

BackendApi/Dockerfile:27

🚩 Assistant thinks this is a true positive

Container entrypoint runs as root user with no USER directive, allowing any compromised process full container privileges.

Agree or Disagree

🚩 Finding description

Rule description

The `ENTRYPOINT` instruction runs without a preceding `USER` directive, meaning the dotnet process will execute as the root user inside the container.

How this could be exploited:

- An attacker gains code execution inside the container (e.g., via a vulnerability in the ASP.NET application or a dependency)
- Since the process runs as root, the attacker has root privileges within the container
- The attacker can then access sensitive files, modify application behavior, escape to the host system, or pivot to other containers on the same host

For example, if a web endpoint in `BackendApi.dll` has a path traversal vulnerability, an attacker could read `/etc/shadow` or other sensitive files that would normally be restricted to root. With root access already granted by the Dockerfile configuration, this becomes trivial to exploit.

The `ENTRYPOINT ["dotnet", "BackendApi.dll"]` instruction doesn't specify which user should run the application, so Docker defaults to root—giving any code executed within the container full system privileges.

Your code

Example code

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🚩 build process

```
8 RUN dotnet restore
9
10 # Kopiere den gesamten Quellcode
11 COPY . ./
12
13 # Build
14 RUN dotnet build -c $BUILD_CONFIGURATION -o /app/build
15
16 # Stage 3: Publish
17 FROM build AS publish
18 ARG BUILD_CONFIGURATION=Release
19 RUN dotnet publish -c $BUILD_CONFIGURATION -o /app/publish /p:UseAppHost=false
20
21 # Stage 4: Final image
22 FROM mcr.microsoft.com/dotnet/aspnet:9.0 AS final
23 WORKDIR /app
24 EXPOSE 8080
25 EXPOSE 8081
26 COPY --from=publish /app/publish ./
27 ENTRYPOINT ["dotnet", "BackendApi.dll"]
28
```

Assistant suggested fix

Rule fix

```
# Stage 2: Build image
FROM mcr.microsoft.com/dotnet/sdk:9.0 AS build
ARG BUILD_CONFIGURATION=Release
WORKDIR /src

# Kopiere nur die Projektdatei für restore
COPY *.csproj ./
RUN dotnet restore

# Kopiere den gesamten Quellcode
COPY . ./

# Build
RUN dotnet build -c $BUILD_CONFIGURATION -o /app/build

# Stage 3: Publish
FROM build AS publish
ARG BUILD_CONFIGURATION=Release
RUN dotnet publish -c $BUILD_CONFIGURATION -o /app/publish /p:UseAppHost=false

# Stage 4: Final image
FROM mcr.microsoft.com/dotnet/aspnet:9.0 AS final
WORKDIR /app
EXPOSE 8080
EXPOSE 8081
COPY --from=publish /app/publish ./

# Add a non-root user and switch to it
RUN useradd -m appuser
RUN chown -R appuser /app
```

1. Add a non-root user creation step before the ENTRYPOINT instruction in your Dockerfile, for example: `RUN useradd -m appuser`.

2. Change the current user to the newly created non-root user by adding `USER appuser` after copying files and before the ENTRYPOINT instruction.

3. Ensure any directory that your application writes to is owned or writable by appuser (you can run `RUN chown -R appuser /app` if needed).

For example:

```
RUN useradd -m appuser
...
COPY --from=publish /app/publish ./
RUN chown -R appuser /app
USER appuser
ENTRYPOINT ["dotnet", "BackendApi.dll"]
```

Running your application as a non-root user reduces the impact of a potential compromise.

RULE DETAILS

🚩 High severity

📊 Medium confidence

🔍 Monitor

📄 CWE-269

🔗 missing-user-entrypoint

FINDING DETAILS

🕒 3 days ago

📁 is241307/simsfh_ws25_SAST

managed-scan

👤 main

🔗 5cef085

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