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How to give an Open BAT or a WLC an IP address ?

- 2018-02-21 - BAT, WLC (HiLCOS)

This lesson describes how to give an Access Point or a WLC controller an IP address. We'll see 4 different methods:

- Via Hidiscovery
- With a DHCP server
- Via the serial interface, using the Command Line Interface (CLI)
- Via LANconfig

This how to is based on the assumption that the devices have the Hidiscovery protocol enabled (factory settings) and DHCP as well.

#### Via Hidiscovery

| HiDiscovery                    | 12         |               |       |                                  |                     |          |          |           |       |      |         | -       | . 🗆 | Σ |
|--------------------------------|------------|---------------|-------|----------------------------------|---------------------|----------|----------|-----------|-------|------|---------|---------|-----|---|
| e Edit Options ?               |            |               |       |                                  |                     |          |          |           |       |      |         |         |     |   |
| ☆ 양 옷<br>Signal Properties WWW | Teinet Pin | Rescan Prefer | ences | 192.168.1                        | . 29: High:         | Speed US | 8-Etherr | et Adap   | ter   | 1    |         |         |     |   |
| MAC Address                    | Writable   | IP Address A  | 1     | Vet Mask                         | Default             | Gatewa   | 1        | Produ     | ct    | Nar  | ne      |         |     |   |
| 0:80:63:F7:53:AF               | <b>V</b>   | 192.168.1.101 |       | 255.255.0                        | 0.0.0.0             |          | BAT-C    | ontroller | WLC25 | WLC_ | 101     |         |     |   |
| 2C:E5:55:56:AB:84              | 4          | 192.168.1.140 | 255.  | Properties                       |                     |          |          |           |       |      |         | ×       |     |   |
| 2 EC:E5:55:8E:53:8C            | 1          | 192.168.1.141 | 255.  | MAC Addre                        | ss: 00:80           | ):63:F7: | 3:AF     |           |       |      |         |         |     |   |
|                                |            |               |       | Name:<br>IP Configu<br>IP Addres | WLC<br>ration<br>s: | _101     | . 168    |           |       | 101  | Set Def | ault () |     |   |
|                                |            |               |       | Net Mask:                        |                     | 255      | . 255    | . 25      | 5.    | 0    | Set Def | ault () |     |   |
|                                |            |               |       | Default G                        | ateway:             | 0        | . 0      | . 0       |       | 0    | Set Def | ault () |     |   |
|                                |            |               |       |                                  |                     |          | Save     | As Def    | ault  |      |         |         |     |   |
|                                |            |               |       |                                  |                     |          | Ok       | Ca        | ncel  |      |         |         |     |   |
|                                |            |               |       | -                                |                     |          |          |           |       |      |         |         |     |   |

It's probably the easiest way.

You can download Hidiscovery from the Hirschmann Website :

http://www.hirschmann.com/en/Hirschmann\_Produkte/Industrial\_Ethernet/Software/Softwar e\_Tools/HiDiscovery/index.phtml

Hidiscovery is also included in the CD delivered with each product.

Connect your laptop with Hidiscovery and the BATs devices to the same L2 network Start Hidiscovery.

Hidiscovery may find automatically the Hirschmann devices connected to your L2 network. But if you have several network adapaters it could also occur that Hidiscovery starts using a wrong Network adapter. In this case, select the relevant network adapter (1) and Rescann the network (2).

From the discovered devices double clic on the one you want to configure an IP address (3) A new window will open wher you can enter Name and IP settings for the device. By clicking OK the settings you entered are automatically applied on the device.

### Via DHCP

By default, DHCP is enabled on the WLC and on the Open BAT.

It's then possible t dynamically assign an IP address to the device.

An Hirschmann switch can be used as DHCP server or you can download free DHCP servers on Internet.

One of the easiest and widely used id TFTPD32 which can be downloaded here :

http://tftpd32.jounin.net/tftpd32\_download.html

The following example was done with tftpd64 v4.50 on windows 7

# Start Tftpd64 and select relevant network interface

| 🏘 Tftpd64 by Ph. Jounin  |  |  |                      |  |  |
|--------------------------|--|--|----------------------|--|--|
| Current Directory        | C:\NET\LOGICIELS   | S/utilities/DHCP SERV  | ▼ Browse             |  |  |
| Server interfaces        | 192.168.1.29   | HighSpeed USI  | Show Dir             |  |  |
| Tftp Server Tftp<br>peer | 127.0.0.1<br>192.168.1.29<br>192.168.199.2<br>192.168.205.1<br>192.168.6.1 | Software Loopt<br>HighSpeed USE<br>ASIX AX88772E<br>VMware Virtual<br>VMware Virtual | wer<br>ess byte<br>▼ |  |  |
|                          |  |  |                      |  |  |
| About                    | s  | ettings  | Help                 |  |  |

Configure the DHCP settings

| Tftpd64 by Ph. Jounin  |   | Tftpd64: Setting 2  |
|--|---|---|
| Tftpd64 by Ph. Jounin Current Directory     GMNETALCOTOLELS/writees/DHOPS Server interfaces     192.168.1.29     HighSpeed Tftp Server     TftpCfent, DHCP server   Systog server     peer     file     start time | Browse<br>USI V Show Dis<br>Log viewer<br>progress byte | Thtpd64: Setting     GLOBAL   TFTP DHCP   SYSLOG        DHCP Pool delinition     IP pool start address   192 168.1.100     Size of pool   100     Lease (minutes)   2880     Boot File      DHCP Options     Det. router (Opt 3)   192 168.1.1     Mask (Opt 1)   295 295 295.0     DNS Servers (Opt 6)     Will's servers (Opt 64) |
| About 1 Settings   | Help  | WINS server (Opt 44)       NTP server (Opt 42)       SIP server (Opt 120)       Domain Name (15)       Additional Option       0         0HCP Settings       Image: Persistant leaves       Double answer if relay detected       Bind DHCP to this address       0K       Default       Help       Cancel                          |

Clic on settings

Go in the DHCP Tab

Enter your DHCP pool, subnet mask, Gateway if necessary

Then OK. The configuration of your DHCP server is finished.

NB: UDP port 67 is used by the server. Take care that your Firewall don't block it

(allow incoming trafic with port destination 67, outgoing trafic with port destination 68)

## Wait the next DHCP request

| Note: The second | . Jounin           |                   | l           | - 0 <b>X</b> |
|--|--------------------|-------------------|-------------|--------------|
| Current Directory  | l                  |                   | •           | Browse       |
| Server interfaces  | 192.168.1.29       | HighSpeed U       | SB-Ethe ▼   | Show Dir     |
| Tftp Server Tftp   | Client DHCP server | Syslog server Lo  | g viewer    |              |
| allocated at   | IP                 | MAC               | renew at    |              |
| 11/11 10:14:57   | 192.168.1.100      | 00:80:63:F7:53:AF | 11/11 10:14 | 4:57         |
|  |                    |                   |             |              |
| About  |                    | Settings          |             | Help         |

At the next DHCP request from the device, your DHCP server will automatically attribute to teh device an IP address from the defined pool of addresses.

### Via the serial interface

WLC and Open BAT have a V24 interface (A coded M12 plug)

A cable is delevered with each device (M12 - RS232) making possible serial connection between a workstation with serial interface (RS232) and the WLC or Open BAT.

If the workstation doesn't have any serial interface, converters USB to serial are needed.

| Pins of the M12 socket<br>on the device | Pin | Function | Description of functions |
|---|-----|----------|--------------------------|
| 4                                       | 1   | GND      | Ground                   |
| ,8                                      | 2   | DTR      | Data terminal ready      |
| 2                                       | 3   | TxD      | Transmit data            |
|   | 4   | RxD      | Receive data             |
| 0 00 3                                  | 5   | DCD      | Data carrier detect      |
| 5                                       | 6   | DSR      | Dataset ready            |
|   | 7   | RTS      | Request to send          |
|   | 8   | CTS      | Clear to send            |

Pin assignment of the V.24 interface, 8-pin, A-coded M12 socket

## **VT 100 terminal settings**

| VT 100 terminal settings |              |  |  |  |  |
|--------------------------|--------------|--|--|--|--|
| Speed                    | 115200 bit/s |  |  |  |  |
| Data                     | 8 bit        |  |  |  |  |
| Stopbit                  | 1 bit        |  |  |  |  |
| Handshake                | Hardware     |  |  |  |  |
| Parity                   | none         |  |  |  |  |

### **Download Putty**

PuTTY is an SSH and telnet client but it can also be used as VT100 Terminal emulation. You can download Putty here: http://www.putty.org/

### Check what Port is used for your serial connection



In our example. we use a USB to serial adapter (Prolific).

To check which COM port is in use, go in:

Control Panel > Administrative Tools > Computer Management > Device Manager > Ports (COM & LPT)

In our example it corresponds to COM5

### Start Putty and configure the settings



- 1/ Select the connection Type: Serial
- 2/ Enter the VT100 Speed: 115200
- 3/ Enter the serial line in use: in our example COM5
- 4/ Open

### **Enter the CLI**

```
- 0 - X
COM5 - PuTTY
Outband-115200 Bit/s OK
±
| Hirschmann BAT-Controller WLC25
| Ver. 9.00.5085 / 17.10.2014
| SN. 034001001070
| Copyright (c) LANCOM Systems
BAT-WLC_F753AF, Connection No.: 001 (Outband-115200 Bps)
Username:
Password:
admin@BAT-WLC_F753AF:/
> set Setup/TCP-IP/Network-list/intranet 192.168.1.100 255.255.255.0
set ok:
                         IP-Netmask
Network-name
            IP-Address
                                        VLAN-ID Interface
Src-check Type Rtg-tag Comment
  _____
INTRANET 192.168.1.100
loose Intranet 0
             192.168.1.100 255.255.255.0 0
                                                any
                         local intranet
admin@BAT-WLC F753AF:/
>
```

After a succesfull login (default password: private) only 1 command is enough to set an IP address:

set Setup/TCP-IP/Network-list/intranet IP\_ADDRESS MASK

#### Via LANconfig

LANconfig is a management software for Open BAT devices and controllers.

You can install it directly from the CD delivered with each device or download it from the Hirschmann Website.

Pre-requisite for the first steps:

The workstation with LANconfig and the device to configure must be in the same L2 network.

This example is based on the assumption that the device to configure has factory settings.

### Start LANconfig and run a scan



1/ Search for devices in the network pressing the ""find devices"" button (1)
2/ In the ""Find Devices"" menu, select ""Search the local network". It will search for the BAT and WLC connected in the same L2 network as all your network interfaces (if you have 2 network interfaces in 2 different L2 networks, the discovery will be done in the 2 L2 networks)

3/ Don't forget to tick ""Extended search to managed APs"", otherwise Open BAT with default config won't be find.

### Select the devices to configure

| Find Devices                         |                              |                 |                 |
|--------------------------------------|------------------------------|-----------------|-----------------|
| Q Device scar<br>3 of 3 devices will | l complete.                  |                 |                 |
| ☑ Name                               | Device Type                  | Address         | Serial Number   |
| AP_140                               | BAT-R                        | 192.168.1.140   | 94207099901010. |
| BAT-WLC_F753AF                       | BAT-Controller WLC25         | 192.168.1.100   | 40003400100010  |
| BAT-R_8E538C                         | BAT-R                        | 50.50.24.15     | 94207099903050. |
| •                                    | m                            |                 | Þ               |
|                                      |                              |                 |                 |
| 3 device(s) found. (3 ne             | ew one(s), 3 with complete s | ysinfo)         |                 |
| Why is my device not bein            | g found? Search anew         | Add selected de | vices Cancel    |

Devices present will be find, new ones (without IP address) or already configured ones. Select the ""new"" devices and select ""Add selected devices""



In the main Window the devices without configuration appear with this icon..

Automatically a Wizard is launched. Follow the Wizard.

#### Accept the warning and log to the BAT

| Hirschmann LANconfig  | Login Data for BAT-WLC_F753AF   |
|---|---|
| This action is performed using the HTTPS protocol to transmit data.<br>Even though the data transmission is encrypted, the connection will<br>not yet be secured by certificates.<br>Do you want to continue? | No login information is stored for this device.<br>Please enter valid login information below in order<br>access the device.<br>Administrator:<br>Password: |
| Yes No  | Save login information OK Cancel  |

Default password : private

Follow the Wizard (1)



- 1/ Give the Device a Name
- 2/ Give the device a password
- 3/ Configure the SNMP read only community
- 4/ Configure the DHCP Mode (on our example off)

#### Follow the Wizard (2)

| CC) / Jake  | Setup Widard for BAT-WLC_F753AF  |
|---|--|
| MLC_F753AF  | System Time Settings   |
| etwork IP address to this device, along with the relevant<br>192:168 1.100<br>255:255:255:0<br>0:0:0<br>0:0:0<br>0:0:0        | Please select the appropriate time zone and daylight saving time of your location.<br>Time zone: <u>v01:Berlin, Brussels, Pats.</u><br>Daylight saving time: <u>Automatic - Europe (EU)</u><br>Here you may choose the domain name or enter the IP address of the time server for synchronizing the device time.<br>Time server: <u>court sign con</u><br>(f) The preselected value will be a good choice in most cases.   |
| < Back Next > C<br>LC_F753AF<br>WLC_F753AF  | arcel  Arcel Arcel  Arcel Ar |
| al but recommended to fill if you have to manage more than on<br>Neckatendingen<br>No le plus besul<br>C'est mon WLC a moi !! | You have configured all necessary basic settings required for a proper device statup.<br>Please select Triath To apply the new settings.<br>(I) The process may take about 60 seconds. After that the setup wizard restarts and further settings may be done.  |
| < Back Next > C   | arcel Cancel   |
|   | NLC_F753AF           stvork: IP address to this device, along with the relevant           192:163.1.10           255:255.255.0           0.0.0   |

- 1/ Give the device an IP address
- 2/ Give the device Time settings
- 3/ Optionnal settings (Location ...)
- 4/ Finish