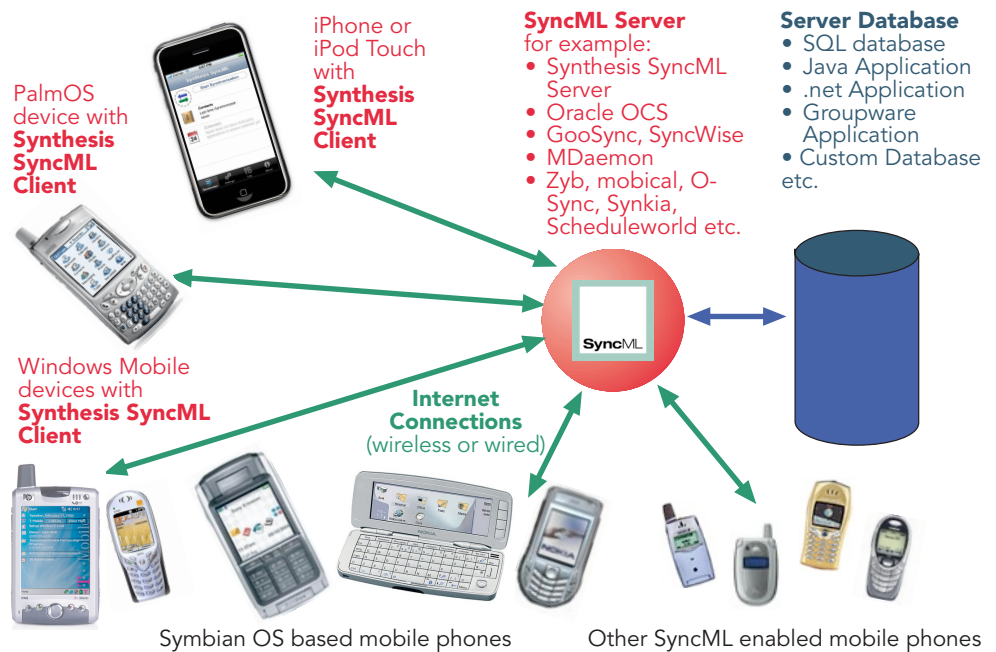


Synthesis SyncML Client for Apple iPhone and iPod touch

With Synthesis SyncML Clients for mobile devices you can synchronize the contacts, events, tasks and emails stored on your mobile devices with any SyncML compliant server - over the (wireless or wired) internet.

- SyncML breaks the barriers between mobile devices from different manufacturers.
- SyncML also unchains your mobile device from extra software installed on a specific Mac or PC. Sync your data from wherever you are - over the air!
- SyncML allows iPhones, Palms, PocketPCs, Smartphones, desktop computers and mobile phones to be kept in sync with a single server.
- Data you enter into your iPod touch or iPhone will be available on your secondary mobile phone. Any new phone number you save on your mobile phone will be transferred to your iPod touch, iPhone, your desktop computer etc. as well.



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1. Features

Synthesis SyncML client for iPhone Version 1.0 is based on the widely used Synthesis SyncML engine 3.x, which powers SyncML client for a variety of platforms, including PalmOS, Windows Mobile, Symbian, Linux, Mac OS X, Windows.

The use of a common engine in all of our products guarantees consistent behaviour among all platforms and services.

The Synthesis SyncML engine is one of the most advanced SyncML implementations with the following features:

- Full support for **SyncML DS / OMA DS Version 1.2 standard**, while retaining full SyncML DS 1.1 and 1.0 server compatibility.
- Full support for **Suspend & Resume**. This is one of the most important additions to SyncML DS in Version 1.2. If the synchronisation process is interrupted - be it intentionally by the user or due to external problems like network connection failure - it will be automatically **resumed where it was interrupted** rather than restarted from the beginning. This greatly enhances user experience when working with large sets of data or large data items (such as emails with large attachments).
- Efficient and fast implementation
- Modular design - new data types can be added quickly as they become available on target platforms (like calendar on iPhone).
- Although the iPhone client product is new, the engine is already well tested over many years with many SyncML enabled product and services world wide, which ensures smooth operation.

2. How to get the SyncML Client Software

Synthesis SyncML Client for iPhone, like all other Apple approved software for the iPhone OS platform, is exclusively distributed on Apple's App Store.

Therefore, to install and upgrade Synthesis SyncML Client for iPhone, please always visit the App Store.





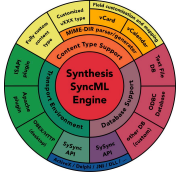
You can use the following link to show Synthesis software on App Store on your desktop machine or your iPhone / iPod touch:

<http://phobos.apple.com/WebObjects/MZStore.woa/wa/viewArtist?id=283161779>

3. How to get a SyncML Server account

In order to sync via SyncML, you need to have an account with a SyncML compliant server. Many web calendars, on-line PIM solution and mobile office services (web offices) offer SyncML or will do so in the near future. Please contact your service provider and ask for SyncML / OMA DS support.

For enterprises, solutions exist to bring groupware content on-line with SyncML. A few examples:

- Oracle Collaboration Suite (OCS) from Oracle (<http://www.oracle.com/collabsuite>) provides SyncML synchronization as a standard feature, including email sync in recent versions. Synthesis SyncML clients are Oracle's recommended choice for synchronizing OCS with Windows Mobile and PalmOS based devices. 
- GooSync (<http://www.goosync.com>) from Toffa, which enables SyncML for Google Calendar. Toffa (<http://www.toffa.com>) also provides solutions to enable GroupWise and Exchange for SyncML clients, including email Push (DMU technology) with attachments.  
- Open-Xchange (<http://www.open-xchange.com>), a Open-Source based groupware solution supports SyncML for integrating mobile devices. 
- Synthesis SyncML server (<http://www.synthesis.ch>) is a generic solution to add SyncML capability to existing databases and applications. SQL databases can be directly accessed and any other type of database or application middle-ware can be integrated through custom database interface plugins (in C/C++, Java or .net, based on a plugin SDK). Fully functional free demo and evaluation versions are available from Synthesis. 
- A lot of other SyncML capable solutions exist and can be used with Synthesis SyncML clients, like consolidate.at, desknow.com, mdaemon.com, scheduleworld.com, zyb.com, synkia.com, o-sync.com, eGroupWare/horde.org, nexthaus.com, mobical.net, funambol.com, synchronica.com, mobileedit.com, and many others.

4. Requirements

To use SyncML client for iPhone or iPod touch you need the following:

- A user account in a SyncML Server (see above)
- A iPhone (EDGE or 3G) or an iPod touch.
- A means to connect the device to the internet, i.e. access to a WiFi access point for the iPod touch, or simply cellular network coverage for the iPhone.



5. Installation

Installation automatically occurs when downloading / purchasing the software on the App Store. After successful installation, the SyncML client will appear with the following icon in your iPhone or iPod touch home screen:



6. Upgrading to more recent versions

To upgrade to a more recent version, just use the update feature in the App Store.

7. Starting up

To start, tap the "SyncML" icon from the home screen.

It will show its main screen as shown on the right:

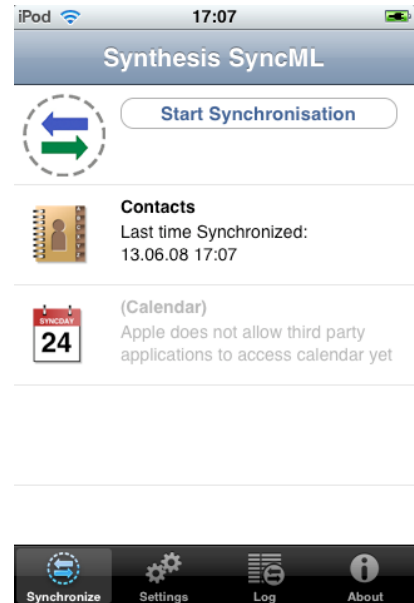
Use the tab bar at the bottom to choose between the different screens. When opened, the "Synchronisation" screen is shown. That's where you can start a synchronisation and observe its progress and completion.

The "Settings" screen is used to configure the client for a specific SyncML server or service.

The "Log" screen shows a short summary of the results of past synchronisations.

The "About" screen is useful to see the version of the program itself and the SyncML engine. It also contains an active link to the Synthesis web site.

Tapping on the "Start Synchronisation" button will start synchronization once everything is set up, however before that you need to enter your SyncML server's settings - please see next chapter.



8. Configuration

Switch to the "Settings" screen by tapping on its tab bar icon. This will show the settings screen.

The settings screen looks similar to the main screen, but has a on-off switch for each of the data types supported. The switch is used to include or exclude synchronisation of the respective datatype. To be able to synchronize, at least one switch must be set to "ON".

To configure the overall settings like the SyncML server URL, user, password etc., tap the blue arrow button in the "Server Settings" box. To configure settings related to only one of the datatypes (contacts, calendar), presse the blue arrow for that datatype.

Use the ON-OFF switches for each data type to select them for synchronisation.



At the time of this writing (Summer 2008) Apple does not yet allow third party applications to access calendar data. Therefore, only contacts can be synchronized at this time.

Server Settings

In the "Server Settings" screen you can set the details of the SyncML server account to use:

- **SyncML Server URL:** This is the internet address of your SyncML service. Your SyncML service provider will inform you what needs to be entered here. Of course, if you have set-up a SyncML server of your own (for example the free Synthesis Demo Server) you can enter it's URL here.

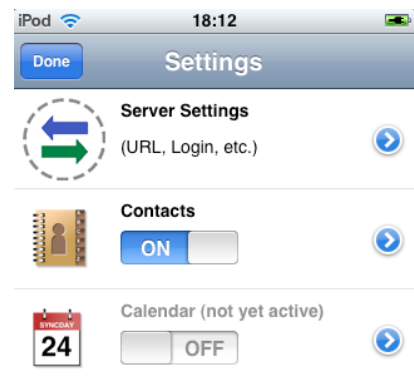


Note that secure connections with SSL/HTTPS are supported - simply use https:// instead of http:// to start the Server URL.

- **Ignore SSL errors:** This switch allows to communicate with SSL even if the certificate of the server cannot be verified or is expired.



Note that this option is **potentially dangerous**, and should be only used if you really know why you have to use it (e.g. if you



have your own server with self-signed certificates). Otherwise, ignoring SSL errors is a **security risk!**

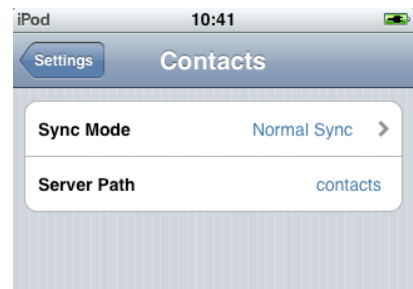
- **User and Password:** This is how you login to the SyncML service. Normally, SyncML user and passwords are the same as for accessing the service via the web.

Data Type Settings

To change detail settings for each type of data synchronized, tap on the blue arrow in the settings screen for that datatype.

For all data types, the following settings are present:

- **Server Path:** This is how the database is called at the server's end. Synthesis SyncML client shows default values here ("contacts", "events", ...) which are widely used for SyncML servers, so in many cases you don't need to change these.



⚠ Still, some servers need different names here - please refer to setup instructions from your SyncML provider. For example OCS needs "./contacts", "./calendar/events" and "./calendar/tasks"

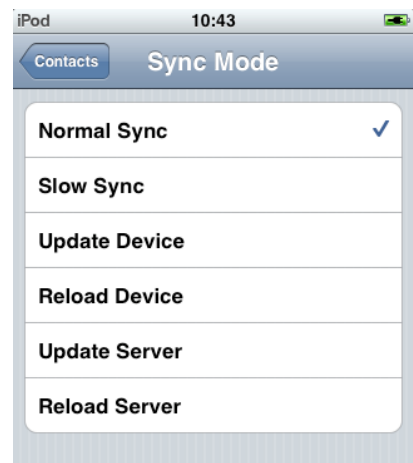
⚠ Some servers (such as those based on our server engine) allow some extra options to be specified in addition to the server DB name. **Note that such options are server specific, so please refer to your SyncML service provider's instructions to see if such extras are supported.**

Therefore, in case of problems when synchronizing events or emails with a certain server, disable the extra options and try again.

- **Sync Mode:** This determines how to synchronize data:

- **Normal:** Normal two-way synchronisation. All changes on the device are sent to the server, all changes on the server are sent to the device. This is the default mode of operation.

⚠ For the initial synchronisation with a server and to recover from error conditions (like data loss on client or server, prematurely interrupted synchronisation etc.), a "Slow Sync" (see below) might be needed and will be automatically performed even if sync mode is set to "Normal".



- **Slow Sync:** Special two-way synchronisation needed for the very first synchronisation with a server and to recover from error conditions. A "slow sync" is called slow because it includes that all data is sent from the device to the server which can take some time. The server takes an inventory of the device's data, so it'll be able to use "normal sync" (only changes are transferred, which is of course much faster) in subsequent syncs.

⚠ This mode is normally used automatically by the software when needed, there is seldom a reason to choose "slow sync" manually.

- **Update Device:** This is like "normal" sync, however only the device will be updated with changes from the server - the data on the server will NEVER be changed at all.

⚠ Using this mode means that you want to have a copy of server's data on your mobile device. This implies that when you do an "update device" sync for the first time, **all extra data on your device that does not exist in your server account will be deleted!**

- **Reload Device:** This is a special "slow" sync as follows: First, **all data on the device will be erased**, then, all data from the server will be copied to the device.

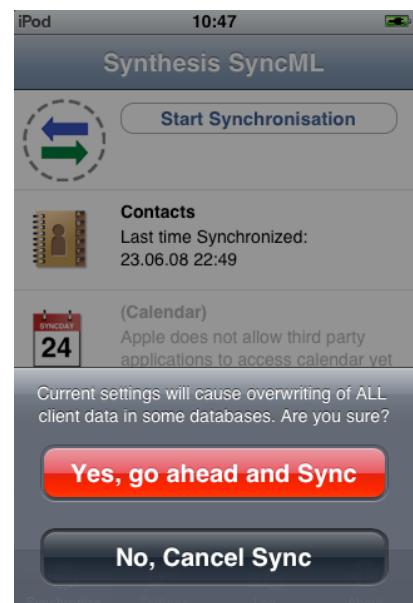
⚠ This is a good mode to restore a device which has accidentally modified or deleted data on it.

⚠ As this involves loosing all data that was not previously saved on the server, a warning message will be shown when you start syncing in this mode.

- **Update Server:** This is like "normal" sync, but only changes made on the device will be sent to the server. The data on the device will NOT be changed at all. Note that this mode does not work with all SyncML servers (server must support "one way sync from client mode")

⚠ Using this mode means that you want to make your server account an exact copy of the data on your mobile device. This implies that when you do an "update server" sync for the first time, **all extra data in your server account that does not exist on your device will be deleted!**

- **Reload Server:** This is the opposite of "reload device" and works as a special "slow" sync as follows: First, all data on the server will be erased, then, all data from the device will be copied to the



server. Note that this mode does not work with all SyncML servers (server must support "refresh from client mode")

Special Options for Calendar

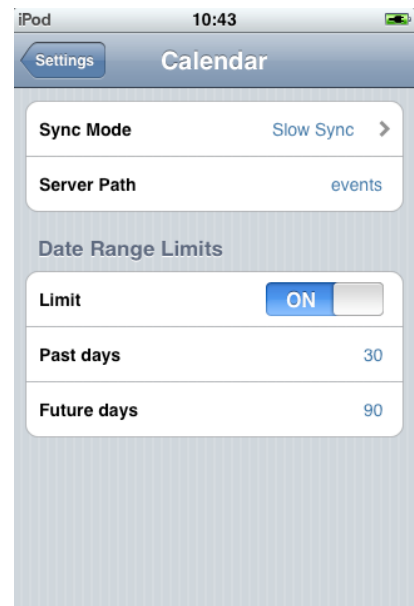


At the time of this writing (Summer 2008) Apple does not yet allow third party applications to access calendar data. Therefore, only contacts can be synchronized at this time. Calendar settings are already available to show the planned functionality, but sync cannot be enabled at this time.



Note that not all SyncML server support these extra options. In case you experience problems synchronizing calendar, try disabling the extra options.

- **Date Range Limits:** For Calendar entries, you can limit the date range of entries that are synchronized. If activated, only calendar entries not older than the number of days set with "Past days" and not more in the future than set with "Future days" will be synchronized. Note that this does not work with every SyncML server, so if you encounter problems synchronizing events, just switch this option off.



9. Synchronizing

When setup is complete, return to the "synchronize" screen and press the "Start Synchronisation" button.



This will start a synchronisation with the SyncML server as configured:

- The device will open a connection to communicate with the SyncML server. It uses the system wide network settings (WiFi, EDGE or 3G for the iPhone 3G).

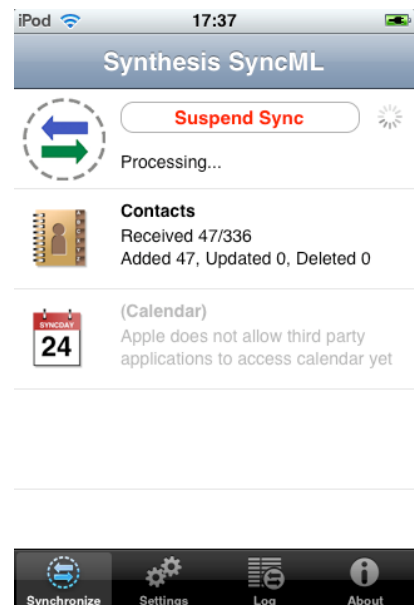
⚠ If you get "connection error" messages, this means that the client cannot connect to the server. Please make sure you have network connectivity (WiFi hotspot or cellular network coverage).

⚠ If you get "No SyncML Response" message, the client can connect to a server machine, but the server does not appear to be a SyncML server. Usually, this happens when your SyncML server URL is not correctly specified in the settings - please check for typos and verify with the provider of the SyncML server that you are using the correct URL. For most services, **the SyncML URL is not the same as the URL you can use in a web browser** to access the server!

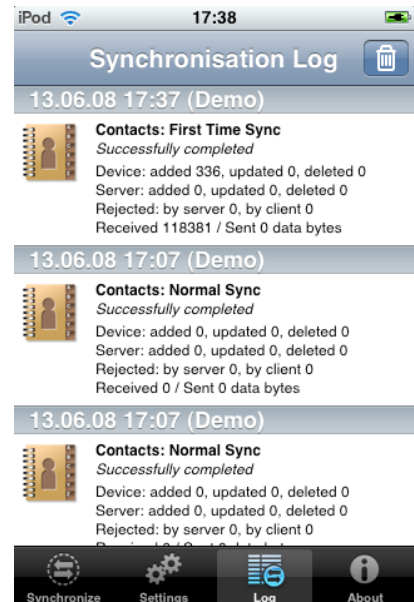
- Data will be synchronized. The main screen will show some progress information, such as how many items are sent and received.

⚠ For each data type, synchronisation starts with a "checking" phase. This is needed to find changes, additions and deletions made since the last sync and will always go through all items in your databases. Note however that during "checking" phase, no data is transferred to the server. So even if "checking" count might be high and take some time - "checking" does not cause any network traffic (or cost).

- Finally, the screen should read "successfully completed" and "Last Sync" will show the current date and time.



- After a completed (or failed) synchronisation, you can view its statistics by switching to the "Log" screen.
This will show the 30 most recent log entries, newest at the top. Using the Trash can button, you can delete all log entries.
 - ⚠ The log shows a separate entry for each datatype synchronized. So if you have enabled sync for "Contacts" and "Calendar" in the settings and start a sync, you will get 2 new entries in the log.
 - ⚠ The number of bytes shown are net content only (your data) - but note that the total amount of bytes transferred over the network is always higher as there is some protocol overhead (8 KBytes sent and received extra in a typical session).



10. Suspend & Resume

A synchronisation can be interrupted, either manually or for external reasons e.g. when the network connection breaks. In SyncML versions before 1.2, this caused the session to **abort**, and a subsequent sync had to **repeat the entire sync from start**, and sometimes even required a **slow sync** to recover. With large data sets, this could be very annoying.

Fortunately, SyncML DS 1.2 has a now a solution for this named **Suspend & Resume**. This means that an interrupted sync will simply be resumed in the next attempt - at the point it was interrupted.

So if your sync aborts for whatever reason, you can resume it by simply pressing the sync button again.



Suspend & Resume is fully supported in the Synthesis SyncML clients 3.0. But it can work **only with servers that support SyncML DS Version 1.2 and actually have the resume feature implemented**. For example, Synthesis SyncML Server 3.0 fully supports Suspend&Resume (but the older 2.1 version does not).



To suspend a sync manually (for example because you need to leave WiFi coverage with an iPod touch while it is in the middle of a sync, press the "Suspend Sync" button **once**. This causes a "soft" suspend - the client tells the server it wants to suspend and **waits for the server to acknowledge the suspend**. This this takes some time until the sync actually stops. During this time, the button text changes to "Abort Sync".



If you now press the button a **second time**, this will cause a "hard" suspend to occur - the client then **immediately** stops the sync (but as it needs to save some data to be able to resume, this might still take a few seconds). This is quite similar to what happens when suddenly the network connection to the server breaks, or the SyncML application is terminated by pressing the home button. Even in this case, SyncML 1.2 can resume the session later. But if you can avoid "hard" suspend, using "soft" suspend is the better choice for manually aborting a sync session.



If you want to explicitly prevent that the next sync resumes a previously aborted or suspended sync, change the sync mode in the settings to something different. This will clear the suspended sync information and ensures that the next sync will start at the beginning.

11. Licensing

The Synthesis SyncML Client for iPhone is an official iPhone application and as such exclusively available on the Apple App Store. The standard licensing terms of the App Store apply.



At the time of this writing (Summer 2008) Apple does not yet allow third party applications to access calendar data. Therefore, only contacts can be synchronized at this time. Until calendar can be supported as well, the contacts-only application remains a free download on the App Store. Once the calendar functionality is available, the application will become a commercial download.

12. Troubleshooting



This section gives some information about common problems that might occur with SyncML synchronisation.

In addition, especially for more specific problems like compatibility with certain environments etc., **please always consult our special iPhone page at <http://www.synthesis.ch/iphone.php> and our Frequently Asked Questions Page on our Web site: <http://www.synthesis.ch/faq.php> first.**



Basically, if your connection to the internet is stable, synchronization should be no problem. Just start a synchronization whenever you want to update your data.

Still, there are a few possible problems, mostly caused by interrupted sync sessions.

- **Synchronization aborts with error code:** See error code explanation in next chapter for details.
- **Strange behavior in general:** If it seems to you that your data is not synchronized as it should, it is a good thing to make a fresh start. SyncML is an incremental method - which means that the things that happened in the past synchronizations influence what will happen in future synchronizations. This is a good thing (saves a lot of time) under normal circumstances, but sometimes this dependency on the past is replicating old problems. To make a new starting point, make sure you have all recent data stored on the server and then set the sync mode to "reload device". This will cut all dependency on past synchronization problems.
- **Sync always takes a long time:** Most probably, the previous synchronization did not complete successfully, so a slow sync occurs. If this happens all the time, this indicates either a very poor quality of the internet connection or a compatibility problem with the server used.



If you need to report the problem to the SyncML service provider, please include date and exact time of the failing sync attempt(s), username, and also the error message displayed at the end of the synchronization in your report. Without this information, it is difficult for the service provider to track down the problem.

- **Duplicates:** In some cases you might notice that some of your data gets duplicated. If this happens only for a few contacts, this is perfectly normal, it shows that a record has been modified on your device and on the server in parallel. In order not to lose either modification, the server has kept both versions of the record so you can decide which version is the "right" one. Just delete the version that is obsolete on the device or on the server.
If you encounter a lot of duplicates without having modified anything, this indicates a compatibility problem with the server used. Please note that if you cannot successfully complete a synchroniza-

tion, the probability of getting duplicates is slightly higher as there might have been problems in the previous synchronization.

- **Missing fields:** If you think that you don't get all data stored on the server or vice versa, not all server fields get update with data you have on your mobile device - please consider that this might be perfectly normal. Why? Unlike proprietary synchronization technologies like iTunes and MobileMe, SyncML is an open standard which allows synchronizing any compliant device with any compliant server. However, not all servers and not all devices support the same set of data fields. A simple mobile phone is likely to support only telephone numbers, but no street address. Or some devices are restricted to one address per contact, while others support separate work and private addresses. This might be confusing on the first sight, but a properly set-up server will be smart enough to preserve your data even if there is no exact 1:1 mapping possible.

Error messages and error codes

Configuration missing or no datastore enabled

This message is shown when trying to start a sync session while missing configuration information.

The reason for this message could be missing server URL, missing server paths of the individual data stores, no database selected for sync at all, or database to sync with is not available on the device (for example, corrupted Contacts or calendar database on the device)

License or demo period expired

This means that the free trial or preview period of the software is over. Please check on the App Store if there is an update for the software.

License not valid here

This message means that your license, although basically valid, cannot be used with this server at this time.

This can be the case for licenses that are restricted to a certain type of server or to a certain server URL (those licenses have a double colon followed by some server specification in the license text like "::=*my.domain.com/sync" or "::=servertype").

Another reason for this message can be if the license is already in use by more devices than allowed (e.g. a 5 user license being used on 7 devices).

Network error - please check internet connection

This means that the client cannot establish a connection to the server.

If this error occurs right after starting the synchronization, either the URL entered for the server is wrong (no such server exists) or there is a basic networking problem.

If this error occurs in the middle of a synchronization, this is most likely an intermittent problem.

Invalid data from server (wrong URL?)

This is usually caused by an incorrect SyncML Server URL entered in the settings. It means that the SyncML client can connect the server, but does not get a SyncML response as it should, but something different, like a error message web page.

Access denied

This message is shown when the client cannot login with the server. Usually, the reason is an invalid user name and/or password; Please check the settings and eventually re-enter the password (note that depending on the server it usually is case sensitive).

Aborted by user

The synchronization was manually aborted by the user.



If the server supports SyncML Version 1.2, aborted synchronizations can be resumed simply by starting sync again. See Chapter "Suspend & Resume" for details.

Server database not found

A database (contacts, events, tasks...) was not found on the server.

Usually, this means that the database does not exist on the server side or has a different name than what was entered as "server path" in the settings (see "Data Type Settings" paragraph in the "Configuration" chapter).

Local Database error

Some problem occurred accessing the device's databases.

This also indicates some internal database problem, usually caused by corrupted data on the device.

Server Database Error

The server reported a problem accessing its data.

This usually indicates a server problem - please check with your SyncML service provider if you repeatedly get this message.

Server busy - try later


The SyncML server is not ready for processing a synchronisation right now. Just wait a few minutes and try again.

Error Code=<number>

Some rarely occurring error codes do not have a text message, but are shown like this.

Some codes you might encounter are:

- 101 Server is busy
- 400 Bad request (usually a server compatibility problem)
- 405 Command not allowed (compatibility problem)
- 408 Timeout

- 412 Incomplete command (compatibility problem)
- 413 Too large - the server cannot process some data sent by the client because it is too large. If this happens when sending emails, it might be caused by large attachments - try sending without attachments.
- 415 Unsupported media type or format (usually this means that the server does not support this type of data - for example synchronizing task to a server that has no support for tasks).
- 417 Retry later. This indicates some sort of temporary failure - retrying after a while might solve the problem.
- 421 Unknown search grammar (compatibility problem)
- 422 Bad CGI script. This might indicate that the server does not understand the special options like date range restrictions for events or size limit for emails (see "Special Options for Calendar and Email data" in the "Configuration" chapter). Try turning off these options.
- 424 Size mismatch. This indicates a transmission problem of a large object, possibly caused by a temporary network problem. Retrying (resuming) the session might help.
- 426 Partial item not accepted.
- 500 Command failed (usually a server malfunction of some kind or a SyncML compatibility problem)
- 501 Not implemented (compatibility problem)
- 503 Service unavailable. This usually indicates a temporary problem.
-  Some servers send this error code when a session was interrupted with error only a short time ago, and the server is not ready yet to start another session. Please wait a few minutes and try to run the session again.
- 511 Server error (some general server error)
- 512 Synchronisation failed (generally failed due to some server error)
- 520 Server database full (the server has no room to store more data)
- 10xxx This has the same meaning like xxx, but indicates that the problem has occurred locally in the client rather than in the server.
- 20001 Bad or unknown transport protocol
- 20002 Fatal problem with SyncML encoder/decoder
- 20003 Cannot open communication
- 20004 Cannot send data
- 20005 Cannot receive data

- 20006 Bad content type (message received with an unknown MIME-type)
- 20007 Error processing incoming SyncML message (for example invalid XML or WBXML formatting)
- 20008 Cannot close communication
- 20009 Transport layer authorisation (e.g. HTTP auth) failed
- 20010 Error parsing XML config file
- 20011 Error reading config file
- 20012 No configuration found at all, or not enough for requested operation (client) - you might have forgotten to enter user-name or password.
- 20013 Config file could not be found
- 20014 License expired or no license found
- 20015 Internal fatal error
- 20016 Bad handle
- 20017 Session aborted by user
- 20018 Invalid license
- 20019 Limited trial version
- 20020 Connection timeout
- 20021 Connection SSL certificate expired
- 20022 Connection SSL certificate invalid
- 20023 incomplete sync session (some datastores failed, some completed)
- 20025 Out of memory
- 20026 Connection impossible (e.g. no network available)
- 20027 Establishing connection failed (e.g. network layer login failure)
- 20028 element is already installed
- 20029 this build is too new for this license (need upgrading license)
- 20030 function not implemented
- 20031 this license code is valid, but not for this product (e.g. STD license used in PRO product, or client license in server product)
- 20032 Explicitly suspended by user
- 20033 this build is too old for this SDK/plugin
- 20034 unknown subsystem
- 20036 local datastore not ready
- 20037 session should be restarted from scratch
- 20038 internal pipe communication problem
- 20039 buffer too small for requested value

- 20040 value truncated to fit into field
- 20041 bad parameter
- 20042 out of range
- 20043 external transport failure (no details known in engine)
- 20044 class not registered
- 20500..20599 These represent SIG_XXX codes in Linux and Mac OS X versions of the SyncML engine. Unexpected SIG_XXX will generate a error code of 20500+signal_code.
- 20998 Internal exception (client encountered an internal exception - a possible reason could be extreme shortage of memory in the device)
- 20999 Undefined internal error
- 21000...21999 Database plugin module specific error codes

Reporting problems



Before reporting a problem by email to us, please have a look at our special iPhone page at <http://www.synthesis.ch/iphone.php>, our FAQ page at <http://www.synthesis.ch/faq.php> and our public forum at <http://forum.synthesis.ch>.



In most cases, sync problems are specific to a SyncML service provider's environment. Therefore, please first ask your service provider in case of problems and mention that you use Synthesis client software. The service provider will then be able to analyze the problem and will contact us directly in case they think the problem is in our client software.



To report a bug or a problem (to the SyncML service provider or to us), please collect the following data before reporting a problem to Synthesis AG

- Version of the Software (please choose "About..." from the menu to find out the exact version number, such as 3.0.1.4)
- Type, model name/number and brand/manufacturer name of the device.
- URL of the server you are using to synchronize with.
- Error messages shown by the software.
- As the problem needs to be tracked down together with the SyncML service provider, please include your user name you used to login to the SyncML service and the exact date and time when you tried to synchronize.

You can contact us at support@synthesis.ch for support issues, but please first have a look at our special iPhone page at <http://www.synthesis.ch/iphone.php>, our FAQ at <http://www.synthesis.ch/faq.php> or our forum at <http://forum.synthesis.ch>. Suggestions or ideas for enhancing the product are also welcome!