



FUNAMBOL mobile open source

Funambol Email Connector & InboxListener Quick Start Guide

Revision History

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1. Introduction

The purpose of this document is to describe how to manage and administer the Funambol Email Connector and the Inbox-Listener component. The admin user will use the FunambolAdmin console and a command line tool in order to configure the entire Funambol email synchronization environment.

This document is intended to be read by the administrative users.

1.1. Release Notes

The current version of the email connector is compliant with the following clients:

- funambol windowmobile/pocketpc plugin
- funambol smartphone plugin
- funambol blackberry plugin
- funambol j2me email client for mobile phone
- Nokia E60 (prototype)

The current version was tested with:

- Ms Exchange 2000/2003 Server
- Lotus Domino 7.0
- Zimbra Collaboration Suite
- CommuniGate Server 5.x
- Some Unix/Linux based Mail Server (Cyrus, Courier, ...)
- Some MS-Windows based Mail Server (Winmail, Mercury, ...)
- Some public Email Service Provider (Gmail, Yahoo, AOL, ...)

1.2. Known Issues

This is a list of some of known issues about the Funambol Email Connector:

- the “forwarded” flag for the email in the inbox folder is not supported yet
- jpg attachments sent by the Microsoft Outlook 2002 client (MS Outlook XP) are not correctly downloaded and handled by the Email Connector

1.3. Related Documents

The following documents are related to this design document:

- [1] DS Modules Development Tutorial
- [2] DS Server Administration Guide

2. Funambol's Email Synchronization Environment

2.1. Environment Description

Before starting with the installation procedure, we will provide a quick overview of Funambol's email synchronization environment.

To implement the push email functionality and improve performance, the email connector provides the Inbox-Listener tool (IL), which offers the following features:

- **Polling inbox-listener feature.** The IL polls the Mail Server for new mail for a specific email account; when new mail has been received for that account, the tool sends a notification to the DS server.
- **Notifiable inbox-listener feature.** The IL keeps listening for notifications from the Mail Server, which are sent out when new mails are received by a specific email account.
- **Message processor feature:** The IL stores some basic email information (such as Message-ID, Date, etc.) from the inbox folder into a local caching system in order to improve the synchronization performance. The number of emails that should be cached on the system can be configured by the user.

To use the email synchronization feature, the module (s4j) of the Email Connector must be added to the DS Server; this component allows synchronization of a user's email between a Mail Server and a Mobile Device.

In order to manage the Email Connector and the Inbox-Listener, the administrator can use the panels provided in the Administration Tool after the Email Connector installation.

All data related to the Email Connector is stored in a database schema that must be added to the Funambol DS Server Schema.

The email synchronization process is summarized in the following diagram:

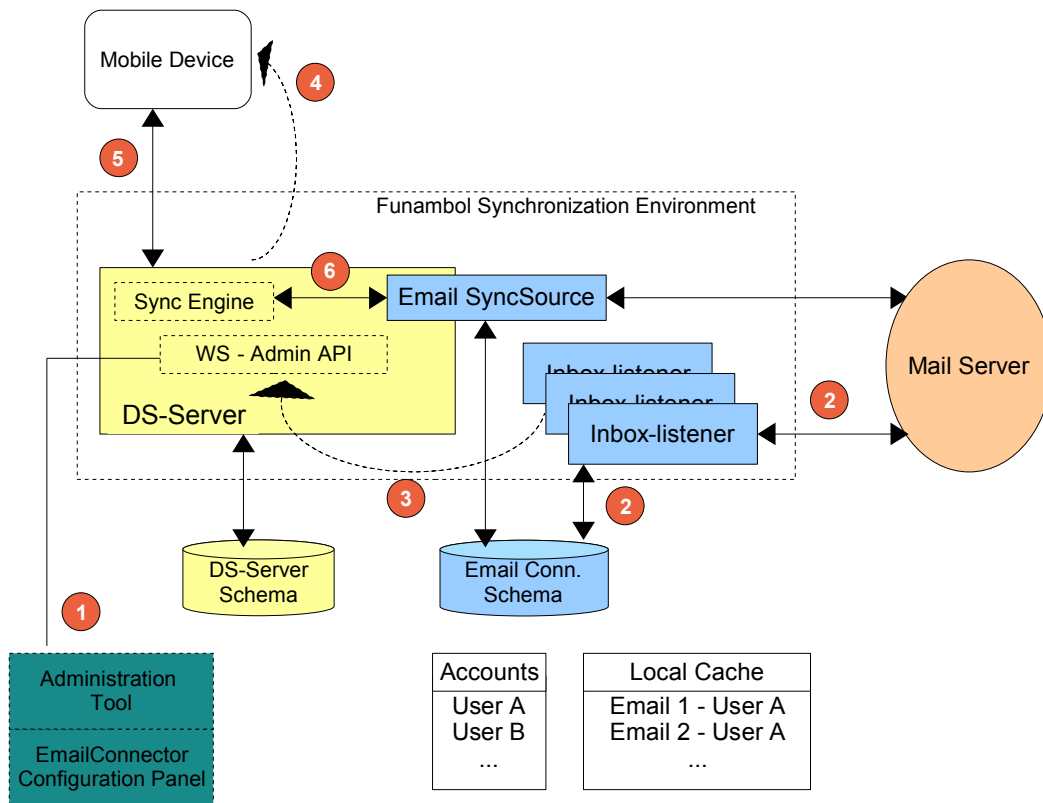


Figure 1: The Funambol email synchronization process

- 1) The administrator user must create the “ds-user” (user in the DS Server) and the “account” (ds-user + all the information about the mail server)
- 2) The Inbox-Listener uses the Email Connector DB Schema and reads data from the “Accounts” table. It retrieves 'N' (max email number) emails from the Server's Inbox Folder and stores some basic info in the “Local Cache”. This behavior allows the Email Connector to improve the performance during the sync process. The Inbox Listener can be driven by a polling system or an asynchronous external notification.
- 3) when new email has been received in the Server Inbox Folder the inbox-listener sends a notification to the DS-Server.
- 4) The DS-Server sends the notification to the client.
- 5) The *Mobile Device* performs a sync session. A sync session can be:
 1. driven by a DS server Notification. The DS Server sends a notification if a new email is the inbox folder.
 2. driven by the user. The user starts the sync session pressing the 'sync button' on the syncML plug-in
- 6) The DS-Server uses the *Email Connector* in order to sync the email with the Mail Server. The *Email Connector* uses the Local Cache in order to improve the performance.

2.2. Installation Steps

In this paragraph we give a short list of the main steps in order to install the Funambol Email Connector & Inbox Listener:

- Check if there is an available DB connection (mysql, postgres, hypersonic)

- Install the Funambol Email Connector
 - the installation automatically creates the Connector DB schema.
- Install the Inbox-Listener Tool
 - configure the *.xml and shell script (*.cmd or *.sh) files
- Run the DS Server
- Run the Admin Tool
- Configure the Email Connector Properties
 - set the Accounts in the Email Connector Panel in the Admin Tool (*in order to get the IMAP Folder Information the administrator can use an option of the Inbox-Listener Command Line Tool. see next chapter for details*)
- Check the Email SyncSources
 - create and set the parameters in the Email SyncSource Panel in the Admin Tool
- Configure the Officer in the Server Settings Panel in the Admin Tool
- [optional] Set the Encryption in the Email SyncSource Panel in the Admin Tool
- [optional] Set the log Level
- set the “push environment” information in the Device Settings Panel (see ch. 4)
- Run the *Inbox-Listener Tool*
 - the Message-Processor loads the inbox folder emails in the cache table (just basic email info; NOT the entire email)
 - the Inbox-Listener starts polling the inbox folder.
- Get the Mobile Device and run a sync session from the Mobile Device or wait for a notification from the DS-Server

3. Funambol's Email Synchronization Installation Procedure

3.1. Installing Funambol Email Connector

The Funambol Email Connector is distributed as a standard Funambol module [1]. The distribution contains the following files:

- funambol-email-connector-<major>.<minor>.<buildnumber>.s4j
- the Inbox-Listener Tool
- this guide

To install the module you have to follow this steps:

1) put the s4j file in the directory

`<installation dir>\ds-server\modules`

2) modify “install.properties” file adding “funambol-email-connector-x.x.x” to the modules list:

`modules-to-install=foundation-x-x-x,pimweb-x-x-x,...,funambol-email-x.x.x`

3) start installation modules command.

For more details about the Funambol module installation see [2].

During the installation the following steps are performed automatically:

1. the database is initialized creating the connector specific tables and registering the connector into the server.
2. the EmailOfficer.xml file is copied in the directory:
`<installation dir>\ds-server\config\funambol\server\security`

Note: before running the Funambol DS-Server you have to put the JDBC in the Application Server library folder; for instance in a Tomcat + Postgres installation you have to copy the postgresql-***.jdbc3.jar library in the “<tomcat_home>\common\lib” folder (just for brand new installation)

Note: the JavaMail library is already included in the distribution so that you don't have copy the mail.jar and the activation.jar in the Application Server library folder.

3.2. Installing and configuring Funambol Inbox-Listener

The Funambol Inbox-Listener tool is included in the Funambol Email Connector archive file:

- funambol-email-**<major>**.**<minor>**.**<buildnumber>**.zip

To install the tool you have to follow this steps:

- 1) unzip the “.zip” and check the directory structure:

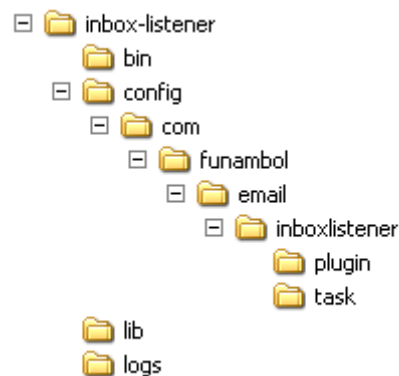


Figure 2: inbox listener home

- 2) modify the run script: bin\inboxlistener.cmd (or *.sh);

- change JAVA_HOME and JDBC_JAR according to your environment

- 3) modify the followong xml file

“com/funambol/email/inboxlistener/InboxListenerConfiguration.xml” according with your environment

```
<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.2" class="java.beans.XMLDecoder">
  <object class="com.funambol.pushlistener.service.config.PushListenerConfigBean">

    <void property="maxThreadPoolSize">
      <int>50</int>
    </void>

    <void property="healthThreadPollingTime">
      <!-- 10 minutes -->
      <long>600000</long>
    </void>

    <void property="registryMonitorPollingTime">
      <!-- 1 minute -->
      <long>60000</long>
    </void>

    <void property="taskPeriodTolerance">
      <double>0.1</double>
    </void>

    <void property="registryTableName">
      <string>fnbl_email_push_registry</string>
```

```

</void>

<void property="pluginDirectory">
  <string>com.funambol/email/inboxlistener/plugin</string>
</void>

<void property="basicDataSource">
  <object class="org.apache.commons.dbcp.BasicDataSource">
    <void property="driverClassName">
      <string>com.mysql.jdbc.Driver</string>
    </void>
    <void property="username">
      <string>funambol</string>
    </void>
    <void property="password">
      <string>funambol</string>
    </void>
    <void property="url">
      <string>jdbc:mysql://localhost:3306/fnbl_651</string>
    </void>
    <void property="maxActive">
      <int>50</int>
    </void>
  </object>
</void>

<void property="WSServerInformation">
  <object class="com.funambol.pushlistener.service.ws.WSServerInformation">
    <void property="url">
      <string>http://localhost:8080/funambol/services/admin</string>
    </void>
    <void property="username">
      <string>admin</string>
    </void>
    <void property="password">
      <string>sa</string>
    </void>
  </object>
</void>

<void property="clusterConfiguration">
  <object class="com.funambol.pushlistener.service.cluster.ClusterConfiguration">
    <void property="clusterName">
      <string>gibi.il</string>
    </void>
    <void property="configurationFile">
      <string>jgroups.xml</string>
    </void>
  </object>
</void>

</object>
</java>

```

Note: the cluster information is needed just if you install more than one inbox-listener tool. In this case you have to put the jgroups.xml in the directory: inbox-listener\config

“com.funambol/email/inboxlistener/task/InboxListenerTask.xml” according with your environment

```

<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.2" class="java.beans.XMLDecoder">

  <object class="com.funambol.email.inboxlistener.service.InboxListenerScheduledTask">

    <!-- true for debug mode; false in production -->
    <void property="startupNotification">
      <boolean>>false</boolean>
    </void>

    <!-- if true the notification is sent just when a new email is detected -->
    <void property="justNewNotification">
      <boolean>>false</boolean>
    </void>
  </object>

```

```

    <!-- true for debug mode; false in production -->
    <void property="saveSubject">
      <boolean>false</boolean>
    </void>

    <!-- true for debug mode; false in production -->
    <void property="saveSender">
      <boolean>false</boolean>
    </void>

  </object>
</java>

```

“com/funambol/email/inboxlistener/task/InboxListenerOneShotTask.xml” according with your environment

```

<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.2" class="java.beans.XMLDecoder">

  <object class="com.funambol.email.inboxlistener.service.InboxListenerTask">

    <!-- true for debug mode; false in production -->
    <void property="startupNotification">
      <boolean>false</boolean>
    </void>

    <!-- if true the notification is sent just when a new email is detected -->
    <void property="justNewNotification">
      <boolean>false</boolean>
    </void>

    <!-- true for debug mode; false in production -->
    <void property="saveSubject">
      <boolean>false</boolean>
    </void>

    <!-- true for debug mode; false in production -->
    <void property="saveSender">
      <boolean>false</boolean>
    </void>

    <!-- fnbl_email_inbox refresh time -->
    <void property="period">
      <!-- 1 minute -->
      <long>60000</long>
    </void>

  </object>

</java>

```

“com/funambol/email/inboxlistener/plugin/UDPUncastReaderPlugin.xml” according with your environment

```

<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.2" class="java.beans.XMLDecoder">
  <object class="com.funambol.email.inboxlistener.plugin.UDPUncastReaderPlugin">

    <void property="enabled">
      <boolean>true</boolean>
    </void>

    <void property="port">
      <int>4000</int>
    </void>

    <void property="taskBeanFile">

```

```

        <string>com/funambol/email/inboxlistener/task/InboxListenerOneShotTask.xml</string>
    </void>

    <void property="submitter">
        <object class="com.funambol.email.inboxlistener.plugin.submitter.BufferedSubmitter">
            <void property="maxThread">
                <int>5</int>
            </void>
            <void property="prefix">
                <string>il-udp-reader</string>
            </void>
        </object>
    </void>

    <void property="parser">
        <object class="com.funambol.email.inboxlistener.plugin.parser.MailboxNameParser">
            <void property="prefix">
                <string>NOX1</string>
            </void>
            <void property="postfix">
                <string></string>
            </void>
        </object>
    </void>

</object>
</java>

```

5) Run the inbox-listener with the following procedure:

- change directory : <ds-server home>/inbox-listener
- type command bin\inboxlistener.sh start (or ./bin/inboxlistener start)

Note: there are 4 option in order to handle the inbox-listener tool

- > ./inboxlistener.sh start : start the inboxlistener
- > ./inboxlistener.sh start -debug : start the inboxlistener with console debug (in a separated window)
- > ./inboxlistener.sh stop: stop the inboxlistener

3.2.1. Clustering Inbox-Listener

In order to activate the cluster of inbox-listener the administrator must:

- install more than one inbox-listener
- copy in all inbox-listener\config directory the file jgroups.xml
- insert the clusterConfiguration property in the InboxListenerConfiguration.xml

3.2.2. Inbox-Listener logger

The Inbox-Listener uses the apache logger. The administrator should configure the file: inbox-listener-0\config\log4j.xml if a different behavior is needed

3.3. Configuring Email Connector

In order to configure the Funambol Email Connector the administrator can open the Funambol Administrator Console and browse in the following tree structure (Figure 3)



Figure 3: Email Connector Access Point

When the administrator points on the Email Connector item he can see the following panel (Figure 4).

Public Mail Servers

Server description

Start with

Reset

Search

Description	Outgoing server	port	Incoming server	port

Add

Edit

Delete

Accounts

Username

Start with

Reset

Search

Server description

Start with

Username	Login	Address	Activation	Max email	Delete o...	Descript...	Protocol

Add

Edit

Delete

Figure 4: Email Connector Configuration First Panel

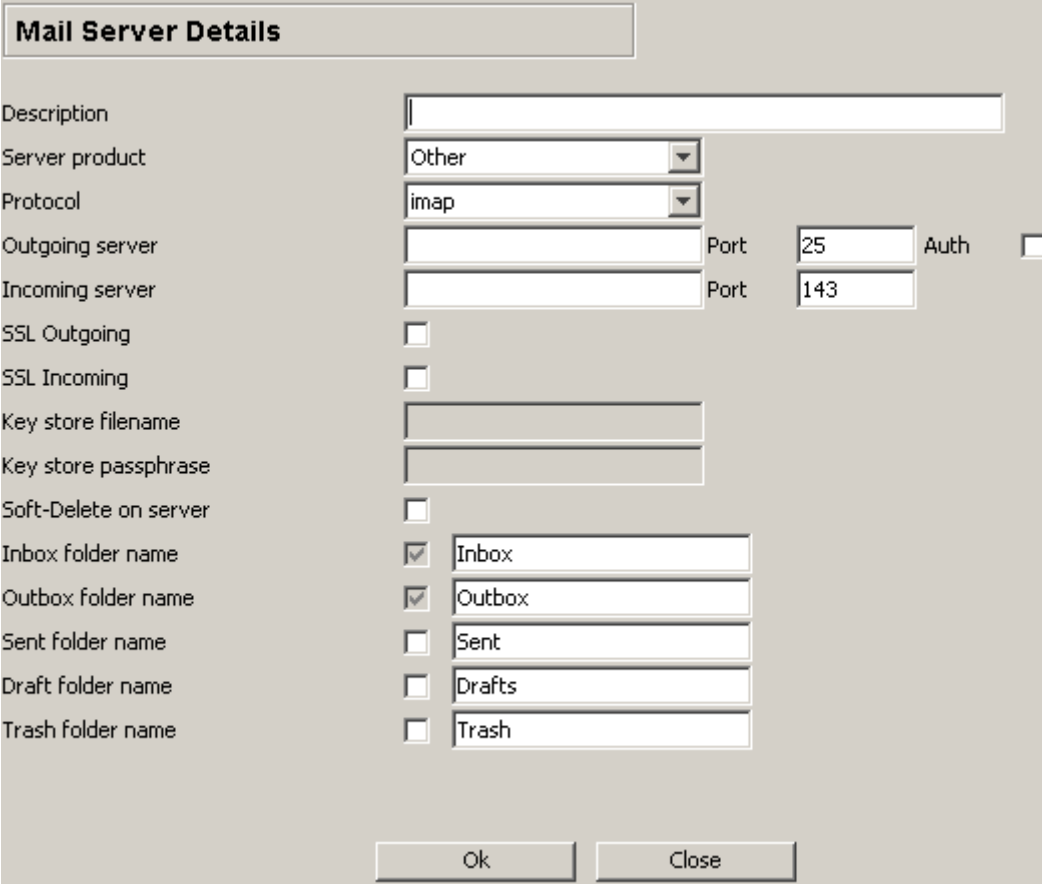
In the first table there is the Public Mail Servers list (i.e. Gmail, Yahoo, ...)

In the second table there is the Accounts list for the registered users in the Funambol DS-Server.

3.3.1. Handling Mail Server

In order to create a new Mail Server the administrator must press the “ADD” button in the “Mail Server section” (Figure 4).

A new panel is opened (Figure 5). In this panel the administrator can add all the settings about a mail server



The image shows a 'Mail Server Details' dialog box with the following fields and controls:

- Description: Text input field.
- Server product: Dropdown menu with 'Other' selected.
- Protocol: Dropdown menu with 'imap' selected.
- Outgoing server: Text input field.
- Incoming server: Text input field.
- Port (Outgoing): Text input field with '25'.
- Port (Incoming): Text input field with '143'.
- Auth: Checkmark button.
- SSL Outgoing: Checkmark button.
- SSL Incoming: Checkmark button.
- Key store filename: Text input field.
- Key store passphrase: Text input field.
- Soft-Delete on server: Checkmark button.
- Inbox folder name: Checkmark button and text input field with 'Inbox'.
- Outbox folder name: Checkmark button and text input field with 'Outbox'.
- Sent folder name: Checkmark button and text input field with 'Sent'.
- Draft folder name: Checkmark button and text input field with 'Drafts'.
- Trash folder name: Checkmark button and text input field with 'Trash'.
- Ok button.
- Close button.

Figure 5: Add mail server panel

3.3.2. Handling Account

In order to create a new account for a Funambol DS-Server user the administrator must press the "ADD" button in the "users section" (Figure 4).

A new pop-up panel is opened. In this panel the administrator can search the Funambol DS-Server user to configure (Figure 6).

Search Users

Username: Start with Search

First Name: Start with Reset

Last Name: Start with

E-mail: Start with

Username	First Name	Last Name	E-mail
----------	------------	-----------	--------

Figure 6: Funambol DS-Server User Selection

When the Administrator press search the table will show all the ds-server users.
When a user is selected the “account settings panel” (Figure 7) is opened

User Account Details (...)

Login:

Password:

Confirm password:

E-mail address:

Enable Push: ☒

Enable Polling: ☒

Refresh time (min):

Max email number:

Max IMAP emails:

Mail server:

Description:

Server product:

Protocol:

Outgoing server: Port: Auth: ☒

Incoming server: Port:

SSL Outgoing: ☒

SSL Incoming: ☒

Soft-Delete on server: ☒

Inbox folder name: ☒

Outbox folder name: ☒

Sent folder name: ☐

Draft folder name: ☐

Trash folder name: ☐

Ok Close

Figure 7: Account Settings Panel

In this panel the administrator can set the parameters like in the table below:

left form

<i>Property</i>	<i>Description</i>
username	Mail server login
Password / confirm password	Mail server password
Email address	User email address
Enable push	If the push environment is active for the specific user
Enable Polling	If the user has the polling enabled
Refresh time	Every "x" minutes the Inbox-Listener tool refreshes the Caching system
Max Inbox Email	Max number of emails in the caching system
Max IMAP Email	Max number of emails that will be synchronized in the Drafts, Sent, Trash folder

right form

<i>Property</i>	<i>Description</i>
Mail Server	The administrator can choose either a public Mail Server or the <custom> option. If the administrator chooses the <custom> option he must insert all the mail server information
Description	A brief description of the mail server
Server Product	Define the mail server product: i.e. Exchange, Courier, Other
Protocol	Used protocol in the sync sessions
Out Server / Out Port / Auth.	All the information about the outgoing server.
In Server / In Port	All the information about the incoming server.
SSL outgoing	SSL Activation for the outgoing server
SSL incoming	SSL Activation for the incoming server
Soft-Delete on Server	Enable the soft delete on the Funambol DS-Server
*** Folder	Activation and information about the path folder (the complete name of the folder)

Folder configuration

Note: the Funabol plug-in and SyncML email client can synchronize the following folders:

- inbox
- outbox

So in the Account panel the admin must check just this two folder.

In the pop-based account this is already done and the folder configuration is disable.

In the imap-based account the folder configuration is enable but the admin user must set just the inbox and the outbox folder

Refresh Time

in order to update the refresh time the admin user can modify the refresh time field in the admin panel. This is a new feature of the new version.

Soft-Delete on Server

If this option is enabled the syncml client can not send a delete command to the server.

For instance the user removes an item on the client inbox folder and press sync. The email is not deleted on the server.

In this way the user on your own device can implement the the scenario that allows to preserve some important emails on the device avoiding the delete on the server;

In order to create this environment on the device the user can:

- create an “archive” folder
- move the email from inbox to archive folder
- press sync

3.4. Configuring Email SyncSource

The email connector provides a single SyncSource type; all the users will be use the “mail” SyncSource in order to synchronize the emails



Figure 8: SyncSource access point

When the administrator user points on the Email SyncSource item he can see the Figure 9

Edit Email Connector SyncSource	
Source URI:	mail
Name:	mail
Supported Types:	application/vnd.omads-email+xml,application/vnd.omads-folder+xml
Supported Versions:	1.2,1.2
Encryption:	<input type="checkbox"/>
Funambol Signature:	funambol :: mobile open source :: http://www.funambol.com
<input type="button" value="Save"/>	

Figure 9: Email SyncSource Configuration Panel

In the SyncSource Panel the administrator can set the following properties:

<i>Property</i>	<i>Description</i>
Source URI	The sync source URI [i.e. "mail"].
Name	The SyncSource name. [i.e. "mail"]
Supported Type	application/vnd.omads-email+xml,application/vnd.omads-folder+xml
version	1.2,1.2
encryption	the communication between syncml client and ds-server will be encrypted (DES and BASE64)
Funambol Signature	This string is attached in all the email sent by the Funambol email plug-in and client

3.5. Officer Configuration

In order to set the Officer for the Funambol Email Connector, you have to set the parameters in the file; at the moment you have to set no parametrs:

<installation dir>\ds-server\config\funambol\server\security\EmailOfficer.xml

This is an example of the EmailOfficer.xml file:

```
<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.0" class="java.beans.XMLDecoder">
  <object class="com.funambol.email.security.EmailOfficer">
    </object>
  </java>
```

In the Admin tool you have to specify the correct Officer:

Officer : com/funambol/server/security/EmailOfficer.xml

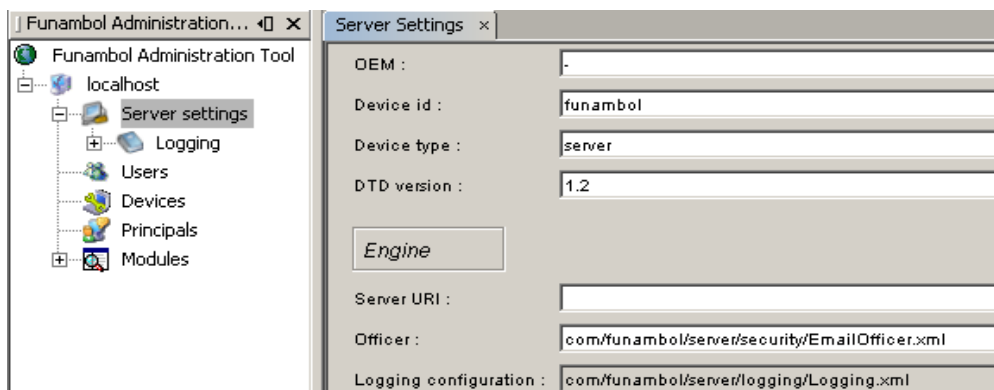


Figure 10: Officer Settings

The Main information about the EmailOfficer are in the Email Connector Configuration Panel. See next paragraph for details.

3.6. Encryption

In order to enable the Encryption Communication between syncML client (i.e. The Funambol WM plug-in) and the Funambol DS-Server/Email Connector you have to check the "encryption/encoding checkbox in the SyncSource configuration Panel

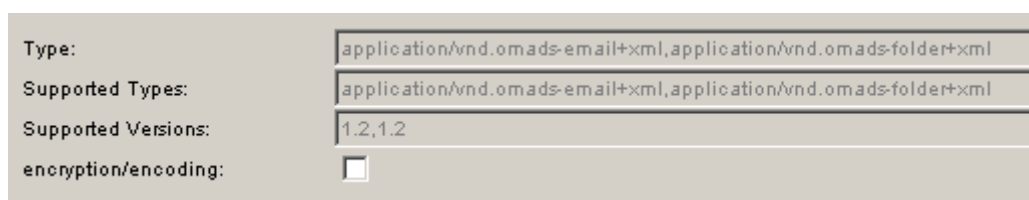


Figure 11: Encryption Settings

if the encryption is enabled the synchronization will be provided with DES and BASE64 encoding

You can also check the configuration in the Data transformation panel in the Server Settings section

- Open the Funambol Admin Tool
- Settings – Data Transformation – Configure
- In the DataTrasformer Configuration Manager; add a raw in the Data Transformations table

Source URI	Transformation
scard	b64
briefcase	b64
scal	b64
stask	b64
note	b64

Figure 12: Data Transformation Table

- press "+"
 - SourceUri : set the SyncSource Name [i.e. "mail"]
 - Transformation: set "**des;b64**"
- press "save"

In this way the server is enabled to handle the encryption data. Meanwhile you have to set on the client the "encryption" property.

3.7. Enabling Log

3.7.1. Enabling log in the Email Connector

In order to configure the logging level for the Funambol Email Connector, you have to modify the file:

```
<installation dir>\ds-server\config\sync4j\server\logging\Logging.xml
```

adding this rows:

```
<void method="add">
  <object class="com.funambol.framework.config.LoggerConfiguration">
    <void property="append">
      <boolean>true</boolean>
    </void>
    <void property="count">
      <int>1</int>
    </void>
    <void property="inherit">
      <boolean>true</boolean>
    </void>
    <void property="level">
      <string>INFO</string>
    </void>
    <void property="limit">
      <int>100</int>
    </void>
    <void property="name">
      <string>funambol.email</string>
    </void>
    <void property="pattern">
      <string>logs/syncserver.email.log</string>
    </void>
  </object>
</void>
```

This file is re-written during server installation (or module installation) so, if you don't want to lose the changes, you may insert the same rows in the file:

```
<installation dir>\ds-server\default\config\common\beans\funambol\server\logging\Logging.xml
```

3.7.2. Enabling log in the InboxListener

In order to configure the logging level for the Funambol InboxListener, you have to modify the file:

```
<installation dir>\bin\log4j.xml
```

```

<?xml version="1.0" encoding="UTF-8" ?>

<!DOCTYPE log4j:configuration SYSTEM "log4j.dtd">

<log4j:configuration xmlns:log4j="http://jakarta.apache.org/log4j/">

  <appender name="console" class="org.apache.log4j.ConsoleAppender">
    <layout class="org.apache.log4j.PatternLayout">
      <param name="ConversionPattern"
        value="%d{yyyy-MM-dd HH:mm:ss,SSS} [%c] [%p] [%t] %m%n" />
    </layout>
  </appender>

  <appender name="log-file" class="org.apache.log4j.RollingFileAppender">
    <param name="File" value="../log/il.log"/>
    <param name="MaxFileSize" value="100MB"/>
    <param name="MaxBackupIndex" value="5"/>
    <layout class="org.apache.log4j.PatternLayout">
      <param name="ConversionPattern"
        value="%d{yyyy-MM-dd HH:mm:ss,SSS} [%c] [%p] %m%n" />
    </layout>
  </appender>

  <logger name="funambol.email">
    <level value="all"/>
  </logger>

  <logger name="org">
    <level value="error"/>
  </logger>

  <root>
    <appender-ref ref="console" />
    <appender-ref ref="log-file" />
  </root>

</log4j:configuration>

```

You can enable/disable the log on console put the following comment in the line

```
<!-- <appender-ref ref="console" /> -->
```

4. Appendix A - Notification System between Funambol DS-Server and Mobile Device

In this chapter we show briefly the main information about the communication between the Funambol DS-Server and the Mobile Device (Figure 13).

A detailed and updated description is included in the specific Funambol Server and Funambol Windows Mobile Plug-in documentation; this chapter must be consider as conceptual.

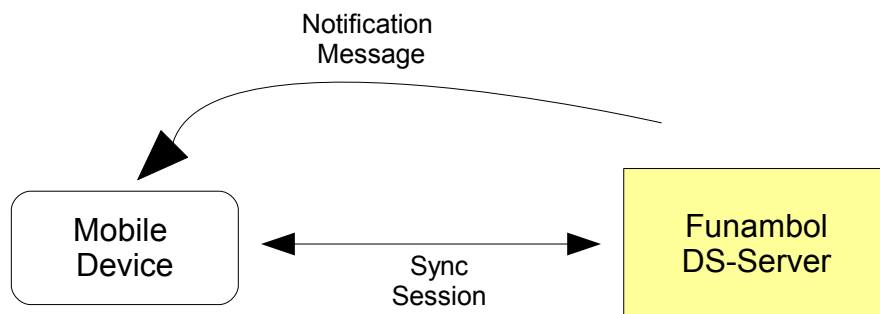


Figure 13: Communication between Server and Device

The Funambol DS-Server sends notification to the device using two protocol.

- **SMS protocol (WAP protocol):** the engine sends the notification sending an sms. In this case we need:
 - activate an SMS service (we have to ask a service to an SMS Provider)
 - provide a modules to install in the funambol engine (an s4j file ..)This module should implement the specification of the SMS provider (i.e. Send a http request with the sms to the provider server) In order to develop this module you can see the class `com/funambol/server/notification/sender/SimpleWAPSenderImpl.java` in the Objectweb cvs
- **TCP-IP protocol:** the engine send to the device a message using the tcp-ip protocol. In the case we need a Mobile Device with a public IP when the “push” is turned on.

When the client plug-in on the device receives the notification automatically performs an email synchronization via the Email Connector module.

Remember to set the push properties on the plug-in settings and to set the properties in the Admin tool

4.1. Mobile Device Settings

Note that this section includes the Funambol client configuration. The images could be out-of-date but the instruction will be pretty similar in the different Funambol client versions.

V6 platform; On the Mobile Device you have to set the following properties.

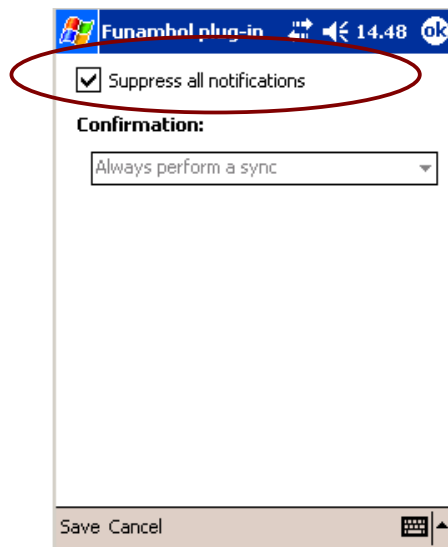


Figure 14: Mobile Device Settings

In order to disable/enable the notification the user must check/decheck the 'Suppress all notifications' option. If the user disables the option the plug-in enables the notification based on both wap and tcp-ip protocol, then the DS-Server will send the message with the protocol defined in the Admin Tool.

Previous Platform; On the Mobile Device you have to set the following properties.

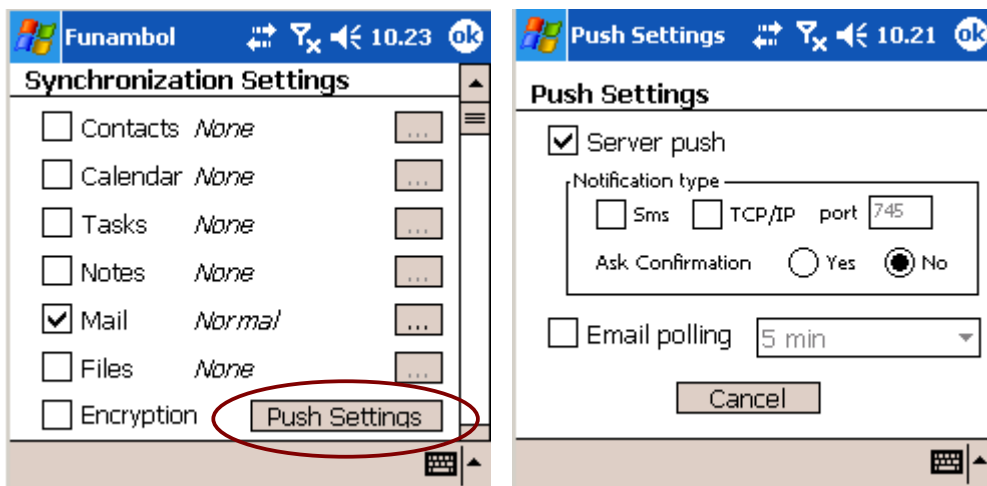


Figure 15: Mobile Device Settings

In the Push settings you can choose if the notification is via Sms or TCP/IP

When the user check “server push” and “tcp/ip” a message is sent to the Funambol DS-Server from the client in order to configure the “address” field in the admin tool (see next chapter).

When the user check “server push” and “sms” no messages are sent to the Funambol DS-Server from the device so the admin user must insert the “msisdn” field in the admin tool (see next chapter).

4.2. Admin Tool Settings

In order to set the properties for the DS-Server we have to use the Admin Tool.

- open the admin tool
- choose <server-name> ---> Devices ---> Edit

ID :	fwm-03E0C3804117A6822
Type :	
Timezone :	Not specified
	<input type="checkbox"/> Convert dates to this timezone
Charset :	UTF-8
Address :	
Phone Number :	
Notification Type :	OMA DS 1.2
Description :	NOKIA OMA DS 1.1 OMA DS 1.2

Figure 16: DS - Server Settings

We have to handle the following properties

- **Address:** IP address of the device (if the user chose the tcp/ip notification).
- **Msisdn:** Msisdn of the device (i.e., the phone number, if the user chose the sms notification)
- **Notification Type:**
 - empty
 - nokia oma ds 1.1: (not used for the email environment)
 - **oma ds 1.2:** this is the default **tcp/ip notification mode** for the email environment. The server uses a **builder component** to create notification messages and a **sender component** to send notification messages to the device. The **builder component** is the DSNotificationBuilder.xml already present in the previous version; the **sender component** is the PushSender.xml (ex - TCPIPSender.xml present in the previous version).

The default PushSender.xml contains the tcp/ip mode configuration:

```
<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.2_01" class="java.beans.XMLDecoder">
  <object class="com.funambol.server.notification.sender.TCPIPSender">

    <!-- Connection timeout in seconds -->
    <void property="timeout">
      <int>60</int>
    </void>

    <!-- Numbers of attempts -->
    <void property="attempts">
      <int>3</int>
    </void>

    <!-- Waiting time between the attempts in seconds -->
    <void property="waitingTime">
      <int>20</int>
    </void>
  </object>
</java>
```

```
<!-- Default port -->
<void property="defaultPort">
  <int>745</int>
</void>

</object>
</java>
```

If the Administrator wants to implement the **SMS notification mode**, he must create and install a new module (a custom push sender s4j module). Note that Funambol provides an sms push sender module for the Carrier Edition (the funambol push sender s4j module)

The Custom Push Sender

The administrator should implements an s4j module and he can follow the main indication in the sample class: `com/funambol/server/notification/sender/SimpleWAPSenderImpl.java` in the Objectweb cvs .

The implementation can contains a PushSender.xml with the http configuration. This configuration on the SMS Provider specification.

5. Appendix B – Mail Server Configuration

5.1. Microsoft Exchange 2000/2003

We can use imap-based account or pop3-based account

We have to setup the MS Exchange Server

- creation of the user in the MS Exchange
- login using “outlook web access” or an account imap on outlook express / outlook

SyncSource Folder Name Configuration

Folder name

- inbox: inbox
- outbox: outbox
- sent: Sent Items
- drafts: Drafts
- trash: Deleted Items

5.2. Domino 6.5/7.0

About imap-based account we have to consider that some aspects of a mail file are structured in template items that are visible only to a Notes client, and as such are not available to IMAP clients.

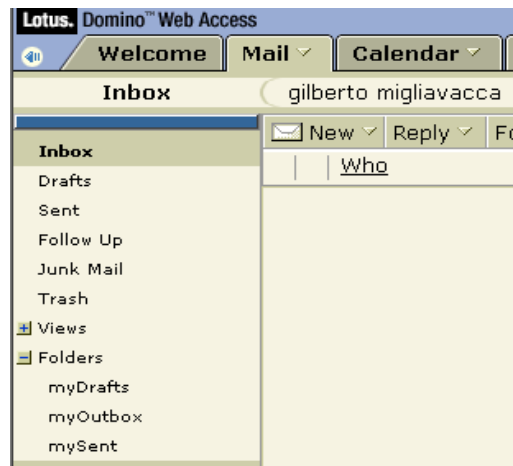
As a result, IMAP clients display certain folders and views in a mail file differently from Notes clients. For instance, from an IMAP client, the Inbox and Trash folders, and any public folders, appear as IMAP mailboxes.

Also, hidden and private folders are not visible to IMAP clients. And finally, IMAP clients do not display views that are part of the Notes mail file template, such as the Draft and Sent view

We have to setup the “domino” mail server

- creation of the user
- login using “Domino Web Access”
 - create the public folder in “folder”
 - pubOutbox
 - pubSent
 - pubDrafts

Note: the “sent” and “draft” folders are “private folder”. The Email connector will use the “public folder”. As a result, the connector displays/uses some folder/email in a mail file differently from Notes clients.



SyncSource Folder Name Configuration

Folder name

- inbox: inbox
- outbox: myOutbox
- sent: mySent
- drafts: myDrafts
- trash: Trash

5.3. GMail

We can use a pop3-based account

In order to config the account you have to set the following parameters

<i>field</i>	<i>value</i>
Incoming server	pop.gmail.com
Incoming server Port	995
Outgoing server	Smtp.gmail.com
Outgoing server Port	465
SSL	checked
Keystore path	See next info
Keystore password	See next info

The Gmail pop access need SSL configuration.

1) Download the GMAIL certificate from link:

https://www.geotrust.com/resources/root_certificates/certificates/Equifax_Secure_Certificate_Authority.cer

or

using cygwin type the command

wget

https://www.geotrust.com/resources/root_certificates/certificates/Equifax_Secure_Certificate_Authority.cer

2) Use the java tool in order to create the keystore (using the certificate just downloaded). open a shell (i.e. A dos shell) and type the command

> keytool -genkey -keyalg RSA -keystore gmail.ks

Note: you have to install the jdk on the machine

3) Remove each entry from the keystore just created

> keytool -delete -alias mykey -keystore gmail.ks

Note: in order to get the alias name run the following command: *keytool -list -keystore gmail.ks*

Note: mykey is a default key that is created during the “genkey” command

4) Import the certificate in the keystore:

> keytool -import -file Equifax_Secure_Certificate_Authority.cer -keystore gmail.ks

5) Set the syncsource and the connector to use the SSL parameter

Note: On the gmail site you have to enable the POP Download

The screenshot shows the Gmail 'Settings' page with the 'Forwarding and POP' tab selected. Under 'Forwarding', the 'Disable forwarding' option is selected. Under 'POP Download', the status is 'POP is enabled' and the option 'Enable POP for all mail' is selected. A tip suggests creating a filter for forwarding some mail. A link 'Learn more' is provided for POP settings. A dropdown menu for 'When messages are accessed with POP' is set to 'keep Gmail's copy in the Inbox'. A link 'Configuration instructions' is provided for email clients.

Settings

[General](#) [Accounts](#) [Labels](#) [Filters](#) **Forwarding and POP** [Chat](#) [Web Clips](#)

Forwarding:

☒ Disable forwarding

☐ Forward a copy of incoming mail to and

Tip: You can also forward only some of your mail by [creating a filter!](#)

POP Download:

[Learn more](#)

1. Status: POP is enabled for all mail that has arrived since May 30

☐ Enable POP for **all mail** (even mail that's already been downloaded)

☐ Enable POP only for **mail that arrives from now on**

☐ Disable POP

2. When messages are accessed with POP

3. Configure your email client (e.g. Outlook, Eudora, Netscape Mail)

[Configuration instructions](#)

5.4. Yahoo

We can use a pop3-based account

We have to setup the “yahoo.com” mail server.

- creation of the user
- login using “web access”

SyncSource Configuration

Source URI:	pyahoo		
Name:	pyahoo		
Outgoing Server :	smtp.mail.yahoo.it	Port:	587 Auth: <input checked="" type="checkbox"/>
Incoming Server :	pop.mail.yahoo.it	Port:	110

Note: yahoo server needs the authentication in order to send the email

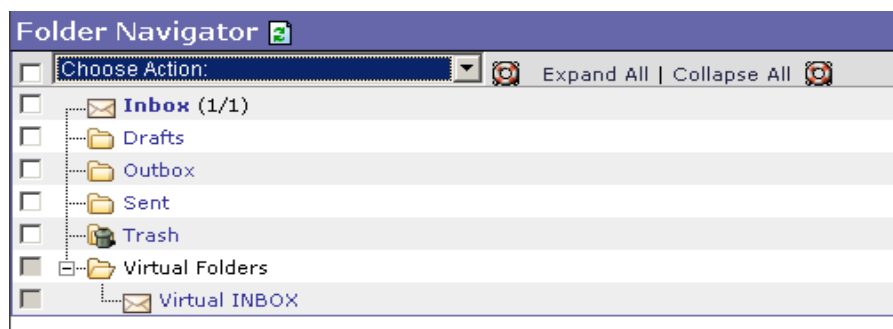
Note: currently the yahoo server needs the “Yahoo Mail Plus” option (it's not a free option) in order to allow the POP configuration.

5.5. Courier (Horde Web Access)

We can use: imap-based account and pop3-based account

We have to setup the “mail.*****.com” mail server (Courier Imap Server).

- creation of the user
- login using “Horde Web Access”
 - select INBOX on the left panel
 - select “folder” in the top bar
 - choose action: create folder
 - create: Sent, Outbox, Drafts



- select “options”
- choose “deleting and moving messages” box
- select the following option

Deleting and Moving Messages		<< Me
<input type="checkbox"/>	Return to the mailbox listing after deleting, moving, or copying a message?	
What should we do with spam messages after they have been reported as spam or innocent?		
	Nothing	
<input checked="" type="checkbox"/>	When deleting messages, move them to your Trash folder instead of marking them as deleted?	
<input type="checkbox"/>	Use Virtual Trash Folder?	
Trash folder:		
	Trash	
<input checked="" type="checkbox"/>	Display the "Empty Trash" link in the menubar?	
<input type="checkbox"/>	Display the "Empty Spam" link in the menubar?	
<input type="button" value="Save Options"/> <input type="button" value="Undo Changes"/> <input type="button" value="Return to Options"/>		

- select “options”
- choose “Personal Information” box
- select the following option (at the end of the panel)

☐ Precede your signature with dashes ('-- ')?
☐ Place your signature before replies and forwards?
☒ Save sent mail?
 Sent mail folder:
 Sent

Save Options Undo Changes Return to Options

- select “options”
- choose “Server and Folder Information” box
- select the following option

Server and Folder Information
☐ Use IMAP folder subscriptions?
 Drafts folder:
 Drafts
 Trash folder:
 Trash
 Spam folder:
 None

Save Options Undo Changes Return to Options

SyncSource Folder Name Configuration

Folder name

- inbox: Inbox
- outbox: INBOX.Outbox
- sent: INBOX.Sent
- drafts: INBOX.Drafts
- trash: INBOX.Trash

5.6. CommuniGate Server 5.x

We tested the server with the pop3-based account. The configuration is standard but in the CommuniGate Server we have to specify as inbox folder name the value: 'INBOX' (all capitol letters).