

Fujitsu Software openUTM Client (BS2000) V7.0

Client Server Communication

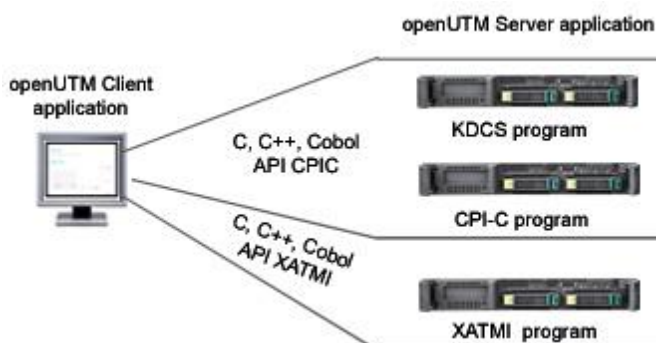
openUTM Client (BS2000)

openUTM Client (BS2000) supports communication between an openUTM server application and programs in BS2000 systems. This enables a client/server architecture to be implemented between BS2000 and Unix, Linux and Windows systems or another BS2000 system, i.e. part of the processing can be exported to the client.

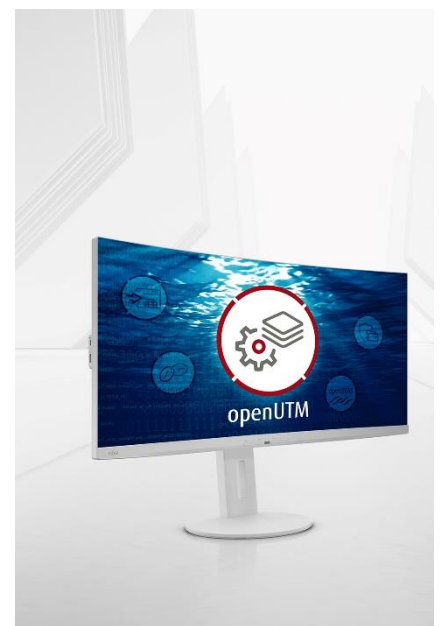
Client program to be implemented by user takes following tasks:

- Secured access to UTM application by using API of openUTM Client
- representation of data and functions of an UTM application at user interface
- exchange of data and steering of services of UTM application

For programming of client applications standard interfaces (CPI-C, TX and XATMI) are offered.



openUTM is part of the comprehensive product offering of [openSEAS](#).



openUTM Client (BS2000) V7.0A

Compared to the previous version V6.5, the current version has been extended by several functions, such as:

- **Encryption**
Encryption functions in openUTM between a UTM application and a UPIC client were reworked. Some security leaks are closed, state of the art methods are supported and delivery is easier.



Features and benefits

MAIN FEATURES

INTERFACES

- APIs CPI-C, TX and XATMI available
- Interfaces for COBOL and C available

ENCRYPTION

- Encryption of access and user data
- Usage of a combination of DES/AES and RSA method

SAFETY AND RESTART

- Support of restart
- Usage of a saved context
- Provision of transaction state information

CARRIER SYSTEM UPIC

- Powerful carrier system UPIC
- Load balancing via UPIC
- Cluster support via UPIC
- Information about shutdown state

CONNECTIVITY

- Connection of TIAM or batch applications to openUTM applications in BS2000 or on open systems
- Connection from any process to openUTM applications

BENEFITS

- Uniform programming done for server and client
- Various possibilities for implementing
- Security against unauthorized reading of messages
- Higher security by key update
- Start with consolidated state of transaction
- Process optimization by context information
- Logical synchronisation with server transactions
- Various possibilities of communication and processing by the client
- Load balancing to UTM applications via Round Robin method
- Identifying of active shutdown requests
- Greater flexibility in application architectures
- Compatible client applications

Topics

openUTM Client (BS2000)

openUTM Client (BS2000) supports communication between BS2000 applications and UTM server applications in Unix, Linux and Windows systems or BS2000. This enables a client/server architecture to be implemented between BS2000 and Unix, Linux and Windows systems or another BS2000 system, i.e. part of the processing can be exported to the client.

For communication, openUTM (BS2000) Client offers the X/Open programming interfaces CPI-C and XATMI, with UPIC as the carrier system. These interfaces enable programming to be done uniformly on both the client and the server. In addition, openUTM supports programming on the server with KDCS. The interfaces can be used in a C and a Cobol environment.

Under UPIC, the initiative for communication is always with the openUTM-Client program. The UPIC protocol is used as the transaction protocol.

The security and restart functions of openUTM are supported. Following a crash, applications can be restarted from the most recent status of the transaction.

openUTM Client supports:

- the implementation of client/server architectures, where the number of servers (tasks) in openUTM can be set as required,
- connection of batch jobs and DCAM applications to openUTM applications in BS2000,
- access from batch jobs to Unix, Linux and Windows systems,
- access from batch applications to distributed, transactionally secure applications (e.g. openUTM CICS/IMS connection),
- greater flexibility for application architectures,
- generation of compatible client application programs

Connection of BS2000 applications to UTM applications on (Unix-, Linux-, Windows-Systeme)- and BS2000

Via openUTM (BS2000) Client connection is possible from each BS2000 process (Batch- and DCAM applications) to UTM applications in Unix-, Linux- and Windows systems or in BS2000.

Support for client/server architecture:

Not all functions of an OLTP (online transaction processing) application need to be subject to strict transaction security controls. These functions can run outside of openUTM on a client. The actual processing, especially access to the database, is performed with transaction security in the openUTM application (server).

Encryption of access and user data

Clients often access openUTM applications via open networks. This means there is a risk of unauthorized persons eavesdropping on the line and, for example, discovering passwords for openUTM user IDs

or sensitive user data. To prevent this happening, openUTM and openUTM-Client support the encryption of passwords and user data for client connections.

For encryption on level 3 or level 4, openUTM uses a combination of the DES/AES and the RSA method, named after its creators Rivest, Shamir and Adleman. The DES/AES key is generated by the UPIC client, while the RSA key pair (public key and private key) is generated by the server. The RSA keys can be changed in openUTM through administration. It is also possible to store the public key locally in advance for the UPIC client. When a connection is established, the received public key is verified against the stored public key.

Encryption level 5:

openUTM Client (BS2000) supports communication to UTM applications, too, if ENCRYPTION-LEVEL 5 was generated for UPIC client. Level 5 uses the Diffie-Hellman method based on Elliptic Curves to agree the session key and encrypts input/output messages with the AES-GCM algorithm. openUTM Client (BS2000) V7.0 also supports communication with UTM applications of V7.0 where ENCRYPTION-LEVEL 5 was generated for the connections to the UPIC client.

Load balancing UPIC Client

openUTM Client complements the UTM-cluster support. The communication of UPIC clients with a UTM-Cluster application can be configured in a way which allows distributing the jobs of the UPIC clients to the cluster application on the individual UTM application nodes.

When a connection is established, a suitable node is selected for the UPIC communication from a list of application nodes (Round Robin method).

Shutdown warn/grace for UTM (node) applications

Via CPI-C interface the shutdown state can be omitted. Thus the user is able to see whether there is a shutdown order at the node application of an UTM cluster application. Likewise the shutdown time can be polled.

Product structure

openUTM Client is part of the openUTM product offering:

- openUTM
- openUTM-D (Supplement to openUTM for Distributed Transaction Processing, the software is integrated in openUTM, the right of usage must be ordered separately)
- openUTM Client
- Usage rights are offered as usage rights for a system (in variants made for performance classes) and in the performance classes as usage rights for user classes.

Technical Details

Technical requirements Hardware

All systems S series (/390 architecture)
All systems of SE series (/390 and X86 architecture)

Resource requirements: see Release note

Technical requirements Software

BS2000 OSD/BC as of V10.0
BS2000 OSD/XC as of V10.0
CRTE as of V10.0A
DSSM as of V4.3B
openNET Server as of V3.6A for BS2000 OSD/BC V10.0, as of V4.0A for OSD V11.0
OSS as of V4.1D for OSI-TP connections
JV as of V15.0A
C/C++ (BS2000) as of V3.2A;
COBOL85 as of V2.3A

For client/server communication optionally:
openUTM (BS2000) as of V6.4
openUTM Enterprise Edition as of V6.4

User interface

Language Commands in English, message texts in German/English

Installation

Installation By the customer according to the release notice

Operating mode Interactive (dialog), transaction and batch mode

Implementation language C

Documentation

Manuals Manuals (German and English) for users and system administrators as files in PDF format;
<https://bs2manuals.ts.fujitsu.com/> files over the Internet

Demands on the user

Demands on the user BS2000 knowledge for development of application programs;
knowledge of CPI-C/XATMI interface.

Training

Training See training offer at: <https://fujitsu.docebosaas.com/customer>

Conditions

Conditions This software product can be leased by the customer in accordance with the conditions for the use of software products.

Ordering and delivery

Ordering The software product can be obtained from your local Fujitsu region.

Contact

Fujitsu

Email: openseas@ts.fujitsu.com

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

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