

Datasheet

FUJITSU Software BeanConnect™ V7.0

Connection of Java™ EE Application Servers with openUTM and CICS

BeanConnect™

BeanConnect™ connects applications based on Java™ EE application servers with applications of the Fujitsu TP monitor openUTM or the CICS Transaction Server from IBM in accordance with the Java EE Connector Architecture (JCA). New applications which are based on the Java EE technology can thus be integrated into an existing IT environment using Java resources.

In addition the BeanConnect product component openUTM-JConnect includes Java classes for access to openUTM from any Java program.

New in BeanConnect™ V7.0

■ Running on Linux systems as a service

On Linux systems, starting a BeanConnect proxy container can be set up as a service. BeanConnect components as a service use the systemd technique.

■ Management Console

The length of the UTM BCAM trace can be controlled via the Management Console.

■ Security

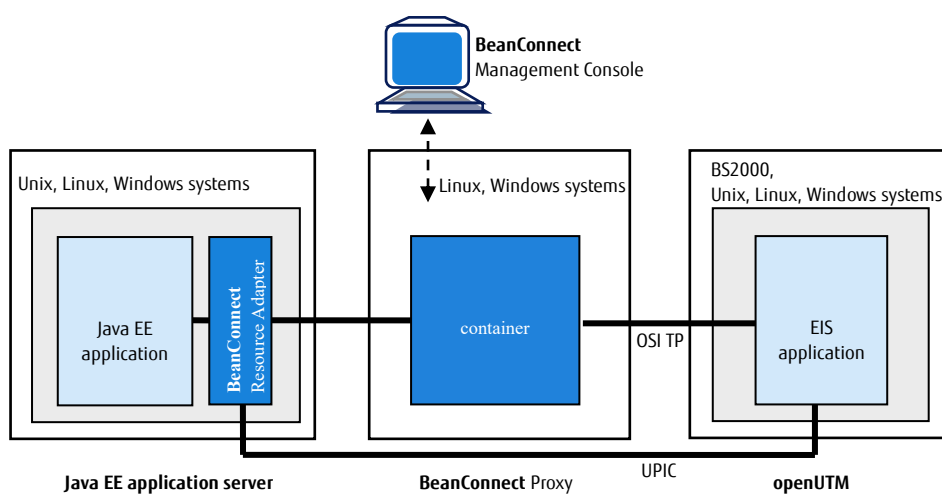
In JConnect, encrypted communication with UTM applications can additionally be performed with ENCRYPTION-LEVEL=5.

■ Java Environment

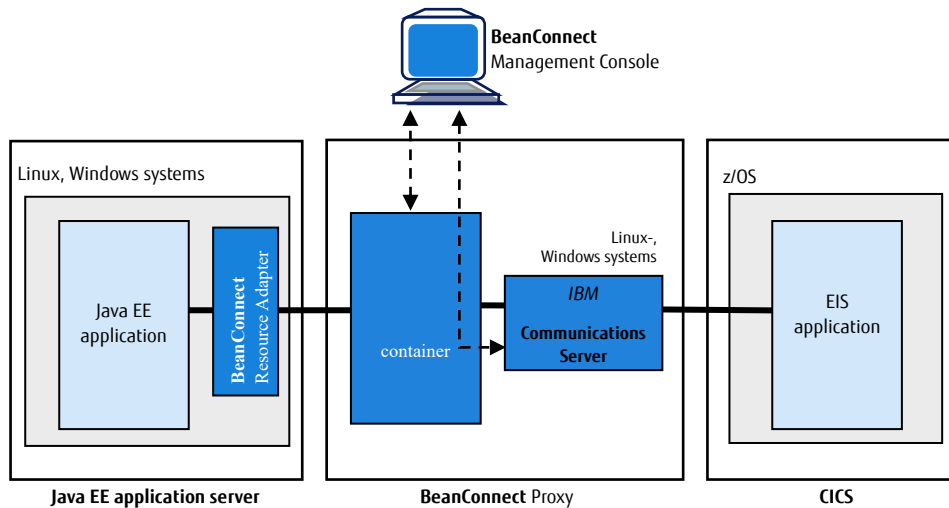
The BeanConnect components can run in both an Oracle Java 8 and an OpenJDK 8 environment.

■ Installation improvements

The installations on Linux and Windows systems have been simplified in terms of handling and SW requirements.



Architecture of BeanConnect connecting an UTM application



Architecture of BeanConnect connecting a CICS application

Features and benefits

Main feature	Benefit
<p>JCA V1.6 conformable adapter</p> <ul style="list-style-type: none"> ■ Usage of Java Platform, Enterprise Edition (Java EE) ■ Support of outbound and inbound communication directions 	<ul style="list-style-type: none"> ■ Integration of existing Enterprise Information Systems (EIS) Connectivity of UTM and CICS applications as EIS ■ Use of as well outbound communication as inbound communication with or without transaction security
<p>Interfaces and protocols</p> <ul style="list-style-type: none"> ■ Providing of „contracts“ committed by Java EE between AS and EIS ■ Support of defined and own interfaces for EIS access ■ Support of different communication protocols 	
<p>JConnect</p> <ul style="list-style-type: none"> ■ Providing of Java classes ■ Support of UPIC protocol 	<ul style="list-style-type: none"> ■ Ensured system level mechanisms as transactions, security, connection pooling ■ Significant reduction of implementation effort ■ Communication with either UTM or CICS applications
<p>Executability with different application servers</p> <ul style="list-style-type: none"> ■ Release in combination with Application Servers ■ Interoperability Check for JCA conformable Application Servers 	<ul style="list-style-type: none"> ■ Access to UTM server applications by any application written in Java ■ Availability of all UPIC functions and additionally SSL security functions
	<ul style="list-style-type: none"> ■ Direct usage in released configurations ■ Warranty of executability in customer configurations

Topics

JCA V1.6 conformable, bidirectional adapter with transaction security

The Java EE Connector Architecture (JCA) is part of the Java platform, Enterprise Edition (Java EE). Based on this architecture user can write new applications using Java EE technology capabilities and can also encapsulate existing Enterprise Information Systems (EIS) with Enterprise JavaBeans or JavaServer Page technologies. BeanConnect implements the connection of UTM and CICS applications as EIS systems. BeanConnect supports JCA V1.6 as well which are parts of Java EE 8.

BeanConnect supports a variety of communication paradigms:

It enables outbound communication, i.e. communication is initiated by the application on the application server, and inbound communication, i.e. communication is initiated by the EIS application. The communication can be transactional or non-transactional and can be executed dialog based as well as asynchronously.

Components

BeanConnect consists of the following components:

- BeanConnect Resource Adapter,
- BeanConnect Proxy,
- BeanConnect Management Console.
- BeanConnect Tools
- openUTM JConnect

The **BeanConnect Resource Adapter** makes the JCA interface available to the user. It is embedded (deployed) in the Java EE application server.

The **BeanConnect Proxy** represents the transactional connection between the resource adapter within the application server on the one side and the EIS application on the other side.

BeanConnect Proxy includes a proxy container based on the transaction monitor openUTM. For the CICS connection, the software gateway openUTM-LU62 for the support of the LU6.2 protocol, and for the realization of the SNA stack IBM's Communications Server (for Linux

and Windows systems) are additionally required. In contrast to openUTM-LU62, this product is not included in the scope of delivery of BeanConnect and must be obtained separately if a connection to CICS is required.

The **BeanConnect Management Console** offers a GUI and a Command Line Interface for configuring and administering of BeanConnect.

BeanConnect doesn't contain components which have to run on the EIS platform itself.

The **BeanConnect Tools** are tools which you require in many BeanConnect applications. They include Cobol2Java and the MC-CmdHandler.

BeanConnect Interfaces and protocols

BeanConnect collaborates with the Java EE application server to provide system level mechanisms, the transactions, security and connection pooling mechanisms. For this JCA defines certain system contracts between application server and EIS whereas BeanConnect embodies the EIS part.

Contracts for outbound communication:

- Connection Management
- Transaction Management
- Security Management

Contracts for inbound communication:

- Transaction Inflow
- Message Inflow
- Security Work Context

Contracts for the resource adapter lifecycle management and thread management:

- Lifecycle Management
- Work Management
- Generic Work Context

Common Client Interface

The Java EE Connector Architecture defines a Common Client Interface (CCI) for EIS access. The CCI defines a standard API for application components. BeanConnect supports the CCI

and offers an additional interface which clearly decreases the programming effort. For communication to the UTM application the following protocols are used:

Outbound communication:

- OSI TP protocol for distributed transactions
- UPIC protocol (a proprietary protocol for clients of UTM applications).

Inbound communication:

- OSI TP protocol for distributed transactions
- UPIC protocol
- Transport protocols such as the UTM socket protocol and the RFC1006 protocol.

For communication to the CICS application the communication protocol LU6.2 is used.

BeanConnect supports CICS application programs which correspond to IBM's Distributed Transaction Programming (DTP) paradigm. To connect CICS application programs which use DPL (Distributed Program Link) a program example is offered. For detailed information on connecting CICS applications and programming CICS programs please view the BeanConnect handbook.

openUTM JConnect: Java classes for access to openUTM

openUTM JConnect includes Java classes for any applications written in Java for access to UTM server applications. openUTM JConnect is part of BeanConnect. openUTM JConnect supports all functions of the UPIC protocol and allows additionally the plug in of SSL security functions.

License structure of the product

- CPU licenses are assigned per core¹ on which the Java EE application server with the BeanConnect Resource Adapter is running. CPU licensing allows any number of users (end user, developers, testers).
- If openUTM JConnect is used, the licenses per core¹ running the Java applications are assigned.
- The cores¹ of single-core processors are counted by a factor of 1.0, the cores¹ of multi-core processors are counted by a factor of 0.5. Virtual cores¹ correspond to the number of CPUs assigned to the virtual machine.
- Licenses for developers and testers² are assigned per user (developer or tester) for a system without CPU licensing.
- For use of BeanConnect with communication to an UTM application and for a communication to a CICS application the BeanConnect licenses have to be ordered separately.
- The software is delivered on DVD.
- The documentation is available via Internet.

Using BeanConnect with Java EE application servers

BeanConnect is released and maintained in conjunction with JCA V1.6 compliant application servers.

The interoperability with the requested Java EE application server can be assured with the following additional service packs:

- BeanConnect AS Interoperability Check
- BeanConnect AS Interoperability Service.

The service packs are described in separate datasheets. "BeanConnect AS Interoperability Check" contains an initial test to secure the interoperability between BeanConnect and the required application server and to fulfil the proprietary properties of the application server. "BeanConnect AS Interoperability Service" is a one-year-service-package to complement the standard service of BeanConnect for the use of BeanConnect with the requested Java EE application server.

¹ Different licenses for processor cores and virtualized cores.

² Different licenses for use in a VM.

Technical details

Requirements

Technical requirements Hardware

The hardware which is compatible to the operating system versions listed below is supported. The BeanConnect components Resource Adapter, Proxy, Management Console and the BeanConnect Tools may run on one system or may be distributed to more systems. The functionality of BeanConnect remains unchanged when different operating systems or operating system versions are coupled.

Resources required:

CPU for BeanConnect Proxy: at least 450 MHz; recommended at least 1 GHz.
For resource requirements see release notice.

Technical requirements Software

The components BeanConnect Resource Adapter and BeanConnect Tools are available for the following operating systems:

- Linux(SuSE) 64 Bit as of SLES 11.4
- Linux(RedHat) 64 Bit as of RHEL 7.2
- Windows 64 Bit as of Windows 10
- Windows Server 64 Bit as of Windows Server 2016
- other platforms on request.

Note: For outbound communication with the UPIC protocol the BeanConnect Proxy and the BeanConnect Management Console are not needed.

The components BeanConnect Proxy and BeanConnect Management Console are available for the following operating systems:

- Linux(SuSE) 64 Bit as of SLES 11.4
- Linux(RedHat) 64 Bit as of RHEL 7.2
- Windows 64 Bit as of Windows 10
- Windows Server 64 Bit as of Windows Server 2016
- other platforms on request.

BeanConnect V7.0 requires JDK 1.8.0.

BeanConnect V7.0 supports all application servers. The configuration must be verified by means of an interoperability check.

The BeanConnect Proxy also requires:

PCMX:

The necessary PCMX versions

- PCMX(Linux x86) 6.0B30
- PCMX(Windows) 5.0B20

are included on the DVD and must be installed.

They may only be used with the Proxy application of BeanConnect V7.0.

openUTM:

A required openUTM version for use with BeanConnect Proxy is included on the DVD and must be installed. It may only be used with the Proxy application of BeanConnect V7.0.

openUTM-LU62 Gateway:

An appropriate openUTM-LU62 version for use with BeanConnect Proxy is included on the DVD and must be installed. It may only be used with BeanConnect V7.0.

The BeanConnect Management Console also needs:

Jython:

If you want to use the command line interface of the management console, you must provide the product Jython. Link for Download:

<http://www.jython.org/download>.

Cobol2Java additionally needs:

Cobol2XML: The software prerequisites of Cobol2000 V1.5 apply for the BS2000 tool Cobol2XML which is included in scope of delivery. For details see the Release Notice of Cobol2000 V1.5.

Enterprise Information System (EIS) openUTM:

- openUTM as of V6.5 (all platforms)
- Under BS2000 openUTM-D is also required for transactional communication.
- openUTM Client (UPIC) from V6.5, on all platforms

Enterprise Information System (EIS) CICS:

CICS on z/OS: z/OS as of V1.9
 CICS as of V3.2

Additional required software for interconnection with CICS:

- Linux:
 IBM Communications Server for Linux, as of V6.2
- Windows:
 IBM Communications Server for Windows, as of V6.4

Note: The Communications Server is not part of the BeanConnect V7.0 delivery.

The following connection options are also supported:

Enterprise Extender and Ethernet (LLC2).

openUTM JConnect V7.0:

openUTM JConnect is available for the following operating systems:

- | | | | |
|---|----------------|--------|---------------------------|
| - | Linux(SuSE) | 64 Bit | SLES 11.4 or higher |
| - | Linux(RedHat) | 64 Bit | RHEL 7.2 or higher |
| - | Windows | 64 Bit | as of Windows 10 |
| - | Windows Server | 64 Bit | as of Windows Server 2016 |

openUTM-JConnect requires JDK 1.8.0

Demands on the user

General Knowledge of Unix /Linux /Windows Operating Systems to produce application programs
 Knowledge of NFS in case of cluster processing
 Knowledge of KDCS /XATMI /CPI-C /TX interfaces
 Knowledge of Data Base Systems
 Knowledge of the programming language Java and general knowledge of Java EE application server

Installation and operation

Implementation language

Java and C

User interface

English, German, custom

Installation

By the users themselves using the description in the manual

Documentation and Training

Documentation

The documentation is available online at <https://bs2manuals.ts.fujitsu.com/index>

Training

Courses on the programming language Java and on Java EE application servers are recommended. Workshops about BeanConnect are offered by Fujitsu, see <http://training.ts.fujitsu.com>

Purchasing

Ordering and delivery

The software product can be obtained from your local Fujitsu Technology Solutions GmbH regional office.

More information

Fujitsu OPTIMIZATION Services

In addition to FUJITSU Software BeanConnect, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as a Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Products

<https://www.fujitsu.com/emeia>

- Client Computing Devices
- Integrated Systems
- Storage Lösungen
- Server
- BS2000 Mainframes

Software Products

<https://www.fujitsu.com/emeia/products/software/index.html>

- Software Infrastructure Manager (ISM)
- Software ServerView Suite

More information

Learn more about FUJITSU Software BeanConnect, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.

<http://www.fujitsu.com/emeia/openseas>

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at: <http://www.fujitsu.com/emeia/about/fts/environment-care>



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