Fueling innovation with hybrid cloud and application modernization

Migrate from Microsoft Azure to IBM Power Virtual Server with .NET 7

SKM Informatik GmbH is an IT system house based out of Germany with 40 specialists that support companies worldwide with the introduction and use of IT, computer-aided design (CAD), computer-aided manufacturing (CAM), and computer-aided engineering (CAE) technologies. SKM goes far beyond the delivery of hardware and software. SKM works to jointly develop and maintain the technology that consists of a company's digital framework for years to come.

Partnering with IBM, SKM Informatik has supplied and serviced a wide variety of IBM technology for its customers. Since the announcement of Red Hat OpenShift being supported on IBM Power Virtual Server back in 2020, the inherent benefits have solicited substantial interest from clients and partners alike. With aspirations of conducting cloud-native development with Red Hat OpenShift on IBM Power Virtual Servers, SKM began development and testing with the help of the local IBM team. Continuing to work on other projects in the background, like the positioning of the open source MLOps tool, Kubeflow, IBM has remained aligned in assisting SKM with various business-critical operations.

Solution

With its existing web service running on Azure, migrating the solution to run on Power Virtual Server required some reassurance from the IBM team that everything would work properly. If possible, SKM needed to build a web service with .NET 7 and Keycloak authentication for users to log in. In the beginning, SKM experienced technical difficulties when running Mono on IBM Power Virtual Server, which it looked to resolve by providing IBM with the generic code to troubleshoot. Using the code provided, the IBM team successfully demonstrated how the .NET code with pre GA .NET 7 runtime container could run on IBM Power9. This success solidified SKM's willingness to move forward with the migration process with the help of IBM.

SKM and IBM collaborated to migrate the Azure workload to Power Virtual Server cloud. To test and receive feedback, the IBM development team provided a pre-GA Alpha .NET 7 container, which SKM used to deliver specific application code through GitHub privately.

Outcome

With only a few minor changes needed in Dockerfile and Skm.Web.HoloServerCore.csproj, the IBM team successfully demonstrated SKM's specific application code working with .NET 7 on Power. IBM and SKM Informatik have continued their efforts to enable the migration of the Enterprise Solution from Azure to IBM Power Virtual Server. As a result of the collaboration, tremendous progress has been made. The IBM team has successfully wrapped up testing the final release, which has been provided to SKM to test with its application. With no reported problems thus far, SKM's testing of the early release .NET 7 with OpenShift on Power Virtual Server is said to be the last step in securing the holistic solution running on Power.

The IBM team is continuing with its effort to provide SKM with .NET 7 container support as the final testing and collaboration period continues, seeing the project through to the very end. Soon, SKM will serve as the first fully functioning example of how to run .NET 7 with OpenShift on IBM Power Virtual Server.

Embrace the benefits of Red Hat OpenShift running on IBM Power Virtual Server.

- Deploy and scale workloads globally
- Build cloud-native applications
- Get back time for core tasks
- Get more from software with less servers
- Modernize your applications
- Leverage open source to drive innovation

"I used the image and did not have any trouble with it. It is stable, even on heavy workload. Thanks to you we were able to create a fully functional development environment of all our web contents in the IBM Cloud under OpenShift."

"Anyway, thanks a lot for the image. It was the last puzzle piece missing for us to implement our services on Power-OpenShift."

Michael Hermelschmidt, Software Developer at SKM Informatik

Initial changes required to run x86 .NET code on Power with .NET 7

Dockerfile

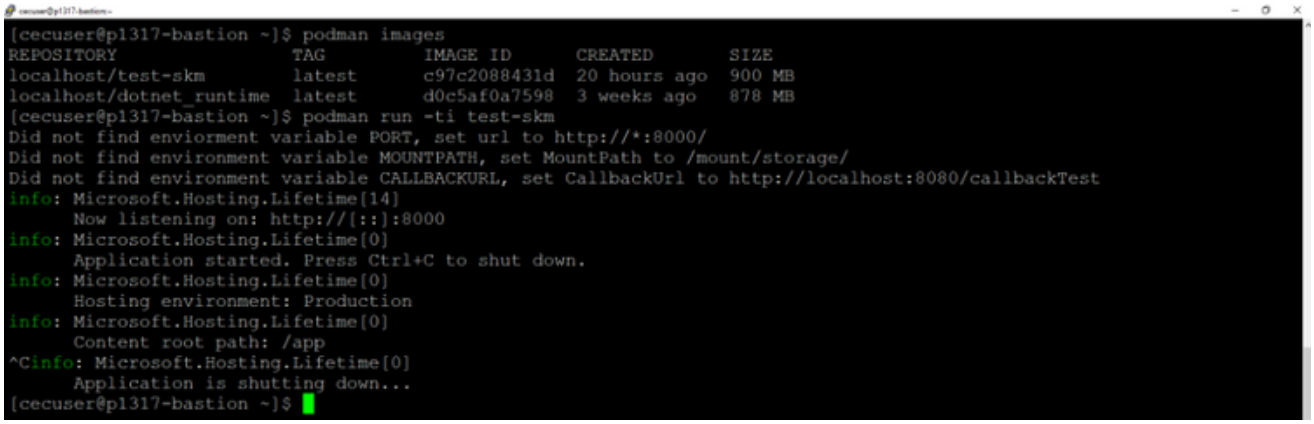
```
#FROM mcr.microsoft.com/dotnet/aspnet:5.0 AS base //commented
FROM dotnet_runtime_devel as base //used our image "dotnet_runtime_devel"
WORKDIR /app
EXPOSE 80

#FROM mcr.microsoft.com/dotnet/sdk:5.0 AS build //commented
FROM dotnet_runtime_devel as build //used our image "dotnet_runtime_devel"
RUN mkdir /holo
```

Skm.Web.HoloServerCore.csproj

```
<PropertyGroup>
    <TargetFramework>net7.0</TargetFramework>  //net7.0 instead of net5.0
    <DockerDefaultTargetOS>Linux</DockerDefaultTargetOS>
    <ErrorOnDuplicatePublishOutputFiles>false</ErrorOnDuplicatePublishOutputFiles>
  </PropertyGroup>
```

Application running with .NET 7 on Power



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