



Diet **Docker**

CRAFTING LIGHTWEIGHT
CONTAINERS WITH MULTI-STAGE
BUILDS

Agenda

ABOUT
THE PLATFORM
THE BASE
THE FILE
THE CONTENTS
QUESTIONS

Hello from Grand Rapids!

I'm Victor Frye

Your friendly neighborhood developer

Unchallenged #1 Clippy fan

Love internet culture and content

- victorfrye.com/blog
- microsoftgraveyard.com
- shrugman.com

Passion for .NET, React, Azure, Xbox

DevOps specialist at Leading EDJE

Building with Microsoft solutions



About **Leading EDJE**

Technology consultancy and services

- Strategists, innovators, partners
- Craft **bespoke solutions**
- **Positive disruption** of business norm

Real. Fun. Geeks.

FREE lunch and learns

Expert talent

- **Cloud infrastructure**
- **Digital and app innovation**
- Data and AI
- Project management



The background features a light blue gradient with several 3D-rendered spheres in shades of blue and purple. Some spheres are large and prominent, while others are small and scattered. At the bottom, there are larger, more complex, liquid-like shapes in similar colors, creating a modern, abstract aesthetic.

The Platform

DOCKER AND CONTAINERIZATION




Abstracting the machine

Virtualization

- Virtualize the hardware
- Abstract compute and storage
- Runs multiple apps
- Can only run one OS at a time
- Slow to spin up
- Best for complete control

Containerization

- Virtualize the OS
- Abstract OS and infrastructure
- Bundles single app and deps
- Lightweight solution
- Can spin up quickly*
- Best for portability and perf



The Docker platform

A **containerization** tool

A daemon and a client

Objects include:

- **Images**: read-only templates with instructions for creating a container
- **Containers**: a runnable instance that can start, stop, or move
- **Registries**: A package store for container images



Alternatives and compliments

Podman

containerd + nerdctl

Buildah

Runc

Kubernetes

Red Hat OpenShift

Azure Container Apps

Amazon ECS

Container app lifecycle



```
FROM mcr.microsoft.com/dotnet/sdk:10.0
WORKDIR /app

COPY . .
RUN dotnet publish ./MyApp.csproj -c Release -o /out

ENTRYPOINT ["dotnet", "/out/MyApp.dll"]
```

EXAMPLE DOCKERFILE FOR A .NET APPLICATION (1.25 GB)

The background is a light blue gradient with various abstract elements. There are several spheres of different sizes in shades of blue and purple. At the bottom, there are larger, more complex organic shapes in similar colors, resembling liquid or soft clay. The overall aesthetic is clean, modern, and artistic.

The Base

WHERE ARE YOU FROM?

All about **Linux**



Choose your **distro**

Debian-based

Debian or Ubuntu

- Debian: Toy Story (bookworm, trixie)
- Ubuntu: alphabetical (jammy, noble)

Uses glibc for C library

Includes common utils

Large base image sizes

Alpine

Just Alpine

Uses musl instead of glibc

Includes BusyBox for utils

No tzdata

Very minimal out-of-the-box

Small base image size



**Why does
size matter?**

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The File

READ THE INSTRUCTIONS ALREADY

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Dockerfiles

DEMONSTRATION

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The Contents

SIZE MATTERS, BUT SO DOES HOW YOU USE IT

Go **distroless**

GOOGLE PIONEERED OPTION

HARDEN IMAGE BY:

- REMOVING UTILITIES
- REMOVING PACKAGE MANAGERS
- REMOVING THE DISTRO ITSELF*

GOOGLE DISTROLESS

AZURE LINUX

DOCKER HARDENED IMAGES

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Distroless

DEMONSTRATION

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Syft images

DEMONSTRATION

Thank you

Provide feedback



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