

DESCRIPTION PAPER

OPENFT V11.0

SETTING UP A CONNECTION TO CUSTOMS (ATLAS) WITH OPENFT FTAM

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PREREQUISITES

The FTAM protocol (FTAM stands for File Transfer Access and Management) is used to exchange data with Customs in the IT system ATLAS. An additional license for openFT FTAM is required in order to use the FTAM protocol.

When installing openFT for Windows make sure that FTAM protocol is selected when checking the existing licenses (see figure 1).

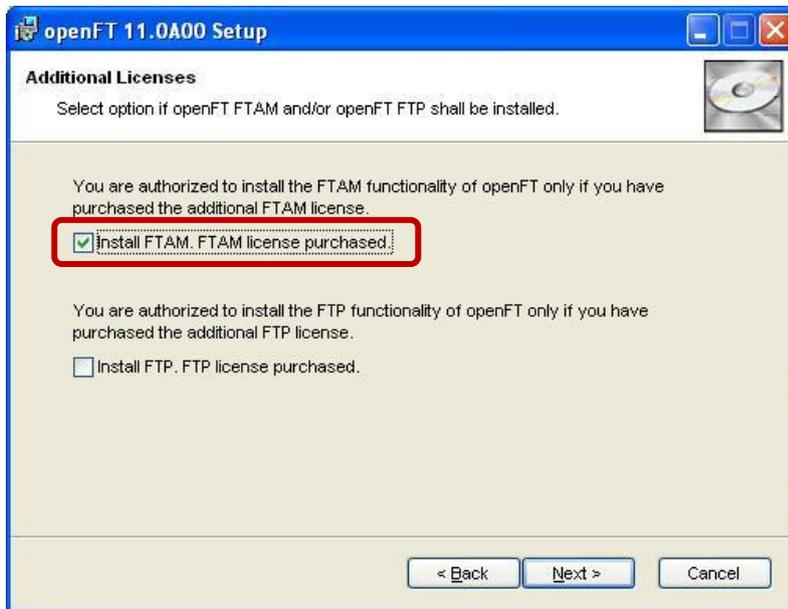


Figure 1

When installing openFT for UNIX systems, proceed as described in the Release Notice for the respective platform.

Please note that under Solaris the installation procedure has an inquiry as to whether support for the FTAM protocol is to be installed by openFT. With the other UNIX systems support for the FTAM protocol must be manually implemented by calling the corresponding installation routine.

ACCESS DATA

Various connection data is required in order to exchange files with Customs.

Access data of the Customs

Current information about the access data for the IT system ATLAS can be found in the Document for users in the section "Data transfer with FTAM" on the [Customs Internet site](#).

In order to send files to Customs, the latter must provide specific information to the user. This is:

- The IP address of the Customs computer. The IP address of the FT Gateway Server at the Customs for incoming messages in real-time mode is 10.131.208.101. The IP address for test operations of the FT Gateway Server is 10.131.208.30.
- The number of the port on which the openFT FTAM application of the Customs computer accepts the connection. The standard value used by the Customs for the port number is 102.
- The name and type of the transport selector which is used by the openFT FTAM application at the Customs. The standard value used by the Customs for the transport selector is FTAM in ASCII format.
- A user-specific transfer admission which the user must specify when transferring data to Customs.

Access data of the user

The user must provide Customs with the following information so that Customs can send files to the user:

- The IP address of the user's computer.
- The number of the port on which the openFT FTAM application of the user's computer accepts the connection. openFT FTAM uses the port number 4800 as standard. It is sensible for easier configuration to set the port number used by openFT FTAM to the standard value 102 used by Customs.

- The name and type of the transport selector which is used by the openFT FTAM application at the user's. Since openFT-FTAM V11.0 the standard value for the transport selector is \$FTAM in TRANSDATA format. It is sensible for easier configuration to set the transport selector to the standard value used by Customs FTAM in ASCII format.
- Transfer admission, which Customs must specify when transferring files to the user.

Note: If Customs sends files to the user, then the sender address of the FT Gateway server at the Customs in real-time mode is 10.131.208.102 and 10.131.208.30 for test operations.

Note: When using a firewall, please check that the port number used by openFT FTAM (102 or 4800) is enabled in the firewall. Under Windows all port numbers used by the asynchronous openFT server are as of openFT V10.0B20 automatically enabled in the Windows firewall.

CONFIGURATION OF OPENFT

openFT can only be configured by the FT administrator.

FT administrators are under Windows the ID of the administrator and the members of the group of administrators. However, it is necessary with activated user account control that a standard non-privileged user (also a member of the group of administrators) is given the privileged mode in order to receive administrator rights. For example, this can be by starting a console with the option "Run as Administrator" or by starting the application "openFT Explorer(ftadm)". The FT administrator on UNIX systems is the root ID.

Operation without TNS

openFT V10.0 onwards can be operated in a mode without having to use the TNS (Transport Name Service) provided by PCMX. All the required local and remote address parameters can be set directly in the operation parameters and in the partner list of openFT. With a new installation of openFT operations without TNS are activated as standard. With an update installation of openFT V8.1 operations with TNS are activated as standard. As operations without TNS offers many advantages, it is recommended to use this operating mode.

The current setting for the mode with or without TNS can be determined using the command `ftshwo` (see figure 2) or the openFT GUI known as openFT Explorer (see figure 3).

```

C:\>ftshwo
STARTED PROC-LIM  CONN-LIM  ADM-CLIM  RQ-LIM  MAX-RQ-LIFE  TU-SIZE  KEY-LEM  CCS-NAME
YES      2      16      8      2000      30      55555      768      GP1252
PTN-CHK  DYN-PART  SEC-LEU  FTAC-LOG  FT-LOG  ADM-LOG  USE TNS
STD      ON      B-P-ATTR  ALL      ALL      ALL      NO
OPENFT-APPL  FTAM-APPL  FTP-PORT  ADD-PORT  ADM-CS
*STD      *STD      21      11000      NO
ACTIVE    ACTIVE    NAUAIL    ACTIVE
HOST-NAME  IDENTIFICATION / LOCAL SYSTEM NAME
*NONE     UMRP / $FJAM,UMRP

ADM-TRAP-SERVER
*NONE

TRAP:  SS-STATE  FT-STATE  PART-STATE  PART-UNREA  RQ-STATE  TRANS-SUCC  TRANS-FAIL
CONS  OFF      OFF      OFF      OFF      OFF      OFF      OFF
ADM   OFF      OFF      OFF      OFF      OFF      OFF      OFF

FUNCT:  SWITCH  PARTNER-SELECTION  REQUEST-SELECTION  OPTIONS
MONITOR OFF  ALL      ALL      ALL      NONE
TRACE  OFF  ALL      ALL
    
```

Figure 2

Activate non-TNS operation

Note: The operating mode with or without TNS should not be switched in running operation, i.e. if files are being transferred.

Operation without TNS can be activated using the command `ftmndo -tns=n` or via openFT Explorer. In openFT Explorer select the menu item "Operating Parameters..." in the menu under "Administration". In the following operations parameter dialog select the register tab "Addresses" and deactivate the option "Use TNS" (see figure 3). Close the dialog via "OK".

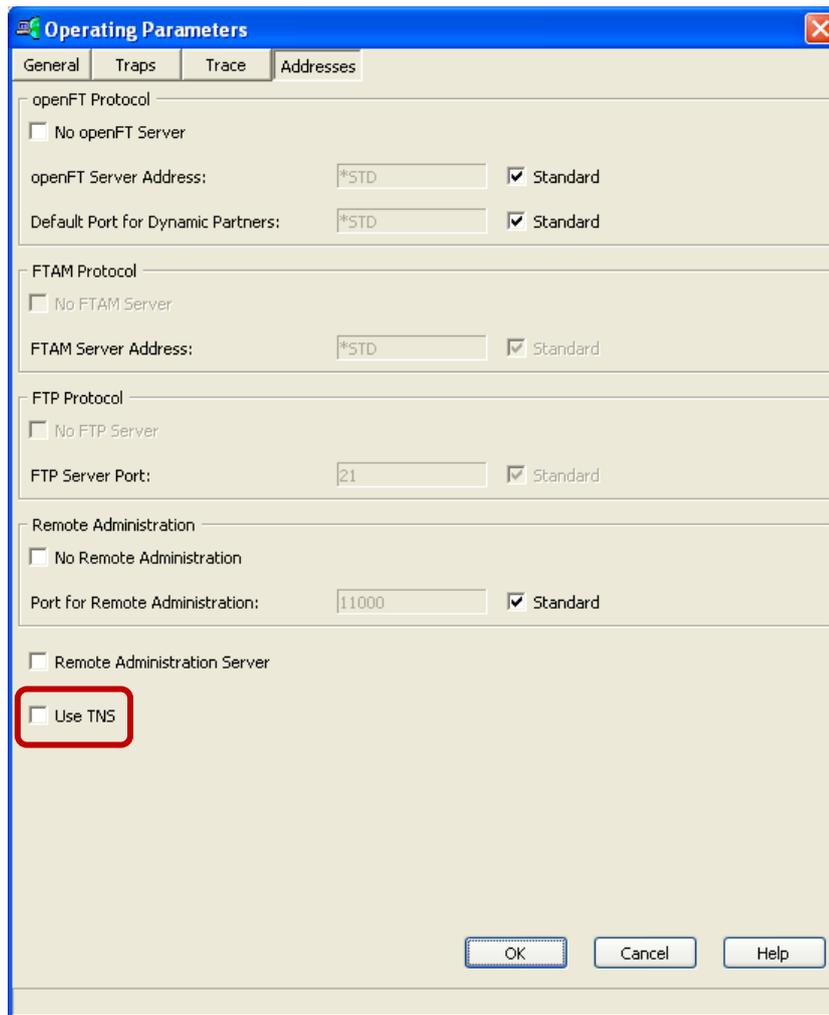


Figure 3

Setting the local FTAM address

As described in section 'Access data of the user', the standard values for the port number used by openFT FTAM are 4800 and for the transport selector \$FTAM in TRANSDATA format. In order for the local address of openFT FTAM to also use the Customs values (port number 102, transport selector FTAM in ASCII format), they can be modified using the command or openFT Explorer.

Modifying the local FTAM address means that the openFT FTAM server waits on the port 102 for incoming TCP/IP connections and accepts connections at the transport level which are defined for the transport selector FTAM (in ASCII format).

With outgoing connections to Customs the transport selector FTAM in the ASCII format is sent as the so-called "Calling Transport Selector" when setting up the connection at transport level in order to identify the sender.

Note: The settings for the local FTAM address in the operations parameters of openFT only take effect if non-TNS operation is activated.

Use the following command in order to set the local address of openFT FTAM at the values described above:

```
ftmodo -ftam=102.FTAM
```

Alternatively, the local FTAM address can also be set via openFT Explorer. Select in the menu of the openFT Explorer under "Administration" the menu item "Operating Parameters...". In the following operations parameter dialog, select the tab "Addresses". In the section "FTAM Protocol" remove the tick for the option "Standard" and enter 102.FTAM in the field "FTAM Server Address". Do not select the option "No FTAM server" as otherwise the function in the openFT FTAM server to receive files from Customs is deactivated (see figure 4).

Create entries in the partner list

When managing the Customs computer address it is sensible to create an entry in the openFT partner list. Configuring a partner list is optional, but it does offer considerable advantages, such as simplified addressing for the user and central administration of the partner addresses.

The addresses of the partner systems to which a connection is to be set up are entered in the open FT partner list.

Create an entry in the partner list for test operations

The command to create an entry in the partner list for the access data specified in section 2.1 for the FT Gateway Server at the Customs in test operations is:

```
ftaddptn custtest -pa=ftam://%ip10.131.208.30:102.FTAM
```

The parameters of the command `ftaddptn` have the following meaning:

- `custtest` is the name of the partner system in the partner list. This name must then be specified in the data transfer command for the remote system. The name may consist of 1 to 8 alphanumeric characters; the first character must be a letter; upper/lower case is not important. The name is optional but must be unique within openFT.
- The option `-pa` is used to specify the address of the partner system. The address components have the following meaning:
 1. `ftam://` specifies that openFT is to use the FTAM protocol for file transfer.
 2. `%ip10.131.208.30` is the IP address of the FT Gateway Server at Customs for test operations. The prefix `%ip` in front of the IP address specifies that the following value is an IP address - this accelerates address processing.
 3. `102` is the port number where the openFT FTAM application at Customs waits for incoming connections.
 4. `FTAM` is the transport selector in the ASCII format where the openFT FTAM application at Customs accepts incoming transport connections.

Note: The command `ftshwptn` is used to display existing partner list entries; they can be modified via the command `ftmodptn`.

Alternatively, the entry in the partner list can also be created via openFT Explorer. Select in the openFT Explorer menu, "File" and the menu item "New" and then "Partner List Entry...". The following dialog then appears (see figure 6):

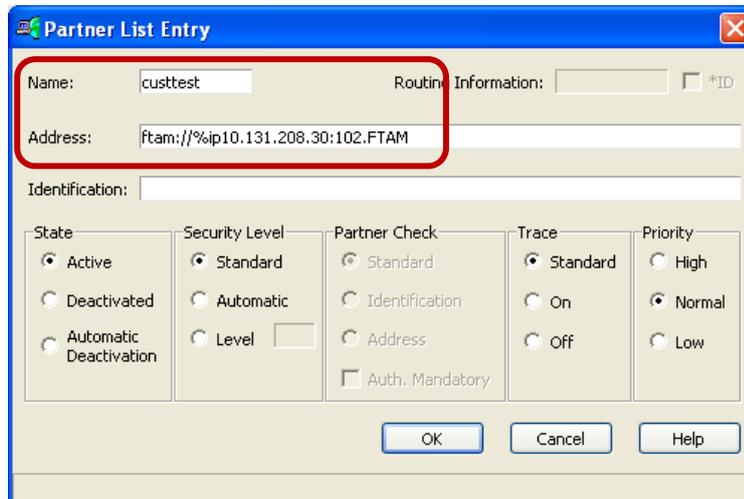


Figure 6

Enter a name for the partner system in the field "Name". In the example, the name "custtest" is selected. Enter in the field "Address" the address parameters for the connection to the FT Gateway Server in test operations. The address consists of the protocol to be used (`ftam://`), the IP address of the FT Gateway Server in test operations (`%ip10.131.208.30`), the port number (`102`) and the transport selector (`FTAM` in ASCII format) of the openFT FTAM application at Customs. The partner list entry is created when "OK" is pressed.

Create entries in the partner list for real-time mode

As described in section 'Access data of the Customs', the latter uses different FT Gateway Servers in real-time (and thus IP addresses) for the transfer direction User to Customs and vice versa.

It is thus basically sufficient for real-time mode when only one entry is created in the partner list for the transfer direction user to Customs. This is done via the following command:

```
ftaddptn customs -pa=ftam://%ip10.131.208.101:102.FTAM
```

The IP address `10.131.208.101` is the address of the FT Gateway Server at Customs for incoming messages in real-time mode, i.e. for the transfer direction

user to Customs.

If Customs send files to the user in real-time mode, then they are sent by the FT Gateway Server for outgoing messages with the IP address 10.131.208.102. It is also sensible to create for this IP address an additional entry in the partner list as incoming connections from Customs can then be assigned to a partner list entry. This is particularly necessary when the use of dynamic partner addresses is deactivated in the operation parameters. The basic recommendation is thus always to create the second entry for the direction Customs to user. The command is:

```
ftadpntn customsi -pa=ftam://%ip10.131.208.102:102.FTAM
```

Alternatively, these entries can also be created via openFT Explorer in the partner list, as described above.

Start/stop the asynchronous openFT Server

The asynchronous openFT Server which processes asynchronous outgoing and incoming requests is configured in the standard instance of openFT so that it is automatically started. Changes to the configuration settings are automatically accepted in run mode.

The command to start the asynchronous openFT Server is:

```
ftstart
```

The command to stop the asynchronous openFT Server is:

```
ftstop
```

Note: The command `ftshwo` can be used to display the set openFT operation parameters and to output information about the start state of the FTAM protocol (see figure 7).

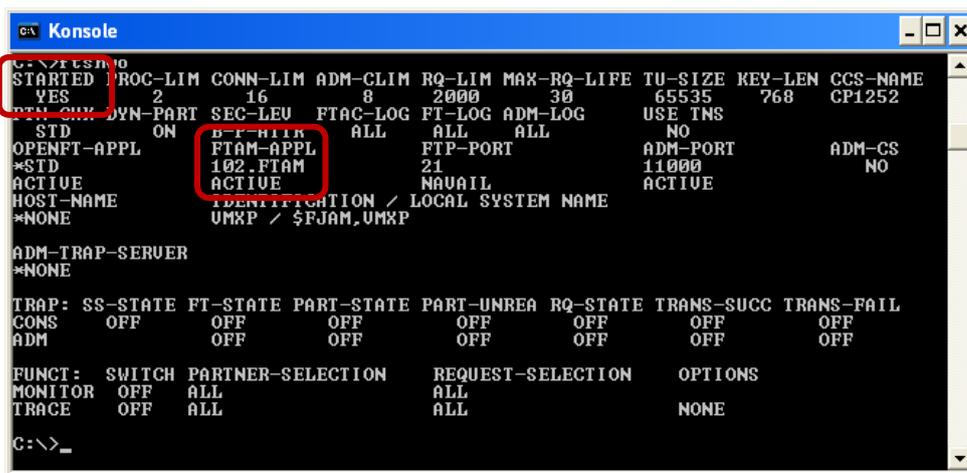


Figure 7

Alternatively, the asynchronous openFT Server can also be started and stopped via openFT Explorer. To start, select in openFT Explorer the menu "Administration" and the item "Start Asynchronous Server" and to stop the asynchronous server select "Administration" and the item "Stop Asynchronous Server".

TRANSFER OF FILES WITH OPENFT

Send a file to Customs

Files can be transferred to Customs via the commands `ncopy`, `ft` or via openFT Explorer.

The command `ncopy` is executed synchronously so that the output message provides immediate information about the transfer success or lack of success. The exit code of the command is used for an automated evaluation of the result (success = exit code 0; greater than 0 in the event of a fault). The command `ft` is available for asynchronous transfers with request storage and restart in the event of a fault.

Note: For the asynchronous openFT Server to process asynchronous requests issued via the `ft` command, the user must first grant openFT the appropriate authorization. See section 4.2.3 "Activating an admission profile".

Example:

The local file ZBE089997085875_1.zip is to be sent in binary mode to the FT Gateway Server at Customs for test operations. An entry in the partner list with the name "custtest" and the corresponding address parameters is created for the FT Gateway Server at Customs as described in section 3.3. The file is also to have the name ZBE089997085875_1.zip in the remote system. Customs has set up transfer admission "access1234567890" for the user.

The corresponding command to send the file is:

```
ncopy -b ZBE089997085875_1.zip custtest!ZBE089997085875_1.zip access1234567890
```

The parameters of the command ncopy have the following meaning:

- -b specifies that the file is to be transferred in the binary mode.
- ZBE089997085875_1.zip is the name of the local file which is to be sent to Customs.
- custtest is the name of the entry for the partner system in the partner list (see section 3.3).
- ZBE089997085875_1.zip behind the exclamation sign (!) is the name of the remote file at Customs. If the remote filename corresponds to the local filename, then the variable % or %BASENAME can be used instead of the filename.
- access1234567890 is the user-specific transfer admission which Customs has assigned to the user. Customs must notify the user of the transfer admission (see 2.1 Access data of the Customs).

Note: On UNIX systems it can be necessary depending on the Shell used that exclamation marks (!) specified in the command between the partner name and the filename is deactivated via a backward slash (\).

Alternatively, the file can also be sent via openFT Explorer. Select "File" and the item "New", "Request" and then "Transfer File..." or press the symbol  on the tool bar, so that the dialog "Transfer file" is displayed (see figure 8).

Press "Select" and an additional dialog appears via which you can navigate through the local directories in order to select the file to be sent. The example had the file ZBE089997085875_1.zip selected from directory C:\outgoing. The filename is then automatically transferred to the field "Local file". The option "Remote directory" is selected as standard for the remote filename and a point (.) is entered in the corresponding field. This means that the file at Customs is transferred to the set directory and is to be given the same name (i.e. ZBE089997085875_1.zip) as the local file. Alternatively, you can also select the option "Remote file" and the name ZBE089997085875_1.zip or % or %BASENAME can be entered in the corresponding field.

The name of the partner system to which the file is to be sent is entered in the field "Partner name". In section 3.3 an entry with the name "custtest" and the corresponding address parameters was created in the partner list for the FT Gateway System at Customs for test operations. The name "custtest" must be specified here. The user-specific transfer admission told to the user by Customs must be specified in the field "Transfer Admission". According to the example the transfer admission is "access1234567890".

The option "Send" is selected in the section "Direction" and it specifies that the local file is to be sent. The setting "Synchronous" under "Mode" specifies that the file is to be transferred synchronously, i.e. the transfer starts immediately after the button "Transfer" is pressed and you are notified about the transfer result as soon as the request has ended. However, the setting "Asynchronous" specifies that the transfer request is to be stored in the openFT request queue and then sent by the asynchronous openFT server.

The file type "binary" determines that the file is transferred in binary mode (i.e. without converting the file contents).

Further FTAM parameters do not have to be specified. The transfer of the file is started by pressing "Transfer".

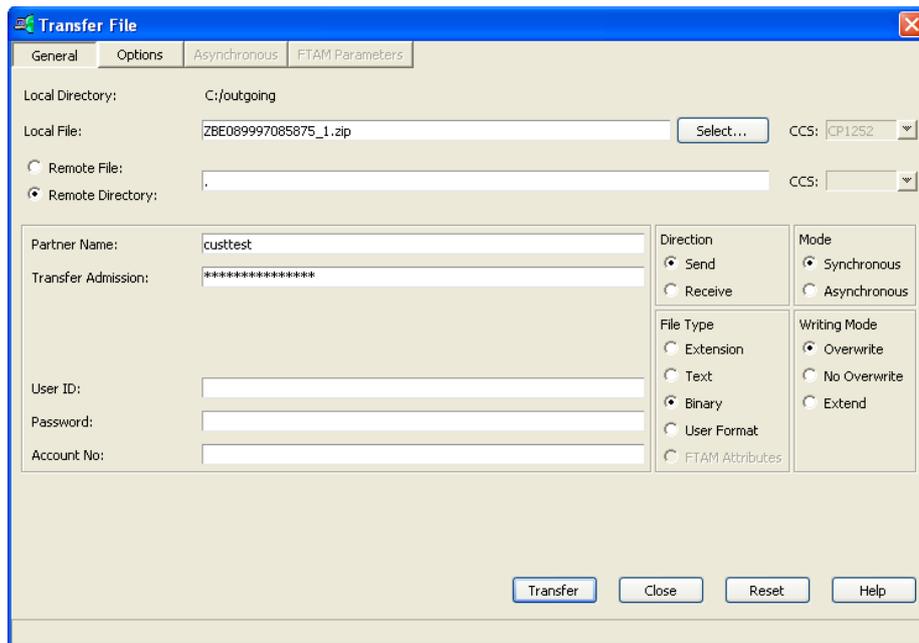


Figure 8

The transfer of a file to the FT Gateway Server at Customs for real-time operations works in the same way as in this example. Only the partner name "custtest" must be replaced with the partner list entry created in section 3.3 with the name "customs"; the transfer admission provided by Customs for real-time operations must be entered in the field "Transfer admission".

Receiving a file from Customs

For Customs to be able to send a file to the user the latter must provide Customs with the access data (see 2.2); the local address used by openFT FTAM must be set accordingly (see 3.2) and the asynchronous openFT Server which processes incoming connections must be started (see 3.4). Furthermore, it is necessary that a transfer admission is configured on the user computer for Customs (see 4.2.1.) which Customs must specify for file transfers to the user computer.

Create transfer admission for Customs

openFT offers an integrated FTAC function with extended access protection (FTAC stands for File Transfer Access Control). A transfer admission is part of such an admission profile. Customs must specify the transfer admission when the files are to be sent to the user computer. The user can set in the admission profile, for example by assigning a prefix for the filename, the directory in which a received file is to be stored or how the file is to be further processed in the event of a successful transfer or if the transfer is aborted.

An admission profile is created via the command `ftcrep`. The `ftmodp` command is used to modify an existing admission profile.

Example:

For customs to be able to send files to the user, a transfer admission is created on the user computer by the user John with the name "customsaccess". The completely transferred files are to be stored under Windows in the directory `C:\incoming\` or for UNIX systems in the directory `/incoming/`. This directory is regularly scanned by an application which processes the files. For this application to be able to process only completely transferred files, the files are buffered during the transfer under Windows in the directory `C:\incoming\temp\` or for UNIX systems under `/incoming/temp/` and moved to the final directory after a successful transfer. The files are moved as moving a file from one directory to another directory on the same partition represents an atomic operation in contrast to copying. In the event of the transfer aborting, partially transferred files are deleted.

The user John issues the following command in order to create an admission profile under Windows:

```
ftcrep customs1 customsaccess -fnp=C:\incoming\temp\ -ls="cmd /c move C:\incoming\temp\%FILENAME
C:\incoming\%FILENAME" -lf="cmd /c delete C:\incoming\temp\%FILENAME"
```

The command on UNIX systems would be as follows:

```
ftcrep customs1 customsaccess -fnp=/incoming/temp/ -ls='mv /incoming/temp/%FILENAME
/incoming/%FILENAME' -lf='rm /incoming/temp/%FILENAME'
```

The `ftcrep` command creates for the user John an admission profile with the name "customs1" and the transfer admission "customsaccess". The user John is

owner of the admission profile and only he (apart from the FTAC administrator) can make changes to the profile. Customs must be notified about the transfer admission and Customs must specify the transfer admission for file transfers to the user's computer. The option `-fnp` is used to specify a filename prefix which is automatically linked with the filename sent by Customs so that all the received files are stored in this directory (**Note:** It is important that in Windows the character `,` or `,` or for UNIX systems the character `,` is specified for the filename prefix at the end of the directory name as otherwise only the filename would be extended). The option `-ls` specifies processing which is executed after a successful receipt of a file. In this situation, the received file is moved from the temporary directory to the final directory. `%FILENAME` is the name of an internal openFT variable which is used as variable for the current filename. The option `-lf` is used to define - when the transfer is aborted (e.g. the request is deleted) - that an incompletely received file is deleted again.

The command to modify an existing admission profile is `ftmodp`.

Note: It is also possible - after a successful transfer - to use the `-ls` in order to directly initiate further processing of the transferred file. For example, a procedure could be called which specifically processes the received file. In such a situation it is not necessary to first buffer files that are still in transfer in a temporary directory and then move them after a successful transfer. Instead the filename of the successfully received file is transferred to the procedure as handover parameter:

Example for Windows: `-ls="cmd /c process.cmd C:\incoming\%FILENAME"`

Example for UNIX systems: `-ls='process.sh /incoming/%FILENAM'`

Alternatively, the admission profile can also be configured using openFT Explorer. To do so, the user John logs into the processor and selects openFT Explorer, the menu "File" and "New" and then the "Admission Profile...". The admission profile dialog then appears (see figure 9).

The name (max. 8 characters long) of the admission profile is entered in the field "Profile name". The example creates a profile with the name "customs1". The profile name is an internal name via which the admission profile is managed by FTAC. The ID "John" is displayed in the field "Owner". The admission profile belongs to this ID.

The transfer admission which Customs must specify when transferring a file to the user's processor, is entered in the field "Transfer Admission". According to the example, the transfer admission "customsaccess" must be entered.

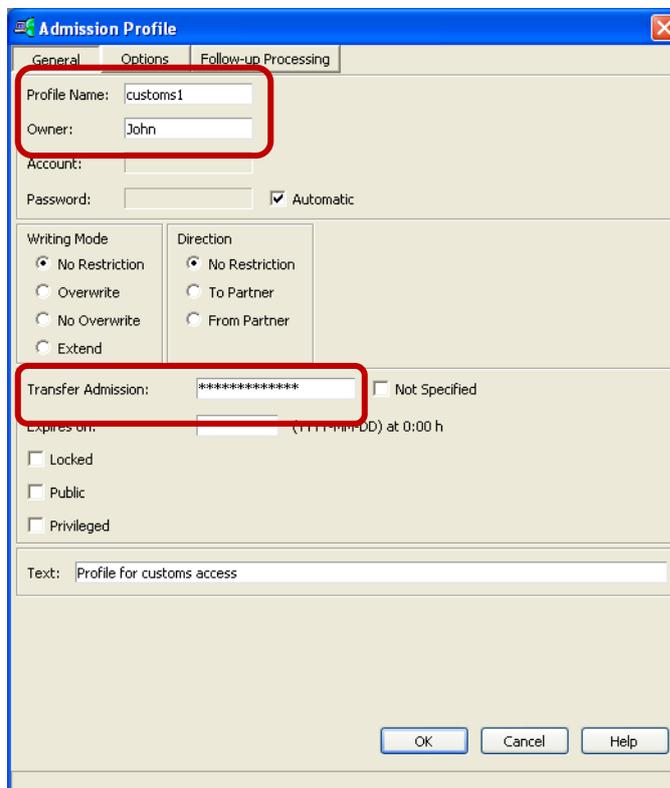


Figure 9

Further admission profile options are defined by pressing the tab "Options". The dialog (see figure 10) is displayed with the options:

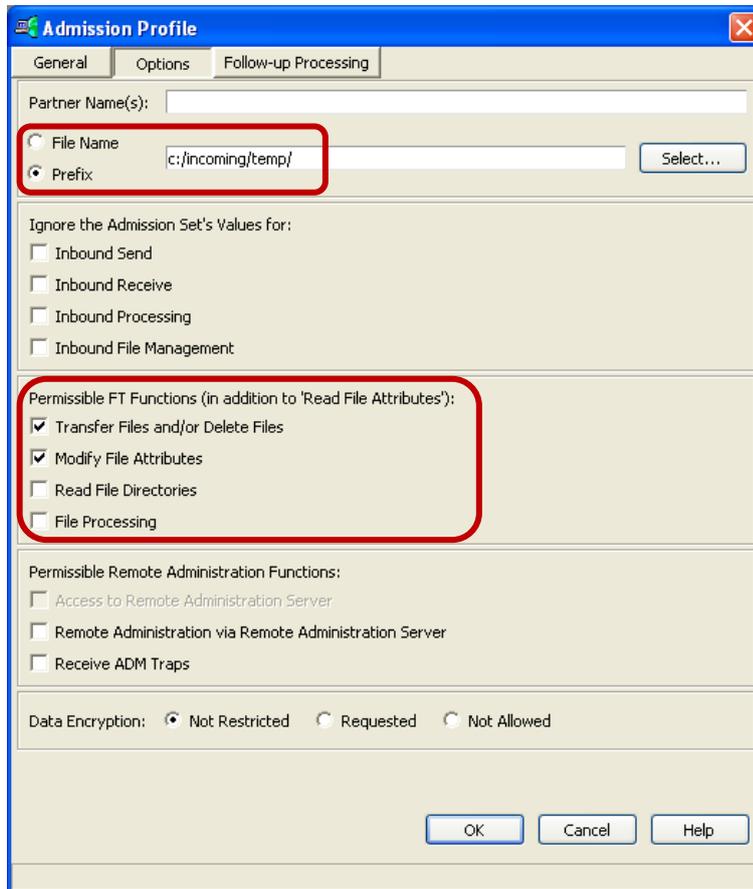


Figure 10

In Windows the directory C:/incoming/temp/ is specified in the field "Prefix" and in UNIX systems the directory /incoming/temp/. This directory is placed in front of the filename sent by Customs so that the received file is stored in this directory. The user John can thus control the storage position on his system for the files arriving on his processor that are sent via the transfer admission "customsaccess".

Note: It is important that the character ,\ or ,/ for Windows or the character ,/ , for UNIX systems is specified with the filename prefix at the end of the directory name as otherwise the filename would be extended.

In the section "Permissible FT functions" it is sufficient for a file transfer if the functions "Transfer Files and/or Delete Files" and „Modify File Attributes“ are permitted.

Press the tab "Follow-up processing" for another dialog that is used to specify the follow-up processing should the transfer be successful or aborted (see figure 11):

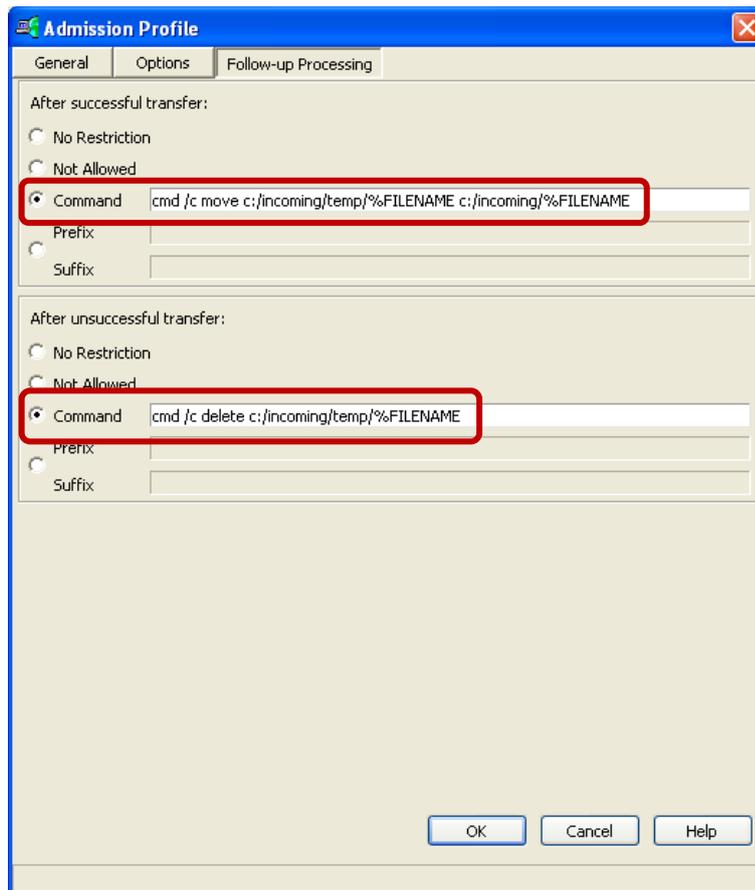


Figure 11

The example specifies that an application scans a directory C:\incoming\ (Windows) or /incoming/ (UNIX systems) for new files in order to process them further. For this application to see only completely transferred files, the files are first transferred to a temporary directory C:\incoming\temp\ (Windows) or /incoming/temp/ (UNIX systems) and moved after successful transfer to C:\incoming\ (Windows) or /incoming/ (UNIX systems). After an aborted transfer a partially transferred file is to be deleted from the directory C:\incoming\temp\ (Windows) or /incoming/temp/ (UNIX systems).

Select "After successful transfer" and the option "Command" and enter the following command (Windows) in the corresponding input field

```
cmd /c move C:/incoming/temp/%FILENAME C:/incoming/%FILENAME
```

or (UNIX systems) the command

```
mv /incoming/temp/%FILENAME /incoming/%FILENAME
```

Select "After aborted transfer" and the option "Command" and enter the following command (Windows) in the corresponding input field

```
cmd /c delete C:/incoming/temp/%FILENAME
```

or (UNIX systems) the command

```
rm /incoming/temp/%FILENAME
```

The admission profile is created by pressing the button "OK".

Activate an admission profile

Before an admission profile and the integrated transfer admission can be used, it is necessary under **Windows** that the profile owner (i.e. user John) grants openFT the corresponding authorization. The user John must make his log-in password for Windows known to openFT. The admission profile can then be used as long as the log-in password is valid. If John changes his log-in password or the password is invalid, then John must tell openFT the new password.

In order to activate an admission profile the user John logs on locally to the computer and issues the following command:

```
ftsetpwd -ua=John,password
```

"password" is the log-in password for the user ID John. In this example the ID John is a local ID on the user computer. If the ID John is a global ID of a domain, then the ID must be specified as a domain\ID. For example, a global ID John that belongs to the domain Sales must be specified as Sales\John.

Activating an admission profile that is only required in Windows can also be implemented via openFT Explorer. The user John selects "Administration" and then "User Password". The following dialog is displayed:



Figure 12

The option "Local" is selected in the dialog as standard. This means that the authorization to use the admission profile must be permitted on the local processor for openFT. The ID name (John) which has started openFT Explorer is shown in the field "User ID". Authorization is permitted for this user. The log-in password for the ID "John" is specified in the field "Password".

The specified password is checked by pressing "Set" and openFT grants the necessary authorization to use an admission profile for this ID.

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