

APtool™

Manual

February 29, 2008

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Introduction

The APtool is designed to configure, manage and monitor Access-Points (following called APs) from ZyXEL Communications. The supported APs are NWA-3100, NWA-3160, NWA-3163, NWA-3165, NWA-3500 up to the time of this document version. Future AP models will be supported if possible. The APtool is independent of the installed firmware of the APs to be managed. It's recommended to use latest firmware versions. Please refer to your local ZyXEL Web page for upgrades.

The management between the APtool and the APs is realized by SNMP and via FTP file transfer. The tool uses the text file based configuration feature. For more information please refer to the manual of NWA-Series APs from ZyXEL.

Before you start

Please make sure to prepare your system according to the following points below before starting APtool:

- Load latest firmware to the APs (see at local ZyXEL homepage)
- Make sure you reset all APs to factory defaults before you begin
- Assign an individual fixed IP address to each AP. DHCP client doesn't work!
- The managed APs and the APtool-PC needs to be in the same IP address and subnet range
- You need to give admin rights to the account running APtool
- Make sure no other ftp service is running at port 69. Check in a DOS shell with the command "netstat -an"
- It's recommended to disable Software firewalls and/or Anti Virus scanners. At least TCP port 6161 for local host (127.0.0.1) needs to be open.
- Install or update JRE (Java Runtime Environment from www.sun.com) to version 1.6 or higher.
- Please note, only one APtool instance can run on the machine. Make sure not to click the APtool icon twice.
- In case of problems starting the APtool deactivate Antivirus programs on your machine

Licensing

APtool uses the following abbreviations about licenses:

Licensing	Means the whole licensing concept
License-Card	This is the document with EAN-Code and serial no. incl. License-Code. The document is typically attached as PDF to an Email which can be requested from the reseller. See Fig. 1 Example of the License-Card
License-Code	This is the License-Code on the License-Card. See Fig. 1 Example of the License-Card with License-Code

License-File	The license-File must be loaded over APtool to manage more than two AP's. The License-File can be requested by sending a License request Email. See Fig. 5 Example of the content of the License-File
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APtool is enabled to manage two devices of the type NMA-31xx without to buy a license. APtool Software can be copied to be used from partners, end customers etc. for evaluation purposes. In order to manage more APs additional licenses can be ordered to manage up to 10, 25 or 50 APs. In case of larger projects licenses for more than 50 APs can be ordered on request. Please ask your local vendor.

Project Licenses

APtool licenses are coupled with the installation location. That means licenses are coupled with at least out of three MAC addresses of the managed network. To get a License-File the three MAC addresses needs to be sent to APtool@styx.ch, or the license can be generated online at <http://www.wlaninfo.ch/license> by entering the three MAC addresses including the serial number over the web page fields. During operation the three devices with the MAC addresses needs to be online all the time. Otherwise the APtool will not work.

How to get the License-File

Preparation

1. Define three LAN MAC addresses out of the APs to be managed with APtool.
2. Make sure to have a License-Card for 10, 25 or 50 nodes on hand. License-Cards can be ordered from ZyxEL vendors or ZyxEL local subsidiaries.
3. Configure in the menu "File" "Properties" the Email settings correctly. Check with button "send mail" if the settings are correct.

Request License-Files by Email (recommended)

- 1) Launch APtool
- 2) At least three APs needs to be online and visible in the APtool. If not visible click "Scan APs" and enable "activate monitoring".
- 3) Click „send mail“ in the menu „File“ „Properties“. You will receive an Email including the first three MAC addresses of the first APs in the "AP List" field.
- 4) Open this Email and insert the License-Code (see License-Card) with the format XXXXX-XXXXX-XXXXX-XXXXX (4x5 capital letters) at the begin of the email text or in the subject filed of the Email.
- 5) Send the modified Email to APtool@styx.ch
- 6) After a view minutes you will receive the license information by Email. Extract with Cut & Paste the first 13 lines of the text and store it as text file with the name „license.txt“
- 7) Load the License-File over the menu "File" "Properties" "Load License". Click "Verify License" to check if License-File is valid. Right after the maximum amount of manageable APs will be shown as a number in the field "Licensing"

Note: Please save and/or print out the file to a secure place. Lost License-Files cannot be replaced!

Request License-Files by Web

- 1) Launch to the web site <http://www.wlaninfo.ch/license> and enter the three LAN MAC addresses including the serial number and the License-Code in the corresponding fields. The serial number and the License-Code can be found on the License-Card
- 2) Fill out all fields and make sure to enter a valid email address. To this address License information will be sent.
- 3) After a view minutes you will receive the license information by Email. Extract with Cut & Paste the first 13 lines of the text and store it as text file with the name „license.txt“
- 4) Load the License-File over the menu “File” “Properties” “Load License”. Click “Verify License” to check if License-File is valid. Right after the maximum amount of manageable APs will be shown as a number in the field “Licensing”

Note: Please save and/or print out the file to a secure place. Lost License-Files cannot be replaced.

APtool™

APtool WLAN Management
License for 10 devices

Product Code
5 6 5 9 1 6 0 1 0 1 0 0 0

Serial Number
8 0 7 2 8 2 4 0 1 1 0 0 3

License Code	Related MAC addresses	Serial Number
CKREM-JNHIX-TZTWZ-OIZAG		8072820411003
	1.	
	2.	
	3.	
valid for 10 devices		

Site: _____ Contact: _____

How to generate your site specific [license.txt](#) file

1. Visit <http://www.wlaninfo.ch/license> and enter the license code from above and 3 MAC addresses of the access points to be managed in this location. (LAN port MAC)
2. Follow the instructions and send the request. Save the reply mail you'll receive, containing the **license data** to the PC on which you run **APtool**. Extract the top 13 lines of the mail and save that part as a textfile named **license.txt**
3. Load the license.txt file into **APtool**
-> file, -> properties, -> load License File, -> verify/activate License

Indicates the license type (10, 25 or 50 nodes)

Serial number (13 digits)

License-Code. Needs to be entered into the license request Email or over <http://www.wlaninfo.ch/license.htm>

Fig. 1 Example of the License-Card with License-Code and serial number

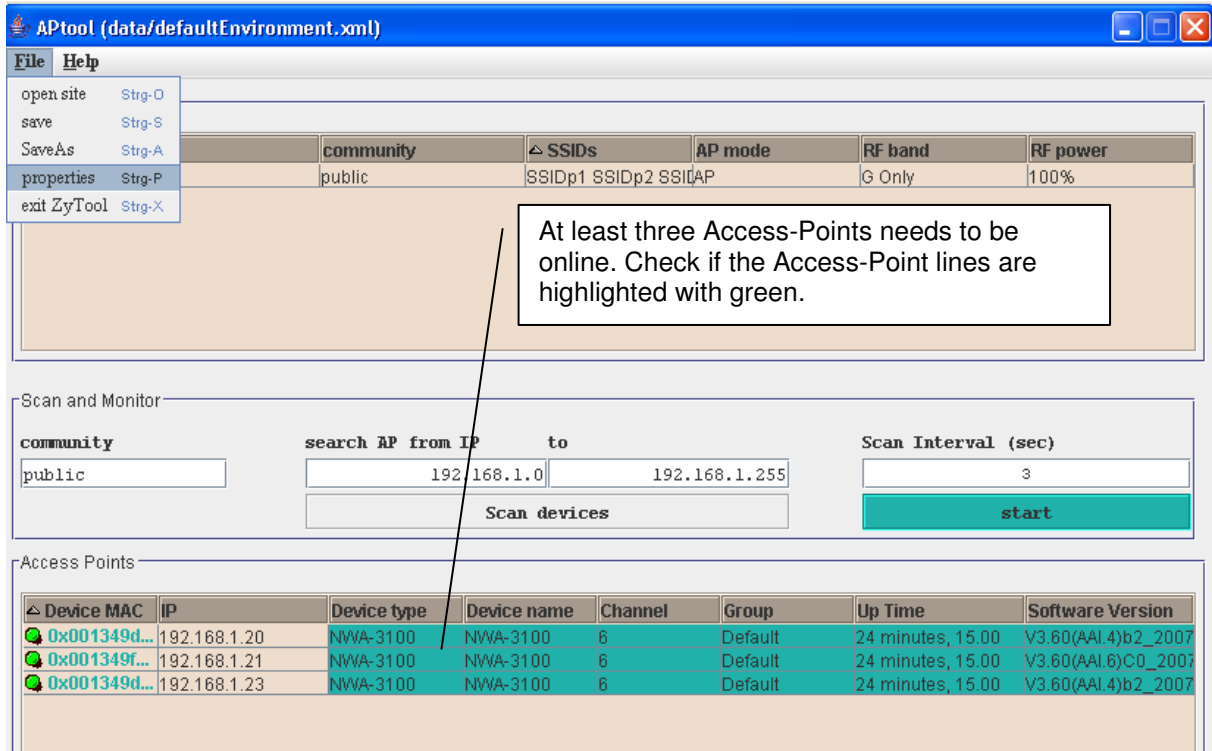


Fig 2 At least three APs need to be online. Otherwise APtool won't work.

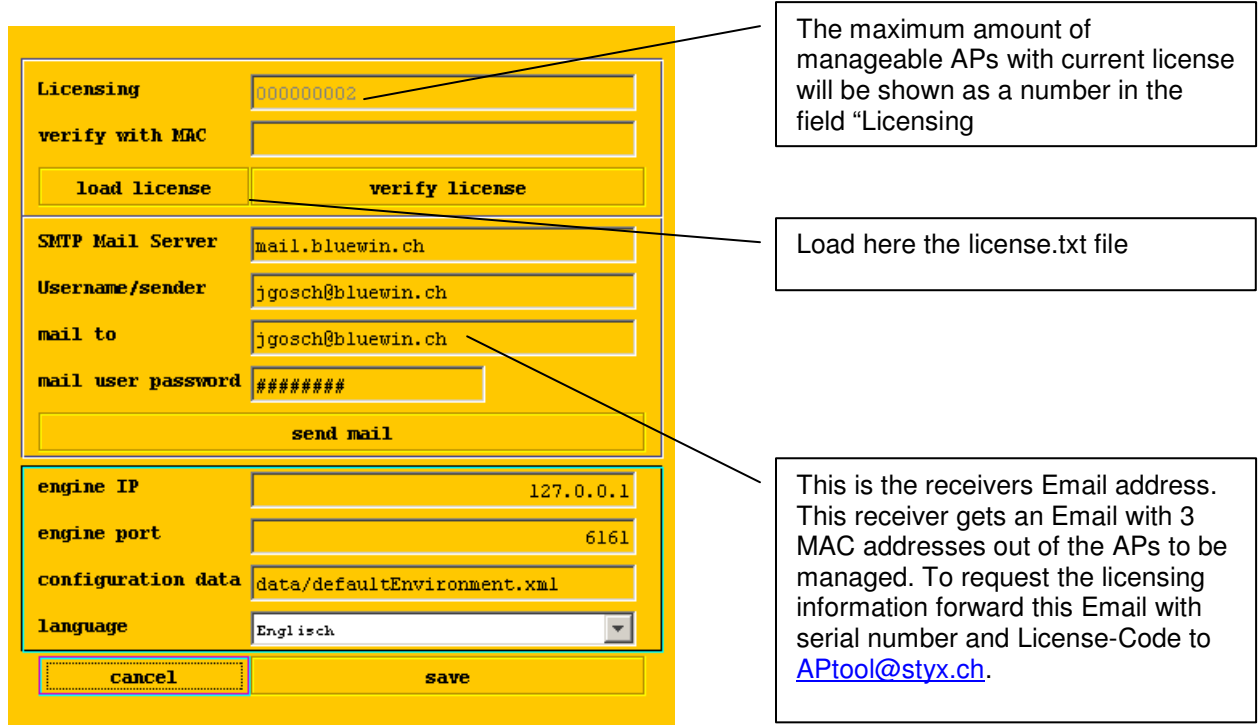


Fig. 3 Generate "License-File" request by clicking Email

The screenshot shows a web browser window displaying the 'Request for License' page for APtool. The page has a yellow background and the APtool logo at the top. Below the logo, there is a heading 'Request for License' and a paragraph explaining that the tool can manage devices without a license, but a license code and serial number are needed for more devices. A red instruction says 'please fill out all fields below'. The form contains several input fields: 'Serial Number: (13 digits)', 'License Code (abcde-12345-vwxyz-67890)', three 'MAC' fields (MAC 1, MAC 2, MAC 3), 'Name of Site/Project/City', 'send License to this eMail:', and a 'Comments:' text area. At the bottom are 'send' and 'clear fields' buttons. Five callout boxes with arrows point to the Serial Number, License Code, MAC 1, eMail, and Comments fields, providing instructions for each.

APtool™

Request for License

APtool is enabled to manage two devices of the type NMA-31xx without a license. In order to manage either up to 10, up to 25 or up to 50 devices enter the serial number and license code you purchased from your ZyXEL dealer. In return, get your site specific license by mail in just a few minutes.

please fill out all fields below

Serial Number:
(13 digits)

License Code
(abcde-12345-vwxyz-67890)

Site is identified by AP's
with these 3 MAC's

MAC 1

MAC 2

MAC 3

Name of Site/Project/City

send License to this eMail:

Comments:

send clear fields

Type in the Serial number from the License-Card

Type in the License-Code from the License-Card

Enter the MAC addresses of at least three Access-Points out of the managed network

Recipient of the License-File. Make sure Email address is valid

Fig. 4 Generate "License-File" over Web Page

The three registered MAC addresses are shown here

```
License:
Registered to yourname@company.ch 2007122000008
1234567123462: 0019cb511d2d,001349fd80ce,0019cb1c1720
AH9rCqokaiXfFKFTPoQymFr92CLVjzPhA/Rr1pTakjsBmYhRBeWpsyp5wpJutd6csWSNjN7vSZjj
kYN5LgPixaH5sqQSDRGUGFgcdQVQiDZlHxZgXCm4V40vnYE+e/D07AzoWw6nTaz8m1AIHcZhuCR1R
mvkDCOolCmeSWZo8Hi8MAMBrdBd82/LiuYAZBZfClftAWd2nS0IqwyR/FCYLq5hjjJu+E8lu89FQ
A487GOztlLlIuRR9GH7ZW+APcIe4idii2mXgOoW3G49wEbsedA3te4ImdMcd3AUJDlxRfReXWD4
FnGvUqLSZwd2uyC1/466hc3akMZ/qeB7i1dD44WkAG36iECue+jUHzOCBJ7HeCSou3lB/B+s1Deh
hNz1KTFYbJNmmgN7Ccyb6oC1qp7DeFwFkZ8Y4InRnshL66AMV9UwYhrz+x2//HPoWZtEZh0wpoDb
AQrh/2EAbP1olyguPVg5dRSFURjxaqkyLFIeTAGxhhjz/4j7Ksu3t6fTozaAD3YmF9HorvE4OUj
HVu4jvxljRsq1svPpieQPg6hA8/7orzM7bHG8m1hjmZTat6nv7egnUgSfWJZn1n8MKgjBLAlxyg
3J0K4gy2+WBodk3/CiC8xL+FuMy2yC6P4V5KMvillgmqRSfHXGxDDq54Hmng5gkGoFTD+2qKyo5TP
E9MO
```

Fig. 5 Example of the content of the License-File

Updates

In general updates include bug fixes and eventually minor feature enhancements. Updates are free of charge. Please launch to <http://www.wlaninfo.ch/license.htm> and check for updates.

New Versions of *APtool*

In general new versions of *APtool* include major feature enhancements and eventually bug fixes. New versions are available as full versions and as updates. They are not for free. A new License-Card needs to be purchased. Please launch to <http://www.wlaninfo.ch/license.htm> and check for updates and full versions for download.

Minimum Requirements

- PC with WinXP SP2; CPU min. speed=1 GHz and RAM>500MB
- Java Run time environment V1.6
- 10 GB free HDD space
- connection to the network (LAN or WLAN)
- Admin rights to operate APtool

Trouble Shooting

In case of troubles or unexpected behaviour of any feature or status window please close APtool and launch the file “techsupp.bat” in APtool program folder (typically C:\Programs\APtool). Try to reproduce the problem and send the file log.txt (to be found in the same program folder) to APtool-feedback@wlaninfo.ch Thank you for your help.

APtool operation

Starting *APtool*

Install the *APtool.exe* file and follow the installation wizard. Start the *APtool*.

Main view of *APtool*

A Group contains configuration set. Groups are assigned to Access-Points in the list “AP List” below. Several groups can be defined independently

group	SNMP community	SSID	operating mode	WiFi-mode	RF power
Default	public	SSIDp1 SSIDp2 SSIDp3	AP	G Only	min
Hitnau	public	SSIDp1 SSIDp2 ruebliweg	AP	B+G	min

Scan devices will find and list Access-Points in the same network.

Starts monitoring of all APs. If enabled, email alerts are generated in case a AP goes offline.

SNMP community: public
 monitor AP: 192.168.100.2 to 192.168.100.255
 status refresh interval [in Sek]: 3
 Scan APs
 stop monitoring

AP MAC	IP	model	AP name	location	Channel	Group	up-time	SW version
0x001349fd80ce	192.168.100.200	NWA-3100	NWA-3100		2	Default	15 minutes, 48.00V3.60(AAI.6)C0.	
0x001349d0c2d8	192.168.100.201	NWA-3100	NWA-3100	Meeting_room	11	Default	15 minutes, 47.00V3.60(AAI.6) 11	
0x001349d0c2bf	192.168.100.202	NWA-3100	NWA-3100	Gang	6	Default	15 minutes, 47.00V3.60(AAI.6) 11	
0x0019cb51efc1	192.168.100.203	NWA-3165	NWA-3165		6	Hitnau	V3.60(AAO.0) 11	
0x0019cb511d2d	192.168.100.204	NWA-3160	NWA-3500		6 / 36	Default	14 minutes, 43.00V3.60(AAL.1)B1 11	
0x0019cb36e5da	192.168.100.205	NWA-3500	NWA-Series			Default	8 minutes, 31.00 V3.60(AAH.1)C0	

Lists all Access-Points with MAC address. Access-Points in this list can be managed. Press and hold shift key and click first and last entry for selecting more than one Access-Point.

Fig. 6: Main view of *APtool*

General Settings “AP Group”

General settings are defined in groups. A group contains all configuration parameters of an AP. Several independent groups can be defined. In large AP projects it can be helpful to try different configuration settings for system optimization. Groups can be very easily applied to one or more APs in the AP list by right click and the following menu.

Each line in the “AP Group” field shows the most important values like Group name, active SSIDs, WiFi mode (g only, b only, mixed etc.) and the output power.

Remark, typically channel setting is individual on each AP in large projects due to channel planning. To ensure proper Roaming or no interference issues, channel planning needs to let to define the channel individual for each AP. So in this case select “ignore” in the “Channel” field in the WLAN menu (double click a group entry).

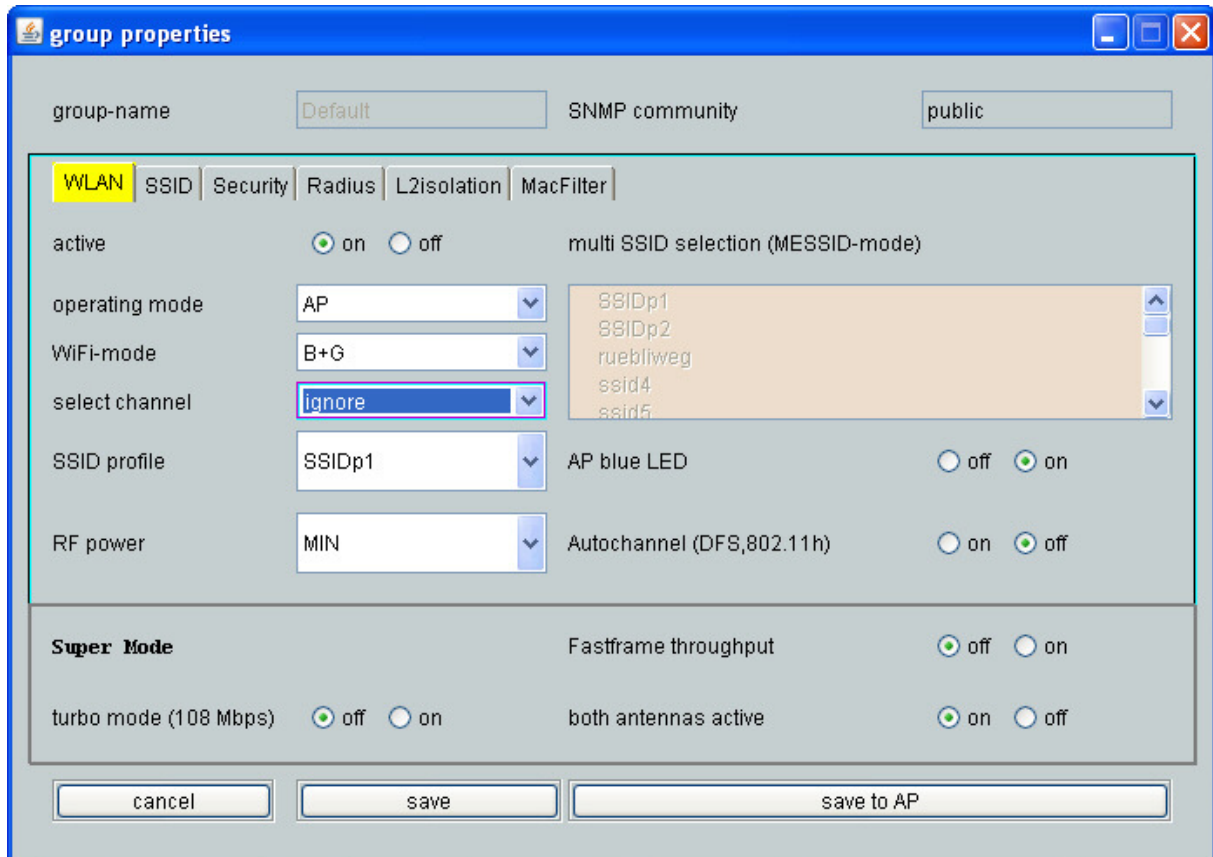


Fig. 7: Group properties menu

Group Properties

By double clicking a group the “Group properties” window shows up. You can configure all necessary AP parameters in the different categories. Please refer for more details the manual of the AP from ZyXEL.

You can edit the parameters in the APtool and save it to the APs later. Make sure to press the “save” button before leaving the menu. When “save to AP” button is pressed, APtool writes down all parameters to the APs in this group. It takes several minutes to write down the parameters to the APs. Don’t stop or disconnect APtool during downloading.

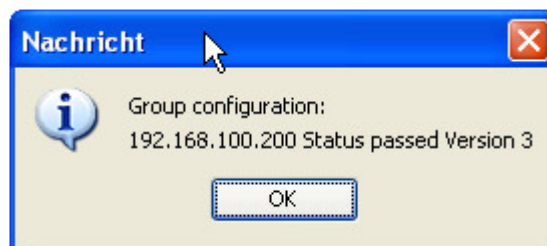


Fig. 8: Message after successful download

After a while APtool shows this message when the download of the parameters to the APs was successful.

AP List

In the “AP List” field are all APs listed which will be managed. To search for APs in the network in one subnet enter first the IP range “from IP” “to IP” field. Then press “Scan APs”. After several seconds AProtool shows up all APs which can be managed. If you missing APs check IP address settings. Check as well if latest firmware is load. See as well “Before you start”.

Press “activate monitoring” and the AP entries will go to green color which shows that AP is online. Red marked lines means that the corresponding AP is offline. Make sure to load a license if you want to manage more than two APs. Otherwise AProtool won’t be able to manage any AP.

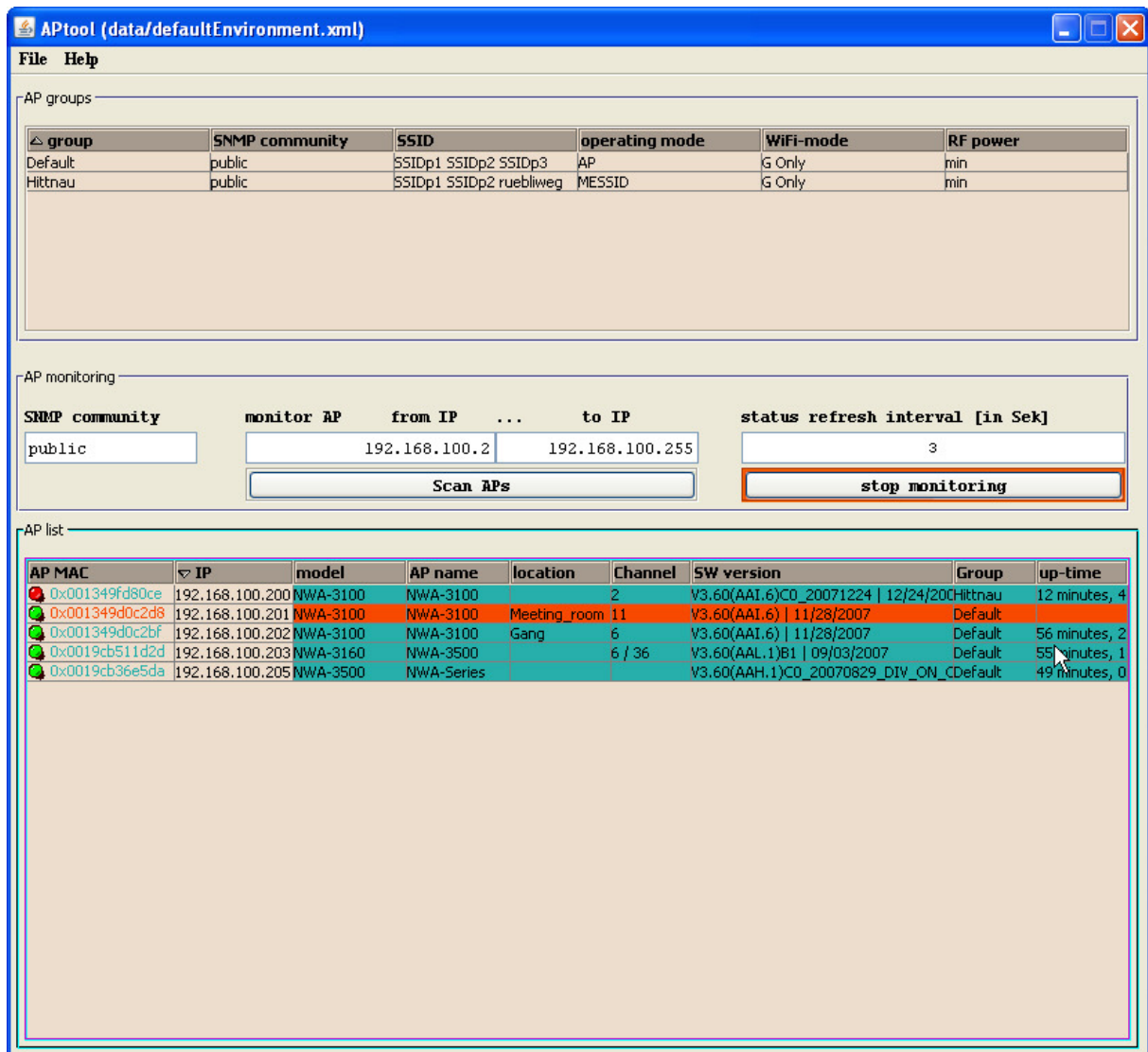
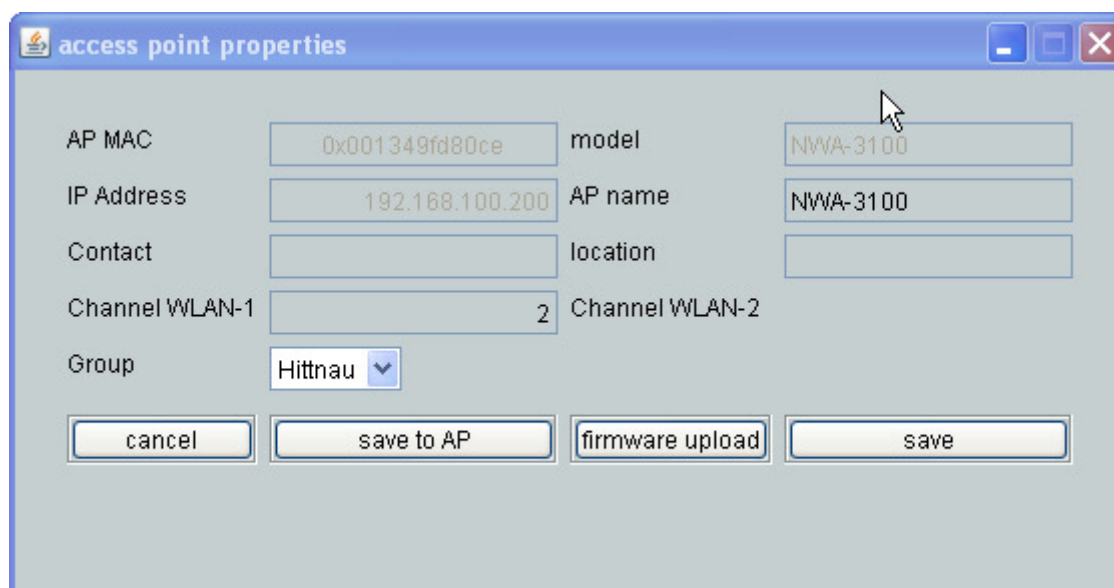


Fig. 9: AP List shows status of manageable APs

Every “AP List” entry shows the most important value. This is the LAN-MAC address of the AP, IP Address, individual channel setting, Firmware version (SW Version) and the applied group configuration.

By right clicking on a AP entry the following screen shows up:



AP MAC	0x001349fd80ce	model	NWA-3100
IP Address	192.168.100.200	AP name	NWA-3100
Contact		location	
Channel WLAN-1		Channel WLAN-2	2
Group	Hittau		

Buttons: cancel, save to AP, firmware upload, save

Fig. 10: Edit individual AP parameters

You can configure individually a WLAN channel, the location of the AP (like first floor, office 2 etc.) a specific AP name and of course the group configuration which will be applied for this specific AP.

By clicking “save to AP” the parameters will then be downloaded to the selected AP. If you “save” only the modifications will not be sent to the AP. This will then be shown as a red dot on the left side in the AP entry.

APtool (data/defaultEnvironment.xml)

File Help

AP groups

group	SNMP community	SSID	operating mode	WiFi-mode	RF power
Default	public	SSIDp1 SSIDp2 SSIDp3	AP	G Only	min
Hittsau	public	SSIDp1 SSIDp2 ruebliweg	MESSID	G Only	min

AP monitoring

SNMP community: public

monitor AP from IP: 192.168.100.2 to IP: 192.168.100.255

status refresh interval [in Sek]: 3

Scan APs stop monitoring

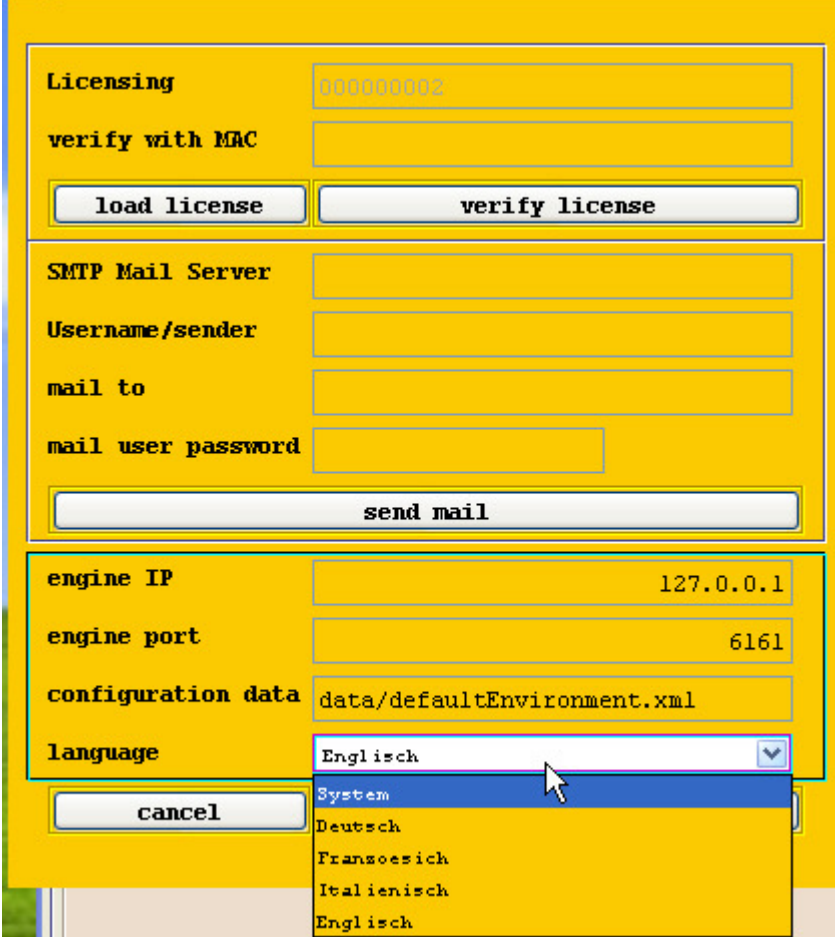
AP list

AP MAC	IP	model	AP name	location	Channel	SW version	Group	up-time
0x001349d80ce	192.168.100.200	NWA-3100	NWA-3100		2	V3.60(AAI.6)CO_20071224 12/24/2007	Hittsau	12 minutes, 4
0x001349d0c2d8	192.168.100.201	NWA-3100	NWA-3100	Meeting_room	11	V3.60(AAI.6) 11/28/2007	Default	
0x001349d0c2bf	192.168.100.202	NWA-3100	NWA-3100	Gang	6	V3.60(AAI.6) 11/28/2007	Default	56 minutes, 2
0x0019cb511d2d	192.168.100.203	NWA-3160	NWA-3500		6 / 36	V3.60(AAL.1)B1 09/03/2007	Default	55 minutes, 1
0x0019cb36e5da	192.168.100.205	NWA-3500	NWA-Series			V3.60(AAH.1)CO_20070829_DIV_ON_C	Default	49 minutes, 0

Fig. 11: Indication that AProtool is not synchronized with APs

Language selection

Select the language of your choice. Remember to restart APtool to make the new language settings becoming effective.



The screenshot shows a configuration dialog box with a yellow background. It is divided into several sections:

- Licensing:** A text field containing "000000002" and a "verify with MAC" field. Below are "load license" and "verify license" buttons.
- SMTP Mail Server:** Fields for "SMTP Mail Server", "Username/sender", "mail to", and "mail user password", with a "send mail" button below.
- engine IP:** A text field containing "127.0.0.1".
- engine port:** A text field containing "6161".
- configuration data:** A text field containing "data/defaultEnvironment.xml".
- language:** A dropdown menu currently showing "Englisch". A mouse cursor is pointing at the dropdown arrow. The dropdown list is open, showing the following options: "System", "Deutsch", "Fransoesich", "Italienisch", and "Englisch".

A "cancel" button is located at the bottom left of the dialog.

Fig. 12: Set up Language

Set up Email Notification

In the “File” “Properties” menu you can set the email notification. As soon the “Scanner” in the main menu runs the email notification is enabled. In case a managed AP goes offline an email will be sent to the corresponding email address.

Licensing	000000002
verify with MAC	
load license	verify license
SMTP Mail Server	mail.bluewin.ch
Username/sender	jgosch@bluewin.ch
mail to	jgosch@bluewin.ch
mail user password	#####
send mail	
engine IP	127.0.0.1
engine port	6161
configuration data	data/defaultEnvironment.xml
language	Englisch
cancel	save

Fig. 13: Set up Email notification