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README.md 2.02 KiB

DSys Challenge Task

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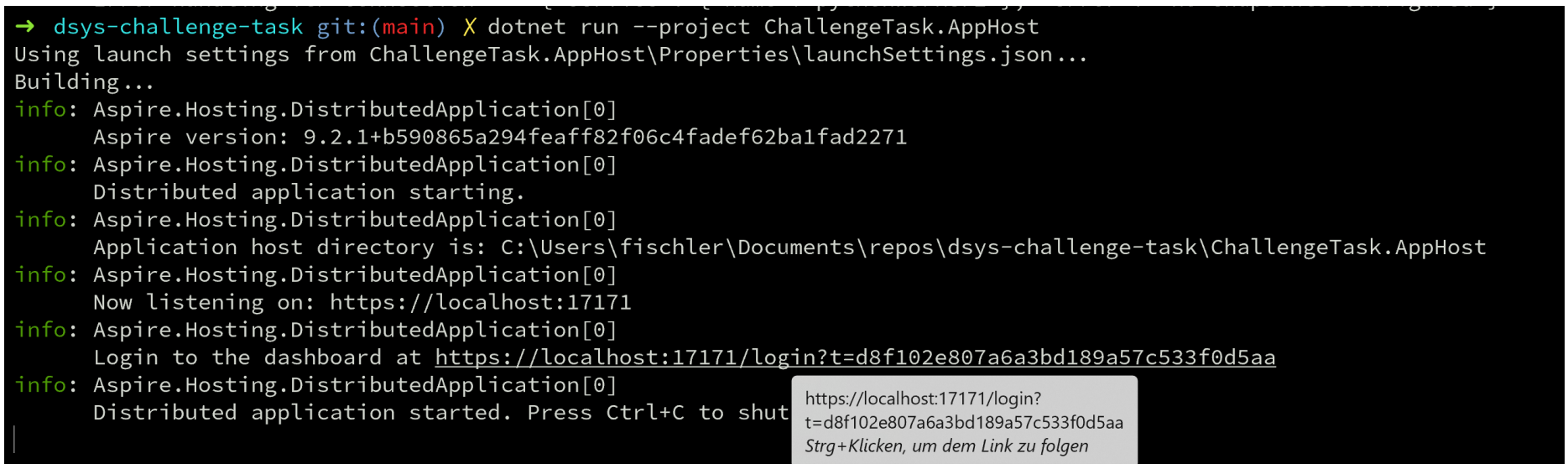
Quickstart (Development)

```
dotnet run --project ChallengeTask.AppHost
```

Note the underlined url in the shell - it is clickable and will lead you to the dashboard:



On the dashboard you're sent to, you can watch the state, check the logs, or even stop and restart containers/parts.

Deployment

- Use something like https://github.com/prom3theu5/aspirational-manifests for automation (untested)
- Use dotnet publish (untested)

Architecture Remarks

- The `ChallengeTask.Api` project contains a load balancer and reverse proxy (YARP)
- The `ChallengeTask.AppHost` contains the .NET-Aspire configuration and setup, it is the entry point
- The `challenge-task-ui` folder contains the svelte-driven ui project, hosted by vite in development
- The `PythonApi` folder contains the API communicating with the ui, to manipulate files and subscribe to updates

SSE

The python project uses FastAPI to serve the routes:

- It uses a FastAPIs `StreamingResponse` with a `text/event-stream` based format to provide an SSE endpoint
  - See `return StreamingResponse(generator, media_type="text/event-stream")`
- It uses peewee as ORM and SQLite as database (SQLite is not production ready!)
  - The SQLite database file is linked into the docker container and shared
- To track changes and notify connected users `watchfiles` is used to watch the SQLite file
  - A proper database would have a notification feature with a callback, but SQLite's API for that does not work when updates are pushed from another process

Load balancing

- YARP is configured to use Round-Robin load balancing
- It also uses active Health-Checks - meaning an endpoint on each python API server is called regularly
- If a server is unhealthy (unreachable or takes too long) it is removed from the cluster and not used as a destination until it is healthy again
- The ui restarts the SSE connection to the server if the connection is closed
  - Reconciliation is communicated to the user, no interaction is needed