

## **openFT (BS2000/OSD) Version 10.0**

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### **Enterprise File Transfer**

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About 80 percent of the total amount of data exchanged within a company or between a company and its customers and business partners is transferred in the form of files. In E-Business the requirements placed on a company-wide file transfer solution (Enterprise File Transfer) become even more important: openness, automation, security, reliability, availability and performance. The Fujitsu Siemens Computers *openFT* product family fulfils these requirements to the utmost and also provides a series of additional useful functions such as file administration for the local and remote system. Furthermore, *openFT* is very easy to install and administrate and can contribute significantly to the reduction of the TCO (Total Cost of Ownership).

*openFT* is a high-performance solution for complex, heterogeneous IT environments that can be used to fully automate the file transfer process. *openFT* is especially suited for companies and government agencies that require a totally reliable and secure provision of large quantities of business-critical data. The use scenarios of *openFT* extend beyond numerous areas of application in mobility and business critical computing. For many application integration projects, *openFT* represents a widely used and proven solution with solid benefits. *openFT* has proven its flexibility and reliability day in day out, even under extreme loads, in over 50,000 server installations.

*openFT* is part of the comprehensive *openSEAS* product offering.

#### **Openness**

*openFT* supports a wide range of system platforms and protocols while maintaining a uniform interface.

##### ▪ **System platforms**

Computers from different manufacturers running different operating systems can be connected with *openFT*. For example, *openFT* is available for all Windows platforms (Windows XP, Windows Server 2003), numerous Unix platforms (including Solaris and Linux), as well as all BS2000/OSD and z/OS systems.

##### ▪ **Protocols and Networks**

*openFT* can also be used in a network in which computers with different protocols communicate with each other. *openFT* supports networks and network protocols such as TCP/IP, SNA, ISO, NEA, X.21/X.25, and ISDN resp. Network transitions can be realized with *openFTIF* (File Transfer Interconnect Facility). The *openFTIF* add-on product implements an end-to-end connection by means of its gateway function.

##### ▪ **Data formats**

*openFT* can process and transfer files with different characteristics (depending on the file type and operating system in which the files were created). *openFT* allows you to transfer any type of BS2000/OSD file (SAM, UPAM, ISAM, POSIX files,...) and PLAM library elements.

##### ▪ **Encoding of character data**

*openFT* is able to handle and transfer text files with various encodings. *openFT* supports the conversion of encoding of standard Unicode variants (UTF-8, UTF-16, UTF-E), standard 8-bit character sets (ISO8859nn, EDF04nn) and any user defined 8-bit character set.

##### ▪ **FTAM support**

The full integration of the FTAM protocol (file transfer based on the ISO 8571 protocol) by means of the

*openFT*-FTAM for BS2000/OSD add-on product means that the communications options are extended to some important systems. The add-on module *openFT*-FTAM is integrated into the *openFT* product. It must be ordered separately as a license.

##### ▪ **FTP support**

The communications options are extended to practically all major systems by the integration of the ftp protocol by means of the *openFT*-FTP for BS2000/OSD add-on product. The add-on module *openFT*-FTP is integrated into the *openFT* product. It must be licensed separately too.

#### **Automation**

*openFT* offers the following functions and features for integration into business processes or applications:

##### ▪ **Follow-up processing**

It is possible to attach a request for follow-up processing in the local or remote system to a file transfer request. If the transferred file is a job, for instance, it can be started by means of the follow-up processing. Further examples of use comprise printing out transferred files and automatic updating of databases.

##### ▪ **Pre- and post-processing**

Operating system commands that process or dynamically create the data before transmission can be started when sending or receiving a file. This means, for instance, that it is easy to access databases and transfer results, perform conversions and integrate customer-specific security tools. With post-processing, the data transferred can be processed further in a similar manner on the receiving end in programs or scripts. In order to perform pre- and post-

processing in the partner system, the partner must use an *openFT* version that supports pre- and post-processing.

- **Remote command execution**  
With *openFT* for BS2000/OSD, it is possible to run BS2000/OSD commands or programs from a local Windows or Unix system with *openFT* for Windows resp. Unix system and thus integrate them in scripts. The SYSLST and SYSOUT output of the commands or programs are mapped onto stdout and stderr resp. and can be easily further processed and put out using Windows or Unix tools. The same functionality is vice versa available initiated in BS2000 for remote command execution in Unix and Windows systems mapping stdout and stderr resp. onto SYSLST and SYSOUT resp. The resulting remote functionality is also completely secured through the FTAC protection functions and the encryption feature.
- **Integration in job scheduling**  
Using pre-, post- and follow-up processing, procedures can be easily realized because all functions can be called from the command line. The command output in OPS variables makes an easy evaluation with SDF in procedures possible. In addition, it is possible to monitor and control requests with job variables.

## Security

In addition to the protection functions of the local system, *openFT* also offers enhanced access protection for file transfer and hence increased security.

- **File Transfer Access Control (FTAC)**  
With the add-on product *openFT-AC* for BS2000/OSD, *openFT* also offers comprehensive and individually adjustable protection functions. Thus, *openFT* works with an access authorization that is independent of the operating system. The rights associated with this access authorization can be set on a highly differentiated basis. Furthermore, the user can precisely restrict and set the authorizations of the remote partner systems with respect to file transfers. The access rights can be restricted to specified tasks for each individual partner so that particular functions are no longer allowed (e.g. follow-up processing or file management functions).
- **File consistency**  
*openFT* for BS2000/OSD locks files being transferred against access by other users during the whole time the request is running. The lock remains set during transfer interruptions as well as between request acceptance and request execution.
- **Encryption**  
The description data for file transfer and file management requests are encrypted with the RSA/AES algorithm. This prevents unauthorized reading of sensitive data at network level such as user IDs or passwords. The contents of the files transferred can be encrypted using the same procedure. This functionality is subject to export restrictions. Due to protocol restrictions, it is not possible to exchange data encrypted by *openFT* with FTAM and ftp partners resp.
- **Authentication**  
*openFT* instances can mutually check with cryptographic means that they are connected with the right partner instance. Thus, it is possible to securely identify both the partner of a request and the own system in the partner system. Prerequisite for the authentication is the exchange of public keys. If the public key of a partner system is available in an

*openFT* instance, then all connections with this partner system are processed with authentication.

- **Logging**  
The log file contains comprehensive information on all access checks and file transfers performed so that an audit can be performed if necessary.

## Reliability, availability

- **Automatic restart**  
When an error occurs (the transport connection is lost), the automatic restart function ensures that an interrupted file transfer request is continued consistently without any user intervention. The ability to restart and continue transferring data also applies to the pre- and post-processing phases. This is a major requirement for unattended operation. Due to protocol restrictions this functionality is not available if file transfer is processed via ftp protocol.
- **Request storage**  
Requests can still be accepted even if a partner system is not available when the request is issued. Also they are accepted if *openFT* is not available locally. These requests are stored and automatically processed once the network or partner system becomes available.
- **Hiplex support**  
In *openFT* you can run several *openFT* instances on a computer at the same time, and each *openFT* instance has its own resources. There are interfaces available for creating, managing and deleting instances. This allows you to switch the functionality of *openFT* to a different computer where *openFT* is already installed when the original computer fails or when there is a resource bottleneck.
- **Resource control**  
The configuration parameters can be changed during operation.
- **Protection functions**  
Protection functions make the system safe from attack and ensure secure operation.

## Performance

- **Throughput**  
*openFT* can be scaled from a desktop up to high-end server and optimally utilizes the resources available. Furthermore, the throughput that can be reached by *openFT* depends on a number of conditions: the load on the local and remote computers, network load, line speeds, network structure, size and number of the files to be transferred, etc. The resource control function allows you to set the operating parameters for a specific installation so that optimal performance is achieved.
- **Data compression**  
Data compression allows you to transfer compressed files in order to reduce the load on the transmission paths or to reduce the transmission times. Due to protocol restrictions, it is not possible to exchange data compressed by *openFT* with FTAM partners.

## Easy to install and administrate

- **Administration functions**  
*openFT* is very easy to install. *openFT* for BS2000/OSD offers a wide range of functions to ease administration such as the management of the request file and the partner list, the ability to set operation parameters (performance), the logging of all file transfer requests (auditing), encryption key management and monitoring functions.

### ▪ Request administration

Thanks to request storage, the transfer can be initiated at any time desired, for example to reduce transmission costs (time control). It is also possible to specify a time at which the request is to be deleted or the transfer is to be aborted (cancel timer). Finally, the order in which requests are processed can be altered using priority control.

### Graphical interface

Using the graphical administration functionality of the *openFT* explorer on Windows and Unix systems resp. you have the possibility to conveniently administer *openFT* for BS2000/OSD remote via a graphical interface. The following functions are offered:

- Set operating parameters
- Switch SNMP traps on and off
- Partner management
- Display of file transfer requests using different criteria and file transfer request management (prioritize, delete)
- Management of logging records
- Management of FTAC admission sets and profiles (depending on your logon authorization)

Users of the product DESK2000 have an additional graphical interface from a Windows workstation. Detailed information on the graphical interface can be found in the corresponding online help system.

### Further Interfaces

The functions offered by *openFT* for BS2000/OSD can also be addressed via a command, COBOL and Assembler programming interface and via an SNMP connection.

### Reduced costs

*openFT* is not only economical in the acquisition phase, but it also plays a major role in lowering the costs for the development, administration and operation of data exchange processes:

- Small programming effort
- Easy, user-friendly installation and administration
- Reduced transmission costs through time-controlled transfers, automatic restart and data compression

### Changes since the preceding version V9.0

- Extended conversion of encoding of text files (support of Unicode and user defined codesets)
- Synchronous file transfer
- Remote command execution initiated in BS2000
- Transfer of migrated mainframe-files (automated recall) in BS2000.
- support of the ftp protocol
- Improved compression (ZIP algorithm)
- Dynamic addressable communication partners (these are partners not recorded in the partner list)
- Unix compatible *openFT* Command Line Interface available in Posix
- Graphical remote administration of *openFT* via *openFT* explorer on Windows and Unix systems resp.
- Editing of Unicode files of BS2000 system via *openFT* explorer on Unix and Windows systems resp.
- Unification of messages und return codes across all platforms
- Meaningful error messages via platform specific diagnose informations
- Improved control (=trace) function

### Changes in V9.0 since the preceding version V8.0 (selection)

- Improved Hiplax support through the introduction of the *openFT* instance concept
- Authentication of *openFT* instances with cryptographic means
- Post-processing
- Pre-processing and post-processing can be restarted
- Support of files > 32 GB
- Follow-up processing up to 1000 characters
- Completion of the OPS and CSV outputs
- User passwords up to 32 characters
- Slow Polling when partners are not available for a longer period of time
- Transfer of EDF04F (corresponds to ISO8859-15) encoded files (with €-character)
- Partner specific authentication check for systems initiating requests
- Import of profiles with/without keeping the assigned privileges (FTAC functionality)
- Selection of all requests pertaining to active partners
- Console messages when adding / deleting a partner
- Display of logging records of the last n days
- Encryption and authentication information in logging records
- Request selection through catid specification

<b>Technical Data</b>	
<b>Technical requirements for hardware</b>	<p>BS2000/OSD server.          Connection for data communications.          Memory requirements (static):</p> <ul style="list-style-type: none"> <li>- <i>openFT</i> for BS2000/OSD: ca. 2,3 MB</li> <li>- <i>openFT-FTAM</i> for BS2000/OSD: ca. 0,6 MB</li> <li>- <i>openFT-FTP</i> for BS2000/OSD: ca. 115 KB</li> </ul> <p>Memory requirements (dynamic):</p> <ul style="list-style-type: none"> <li>- depending on the number of connections and on the block size</li> </ul>
<b>Technical requirements for software</b>	<p><i>openFT</i> for BS2000/OSD:</p> <ul style="list-style-type: none"> <li>- BS2000/OSD-BC as of V5.0</li> <li>- openNet Server as of V3.0</li> <li>- SDF as of V4.0</li> <li>- POSIX-BC is a prerequisite for the support of POSIX files</li> <li>- <i>openFT-CR</i> V10.0 for BS2000/OSD is a prerequisite for the encryption of the transferred file contents</li> <li>- <i>openFT</i> with the <i>openFT-FTAM</i> add-on interworks via ISO LAN/WAN and TCP/IP (incl. RFC 1006) with FTAM partners</li> <li>- OSS V4.1 when deploying <i>openFT-FTAM</i> for BS2000/OSD</li> </ul> <p>Graphical administration interface:</p> <ul style="list-style-type: none"> <li>- Windows 2003 or Windows XP</li> <li>- DOORS emulation or MT9750 as of V4.0</li> <li>- DESK2000 as of V4.0</li> <li>- <i>openFT</i> for BS2000/OSD as of <i>openFT</i> version 7.0</li> </ul>
<b>User interface</b>	English und German, others on request.
<b>Installation</b>	By the customer on the basis of the release notice
<b>Documentation</b>	Manuals (English and German) for users and system administrators, in printed form via <a href="http://fsc-manualshop.com/">http://fsc-manualshop.com/</a> or as PDF files; also available on the Internet via <a href="http://www.fujitsu-siemens.com/openft">http://www.fujitsu-siemens.com/openft</a>
<b>Demands on the user</b>	BS2000 knowledge and if necessary knowledge of the partner system
<b>Training</b>	Courses are held in the Technical Training Academy von Fujitsu Siemens Computers under the currently valid conditions. For further information see <a href="http://training.fsc-mediaserver.com/elearningmedia/tectrac/">http://training.fsc-mediaserver.com/elearningmedia/tectrac/</a>
<b>Conditions</b>	This software product is supplied to the customer under the conditions for the use of software products against instalments or a single payment
<b>Warranty</b>	Class: A Delivery format: Machine language
<b>Ordering and delivery</b>	This software product may be obtained from your local Fujitsu Siemens Computers regional office