FUJITSU Software BeanConnect™

Version 3.0
*1   October 2015

Release Notice

1 General

This is the Release Notice for the product BeanConnect™ V3.0.

BeanConnect is a standardized adapter implementation in accordance with JCA1.5/1.6 (Java Connector Architecture), which allows data to be exchanged between Java™ EE application servers, such as the Oracle™ WebLogic server and EIS systems (Enterprise Information System).
BeanConnect implements the connection of openUTM-(Cluster) applications and CICS applications as EIS systems.
BeanConnect supports a variety of communication paradigms. It permits outbound communication, i.e. where communication is initiated by the application server and inbound communication, i.e. the communication is initiated by an EIS application. In addition an inbound communication initiated by UPIC, Socket or RFC1006 Clients is possible.

Communication can be transactional and non-transactional.

With outbound communication with openUTM applications, two connection options are available:
- Connection via the OSI TP protocol
- Connection via the UPIC protocol

Several connection options are available with inbound communication:
- Connection via the OSI TP protocol
- Connection via the UTM socket protocol
- Connection via the RFC1006 protocol
- Connection via the UPIC protocol, with a UPIC client

Communication to the CICS application, for outbound and inbound communication, is via the LU6.2 protocol.

*1   **BeanConnect V3.0 consists of the following components:**

- BeanConnect Resource Adapter:
  This component provides the JCA interface for the user. It is deployed in the application server and runs as part of the application server.

- BeanConnect Proxy:
  This component is implemented on the basis of openUTM – the Universal Transaction Monitor from Fujitsu Technology Solutions.
  It establishes the transactional connection between the Resource Adapter in the application server on the one side and the openUTM application or CICS application on the other side.
  With connections to CICS applications, the LU62-Stack is provided via the openUTM-LU62 Gateway.

- BeanConnect Management Console:
  This component is the Java GUI and a Command Line Interface for the configuration and administration of the BeanConnect Proxy.

- BeanConnect Tools:
  Cobol2Java supports and simplifies the communication of BeanConnect Clients with BS2000/OSD*)-Cobol applications

  Management Console Command Handler (MCCmdHandler) helps the management console to manage other components (e.g. openUTM-LU62 gateways, communication services, proxies), which are not running on the same processor as the management console.

Note: The outbound communication with protocol UPIC only requires the Resource Adapter component. The BeanConnect proxy and the BeanConnect Management Console are not required.

*1   The Java classes FUJITSU Software openUTM-JConnect V3.0 is an additional part of the BeanConnect
*1   V3.0 delivery and is used to access openUTM server applications on the basis of the UPIC protocol.
*1   A separate release notice is available for openUTM-JConnect V3.0.

BeanConnect is part of the comprehensive middleware suite openSEAS. The openSEAS middleware suite enables the simple integration of individual applications and the interaction of existing and new applications. openSEAS perfectly complements the Fusion middleware of our strategic partner Oracle. Oracle Fusion middleware is a market-leading family of pre-integrated products, which ranges from application infrastructure and development applications through to business intelligence.

Together this provides the platform for:
- Individual business-critical IT solutions
- Company portals
- Integration solutions for service-oriented architecture
- Web applications and portals
- Business processes

More information about the listed products and the data sheets is available under:
http://de.ts.fujitsu.com/BeanConnect

This Release Notice is a summary of the major extensions, dependencies and operating information
*1   with respect to BeanConnect V3.0B and all the information necessary for migrating from the predecessor version BeanConnect V2.1A.
The Release Notice is supplied as a readme file. Subsequent changes will be updated in this file.

*1   The content corresponds to release status V3.0B of October 2015.

*1   Changes to release level September 2013 are marked with *1.

If one or more predecessor versions are skipped when this current product version is in use, it may be necessary to also take account of the information from the release notices (i.e. readme files) of the predecessor versions.

All Unix, Linux and Windows product release notices including this one are available on the Internet under the following URL:
http://manuals.ts.fujitsu.com

The use of name, trademark, etc. in this release notice does not entitle readers to assume that these names/designations may be used without restriction by anyone; often the names/designations are protected by law or contract, even if this is not indicated here.

1.1 Ordering

*1   BeanConnect V3.0B can be ordered from your local Sales.

*1   For BeanConnect V3.0B the general Software license conditions of Fujitsu and the general conditions for Hardware and Software Support Services of Fujitsu are effective.

The product consists of:
- Licenses
- Data volume with software
- Manual

1.1.1   Licenses

- Two licenses exist for BeanConnect V3.0.
  The BeanConnect V3.0 for openUTM license entitles you to communicate with openUTM applications.
  The BeanConnect V3.0 for CICS license entitles you to communicate with CICS applications.
  Both licenses must be available for communication with both EIS partners.
  More information about licensing rights can be seen in the data sheet. The data sheet is available in the Internet.
  http://de.ts.fujitsu.com/products/software/openseas/beanconnect.html

- PCMX:
  PCMX is supplied with BeanConnect V3.0B. The PCMX supplied with BeanConnect V3.0B may only be used together with BeanConnect V3.0B and is only license-free for this use.

- openUTM:
  openUTM software is supplied with BeanConnect V3.0B. It is used as a process carrier in the BeanConnect proxy and is only license-free for this use.

- openUTM-LU62:
  openUTM-LU62 is supplied with BeanConnect V3.0B. The openUTM-LU62 V5.1 supplied with BeanConnect V3.0B may only be used together with BeanConnect V3.0B and is only license-free for this use.

1.2 Delivery

The Software is supplied on DVD.
The following manual is also supplied on DVD:

*1   BeanConnect V3.0B

1.3   Documentation

*1   The manual for BeanConnect V3.0B is available under http://manuals.ts.fujitsu.com.

*1   After installation of the BeanConnect Resource Adapter, java documentation is available in the JavaDoc directory of the BeanConnect Resource Adapter (see manual „BeanConnect V3.0B", chapter „Installing BeanConnect").

The BeanConnect Management Console include an online help system.

*1   After Installation of the BeanConnect Management Console, java documentation for the Command Line Interface is available in the JavaDoc directory of the BeanConnect Management Console (see manual „BeanConnect V3.0B", chapter „Structure of the BeanConnect documentation").

2   Software extentions

2.1   New functions in BeanConnect V3.0A

Resource Adapter

- JCA 1.6
  BeanConnect V3.0A can work together with application servers, which provide support for the specification JCA 1.5 or JCA 1.6. Two versions of the resource adapter are supplied with BeanConnect V3.0A. As standard, the BeanConnect Resource Adapter can be used for application servers that provide support for JCA 1.6 (e.g. Oracle™ WebLogic Server).
  A separate BeanConnect Resource Adapter is supplied for application servers that only provide support for JCA1.5. Details of this are described in section "Installation of the BeanConnect Resource Adapter" in the BeanConnect manual.
- Load distributor functionality
  Use of the JConnect load distributor functionality in the JUPIC-RA for outbound communication with an openUTM-Cluster application

Management Console

- 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.
- UTM Cluster as an EIS Partner
  It is possible to configure a UTM-Cluster application as an EIS partner, both for inbound and outbound communication.
- Generating EIS Partners
  Proxies can be configured with various APTs, thus enabling each proxy to receive an own application process title (APT) when coupling a UTM application with several proxies.
- EIS Partners in the Properties Dialog of an Outbound Communication Endpoint
  It is now possible to make direct changes to the EIS partner in the properties dialog of the outbound communication endpoint.

MCCmdHandler

- Windows, Activation of the MCCmdHandler Server Port
  Since problems can occur when running the BeanConnect MCCmdHandler if the Windows firewall is enabled, it is now possible to activate the MCCmdHandler server port during installation.
- Windows, Service Monitoring
  A message box is output when monitoring the service for impermissible messages.

2.2 New functions in BeanConnect V3.0B

Management Console

- Command Line Interface (CLI) for CICS Partner
  As of BeanConnect V3.0B administration for EIS applications of type CICS is available via CLI, too. Jython is used as the script language.
- 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 use the recorded actions for the administration without GUI by Command Line Interface.
- Support of „long" computer names
  BeanConnect supports the hostname mapping for computer names longer than eight characters. This applies to the computer name of a proxy – during the installation – as well as for the name to the computer name of an EIS application – when the EIS application is registered.

2.3 Implemented Change Requests

*1 Folgende Change Requests wurden mit BeanConnect V3.0A umgesetzt:

*1 A0508016   Connection termination during pooling
*1 A0595383   change of an EIS partner in the property dialog of an outbound communication endpoint

*1 The following Change Requests have been implemented with BeanConnect V3.0B:
*1   -   Support of Computer names longer than 8 characters

3 Technical information

3.1 Resource requirements

Disk storage requirements :
BeanConnect Resource Adapter: archive   about 12 MB
                                                 extracted   about 16 MB

BeanConnect system: Solaris   : about 33 MB
                                                 Linux   : about 28 MB
                                                 Windows : about 19 MB

BeanConnect Container :   Solaris   : about 60 MB
                                                 Linux   : about 59 MB
*1   Windows : about 59 MB

BeanConnect Management Console:
*1   Solaris   : about 800 KB
*1   Linux   : about 800 KB
*1   Windows : about 1,2 MB

Tools:
*1   Cobol2Java   : archive   about 5 MB
*1   extracted   about 10 MB

          MCCmdHandler   : archive   about 6 MB
                                                 extracted   about 7 MB

*1   openUTM   : Solaris   : about 700 MB
*1   Linux   : about 250 MB
                                                 Windows : about 100 MB

      openUTM-LU62   :   Solaris   : about 11 MB
                                                 Linux   : about 6 MB
                                                 Windows : about 6 MB

3.2 SW configuration

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

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

          Windows 7 / Server 2008 R2
*1   Windows 8.1 / Server 2012
          Note: on Windows systems, supporting 64 Bit, the BeanConnect Resource Adapter
                  can be executed in 64 Bit mode also

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

          Solaris SPARC   32/64 Bit   as of V10
*1   Linux(SuSE)   32/64 Bit   as of SLES 11
*1   Linux(RedHat)   32/64 Bit   as of RHEL 6

Windows 7 / Server 2008 R2
*1   Windows 8.1 / Server 2012
*1   Note: on Windows systems, supporting 64 Bit, the BeanConnect Resource Adapter
*1   can be executed in 64 Bit mode also.
*1   On Windows systems, supporting 64 Bit, the BeanConnect Proxy can only be executed in
*1   32 Bit mode with 32 Bit mode jdk.

The BeanConnect components can be operated on the same processor or run on different processors. For the functionality of BeanConnect it is irrelevant which coupling of operating systems or operating system versions is used.

*1   BeanConnect V3.0B requires JDK 1.7.0 or higher.

*1   BeanConnect V3.0B supports the following application server:

  - Oracle™ WebLogic Server 12c
  - 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:
*1   - IBM WebSphere AS as of V8.x
         - RedHat JBoss EAP 6
         - SUN Glassfish V3

The BeanConnect Proxy also requires:

PCMX   : The necessary PCMX versions
                 - PCMX(Solaris)   6.0B00
                 - PCMX(Linux)   6.0B00
*1   - PCMX(Windows)   5.0A80
                 are included on the DVD and must be installed.
*1   They may only be used with the Proxy application of BeanConnect V3.0B.

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 V3.0B.

openUTM-LU62 Gateway:
                 An appropriate openUTM-LU62 version for use with BeanConnect Proxy is included on
                 the DVD and must be installed.
*1   It may only be used with BeanConnect V3.0B.

Hint:
When running a BeanConnect Proxy a 32 bit C run time environment is mandatory.
This also applies when the BeanConnect Proxy runs in 64 bit mode!
On purely Linux 64 bit systems the 32 bit variant of the C standard library e.g. glibc-2.12-1.107.el6_4.4.i686 and the thereof dependent rpm packages must be installed.

The BeanConnect Management Console also needs:
Jython: If you want to use the command line interface of the management console,
                 you must then provide the product Jython.
                 (see also section 3.3.5)

Cobol2Java also needs:
Cobol2XML: The software prerequisites of Cobol2000 V1.5 apply for the BS2000 tool
                 Cobol2XML - included in scope of delivery. For details see the
                 Release Notice of Cobol2000 V1.5.

Enterprise Information System (EIS) openUTM:
- *1 - openUTM(Unix, Linux and Windows Systems)(32 and 64 Bit)   as of V5.3
- *1 - openUTM(BS2000)   as of V6.0
     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 Data Connection Ltd.

   - Linux   : IBM Communications Server for Linux, V6.2 or higher

   - Windows : IBM Communications Server for Windows, V6.1.2 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).

A series of products from other manufacturers are delivered free-of-charge. The products are required to operate BeanConnect V3.0. A comprehensive list of these products is included in the file „ThirdPartyLicenseReadme.txt" in the subdirectory docs/licenses (Solaris/Linux systems) respectively Docs\licenses (Windows systems) of the BeanConnect installation directory. Please note the corresponding licenses files, which is provided in this directory as well.

3.3   Product installation

*1   Comprehensive information about the installation of BeanConnect V3.0B is available in the manual
*1   „BeanConnect V3.0B", chapter „Installing BeanConnect".

3.3.1   Update installation

The prerequisite for an update installation is that the proxy and the management console are runnable
*1   with the BeanConnect V2.1A installation or the BeanConnect V3.0A installation and that the proxy container was terminated normally.

3.3.2   Kernel tuning

For operation of the BeanConnect Proxy, it may become necessary to increase several UNIX kernel parameters.

   - Changing the kernel parameters under Solaris:
     The values can be modified by making entries in /etc/system. A reboot is required after changes have been completed.

     Recommended values for the respective parameters:
     set shmsys:shminfo_shmmax=0x10000000
     set shmsys:shminfo_shmseg=32
     set semsys:shminfo_shmmapx=64
     set semsys:shminfo_shmmni=64
     set semsys:shminfo_shmmns=1600
     set semsys:shminfo_shmmnu=64
     set semsys:shminfo_shmume=900

- Changing the kernel parameters under Linux:
The values can be altered by making entries in /etc/sysctl.conf. Once the change has been concluded, execute the command:

  sysctl –p

and in addition on SuSE Linux, execute the command

  chkconfig boot.sysctl on

Recommended values for the respective parameters:

Kernel.shmmax = 0x10000000

Further information about how to modify the kernel parameters and how to create a new kernel is included in the documentation provided by your Linux distributors.

Please observe the information in the delivery information.

3.3.3   Java and SELinux

When using BeanConnect on Linux systems, the following error message may occur:
error while loading shared libraries: ./libjvm.so: cannot restore segment prot after reloc: Permission denied

This is a general problem in the interface between Java and SELinux (Security-Enhanced Linux) which cannot be solved or bypassed by BeanConnect. Using BeanConnect therefore requires disabling the SELinux environment.

To disable SELinux, open the file /etc/sysconfig/selinux and replace the line
SELINUX=enforcing
by
SELINUX=disabled.

Please note that the changes will not become effective before rebooting the Linux system.

3.3.4   Installation under Solaris

The GUI based IzPack installation of the Resource Adapter and the tools MCCmdHandler and Cobol2Java may not work on SUN Solaris 10 systems due to technical reasons (error message: not enough free space on device to install). Here the command line mode has to be used for installation. Please refer to the manual for further notes.

3.3.5   Installation of Jython

You need Jython for the command line interface of the management console.
Jython is available for download at the following link: http://www.jython.org .

Download the Jython installation file, e.g. jython-installer-2.5.3.jar.
Double-click on the jar file or alternatively in the command line mode with java -jar <jython-install-datei> to carry out the installation.

3.4 Product use

*1   Information is available in the manual „BeanConnect V3.0B".

3.5 Functions to be discontinued

None

3.6 Incompatibilities

None

3.7 Restrictions

None

3.8 Procedure in the event of errors

The following information is necessary for error analysis:
- Detailed description of the error situation
- Information about the version/correction version levels of the software used
- Exact information concerning the processor type

The error documentation should be as complete as possible. The following error documentation is required:
- All the created logging files
- UTM Dumps of all Work processes and respective gcores. These files should be available as binary files, i.e. in non-prepared form
- SYSLOG file(s)
- stdout/stderr protocols of the UTM processes
- KDCDEF generation, start procedure and start parameter
- Core files with respective phases (utmwork) and shared objects. The shared objects can be defined with "ldd utmwork"

With errors, which occur in conection with the openUTM network connection, the following information can also be created :
- CMX traces
- OSS traces
- UTM-BCAM trace
- Conversion file with mapped host name entries
- With a heterogeneous connection of generation information and trace of openUTM LU6.2 and its SNA components and the IBM-SNA system.

*1   Further information required for the diagnostics is available in the manual „BeanConnect V3.0B",
      chapter „Logging, diagnostics and troubleshooting".

4 Hardware support

The hardware is supported on which the operating systems version run as named under
„3.2 SW configuration".

*1   CPU / BeanConnect Proxy :
*1   At least 450 MHz, recommended 1GHz or more

*1   Main memory / BeanConnect Proxy :
*1   At least 512 MB, recommended 1GB or more