

Datasheet

Fujitsu Software BS2000

JENV V17.0



BS2000 Environment for Java

Topics

Product characteristic

The Internet programming language Java™ and its corresponding runtime environment are having a significant impact on the whole of enterprise computing. The Java concept ("write once, run anywhere") allows applications to be run via networks of heterogeneous computer systems - embracing the most varied platforms and operating systems.

The BS2000 Environment for Java™ (JENV) enables BS2000 systems to run all Java programs created on any platform. Similarly, Java applications developed for BS2000 can also run on other platforms. Programs created with JENV V17.0 can be run on any platforms that have a JAVA-compatible runtime environment.

Product description

Fujitsu Software BS2000 JENV V17.0 is an implementation of "Java Platform, Standard Edition" (Java SE) on basis of OpenJDK 17 for the Fujitsu Software BS2000 operating system with the complete name "BS2000 Environment for Java™ V17.0".



JENV V17.0 contains a runtime environment (JRE) which conforms to the following relevant specifications:

- "The Java™ Language Specification, Java SE 17 Edition"
<https://docs.oracle.com/javase/specs/jls/se17/html/index.html>
- "The Java™ Virtual Machine Specification, Java SE 17 Edition"
<https://docs.oracle.com/javase/specs/jvms/se17/html/index.html>
- Version specific API Specification "Java™ Platform, Standard Edition & Java Development Kit Version 17 API Specification"
<https://docs.oracle.com/en/java/javase/17/docs/api/>

The components for running Java programs comprise:

- the Java runtime system (java, also referred to as the Java Virtual Machine, JVM) together with some utilities,
- a highly optimizing HotSpot® client VM

To deliver high performance on x86-based Server Units of BS2000 SE series, a variant optimized for this platforms has been provided. The HotSpot client VM contained in it generates x86 code directly.

The product also includes a development environment (JDK) providing a wide array of development tools. These can be used to develop applications or applets conforming to the above-mentioned API specification.

The implementation of JENV V17.0 is based on OpenJDK 17.

The components for developing java programs comprise:

- Java compiler (javac)
- Java debugger (jdb)
- The Java classes
- The program for Java archive files (jar) and other utility programs.

Functional description

The main functions of Java can be summarized as follows:

- Java programs are platform-independent and portable. As soon as the virtual machine (VM) is part of the operating system, Java applications can run immediately without recompilation.
- Java applications are secure, even when loaded off the internet. The virtual machine provides a separate runtime environment enabling integrated,

flexible, finely tunable control over access to the software and data.

- The Java syntax is simple. It is based on C++, but avoids the latter's complexity and potential error sources (memory leaks).
- Java supports the current object-oriented concepts such as classes, polymorphism, or simple inheritance.
- Java is very robust. Memory bottlenecks are avoided by automatic garbage collection, while runtime errors can be intercepted and dealt with by exception handling.
- Java programs are interpreted, thus enabling shorter development cycles.
- In JENV a Fujitsu in-house thread implementation is used.
- Large files (> 32GB) are also supported.
- JENV contains the package JRIO (Java Record I/O). A collection of Java classes enabling direct (native) access to files with a record- and/or block structure and supporting record- and/or page-oriented input/output to/from such files. These, of course, include in particular BS2000 DMS/DVS files.
- As of version V8.1 JENV contains the Java-COBOL-Interface (JCI).

Differences to OpenJDK 17

- The Serial Garbage Collector is used by default, instead of the G1 Garbage Collector.
- The HotSpot client VM is the only VM technology supported.

Important license information

- JENV V17.0 is Open-Source Software.
- All relevant license information can be found at: [JENV V17.0 License Information](#).

Technical Details

Requirements

Technical Requirements Hardware	BS2000 Business Server
Technical Requirements Software	Fujitsu Software BS2000 JENV V17.0 is included as part of the shipments of the BS2000 operating system OS DX as of V1.0. JENV V17.0 is thus delivered as part of the basic configuration of the operating system. For developing "Java native interfaces" (C or C++ code called by Java programs) you need a C/C++ compiler or and CRTE. For the components POSIX-BC, BLSSERV, CRTE-BASYS, C/C++ compiler..., correction levels as described in the Release Note are to be used.
User Requirements	Knowledge of BS2000

Installation

Operating Mode	Dialog or batch
Implementation Language	C++, C, Java and Assembler
User Interface	Alphanumeric or graphical
Installation	Please refer to the relevant release notices.

Documentation and Training

Documentation	The manuals for JENV are available on the manual server .
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Purchase and Delivery

Conditions	This software product is supplied to the customer under the conditions laid down in our system contract.
Order and Delivery	The software product may be obtained from your local Fujitsu regional office. JENV V17.0 is part of all shipments of the BS2000 operating system and is delivered free of charge automatically with SOLIS.

Fujitsu Platform Solutions

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