

ZMacSync



User Manual

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Installation

Check Requirements

Hardware:

Zaurus SL5000, SL5500, C7x0, C860, SL-C3000, SL-6000

Firmware:

Sharp ROM 3.1x on 5x00; ROM 1.2 or later on C series or Cacko 1.21

Mac:

MacOS X 10.3 (or later)

NOTES:

- ZMacSync is NOT compatible with OpenZaurus or pdaXrom
- it is known to crash on MacOS X 10.2.8

Installing the USB Driver (not required if you have WLAN)

WARNING: Please do not connect the Zaurus to a Mac with MacOS X 10.3.5 or later before installing the USB driver.

This might lead to a driver conflict resulting in a Kernel Panic.

Install "AJZaurusUSB.pkg"

simply by clicking on the package and following the Installer instructions.

For more information on this driver, please refer to <http://www.lucid-cake.net>

At the end of the installation process,

reboot the computer (the Installer will ask you to do so).

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After rebooting

(or before, it doesn't matter) connect the cradle to a free USB port, put the Zaurus into the cradle and turn it on.

Start the System Preferences application

and select "Network". You will be notified that a new Ethernet interface is available. Configure the new interface with a manual IP address of "192.168.129.1" and click "Apply Now".

Open the Terminal application

and try to ping the Zaurus by "ping 192.168.129.201" (unless you have changed that address on the Zaurus).

If it is not responding, go to the Settings/PC Link display on the Zaurus. Set the Host-name to be "zaurus", the USB IP address to "192.168.129.201" and the Connection to "USB-TCP/IP (advanced)".

Installing ZMacSync on the Zaurus

You can use a memory card to transfer the files. But If you don't have one, you can use Finder and the SMB server on the Zaurus.

In Finder

select the "Go/Connect Server..." menu.

In the Server Connection window,

type in "smb://ZAURUS/" or "smb://192.168.129.201/" and "Connect".

In the next popup,

select the folder "home" and press Ok.

Installation(1)

In the SMB/CIFS identification,

set the Domain to "WORKGROUP", the user name can be "zaurus" and the password can be left empty.

After pressing Ok,

Finder opens a new "HOME" window in which you will see a folder called "Main_Memory".

This reflects the folder "/home/samba" on the Zaurus. You might also see other folders for your installed CF or SD cards.

Open the "Main_Memory"

(or on your CF or SD card) folder and therein the "Install_Files".

Copy the file "zmacsync_1.5_arm.ipk"

from the "Tools" folder on the Mac to the "Install_Files" folder on the Zaurus.

NOTE: this is a combined installer for dtm2xml and openssh-server. If you already have installed either of both, just install the other, but NEVER all three of them.

Eject the HOME volume

in Finder. Note that you might corrupt a CF or SD card when not ejecting and a Powerbook or the Zaurus goes to sleep mode.

On the Zaurus

Make a Backup!

Go to the "Settings" tab

and open "Add/Remove Software". Select "Install Packages".

Install "zmacsync"

(or "dtm2xml" and/or "openssh-server" but not all three!) to "Internal Flash".

Installation(1)

Close the Installer

to go back to the Applications.

Installing ZMacSync on the Macintosh



Drag the zMacSync application to a location where you like it to open on the MacOS X machine.

This can be e.g. /Applications or your private ~/Applications folder.




Doing your first Sync


Make a Backup of your Library folder!

ZMacSync will do its own backup (.tgz) of your personal Addresses, Calendars, StickiesDatabase and Safari Bookmarks each time you select "Sync". This is stored in "`~/Library/Application Support/ZMacSync`".

But we make no guarantees and ZMacSync can't restore from the backup yet. For restoring from the Backup file manually through a Terminal shell, you should need to know how to work with the "tar" command.


Start ZMacSync

- Click on the Zaurus Settings (right hand )
- Change the Address ("`192.168.129.201`"), User name ("`root`") and Passcode of the Zaurus (this does not work yet!) if they need to be changed.
- Select the data types to be synchronized (written to).
- Click on the Macintosh "Settings" (left hand )
- Select the data types to be synchronized (written to).
- Close the window and select the menu "File/Fetch". This will update the list of changed. Using the Info window(s)  you can have a preview list showing the records (or their ID) that have really been changed.

- Press  (sync) or select the "File/Sync" menu item.

Using WLAN

Using WLAN instead of USB makes only small differences:

- you do not need to install AJZaurusUSB but a working IP connection from the Macintosh to the Zaurus (having one or two WLAN parts, or being a Computer-Computer-Network).
- type the IP address of your Zaurus in the SMB window of Finder (please make sure to unmount the SMB drive before the Zaurus leaves the WLAN access range!)
- open the Zaurus Settings () of ZMacSync and type in the IP address at which the Zaurus can be reached
- please consider to set the Settings/Security/Passcode on the Zaurus as your device would otherwise be openly accessible through ssh by anybody on your WLAN network!

Licence

ZMacSync is copyrighted by HNS@DSITRI. All rights are reserved. It is licenced individually based on the Shareware model. There is no warranty.

The driver AJZaurusUSB is developed by Andreas Junghans and provided as a binary package or source code by <http://www.lucid-cake.net>. It is under GPL.

The tool dtm2xml is under the GPL and based on dtmdump.

Shareware Fee

There is a Popup that reminds you to pay your shareware fee on each sync attempt unless you purchase a key. There is no other functional limitation so that you can try out the software.

Payment is fairly simple through the US company KAGI: <http://www.kagi.com?QM4>. This link is also installed in the About.../Purchase dialog.

Installation(1)

Enter the number of licenses you want to purchase and state your name, email-address and other payment data. We would appreciate if you also add some Donations (please enter the number of US \$ you want to add).

That's all. After a while you will receive an email receipt from KAGI provided that you have specified a valid internet email address. After an additional processing time (please leave some 2-3 days), you will then receive the enabling key in a second mail directly from DSITRI.

Features

- Full Unicode support (e.g. Chinese and Japanese characters)
- Encrypted access of Zaurus through USB or WLAN
- Automatic detection of Zaurus connection status (hot-sync)
- Configurable (areas to write, auto-fetch, auto-sync)
- Individual enabling or disabling of data areas to be written to
- Data areas synchronized:

Zaurus	MacOS X	Entries	Note/Limitations
Address Book	Address Book	Contacts	full
Calendar	iCal	Events	Mac -> Z only
Text Editor (Notes)	Stickies	Notes	Mac -> Z only
To Do	iCal	Tasks	Mac -> Z only
Browser	Safari	Bookmarks	not implemented
Mail	EMail (Inbox,Outbox)	Mails	not implemented
Clock	Clock	Date&Time	Mac -> Z only Timezone not updated

- Zaurus clock synchronization (assuming precise NTP time on the Macintosh)
- Log window
- Delta-inspector (preview what has been detected as differences)
- Includes AJZaurusUSB driver for MacOS X 10.3 and open-ssh

Operation(1)

Operation

How ZMacSync works

Bag of Objects model

ZMacSync uses a “Bag of Objects“ modell which means that it collects all records that are available for synchronization into a single bag of objects even if they have different data types (i.e. Contacts from the Address Book, Events from the Calendar). These objects are then compared and exchanged between the Macintosh and the Zaurus.

Unique IDs

Each record in the bag is identified by a Unique-ID (which is a string of characters). As the name implies these IDs are globally unique (by using time stamps, ethernet addresses etc.). They are assigned when a new entry is created. Two records are regarded the same if they have the same Unique-ID or different if they differ in ID. In both cases they might have different values, i.e. person’s name or task due date.

Last-Sync store

To detect if a record has been modified recently and needs to be synchronized with the peer, ZMacSync keeps a table that remembers the last modification date for each Unique-ID on each peer. So, there are two tables, one for modifications on the Mac and the other for modifications on the Zaurus. In addition there is a record stored directly on the Zaurus which is used to detect attempts to synchronize different Zaurus devices on the same Mac and to recognize a full reset of the Zaurus.

Deltas

By this mechanism, ZMacSync can identify what it has to do without having any knowledge of the content of the records. Assume, you have changed the name of an entry in the Macintosh Addressbook. This makes the modification date of this record differ from the date stored in the Last-Sync store for the Mac. And now, the sync engine knows that it should copy the new address record to the Zaurus. When the record

is written to the Zaurus, the Zaurus Last-Sync store is also updated so that the new records is not copied back on the next sync operation.

By the same mechanisms ZMacSync can detect newly added records as well as records that have been deleted since the last synchronization.

The number of additions, replacements, and deletions is displayed in the main window for each peer.

Synchronization process

Based on the detected Deltas the synchronization itself is rather simple. New records are copied to the other side, replacements are changed and deleted records are deleted as well.

To aid in controlling what is going on and to allow for data protection, ZMacSync provides a “write protect mechanism“. You can control which data areas are really written to in the settings window. So if you disable e.g. writing Address records to the Zaurus, ZMacSync will detect modifications on the Zaurus and on the Mac. And will copy the modifications on the Zaurus to the Mac but modifications on the Mac are simply discarded. So, the Zaurus address book is protected from being modified.

Data conversion

A rather complex and sometimes tricky part of ZMacSync is the data conversion. Records on the Macintosh do not have the same data format as on the Zaurus. Some fields may be missing (e.g. the Macintosh has no “Gender“ field in the Address Book while the Zaurus can’t store an Image) or have a different format (e.g. the Macintosh uses a labeled “MultiValue“ for the e-mail addresses while the Zaurus has two record entries: one for a comma separated list of e-mail addresses and one for the primary).

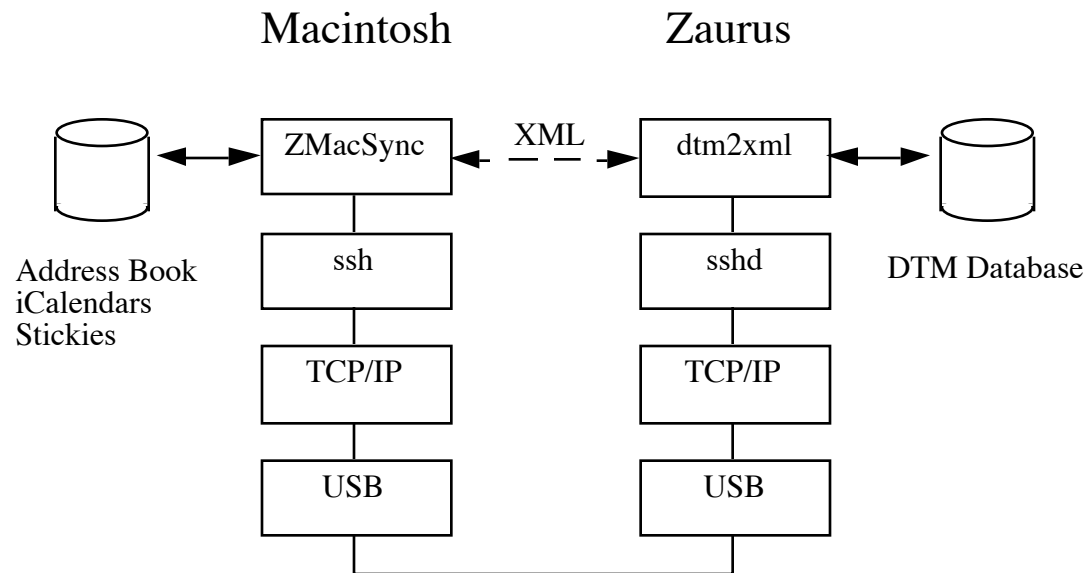
So writing records to the peer is not only transmitting data but also converting. Some data loss is unavoidable. But can be limited together with the Delta-Sync mechanism to a minimum.

Still it is not perfect and has some unexpected limitations. Assume you have a record on the Macintosh with several e-mail addresses, labeled “Home“, “Business“, “Alternate“. And you sync to the Zaurus, they will just appear - as you would expect - as a comma separated list. Now, you add a note to this record on your Zaurus. And when you sync, the modified Zaurus record is copied and converted back to the Macintosh format. But the labels are lost and replaced by “1“, “2“, “3“.

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Communication

Communication is done through ssh (secure shell) over any TCP/IP connection between the Zaurus and the Macintosh. This can be either IP over USB or WLAN or could even be GPRS. This diagram below gives an overview how communication works.



Background Ping

ZMacSync runs a background “ping” command to detect if the Zaurus is plugged in or out. This mechanism has some reaction time so that it might need 10-20 seconds until you see a response.

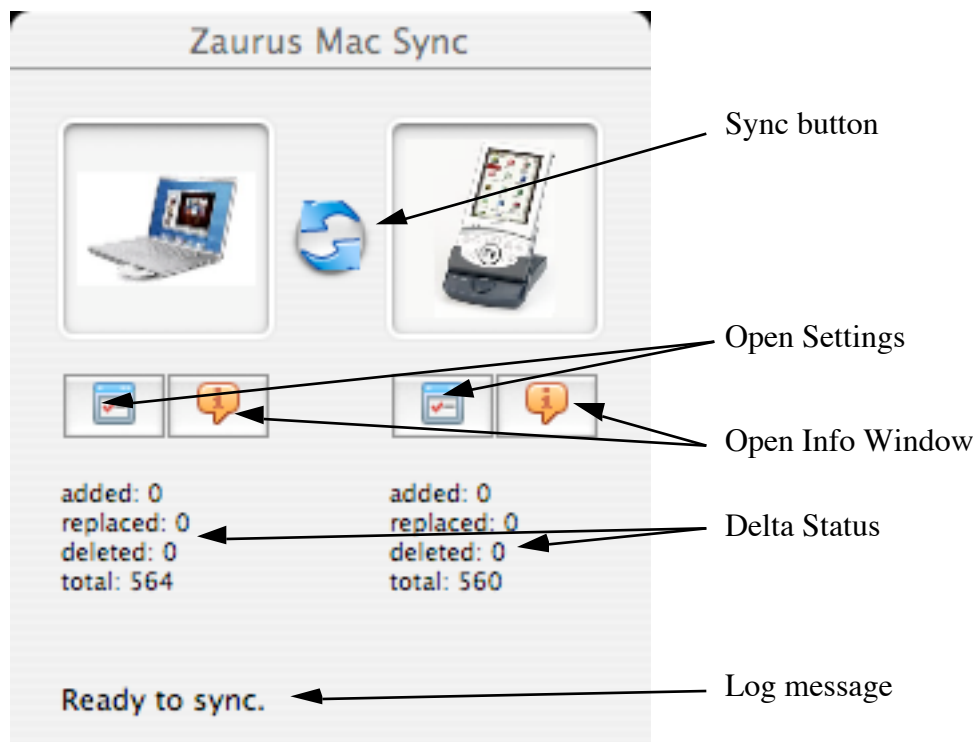
Main Windows

The main control window of ZMacSync looks like the following picture (if the Zaurus is not connected).

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By connecting the Zaurus, the window changes to look the following:



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Synchronizing

writes all Deltas to the peer (if the record type is enabled for writing). This is the standard mode of synchronization.

Note, that this does not “refresh” the data on the peer if there is no change..

You can trigger synchronization by three ways:



- by pressing the Sync button
- by selecting File/Sync
- by enabling Autosync in the Preferences and doing a Fetch

If a confirmation for deletions is enabled in the Preferences, a popup window will appear asking for confirmation. You have three options to answer:

Delete	Synchronize all additions, changes and deletions
Cancel	Cancel the sync command
Don't delete	Synchronize additions and changes, but discard all deletions

Bidirectional Copying

Normal Synchronization uses the Delta to determine which records are to be copied or replaced or deleted on the peer side.

The File/Copy command works a little different. It takes all records on one side and sends all records that have no counterpart (identified by the Unique-ID and not the content!) to the peer.

If there are some additions or changes, the result is the same as synchronization. But Copy will never delete anything.

When should you use this command?

In all cases where you have enabled additional data areas (e.g. calendar) and want to synchronize the already existing records. In this case the the normal Delta sync would fail because it find that no records have been changed and would not send any data.

A second case is after you have manually reset the DTM database on the Zaurus or the Zaurus data has been lost for other reasons (e.g. hard reset). In that case the Delta-Sync also thinks there are no changes and won't write anything.

After doing it once, you can revert back to the normal Delta-Synchronization.

Single-Direction Copying

Copy M->Z

This is like the bidirectional Copy command - but limited to the direction Mac to Zaurus. This means it will never update the Mac and just looks for records not (yet) available on the Zaurus.

This is probably the most useful way of restoring the Zaurus after a complete reset.

Copy Z->M

This is like the bidirectional Copy command - but limited to the direction Zaurus to Mac. This means it will never update the Zaurus and just looks for records not (yet) available on the Mac.

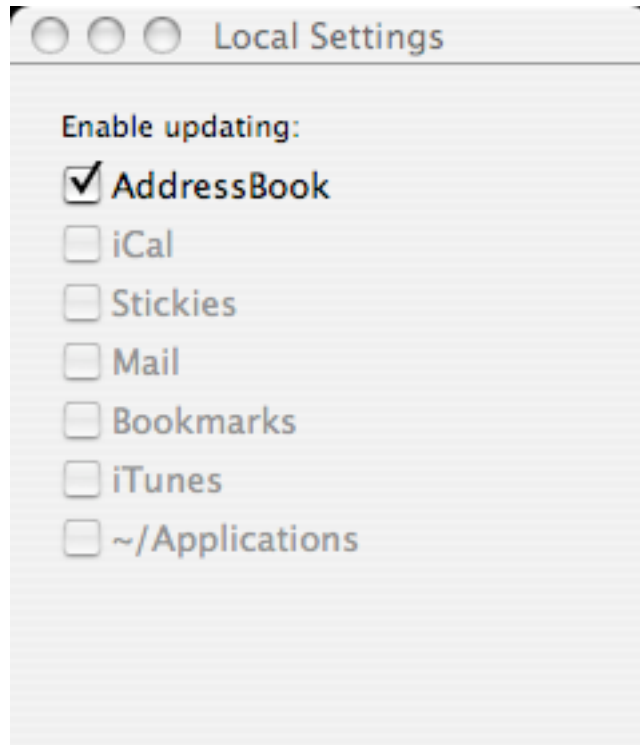
Settings Windows



Macintosh Settings

In this window you can select which record types can be updated by ZMacSync on the local Macintosh. By disabling you can effectively protect your data on the Mac.

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Zaurus Settings

In this window you can select which record types can be updated by ZMacSync on the Zaurus. By disabling you can effectively protect your data on the Zaurus.

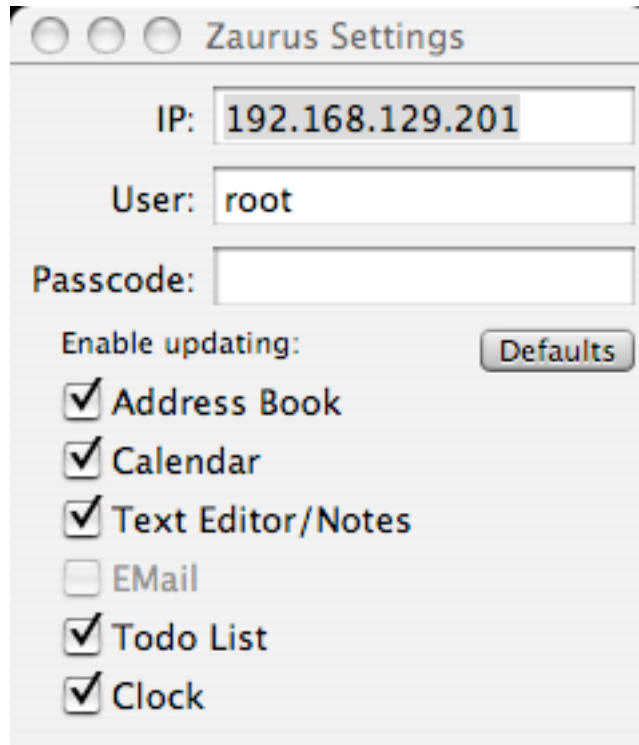
In addition, you specify the IP address here and the user name and passcode for access through ssh. The user name should be either “root“ or “zaurus“.

If using “zaurus“, you can’t write the Zaurus clock, so you should disable the Clock from updating. It may also have additional limitations.

Changes of the IP address are effective immediately, so that you do not have to close this window or restart ZMacSync.

The passcode must be the same digit sequence as the code given to the Settings/Security control on the Zaurus. The only exception is that the setting in ZMacSync is ignored if there is no Passcode defined on the Zaurus.

Please consider setting a passcode when using WLAN!



Info Windows



show the Deltas since the last synchronization as a list. There are two of these windows, one for the Macintosh and one for the Zaurus.

The C column shows the category of the Delta:

A	added
D	deleted
R	replaced

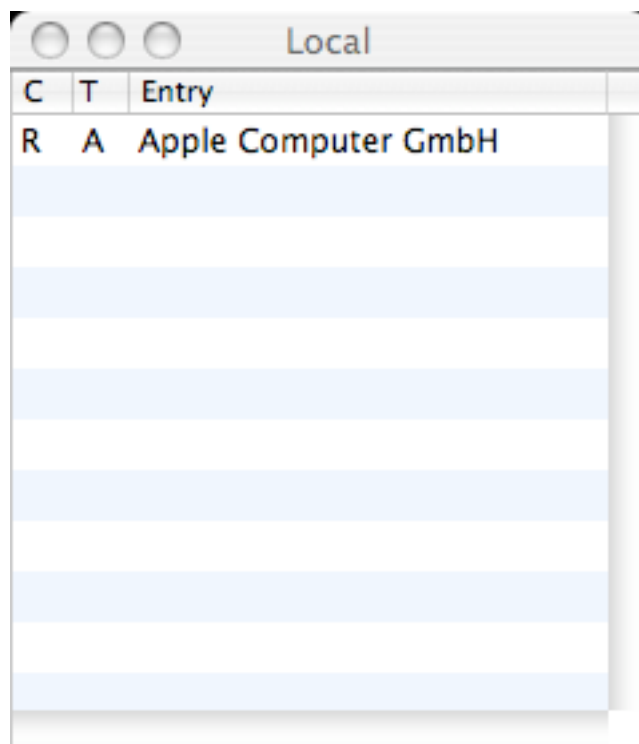
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The T column shows the type of the record:

A	Address (Person)
G	Group (Mac only)
C	Calendar Event
T	Calendar Task / ToDo Task
S	Sticky / Text Editor Note
B	Bookmark
M	Mail

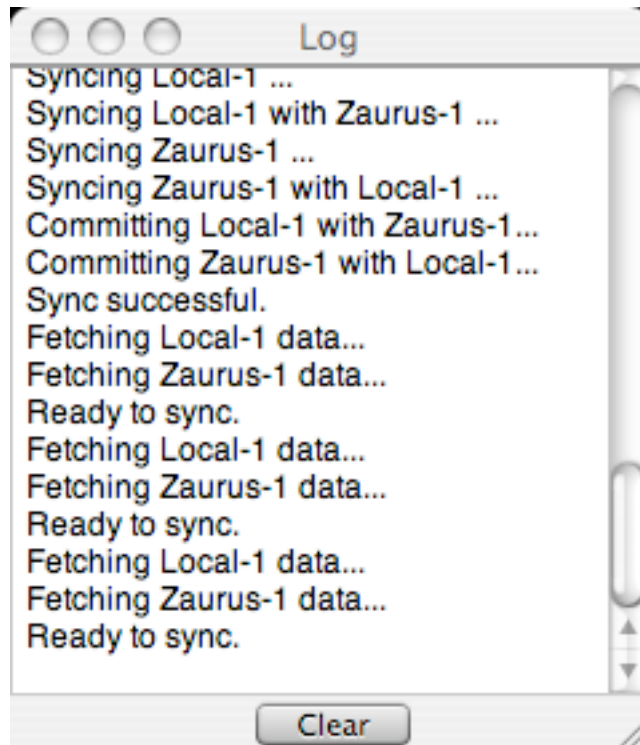
The Entry column either shows the name (in case of a Person or Group) or the first words of the Calendar Event or Task or the Note.

In case of deleted records, the Unique-ID is shown.



Log window

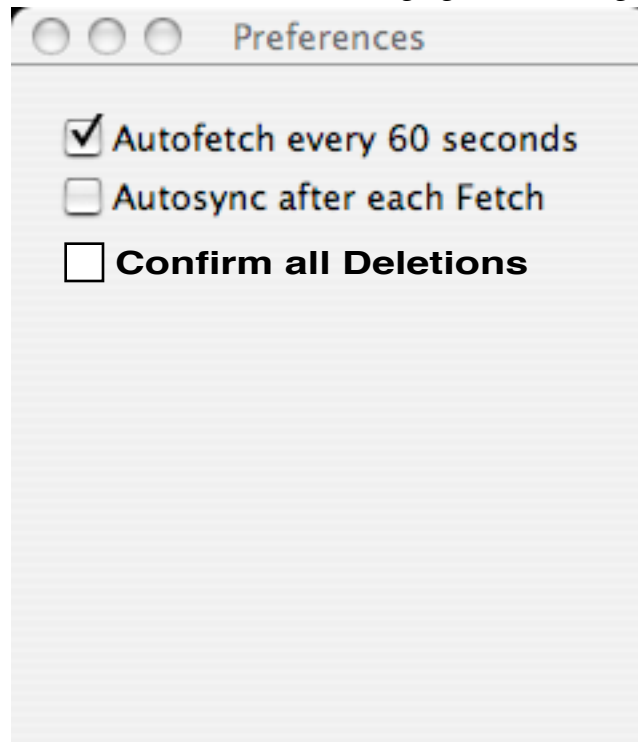
By opening the Log window through the Windows menu, you can see and review the actions that have been done recently.



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Preferences window

The preference window allows to change general settings.



Autofetch

if this checkbox is enabled, ZMacSync automatically starts a Fetch command 60 seconds after the last one. This allows ZMacSync to identify and show changes shortly after they occur.

Autosync

if this checkbox is enabled, each Fetch (either manually or by Autofetch) automatically starts a Synchronization process. If enabled together with Autofetch, this allows you the following mode of operation:

- On arriving at your Macintosh (running ZMacSync) you plug in the Zaurus.
- Any changes done while you have used the Zaurus before will then be synced.
- While working on your Macintosh you change some values. These will be synchronized to the Zaurus in the background.

- When you are finished, you just unplug the Zaurus and have the latest synchronized status.

Confirm deletions

if this checkbox is enabled, ZMacSync asks the user for confirmation if any record is to be deleted. The user can either accept, cancel or continue syncing but without deleting anything.

Menus

ZMacSync

About...

Shows the Version number of ZMacSync and allows you to report bugs, propose features and register the Application.



Preferences...

Opens the Preferences window.

Operation(1)

File

Sync

Starts the Synchronization process.

Copy

Starts a Bidirectional Copy process.

Copy M->Z

Starts a Copy process from the Macintosh to the Zaurus.

Copy Z->M

Starts a Copy process from the Zaurus to the Macintosh.

Fetch

Refetches all data from the Macintosh and Zaurus to determine the Delta. If Autosync is enabled in the Preferences, this also starts a Synchronization process.

Import...

no functionality.

Export

not functionality.

Restore

not implemented. Can be used to roll back and forth the Macintosh databases (Addressbook, Calendars, Stickies) to saved versions.

Edit

This menu has no special functions. It is enabled and can be used while changing settings (e.g. the IP address).

Window

Show Log

Opens the Log window.

Clear Log

Clears the Log window.

Help

There is no built-in help.

Messages on First Sync

On the first synchronization or if something goes wrong, you might see one of these messages:

This Zaurus was never synced or was reset. Sync will copy all entries (Continue).

This message should occur on the first synchronization attempt. You can simply continue.

It also occurs if your Zaurus has lost all its data. If you simply continue, ZMacSync will start syncing changed entries but it will not copy the entries from the Mac that have not been changed.

In this case, use the File/Copy command.

This Zaurus was last synced with a different Mac. Continuing might duplicate all entries (Cancel, Reset, Ignore).

If you do not want to do that, use Cancel.

If you want to use the Last-Sync data from the other Zaurus (which does not make much sense), press Ignore.

By selecting Reset, the Last-Sync information is cleared and you can start syncing with the new Zaurus. You should use a File/Copy in this case.

This Zaurus ran out of sync. Continuing might duplicate all entries. (Cancel, Reset, Ignore).

This message might occur if you are restoring your Macintosh or the Zaurus from a Backup. In that case, the Last-Sync data on the Zaurus can be deleted (Reset). Note,

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that in this case, the Unique-ID list is lost and therefore records stored on the Zaurus are regarded as new entries. So you might end up with duplicate entries being visually the same, but having a different internal Unique-ID and therefore processed as different records.

Limitations

Supported Systems

ZMacSync has been tested or reported to work on this

Hardware:

- SL5000
- SL5500
- SL5600
- SL-C7x0
- SL-C860
- SL-C3000
- SL6000

Firmware:

- Sharp ROM 3.10 or later on SL5x00 series
- ROM 1.2 or later on SL-C series or SL6000L
- Cacko 1.21

Macintosh:

- MacOS X 10.3 (or later)

NOTES:

- ZMacSync is NOT compatible with OpenZaurus or pdaXrom
- it is known to crash on MacOS X 10.2.8 (or earlier)

Limitations(1)

Limitations of data conversion

Data copied but not displayed

- Macintosh does not show Gender
- Zaurus might not support full Unicode font (depending on model and localization)

Data lost when copying from Mac to Zaurus

- Image
- „me“ record
- some other fields not supported by the Zaurus

Data lost on copy from Zaurus to Mac

- Assignment of the labels „Home“, „Work“ etc. for e-mail addresses (Zaurus has only a list)

Functions not yet implemented

- No sync from Zaurus to Mac for calendar files
- No sync from Zaurus to Mac for Stickies
- No syncing of Bookmarks, E-Mails, Images, etc.
- The Macintosh “me“ record is not synced with the Owner entry on the Zaurus
- No Handling of Groups (Addresses)
- No Calendar Categories (all Calendars are synchronized)

Known bugs (to be resolved in upcoming versions)

- Calendar entries are not translated properly
- Dates for Calendar and Events/Todos are not correct (does not honour timezones properly)
- Calendar recurrence and exceptions is not handled at all
- Alarms are not set properly

Troubleshooting

It does not work. What else can I try?

No connection

1. Connecting is hanging

You have just plugged in the Zaurus USB connection but the Zaurus is not recognized. Or a Powerbook just awoke from sleep mode and does not find the Zaurus. But it has already worked.

This situation sometimes occurs if the USB driver on the Zaurus is hanging. In this case switch off the Zaurus for approx. 10 seconds and switch on. Usually, this resets the IP over USB connection.

2. Clean up the Zaurus

- a) uninstall openssh, dtm2xml, zmacsync
- b) reinstall zmacsync.ipk OR openssh.ipk and dtm2xml.ipk (not all three!)

3. Clean up ssh on the Mac

- a) open the Terminal application
- b) type all commands printed here in **bold courier** (substitute your Zaurus address if it is different)

```
$ ping -c 5 192.168.129.201           this checks the basic USB driver
PING 192.168.129.201 (192.168.129.201): 56 data bytes
64 bytes from 192.168.129.201: icmp_seq=0 ttl=255 time=1.731 ms
64 bytes from 192.168.129.201: icmp_seq=1 ttl=255 time=1.428 ms
64 bytes from 192.168.129.201: icmp_seq=2 ttl=255 time=1.129 ms
64 bytes from 192.168.129.201: icmp_seq=3 ttl=255 time=1.767 ms
64 bytes from 192.168.129.201: icmp_seq=4 ttl=255 time=1.551 ms
--- 192.168.129.201 ping statistics ---
```

Troubleshooting(1)

```
5 packets transmitted, 5 packets received, 0% packet loss      if there is packet
                                                                loss, check the
                                                                Network settings

round-trip min/avg/max = 1.129/1.521/1.767 ms

$ cd $HOME/.ssh

$ rm known_hosts      this resets ssh. If ssh was never used, a harmless message
                      that the file does not exist will appear.

$ ssh -2 root@192.168.129.201

The authenticity of host '192.168.129.201 (192.168.129.201)' can't be esta-
blished.              if you get a different message, see below.

RSA key fingerprint is xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx.

Are you sure you want to continue connecting (yes/no)? yes      you must really
                                                                type yes and
                                                                not only y

Warning: Permanently added '192.168.129.201' (RSA) to the list of known hosts.

This system is for the use of authorized users only.  Individuals using this
computer system are subject to having all of their activities on this system
monitored and recorded.  Anyone using this system expressly consents to such mo-
nitoring and is advised that if such monitoring reveals possible criminal ac-
tivity, system personel may provide evidence of such monitoring to law
enforcement.

# hostname

zaurus                ok, we are now remote controlling the Zaurus

# dtm2xml -a | head -3

<!DOCTYPE dtm PUBLIC "-//GNU//DTD DTM 1.0//EN" "ht-
tp://www.dstri.de/DTDs/dtm-1.0.dtd">

<DTM VERSION="1.5">      if not at least "1.5", a too old version of dtm2xml is installed

# exit

Connection to 192.168.129.201 closed.

$                      we are back on the Macintosh
```

4. Messages that might come from ssh:

```
Host key verification failed

      Remove the known_hosts file in $HOME/.ssh.
```

```
ssh: connect to host 192.168.129.201 port 22: Operation timed out
```

Ping should have already shown packet loss. Switch off the Zaurus for approx. 5-10 seconds and on again. Then, retry. This state can happen if the Zaurus or a Powerbook went to sleep mode.

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
```

```
@ WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED! @
```

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
```

This can happen if you have two different Zaurus models operated on the same USB connector. Or the Zaurus was rebooted. Remove the `known_hosts` file.

```
ssh: port 22: No route to host
```

Switch on the Zaurus and check the cable. Or check the USB driver setup.

```
ssh: Permission denied, please try again.
```

Remove the Passcode (Settings/Security) on the Zaurus

```
ssh_exchange_identification: Connection closed by remote host
```

openssh is not installed. Please install either `zmacsync` or `openssh`

ZMacSync is hanging (spinning ball)

Synchronization of an average system with 500-1000 entries (addresses, calendar entries) should be finished within not more than 2-3 minutes.

If ZMacSync simply hangs and you can still ssh into the Zaurus, this is a symptom for a corrupt DTM database (see below). In that case, use `ssh` to access the Zaurus and issue the `dtm2xml -v -a` command to verify first and to repair use the `dtm2xml reset database` command.

Zaurus Database is corrupt

In rare occasions the DTM database can be corrupted (e.g. if you had to reset the Zaurus without closing the Address Book). Symptoms are that there are records you can't delete or change anymore.

To verify, ssh to the Zaurus and use `dtm2xml -a` to get a full listing of the database or `dtm2xml -t` to verify.

In case you have to restore the database:

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```
# killall -SIGTERM addressbook datebook todolist textedit qtmall1
```

```
# dtm2xml reset database
```

Please close all PIM applications (Calendar, Address Book, ToDo List, Text Editor, EMail) first!

Really clear all data in database (yes)? **yes**

```
# rm /home/zaurus/Applications/ZMacSync.plist
```

The first command stops all Zaurus applications that might access the DTM database (they are running even if the window is closed). And the last command notifies ZMacSync that the database itself has been lost.

Records are missing

description coming

Records are duplicated

description coming

Other issues

If you still can't solve the problem, send a mail to zmacsync@dsitri.de. And please try to submit a Console or Crash log.

1. You can also issue `telinit 2` before running the `dtm2xml reset database` and `telinit 5` afterwards. This shuts down and relaunches all Qt applications.

dtm2xml

This is a tool to read (dump) and write the Sharp Zaurus DTM Database.

Usage

```
dtm2xml [-w[e]] [-v] [-a] table | -f path.box ... [<input.xml]
```

-v

Verify database integrity.

Combine the -a flag to verify all databases.

Use the -f flag to specify a specific box or index file.

-w

Read XML from stdin (or file `input.xml`) and update database before dumping

-we

read XML from stdin (or file `input.xml`) and echo new records (with new `card="x"` value assigned)

-a

print all data (ToDo, Calendar, Addressbook, Memo). May be combined with -w but should not with -we.

table

the database table(s) to read:

ToDo

Calendar

Addressbook

Memo

Category

Inbox

Outbox

dtm2xml(1)**-f path.box**

file path to a .box file

...

you can list more than one table or box file for reading at least one specification is required unless `-w` or `-a` is present

reset database

installs a fresh DTM directory - after verifying that you really want to delete all your PIM data!

Please kill all running DTM applications before using this command as they might cache some data:

```
killall -SIGTERM addressbook datebook todolist textedit qtmail
```

XML format

The following XML format is generated when reading or expected for writing:

<DTM VERSION="1.5">

<Table> select database table (Table to replaced by keyword)

<Entry card="123">select card (Entry and 123 to replaced by keyword and card number - counting from 1)

use card="0" to create a new card where the system assigns a currently unused CARDID

<ATTR>value</ATTR>change value (ATTR and calue to replaced by 4-character keyword and new value)

ATTR can also be "REF" and value a reference value that is echoed back but not stored for `-we`

<delete/> delete current card

</Entry> finish card

</Table> finish database table

</DTM> done

To specify tables and entries:

Table	<Table>	<Entry>
ToDo	<Tasks>	<Task>
Calendar	<Events>	<Event>
Addressbook	<Contacts>	<Contact>
Memo	<Memos>	<Memo>
Category	<Categorie>	<Category>
Inbox	<Inbox>	<Email>
Outbox	<Outbox>	<Email>
Trash	<Trash>	<Email>

For the ATTR fields please refer to the Sharp DTM specificaion.

License

This software is based on dtmdump written by S.C. Kremer <stefan@kremer.ca> as described at

http://216.239.57.104/search?q=cache:H1aFQ1R_6j0J:docs.zaurus.com/index.php%3Fid%3Ddtm_howto+dtmdump or

<http://www.zaurususergroup.com/modules.php?op=modload&name=phpWiki&file=index&pagename=DTM%20database>

and expanded by H. N. Schaller <hns@dsitri.de>

This software is using the GPL.

The source code is included in the ZMacSync package.

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