

bellsoft



Liberica
Native Image Kit

Liberica Native Image Kit

GRAALVM-BASED UTILITY FOR NATIVE IMAGE GENERATION

JULY 2024



What is Liberica NIK?

[Liberica Native Image Kit](#) (NIK) is a tool that converts JVM-based applications into fully compiled native executables ahead of time under the closed-world assumption. The resulting file contains all the necessary statically linked native code, runtime library, application classes, and dependencies. Native images minimize static footprint and speed up application startup.

Based on GraalVM Community Edition and Liberica JDK 17, 21 and 22, Liberica NIK brings the following benefits to enterprise development:

- Small image size for building microcontainers
- Reduced memory usage
- Accelerated startup time (in 1/10 s)

The table below shows the comparative results of compiling a Spring-based application into a standard JAR file versus a native image using Debian and Alpaquita Linux.

REDUCED RESOURCE CONSUMPTION WITH LIBERICA NIK ON ALPAQUITA LINUX

CONTAINER + APPLICATION	CONTAINER SIZE	RSS	STARTUP TIME
Debian 9 + JDK 11 + JAR	240 MB	257 MB	1.75 sec
Debian 9 + native image	188 MB	77 MB	0.039 sec
Alpaquita 3.19 + native image	76 MB	71 MB	0.038 sec

COMPATIBILITY AND AVAILABLE VERSIONS:

- Supported system configurations: Linux x86_64 (glibc), Linux Alpine x86_64 (musl), Linux AArch64 (glibc), Linux Alpine AArch64 (musl), mac OS x86_64, mac OS AArch64, Windows x86_64
- Languages: Java, JavaScript, LLVM, Python, Ruby, R, WebAssembly, Node.js
- Current versions: Liberica NIK 23 & 24



Why Choose Liberica NIK?

LIBERICA NIK STANDS OUT DUE TO ITS COMMITMENT TO FIVE PILLARS OF HIGH-QUALITY PRODUCT DEVELOPMENT:

Up-to-date

Always built on the latest GraalVM CE and Liberica JDK versions, incorporating patches, fixes, and improvements



Secure

Follows a quarterly CPU release cycle with timely security fixes and new features to prevent zero-day vulnerabilities



Performant

Facilitates the development of multilingual services, optimizing startup time and reducing static footprint



Versatile

Supports a wide range of platforms, languages, and toolkits such as Swing, AWT, JavaFX



Supported

Backed by a major OpenJDK contributor and a member of the GraalVM advisory board

LIBERICA NIK IS RELEASED IN THREE FLAVORS TO PROVIDE ADDITIONAL FLEXIBILITY:

- **Full version:** includes LibericaFX based on OpenJFX.
- **Standard version:** supports plugins for using non-Java programming languages available for a chosen configuration
- **Core version:** contains Liberica VM and native image (derived from GraalVM) without support for language installables (Note: the core version was discontinued starting from NIK 24.)

Chosen for Spring Native

Spring Native is a version of the Spring framework with built-in support for compiling Spring Boot applications into native images. In addition to all the benefits of native images, such as faster startup times and reduced memory consumption, Spring Native allows introducing native image technology with minimal modifications to existing projects.

Liberica NIK is the default native-image compiler distribution used in Cloud Native Buildpacks provided by Spring.

Support Roadmap for Liberica NIK

Liberica NIK versions are supported for at least two years after their release. With a new version released annually, there is a one-year overlap during which two versions are supported simultaneously.

RELEASE	RELEASE YEAR	END OF COMMERCIAL SUPPORT
Liberica NIK 22	Mar 2022	May 2024
Liberica NIK 23	Mar 2023	May 2025
Liberica NIK 24	Mar 2024	May 2025

A part of Alpaquita Cloud Native Platform

[Alpaquita Cloud Native Platform](#) is a set of fundamental technologies for executing containerized Java services. It enables creating one of the smallest and most performant containers for Java applications. Liberica NIK is an integral component of this platform that turns applications into native images that are compatible with other components, including the key element [Alpaquita Linux](#).

For more information about BellSoft's offer for cloud-native Java, please refer to [the Alpaquita Cloud Native Platform page](#) on our Website.

Support of Liberica NIK

Like other BellSoft's products, Liberica NIK is free for commercial and production use, and is [available](#) on our website.

BellSoft offers support for Liberica NIK as a part of [commercial support](#) packages for Liberica JDK and Alpaquita Cloud Native Platform.

