

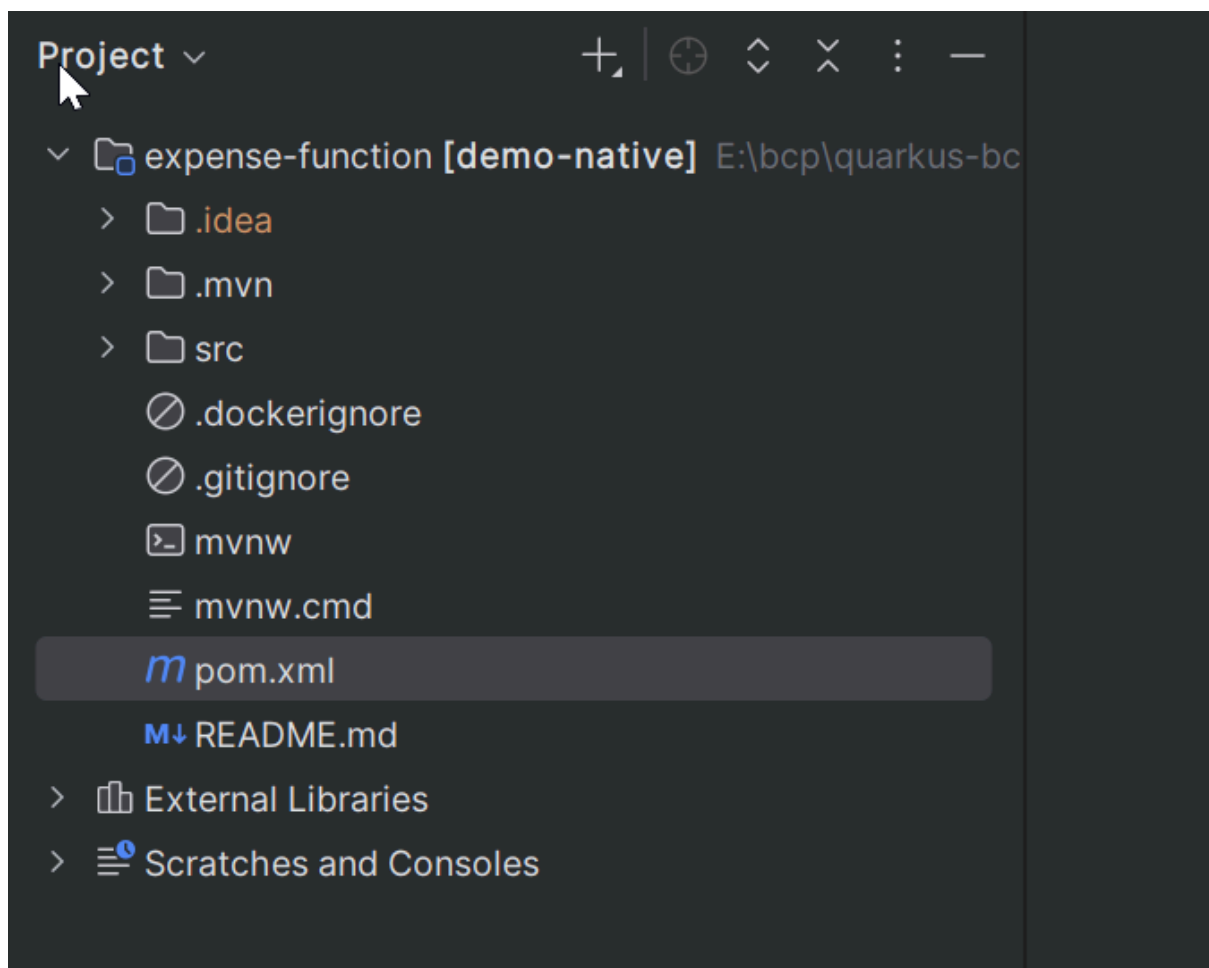
LAB 5: QUARKUS NATIVE

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Github Repo: <https://github.com/joedayz/quarkus-bcp-2025.git>

1. Abre el proyecto **expense-function**.



2. Verifica que la aplicación corre sin problemas en modo desarrollo.

2.1 Inicia el modo de desarrollo Quarkus en la terminal con: **mvn quarkus:dev**

2.2 Presiona **q** para detener la aplicación.

3. Configura el proceso de construcción nativo que usa un constructor contenerizado de Mandrel.
 - 3.1 Configura el proceso de construcción nativo para usar un constructor de imagen. Agrega la siguiente línea a `src/main/resources/application.properties`:

quarkus.native.container-build=true

3.2 Configura podman como el container runtime. Agrega la siguiente línea a el mismo `application.properties`:

```
quarkus.native.container-runtime = podman
```

4. Construye la aplicación como ejecutable nativo.
 - 4.1 Retorna a la terminal y ejecuta la fase maven package con el profile native.

```
[student@workstation develop-native]$ mvn package -Pnative
...output omitted...
[INFO] [io.quarkus.deployment.QuarkusAugmentor] Quarkus augmentation completed in
77157ms
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
...output omitted...
```

Este comando genera el ejecutable nativo en `target/expense-function-1.0.0-SNAPSHOT-runner`.

NOTA: El proceso de construcción nativo puede tardar varios minutos en completarse.

```
Terminal Local x + v

Produced artifacts:
/project/build-artifacts.json (build_info)
/project/demo-native-1.0.0-SNAPSHOT-runner (executable)
/project/demo-native-1.0.0-SNAPSHOT-runner-build-output-stats.json (build_info)
=====
Finished generating 'demo-native-1.0.0-SNAPSHOT-runner' in 3m 25s.
[INFO] [io.quarkus.deployment.pkg.steps.NativeImageBuildRunner] podman run --env LANG=C --rm -v /e/bcp/quarkus-bcp-2025/04-develop-native-start/expe
nse-function/target/demo-native-1.0.0-SNAPSHOT-native-image-source-jar:/project:z --entrypoint /bin/bash quay.io/quarkus/ubi-quarkus-mandrel-builder
-image:jdk-21 -c objcopy --strip-debug demo-native-1.0.0-SNAPSHOT-runner
[INFO] [io.quarkus.deployment.QuarkusAugmentor] Quarkus augmentation completed in 285239ms
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 05:04 min
[INFO] Finished at: 2025-09-05T01:45:34-05:00
[INFO] -----
PS E:\bcp\quarkus-bcp-2025\04-develop-native-start\expense-function> ]
```

5. Quarkus delega la compilación a Mandrel/GraalVM dentro del contenedor.
Este contenedor está basado en Linux (UBI = Universal Base Image de Red Hat).

Resultado → el binario que se genera (expense-function-1.0.0-SNAPSHOT-runner) es un ejecutable Linux ELF, no un .exe de Windows.

6. Si quieres crear un ejecutable de windows, tendrás que usar el GraalVM instalado en tu máquina ubicable en el PATH y poner a false la propiedad:

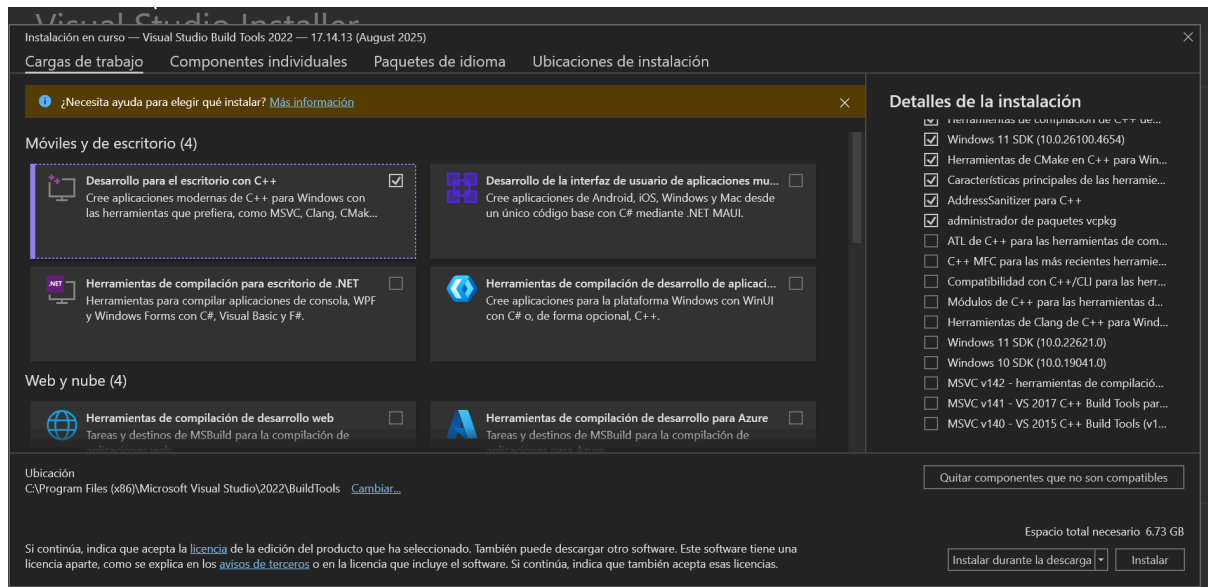
```
quarkus.native.container-build=false
```

NOTA: Si te sale este error, es porque te falta unos utilitarios de C++

Error: Failed to find '**vcvarsall.bat**' in a Visual Studio installation.
Please make sure that Visual Studio 2022 version 17.1.0 or later is installed on your system. You can download it at <https://visualstudio.microsoft.com/downloads/>. If this error persists, please try and run GraalVM Native Image in an x64 Native Tools Command Prompt or file a ticket.

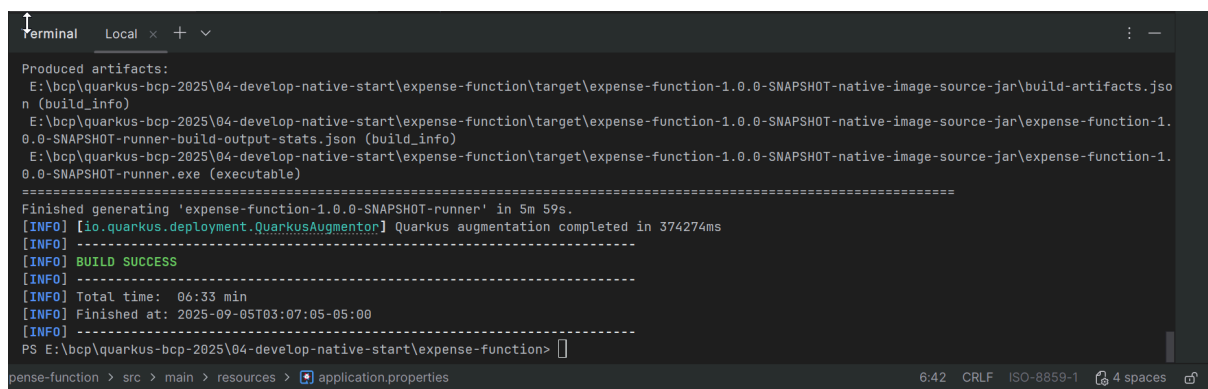
Bajate mejor: <https://visualstudio.microsoft.com/visual-cpp-build-tools>

Se necesita:



NOTA: Lo recomendable es **instalar la edición estable** (*Community* o *Build Tools*). Por ningún motivo instalen Preview. GraalVM no lo reconoce.

7. Ejecutar nuevamente: `mvn package -Pnative`.



8. Ejecuta el ejecutable nativo y verifica que la aplicación trabaja perfectamente.
- 8.1 Ejecuta la aplicación. El start up time debería ser dos veces más rápido que antes.

9.3 Retorna a la terminal y construye la aplicación con el profile native: **mvn package -Pnative**.

```
Terminal Local x
[INFO] [io.quarkus.container.image.jib.deployment.JibProcessor] Starting (local) container image build for native binary using jib.
[INFO] [io.quarkus.container.image.jib.deployment.JibProcessor] Using podman to run the native image builder
[WARNING] [io.quarkus.container.image.jib.deployment.JibProcessor] Base image 'quay.io/quarkus/quarkus-micro-image:2.0' does not use a specific image digest - build may not be reproducible
[INFO] [io.quarkus.container.image.jib.deployment.JibProcessor] Using base image with digest: sha256:7264f644de3c10c10c0aee373865a737f38fc5a8fd7e1ae07d007aa753030ff
[INFO] [io.quarkus.container.image.jib.deployment.JibProcessor] Container entrypoint set to [./application]
[INFO] [io.quarkus.container.image.jib.deployment.JibProcessor] Created container image josed/expense-function:1.0.0-SNAPSHOT (sha256:6d60bde875e03c41724e1d9ac52487148328b16f360af26a5fbd771c8a4d1f4)

[INFO] [io.quarkus.deployment.QuarkusAugmentor] Quarkus augmentation completed in 209410ms
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 03:46 min
[INFO] Finished at: 2025-09-05T03:19:42-05:00
[INFO] -----
PS E:\bcp\quarkus-bcp-2025\04-develop-native-start\expense-function>
```

9.4 Usar podman para ejecutar el contenedor nativo que has construido:

`podman run -p 8080:8080 --rm josed/expense-function:1.0.0-SNAPSHOT`

```
[INFO] [io.quarkus.deployment.QuarkusAugmentor] Quarkus augmentation completed in 209410ms
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 03:46 min
[INFO] Finished at: 2025-09-05T03:19:42-05:00
[INFO] -----
PS E:\bcp\quarkus-bcp-2025\04-develop-native-start\expense-function> podman run -p 8080:8080 --rm josed/expense-function:1.0.0-SNAPSHOT

--//--\////--\//--\//////--\
-////////--\//--\//////--\
--\--\--\////////////--\
2025-09-05 08:21:26,163 INFO [io.quarkus] (main) expense-function 1.0.0-SNAPSHOT native (powered by Quarkus 3.24.5) started in 0.054s. Listening on
: http://0.0.0.0:8080
2025-09-05 08:21:26,164 INFO [io.quarkus] (main) Profile prod activated.
2025-09-05 08:21:26,164 INFO [io.quarkus] (main) Installed features: [cdi, funqy-http, rest, smallrye-context-propagation, vertx]
[]
```

9.5 Verificar el endpoint: `curl http://localhost:8080/expenses`

```
[student@workstation develop-native]$ curl http://localhost:8080/expenses
[{"uuid":"e33d5ec9-bb45-4c14-b74e-edeb6667410b", "name":"example-
expense-1", "creationDate":"2022-10-17T12:42:20.145895",
  "paymentMethod":"CREDIT_CARD", "amount":83}, {"uuid":"ce606da2-
ac7b-4c6e-bc5e-0a6c1019943a", "name":"example-
expense-21", "creationDate":"2022-10-17T12:42:20.145896", "paymentMethod":"CASH",
  "amount":21}]
```

9.6 Termina el contenedor con CTRL+C.

Listo. Hemos terminado.



Enjoy!

Joe

enjoy!

Jose