

# Funambol Exchange Connector v6.5 Installation Guide

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# 1. Introduction

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

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

## 1.1. Prerequisites

- Funambol DS Server v6.5 or later
- MS Exchange Server 2003 or later

## 1.2. Related documents

The following documents are related to this design document:

[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.

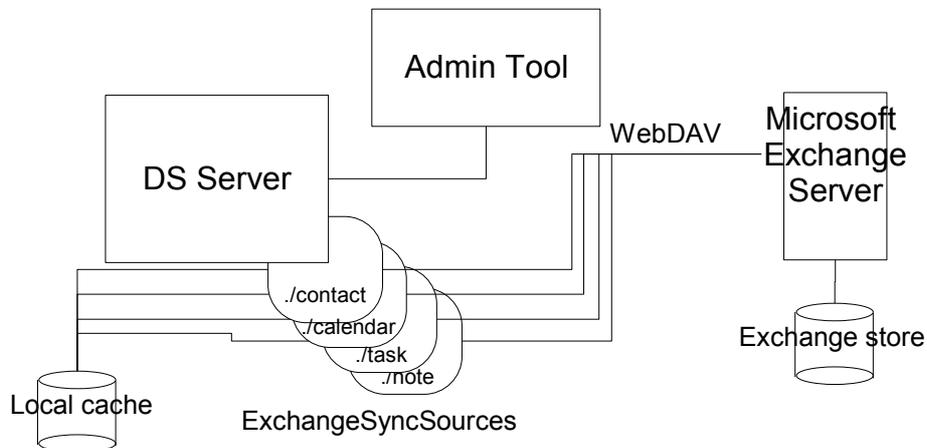


Figure 1 - Funambol Exchange Connector high level architecture

PIM data is stored in the Microsoft Exchange store and is managed by the Microsoft Exchange Server. When the server receives a synchronization request from a client addressed to one of the *ExchangeSyncSource*, the local cache is queried for latest 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 is administered with a dedicated plug-in for the Funambol DS Server 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-*<major>.<minor>.<build number>*.s4j (the module)
- the release notes
- this guide

To install the module, follow these steps:

1. Copy the **funambol-exchange-*<x.x.x>*.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 DS Server.

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 in the directory:

*Funambol/ds-server/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).

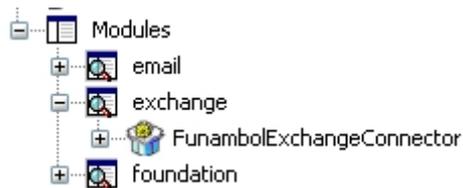


Figure 2: Connector Tree

This will bring up the Exchange Connector Configuration Panel (see Figure 3).

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:

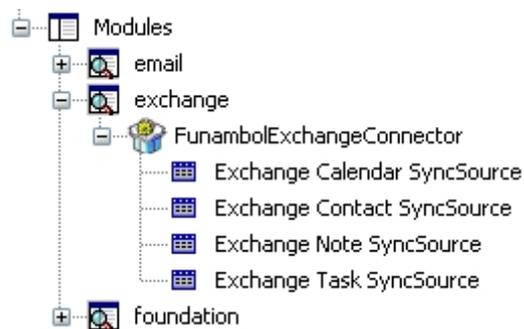


Figure 4: Exchange SyncSources

All SyncSources have the following properties:

<i>Property</i>	<i>Description</i>
Source URI	The sync source URI [i.e. “./contacts” ].
Name	The SyncSource name. [i.e. “contacts” ]
Type	Should the Data content be SIF-XML format or vcard/ical format? (see next table)
Encryption	Should the Data Content be encrypted using DES algorithm?
Encoding	Should the Data Content be encoded using Base64 algorithm?

The Calendar/Task SyncSources have the following properties:

<i>Property</i>	<i>Description</i>
Source URI	The SyncSource URI [i.e. “./contacts” ].
Name	The SyncSource name. [i.e. “contacts” ]
Type	Should the data content be SIF-XML format or vcard format?
Subtype	If the data content is in SIF-XML format, then we will have the following value: SIF-E => Event; SIF-T => Task  If the data content is in vcal format, then the value can be: event, task or both
Encryption	Should the data content be encrypted using DES?
Encoding	Should the data content be encoded using Base64?

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

<i>SyncSource</i>	<i>Property</i>	<i>Value</i>
<i>Exchange Calendar SyncSource</i>	Type	ical, vcal
<i>Exchange Contact SyncSource</i>	Type	vcard
<i>Exchange Note SyncSource</i>	Type	plain text
<i>Exchange Task SyncSource</i>	Type	not supported

### Exchange SyncSources configuration to use Sync4j Clients that use SIF-XML format

<i>SyncSource</i>	<i>Property</i>	<i>Value</i>
<i>Exchange Calendar SyncSource</i>	Type	SIF-E
<i>Exchange Contact SyncSource</i>	Type	SIF-C
<i>Exchange Note SyncSource</i>	Type	SIF-N
<i>Exchange Task SyncSource</i>	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/ds-server/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>
```

---

**Note:** 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:

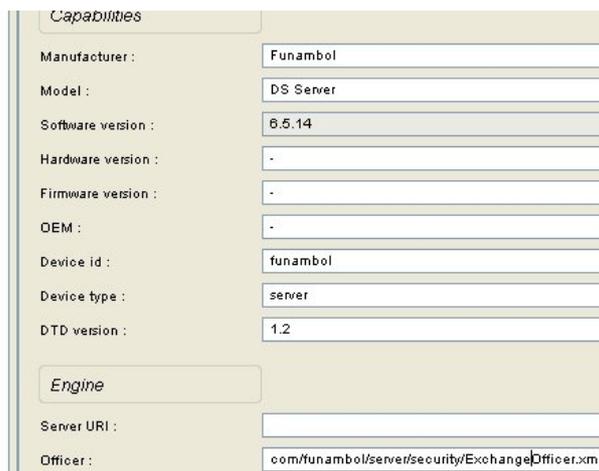
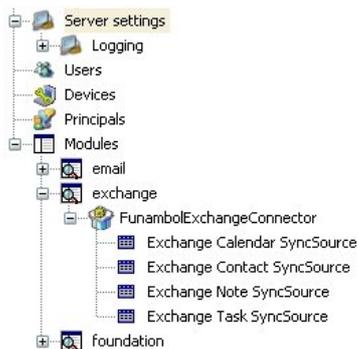


Figure 5: Officer Settings

### 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:

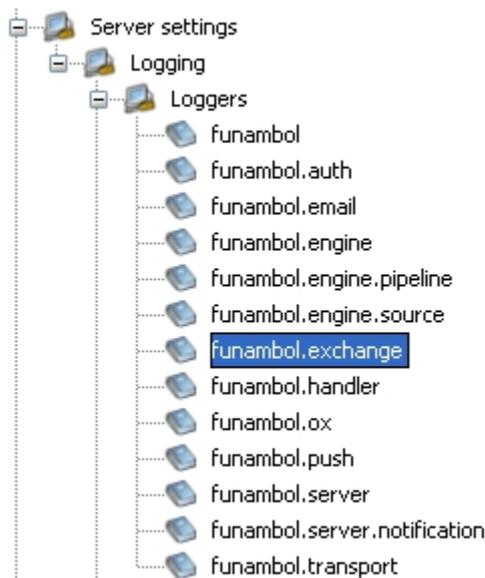


Figure 6: Logging Tree

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).

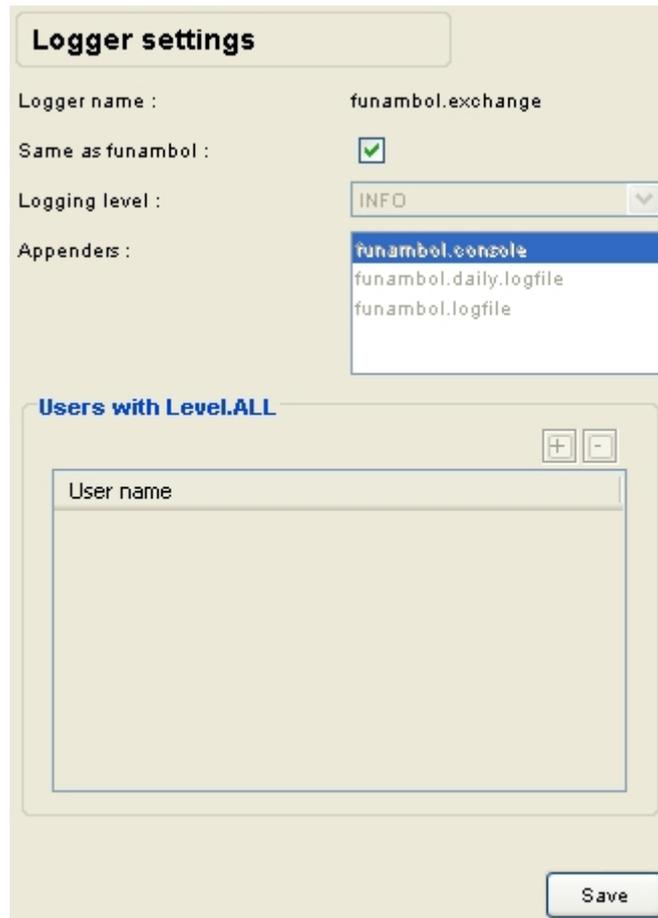


Figure 7: Logger settings

### 3.6. Enabling Data Transformation

In order to enable the Encryption Communication between the Funambol client (for example, the Funambol WM plug-in) and the Funambol Server / Exchange Connector, you must check the encryption/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 in the Server Settings section in the Administration Tool (see Figure 9).

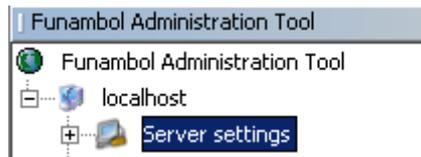


Figure 9: Server Settings

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

A screenshot of the 'Engine' settings configuration panel. The panel has a title bar 'Engine' and a list of configuration items, each with a text input field and a 'Configure' button. The items are: Server URI (http://192.168.3.10:8080/funambol/ds), Officer (com/funambol/server/security/ExchangeOfficer.xml), Logging configuration (com/funambol/server/logging/Logging.xml), Pipeline manager (com/funambol/server/engine/pipeline/PipelineManager.xml), Handler (com.funambol.server.session.SyncSessionHandler), Persistence store manager (com/funambol/server/store/PersistentStoreManager.xml), Device inventory (com/funambol/server/inventory/PSDeviceInventory.xml), Data transformer manager (com/funambol/server/engine/transformer/DataTransformerManager.xml), Strategy (com/funambol/server/engine/Strategy.xml), User manager (com/funambol/server/admin/DBUserManager.xml), and Min. value for max. msg size (2500). At the bottom are 'Save' and 'Cancel' buttons.

Figure 10: Engine Settings

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

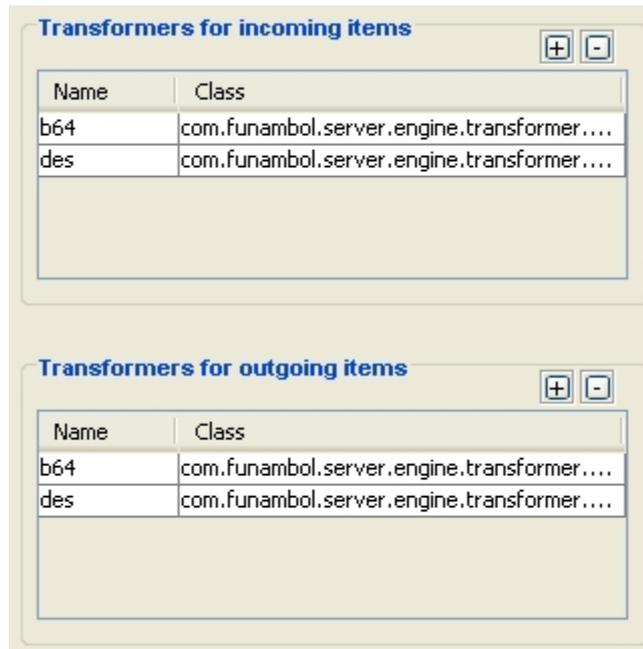


Figure 11: Transformers

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 pug-in 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

### 3.7. Setting Up a Secure Connection using SSL

To set up a secure connection between Funambol Sync Server and Exchange Server using SSL, the following steps must be followed:

1. Request a Certificate for Exchange Server from IIS (Internet Information Service)
  - on the machine with the Exchange Server, go to Administrative Tools -> IIS Manager
  - check a tree structure similar to this
  - right click on the Web Site containing Exchange, and click Properties

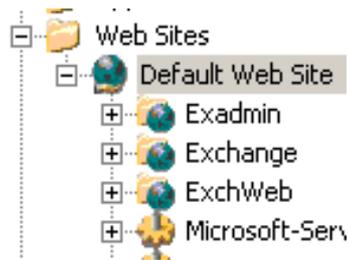


Figure 13: IIS Manager Tree

- in the displaying window select the Directory Security tab and click the Server Certificate... button
- use the displaying wizard to create a certificate request
  1. Send the request to a Certificate Emitting Authority and obtain the certificate
  2. Install the certificate using IIS
- proceed as at step 1 and use the wizard to install the certificate
  3. Insert the Certificate in a keystore file, using the command:

---

```
keytool -import -file <certificateFile> -keystore <keystoreFile>
```

---

4. Having the keystore file on the machine with the Sync Server configure the Exchange Connector to use SSL with this keystore (see chapter 3.2)

## 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.