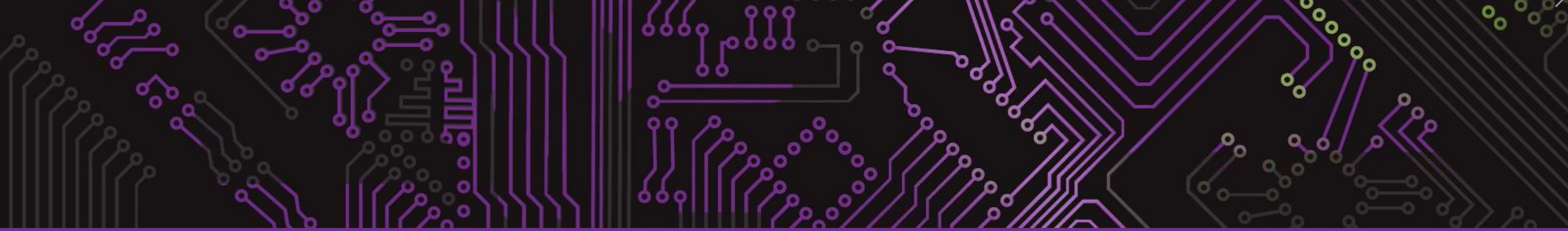
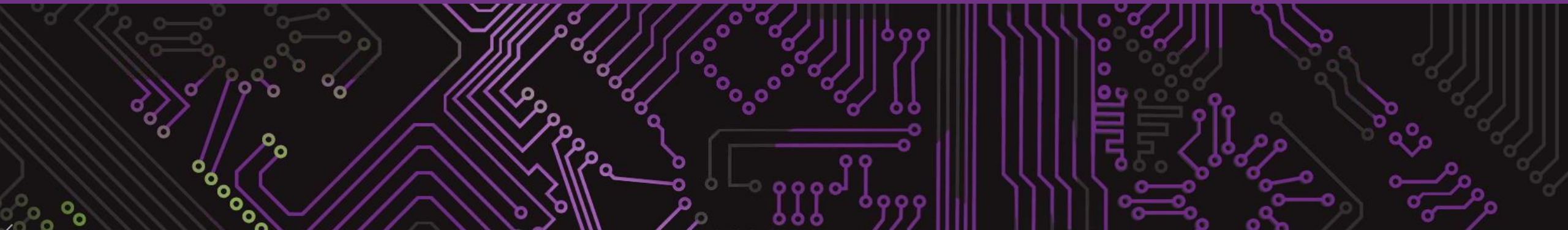


Learn. Imagine. Build.

dotnet on linux

Phi Huynh, R&D Manager, NashTech
phi.huynh@nashtechglobal.com

NASH TECH
The Power to Innovate




Microsoft
Linux

Google

redhatloves.net

redhat.

Agenda

- Supported Linux version
- dotnet on Linux containers
- dotnet on IoT ARM devices
- dotnet on cloud
- Sclable dotnet infrastructue

Supported Linux versions

.NET Core 2.x | .NET Core 1.x

.NET Core 2.0 treats Linux as a single operating system. There is a single Linux build (per chip architecture) for supported Linux distros.

NET Core 2.x is supported on the following Linux 64-bit (`x86_64` or `amd64`) distributions/versions:

- Red Hat Enterprise Linux 7
- CentOS 7
- Oracle Linux 7
- Fedora 25, Fedora 26
- Debian 8.7 or later versions
- Ubuntu 17.04, Ubuntu 16.04, Ubuntu 14.04
- Linux Mint 18, Linux Mint 17
- openSUSE 42.2 or later versions
- SUSE Enterprise Linux (SLES) 12 SP2 or later versions

See .NET Core 2.x Supported OS Versions for the complete list of .NET Core 2.x supported operating systems, out of support OS versions, and lifecycle policy links.

Getting started with dotnet on Linux

```
$ dotnet –version
$ dotnet new webapi -o dot-net-on-linux
$ dotnet run
$ dotnet publish -o ./publish
```

dotnet SDK

Visual Studio Code

Docker

Remote debugging dotnetapp on Linux

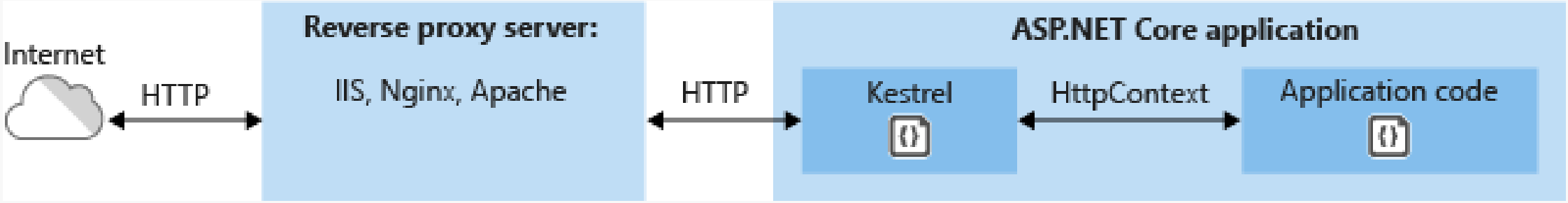
On Linux Server

```
curl -sSL https://aka.ms/getvsdbgsh | bash /dev/stdin -v latest -l ~/vsdbg
```

On VSCode launch.json

```
{
    "name": ".NET Core Remote Attach",
    "type": "coreclr",
    "request": "attach",
    "processId": "${command:pickRemoteProcess}",
    "pipeTransport": {
        "pipeProgram": "ssh",
        "pipeArgs": [ "-T", "ExampleAccount@ExampleTargetComputer" ],
        "debuggerPath": "~/vsdbg/vsdbg",
        "pipeCwd": "${workspaceRoot}",
        "quoteArgs": true
    },
    "sourceFileMap": {
        "/home/ExampleAccount/ExampleProject": "${workspaceRoot}"
    }
}
```

dotnet on production env.



Why use a reverse proxy server?

Kestrel is great for serving dynamic content from ASP.NET Core; however, the web serving parts aren't as feature rich as servers like IIS, Apache, or Nginx. A reverse proxy server can offload work like serving static content, caching requests, compressing requests, and SSL termination from the HTTP server. A reverse proxy server may reside on a dedicated machine or may be deployed alongside an HTTP server.

systemd – aspnetcore as a service

kestrel-webapi-test.service

```
[Unit]
Description=WebAPI Test

[Service]
WorkingDirectory=/home/phihuynh/projects/webapi-test/publish/
ExecStart=/usr/bin/dotnet /home/phihuynh/projects/webapi-test/publish/webapi-test.dll
Restart=always
RestartSec=10  # Restart service after 10 seconds if dotnet service crashes
SyslogIdentifier=dotnet-webapi-test
User=www-data
Environment=ASPNETCORE_ENVIRONMENT=Production

[Install]
WantedBy=multi-user.target
```

bash Copy

```
sudo nano /etc/systemd/system/kestrel-hellomvc.service
```

systemd – aspnetcore as a service

systemctl enable kestrel-webapi-test.service
systemctl start kestrel-webapi-test.service
systemctl status kestrel-webapi-test.service

```
phihuynh@ubuntu:~/projects/webapi-test$ systemctl status kestrel-webapi-test.service
● kestrel-webapi-test.service - WebAPI Test
   Loaded: loaded (/etc/systemd/system/kestrel-webapi-test.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2017-09-24 17:45:57 ICT; 10min ago
 Main PID: 10529 (dotnet)
    Tasks: 19
   Memory: 47.8M
      CPU: 1.689s
   CGroup: /system.slice/kestrel-webapi-test.service
           └─10529 /usr/bin/dotnet /home/phihuynh/projects/webapi-test/publish/webapi-test.dll

Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: warn: Microsoft.AspNetCore.DataProtection.Repositories.EphemeralXmlRepository[50]
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]:       Using an in-memory repository. Keys will not be persisted to storage.
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: warn: Microsoft.AspNetCore.DataProtection.KeyManagement.XmlKeyManager[59]
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]:       Neither user profile nor HKLM registry available. Using an ephemeral key rep
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: warn: Microsoft.AspNetCore.DataProtection.KeyManagement.XmlKeyManager[35]
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]:       No XML encryptor configured. Key {18239bfe-6455-4082-a073-443cf767cada} may
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: Hosting environment: Production
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: Content root path: /home/phihuynh/projects/webapi-test/publish
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: Now listening on: http://localhost:5000
Sep 24 17:45:57 ubuntu dotnet-webapi-test[10529]: Application started. Press Ctrl+C to shut down.
```

dotnet on cloud

- Azure Container Service
- Azure WebApp (Linux Container)
- AWS Beanstalk (Linux Container)
- AWS Elastic Container Service
- Google App Engine
- Google Container Engine (Kubernetes)
- OpenShift
- AWS Lambda
- Amazon Alexa
- Docker Cloud

dotnet on IoT device (ARM-based)

DEMO
dotnet on Raspberry Pi

Thank you!!!