.NET API Installation Guide

Version 1.0

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Who should read this document:

This document is *ideally* meant for IT Staff as it is technical in nature

- a. System Administrators
- b. DevOps team members
- c. Network experts
- d. Project administrator's seeking technical guidance for installation of the 'OER' project.

Pre-requisites:

1. Install CentOS Server on an server class computer in a location of your choice
2. Make sure you set up remote access complying to your organisation's IT standard while allowing remote access for emergency / external support.
3. Make sure you server is configured to allow access to the other services in the DMZ(De Militarised Zone).
4. Note: Upto this point we are setting a standard Linux instance. Please feel free to make necessary security provision's as per your organisation's norms.
5. We assume you have already setup the following and know the credentials:
    - a. SMTP server for mail
    - b. MinIO for Storage
    - c. MSSQL Server 2016 or above

(Note: These are products that are openly available and instructions to install and configure them are available with their respective vendors.)

6. Retrieve and have and have a copy of deployable binaries ready *(which is delivered digitally)*

Installation on the Server

Setting up dotnet core

Install .NET Core 2.2 Runtime and SDK on CentOS Server

```
yum install rh-dotnet22-dotnet-runtime-2.2 -y
scl enable rh-dotnet22 bash
```

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```
dotnet add /home/centos/OERSERVICE/OERService.csproj  package
DinkToPdf --version 1.0.8
```

Dependencies

Run the below command to find dependencies of libwhtmltox.so and install those:

```
ldd libwhtmltox.so
```

The dependencies not installed will be depicted by "not found" aws:

```
linux-vdso.so.1 =>  (0x00007ffd05597000)
libXrender.so.1 => not found
libfontconfig.so.1 => not found
libfreetype.so.6 => /lib64/libfreetype.so.6 (0x00007f8559e5c000)
libXext.so.6 => not found
libX11.so.6 => /lib64/libX11.so.6 (0x00007f855990c000)
libz.so.1 => /lib64/libz.so.1 (0x00007f85596f6000)
libdl.so.2 => /lib64/libdl.so.2 (0x00007f85594f2000)
librt.so.1 => /lib64/librt.so.1 (0x00007f85592ea000)
libpthread.so.0 => /lib64/libpthread.so.0 (0x00007f85590ce000)
libstdc++.so.6 => /lib64/libstdc++.so.6 (0x00007f8558dc7000)
libm.so.6 => /lib64/libm.so.6 (0x00007f8558ac5000)
libgcc_s.so.1 => /lib64/libgcc_s.so.1 (0x00007f85588af000)
libc.so.6 => /lib64/libc.so.6 (0x00007f85584e2000)
/lib64/ld-linux-x86-64.so.2 (0x00007f855d2a3000)
libexpat.so.1 => /lib64/libexpat.so.1 (0x00007f85582b8000)
libuuid.so.1 => /lib64/libuuid.so.1 (0x00007f85580b3000)
libbz2.so.1 => /lib64/libbz2.so.1 (0x00007f8557ea3000)
libpng15.so.15 => /lib64/libpng15.so.15 (0x00007f8557c78000)
libxcb.so.1 => /lib64/libxcb.so.1 (0x00007f8557a50000)
libXau.so.6 => /lib64/libXau.so.6 (0x00007f855784c000)
```

Switch to Release mode

1. Copy the complete .NET code in CentOS and use the below command to publish it :

```
dotnet publish  /home/centos/OERSERVICE/OERService.csproj --
configuration Release
```

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2. In the publish folder, the folder structure will be created as below :

Name	Size	Changed	Rights	Owner
⬆️ [..]		08-09-2019 02:28:42 PM	rwxrwxr-x	centos
📁 ContentHtml		08-09-2019 01:31:41 PM	rwxrwxr-x	centos
📁 EmailTemplates		08-09-2019 01:31:55 PM	rwxrwxr-x	centos
📁 PDFConversionDLLs		08-09-2019 02:28:42 PM	rwxrwxr-x	centos
📁 runtimes		08-09-2019 02:28:43 PM	rwxrwxr-x	centos
appsettings.json	3 KB	08-09-2019 02:17:39 PM	rw-rw-r--	centos
BouncyCastle.Crypto.dll	2,722 KB	08-02-2019 07:20:10 AM	rwxrw-r--	centos
CustomAssemblyLoadContext.cs	1 KB	01-07-2019 09:26:47 PM	rw-rw-r--	centos
DinkToPdf.dll	42 KB	19-04-2017 12:46:24 AM	rwxrw-r--	centos
dotnet-aspnet-codegenerator-design.dll	52 KB	03-03-2019 01:22:30 AM	rwxrw-r--	centos
Emailer.cs	3 KB	02-08-2019 09:39:03 PM	rw-rw-r--	centos
EmailHelperService.cs	1 KB	25-06-2019 02:08:39 PM	rw-rw-r--	centos
ImageHelper.cs	2 KB	25-06-2019 02:08:39 PM	rw-rw-r--	centos
iTextSharp.LGPLv2.Core.dll	8,605 KB	08-03-2019 12:17:00 PM	rwxrw-r--	centos
libwkhtmltox.dll	29,068 KB	27-04-2018 01:01:34 PM	rw-rw-r--	centos
libwkhtmltox.so	44,077 KB	27-04-2018 01:01:36 PM	rw-rw-r--	centos
Microsoft.AspNetCore.Antiforgery.dll	53 KB	08-09-2019 02:14:46 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Abstractions.dll	29 KB	08-09-2019 02:14:46 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Cookies.dll	47 KB	08-09-2019 02:14:46 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Core.dll	38 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.dll	62 KB	08-09-2019 02:14:46 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Facebook.dll	26 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Google.dll	28 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.JwtBearer.dll	36 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.MicrosoftAccount....	25 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.OAuth.dll	42 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.OpenIdConnect.dll	88 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.Twitter.dll	44 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authentication.WsFederation.dll	45 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authorization.dll	40 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos
Microsoft.AspNetCore.Authorization.Policy.dll	20 KB	08-09-2019 02:14:47 PM	rw-r--r--	centos

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3. Open the file **appsetting.json** and update the **Database connections**, Keycloak Config, **SMTP**, Elastic and Minify.IO settings.

```json
{
  "ConnectionStrings": {
    //  "DefaultConnection": "Server=LENOVO-PC\\MSSQLSERVER01;Database=OERDB;persist security info=True; Integrated Security=SSPI;"
    "DefaultConnection": "Server=10.10.4.120,14340;Database=oeruat;Trusted_Connection=False;MultipleActiveResultSets=true;User ID=usr_oer;Password=T1kk@21"
    //  "DefaultConnection": "Server=DESKTOP-UVHSHHF\\SQLEXPRESS;Database=oerdevdb2;persist security info=True; Integrated Security=SSPI;"

  },
  //"Jwt:Authority": "http://148.66.135.165:8080/auth/realms/OER",
  //"Jwt:Audience": "OER-Client",

  "Jwt:Authority": "https://148.66.135.165:8181/auth/realms/OER",
  "Jwt:Audience": "OER-Client",
  "Uploads": {

    "ResourcePath": "Uploads/",
    "ProfileImagePath": "Uploads/ProfileImages/"
  },
  "Smtp": {
    "server": "appsmtp.moe.gov.ae",
    "Port": "25",
    "emailusername": "noreply2@moe.gov.ae",
    "emailpassword": ""
  },
  "MinIO": {
    "endpoint": "10.224.22.30:9000",
    "accessKey": "QVQ9P24HALX8V4KRF1S1",
    "accessSecret": "9612N07KLm64XAN+6STW3+ElcDMWW76YmIjRYLDw",
    "bucket": "oer-admin-bucket",
    "baseUrl": "https://s3-manara.moe.gov.ae/"
  },

  "Serilog": {
    "MinimumLevel": "Debug",
    "WriteTo": [

      {
        "Name": "File",
        "Args": {
          //"formatter": "Serilog.Formatting.Compact.CompactJsonFormatter, Serilog.Formatting.Compact",
          "path": "C:\\Logs\\oerservice.txt"

        }
      }
    ],
    //"Enrich": [ "FromLogContext", "WithMachineName", "WithThreadId" ],
    //"Destructure": [
    //  {
    //    "Name": "ToMaximumDepth",
    //    "Args": { "maximumDestructuringDepth": 4 }
    //  },
    //  {
    //    "Name": "ToMaximumStringLength",
    //    "Args": { "maximumStringLength": 100 }
    //  },
    //  {
    //    "Name": "ToMaximumCollectionCount",
    //    "Args": { "maximumCollectionCount": 10 }
    //  }
    //],
    "Properties": {
      "Application": "OER Service"
    }
  },
  "LogoURL": "https://s3-manara.moe.gov.ae/oer-admin-bucket/Logo.png",
  "FooterURL": "https://s3-manara.moe.gov.ae/oer-admin-bucket/Footer.png",
  "ElasticURL": "10.224.22.29:9200"
}
```

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Deployment Instructions for Docker

Install Docker

First get and install Docker. Instructions are given on the Centos fourm based on your version or here https://www.docker.com/.

Create Dockerfile

Create a *text file* in a New folder in desktop, add the code below to the file and rename it as 'Dockerfile'. Remember to save it **without** any file extension.

The contents of the 'Dockerfile' would appear as follows:

Commands in the dockerfile

FROM microsoft/dotnet:2.2-aspnetcore-runtime
# Install libwkhtmltox dependencies 	
RUN apt-get update \
  && apt-get install -y --no-install-recommends \
    zlib1g \
    fontconfig \
    libfreetype6 \
    libx11-6 \
    libxext6 \
        libgdiplus \
    libxrender1 \
  && curl -o /usr/lib/libwkhtmltox.so \
    --location \
    https://github.com/rdvojmoc/DinkToPdf/raw/v1.0.8/v0.12.4/64%20bit/libwkhtmltox.so
WORKDIR /app
COPY /app /app
ENTRYPOINT ["dotnet","OERService.dll"]

INSTALLATION / UPDATION OF API

The following are the steps for setting up a docker instance
1) prepare content
2) Build (You will need to be connected to internet to perform this step).High speed internet is *highly recommended*.
3) Run

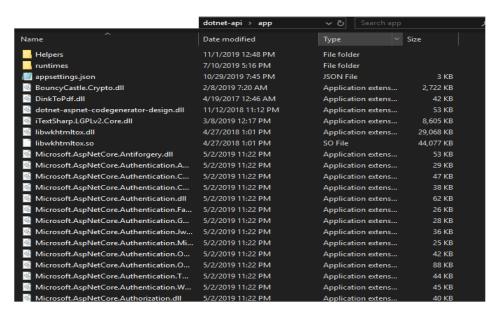**Continued on next page**

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Starting deployment

Prepare content

Copy the items from publish folder to a folder name 'app' in the new folder

Build Docker image

Run the following command via terminal on the server in the folder that you have the file called 'Dockerfile'

```
docker build -t {image_name} .
```

Run Docker image

o Upon successful build completion, on the same terminal, run the command

```
docker run -t {image_name}
```

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