



Funambol Exchange Connector Installation and Configuration Guide

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1. Introduction

The purpose of this document is to describe how to manage and administer the Exchange connector component using the Administration Tool console.

This document is intended to be read by the administration users of the Funambol Server.

1.1. Prerequisites

- Funambol Data Synchronization (DS) Service version 6.5 or later
- MS Exchange Server 2003 or later

1.2. Related documents

[1] Funambol Interchange Format

[2] Internet Calendaring and Scheduling Core Object Specification - [RFC 2445]

[3] Funambol Developer's Guide

[4] Funambol Administration Guide

[5] SECC Quick Start Guide

[6] IIS Help

[7] <http://www.webdav.org>

2. Funambol Exchange synchronization environment

This section describes the architecture of the Funambol Exchange connector.

2.1. Environment description

The system architecture of the Funambol Exchange connector is pictured in Figure 1.

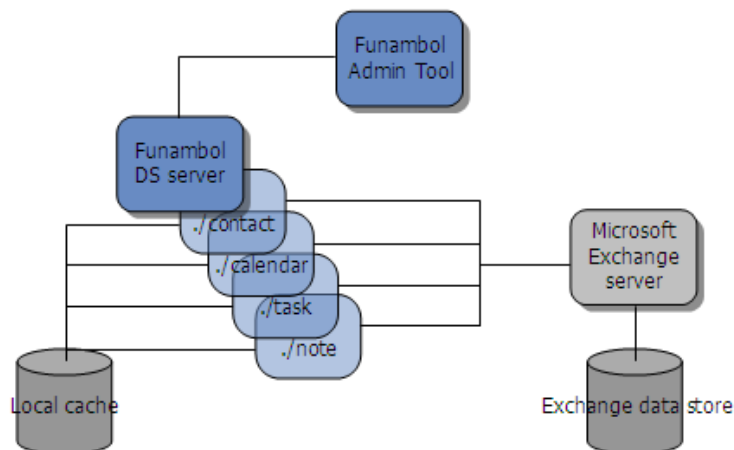


Figure 1 - Funambol Exchange connector high level architecture

PIM data is stored in the Microsoft Exchange store and is managed by the Microsoft Exchange Server. When the Funambol Data Synchronization Service receives a synchronization request from a client addressed to one of the *ExchangeSyncSource*, the local cache is queried for updates and, if any item has been updated client side or server side, the *ExchangeSyncSource* communicates with the Exchange server through the WebDAV protocol.

The Funambol Exchange connector can be administered using a dedicated panel in the Funambol Admin Tool by which an administrator can create/modify/delete *ExchangeSyncSources*.

2.2. Funambol Server – Exchange server communication

The remote access protocol recommended by Microsoft in a distributed environment is WebDAV.

The WebDAV protocol is an extension to HTTP that you can use to build Web applications that are writable. Using WebDAV protocol methods, you can create, copy, delete, move, or search for resources in the Exchange store as well as set and search for resource properties.

Note: Being WebDAV an HTTP based protocol, security and authentication is based on HTTP security and authentication. Authentication is also the mechanism used by Exchange server to support multiuser. When a WebDAV request is served, it allows to operate only with data belonging to the requesting user.

For more information about WebDAV see [7].

3. Installing the Exchange connector

3.1. Funambol Exchange connector installation procedure

The Funambol Exchange connector is distributed as a standard Funambol module (see [3]). The distribution contains the following files:

- *funambol-exchange- $\langle major \rangle$. $\langle minor \rangle$. $\langle build number \rangle$.s4j* (the module)
- the release notes
- this guide

To install the module, follow these steps:

1. Copy the **funambol-exchange- $\langle x.x.x \rangle$.s4j** file in the directory *Funambol/ds-server/modules*
2. Using a text editor, modify the file *Funambol/ds-server/install.properties* adding “funambol-exchange-*. *.*” to the comma separated modules list:

```
modules-to-install=foundation-x.x.x,pdi-x.x.x,pimweb-x.x.x,funambol-exchange-*. *.*
```

3. Call the modules installation command, found in *Funambol/ds-server*:

```
bin\install-modules <application_server> (Windows)
bin/install-modules.sh <application_server> (Linux)
```

where the optional parameter *<application_server>* is the Tomcat version (e.g.: tomcat50).

For more details about the Funambol module installation see [4].

Note: As the installation proceeds, you will be prompted to rebuild the database for the Data Synchronization Service.

During installation, the following steps are performed automatically:

1. the database is initialized; the connector specific tables are created and the connector is registered into the server
2. the *ExchangeOfficer.xml* file is copied under *Funambol/config/com/funambol/server/security*

3.2. Configuring the Exchange connector

Once the installation is complete, you can use the Administration Tool to configure the Exchange connector. Expand the tree structure on the left and click on *Modules | exchange | FunambolExchangeConnector* (see Figure 2).

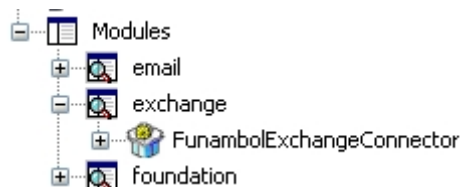


Figure 2: Connector tree

This will bring up the Exchange connector configuration panel (see Figure 3).

Funambol Exchange Connector

HTTP Server Configuration

Server:

Port:

WebDav Message Configuration

Server:

Name:

SSL

Use SSL

Key Store File:

Key Store Password:

Figure 3: Exchange connector configuration panel

HTTP server configuration

Note: If you are not using the SECC architecture you can set the MS Exchange values (i.e. IP address of the MS Exchange machine and port 80)

<i>Property</i>	<i>Description</i>
Server	The address of the SECC Proxy server (or of the back-end server is SECC is not used)
Port	The port of the SECC Proxy server (or of the back-end server is SECC is not used)

For more details about SECC, refer to [5].

WebDav message configuration

<i>Property</i>	<i>Description</i>
Server	The address of the back-end server (i.e. Exchange server)
Name	Root folder for all Exchange users and name of the Webdav Exchange datastore (e.g. Exchange)

SSL

<i>Property</i>	<i>Description</i>
Use SSL	Check this option is you want to use a secure connection between the Sync Server (Funambol) and the Back-End Server (Exchange)
Key Store File	The path to the keystore with trusted certificates
Key Store Password	The password of the keystore

For more information, refer to the chapter about Setting Up a Secure Connection Using SSL.

When done, press “Save”.

3.3. Configuring the SyncSources

To set up the Exchange connector's SyncSources, open the Administration Console and expand the navigation tree as shown in Figure 4:

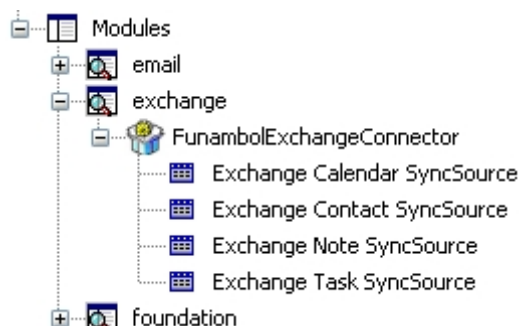


Figure 4: Exchange SyncSources

All SyncSources have the following properties:

Property	Description
Source URI	The SyncSource URI [i.e. “excard” for vCard or “excal” for vCal].
Name	The SyncSource name [i.e. “contacts”]
Type	Should the data content be SIF-XML format or vCard / iCal format? (see next table)
Encrypt data	Should the data content be encrypted using DES algorithm?
Encoding	Should the data content be encoded using Base64 algorithm?

The tables below show the configuration to use the Exchange SyncSource with mobile phone or with Funambol clients that use SIF-XML format.

Exchange SyncSources configuration to use mobile phone

SyncSource	Property	Value
Exchange Calendar SyncSource	Type	ical, vcal
Exchange Contact SyncSource	Type	vcard
Exchange Note SyncSource	Type	plain text
Exchange Task SyncSource	Type	ical, vcal

Exchange SyncSources configuration to use sync4j clients that use SIF-XML format

SyncSource	Property	Value
Exchange Calendar SyncSource	Type	SIF-E
Exchange Contact SyncSource	Type	SIF-C
Exchange Note SyncSource	Type	SIF-N
Exchange Task SyncSource	Type	SIF-T

3.4. Officer configuration

In order to set the Officer for the Funambol Exchange connector, you have to set the parameters in the following configuration file:

Funambol/config/funambol/server/security/ExchangeOfficer.xml

This is an example of the *ExchangeOfficer.xml* file:

```

<?xml version="1.0" encoding="UTF-8"?>
<java version="1.4.0" class="java.beans.XMLDecoder">
  <object class="com.funambol.exchange.security.ExchangeOfficer">
    <void property="exchangeRoot">
      <string>Exchange</string>
    </void>
    <void property="serverAuth">
      <string>none</string>
    </void>
  </object>
</java>

```

In the Administration Tool, you must specify the correct Officer in the Server settings, that is *com/funambol/server/security/ExchangeOfficer.xml*, as shown in Figure 5:

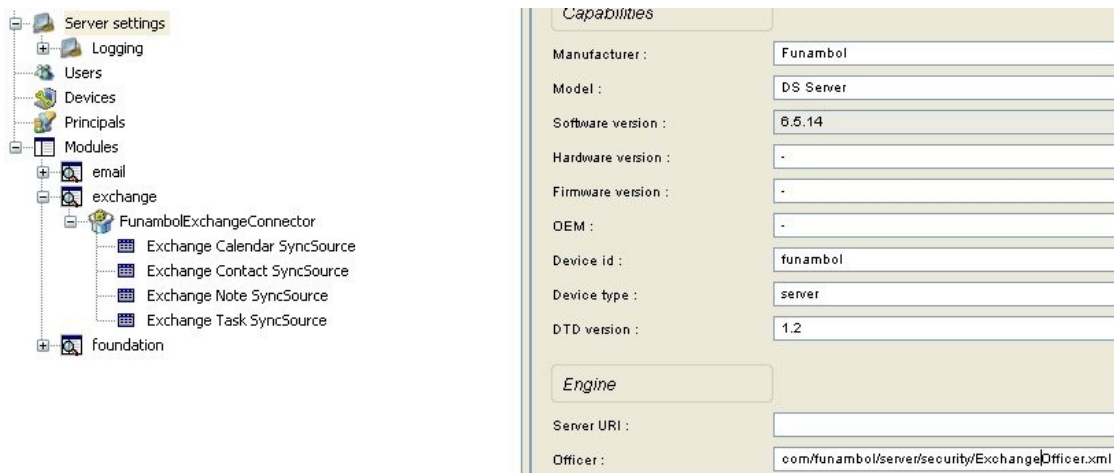


Figure 5: Officer Settings

3.5. Enabling Logging

To modify the logging level and other properties, access the Administration Tool and expand the tree structure as shown in Figure 6:

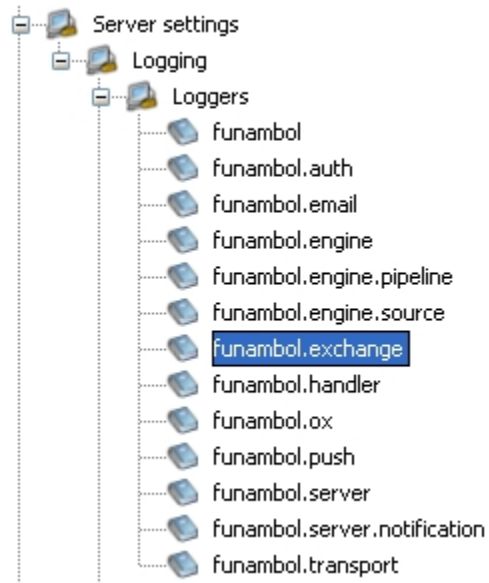


Figure 6: Logging Tree

Click on any of the categories: *funambol*, *funambol.engine* and so on, to display their logging configuration panel. To set the Exchange connector's logger, double click on the *funambol.exchange* node in the Logging | Logger tree and modify the options to obtain the desired logging level and output (Figure 7).

Logger settings

Logger name : funambol.exchange

Same as funambol :

Logging level : INFO

Appenders :

funambol.console
 funambol.daily.logfile
 funambol.logfile

Users with Level.ALL

User name

Figure 7: Logger settings

3.6. Enabling Data Transformation

In order to enable encrypted communication between the Funambol client (for example, the Funambol Windows Mobile Sync Client) and the Funambol Server / Exchange connector, you must check the encrypted data / encoding checkbox in the SyncSource configuration Panel (Figure 8).

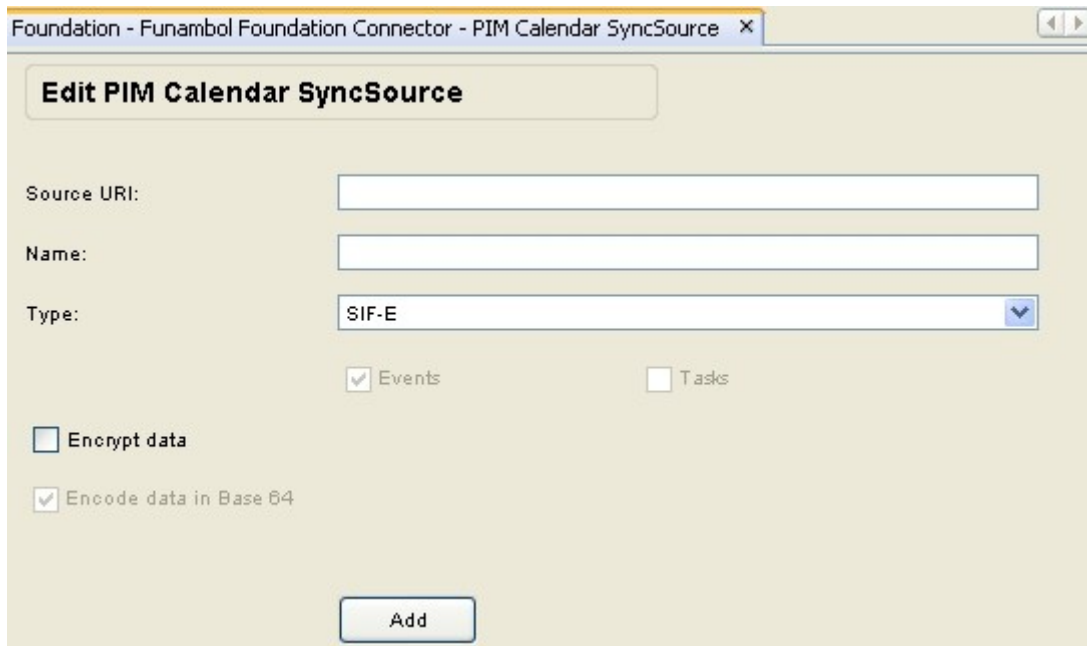


Figure 8: Encryption settings

If encryption is enabled, the synchronization will be provided with DES and BASE64 encoding.

You can also check the configuration in the Data transformation panel of the Server Settings section in the Administration Tool (see Figure 9).

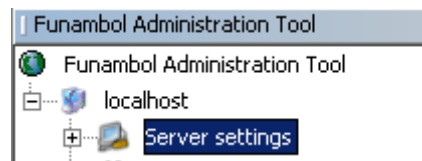


Figure 9: Server Settings

Double click on Server Settings; a panel will appear. Click the “Configure” button next to “Data transformer manager” (see Figure 10):

Engine

Server URI :

Officer :

Logging configuration :

Pipeline manager :

Handler :

Persistence store manager :

Device inventory :

Data transformer manager :

Strategy :

User manager :

Min. value for max. msg size :

Figure 10: Engine Settings

Setup “Transformer for incoming items” and “Transformer for outgoing items” if needed (see Figure 11).

Transformers for incoming items

Name	Class
b64	com.funambol.server.engine.transformer....
des	com.funambol.server.engine.transformer....

Transformers for outgoing items

Name	Class
b64	com.funambol.server.engine.transformer....
des	com.funambol.server.engine.transformer....

Figure 11: Transformers

Link the sync source URI with the needed transformation. If the SyncSource is intended for sync with Windows Mobile devices, then “b64” transformation is required. If the Windows Mobile Sync Client is configured to also use encryption, the the transformation must be set to “des;b64”.

When you are done, press “Save” (see Figure 12).

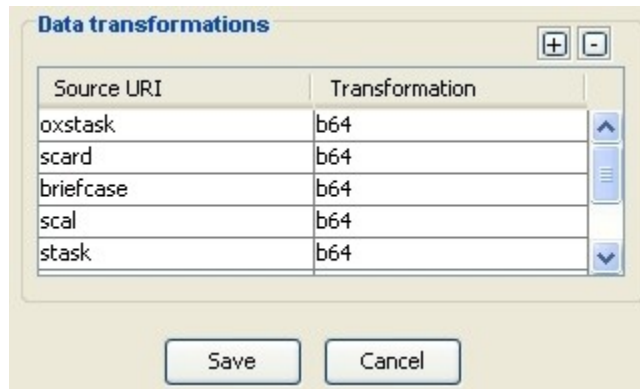


Figure 12: Transformations for SyncSources

4. Known Issues

The current version of the Funambol Exchange connector is able to handle recurrences for events, but not for tasks.

It is also not able to handle events and tasks at the same time when syncing with devices which handle events and tasks together, such as for example Nokia devices.