A short documentation of the concept behind the logic of the file operations functionality.

# File operations in a7EBP

The file operation algorithms

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Autor	Data	Opis
Kowalczyk	2012-05-20	First document version
Kowalczyk	2012-06-03	<ul> <li>Added file states:         <ul> <li>NewOnServer</li> <li>ConflictNewOnServer</li> </ul> </li> <li>Added behaviour for this new file states</li> </ul>

## 1. File state types

- OnlyOnServer file exists on server and there isn't any local location (for current user and computer) set in the metadata
- OnlyLocal file doesn't exist on the server, but there is a local location record and the file exists locally (rare situation when f.e. after a download the file was deleted on the server)
- NoLocalNoServer no file info neither on server nor locally
- ChangedOnServer The file exists on server, and locally, but since the last download/upload of the file, it was changed on the server and not locally
- NewOnServer The file exists on server, and locally, but since the last download/upload of the file, a new file was uploaded to the server on this record.
- ChangedLocally The file exists on server, and locally, but since the last download/upload of the file, it was changed locally but not on the server
- Conflict The file exists on server, and locally, but since the last download/upload of the file, it was changed on the server and locally
- ConflictNewOnServer The file exists on server, and locally, but since the last download/upload of the file, it was changed locally and on the server a new file was uploaded on this record.
- Synchronized The file exists on server, and locally, and is the same on both locations, wasn't changed on neither of them.
- NoRecordSelected no record is selected.

#### 2. Download behavior

- OnlyOnServer Popup the folder select dialog and download file
- OnlyLocal disabled
- NoLocalNoServer disabled
- ChangedOnServer –"You have the file already downloaded earlier, but on the server is a newer version"



- Actualize local file
- Download file to new location
- NewOnServer "You have the file already locally, but on the server is a new file."
  - Download file to new location
- ChangedLocally "Your earlier downloaded file has changed, select what to do:"
  - Upload your file on the server (open/close after finish) (if edit rights)
  - Download file to new location (leave earlier downloaded changed file)
  - Overwrite your file with the server version (Local changes will be lost on file: xxxx)
- Conflict "You have the file already downloaded earlier, since then, the file has changed both on the server and locally"
  - Actualize local file (Local changes will be lost on file: xxx)
  - Download file to new location (leave earlier downloaded changed file)
- ConflictNewOnServer You have the file already locally and changed it, but in the mean time the file was replaced on the server by another one.
  - Download file to new location
- Synchronized "You have already the file downloaded earlier, and your local file is up-to-date"
  - o Open file
  - Download file to new location

# 3. Upload behavior

- OnlyOnServer -
  - If on OneChildBox: Ask if overwrite file, Popup the file select dialog and upload file
  - If on a normal box:
    - If record selected:
      - Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
      - Create new file on server
- OnlyLocal Popup the file select dialog and upload file
- NoLocalNoServer Popup the file select dialog and upload file
- ChangedOnServer –"You have the file already downloaded earlier, but on the server is a newer version"
  - Overwrite file on server with your local file (changes on server will be lost) (if edit rights)
  - Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
  - Create new file on server (if not onechild box)
- NewOnServer like "ChangedOnServer" only the messages are informing, that on the server is a new file.
- ChangedLocally "Your earlier downloaded file has changed, select what to do:"
  - Upload your file on the server (open/close after finish) (if edit rights)
  - Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
  - Create new file on server (if not onechild box)
- Conflict "You have the file already downloaded earlier, since then, the file has



changed both - on the server and locally"

- Overwrite file on server with your local file (changes on server will be lost) (if edit rights)
- Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
- Create new file on server (if not onechild box)
- ConflictNewOnServer like "Conflict" only the messages are informing, that on the server is a new file.
- Synchronized "You have already the file downloaded earlier, and your local file is up-to-date"
  - Open file
  - Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
  - Create new file on server (if not onechild box)

# 4. Sync behavior

- OnlyOnServer Popup the folder select dialog and download file
- OnlyLocal Popup the file select dialog and upload file
- NoLocalNoServer Popup the file select dialog and upload file
- ChangedOnServer Actualize local file
- NewOnServer "On the server is a new file."
  - Download file to new location
  - Overwrite file on server with your local file
- ChangedLocally Upload your file on the server (open/close after finish) (if edit rights)
- Conflict "You have the file already downloaded earlier, since then, the file has changed both on the server and locally"
  - Actualize local file (Local changes will be lost on file: xxx)
  - Download file to new location (leave earlier downloaded changed file)
  - Overwrite file on server with your local file (changes on server will be lost) (if edit rights)
  - Overwrite file on server with a new file (changes on server will be lost) (if edit rights)
  - Create new file on server (if not onechild box)
- ConflictNewOnServer The local file was changed since last synchronisation, but in the mean time the file was replaced on the server with another one..
  - Download file to new location
  - Overwrite file on server with your local file
  - Overwrite file on server with a new file
  - Add new file to the server (if not onechild box)
- Synchronized "You have already the file downloaded earlier, and your local file is up-to-date"
  - o Open file



## 5. Open behavior

- OnlyOnServer Popup the folder select dialog, download file, open file
- OnlyLocal display warning, that the file is already only locally existing, ask if upload before opening, and open file
- NoLocalNoServer disabled
- ChangedOnServer –"You have the file already downloaded earlier, but on the server is a newer version"
  - Actualize local file (and open)
  - Download file to new location (and open)
  - Open your local file (without actualization
- NewOnServer "You have the file already locally, but on the server is a new file."
  - Download file to new location before open
  - Open your local file (without actualization)
- ChangedLocally "Your earlier downloaded file has changed, select what to do:"
  - Upload your file on the server and open (open/close after finish) (if edit rights)
  - Download file to new location and open (leave earlier downloaded changed file)
  - Overwrite your file with the server version and open (Local changes will be lost on file: xxxx)
- Conflict "You have the file already downloaded earlier, since then, the file has changed both – on the server and locally"
  - Actualize local file and open(Local changes will be lost on file: xxx)
  - Download file to new location and open (leave earlier downloaded changed file)
  - Overwrite file on server with your local file and open (changes on server will be lost) (if edit rights)
  - Overwrite file on server with a new file and open (changes on server will be lost) (if edit rights)
  - Create new file on server and open (if not onechild box)
- ConflictNewOnServer You have the file already locally and changed it, but in the mean time the file was replaced on the server by another one.
  - o Download file from server (without your changes) to new location and open it
  - Overwrite file on server with a new file and open it
  - Add new file to the server and open it (if not onechild box)
- Synchronized "You have already the file downloaded earlier, and your local file is up-to-date"
  - o Open file

#### 6. Check Out behavior

Like open only before open the check out flag is set on the file record

## 7. Cancel check out behavior

Check out flag is set to false



#### 8. Check In behavior

- OnlyOnServer disbled (message)
- OnlyLocal Popup the file select dialog and upload file, set check-out flag to false
- NoLocalNoServer Popup the file select dialog and upload file, set check-out flag to false
- ChangedOnServer –"You have the file already downloaded earlier, but on the server is a newer version"
  - Ask if overwrite file on server with your local file (changes on server will be lost) (if edit rights) and set check-out flag to false
- NewOnServer like "ChangedOnServer" only the messages are informing, that on the server is a new file.
- ChangedLocally "Your earlier downloaded file has changed, select what to do:"
  - Upload your file on the server set check-out flag to false
- Conflict "You have the file already downloaded earlier, since then, the file has changed both on the server and locally"
  - Ask Overwrite file on server with your local file (changes on server will be lost)
     (if edit rights) set check-out flag to false
- ConflictNewOnServer like "Conflict" only the messages are informing, that on the server is a new file.
- Synchronized "You have already the file downloaded earlier, and your local file is up-to-date"
  - set check-out flag to false



# 9. File upload algorithm

a7FileService	a7.File.SModule	a7Kernel	a7.File.CModule
			FileUploadRequest
		Handle the	
		FileUploadRequest*:	_
		Create <i>dirty</i> file-record	
		or update file-record	
		(includes checking auth	
		and security)	
		OnAfterAdd/Edit	
	Select correct file	On After Addy Edit	
	service	<b>—</b>	
	Make call to		
	a7FileService		
Handle the FOR*:	ari lieservice		
Check Request IP			
Generate Token			
Associate token in			
cache with:			
<ul><li>Cache with:</li><li>Client IP</li></ul>			
■ File ID			
<ul> <li>OperationType</li> </ul>			
Return token	Append token and	Record comes back to	Use token and connection
	connection data to	client	data for file operation.
	records "Additional		
	Information"		
			Call to file service
Perform file operation			1
<ul> <li>Check token with</li> </ul>			
client state			
<ul> <li>Perform file</li> </ul>			
operation			
<ul> <li>Actualize file</li> </ul>		Actualize record.	
record with		<ul> <li>Change from dirty</li> </ul>	
information that		if new	
it's a call from <table-cell-columns></table-cell-columns>		<ul> <li>Actualize location</li> </ul>	
a7FileService			
<ul> <li>Send response</li> </ul>			
			Handle response



# 10. File download algorithm

a7FileService	a7.File.SModule	a7Kernel	a7.File.CModule
			FileDownloadRequest:  • Perform "Generate Token" SMF
			1
	Select correct file service		
	Make call to a7FileService		
Handle the request:			
Check Request IP			
Generate Token			
<ul> <li>Associate token in cache with:</li> <li>Client IP</li> <li>ClientState</li> <li>File ID</li> <li>OperationType</li> </ul>			
Return token	Append token and		Use token and connection
L	connection data to records "Additional Information"		data for file operation.
			Call to file service
Perform file operation			
<ul> <li>Check token with</li> </ul>			
client state			
Send response			Handle recoonse
			Handle response

