FUNAMBOL

Funambol Administration Guide version 7.1

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CHAPTER 1

Introduction

This document will guide you through both initial and ongoing Funambol Server administration tasks, using the *Funambol Administration Tool*, a standalone application with versions for both Linux and Microsoft Windows.

The components of the Funambol Server that will be described in this document are:

- Data Synchronization Service
- Email connector
- Inbox Listener Service
- PIM Listener Service
- Push Connection Service
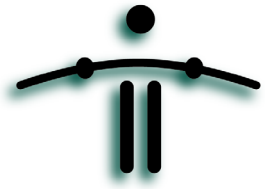
Starting the Funambol Data Synchronization Service Administration Tool

Before using the Administration Tool, verify that both the Data Synchronization Service and the database have been started and are in operation. For details on how to use Funambol with a MySQL database, see "Using Funambol with MySQL" on page 66.

Note: the Funambol Administration Tool does not work without administrator privileges in Windows Vista.

Chapter contents

Opening the Administration Tool window

To open the Administration Tool window, follow these steps:

1   To start the Funambol Administration Tool if you installed the Funambol Server package, do one of the following:

WINDOWS: Click **Start**, and choose **Programs | Funambol | Administration Tool**.

LINUX: At the prompt, change to <FUNAMBOL_HOME> and run this command:

```
admin/bin/funamboladmin
```

2   The Funambol Administration Tool window appears.

No information is displayed until you log in with an administrative user ID and password, as detailed in the next section.

Logging into the Data Synchronization Service

1   In the Administration Tool window, choose **File | Login** or double-click the Funambol Admin Tool icon in the Navigation pane.

The Login dialog box appears.

FIGURE 2-1

2   If this is your first time logging in, you have two options:

• If the server is on a local host, make no changes to the default settings and click **Login**.

• If the server is on a remote host, enter the correct information in the **Hostname/IP** field, then click **Login**.

Note: the default username and password are:

- **Username**: admin
- **Password**: sa

Tip: the Administration Tool remembers the most recent entries and suggests them for use in future logins.

After a successful login, the Admin Tool window **Navigation** pane lists your server as the root of an explorer-like tree that sorts your tasks into server settings, users, devices, principals, modules and more.

3 Your first post-login task is to replace the password for the main "admin" user account—as detailed in the next section.

Changing the admin user login password

You should regularly change the "admin" password to increase security to your system, when you first log in and at regular intervals thereafter. Note that when you apply the change, you'll need to immediately exit the Funambol Admin Tool, then restart it and log back in to the server, using the new password.

1 In the Admin Tool window, expand the server tree in the Navigation pane, and double-click **Users**.

2 When the Search Users features appears, click in the **Username** field and type "admin".

3 Click **Search**.

The admin account should appear in the results table.

4 Select the admin account and click **Edit**.

The User Details options appear, with key information displayed in editable fields.

5 Type a new password in both **Password** and **Confirm Password** fields.

6 Click **OK** to save and apply the new password.

- **Important!**

1 After changing the password, exit the Admin Tool.

2 Restart the tool and log in again as "admin"—using your new password.

This confirms your new password.

For information on creating additional admin user accounts, see "Creating additional administrator user accounts" on page 5.

Logging in through a proxy

After configuring and activating your Data Synchronization Service, you or other admin-role users may need to log in for administrative purposes through a proxy server, depending on your location and network connection. This requires a slight adjustment of the login procedure, as detailed in this section:

1 In the Admin Tool window, choose **File | Login** or double-click the Funambol Admin Tool icon in the Navigation pane.

   The Login dialog box appears.

2 Verify your user entries in the active fields.

3 Check the **Use Proxy** checkbox.

   Additional features appear in the **Login** dialog box.

4 Enter the relevant proxy server information. Once you have logged in with proxy settings, the Login dialog box retains your entries for future use.

5 Click **Login**.

   After a successful login, the Admin Tool window **Navigation** pane lists your server as the root of a tree that incorporates server settings, users, devices, principals and modules.

Creating additional administrator user accounts

If your workload justifies the use of more than one system administrator, you can add the needed accounts by following these steps:

1 After expanding the server tree in the Navigation pane, right-click **Users** in the navigation pane and choose **Add User**.
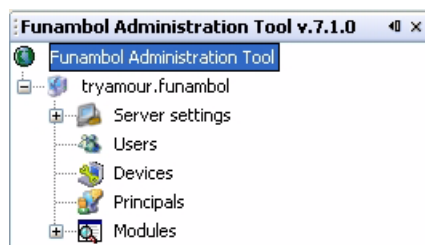
FIGURE 2-2

The Add User options appear in the Data Entry pane.

2   Enter the relevant information in the following fields.

Username	Enter a name up to 255 characters in length, using any characters. This name is case-sensitive.
Password	Enter a unique, secure password.
Confirm password	Re-type the same password.
First Name	Enter the user's first name (not including any middle initials).
Last Name	Enter the user's last name.
Email	The email address the user wants to link to the Funambol Data Synchronization Service.
Roles	Choose **Administrator**. (Anyone using this account will be able to perform administrative tasks but not synchronizations).

3   Click **Add** to save the settings.

A confirmation message appears in the Output-Messages pane.

4   Repeat this procedure to create any needed administrator accounts.

5   You can now communicate this admin-user account information to relevant would-be users.

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A tour of the Administration Tool window

The Funambol Administration Tool window is divided into three panes, as shown here in a typical working mode (example of a Log file configuration).
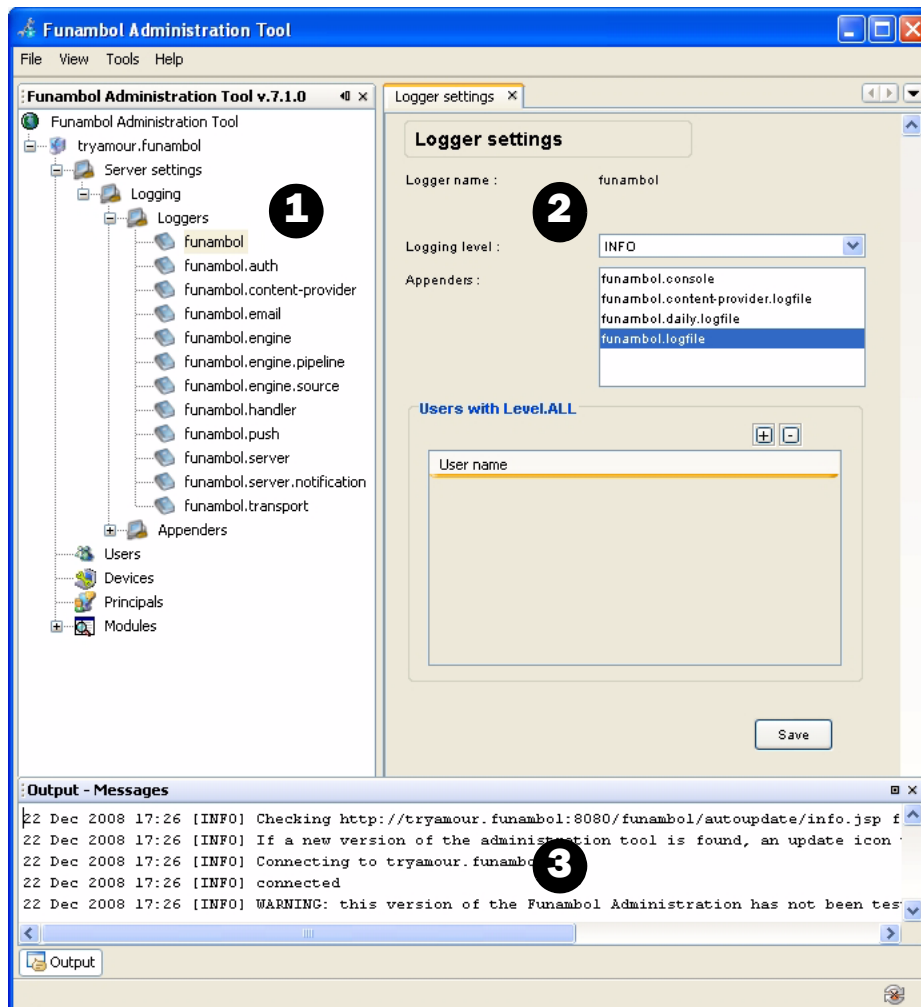
[-1-] — **Navigation**	Lists all the primary components, that you can add to or edit, to monitor and maintain the server, users, devices, principals, modules, etc.
	Double-click an item in the expanded Navigation tree, to see the current entries and editable options in the Data Entry pane.
[-2-] — **Data entry**	Use the features in this pane to add, edit, delete or search for information related to the item selected in the Navigation pane.
[-3-] — **Output Messages**	This pane displays in-progress status messages (results, success or failure) relevant to your current task.

In addition, you can temporarily hide one or two of the three principal panes, as needed. For example, some Data Entry displays are so full of options, it's helpful to be able to hide both Navigation and Output panes in order to see all the options.

• Maximizing/minimizing the Data Entry pane

You can quickly maximize the Data Entry pane to hide both Output Messages and Navigation panes by doing the following:

1   Double-click the Data Entry label tab to expand this pane.
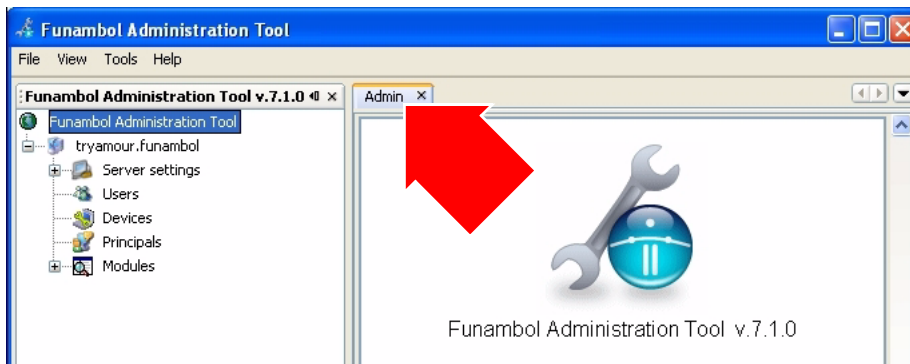
The expanded pane fills the window.

2   To see the Navigation pane, double-click the Data Entry pane label tab again.

The Data Entry pane is minimized to its original size.

• Hiding/restoring the Navigation pane

To hide just the Navigation pane, click the **Hide** button once.

8
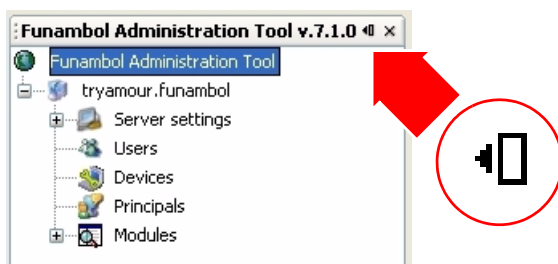
The Navigation pane collapses into the left window frame, visible as a sideways label.
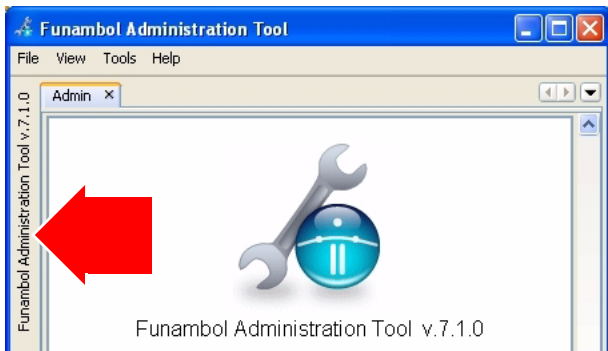
To reopen the Navigation pane, (1) float the cursor over the label, then (2) when the pane temporarily reappears, (2) click the **Show** button.
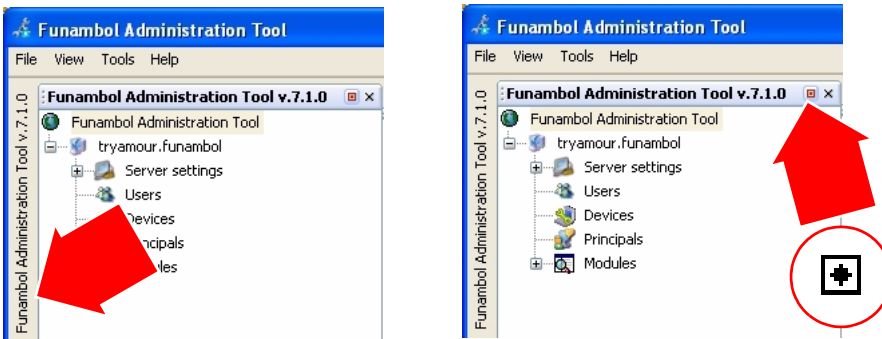
• Hiding/restoring the Output pane

To hide just the Output-Messages pane, click the **Hide** button once.
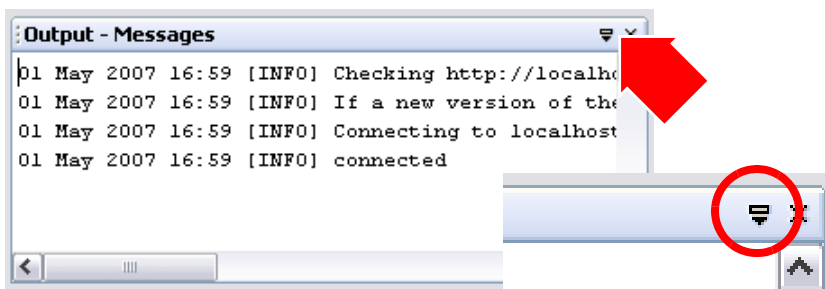
The Navigation pane collapses into the window frame, visible as a tab label.
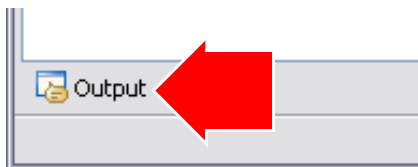
To reopen the Output-Messages pane, (1) float the cursor over the tab label, then (2) when the pane temporarily reappears, (2) click the **Show** button.
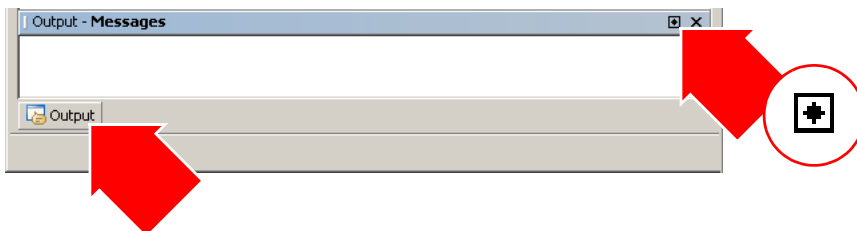
Note: the Data Entry pane cannot be hidden, only the Navigation and Output-Messages panes (singly or both at once) can be hidden.

Reviewing the Data Synchronization Service's settings

The Data Synchronization Service is at the core of the Funambol Server sync architecture.

You can review and modify the server settings via the Administration Tool, as detailed in this chapter.

Chapter contents

The contents include the following server administrative options:

Getting started

To open the Data Synchronization Service file containing the principal settings in the Administration Tool, follow these steps:

1   In the Administration Tool window, expand the server tree in the Navigation pane.

2   Double-click **Server Settings**.

The Server Setting options appear in the Data Entry pane.

3   You can review and change server setting as organized into the following key categories:

Capabilities	(Detailed in "Reviewing the capabilities options" on page 12)
Engine	(Detailed in "Reviewing the engine options" on page 13)

4   Under "Engine", you'll find additional options for the following:

| Data Transformer Manager | (Detailed in "Configuring the DataTransformer manager" on page 14) |
| Strategy configuration | (Detailed in "Configuring the synchronization strategy" on page 16) |

This chapter guides you through the options for each category, as incorporated into the Administration Tool.

Reviewing the capabilities options

These options include all the settings that determine what is initially sent to the SyncML device or Funambol client, to describe important server characteristics.

Alert: in most Data Synchronization Service installations, the default *Capabilities* and *Engine* settings should not require any changes.

1   Open the **Server Settings** in the Data Entry pane if you haven't already done so.

The Server Settings options appear in the data Entry pane, including the **Capabilities** options as shown here

FIGURE 3-1

This collection of options represents information about the Data Synchronization Service that is sent to the client, to help in identifying the server.

2   Review the options (under "*Capabilities*"), and make any needed changes—ONLY IF NECESSARY.

3   When you are finished, click **Save** to save any changes.

4   Look for a confirmation message in the Output-Messages pane.

You can now review the Data Synchronization Service *Engine* options, detailed in the next section.

Reviewing the engine options

These options include all the settings that control the behavior of the Data Synchronization Service. In most server installations, you'll need to attend to the engine settings for Handler, Data transformer and Strategy.

Alert: in most Data Synchronization Service installations, the default *Capabilities* and *Engine* settings should prove adequate.

1 Open the **Server Settings** in the Data Entry pane if you haven't already done so.

The Server Settings options appear in the data Entry pane, including the **Engine** options as shown here.

Engine	
Server URI :	
Officer :	com/funambol/server/security/UserProvisioningOfficer.xml
Handler :	com.funambol.server.session.SyncSessionHandler
Device inventory :	com/funambol/server/inventory/PSDeviceInventory.xml
Data transformer manager :	com/funambol/server/engine/transformer/DataTransformerManager.xml [Configure]
Strategy :	com/funambol/server/engine/Strategy.xml [Configure]
User manager :	com/funambol/server/admin/DBUserManager.xml
SMS service :	com/funambol/server/sms/SMSService.xml
Min. value for max. msg size :	1800
Check for server updates :	☑

2 Review the following options.

Server URI	Specifies the URI to be used by the client in responding to the server messages. Note that this value doesn't affect the URL or port used by the application server that runs the Funambol application. For example: `http://my.funambol.com/sync`.
Officer	Controls how users are authenticated and granted access to the system. (See"Assigning the officer for the Email Connector" on page 37 for more details).
Handler	This option (utilizing the contents of an XML-format file) manages the synchronization sessions.
Device Inventory	This option manages all the device records.
Data Transformer Manager	This option involves a separate dialog box that allows you to customize the encryption applied to incoming and outgoing messages. (See "Configuring the Data-Transformer manager" on page 14 for more details).
Strategy	This option involves a separate dialog box in which you can fine-tune the prioritization of data, when

	duplications are detected. (See "Configuring the synchronization strategy" on page 16 for more details).
User Manager	This option manages all the user records. If you plan to store user records on a LDAP server, you'll need to create a new user manager and select the resulting XML file in this field.
Min. Value for Max. Msg Size	This option specifies the minimum value to be used by the client for MaxMsgSize. This value is the maximum size that all messages sent by the server must have (specified by the SyncML protocol).
	If a client specifies a value for MaxMsgSize that is smaller than "Min. Value for Max. Msg Size", the server refuses the synchronization and will log an error.
Check for updates	[Active by default] Enables the Data Synchronization Service to check the Funambol website daily for updates (that will be automatically downloaded and installed).

3 Make any needed changes—ONLY IF NECESSARY.

4 When you are finished, click **Save** to save any changes.

5 Look for a confirmation message in the Output-Messages pane.

You can now review the encryption and duplicate-information strategy options, detailed in the following sections.

Configuring the DataTransformer manager

These options, part of the *Engine* settings, control which encryption algorithms are applied to data traffic. Transformations are applied to data in both directions, usually encrypting outgoing data and decrypting incoming data.

You can specify the name and class of transformers for both incoming and outgoing items, with the source URI of items to be transformed along with the name of the transformer to be used.

1 In the **Engine** options of the Server Settings, review the information noted in the **Data-Transformer Manager**.

2 To edit or replace this entry, click **Configure**.

The DataTransform Manager options appear in the Data Entry pane.
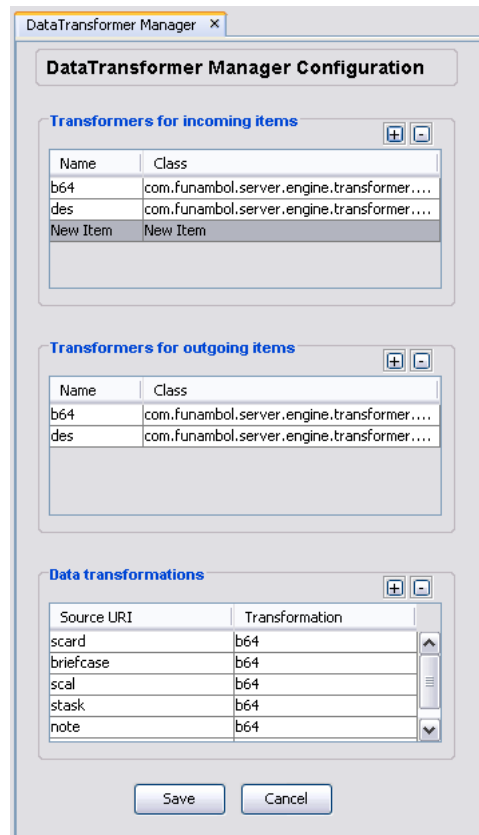
This collection of features includes default transformation encryption components, and pre-set combinations that are applied to incoming and outgoing messages.

3   Review the following options, and make the needed changes.

This includes (1) adding new rows/entries, (2) editing the existing rows/entries, and (3) deleting existing rows/entries.

4   Under **Transformers for incoming items**—click the "+" icon in the upper right corner of this table.

A new row appears at the bottom of the table.
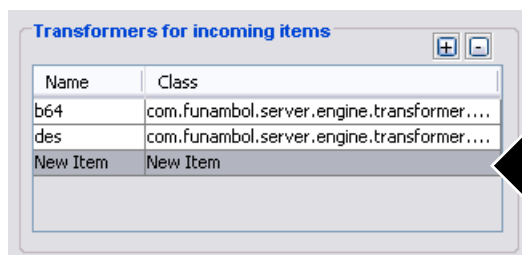
5   Click each cell in the row to make it active, and make the needed entries to guide the server in decrypting information from a specific item (scard) that may have a combina-

tion of encryption applied. This allows the server to decrypt the data received from a client and sync it.

6   Under **Transformers for outgoing items**—click the "+" icon in the upper right corner of this table.

7   When a new row appears at the bottom of the table, make the needed entries to guide the server in encrypting information extracted from a specific item (scard) that may require a specific combination of encryption applied. This allows the server to encrypt the data and transmit it to the client.

8   Under **Data Transformations**—click the "+" icon in the upper right corner of this table.

     When a new row appears at the bottom of the table, make the following entries in each column of the new row:

     Source URI   Enter the value of the source (e.g., scard, mail)

     Transformation   Enter the needed encoding parameters, separated by a semi-colon.

9   When you are finished, click **Save**.

10   A confirmation message appears in the Output-Messages pane.

11   To return to Server Settings, click **Cancel**.

Configuring the synchronization strategy

These options, part of the *Engine* settings, are where you can set the preferred conflict resolution applied by the Funambol Data Synchronization Service to SyncSources.You can use this feature to specify how the server handles any potential conflicts that may occur when the Data Synchronization Service tries to synchronize two copies of similar records. This is done by designating either client or server as "winner".

1   In the **Engine** options of the Server Settings, note the XML file pathway in the **Strategy** field. This file stores all data-conflict strategy settings.

2   To review the current settings and make changes, click **Configure**.

The Strategy Configuration options appear in the Data Entry pane
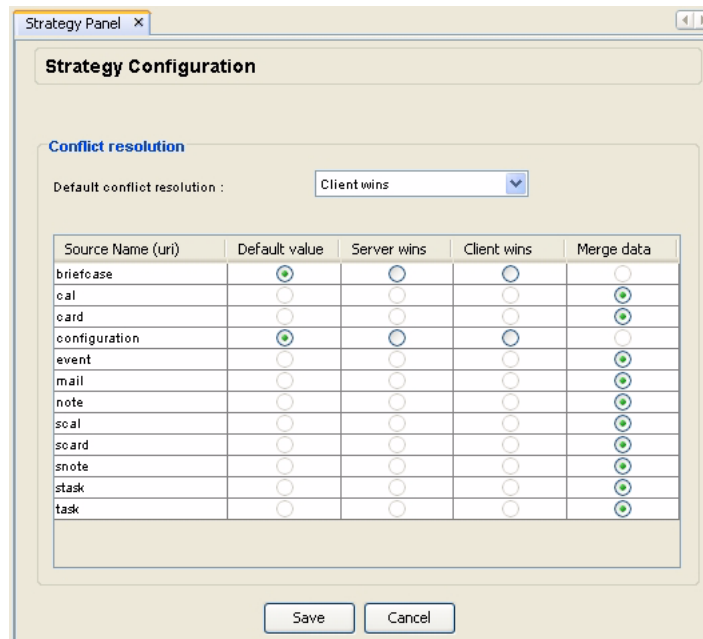
The available options for resolving conflicts are:

Server wins: Changes made to an item on the server are copied to the client, overwriting previously stored data.

Client wins: Changes made to an item on the client are copied to the server, overwriting previously stored data.

Merge data: Item details are compared and changes are merged; if a field (for example, the contact's last name) has been modified both on the server and on the client, the "Client wins" rule is applied.

3   Open the **Default Conflict Resolution** menu and choose an option.
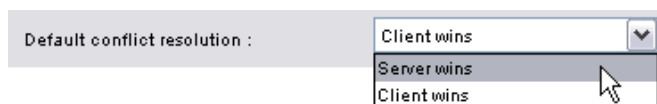
- Your options are **Client wins** and **Server wins**.

This setting is applied to those SyncSources that do not need to be configured individually, and can be used to globally switch the conflict resolution for all such SyncSources.

4   Review the table and select the preferred conflict resolution for each URI source name (where the option is active).

Note: data sources with only one active resolution option reflect their base Sync-Source, while other sources with two or more resolution options reflect different Sync-Sources.

5   When you are finished, click **Save**.

A confirmation message appears in the Output-Messages pane.

6   To return to Server Settings, click **Cancel**.

Adding and managing user accounts

Chapter contents

Important notice

You do not need to manually add new user records (as detailed in this chapter), as Funambol users can auto-loads their account (including user, device and principal information) when they initially connect to the Data Synchronization Service or later, if they update their device.

How does this work? Each user initially prepares their mobile devices for a "sync" by entering a username and password of their choice, along with the Funambol server URL. During the resulting connection attempt, this information triggers the Data Synchronization Service to:

- auto-generate a new user record (applying their user name and password)
- add a new device record
- link user and device automatically in a new principal record

A synchronization then starts. This auto-loading process is particularly useful if you have a large number of potential users.

• So, why is there a New User entry form?

When would you possibly manually create new user and device records? If you are setting up an email synchronization for a potential (unregistered) user, you may need to create the records for User, Device and Principal, then use the new user record to link to the relevant mail server (using the Email Connector, as detailed in a later chapter). The actual user (who hasn't registered yet) must then be sent a copy of the Funambol URL, plus the newly recorded user-name and password, to use in setting up all their synchronization connections with clients and devices.

Introduction

It is critically important to understand how "User" records fit in with *Device* and *Principal* records, since the two types of records are used together in the data synchronization process.

User records	A separate user record must exist for every person who will be synching data between a wireless device and the Data Synchronization Service. the system defines a single record per user, regardless of the number of devices that the user will be syncing.
Device records	Each wireless device—laptop, smartphone, PDA, etc.—must have a record in the Data Synchronization Service database, whether used solely by one person, or shared among several users
Principal records	This set of records allows you to combine individual users and devices, so that you can account for all usage patterns. This includes the following: Exclusive use of one device by one person. Shared use of one device by several people. This enables the Data Synchronization Service to specifically sort out data synchronized from more than one user, who share the same work-use cell phone. Their specific data will be available only to them, once they've been identified in a "principal" record.

Adding a new user record/account

To add a new user record to the Data Synchronization Service database, follow these steps:

1 After expanding the server tree in the Navigation pane, right-click **Users** in the navigation pane and choose **Add User**.

The **Add User** options appear in the Data Entry pane.

FIGURE 4-1

2 Enter the relevant information in the following fields.

Username	Enter a short name up to 255 characters in length, using any combination. User names are case-sensitive.
	Tip: you may want to keep in mind the space and typing limitations of mobile devices.
Password	Enter the user's password. (Passwords, too, are case-sensitive).
Confirm password	Re-enter the same password.
First Name	Enter the user's first name.
Last Name	Enter the user's last name.
Email	Enter the email address the user wants to link to the Funambol Data Synchronization Service.
Roles	Select a role from the following:
	A **User** can perform synchronizations with the server.
	An **Administrator** can log into the Administration Tool and perform administrative tasks but not synchronizations.

3 Click **Add** to save the settings, or click **Cancel** to quit without saving the settings.

A confirmation message appears in the Output-Messages pane.

4 Repeat this procedure to create any other user accounts.

You can now communicate the account information to would-be users.

Editing existing user accounts

To review and change the information for an existing user account, follow these steps:

1   After expanding the server tree in the Navigation pane, double-click **Users**.

       The Search User options appear in the Data Entry pane.

2   Click in one or more relevant search fields (e.g., just **Last Name**, or both **First Name** and **Last Name**) and type the search text.

3   Click **Search**.

       The resulting matches, if any, appear in the table.

4   Click the likely record and then click the now-active **Edit** button

       The Edit User options appear in the Data Entry pane, displaying the current user's information.

5   Review the following fields, and make the needed changes.

Username	The user's system ID.
Password	The user's password.
Confirm password	Confirmation of the user's password.
First Name	The user's first name (not including any middle initials).
Last Name	The user's last name.
Email	The email address the user wants to link to the Funambol Data Synchronization Service.

| Roles | The choices include **User**, who can only perform synchronizations with the server, or **Administrator**, who can only perform administrative tasks. |

6 Click **Add** to save the changes, or click **Cancel** to quit without saving the settings.

Deleting existing user accounts

1 After expanding the server tree in the Navigation pane, double-click **Users**.

The Search User options appear in the Data Entry pane.

2 Click in one or more relevant search fields (e.g., just **Last Name**, or both **First Name** and **Last Name**) and type the search text.

3 Click **Search**.

The resulting matches, if any, appear in the table.

4 To verify the account is the one that is to be deleted, select the likely record and click the now-active **Edit** button.

5 Review the User Details options, then click **Cancel** to reopen the Search Users pane.

6 Select the record and click the now-active **Delete** button.

CHAPTER 5

Managing device records

Chapter contents

Important notice

You do not need to manually add new device records (as detailed in this chapter), as Funambol users can auto-loads their account (including user, device and principal information) when they initially connect to the Data Synchronization Service or later, if they update their device.

How does this work? Each user initially prepares their mobile devices for a "sync" by entering a username and password of their choice, along with the Funambol server URL. During the resulting connection attempt, this information triggers the Data Synchronization Service to:

1 auto-generate a new user record (applying their user name and password)

2 add a new device record

3 link user and device automatically in a new principal record

A synchronization then starts. This auto-loading process is particularly useful if you have a large number of potential users.

• So, why is there a Add Device entry form?

When would you possibly manually create new user and device records? If you are setting up an email synchronization for a potential (unregistered) user, you may need to create the records for (1) User, (2) Device and (3) Principal, then use the new user record to link to the rel-evant mail server (using the Email Connector, as detailed in a later chapter). The actual user (who hasn't registered yet) must then be sent a copy of the Funambol URL, plus the newly recorded username and password, to use in setting up all their sync connections with clients and devices.

Introduction

As with user records, this chapter guides you through the creation and management of the needed records. Each wireless device—laptop, smartphone, PDA, etc.—must have a record in the Data Synchronization Service database, whether used solely by one person, or shared among several users. As noted previously, this permits you to set up synchronization for each user on any relevant device.

Adding a new device record

To manually add a new device record to the Data Synchronization Service, follow these steps:

1   In the Navigation pane, right-click **Devices** and choose **Add Device**.

The Add Device options appear in the Data Entry pane.

2   Enter the relevant information in the following fields.

ID	The device ID, e.g., the phone IMEI for SyncML phones.
Type	The device type.
Timezone (TZ)	The timezone associated with the device.
Conversion to current TZ	Enable/disable conversion to the current timezone.
Charset	The character set used for communication with the device. Valid values: UTF-8, UTF-16, ISO-8859-1, US-ASCII.

Address	IP address of the device (if applicable).
Phone number	The full phone number of the device.
Notification Type	Choose the correct type from the options in this menu:
	OMA DS 1.2: works with Funambol clients and with Syn-cML 1.2 clients
	Nokia OMA DS 1.1: works with Nokia phones that support SyncML 1.1
Description	Informational or descriptive text (optional).

3   Click **Add** to save the settings.

A confirmation message appears in the Output-Messages pane.

Editing existing device records

To review and revise the settings for an existing device record, follow these steps:

1   In the Navigation pane, double-click **Devices** in the Navigation pane.

The Search Devices options appear in the Data Entry pane.

2   Click in one or more relevant search fields and type the search text. (Or, to view a complete list of all existing device records, make no entries in the search fields).

3   Click **Search**.

The resulting matches appear in the table.

4   Click the likely record and then click the now-active **Edit** button

The Edit Device options appear in the Data Entry pane.

5   Review the information in the following fields and make any needed changes.

ID	[-Read only-] The device ID, e.g., the phone IMEI for SyncML phones.
Type	The device type.
Timezone	The timezone associated with the device.
Charset	The character set used for communication with the device. Valid values: UTF-8, UTF-16, ISO-8859-1, US-ASCII.
Address	IP address of the device (if applicable).
Phone Number	The full phone number of this device.
Notification Type	Choose the correct type from the options in this menu:
	OMA DS 1.2: works with Funambol clients and with SyncML 1.2 clients
	Nokia OMA DS 1.1: works with Nokia phones that support SyncML 1.1
Description	[-Optional-] Informational or descriptive text.

6   Click **Save** to save any changes.

A confirmation message appears in the Output-Messages pane.

Reviewing device capabilities

If you wish to examine in great detail the technical functionality (which we call "capabilities") of a specific device, you can do so in this version of the Administration Tool, in the Devices data entry options. Owing to the fact that all of the "Device Capability" categories and options are read-only displays, and cannot be modified, the information has been printed in a separate chapter—"Reviewing device capabilities" on page 68.

Deleting device records

To delete an existing device record from the Data Synchronization Service database, follow these steps:

1 After expanding the server tree in the Navigation pane, double-click **Devices**.

The Search Devices options appear in the Data Entry pane.

2 Click in one or more relevant search fields and type the search text.

3 Click **Search**.

The resulting matches, if any, appear in the table.

4 To verify the account is the one that is to be deleted, select the likely record and click the now-active **Edit** button.

5 Review the Device Details options, then click **Cancel** to reopen the Search Devices pane.

6 Select the record and click the now-active **Delete** button.

A confirmation message appears in the Output-Messages pane.

CHAPTER 6

Managing principals

Chapter contents

Important notice

You do not need to manually add new principal records (as detailed in this chapter), as Funambol users can auto-loads their account (including user, device and principal information) when they initially connect to the Data Synchronization Service or later, if they update their device.

Introduction

In the wireless mobile universe, there are two overlapping combinations of user and device that pose a potential quandary for centralized data synchronization services.

- A single Funambol user using more than one device or client for data synchronization. For example, one might have an at-work SyncML phone, a personal-use smartphone, a copy of Microsoft Outlook on their laptop, and a PocketPC PDA.
- Or, that same individual may be one of several users who would want to synchronize data from a single device that they take turns sharing.

With these two associations in mind, the Funambol Data Synchronization Service incorporates the concept of a *principal*, that associates a single user with a specific device. This allows one device to be shared by multiple users, or one user to utilize any number of devices—all synchronizing with Funambol, but without the wrong data going to the wrong client. Each of these associations is uniquely identifiable in the system as a *principal*.

Creating a new principal

To create a new principal in Funambol, use the Administration Tool to search for [1] the desired user, then [2] for a device match. After selecting a matching user and device from the search results tables, you link them as an individual principal.

Note: remember that you can pair more than one user with the same device, each as a unique principal. If a single phone has five users, you would create five principals to represent the associations.

1 In the Navigation pane, right-click **Principals** and choose **Add Principal**.

The Add Principal options appear in the Data Entry pane.

Tip: you may want to make more room for the Data Entry pane, by reducing both Output and Navigation panes, as described in *"A tour of the Administration Tool window"* on page 7.

2 Enter the relevant information in one or more of the **Users** search fields, and click **Search**. (Some portion of the user's last name is a good starting point).

The results (if any) appear in the table below.

3 Enter the relevant information in one or more of the **Devices** search fields, and click **Search**.

The table below the search form lists the results of your query.

After you have matched a particular user and a device, the tables should look like this example.

Username	Name	E-mail		ID	Type	Description
prosewonk	Giovanni Funambolo	mudhen@funambol....		Nokia 880	Phone	Bogus

Add Principal   Cancel

4   If your search turned up one match for each category, make sure each record is selected.

5   If your search turned up multiple matches for user or device, select the correct record for each category.

6   Click the now-active **Add Principal** button to save the user/device pairing.

Look in the Output-Messages area for confirmation of the new principal.

Editing existing principals

As there is no way to directly edit a principal record, you have the option in the Funambol Administration Tool to (1) delete the existing record and (2) create a new principal record.

Deleting existing principal records

1   Right-click the **Principals** icon in the Navigation pane and choose **Search Principals**.

The Search Principals options appear in the Data Entry pane.

2   Search for a specific principal, using any of the data fields.

   • Or, to view the complete catalog of principals, leave the search fields empty and click **Search**.

3   Select the appropriate result in the table below the search form.

4   Click **Delete**.

5   When the deletion confirmation dialog box appears, click **OK**.

The selected record is deleted. A confirmation message appears in the Output-Messages pane.

Reviewing last synchronization timestamps

To find and display the details about the most recent ("last") synchronization of a specific principal, follow these steps:

1. Right-click the **Principals** icon in the Navigation pane and choose **Search Principals**.

   The Search Principals options appear in the Data Entry pane.

2. Search for a specific principal, using any of the data fields.

   - Or, to view the current catalog of principals, leave the search fields empty and click **Search**.

3. Select the appropriate result in the table below the search form.

4. Click **Details**.

   The Last Synchronization Timestamps options appear in the Data Entry pane.

FIGURE 6-3

5. The table provides the following information about the most recent synchronizations of the selected principal:

Database	Identifies the SyncSource used by the principal.
Sync Type	Notes the type of synchronization.
Status	Reports the sync status code
Client anchor	Displays the client anchor last used
Server anchor	Displays the server anchor last used
Start	Notes the start time of the most recent synchronization
End	Notes the end time of synchronization

6. IF you want to verify that this is indeed the most recent synchronization, click **Refresh**.

7. When you are finished, you must either double-click another icon in the server tree, or exit the Administration Tool.

Deleting a synchronization record

You can delete the records about the most recent synchronizations, but this not only erases the records, but will force the Data Synchronization Service to perform a "deep" comparison of client and server data. This will be automatically initiated the next time the client device or service attempts to sync with the Data Synchronization Service. You may want to perform this task only if there are problems arising from previous synchronizations.

1. To start the process, click the **Reset** button.

2 If you do delete the most recent synchronization information, the server automatically performs a slow synchronization the next time. Note that this synchronization may take some time.

Installing and using the Email Connector and Inbox Listener Service

Chapter contents

About the Funambol Email Connector

The *Email Connector*, a key Funambol Data Synchronization Service module, allows a user to synchronize email clients on their computers and mobile devices to external mail servers through a Funambol Data Synchronization Service connection. The Email Connector module incorporates a basic SyncSource—"mail"— that enables email synchronization and email push for both POP and IMAP email. When this module is set up and active, email can be synchronized with a designated mail server, but with important protocol-specific differences:

- POP users can sync their client Inbox folder (but no subfolders), and can send mail through their client Outbox

- IMAP users enjoy full synchronization of all folders and subfolders with the mail server

You set up the Email Connector as a "mail" service, then configure the protocols (POP or IMAP) on a per-user record basis, through the Users options.

Note that (as detailed in this chapter) user authentication with the email server can be configured to rely on the user's own mail authentication settings—which means a simpler setup for you, the administrator.

The Email Connector serves your users who want to manually synchronize their various email clients. You can also install and configure Funambol Inbox Listener Service (as detailed in "About the Inbox Listener Service" on page 45) to enable email push, so that the Data Synchronization Service is automatically loaded with the latest incoming email, and copies are pushed to all active client devices.

Environment description

Before starting with the installation procedure, it may be helpful to review the main features of Funambol's email module.

To implement the push email functionality and improve performance, the email module provides the Email Connector and the Inbox Listener Service tool, which offers the following features:

- **Polling Inbox Listener Service feature**. The service 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 Data Synchronization Service.

- **Notifiable Inbox Listener Service feature**. The service 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 service 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.

Note: if the Inbox Listener Service is not running, both push email functionalities and message processor features are not available.

To use the email synchronization feature, the module (s4j) of the Email Connector must be added to the Data Synchronization Service; 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 Service, 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 Data Synchronization Service Schema. This database schema is automatically created during the installation procedure.

The email synchronization process is summarized in the following diagram:
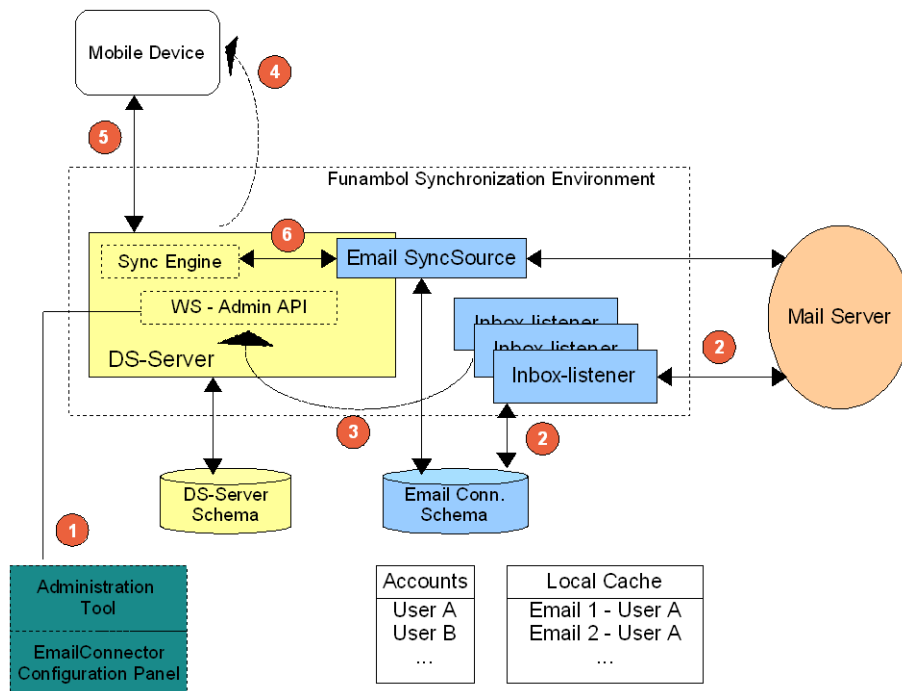
1   The administrator user must create the "ds-user" (user in the Data Synchronization Service) and the "account" (ds-user + all the information about the mail server)

2   The Inbox Listener Service 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 Service 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 Service sends a notification to the Data Synchronization Service.

4   The Data Synchronization Service sends the notification to the client.

5   The Mobile Device performs a sync session. A sync session can be driven by:

  • a Data Synchronization Service Notification - the Data Synchronization Service sends a notification if a new email is the inbox folder.

  • the user - the user starts the sync session pressing the 'sync button' on the syncML client.

6 The Data Synchronization Service 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.

Installation/operation requirements

If you have previously installed the Funambol Server package, the Email Connector is present, ready for setup and use (as detailed in this chapter). If you installed only the Data Synchronization Service on an existing host (that meets the requirements), you should install the Email Connector as a separate component—as detailed in this chapter.

Alert: if you've already set up a working Data Synchronization Service, there are cautions noted in this chapter that, if heeded, reduce the risk of your erasing existing Funambol data during Email Connector installation.

Configuring the Email Connector

To configure the Email Connector for external mail server communications and synchronizations, use the Funambol Administration Tool to perform the following actions:

- assigning the Officer for the Email Connector (to enable user authentication)

- configuring the Email Connector

- setting Up the Email SyncSources (POP and IMAP)

Each of these tasks is detailed in a separate sub-section.

Assigning the officer for the Email Connector

After the initial installation, a key Server setting, "Email Officer", controls how users are authenticated so that they can access the server functions. Two XML files define the options for the two instances of the Officer that are present in the Funambol standard installation:

•The default Officer is "UserProvisioningOfficer.xml". Use this file if your Data Synchronization Service cannot use an external mail server or user database for user authentication. In this case, this Officer performs the authentication function locally. Note that, if this officer is active, you must manually enter user accounts, including ID and password, then communicate that information to users to aid them in preparing their clients and devices for synchronization.

•The alternate Officer is "EmailOfficer.xml". Use this file if your Data Synchronization Service has access to a mail server or other user-authentication source. This greatly simplifies your user-connection setup; your users can set up device sync profiles using their email login entries for authentication and access to Funambol. When they first connect, the system validates their identity, then auto-generates the needed user, device and principal records.

To change the default to "EmailOfficer.xml", follow these steps:

1 After opening the Administration Tool, log into the server.

2 Expand the server tree in the Navigation pane.

3 Double-click **Server settings**.

The Server Settings options appear in the Data Entry pane (as highlighted below)

Engine	
Server URI :	
Officer :	com/funambol/server/security/UserProvisioningOfficer.xml
Logging configuration :	com/funambol/server/logging/Logging.xml

4   In the **Officer** field (included in the *Engine* options), the default entry is "UserProvisioningOfficer.xml". Edit the entry as follows (with edits shown in bold):

   com/funambol/server/security/**EmailOfficer.xml**

5   Click **Save** to save and apply the configuration settings.

You can now proceed with Email Connector configuration.

Configuring the Email Connector

1   Expand the Navigation pane tree as follows:

   Modules > email > FunambolEmailConnector

2   Double-click **FunambolEmailConnector**

The Email Connector options appear in the workpane, divided into two collections of options:

   • **Public Mail Servers**

email - FunambolEmailConnector ×	

Public Mail Servers

Server description   Start with ▼   Reset   Search

Description	Outgoing server	port	Incoming server	port	Add
					Edit
					Delete

   • **Accounts**

Accounts

Username   Start with ▼   Reset   Search
Server description Start with ▼
Activation   All   ▼

Username	Login	Address	Activation	Max email	Soft-Del...	Descript...	Protocol	Add
								Edit
								Delete
								Cache

3   Use these features to complete a sequence of three setup tasks:

- Create records for those mail servers your Funambol users would synchronize with
- Link existing user records to relevant servers
- Activate mailbox monitoring and email push on a per-account basis.

Each of these tasks is detailed in the following sub-sections.

[1] Creating public mail server records

The Data Synchronization Service is pre-loaded with the most common public mail servers — AOL, Yahoo, Gmail, Hotmail. After activating this group, you may need to manually add more mail servers. This section describes both tasks in step-by-step detail.

1 After opening the FunambolMailConnector options, locate the Public Mail Server options and click **Search**.

The table lists a default set of public servers, ready for use.

Description	Outgoing ser...	port	Incoming ser...	port
Gmail	smtp.gmail.com	465	imap.gmail.com	993
Google Mail	smtp.googlemail.c...	465	imap.googlemail....	993
Yahoo	smtp.mail.yahoo.c...	465	pop.mail.yahoo.c...	995
AOL	smtp.aol.com	587	imap.aol.com	143
Hotmail	smtp.live.com	25	pop3.live.com	995
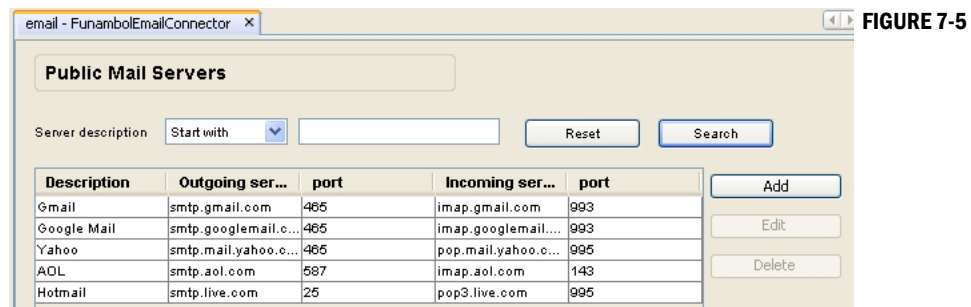
2 If this list is not inclusive of servers utilized by your users, click **Add**.

The Mail Server Details dialog box appears.

Mail Server Details	
Description	Google Mail
Server product	GMail
Protocol	imap
Outgoing server	smtp.googlemail.com Port 465 Auth ☑
Incoming server	imap.googlemail.com Port 993
SSL Outgoing	☑
SSL Incoming	☑
Soft-Delete on server	☐
Inbox folder name	☑ INBOX
Outbox folder name	☑ Outbox
Sent folder name	☐ [Google Mail]/Sent Mail
Draft folder name	☐ [Google Mail]/Drafts
Trash folder name	☐ [Google Mail]/Trash

Ok Close

3 Review the following options (some of which are read-only) and make needed entries and selections:

Option	Description/Action
Description	A plain-language descriptive name for this server, usually incorporating the server's brand name, e.g. Scalix.
Server product	[Default: "Other"] Open this menu and choose the mail server application -- if it matches one of the listed options.
Protocol	Open this menu and choose "pop3" or "imap". Note that some options will be activated (or rendered inactive) depending on your choice of protocol.
Outgoing Server	The URL of the outgoing email server.
Port	Outgoing email server port. Default = 25 (SMTP)
Auth	if checked, the user credentials (mail login and password) are sent to the email server to authenticate the outgoing mail.
Incoming Server	The URL of the incoming email server.
Port	Incoming mail server port. Default entries are = 110 (POP), 143 (IMAP)
SSL Outgoing	If checked, this option activates SSL on all outgoing messages.
SSL Incoming	If checked, this option activates SSL on all incoming messages.
Soft-delete on server	If checked, when you delete a message on your client, your messages will also be deleted on the server. (Checked by default).
Inbox Folder Name	Displays the name server label assigned to the Inbox folder. (Inactive by default)
Outbox Folder Name	Displays the name server label for the Outbox folder. (Inactive by default).
Sent Folder Name	Displays the name server label for the Sent folder.
Drafts Folder Name	Enter the name server label for the Drafts folder. Check this option to activate synchronization. (Optional).
Trash Folder Name	Enter the name server label for the Trash folder. Check this option to activate synchronization. (Optional).

4 Click **Save**.

5 When a (confirmation) dialog box appears, click **OK**.

6 Repeat the previous steps as needed until you have records for all relevant mail servers.

[2] Linking user accounts to mail servers

Do not start this task until you have already compiled a Data Synchronization Service database of user records.

1 In the FunambolEmailConnector **Account** options, click **Add**.

The **Search Users** dialog box appears.

FIGURE 7-7

2 Use the search features to find matching user records (from your Funambol database of already-active users and double-click the exact user match.

The **Search Users** dialog box is replaced by the **User Account Details** <username> dialog box, which displays a set of options related to the current state of the user record, including mail-server options that automatically fill in with relevant values.

FIGURE 7-8

3 Review the left-hand column of user-specific options, and make any needed changes:

Login　　　　　　　Enter the mail server user name for this record.

Password　　　　　Enter the related password.

Confirm Password　Re-enter the same password text.

Email Address　　　Enter the full text of this user's email address.

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Enable Push	Check this flag to enable push notifications.
Enable Polling	Check this flag to enable polling.
Refresh Time	Enter a number that determines how many minutes between mailbox pollings.
Max Email Number	(*Applies to POP accounts*) Choose a number from the menu to control the maximum number of email messages that are pushed to the user at one time.
Max IMAP Email	(*Applies to IMAP accounts*) Choose a number from the menu to set the maximum number of email messages that are cached from the Inbox, Drafts, Sent and Trash folders at one time

4   Review the right-hand mail server-specific options—but don't make any changes at this time.

5   Open the **Mail Server** menu and choose the pre-existing mail server used by this user.

The existing server settings automatically load into this dialog box. All the options are read-only—as shown here.
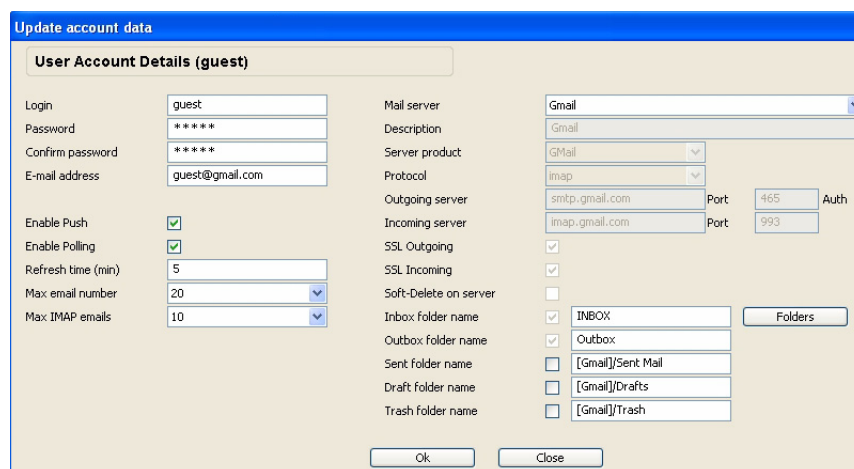
FIGURE 7-9

6   Click **Save**.

7   When a (confirmation) dialog box appears, click **OK**.

8   Repeat this procedure as needed to link all users to mail servers.

[3] Activating mailbox listening and email push for user accounts

If a user wishes to make use of email push (in any form), you can use the Administration Tool to open that user's record and reset the relevant Inbox Listener Service activation options. Three options are involved.

1   Expand the Navigation pane tree as follows:

Modules > email > FunambolEmailConnector

2   Double-click **FunambolEmailConnector**

The Email Connector options appear in the workpane, divided into two collections of options.

3   Select a user record (after searching for and finding the records) and click **Edit**.

4   When the **User Account Details** <username> dialog box appears, look for these options:

Enable Push   Enter a checkmark to activate email push, by which the Inbox Listener Service notifies the Data Synchronization Service of new email to be pushed to the user's client.

5   If you made any changes, click **Save**.

6   When a (confirmation) dialog box appears, click **OK**.

This will enable push to the user. The push mode depends on the user device's capabilities: the server will first try to use connection-less push with the device, than connection-oriented push, and finally SMS-based push, if permitted to do so by the parameter in the respective XML file located in the directory `$FUNAMBOL_HOME/config/com/funambol/server/notification`.

Forcing the verification of SSL certificates

By default, Funambol doesn't verify the certificates provided by email servers in SSL connections. This doesn't mean that the communication between Funambol and the email servers are not encrypted, but that the authenticity of the certificates is not verified. This makes it possible for the portal to connect to email server that support SSL without any manual intervention.

If you are worried about this behavior, you can change it editing the following files:

- `Funambol/config/com/funambol/email/inboxlistener/task/InboxListener-Task.xml`

- `Funambol/config/email/email/FunambolEmailConnector.xml`

and setting the checkCertificates property to *true.*

Manually enabling encryption/encoding

All communication between the Email Connector and any SyncML client is automatically encoded with base64. If you prefer, those communications can be encoded with both DES and base64. To do so, follow the procedure described below.

1   In the Navigation pane, expand the server tree and double-click **Server Settings**.

The Server Settings options appear in the Data Entry pane.

2   Locate the **Data transformer manager** option (under *Engine*) and click the **Configure** button (to the right of the field).

3   When the Data Transformer Manager Configuration options appears as shown here, click the "+" icon in the upper right corner of the **Data Transformations** table.
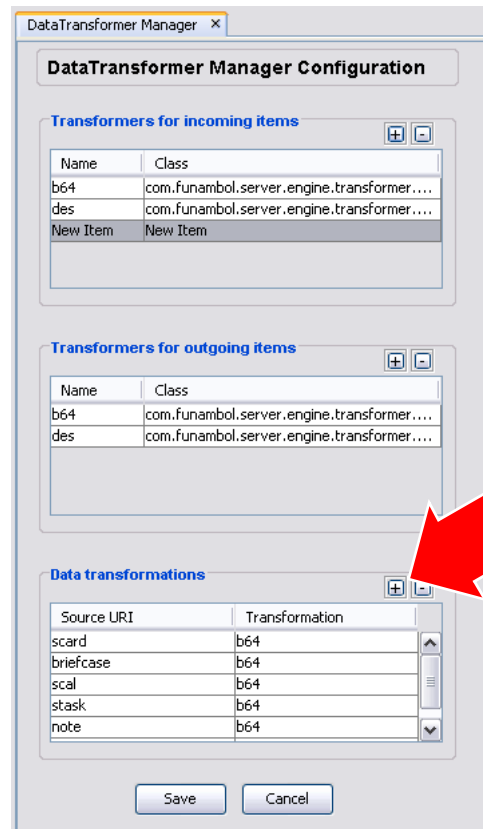
This creates a new row at the bottom of the table.

4   Make the following entries in each column of the new row:

Source URI   Enter the value of the Source URI (e.g., the string "mail") of the SyncSource instance you created in the previous section.

Transformation   Enter this text: "des;b64" to apply the DES cipher and Base64 encoding.

5   Click **Save** to save and apply this encryption transformation.

About the Inbox Listener Service

In conjunction with the Email Connector, the Inbox Listener Service is a key component that makes it possible for the Funambol Data Synchronization Service to monitor external mail servers, and when new in-bound messages are detected in a user's mailbox, to do the following:

- (1) send an alert to the user

- (2) automatically sync ("push") the new messages to the user's Funambol archives

When a new message is detected by the Inbox Listener Service, the Funambol engine notifies the user's device about the new mail. The device then initiates the email synchronization process with the email server via the Funambol engine and Funambol Email Connector.

Note: there is no access to the Inbox Listener Service by means of the Administration Tool. You must use the command line (as detailed here) to configure and manage the Inbox Listener Service.

Configuring the Inbox Listener Service

To customize the Inbox Listener Service to match your system, you will follow the procedure detailed in this section. You may need to repeat the procedure twice, to cover POP mail and IMAP mail. The following cannot be done with the Administration Tool; you must use a command line window, as described here.

1   Change to this directory:

`<FUNAMBOL_HOME>/config/com/funambol/email/inboxlistener`

2   Open the `InboxListenerConfiguration.xml` file.

3   Review and edit any of the following properties:

Property	Description
maxThreadPoolSize	Specifies the max number of threads that can be used. This should be a function of the number of users to monitor.
healthThreadExecutionPeriod	Sets the interval (in seconds) between executions of the HealthThread, a thread that at regular intervals assesses the Inbox Listener Service status.
registryMonitorPollingTime	Sets the interval (in seconds) between executions of the RegistryMonitor, a thread that regularly checks the database for changes to the monitored accounts.

Property	Description
taskPeriodTolerance	Sets the tolerance accepted on the period between two data checks. If a user is scheduled to be checked every *x* seconds (period), the server will produce a warning log entry if the data check occurs after *x* + *periodTolerance/x*
registryTableName	Defines the table that contains the push registry entries. By default `fnbl_email_push_registry`.
registryEntriesIdSpace	ID space used to create unique identifiers for registry entries. By default `email.registryid`.
pluginDirectory	The directory from which the service loads plug-ins.
WSServerInformation	Records the information used to call any webservices exposed by the Data Synchronization Service, as noted below:
	url: the Funambol engine administration URL
	username: the Funambol engine administrator username
	password: the Funambol engine administrator password
clusterConfiguration	Contains the information used to create a cluster between two or more Inbox Listener Services.

4   Save your changes and close the file.

Strategizing the Inbox Listener Service configuration

If you anticipate a large number of users who want email push for their mail data, the cluster configuration of the Inbox Listener Service is suggested; in this configuration, load balancing is implemented for better performances.

Starting and stopping the Inbox Listener Service

To start the Inbox Listener Service, follow these steps:

1   Open a command line window (Windows or Linux).

2   At the prompt, type the following:

Windows:

```
cd <FUNAMBOL_HOME>\bin
```

```
inbox-listener.cmd start [-debug]
```

Unix/Linux: (do the following as root)

```
cd <FUNAMBOL_HOME>/bin
```

```
./inbox-listener start [-debug]
```

Stopping the Inbox Listener Service

To stop the Inbox Listener Service if it's a foreground process (which it shouldn't be except for testing purposes), open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin
```

```
inbox-listener.cmd stop
```

Linux:

```
cd <FUNAMBOL_HOME>/bin
```

```
./inbox-listener stop
```

Tip: if the Inbox Listener Service was started with -debug, use the Ctrl-C key combination to stop it.

Maintenance

When using a PostgreSQL database, you need to periodically check the the size of the table `fnbl_email_inbox`. To do so, go to the postgres console and run this query:

```
select * from pg_relation_size('fnbl_email_inbox');
```

which will return the number of bytes occupied by the `fnbl_email_inbox` table.

If necessary, use the VACUUM facility provided for PostgreSQL to clean up the database. To do a deeper cleaning and free the disk space, the VACUUM function should be run with the 'full' option. Please refer to official PostgreSQL documentation for further details.

Installing and activating the PIM Listener Service

Chapter contents

Introduction

PIM, or Personal Information Management, is the standard term used to refer to the collection of personal information (contacts, calendar entries, notes, tasks, etc.) that the user can synchronize with the server using the Funambol software.

The Funambol PIM Listener Service monitors the Data Synchronization Service PIM database. If PIM Listener Service detects any out-of-sync data, a prompt is sent to the Funambol engine. If correctly configured, the server notifies any affected, out-of-sync devices using the appropriate push mode (connectionless, connection-oriented or SMS) ; the devices, in response, automatically initiate a new synchronization process to update all their data.

Configuring the PIM Listener Service

This section details the configuration of the software, including setting the log.

Configuration

1 Change to this directory:

```
<FUNAMBOL_HOME>/config/com/funambol/pimlistener/
```

2 Open the `PIMListenerConfiguration.xml` file.

3   Review and edit the following properties:

Property	Description
maxThreadPoolSize	Specifies the max number of threads that can be used. This should be a function of the number of users to monitor.
healthThreadExecutionPeriod	Sets the interval (in seconds) between executions of the HealthThread, a thread that at regular intervals assesses the PIM Listener Service status.
registryMonitorPollingTime	Sets the interval (in seconds) between executions of the RegistryMonitor, a thread that regularly checks the database for changes to the monitored accounts.
taskPeriodTolerance	Sets the tolerance accepted on the period between two data checks. If a user is scheduled to be checked every x seconds (period), a warning is triggered if the data check occurs after x + periodTolerance/x
registryTableName	Defines the table that contains the push registry entries. By default `fnbl_push_listener_registry`.
registryEntriesIdSpace	ID space used to create unique identifiers for registry entries. By default `pushlistener.id`.
pluginDirectory	The directory from which the service loads plug-ins.
WSServerInformation	Records the information used to call any webservices exposed by the Data Synchronization Service, as noted below:
	url: the Funambol engine administration URL
	username: the Funambol engine administrator username
	password: the Funambol engine administrator password
clusterConfiguration	Contains the information used to create a cluster between two or more PIM Listener Services.

4   Save your changes and close the file.

Configuring PIM Listener Service logging

The Funambol PIM Listener Service uses log4j as the basis for its logging system. In order to configure the PIM Listener Service log, follow these steps:

1   Open this directory:

> `<FUNAMBOL_HOME>/config`

2   Open the log4j-pimlistener.xml file and edit it according to your preferences.

  • By default, that file will be updated every 30 seconds.

3   Please see the log4j documentation for details about log configuration.

About the detailed appenders

By default, two detailed appenders are configured in the PIM Listener Service:

• detailed-console

• detailed-log-file

Both appenders use this layout:

> [%d{yyyy-MM-dd HH:mm:ss,SSS}] [%c] [%p] [%t] [%X{entryId}] [%X{deviceId}]
>
> [%X{userName}] [%X{sourceURI}] %m%n

These options, when utilized fully, create a very enriched log message with this [text]:

> username/deviceId/sourceUri.

Activating and using the PIM Listener Service

This section covers the procedures for starting the PIM Listener Service, and managing the user account database. The following tasks are covered in separate sub-sections.

  • Starting the PIM Listener Service

  • Monitoring the status of the PIM Listener Service

  • Adding user accounts to the PIM Listener Service

Starting the PIM Listener Service

In the case of either Windows or Linux server installations, you must set the JAVA_HOME environment variable for both of the following scripts **before** running them. That variable must point to a valid JDK/JRE 1.5.x installation directory.

To start the PIM Listener Service after configuring the scripts, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin

pim-listener.cmd start [-debug]
```

Linux:

```
cd <FUNAMBOL_HOME>/bin
```

```
./pim-listener start [-debug]
```

Tip: if you run the PIM Listener Service using `-debug`, the output messages will be displayed on the console.

Monitoring the PIM Listener Service status

To review the current PIM Listener Service status, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin
pim-listener.cmd status
```

Linux:

```
cd <FUNAMBOL_HOME>/bin
./pim-listener status
```

Managing the user account database

To configure the users that must be monitored, follow these steps:

1   Open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin
pim-listener.cmd console
```

Linux:

```
cd <FUNAMBOL_HOME>
./pim-listener console
```

2   When the PIM Listener Service console window appears, use the following commands to enter and/or manage your user accounts:

Command	Description
0 - quit	Exits the PIM Listener Service console.
11 – list entries	Displays a list of all monitored users (entries).
12 – list entries by userName	Displays a list of all entries associated with a specific user.
14 – get entry	Displays the entry with a specified ID.
15 – enable entry	Enables the entry with a specified ID.
16 – disable entry	Disables the entry with a specified ID.

Command	Description
17 – insert entry	Inserts a new entry through a guided procedure. Please note that by activating calendars, tasks will be activated as well.
18 – update entry	Update an already existing entry.
19 – mark an entry as deleted	Marks an entry deleted. The record in the database will be automatically deleted by the PIM Listener Service itself.

Stopping the PIM Listener Service

To stop the PIM Listener Service, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin

pim-listener.cmd stop
```

Linux:

```
cd <FUNAMBOL_HOME>/bin

./pim-listener stop
```

Tip: if the PIM Listener Service was started with –debug, use the Ctrl-C key combination to stop it.

CHAPTER 9

Installing and activating the Push Connection Service

Chapter contents

Introduction

The Funambol Push Connection Service is responsible for managing the connections between the mobile device and the Funambol Data Synchronization Service.

Configuring the Push Connection Service

This section details the configuration of the software, including setting the log.

Configuration

1   Change to this directory:

   `<FUNAMBOL_HOME>/config/com/funambol/ctp/server/`

2   Open the `CTPServerConfiguration.xml` file.

3   Review and edit the following properties:

Property	Description
portNumber	By default, the Push Connection Service opens a server socket on port 4745. Client devices connect to this port in order to receive notification messages. If you wish to change the port, change the value of this property accordingly.

Property	Description
loggingFilterEnabled	By default, the Push Connection Service doesn't log incoming and outgoing messages. If you want to log them you have to enable the logging filter by setting the value of this property to "true".
	Please note that the incoming and outgoing messages are logged at "trace" level, so you have to enable logging level to "All" in the file log4j-ctpserver.xml located in the directory: <FUNAMBOL_HOME>/config/
WSServerInformation	By default, the Push Connection Service connects to the Data Synchronization Service web service at the URL: `http://localhost:8080/funambol/services/admin` using user = "admin" and password = "sa".
	If you wish to change these details, modify the value of the sub-properties **url**, **username** and **password**.
notificationGroupName	By default, Push Connection Services and Push Senders communicate using the group name *ctp-notification-group*. If you wish to install two distinct groups of processes, you must specify a different group name either for the Push Connection Services or for the Push Senders.
	To specify the group name for the Push Connection Service, modify the value of this property.
	To specify the group name for the Push Sender, open the <FUNAMBOL_HOME>/config/com/funambol/server/notification/Push-Sender.xml file and modify the **groupName** property.

Configuring Push Connection Service logging

The Funambol Push Connection Service uses log4j as the basis for its logging system. In order to configure the Push Connection Service log, follow these steps:

1   Open this directory:

        `<FUNAMBOL_HOME>/config directory`

2   Open the `log4j-ctpserver.xml` file and edit it according to your preferences.

      • By default, that file will be updated every 30 seconds.

3   Please see the log4j documentation for details about log configuration.

Activating and Using the Push Connection Service

This section covers the procedures for starting the Push Connection Service and managing the user account database. The following tasks are covered in separate sub-sections.

- Starting the Push Connection Service
- Monitoring the status of the Push Connection Service

Starting the Push Connection Service

In the case of either Windows or Linux server installations, you must set the JAVA_HOME environment variable for both of the following scripts **before** running them. That variable must point to a valid JDK/JRE 1.5.x installation directory.

To start the Push Connection Service after configuring the scripts, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin

ctp-server.cmd start [-debug]
```

Linux:

```
cd <FUNAMBOL_HOME>/bin

./ctp-server start [-debug]
```

Tip: if you run the PIM Listener using −debug, the output messages will be displayed on the console.

Monitoring the Push Connection Service status

To review the current Push Connection Service status, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin

ctp-server.cmd status
```

Linux:

```
cd <FUNAMBOL_HOME>/bin

./ctp-server status
```

Stopping the Push Connection Service

To stop the Push Connection Service, open a command line window and type the following at the prompt:

Windows:

```
cd <FUNAMBOL_HOME>\bin

ctp-server.cmd stop
```

Linux:

```
cd <FUNAMBOL_HOME>/bin

./ctp-server stop
```

Tip: if the Push Connection Service was started with –debug, use the Ctrl-C key combination to stop it.

CHAPTER 10

Customizing the Data Synchronization Service's log settings

Chapter contents

Getting started

A basic Data Synchronization Service installation provides a single log file called `ds-server.log`, which you will find in the `<FUNAMBOL_HOME>/logs/ds-server` directory. This file has been structured to store a lot of information; if you prefer, you can use the Funambol Administration Tool to redirect logging for specific server components so that more refined output is sorted into distinct log files.

To review the settings for the default system logger, follow these steps:

1   In the Funambol Administration Tool, expand the navigation pane server tree as noted here:

Server settings > **Logging > Loggers**

A list of logging categories (called "loggers") appears below "Logging", as shown here.
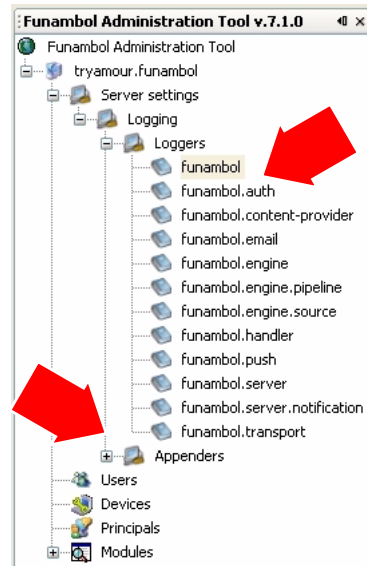
A second list of logging configuration files (called "appenders") are also listed here.

2 To review the default log file settings (automatically applied to all other loggers), double-click **Funambol** (under "loggers").

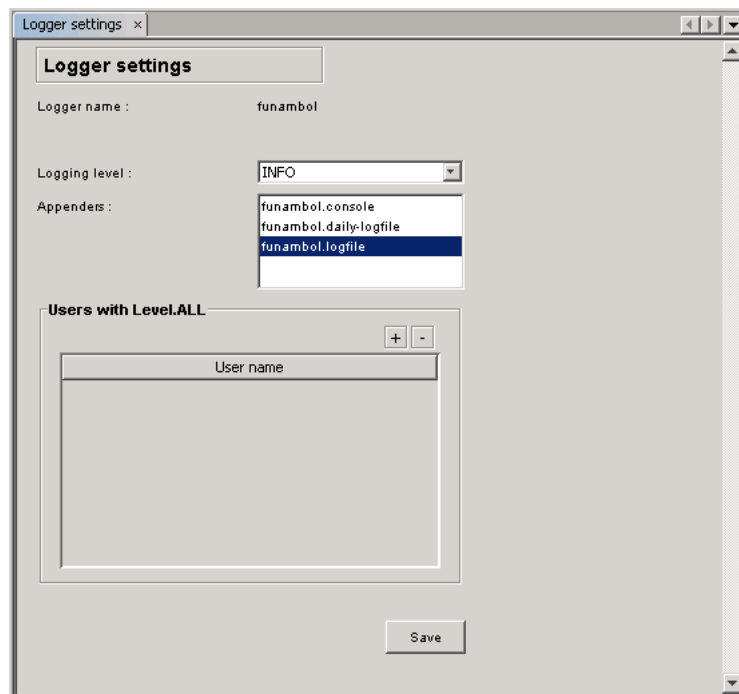The pane displays the current logger settings, which are editable.

These "funambol" settings are automatically applied to all of the other listed loggers.

3 To review—and customize—each logging category, double-click each logger name in the **Logger** tree.

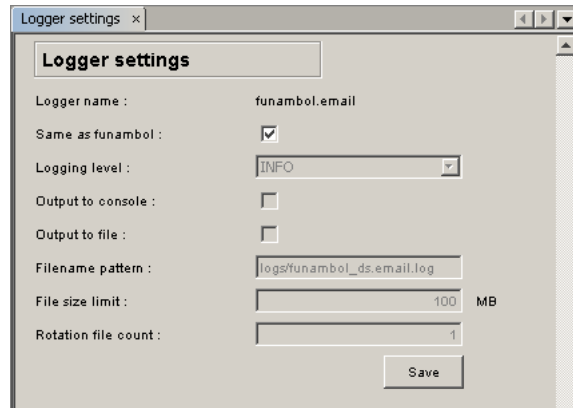Note that all of the options of all other loggers are grayed out (inactive).

4 To customize the settings for a specific server logger, uncheck the **Same as Funambol** checkbox.

5 The following logging parameters become active, which you can now revise:

Logging Level Open this menu and choose the level of information to be logged. (The default menu choice: INFO).
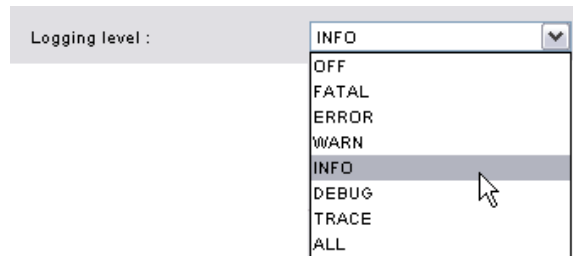
The menu choice range from Off to All, reflecting the following:

OFF = no information logged

ALL = info, errors and debug information are logged.

To record all server problems when debugging the server or a SyncSource, choose ALL. This level provides the most informa-tion. You should also use ALL if you wish to submit a log file for consideration by participants in any Funambol mailing lists.

Appenders This list displays the relevant appenders that control aspects of this logger's operations. You can review each of the appenders and their settings in a separate procedure, detailed in the follow-ing section.

Users with Level.ALL This list is for additional logs that track specific individual users. To add a user to this list, click the plus [+] button, then double-click the "user name" row that appears to activate the text field.
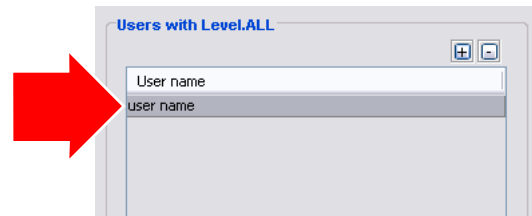
FIGURE 10-5

Type the exact text of a user name in this field, then click anywhere in the pane. The funambol_ds.log file now tracks the activities of the selected user.

Note: the log to ALL for users is valid only for specific actions (for example, syncing) carried out by a particular user, but it does not affect SMS sending. In order to enable full logging on SMS sending as well, which is controlled by the logger `funambol.server.notification.subitosms`, you must enable full logging on the parent logger: `funambol.server.notification`, by following these steps:

- Open the admin tool

- Log in to the server you want to manage

- Expand the server name

- Expand Server settings

- Expand Logging

- Expand Loggers

- Double click on `funambol.server.notification`; the logger configuration panel will appear on the right, make sure that the Logger name is `funambol.server.notification`

- Uncheck "Same as funambol.server" (in this way you are specifying different logging settings for the specific logger)

- Set Logging level to ALL

- Select funambol.logfile in the Appenders list

6 Click **Save** to save and apply your changes.

A confirmation message appears in the Output-Messages pane.

Reviewing the logging appenders

Appenders are files that store particular configurations that you can customize on a per-log basis.

1 In the Funambol Administration Tool, expand the navigation pane server tree as noted here:

Server settings > **Logging > Appenders**

Three appenders are listed in the Navigation tree:

funambol.console

funambol.daily-logfile

funambol.logfile

2 Double-click an appender to review its current settings.

The appender-specific options appear in the workpane. For example, if you open the `funambol.console` appender, the following dialog box appears.

If you open the `funambol.daily-logfile` appender, the following dialog box appears..

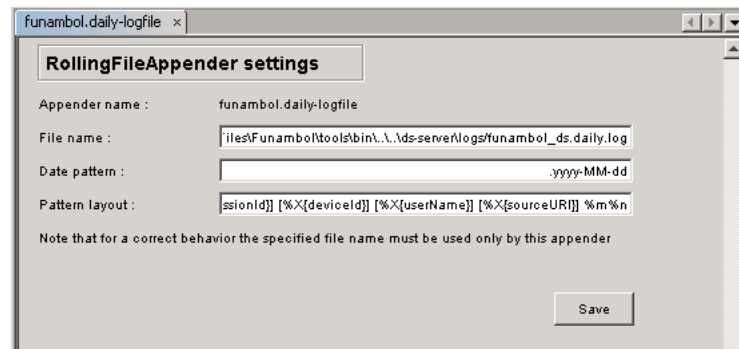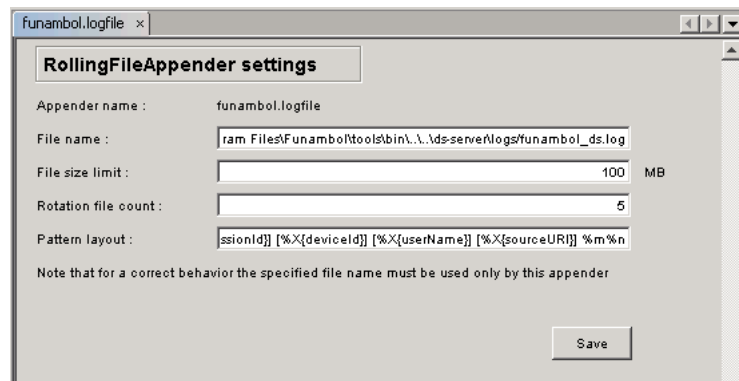If you open the `funambol.logfile` appender, the following dialog box appears..

You can take advantage of the following options, to format any of the three log appenders:

File Name	Stores the log file name and exact pathway.
Date Pattern	Notes the pattern of date entries.
File Size Limit	Sets a maximum size for a log file, before earliest entries are deleted to make room.
Rotation File Count	Determines how many separate log files can be maintained.
Pattern Layout	Edit these text string elements to control how much data is stored per entry:

      /   -the local pathname separator

      %t   -the system temporary directory

      %h   -the value of the "user.home" system property

      %g   -an automatically generated number to distinguish rotated logs

      %u   -a unique number to resolve conflicts

      %%   -translates to a single percent sign (%)

Tip: copy the current Pattern Layout string to a text editor, make any needed changes, then copy it back to this text field.

3   Click **Save** to save and apply any changes.

    A confirmation message appears in the Output-Messages pane.

Customizing log files on a per-user basis

With Funambol v6 and later, you can add individual users to the log files maintained by the Data Synchronization Service. In addition to system status and activities, log files can now be directed to record all the activities of individual users. This enables you to check the activities and any potential problems experienced by users, from the point of view of the server. All you need is the exact Funambol username and the appropriate log file.

To set up a log file for an individual user, follow these steps:

1   In the Funambol Administration Tool, expand the navigation pane server tree as noted here:

      Server settings | Logging | Loggers

    A list of logging categories (called "loggers") appears below "Logging".

2   Double-click the appropriate log file (under "loggers").

    Note that all of the options of this logger are grayed out (inactive).

3   To add a user to this logger, uncheck the **Same as Funambol** checkbox.

4   You can now add one or more user-specific log files, by means of the **Users with LevelALL** list:

    • Click the plus [+] button.

- Double-click the "user name" row that appears (shown here). This activates the text field.
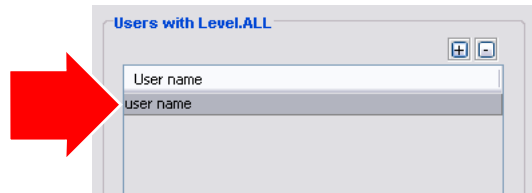
- Type the exact text of the Funambol user name in this field.

- Click anywhere in the pane to save your entry.

- Repeat this procedure to add other users, as needed.

An additional log file will be kept (with "level ALL") that tracks the activities of the newly entered user.

5 Click **Save** to save and apply your changes.

A confirmation message appears in the Output-Messages pane.

Funambol reference guide

Default SyncSource properties

The Funambol Data Synchronization Service provides the following default databases to which you can synchronize user data. Note that all noted URI entries are case-sensitive.

• Calendar

Usage: synchronizing calendar data, including events and tasks.

URI	MIME-TYPE	Clients
scal	text/x-s4j-sife	All Funambol clients. This database manages events only.
cal	text/x-vcalendar text/calendar	Most of the common and known clients that are already built into a mobile device. This database manages both events and tasks.
stask	text/x-s4j-sift	All Funambol clients. This database manages tasks only.
event	text/x-vcalendar text/calendar	Most of the common and known clients that are already built into a mobile device. This database manages events only.
task	text/x-vcalendar text/calendar	Most of the common and known clients that are already built into a mobile device. This database manages tasks only.

- Contacts

Usage: synchronizing contact data.

URL	MIME-TYPE	Clients
scard	text/x-s4j-sifc	All Funambol clients
card	text/x-vcard text/vcard	Most of the common and known clients that are already built into a mobile device.

- Notes

Usage: synchronizing text-based notes.

URLI	MIME-TYPE	Clients
snote	text/x-s4j-sifn	All Funambol clients
note	text/plain	Most of the common and known clients that are already built into a mobile device.

- Briefcase

Usage: synchronizing briefcase data.

URLI	MIME-TYPE	Clients
briefcase	Application/*	All Funambol clients

Install properties

The `<FUNAMBOL_HOME>\install.properties` file is the central repository of configuration information that is used by the installation procedure to set up the Funambol Data Synchronization Service. A standard Java properties file, it contains the following parameters:

context-path	The context path to be used to configure the web container for the Funambol Data Synchronization Service module. The Data Synchronization Service will respond to URLs starting with this context path.
dbms	Name of the database where Funambol Data Synchronization Service tables are created.
jdbc.classpath	Classpath including the JDBC driver for the database, if not included in the system classpath.
jdbc.driver	JDBC driver class.
jdbc.password	Database user password
jdbc.url	JDBC connection URL

modules-to-install	Comma-separated list of Funambol Data Synchronization Service modules to install. If a module has already been installed, the installation procedure reinstalls it again.
server-name	The server URI that will be specified in SyncML messages. The server will only respond to messages addressed to this URI.

Using Funambol with MySQL

When installing the Funambol Server package, by default, the database used is Hypersonic. If you wish to use Funambol with a MySQL database, follow these steps:

1   Create the user funambol/funambol.

2   Create the database funambol and grant the user funambol all privileges on the database funambol:

`mysql> create database funambol;`

`mysql> GRANT ALL PRIVILEGES ON funambol.* TO 'funambol'@'localhost' IDENTIFIED BY 'funambol';`

3   Copy `mysql-connector-java-5.0.4-bin.jar` to the directory:

`<FUNAMBOL_HOME>/funambol/tools/jre-1.5.0/jre/lib/ext`

4   Modify the file:

`<FUNAMBOL_HOME>/funambol/ds-server/install.properties`

changing the value of the dbms parameter to:

`dbms=mysql`

5   Comment the hypersonic configuration section:

`#jdbc.classpath=../tools/hypersonic/lib/hsqldb.jar`

`#jdbc.driver=org.hsqldb.jdbcDriver`

`#jdbc.url=jdbc:hsqldb:hsql://localhost/funambol`

`#jdbc.user=sa`

`#jdbc.password=`

6   Insert the MySQL configuration; for example:

jdbc.classpath=/opt/Funambol/tools/jre-1.5.0/lib/ext/mysql-connector-java-5.1.7-bin.jar

jdbc.driver=com.mysql.jdbc.Driver

jdbc.url=jdbc:mysql://localhost/funambol?characterEncoding=UTF-8

jdbc.user=funambol

jdbc.password=funambol

7   Run the command:

`<FUNAMBOL_HOME>/funambol/bin/install.cmd`

answering 'y' to all questions.
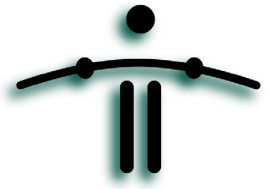
Reviewing device capabilities

If you wish to examine—in great detail—the technical functionality (which we call "capabilities") of a specific device, you can do so in this version of the Administration Tool. All of the categories and options are read-only displays; you cannot edit them at this time.

1   After expanding the server tree in the Navigation pane, double-click **Devices**.

The Search User options appear in the Data Entry pane.

2   Click in one or more relevant search fields and type the search text.

3   Click **Search**.

The resulting matches, if any, appear in the table.

4   To verify the account is the one that is to be deleted, select the likely record and click the now-active **Capabilities** button.

The Capabilities Details pane appears.

This pane is organized into collections of related "capability" options—Properties, Datastores, Extensions and a full range of Datastore Contacts. You can review all four sets of options through this Data Entry display.