

Datasheet

FUJITSU Software BeanConnect™ V3.0

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.

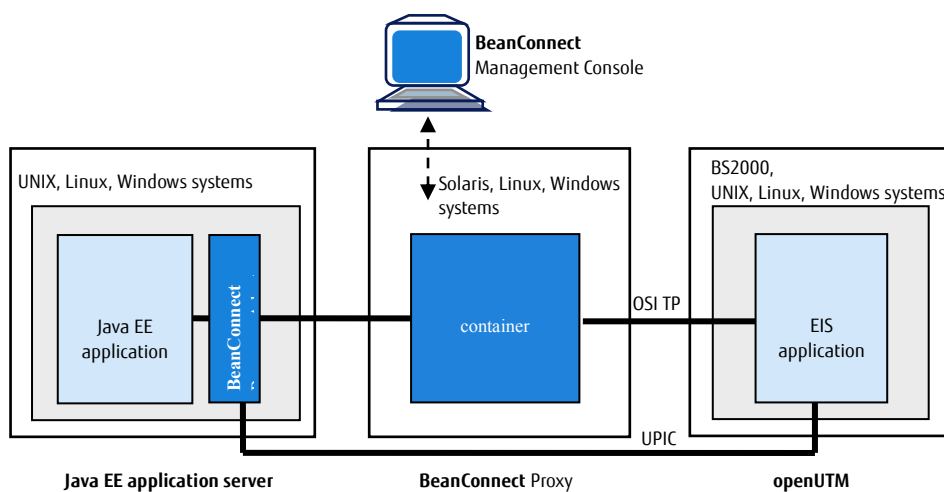
In addition the BeanConnect product component openUTM-JConnect includes Java classes for access to openUTM from any Java program.

New in BeanConnect™ V3.0A

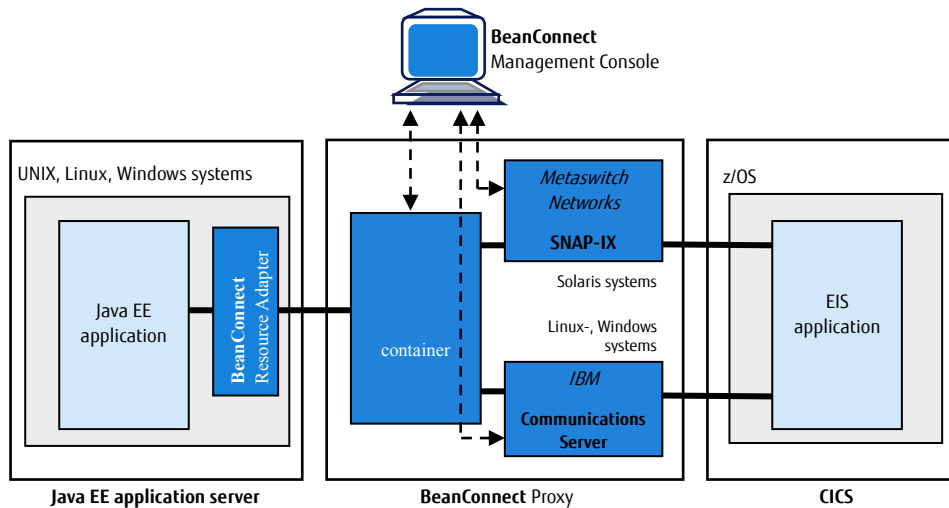
- **JCA 1.6**
BeanConnect V3.0 cooperates with application servers, which provide the support of specification JCA 1.5 or JCA 1.6.
- **Command Line Interface (CLI)**
In addition to graphical administration, administration via scripts is possible with BeanConnect V3.0A. Jython is used as the script language.
- **Support of UTM-Cluster applications**
BeanConnect supports the communication with UTM-Cluster applications. A load balancer is provided for outbound communication to a UTM-Cluster application as well as for communication to a UTM-Cluster application via openUTM-JConnect.

New in BeanConnect™ V3.0B

- **Command Line Interface for CICS connection**
As of V3.0B administration for EIS of type CICS is available via CLI, too.
- **Recording of Management Console GUI**
All actions taken via GUI of Management Console – except those to CICS EIS applications – can be recorded. These scripts can either be used as logging of the actions or as a possibility to run recorded actions offline.
- **Support of “long” computer names**
Computers with names longer than eight characters can be addressed “out of the box” without additional actions, too.



Architecture of BeanConnect connecting an openUTM 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 openUTM 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 openUTM or CICS applications
<p>Executability with different application servers</p> <ul style="list-style-type: none"> ■ Release in combination with Oracle's Application Servers ■ Interoperability Check for different JCA conformable Application Servers 	<ul style="list-style-type: none"> ■ Access to openUTM 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 non standard 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 openUTM and CICS applications as EIS systems.

BeanConnect uses The JCA V1.6, which is part of the Java EE 7, as well as the JCA V1.5.

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 hand and the EIS application on the other hand.

BeanConnect Proxy includes a proxy container based on the transaction monitor openUTM. For the connection to CICS the proxy includes a software gateway to support the protocol LU6.2. For implementation of a SNA stack

Metaswitch Networks' SNAP-IX (for Solaris systems) or IBM's Communications Server (for Windows and Linux systems) are needed.

These two products are not part of BeanConnect and have to be ordered 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 openUTM application the following protocols are used:

Outbound communication:

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

Inbound communication:

- OSI TP protocol for distributed transactions
- UPIC protocol
- Transport protocols such as the openUTM 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 openUTM 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 processor core 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 processor core running the Java applications are assigned.
- The cores of single-core processors are counted by a factor of 1.0, the cores of multi-core processors are counted by a factor of 0.5.
- Licenses for developers and testers are assigned per user (developer or tester) for a system without CPU licensing.
- For use of BeanConnect with communication to an openUTM application and for a communication to a CICS application the BeanConnect licenses have to be ordered separately.
- The software and documentation are delivered on DVD.

Using BeanConnect with Oracle's application servers and other Java EE application servers.

BeanConnect is only released and maintained in connection with Oracle's application servers. For other Java EE application servers the product can be used as well if they are JCA V1.5 or JCA V1.6 conformable. 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.

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:

- Solaris SPARC 32/64 Bit as of V10
- Linux(SuSE) 32/64 Bit as of SLES 11
- Linux(RedHat) 32/64 Bit as of RHEL 6
- HP-UX 32/64 Bit as of V11.31
- IBM-AIX 32/64 Bit as of V6.1

- Windows 7 / Server 2008 R2
- Windows 8.1 / Server 2012

Note: On Windows systems, supporting 64 Bit, the BeanConnect Resource Adapter may be used in 64 Bit mode.

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:

- Solaris SPARC 32/64 Bit as of V10
- Linux(SuSE) 32/64 Bit as of SLES 11
- Linux(RedHat) 32/64 Bit as of RHEL 6
- Windows 7 / Server 2008 R2 (32bit)
- Windows 8.1 / Server 2012 (32bit)

BeanConnect V3.0 requires JDK 1.7.0 or higher.

BeanConnect V3.0 supports the following application servers:

- Oracle™ WebLogic Server 12c; JCA 1.6 and JCA 1.5 are optional possible
- Oracle AS /OC4J as of 10.1.3.3 (JCA 1.5)

The following application servers require the BeanConnect service packs, which have to be ordered additionally

AS Interoperability Check and BeanConnect AS Interoperability

Service:

- IBM WebSphere AS as of V8.x
- RedHat JBoss EAP 6
- SUN Glassfish as of V3

The BeanConnect Proxy also requires:

PCMX:

The necessary PCMX versions

- PCMX(Solaris) 6.0B00
- PCMX(Linux x86) 6.0B00
- PCMX(Windows) 5.0A80

are included on the DVD and must be installed.

They may only be used with the Proxy application of BeanConnect V3.0.

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 V3.0.

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 V3.0.

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/downloads.html> .

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 (BS2000) as of V6.0
- openUTM (Solaris, Linux and Windows systems) as of V5.3
- Under BS2000 openUTM-D is also required for transactional communication.
- openUTM Client (UPIC) from V5.3, on all platforms (32 and 64 Bit)

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:

- Solaris: SNAP-IX, V7.0.2.4 or higher, from Metaswitch Networks Ltd.
- Linux: IBM Communications Server for Linux, V6.2 or higher
- Windows: IBM Communications Server for Windows, V6.4 or higher

Note: SNAP-IX and the communications server are not part of the BeanConnect V3.0 delivery.

The following connection options are also supported:

Enterprise Extender and Ethernet (LLC2).

openUTM JConnect V3.0:

openUTM JConnect is available for the following operating systems:

- Solaris SPARC 32/64 Bit V10 or higher

- Linux(SuSE) 32/64 Bit SLES 11 or higher
- Linux(RedHat) 32/64 Bit RHEL 6 or higher
- Windows 7 / Server 2008 R2
- Windows 8.1 / Server 2012

openUTM-JConnect requires JDK 1.7.0 or higher

Demands on the user	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
Installation	By the users themselves using the description in the manual
Documentation and Training	
Documentation	The documentation is available online at http://manuals.ts.fujitsu.com
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	This software product may be obtained from your local Fujitsu 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.

Computing products

www.fujitsu.com/global/services/computing/

- PRIMERGY: Industrial standard server
- SPARC Enterprise: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system
- BS2000 Mainframes

Software

www.fujitsu.com/software/

- Interstage: Application infrastructure software
- Systemwalker: System management software

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/fts/products/software/middleware/openseas-oracle/>

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: www.fujitsu.com/global/about/environment/



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