

Appendix C. Use Cases

A Use Case describes the behaviour of the system in response to actions carried by the primary actor. The normal scenario and alternative flow are listed and documented in below tables. The following use cases focus on Android application. Mac OS X application has a similar actions flow.

Use Case Number	1
Application	Android
Use Case Name	View Sync Directories
Purpose	A detail screen showing all directories to synchronise
Primary Actor	User of the application
Basic Flow	<ul style="list-style-type: none">• Go to 'Sync List' tab• All entry will be shown with following details:<ul style="list-style-type: none">○ Local Path○ Remote Path
Alternate Flows	<i>No records in database</i> <ul style="list-style-type: none">• If this is no records in the database, "Currently there are no directories to be synchronised" will be displayed on screen
Postconditions	<ul style="list-style-type: none">• Update the list by pulling down from the top• Add new entry by pressing Add button• Delete each item by long pressing the item

Use Case Number	2
Application	Android
Use Case Name	Add sync directory
Purpose	Add new sync directory to database
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none">• FTPS settings configured, application able to enter remote server directories
Basic Flow	<ul style="list-style-type: none">• Go to 'Sync List' tab• Press '+' button

	<ul style="list-style-type: none"> • Input following details, they can be either entering the exact path or Click folder icon to select directory using folder picker: <ul style="list-style-type: none"> ○ Local Path ○ Remote Path • Save Settings by pressing 'Confirm'
Alternate Flows	<i>Option to cancel</i> <ul style="list-style-type: none"> • User can dismiss at anytime by pressing 'Dismiss', New entry will be saved.
Postconditions	<ul style="list-style-type: none"> • New entry has been added and display on the 'Sync List'.

Use Case Number	3
Application	Android
Use Case Name	Edit sync directory
Purpose	Edit sync directory existed in the database
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • FTPS settings configured, application able to enter remote server directories • Sync list is not empty, some paths has been configured
Basic Flow	<ul style="list-style-type: none"> • Go to 'Sync List' tab • Click on the item represent the sync entry • Input following details, they can be either entering the exact path or Click folder icon to select directory using folder picker: <ul style="list-style-type: none"> ○ Local Path ○ Remote Path • Save Settings by pressing 'Confirm'
Alternate Flows	<i>Option to cancel</i> <ul style="list-style-type: none"> • User can dismiss at anytime by pressing 'Dismiss', change made will not be saved.
Postconditions	<ul style="list-style-type: none"> • Return to 'Sync List' and Nothing has been modified.

Use Case Number	4
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Application	Android
Use Case Name	Delete sync directory
Purpose	Remove sync directory existed in the database
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • Sync list is not empty, some paths has been configured
Basic Flow	<ul style="list-style-type: none"> • Go to 'Sync List' tab • Long press on the item represent the sync entry • Remove item by pressing 'Delete'
Postconditions	<ul style="list-style-type: none"> • Selected entry has been removed from the database. • Return to 'Sync List'.

Use Case Number	5
Application	Android
Use Case Name	Start auto sync
Purpose	Enable auto sync service with configured sync settings
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • FTPS settings configured, application able to enter remote server directories • Sync list is not empty, some paths has been configured
Basic Flow	<ul style="list-style-type: none"> • Go to 'Preferences' • Enable 'Auto Sync', under 'Sync' setting • Set 'Sync Interval' • Back to Main Screen • Switch On the button in action bar
Postconditions	<ul style="list-style-type: none"> • Notification comes up when service switched on • Notification shows synchronise status • Synchronise in Action every X minutes

Use Case Number	6
Application	Android

Use Case Name	Manual Sync
Purpose	Start synchronisation manually
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • FTPS settings configured, application able to enter remote server directories • Sync list is not empty, some paths has been configured
Basic Flow	<ul style="list-style-type: none"> • Go to main screen • Press 'Sync' button
Postconditions	<ul style="list-style-type: none"> • Notification comes up and shows synchronise status • Synchronise in Action

Use Case Number	7
Application	Android
Use Case Name	Synchronise in Action
Purpose	The synchronous flow
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • Pressed 'Sync' button manually, OR, • Auto Sync switched on and trigger the action
Basic Flow	<ul style="list-style-type: none"> • Sync Started, either triggered by schedule timer or pressed button • Check and Get FTPS Settings • Get saved local directory list • Get current local directory list • Compare saved and current local lists <ul style="list-style-type: none"> ○ If file modify, either file size or last modification date change, file version +1 ○ If file deleted after last sync, set file size and date as -1 ○ If file added after last sync, add new entry to the list with version = 0 • Get saved remote directory list • Get current remote directory list

	<ul style="list-style-type: none"> ● Compare saved and current remote lists (inner steps same as local list) ● Compare these two new list, local and remote <ul style="list-style-type: none"> ○ Each file has a version object, each object contains all clients with their file version. (e.g. {'client': 1, 'server': 0} on client side and {'client': 0, 'server': 0} on server side) ○ Compare two version objects <ul style="list-style-type: none"> ■ If there are equal, <ul style="list-style-type: none"> ● with equal file size and date, then Skip this file. ● with different file size or date, then file conflict. ■ If client side has a larger value than server side, file on client side is the one more updated. (e.g. see first example above) <ul style="list-style-type: none"> ● If file size and date are -1 (which means file deleted after last sync), Remove file on remote server. ● Otherwise, Upload this file from local to remote server. ■ If server side has a larger value than client side, file on server side is the one more updated. (e.g. {'client': 1, 'server': 1} on client side and {'client': 1, 'server': 2} on server side) <ul style="list-style-type: none"> ● If file size and date are -1 (which means file deleted after last sync), Delete file on local client. ● Otherwise, Download this file from server to local. ■ Otherwise, this file is in conflict. (e.g. {'client': 4, 'server': 1} on client side and {'client': 1, 'server': 4} on server side) <ul style="list-style-type: none"> ● If file size and date are -1 (which means file deleted after last sync),
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	<p>Remove file on remote server and Delete file on local client.</p> <ul style="list-style-type: none"> Otherwise, Let user to choose which file is the latest one. <ul style="list-style-type: none"> Save the new list formed when comparing two lists to both local client and remote server
Alternate Flows	<p><i>No FTPS Settings</i></p> <ul style="list-style-type: none"> Message to notify user they do not have a valid ftps settings will be shown Sync Stopped <p><i>In Mobile network, but set to Wifi Only</i></p> <ul style="list-style-type: none"> Message to notify user they are in an invalid network condition will be shown Sync Stopped
Postconditions	<ul style="list-style-type: none"> Save synchronise status log to database Update log screen Update notification status

Use Case Number	8
Application	Android
Use Case Name	View Log
Purpose	A detail log screen showing all synchronise file actions
Primary Actor	User of the application
Basic Flow	<ul style="list-style-type: none"> Go to 'Log' tab All log will be shown with following details: <ul style="list-style-type: none"> Transfer Action (Upload, Download, Remove, Skip) Local File Path Remote File Path Date Status (Done, Skipped, False)
Alternate Flows	<p><i>No records in database</i></p> <ul style="list-style-type: none"> If this is no records in the database, "No Log" will be displayed on screen

Postconditions	<ul style="list-style-type: none"> • Update log screen by pulling down from the top • Clear all logs by pressing clear button
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Use Case Number	9
Application	Android
Use Case Name	Solve Sync Conflict
Purpose	Action to solve conflict file when comparing versions of the files between local client and remote server.
Primary Actor	User of the application
Precondition	<ul style="list-style-type: none"> • FTPS settings configured, application able to enter remote server directories
Basic Flow	<ul style="list-style-type: none"> • Dialog popup, showing local and remote path, file size and last modification • Choose either 'Local' or 'Remote' <ul style="list-style-type: none"> ◦ Local: Upload file to remote server ◦ Remote: Download file from remote server • Action Complete
Alternate Flows	<p><i>Preference set to choose local file in all cases</i></p> <ul style="list-style-type: none"> • No popup • Redirect to upload file from local client to remote server <p><i>Preference set to choose remote file in all cases</i></p> <ul style="list-style-type: none"> • No popup • Redirect to download file from remote server to local client
Postconditions	<ul style="list-style-type: none"> • Save synchronise status log to database • Update log screen • Update notification status

Use Case Number	10
Application	Android
Use Case Name	Save FTPS Settings
Purpose	Update FTPS configurations.
Primary Actor	User of the application

Basic Flow	<ul style="list-style-type: none"> • Go to 'Preferences' • Enter domain name of the ftps server in 'Server' • Enter port number • Enter username • Enter password • Back to main screen
Alternate Flows	<p><i>Server or Port number is not set</i></p> <ul style="list-style-type: none"> • Alert the user • Choose either 'Continue' or 'Exit' <p><i>Preference set to choose remote file in all cases</i></p> <ul style="list-style-type: none"> • No popup • Redirect to download file from remote server to local client
Postconditions	<ul style="list-style-type: none"> • Save synchronise status log to database • Update log screen • Update notification status