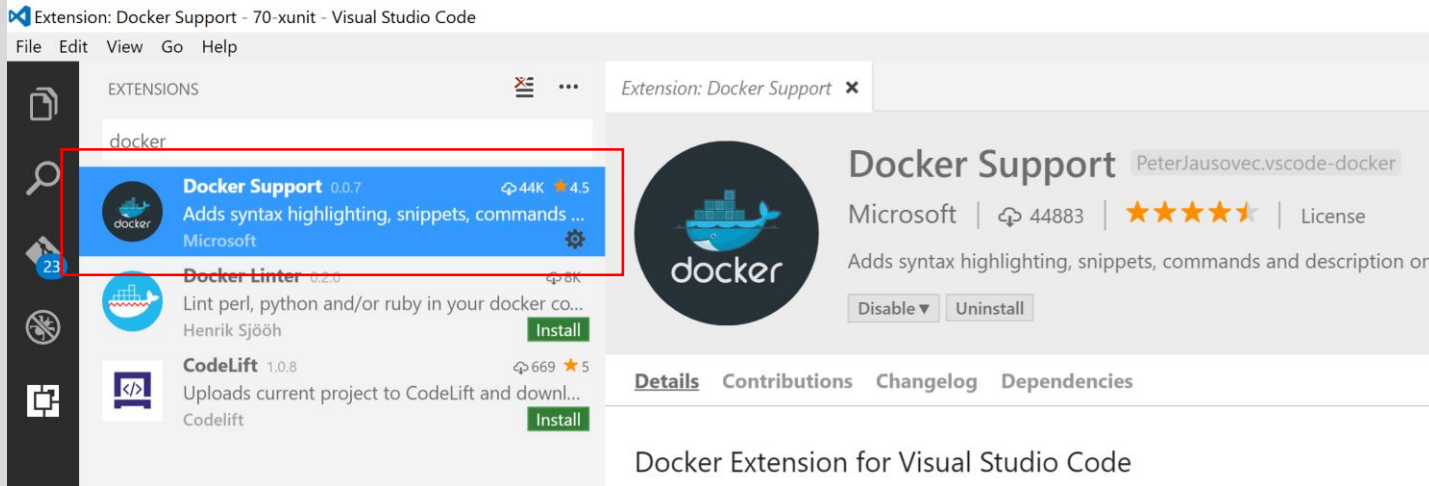
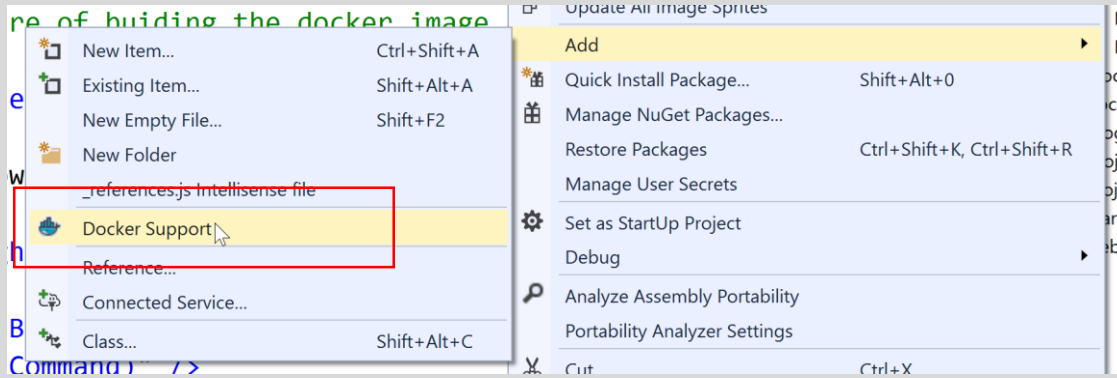
Developer Tools

Visual Studio support

Visual Studio

Docker Tools for Visual Studio

Docker support for Visual Studio Code



TFS/VSTS

Docker extensions for TFS/VSTS

The screenshot shows the Visual Studio Marketplace interface. The top navigation bar includes 'Visual Studio', 'Visual Studio Team Services' (highlighted in pink), and 'Visual Studio Code'. A search bar contains the text 'docker'. Below the search bar, it says '3 Results' and 'Showing: Build'. Three extension cards are displayed. The first two cards, 'Docker Integration' by Microsoft and 'Docker build task' by Lambda3, are enclosed in a red rectangular box. The third card, 'Container Security' by Aqua Security, is not boxed. Each card shows the Docker logo, the extension name, the publisher, download count, a brief description, a star rating, and a price/status label.

Extension Name	Publisher	Downloads	Description	Rating	Status
Docker Integration	Microsoft	1.2K	Build, push, run or deploy Docker images and multi-container Docker applications.	★★★★☆	FREE
Docker build task	Lambda3	141	Adds a build task that enables Docker actions.	★★★★★	PREVIEW
Container Security	Aqua Security	32	Vulnerability scanner for container images	★★★★☆	PREVIEW

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

Workshop

Q&A

Thank you for attending!



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