

FUJITSU Software openUTM (BS2000)
FUJITSU Software openUTM CRYPT (BS2000)

Version 6.4A
May 2018

Release Notice

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1 General

The open and universal transaction monitor openUTM supports the creation and operation of transactional applications under the FUJITSU operating system BS2000 as well as under commonly available Unix systems (Solaris, HP-UX, AIX) or Linux and Windows systems.

FUJITSU Software openUTM lets you implement client/server architectures and create distributed transaction applications in homogenous and heterogeneous IT infrastructures (multi-tier architecture).

Some tools are included free of charge in openUTM product:

- The graphical User Interface WinAdmin for administration of UTM applications is shipped with media kit DVD.
A separate Release Notice is available for WinAdmin.
- The web based tool WebAdmin is available for administration of UTM applications via Internet browser.
A separate Release Notice is available for WebAdmin.
- WS4UTM is a tool which offers a convenient method for making program units of a UTM application available as web services. It is possible to call a UTM-Service as a web service from a web application implemented in Java. This allows UTM to be integrated into SOA solutions.
(SOA = Service Oriented Architecture)
- "XML for openUTM" provides openUTM with a convenient interface for creating and processing data in the form of XML documents.
A separate Release Notice is available for UTM-XML.
- BizXML2Cobol permits the creation of Cobol data structures from existing service definitions (WSDL description or XML schema) and code, which can be integrated in existing transactional Cobol applications so that these implement the predefined service. Thus, the top-down approach (from the business-relevant definition to implementation) in SOA projects is also supported for the inclusion of existing program logic.

Additionally openUTM can be combined with further chargeable products.

- FUJITSU Software openUTM Client is a product which allows client/server communication with openUTM server applications and is available as a separate product for the Fujitsu operating system BS2000 as well as for Unix, Linux and Windows systems.
A separate Release Notice is available for openUTM-Client.
- The add-on product FUJITSU Software openUTM LU62 (Unix/Windows) V5.1 supports connections to CICS/IMS applications on IBM systems via SNA LU6.2.
A separate Release Notice is available for openUTM LU62.
- The product FUJITSU Software BeanConnect enables UTM applications to connect to Java EE Application Servers. BeanConnect also includes a component for creating Java clients for openUTM.
A separate Release Notice is available for BeanConnect.

Encrypted transfer of messages between the UTM application and the client is provided by additional encryption software for openUTM and openUTM Client with the carrier system UPIC.

The add-on product FUJITSU Software openUTM CRYPT (BS2000) is available for openUTM (BS2000).

More information about the above mentioned products and the data sheets are available at:

<http://de.ts.fujitsu.com/openUTM>

openUTM is part of the comprehensive middleware suite openSEAS. The middleware suite openSEAS 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 development applications through to business intelligence.

Together this provides the platform for:

- Individual business-critical IT solutions
- Company portals
- Integration solutions for service-oriented architectures
- Web applications and portals
- Business processes

This Release Notice is a summary of the major extensions, dependencies and operating information with respect to openUTM (BS2000) V6.3A and openUTM CRYPT (BS2000) V6.3A under the operating system BS2000 and all the information necessary for migrating from the predecessor version openUTM (BS2000) V6.2A.

Changes which have become known subsequently are updated and provided in this file.

*1 The release level is that of: May 2018.

*1 Changes to release level July 2016 are marked with *1.

All BS2000 product Release Notices including this one are available on the Internet under the following URL:

<http://manuals.ts.fujitsu.com>

If you skip one or more previous versions when you install this product, you must heed the information from the Release Notices (and README files) of the previous versions.

The use of names, trademarks, etc. in this Release Notice does not entitle readers to assume that these names/designations may be used without restrictions by anyone. Often the names/designations are protected by law or contract, even if this is not indicated here.

1.1 Ordering

openUTM (BS2000) V6.4A and openUTM CRYPT (BS2000) V6.4A can be ordered from your local distributors.

openUTM (BS2000) V6.4A and openUTM CRYPT (BS2000) V6.4A are subject to the general terms and conditions of the software product purchase, maintenance, use and service agreement.

1.1.1 Licensing

The licenses are part of the contract that you entered into with Fujitsu Technology Solutions when you purchased openUTM (BS2000).

openUTM (BS2000) V6.4A is a product, for which user licenses are required and are available in variants according to the system performance, incl. a license per user class. For distributed transaction processing there is an additional UTM-D user license per system (in variants depending on the performance class of the system, including license per user class).

1.1.2 License for encryption

openUTM (BS2000) V6.4A normally ships without the encryption software. If you wish to employ the encryption functions in the server product openUTM (BS2000) V6.4A, you have to separately order the add-on product openUTM (BS2000) CRYPT V6.4A incl. license. It contains the code of the encryption functions for openUTM (BS2000) V6.4A.

The delivery of openUTM CRYPT (BS2000) is subject to export restrictions. If openUTM (BS2000) V6.4A is to be used outside Germany with encryption functions, a special export permit must be obtained in advance.

1.1.3 License for CALLUTM

The program CALLUTM is delivered with openUTM on BS2000 systems. It enables the call of UTM services out of an arbitrary BS2000 Batch or Dialog task. The program offers a SDF interface and can be called from the BS2000 command mode.

For the use of CALLUTM V6.4A which is delivered with openUTM (BS2000) V6.4A a runtime license for openUTM Client (BS2000) V6.4A is required due to the UPIC library is linked dynamically when CALLUTM is called. The advantage of the dynamically linkage is that the user can choose whether the communication should be done via socket or via CMX and whether it should be done with encryption.

CALLUTM-STD V1.0 could be used instead of CALLUTM V6.4A if openUTM CLIENT (BS2000) V6.3A should not be licensed. It is delivered with openUTM (BS2000) V5.3A and V6.0A.

Please note that for CALLUTM-STD there is no maintenance i.e. there will be no error corrections and no development.

1.2 Delivery

1.2.1 Software on data media

The openUTM (BS2000) V6.4A and openUTM CRYPT (BS2000) V6.4A files are supplied via SOLIS. The current files and volume characteristics of openUTM are listed in the SOLIS2 delivery cover letter.

The delivery includes all product components for openUTM (BS2000) V6.4A (incl. openUTM-D) but does not include the encryption products.

The delivery of openUTM CRYPT (BS2000) V6.4A is subject to export restrictions; your local distributors will provide you with information about this.

Delivery components of openUTM (BS2000) V6.4A

The openUTM (BS2000) V6.4A delivery components are listed below.

File

Contents

Module libraries

| | | |
|----|--------------------|------------------------------------|
| *1 | SYSLNK.UTM.064.TPR | openUTM system code (TPR) for /390 |
| *1 | SKMLNK.UTM.064.TPR | openUTM system code (TPR) for x86 |

| | | |
|----|-----------------------|--|
| *1 | SYSLNK.UTM.064 | openUTM module library, TU code only |
| *1 | SYSLNK.UTM.064.SPLRTS | SPL runtime system for openUTM |
| *1 | SYSLNK.UTM.064.UTIL | Load library for UTM utility programs |
| *1 | SYSLIB.UTM.064.XOPEN | Components for X/OPEN interfaces XATMI, CPIC, TX |

Includes/COPY elements

| | | |
|----|---------------------|-----------|
| *1 | SYSLIB.UTM.064.ASS | ASSEMBLER |
| *1 | SYSLIB.UTM.064.COB | COBOL |
| *1 | SYSLIB.UTM.064.C | C |
| *1 | SYSLIB.UTM.064.PLI1 | PL/1 |
| *1 | SYSLIB.UTM.064.PASC | PASCAL-XT |
| *1 | SYSLIB.UTM.064.FOR | FORTRAN |
| *1 | SYSLIB.UTM.064.SPL | SPL4 |

openUTM messaging

| | | |
|----|-------------------------|----------------------------|
| *1 | SYSMESH.UTM.064.MSGFILE | Message definition file |
| *1 | SYSDAT.UTM.064.MTXTIN | Input for UTM tool KDCMTXT |

BS2000 messaging

| | | |
|----|----------------|---------------------|
| *1 | SYSMES.UTM.064 | BS2000 message file |
|----|----------------|---------------------|

Syntax file

| | | |
|----|----------------|--|
| *1 | SYSSDF.UTM.064 | |
|----|----------------|--|

Installation

| | | |
|----|--------------------|---|
| *1 | SYSSSC.UTM.064.180 | SSD object for BS2000/OSD-BC V9.0 (/390) |
| *1 | SYSSSC.UTM.064.190 | SSD object for BS2000 OSD/BC V10.0 (/390 and x86) |
| *1 | SYSSSC.UTM.064.200 | SSD object for BS2000 OSD/BC V11.0 (/390 and x86) |
| *1 | SYSNRF.UTM.064 | NOREF file |
| *1 | SYSRMS.UTM.064 | RMS file |
| *1 | SYSSII.UTM.064 | Structure information for IMON |

openUTM-Tools

| | | |
|----|------------------------|---|
| *1 | SYSLNK.UTM.064.CALLUTM | UPIC-Application for Administration and Client Server Communication using a SDF command interface |
| *1 | SYSSDF.UTM.064.CALLUTM | SDF Syntax file for the Client program CALLUTM |

Examples

| | | |
|----|------------------------|---|
| *1 | SYSPRC.UTM.064 | Library containing precompiled sample procedures which can be executed on systems without SDF-P |
| *1 | SYSLIB.UTM.064.EXAMPLE | Library containing sample programs and sample procedures |

Documentation

| | | |
|----|------------------|------------------------|
| *1 | SYSFGM.UTM.064.D | German Release Notice |
| *1 | SYSFGM.UTM.064.E | English Release Notice |

Product files for openUTM CRYPT (BS2000) V6.4A

The openUTM CRYPT (BS2000) V6.4A delivery components are listed below.

| <u>File</u> | <u>Contents</u> |
|-------------------------|--------------------------------|
| *1 SYSLNK.UTM-CRYPT.064 | System code for platform /390 |
| *1 SKMLNK.UTM-CRYPT.064 | System code for platform x86 |
| *1 SYSSII.UTM-CRYPT.064 | Structure information for IMON |

openUTM WinAdmin

The openUTM (BS2000) V6.4A delivery includes the product FUJITSU Software openUTM WinAdmin V6.4A with which you can administer UTM applications with a convenient graphical user interface.

1.2.2 Software for download**openUTM WebAdmin**

Together with openUTM (BS2000) V6.4A the product FUJITSU Software openUTM WebAdmin V6.4A is released.

openUTM WebAdmin offers a graphic administration interface which runs on a web server in contrast to WinAdmin.

openUTM WebAdmin is available for downloading on the openUTM website

<http://www.fujitsu.com/uk/products/software/partners/oracle/openseas-oracle/>.

XML for openUTM

The software "XML for openUTM" is a free add-on to openUTM. It is supplied "as is" and all use is at your own risk. The Software is available on the web under

<http://www.fujitsu.com/uk/products/software/partners/oracle/openseas-oracle/>.

This component contains the Open Source GNOME XML parser, which is provided in accordance with the conditions of the MIT license. This is included in the application package ('rt') and is also available on the web under

<http://www.opensource.org/licenses/mit-license.html>

1.2.3 Software for WS4UTM and BizXML2COBOL

Consulting project packages, in the context of which the software „WebServices for openUTM" (WS4UTM) and BizXML2Cobol is made available, can be purchased from your local Fujitsu regional office. The manuals can be downloaded from the Internet:

<http://manuals.ts.fujitsu.com>

The use of the software is only permitted within the framework of the license purchased in the project package.

1.3 Documentation

1.3.1 Availability

The documentation is available in the Internet:

<http://manuals.ts.fujitsu.com>.

The manuals are shipped as PDF files on the product medium.

The OSS and CMX manuals are also recommended for connection using the OSI-TP protocol.

1.3.2 Documentation of the Open Group interfaces

| <u>Title:</u> | <u>Order number:</u> |
|---|----------------------|
| CPI-C X/Open CAE Specification Distributed Transaction Processing: The CPI-C Specification, Version 2 | ISBN 1 85912 135 7 |
| Reference Model X/Open Guide Distributed Transaction Processing: Reference Model, Version2 | ISBN 1 85912 019 9 |
| TX X/Open CAE Specification Distributed Transaction Processing: The TX (Transaction Demarcation) Specification | ISBN 1 85912 094 6 |
| XATMI X/Open CAE Specification Distributed Transaction Processing: The XATMI Specification | ISBN 1 85912 130 6 |

The X/Open manuals are available on the web. They can be obtained in printed form from bookstores quoting the ISBN number.

2 Software extensions

Only the extensions and improvements over the previous version openUTM (BS2000) V6.3 are described in the following section.

2.1 New functions in openUTM (BS2000) V6.4A

2.1.1 UTM cache in data spaces

On BS2000 systems the UTM cache can be stored on one or multiple data spaces. This provides benefits when an UTM application requires a very large cache.

The following interfaces were extended to support this:

- Generation
KDCDEF statement MAX... CACHE-SIZE=: New values PROGRAM-SPACE and DATA-SPACE
- KDCADMI administration interface
Data structure *kc_max_par_str*: New field *cache_location* for the storage location of the UTM cache
- KDCADM command interface
KDCINF SYSPARM: New output field CACHE-LOCATION for the storage location of the UTM cache

2.1.2 Saving compressed data

UTM can compress data in secondary storage areas (GSSB, LSSB), long-term storages (TLS and ULS), and the communication area-program area, and thus reduce resource consumption. The UTM pages saved on average per data compression can be displayed using the administration functions.

The following interfaces were extended to support this:

- Generation
KDCDEF statement MAX: New operand DATA-COMPRESSION used to enable or disable data compression
- KDCADMI administration interface
 - Data structure *kc_curr_par_str*:
New field *data_compression* for displaying and modifying the current compression setting and new field *avg_saved_pgs_by_compr* for UTM pages saved on average per compression
 - Data structure *kc_max_par_str*:
New field *data_compression* for the generated compression setting
- KDCADM command interface
 - KDCAPPL: New operand DATA-COMPRESSION for modifying the compression setting
 - KDCINF STAT: Output of the pages saved on average per compression (AVG COMPRESS PAGES SAVED)
 - KDCINF SYSPARM: Output of the generated compression setting (DATA-COMPRESSION (GEN))

2.1.3 Page pool information

UTM outputs the current values for page pool utilization.
The administration interface was extended for this purpose:

- KDCADMI administration interface
 - New object type KC_PAGEPOOL for output of the page pool information
 - New data structure *kc_pagepool_str* for the current utilization of the page pool
- KDCADM command interface
 - KDCINF PAGEPOOL outputs the current utilization of the page pool

2.1.4 Controlling the number of UTM system processes

The number of UTM system processes can be controlled by means of UTM generation, i.e. more or also fewer than the current maximum of three UTM system processes can be started.

The configuration interface was extended for this purpose:

- New KDCDEF operand MAX SYSTEM-TASKS. The default value *STD corresponds to the former setting

2.1.5 Authorization data for Oracle databases

For security reasons, the authorization data for Oracle databases can now only be specified in the UTM generation. A specification in the start parameters is no longer permitted and rejected with message K237.

2.1.6 Other changes

- Messages
 - New message K199 when a task or program run is terminated
 - New message K237 when a user ID and/or password was specified in clear text in the XA open string for an Oracle database
 - Additional insert XPOSAS (OSI-TP ASSOCIATION REFERENCE) in some XAP-TP-messages
- Administration commands
 - Output values of administration commands are output in floating point presentation if they require more space than is available for the field
 - KDCINF LTAC: new column D for LTACs which were deleted by means of dynamic administration
- Starting a subsequent task of a UTM (BS2000) application using the SDF command ENTER-PROCEDURE
 - New start parameter ENTER-PROC-INPUT
 - New sample procedure START-APPL-ENTER-PROC
- Trace entries

When event exits (START, SHUT, etc.) are called, additional trace entries are written to the UTM-DIAGAREA

*1 **2.2 New functions in openUTM (BS2000) V6.4A20**

*1 Besides corrections the correction version openUTM V6.4A20 doesn't contain further functional extensions.
*1

2.3 Implemented change requests (CR)

not applicable

3 Technical information

3.1 Resource requirements

Virtual address space

openUTM (BS2000) V6.4A has the following memory requirements:

System code: 3975 KB
openUTM CRYPT: 126 KB

Each UTM task occupies additional memory in classes 5 and 6 whose size depends on the application configuration and the application programs.

Static disk storage space

The openUTM (BS2000) V6.4A product files occupy approximately 30.000 – 35.000 PAM pages on /390 computers and x86 computers.
The openUTM CRYPT (BS2000) V6.4A product files occupy approximately 300 PAM pages.

Dynamic disk storage space

The space required for KDCFILE, USLOG, SYSLOG files and the application program depends on the size of the configuration.

3.2 Software configuration

| | | | |
|----|----------------|--------------|---|
| *1 | BS2000 | as of V9.0 | for /390 and x86 |
| | OSD/XC | as of V4.1 | for SQ systems |
| | openUTM CRYPT | V6.4A | if encryption is used in the UTM applications |
| | DSSM | as of V4.3A | |
| | openNet Server | as of V3.3A | contains BCAM V20.0A, CMX V1.4A, DCAM V13.3B, ONETSERV V3.3A, SOCKETS V2.4A, VTSU-B V13.3A, XHCS V2.1A for Unicode support, etc. |
| | OSS | as of V4.1D | for OSI-TP applications |
| | FHS | as of V8.3B | for using formats with CCSNAME for asynchronous formatting and for Unicode support |
| | IFG | as of V8.3A | |
| | JV | as of V15.0A | |
| | HIPLEX-MSCF | as of V5.0 | for UTM-Cluster applications |
| | RSO | as of V3.6A | |
| | OMNIS | as of V8.4A | |
| | OMNIS-MENU | as of V3.4A | |
| | DRIVE | as of V3.1A | |
| | UDS/SQL | as of V2.5A | |
| | SESAM/SQL | as of V2.7A | for UTM-Cluster applications |
| | | as of V6.0A | |
| | | as of V8.0A | for UTM-Cluster applications |
| | LEASY | as of V6.2A | |
| | ORACLE | 10g | XA connection only |
| | CRTE | as of V2.9A | in BS2000/OSD-BC V9.0 |
| | CRTE | as of V10.0A | as of BS2000 OSD/BC V10.0 |
| | SPL4 | as of V2.9A | |
| | C/C++ | as of V3.2A | |
| | COBOL85 | as of V2.3A | |
| | COBOL2000 | as of V1.4A | |
| | ASSEMBH | as of V1.2C | |
| | FOR1 | as of V2.2C | |
| | FORTTRAN90 | as of V1.0A | |
| | PASCAL-XT | as of V2.2B | |
| | PLI1 | V4.2A | |
| | RPG3 | V4.0B | |
| | FormplagDoors | as of V3.0B | |
| | SECOS | as of V5.2B | necessary for Kerberos |

If problems occur with older compiler versions and runtime systems that Fujitsu Technology Solutions is no longer obligated to maintain, the user has no right to warranty or correction claims.

In this case we recommend that you update to current versions of compilers and/or runtime systems.

The following versions are supported for distributed transaction processing with other UTM applications:

| | |
|---|------------|
| openUTM (BS2000) | as of V6.0 |
| openUTM (Unix, Linux and Windows systems) | as of V6.1 |

If problems occur with UTM versions that Fujitsu Technology Solutions is no longer obligated to maintain, the user is not entitled to warranty or correction claims. In this case we recommend that you update to current versions of openUTM.

The following products can be used for communication with IBM-SNA systems via LU6.2:

- openUTM LU62 (Unix, Linux and Windows systems) as of V5.1
- *1 and, depending on the operating system, the following third-party products:
 - Solaris: SNAP-IX as of version 7.0.2.4; from Metaswitch Networks
 - Linux: IBM Communications Server for Linux as of version 6.3
 - *1 Windows: IBM Communications Server for Windows as of version 6.1.2

The following versions are supported for distributed transaction processing with Java EE applications:

BeanConnect (Unix, Linux and Windows systems) as of V3.0

For client/server communication optionally:

openUTM Client (Unix, Linux and Windows systems) as of V6.1
(contains carrier systems UPIC V6.1; OpenCPIC V4.0)

openUTM Client (BS2000) as of V6.0

BeanConnect (Unix, Linux and Windows systems) as of V3.0
(contains the component JConnect)

For client-side load distribution in UTM-Cluster applications

CALLUTM (BS2000) as of V6.0

For the administration using graphical interfaces:

openUTM WinAdmin V6.4A
openUTM WebAdmin V6.4A

Note:

The software configuration includes some products that are still technically usable but for which later versions are available. You should always try and use the latest versions that are available.

3.3 Product installation

The installation of the product openUTM (BS2000) with the IMON installation monitor is mandatory. You must follow the information concerning installation in the delivery cover letter and in the product documentation as well as the information in this Release Notice.

The necessary inputs and the sequence of the installation are described in the IMON documentation.

For the following product files, *DEFAULT-USERID is pre-set as the default user ID in the SSD objects:

| | |
|--------------------|--------------------------------|
| SYSLNK.UTM.064.TPR | Load library for /390 hardware |
| SKMLNK.UTM.064.TPR | Load library for x86 |
| SYSREP.UTM.064 | REP file |

3.3.1 The UTM subsystem

The entire UTM system code, including the mapping module to BS2000 and UTM-D system code, is loaded and administered by DSSM as one subsystem. The time at which the UTM system code

is to be loaded is defined in the DSSM statements for the UTM subsystem.

The default is CREATIM=AT-CREATION-REQUEST, meaning that the UTM subsystem must be started by issuing a command.

During a standard installation, SOLIS automatically creates an entry in the subsystem catalogue. Only the "Basic UTM system with UTM-D" case still exists.
The following SSD objects are supplied for entry into the subsystem catalogue:

*1 SYSSSC.UTM.064.180 for BS2000/OSD-BC V9.0 for /390 and x86
 *1 SYSSSC.UTM.064.190 for BS2000 OSD/BC V10.0 for /390 and x86
 *1 SYSSSC.UTM.064.200 for BS2000 OSD/BC V11.0 for /390 and x86

3.3.2 Coexistence of multiple UTM versions (parallel operation)

It is possible to load multiple UTM versions on the same BS2000 system and run them at the same time in production mode.

Parallel operation is possible with all UTM versions that have been approved for the respective BS2000 system.

If you do this, keep the following in mind:

- Should older versions be retained, this must be explicitly specified with the installation in IMON. The standard situation is that they are de-installed.
- The subsystems must be started with the VERSION-PARALLELISM=*COEXISTENCE-MODE parameter in the /START-SUBSYSTEM command.
- Two UTM applications with the same application name cannot run in different UTM versions at the same time. openUTM would prevent the second application from starting.

3.3.3 Product installation of openUTM CRYPT (BS2000)

You should keep the following in mind when installing openUTM CRYPT (BS2000):

The system code of openUTM (BS2000) V6.4A and in the load library for the UTM utility programs includes the module KCNOCRYP as the substitute for the encryption code. If you want to use the encryption functions with openUTM (BS2000) V6.4A, you then have to change the following before starting the UTM subsystem:

*1 In the library with the UTM system code and in the load library for the UTM
 *1 utility programs the module KCNOCRYP has to be replaced by the module
 *1 KCECRYP and KCECRYP.
 *1 The SYSPRC.UTM.064(COPY-CRYPT) procedure is available to the user for
 *1 both these actions.

3.3.4 UTM-SM2 subsystem

With the BS2000 SM2 measurement monitor, you can display the current performance of UTM applications on the screen and collect the values in the SM2 measurement value file for later analyses.

The UTM-SM2 module is used for communication between openSM2 and openUTM (BS2000). It is implemented as an independent BS2000 subsystem.

The UTM-SM2 subsystem files ship with BS2000-GA. The entry for UTM-SM2 in the subsystem catalogue is created automatically during BS2000 installation.

The following versions of UTM-SM2 must be used:

*1 UTM-SM2 V18.0 for BS2000/OSD-BC V9.0 for /390 and x86
 *1 UTM-SM2 V19.0 for BS2000 OSD/BC V10.0 for /390 and x86
 *1 UTM-SM2 V20.0 for BS2000 OSD/BC V11.0 for /390 and x86

SOLIS automatically generates the entry for UTM-SM2 in the subsystem catalogue during standard installation. The following files are required for using UTM-SM2:

Load libraries:

SYSLNK.UTM-SM2.180 for BS2000/OSD-BC V9.0 for /390
 SKMLNK.UTM-SM2.180 for BS2000/OSD-BC V9.0 for x86
 SYSLNK.UTM-SM2.190 for BS2000 OSD/BC V10.0 for /390
 SKMLNK.UTM-SM2.190 for BS2000 OSD/BC V10.0 for x86
 *1 SYSLNK.UTM-SM2.200 for BS2000 OSD/BC V11.0 for /390
 *1 SKMLNK.UTM-SM2.200 for BS2000 OSD/BC V11.0 for x86

REP file:

SYSREP.UTM-SM2.nnn REP file

SSD objects:

SYSSSC.UTM-SM2.180 for BS2000/OSD-BC V9.0 for /390 and x86
 SYSSSC.UTM-SM2.190 for BS2000 OSD/BC V10.0 for /390 and x86
 *1 SYSSSC.UTM-SM2.200 for BS2000 OSD/BC V11.0 for /390 and x86

The following default values are pre-set in the SSD object:

- Load time: Loading with DSSM command required
 - Load library: \$TSOS.SYSLNK.UTM-SM2.nnn or
 \$TSOS.SKMLNK.UTM-SM2.nnn
 - Rep file: \$TSOS.SYSREP.UTM-SM2.nnn
 Suffix nnn = 180 for UTM-SM2 V18.0A
 Suffix nnn = 190 for UTM-SM2 V19.0A
 Suffix nnn = 200 for UTM-SM2 V20.0A
- *1

The system administrator must not change the pre-set load time!

3.3.5 KDCMON subsystem

KDCMON is a tool for measuring UTM applications and is implemented as a separate subsystem.

With KDCMON, you can measure UTM applications running on one BS2000 system under different UTM versions. The KDCMON subsystem files ship with BS2000-GA. The entry for KDCMON in the subsystem catalogue is created automatically during installation of BS2000.

The following KDCMON versions must be used:

KDCMON V18.0A in BS2000/OSD-BC V9.0 for /390 and x86
 KDCMON V19.0A in BS2000 OSD/BC V10.0 for /390 and x86
 *1 KDCMON V20.0A in BS2000 OSD/BC V11.0 for /390 and x86

SOLIS automatically generates the entry for KDCMON in the subsystem catalogue during standard installation. The following files are required for using KDCMON:

Load libraries:

SYSLNK.KDCMON.180 for BS2000/OSD-BC V9.0 for /390
 SKMLNK.KDCMON.180 for BS2000/OSD-BC V9.0 for x86
 SYSLNK.KDCMON.180 for BS2000 OSD/BC V10.0 for /390
 SKMLNK.KDCMON.180 for BS2000 OSD/BC V10.0 for x86
 *1 SYSLNK.KDCMON.200 for BS2000 OSD/BC V11.0 for /390
 *1 SKMLNK.KDCMON.200 for BS2000 OSD/BC V11.0 for x86

REP file:

SYSREP.KDCMON.nnn REP file

SSD objects:

SYSSSC.KDCMON.180 for BS2000/OSD-BC V9.0 for /390 and x86
 SYSSSC.KDCMON.190 for BS2000 OSD/BC V10.0 for /390 and x86
 *1 SYSSSC.KDCMON.200 for BS2000 OSD/BC V11.0 for /390 and x86

Executable programs:

SYSPRG.KDCMON.nnn Program for starting KDCMON
 SYSPRG.KDCMON.nnn.KDCPMSM Program for converting measurement data

Message file:

SYSMES.KDCMON.nnn BS2000 message file

The following default values are set in the SSD object:

- Load time : implicit with the first call
- Load library: \$TSOS.SYSLNK.KDCMON.nnn or
 \$TSOS.SKMLNK.KDCMON.nnn
- REP file : \$TSOS.SYSREP.KDCMON.nnn
 Suffix nnn = 180 for KDCMON V18.0A
 Suffix nnn = 190 for KDCMON V19.0A
 Suffix nnn = 200 for KDCMON V20.0A

The system administrator must not change the load time default setting!

KDCMON is loaded by starting the program SYSPRG.KDCMON.nnn under \$TSOS.

3.4 Product use

3.4.1 Notes for upgrading to openUTM (BS2000) V6.4A

Components of different UTM versions may not be mixed. The version check of openUTM guarantees that the versions of the product components match.

Carry out the following steps when upgrading from an earlier version to openUTM (BS2000) V6.4A:

- Generate KDCFILE and KDCROOT with the KDCDEF of openUTM (BS2000) V6.4A
(take any KDCDEF changes into account)
- Compile the ROOT source
- Compile any application-specific administration programs, if present
- Compile the MSGTAC program unit if present and, where applicable, separate asynchronous programs if their TAC was defined as the message target via the KDCDEF statement MSG-DEST
- If application-specific message modules are used, the source for the message modules must first be newly generated with KDCMMOD and then compiled again (take deleted messages and changed message targets into account)
- Link the application program
- Transfer the user data with the KDCUPD of openUTM (BS2000) V6.4A to the new KDCFILE if the data is relevant

KDCUPD of openUTM (BS2000) V6.4A supports the following version upgrades:

```

openUTM (BS2000) V6.0A ===> openUTM (BS2000) V6.4A
openUTM (BS2000) V6.1A ===> openUTM (BS2000) V6.4A
openUTM (BS2000) V6.2A ===> openUTM (BS2000) V6.4A
openUTM (BS2000) V6.3A ===> openUTM (BS2000) V6.4A
openUTM (BS2000) V6.4A ===> openUTM (BS2000) V6.4A

```

*1 3.4.2 Updating from openUTM (BS2000) V6.4A to V6.4A20

- *1 openUTM (BS2000) V6.4A20 is compatible with openUTM (BS2000) V6.4A.
- *1 After the UTM subsystem has been restarted with the openUTM (BS2000) V6.4A20 system code, UTM applications and KDCFILE that were used in V6.4A can also be used
- *1 without changes in V6.4A20. Users, who want to use all corrections, have to generate all
- *1 application components again.

3.4.3 Using openUTM CRYPT (BS2000) V6.4A in openUTM (BS2000) V6.4A

As standard openUTM (BS2000) V6.4A is shipped without encryption software. If you want to use the encryption functions in the server product openUTM (BS2000) V6.4A, the add-on product openUTM CRYPT (BS2000) V6.4A has to be ordered separately. It contains the code of the encryption functions for openUTM (BS2000) V6.4A.

3.4.4 Notes on migrating from /390 to SQ

If you migrate a UTM application from a BS2000 system /390 to a BS2000 system / SQ (x86), the timer values that were generated for this application may have to be adjusted. This applies especially to the timers that monitor the runtime of the application programs that have been generated with the TAC TIME parameter. After a conversion, the values that were generated for CPU and real time monitoring must be checked and adjusted if necessary.

3.4.5 Optional REPs

Currently, no optional REPs are shipped with openUTM (BS2000) V6.4A.

3.5 Discontinued functions (and those to be discontinued)

3.5.1 Obsolete functions

XA start parameters:

The plain text specification of the user ID in the open string of start parameter file is no longer supported.

3.5.2 Interfaces to be discontinued

Databases:

This version supports the database type PRISMA for the last time.

Generation:

In UTM V6.4 the parameters CERTIFICATE and CERTIFICATE-AUTHORITY of the USER statement of utility KDCDEF are supported for the last time.

*1 BS2000 Versions:

*1 With openUTM V6.4A20 BS2000/OSD-BC V8.0 is no longer supported.

3.6 Incompatibilities

Command interface administration:

The layout of some output screens of KDCINF has changed to output fields with more digits. This applies to the output of KDCINF LTERM, KDCINF LTAC and KDCINF CON.

The alignment of the fieldnames of the command KDCINF USER in the header line was corrected. Application programs, that evaluate the outputs of the KDCINF command, have to be adapted to the new layout if necessary.

3.7 Restrictions

not applicable

3.8 Procedure in the event of errors

The following documentation is required for diagnosis if an error occurs:

- Detailed description of the error situation and indication whether and how the error can be reproduced
- BS2000 version with correction status and loader ID
- openUTM-specific documentation:
 - UTM version with correction status
 - List of control statements for KDCDEF
 - For warm start errors or errors in KDCUPD and abnormal application end with PMIO20/PMIO22, the KDCFILE files are needed
 - Binder lists of the application program
 - DBL list of the application (dynamic link loader)
 - Compilation lists of affected program units
 - When reproducing errors, turn on TESTMODE=ON; TRACEREC should be set to at least 3000 (10000 if using UTM-D)
 - UTM dumps; remember to include the dumps of all tasks that were active at the time of the error
 - SYSLOG file
 - User dumps in case of XT58/XT5C, etc.
 - SYSLST/SYSOUT logs
- For errors in connection with FHS also include:
 - Which FHS version was used
 - Format printout with IFG
 - Ready-to-use format module in file form or printout of the format with LMS or DPAGE
 - User dump at the time of the error in file form
- For errors in connection with databases, see the Release Notice for the respective database system
- For errors with KDCUPD:
 - SYSOUT/SYSLST log for the KDCUPD run
 - UTM dump, provided one was generated
 - KDCDEF control statements for old and new KDCFILE if data security allows
 - Old KDCFILE
 - New KDCFILE with status prior to the KDCUPD run, or KDCDEF input data for new KDCFILE as a file
- For errors in connection with RSO, see the information about the OLTP interface in the manual and the Release Notice for the version of RSO used
- For distributed processing over LU6.1:
 - Any BCAM trace (PORT trace)
 - Any UTM-BCAM trace
- For heterogeneous connections, generation information and trace from openUTM LU6.2 and its SNA components and from IBM-SNA system
- When using communication over OSI TP:
 - Activate the OSS trace in the UTM application

4 Hardware requirements

openUTM (BS2000) V6.4A will run on all CPUs supported by the following BS2000 versions:

- *1 BS2000/OSD-BC V9.0 (/390 and x86 architecture)
BS2000 OSD/BC as of V10.0 (/390 and x86 architecture)

openUTM (BS2000) V6.4A supports the following terminal types

8160, 9758, 9759, 9750, 9751, 9752, 9753, 9755, 9755, 9756, 9758 (generate as 9755 or 9763),
9763, 9770 and 3270.

openUTM (BS2000) V6.4A supports the following printer types:

9001, 9002, 9003, 9011, 9012, 9013, 9015, 9021, 9022 and 3287
and all printer types that are supported by RSO if the printouts are made via the UTM-RSO interface.

A list of all devices supported by openUTM (BS2000) V6.4A can be found in the manual "openUTM Generating Applications".