# PX30 User's Guide

*QPRM 00172/01*

**Possio AB**

11th July 2003

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**QPRM 00172/01 Rev. PX30**$_{BETA_VERSIONcompliantwiths/w:R1F}$

***English edition, 11th July 2003***

# Chapter 1

# Product Overview

## 1.1 WLAN

Wireless Local Area Network (WLAN) is designed to look and feel like any Local Area Network (LAN). This means that it must appear as a wired network to which a user may be accustomed. It must support all of the protocols and all of the LAN management tools that operate on a wired network. WLAN uses radio as a data carrier. In fact, two important differences between a traditional LAN and WLAN is the lack of cables and the mobility this provides. Because WLAN transmissions are not confined to a wire, there may be concerns that the data carried by a WLAN is not private. The designers of the WLAN specification (802.11) realized that this concern could be a significant problem and designed strong cryptographic mechanism into the protocol to provide protection.

## 1.2 Bluetooth

Bluetooth is a low cost, low power, short range radio technology, originally developed as a cable replacement to connect devices such as mobile phone and headsets or PDA:s and Personal Computers. The Bluetooth specification is an open global specification defining the complete system from radio right up to the application level. A key feature of the Bluetooth specification is that it aims to allow devices from different manufacturers to interact. As mentioned Bluetooth does not just define a radio system, it also defines a software stack to enable applications to find other Bluetooth devices in the area, discover what services they offer, and use this services. To cope with this, Bluetooth provides inquiry and paging mechanism and a Service Discovery Protocol (SDP). In addition to the core specification the Bluetooth specification includes a profiles document. Each profile defines how a particular application can be implemented, including which part of the core Bluetooth protocol should be used to support the profile. The PX20 comes with two Bluetooth profiles: DUN and LAP.

**DUN** The Dial Up Networking (DUN) profile provides a Dial up data connection. This allows a computing device to access a telephone network using services of a communication device, such as a mobile phone or a modem.

**LAP** The LAN Access Point Profile (LAP) allows a Bluetooth device to access a fixed network via a Bluetooth Server, also running LAP. Such a device could be used in many scenarios: as a personal work area access point, replacing the network cable and allowing mobility within range of the access point, as a shared access point in a meeting room allowing fast access to the network or as a public access point allowing easy access to information and services, for example at airports check-ins. The LAN Access is secured by the use of PIN:s.

## 1.3 OSGi

OSGi is the leading standard for the next generation Internet services. The OSGi server installed on the PX30 delivers an open, common architecture to develop, deploy and manage services in a coordinated fashion. It enables an entirely new category of smart devices due to its flexible and managed deployment of services. Electronically downloadable services, called bundles can be executed inside the OSGi framework in a well defined and protected environment. The OSGi environment includes a Java runtime and adds life cycle management, persistent data storage, version management and a service registry.

## 1.4 Schematic Overview of the PX30 Environment

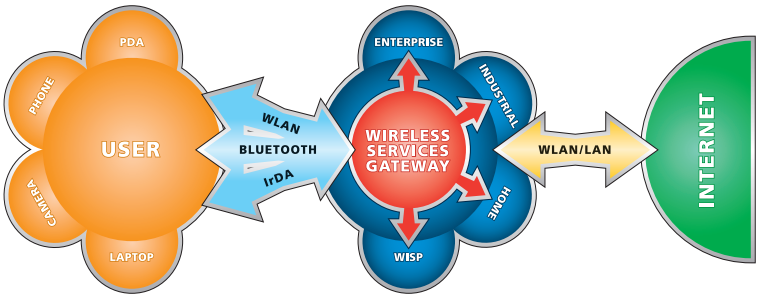



Figure 1.1: Overview of the PX30 environment

The user (orange circle) equipped with a Bluetooth enabled device, PDA, Smart Phone or a Laptop, connects with the Wireless Services Gateway, the Possio PX30 (red circle). When connected to the PX30 the user have access to the contents available in the OSGi server on the PX30 (the server content is adapted to the environment). The user may also access the Internet if the Hotspot environment allowes it to. The PX30 in the Hotspot environment (blue circle) an industrial, public, commercial or home network connects to the Internet (green circle).

# Chapter 2

# PX30 User's Guide

## 2.1 Dear customer

Thanks for purchasing a PX30. We hope you will appreciate it and take full advantage of its many applications. This User's Guide will provide you with information on how to configure your PX30. If you require further assistance do not hesitate to contact us, send an email to: **info@possio.com**

## 2.2 About the PX30

The Possio PX30 Wireless Services Gateway is a flexible Wireless access point combined with an OSGi server. It allows wireless devices access to Internet and local network contents. Its built-in OSGi application server can supply the local network contents through its web server and distributed Java applications.

## 2.3 Installation

When installing the Possio PX30, please keep in mind that the maximum communication range of a wireless device much depends on the environment where the equpipment is installed. In an indoor environment, walls and furniture can decrease the communication range of the PX30. Other electronical equipment, like cordless phones and microwave ovens, may also have negative effect of the PX30 performance.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: This equipment is shipped in a certain hardware configuration. Any modifications to this configuration, such as using the PX30 together with antennas other than those shipped with the PX30, could void the user's authority to operate the PX30. Possio can only guarantee compliance with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules, as long as the PX30 is operated with Possio approved hardware attached to it.

NOTE: In order to meet FCC requirements for RF exposure compliance, please install the PX30 in a location which assures that users will not approach closer than 20 cm while the PX30 is in normal operation.

NOTE: This equipment complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The antennas provided with the PX30 are selected with the overall product functionality in mind. Therefore the antennas must not be replaced by others, not approved by Possio AB, since this might change the product characteristics in a way that violates radio propagation regulations.

# Chapter 3

# Highlights

- Combining Bluetooth and WLAN in a single device.
- Built-in OSGi server to allow distributed applications developed in Java.
- Allows WLAN and Bluetooth clients access to Internet and existing networks.
- Easy physical installation, connect mains adapter to get up and running.
- A cost efficient and flexible solution for network deployment and enhancement.
- Supports most major network and Internet protocols.
- Adaptable hardware supports many different network and connectivity solutions for PC Card and Compact Flash cards, as well as USB devices.
- Built-in web server to host local information and distributed Java Applications.
- High performance Intel XScale CPU, 300 Mhz.
- Internal battery for backup and temporary networks lacking mains power.

IMPORTANT NOTICE: Please read the Limited License Agreement (part of the package) carefully before using the PX30. If you find errors in this document or miss something you are more than welcome to let us know. In return we will give you an updated version of the user's guide as soon as it is available.

# Chapter 4

# Getting Started

## 4.1 Step-by-Step introduction

- Before using your PX30 for the first time, please allow the unit to charge for 3-4 hours with the supplied charger. This is necessary in order to fully charge the internal battery.
  **Note:** The PX30 battery must be charged with the supplied charger.

- **PX30 LED indicators**

  The LED indicators on the PX30 indicates the operational status of the device.

  **Red LED**
  When the PX30 is starting up the Red led indicates that the device is busy. The PX30 will not accept connections when the Red Led is lit.

  **Green LED**
  After the PX30 has started up the Green LED indicates that the PX30 is ready to use.

  **Blue LED**
  After startup the Blue LED is lit for about two seconds. During normal operation the Blue LED may indicate WLAN and/or Bluetooth activity.

- **On/Off-button**

| | |
|---|---|
| On | To switch on the PX30. Press the button quickly one time. |
| Off | To switch off the PX30. Press the button for two seconds and release. The blue LED is lit and the PX30 switches off. |
| Restore defaults | If the On/Off button is pressed between 8 and 12 seconds the PX30 factory settings will be restored. This means that all personal settings will be lost. |

## 4.2 Connect to your PX30 for the first time

After you turn on the PX30 it will try to obtain an IP address through DHCP over the Ethernet cable, if one is properly attached. When the green LED is lit, WLAN and Bluetooth clients will be able to connect to the PX30 in the following matter:

**WLAN client**
To connect to the PX30 with a WLAN client, configure your client WLAN card to connect to a WLAN Access Point with ESSID “default” and no WEP encryption key. If the client is within range of the PX30 and correctly configured, it will obtain a DHCP lease from the PX30. For help on configuring your WLAN client, please consult the User’s Guide delivered with the card.

To configure your PX30 from the WLAN client, use a browser and enter ’http://192.168.1.1/admin’. Thereafter follow the instructions in the Configuration chapter.

**Bluetooth client**
Let your Bluetooth client do an inquiry to search for other Bluetooth devices within range.
The PX30 should show up with a friendly name like $PX30_{x}xx, where'xxx'isauniqeserialnumber.Connecttothe$

$Toconfigureyour PX30 fromtheBluetoothclient, useabrowserandenter'http://10.0.1.1/admin'.Therea fte$

# Chapter 5

# Configuration

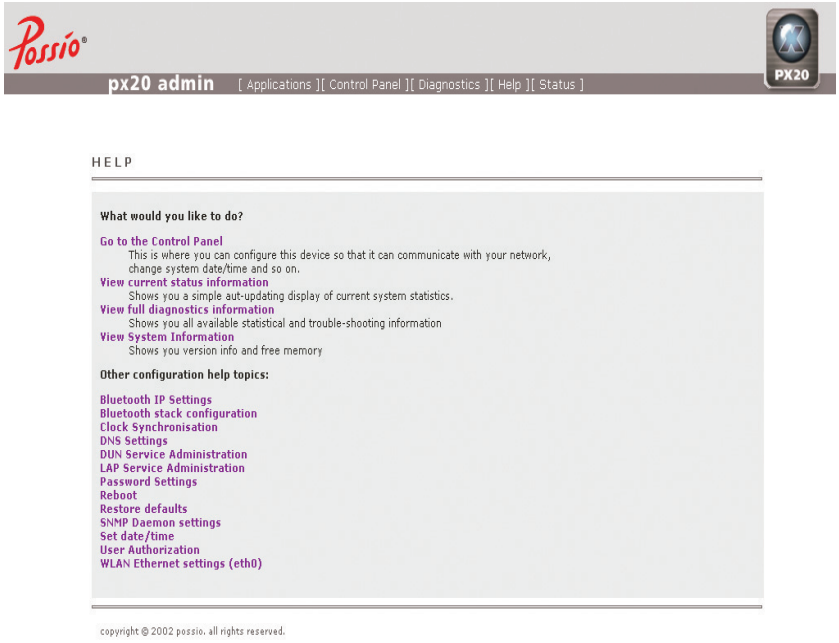



Figure 5.1: Screen shot of the PX30 Help tab

## 5.1 Access the configuration web interface

The PX30 is configured trough a web interface. You access the web interface by using a browser and enter the URL 'http://PX30 IP address/admin'. If you have connected to the

PX30 with a WLAN client, the default IP address of the PX30 is '192.168.1.1'. If you are using a Bluetooth client, the address is '10.0.1.10'.

You will be prompted to enter a login name and password when you try to connect to the web interface. By default these are:
Login: admin
Password: possioadmin

## 5.2 Help

The PX30 is enabled with a online help system. From the help tab all online help sections can be accessed. The help page also provides access to a System Information page where you can find information about the product, software version number and other useful things. (Figure: 5.1)

## 5.3 Status

The status tab gives the user quick feedback about the system's status.

## 5.4 Diagnostics

This tab shows status information in plain text, including IP, Bluetooth and WLAN information. Information about other WLAN Access Points in the neighbourhood as well as information about connected clients could also be found here.

## 5.5 Control Panel

The Control Panel tab consists of a menu with several configuration options, some of the configuration options have sub menus. This is indicated by a '+' sign. If a configuration option in the menu is chosen, a sub menu or a configuration page will be displayed. All configuration pages on the PX30 have the same structure. After a new value is entered, the value will be applied by pressing the Save and Apply button. The Save and Apply button is available on every configuration page. Below you will find descriptions of the configuration options on the PX30. (Figure:5.2)

### 5.5.1 Bluetooth IP Settings

The Bluetooth IP settings page is used to configure how the client device, connected to the PX30, and the wireless gateway itself retrieves IP settings and IP related information.

### Client IP Assignment Method

Client IP Assignment Method is used to configure how the wireless gateway and the client connected to this device will retrieve IP related information.

**DHCP Proxy -**
The wireless gateway retrieves its IP number from a DHCP server. The client device connected to the wireless gateway will be assigned a public IP-address.
**NOTE!** If DHCP proxy is enabled there will no longer be possible to connect to the admin pages using the URL http//:<card-ip>/admin instead the host name and domain must be used to connect to the admin pages. See Control panel, DNS settings for further information about the PX30 hostname.

**Static -**
(Default value) The IP number of the Bluetooth card is set to the value entered in the Card IP text field. The client device will be assigned a private IP address between values specified in "Lease Start" and "Lease End" text fields on the Bluetooth IP Settings page. If this option is used there will be possible to connect to the admin pages via the http://<card-ip>/admin URL. By default the value in the Card IP text field is set to 10.0.1.10, thus to connect to the admin pages the URL http://10.0.1.10/admin is used.

**Self -**
IP address will be retrieved from the settings entered in the Card IP text field on the Bluetooth Ip Settings page. The client device connected to the wireless gateway will not retrieve a IP address if this option is used. To be able to browse the Internet the client must specify a valid IP address on the client device. The fields Lease Start and Lease End will not be used if this option is selected

**Card IP -**
In the Card IP text field on the Bluetooth IP settings page the IP address of the Bluetooth card can be specified. If the Client Assignment Method is set to DHCP proxy the IP address specified in this field will not be used.

**Lease Start -**
In the Lease Start text field on the Bluetooth IP settings page, this value is the first IP address that a client will be assigned when connecting to the PX30. This applies only when the assignment method is static. This field will not be used if the Assignment Method is set to DHCP proxy or Self assignment.

**Lease End -**
In the Lease End text field on the Bluetooth IP settings page, this value is the last IP address that a client will be assigned when connecting to the PX30. This applies only when the assignment method is set to Static. This field will not be used if the Client Assignment Method is set to DHCP proxy or Self assignment.

### 5.5.2 Bluetooth Stack Configuration

**Friendly name -**
The Friendly Name text field on the Bluetooth Stack Configuration page is used to assign a name to the wireless gateway. This name will be shown when a client device searches for other Bluetooth devices in the area. The name should be unique and easy to remember, for example: Possio BT-gateway.

**PIN code -**
The PIN code text field on the Bluetooth Stack Configuration page is used to assign a PIN code to the wireless gateway. The client device has to enter this PIN code to be able to establish a Bluetooth link to the wireless gateway. The PIN code is also used when you pair your device with the wireless gateway. The default PIN code is set to: 1234.

**Discoverable -**
The Discoverable option on the Bluetooth Stack Configuration page shall be enabled to make the wireless gateway discoverable to other Bluetooth devices performing an inquiry. If the Discoverable option is disabled the wireless gateway will not be visible to other. Bluetooth devices.

**Connectable -**
The Connectible option on the Bluetooth Stack Configuration page shall be enabled to make it possible for other devices to connect via Bluetooth to the wireless gateway. If this option is disabled it will be possible for Bluetooth client devices to find the wireless gateway during a service search but NOT to connect to it.

**RoleSwitch -**
The Role switch option on the Bluetooth Stack Configuration page must be enabled if several Bluetooth clients will be able to connect to the wireless gateway at the same time. If this option is disabled only one Bluetooth client at the time can connect to the wireless gateway. By default Role switch is disabled. This feature exists mainly to support a wider range of Bluetooth cards. Bluetooth clients that do not support role switch will NOT be able to connect to the wireless gateway if this feature is turned on.

### 5.5.3 User Authorization

The User Authorization page is used to restrict end user access to the wireless gateway.

**Use PPP auth -**
The Use PPP auth option on the User Authorization page shall be enabled if limited access to the wireless gateway is wanted. If this option is enabled the user connecting to the wireless gateway will be prompted for a user name and password when trying to connect. If this option is disabled it will be possible to connect to the wireless gateway without a username and password. This option is disabled by default. To enable user authorization remember to submit name and password.

**Name -**
Enter the username the Bluetooth client have to submit when trying to connect to the wireless gateway.

**Password -**
Enter a password that the Bluetooth client have to submit when connecting to the wireless gateway PX30.

**Confirm password -**
This password must match the password entered in the Password field, otherwise the password will be unchanged.

**Use list -**
This is a list of all users available that have access to the wireless gateway. If you want to remove one or more users, select them from the list and press the Save and Apply button.

### 5.5.4 Bluetooth Services

The Bluetooth Service configuration page is used to configure Bluetooth security on the PX30. By default there are two Bluetooth services installed on the PX30, LAP service and DUN service.

**No Security** -
No Security is used. This option is enabled by default.

**Authentication** -
This option enables authentication. If this option is enabled the user must submit a PIN-code to be able to connect to the wireless gateway. To set the PIN code go to the Control panel/Bluetooth stack configuration admin page.

**Authentication and Encryption** -
If Authentication and Encryption option is enabled the Bluetooth link will be encrypted.

**User list** -
This is a list of currently connected users. To disconnect one or more users, select them and press the Save and apply button.

### 5.5.5 AP IP Settings

This module is used for setting IP address and netmask for the Wireless LAN interface. If you make changes to settings described in this section you will not be able to connect to the PX30 in the same way as described in the "Getting started" section in this user's guide.

| | |
|---|---|
| IP | Set the IP of the Wireless LAN interface |
| Subnet mask | Subnet mask of the Wireless LAN interface |

### 5.5.6 AP Wireless Settings

Module for setting wireless properties. If you make changes to settings described in this section you will not be able to connect to the PX30 in the same way as described in the "Getting started" section in this user's guide.

| | |
|---|---|
| ESSID: | The essid that should be used to connect to this device. |
| Encryption key: | The encryption key that should be used by the device. This should be entered as a hex value (0-9, a-f), for weak encryption enter 10 digits, for strong encryption enter 26 digits. |
| Channel: | The WLAN channel to use. This number should be between 1-13. |
| Ble LED blink: | Turns on and off the Blue LED WLAN traffic indication. |

### 5.5.7 DHCP Server Settings

This module is used for DHCP settings.

| | |
|---|---|
| Lease start address | The first IP address in the address range that the DHCP server should give out. |
| Lease end address | The last IP address in the address range that the DHCP server should give out. |
| Default lease time | Default DHCP lease time in seconds. |
| Max lease time | Maximum DHCP lease time in seconds. |
| Domain name | The domain name that the DHCP server should use. |

### 5.5.8 DNS Settings

The DNS Settings page is used for DNS settings. The domain and Host name could be used to connect to the admin pages via a browser. To connect to the admin pages with host name and domain the following URL shall be used: http://host-name.domain-name/admin. Remember that the IP-address also could be used to connect to the wireless gateway by submitting the following URL: http://<IP-address>/admin in a browser. The options DNS Address 1 and DNS Address 2 on the DNS Settings page is NOT used if DHCP is enabled.

**Domain -**
Set the domain name of your device. If you do not know the correct network domain name please consult your network administrator. Example: yourcompany.com

**Host name -**
Set the host name of your PX30. For example: “Possio-PX30”

**DNS Address 1 -**
Address of primary DNS server, not used if DHCP is enabled.

**DNS Address 2 -**
Address of secondary DNS server, not used if DHCP is enabled.

### 5.5.9 Ethernet Settings

The Ethernet Settings page has options for IP-setting configuration of the Ethernet network interface of the wireless gateway.

**DHCP Enabled -**
Enable DHCP if your wireless gateway shall retrieve IP and DNS information from a DHCP server. If this option is enabled the fields IP Address, Subnet mask and Gateway Address will not be used. If the DHCP option is disabled these fields must be set to correct values. If you do not want to use DHCP please consult your network administrator for information regarding IP address, Subnet mask and Gateway address.

**IP Address -**
The IP address of the network interface(only used if DHCP is off). Ex: 192.168.0.10

**Subnet Mask -**
Subnet mask of the network interface (only used if DHCP is off). Example: 255.255.255.0

**Gateway Address -**
Gateway Address of the network interface (only used if DHCP is off). Example: 192.168.0.1

### 5.5.10 Advanced

This module consists of three submodules, Firewall and Routing options, MAC Blocking and Port Blocking.

#### Firewall and Routing options

The WLAN Services Gateway (AP) can work in three modes. NAT On, NAT Off and NAT Off (No firewall). NAT stands for Network Address Translation and enables mobile units to get private Internet addresses.

If NAT is turned on (default) then the mobile units connecting to the AP will get private Internet addresses as specified in the DHCP Server Settings tab.

| | |
|---|---|
| AP mode: | Settings for NAT on/off. When NAT is turned off, you can also disable the firewall and hence allow all traffic to pass to and through the PX30. When the firewall is turned on, you can open and close ports by entering the Port Blocking page. |
| WLAN client crosstalk: | If enabled(default) wireless clients can communicate with each other. |

#### MAC Blocking

This tab is used for MAC address blocking. When MAC address blocking is enabled, only clients that are listed in the allowed MAC list are able to connect to the device.

| | |
|---|---|
| Use MAC address blocking: | Set to 'yes' to enable MAC address blocking. |
| MAC address: | Enter a MAC address that you want to add to the allowed list. The address should be on the format: XX:XX:XX:XX:XX:XX. |
| Nickname: | A nickname for the MAC address that. This might be easier to remember that the MAC address itself. |
| MAC list: | A list of all allowed MAC addresses. To remove a MAC address from the list, simply select it and press 'Save and Apply'. |

#### Port Blocking

By default the WLAN Services Gateway (AP) has a strict security policy. It has a built in firewall that accepts requests made from the inside of the AP (from mobile

units) to the Ethernet side (internet), from mobile units to the AP and from AP to mobile units. Requests made from the AP to Ethernet and vice versa are by default blocked. By adding ports in the text fields separated by "," and/or ":"(for port ranges), ports are opened. Only tcp and udp ports are affected.

| | |
|---|---|
| Ethernet to AP settings | Type 123,90,91,92,93 to open ports from Ethernet to the AP in the Add ports to open field. If you would like to remove open ports select the port(s) you would like to remove in the Select ports to remove Select Box |
| AP to Ethernet Settings | Type ports you would like to open in the Add ports to open field. Remove ports in the Select ports to remove Select Box. |

When the Save and Apply Settings button is pressed it will take approximately 15 sec for the firewall to restart.

### 5.5.11 Password Settings

The Password Settings page on is used for change the login password used on the admin pages. The password must contain six or more characters. Press Save and Apply button to change password.

**Old Password -**
Enter the old password.

**New Password -**
Change password for the admin page.

**Confirm password -**
Confirm the new password typed in the New Password text field

### 5.5.12 Reboot

Reboots your PX30. It will take about ten seconds before the PX30 reboots. The red LED indicates that the PX30 have started to reboot. The PX30 can be used again when the green LED is lit.

### 5.5.13 Restore Defaults

Restores the PX30 to its factory settings. Please note that if you restore to default settings you will lose all your previous settings. You can also restore defaults by pressing the power button between 8 to 12 seconds. When releasing the settings will be restored and the PX30 will restart. If you have changed the connection

settings for the PX30 and no longer can connect to it. The reset will make it possible to connect to the PX30 in the same way as described in the "Getting Started" section in this User's Guide.

### 5.5.14 Clock

The Clock synchronization pages is used to configure the System clock of the wireless gateway. Since the wireless gateway do not have a built in system clock this feature is enabled by default. If you would like to set the system clock manually please disable the options Sync with time server and the option Use PX NTP to sync and set the clock under system/clock/Set date/time. If the wireless gateway do not have access to the Internet the system clock settings will be lost when rebooting the wireless gateway.

#### Set Date/Time

This option page is used to manually set time and date for the PX30.

**New Date** -
Set new date in YYYY-MM-DD format. Example: 2003-12-31

**New Time** -
Set new time in HH:MM:SS format (24 h format). Example: 10:46:47

#### Clock Synchronization

This option page is used to configure automatic clock synchronization.

**Sync with time server** -
Set to Yes if you want to enable automatic clock synchronization.

**Time server address** -
Address of the time (NTP) server the PX30 uses to synchronize time. Ex: time-a.nist.gov

**Use PX NTP to sync** -
Select Yes if you want your PX30s to sync against each other if the NTP server is not reachable.

**Refresh interval** -
Time between time syncs.

## 5.6 Applications

Under the Application tab on the PX30 applications installed on the platform will be visible. To launch a application choose the corresponding link.

### 5.6.1 Upgrade

The PX30 comes with one application installed by default, the Upgrade application. This application makes it possible to upgrade the PX30 remotely by submitting a URL provided by Possio AB. When a correct URL is submitted, the current system version and the system version available for download will be presented. If continue is pressed the system will be upgraded. While upgrading the device do not reboot or interact with the settings on the admin pages. The Upgrade application continuously give the user feedback on what's going on. The RED led on PX30 will indicate when the flashing of the device take place. When the device is upgraded the Green LED is lit. During a upgrade all settings on the PX30 will be lost and therefore the URL displaying feedback to the user will no longer be valid. This means that the web interface may show misleading information when the device is actually successfully upgraded. When the Green LED indicates that the device is upgraded please reboot the PX30.

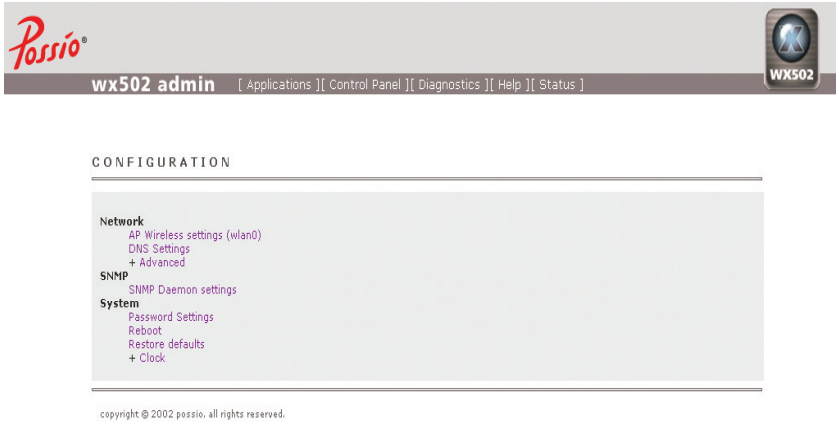



Figure 5.2: Screen shot of the PX30 Control panel tab

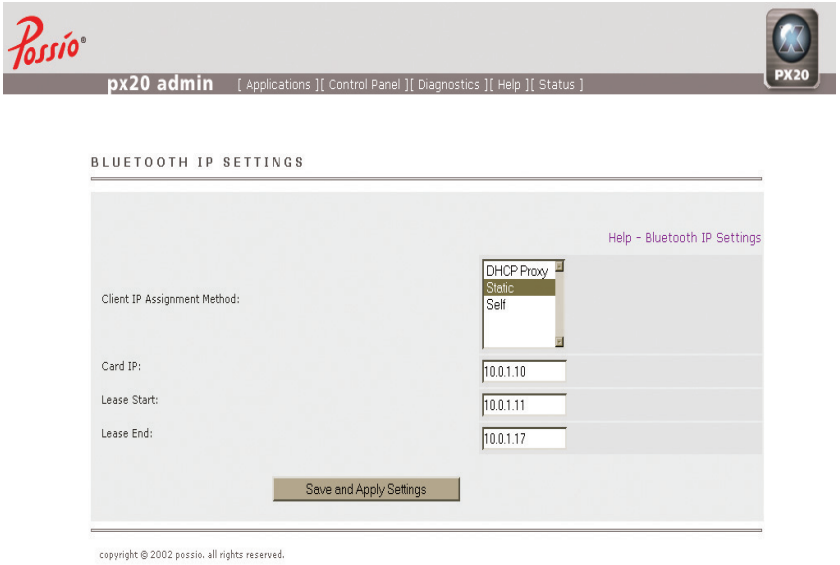



Figure 5.3: Screen shot of the PX30 Bluetooth ip settings tab

# Chapter 6

# OSGI Administration

The OSGi server is managed through a web interface. If you go to a page called /smfadmin instead of admin the OSGi administration page will load. If you have a Bluetooth connection you would go to http://10.0.1.10/smfadmin and if you are accessing the PX30 over WLAN, go to http://<your-PX30-ip>/smfadmin.

When you are trying to access the SMF Admin page a password box will appear. When accessing the page for the first time use the following log in information:

**username** –
: "smfadmin"

**password** –
: "password"

It is strongly recommended that you change this password! To change the password go to http://<PX30-ip>/smfadmin/password and enter the new username and password. Do not forget your password. At the SMF administration page you will see a list of all installed bundles and their state. Below the list of bundles you will find a list of registrered OSGi services. At the bottom there are two links, Administration and Log Data. Administration is the current page and Log Data is a link to a page that shows the OSGi log. (Figure: 6.1)

## 6.1 Bundle Administration

In the first table, the one showing all bundles, there are four buttons associated with each bundle. Start, Stop, Update and Uninstall. This is what the buttons do:

**Start** –
: Pressing this button will start the bundle. If the bundle is depending on services that is not available the bundle will not be started.

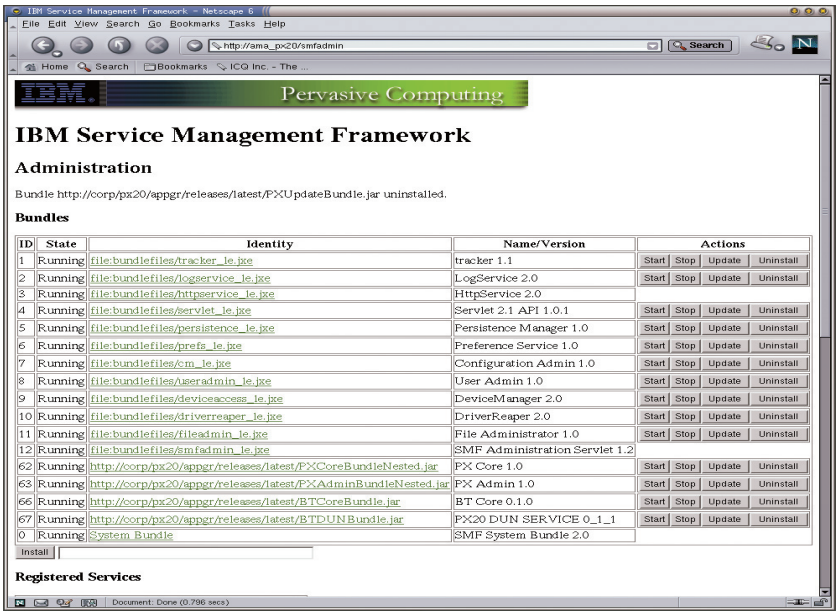



Figure 6.1: Screen shot of the PX30 SMFadmin tool

**Stop** –
This will stop the bundle.

**Update** –
The newest bundle will be downloaded and installed (if available).

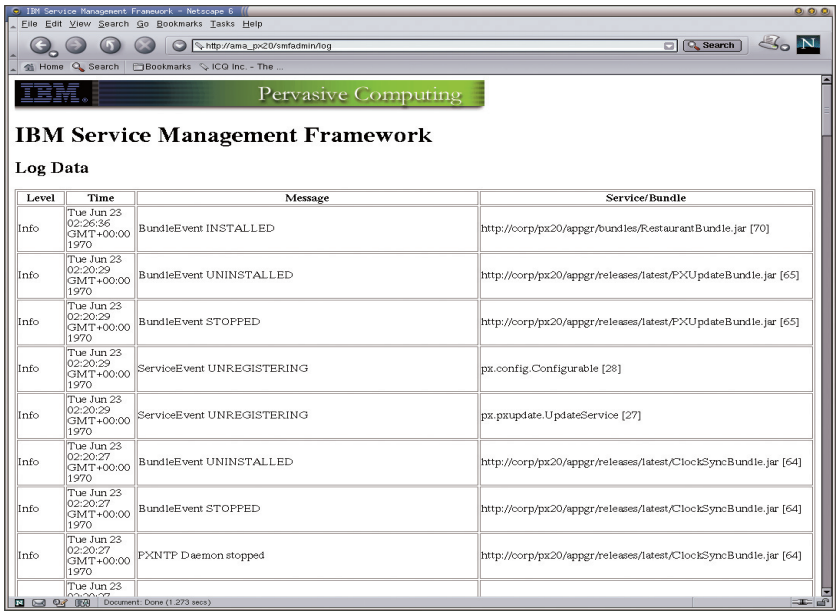
**Uninstall** –
This will uninstall the bundle from the system.

Below the top table is a button labled Install and a textfield. These are used for installing new bundles. To install a new bundle, just write the URL in the textfield:

**Example:** –http://www.yourcorp.com/bundles/myByndle.jar or

**Example** –ftp://ftp.yourcorp.se/pub/bundles/HelloWorldBundle.jar

After typing in the URL press the install button. When the bundle is installed it will appear in the bundle table and you can press Start to activate it.




| Level | Time | Message | Service/Bundle |
|---|---|---|---|
| Info | Tue Jun 23 02:26:36 GMT+00:00 1970 | BundleEvent INSTALLED | http://corp/px20/appgr/bundles/RestaurantBundle.jar [70] |
| Info | Tue Jun 23 02:20:29 GMT+00:00 1970 | BundleEvent UNINSTALLED | http://corp/px20/appgr/releases/latest/PXUpdateBundle.jar [65] |
| Info | Tue Jun 23 02:20:29 GMT+00:00 1970 | BundleEvent STOPPED | http://corp/px20/appgr/releases/latest/PXUpdateBundle.jar [65] |
| Info | Tue Jun 23 02:20:29 GMT+00:00 1970 | ServiceEvent UNREGISTERING | px.config.Configurable [28] |
| Info | Tue Jun 23 02:20:29 GMT+00:00 1970 | ServiceEvent UNREGISTERING | px.pxupdate.UpdateService [27] |
| Info | Tue Jun 23 02:20:27 GMT+00:00 1970 | BundleEvent UNINSTALLED | http://corp/px20/appgr/releases/latest/ClockSyncBundle.jar [64] |
| Info | Tue Jun 23 02:20:27 GMT+00:00 1970 | BundleEvent STOPPED | http://corp/px20/appgr/releases/latest/ClockSyncBundle.jar [64] |
| Info | Tue Jun 23 02:20:27 GMT+00:00 1970 | PXNTP Daemon stopped | http://corp/px20/appgr/releases/latest/ClockSyncBundle.jar [64] |
| | Tue Jun 23 | | |

Figure 6.2: Screen shot of the PX30 SMFadmin Log

## 6.2 Log

Pressing the Log Data link at the bottom of the /smfadmin page will bring up the OSGi log. (Figure: 6.2) The log has four levels: Debug, Info, Warning and Error, where error is the most severe message. The log shows (except a message), the time that the message was put in the log and what bundle put it there.

# Appendix A

# Glossary of terms

**AP** -Access Point.

**API** -Application Programming Interface. The specification for how a programmer writes an application accessing the behavior and state of classes and objects.

**CDC** -Connected Device Configuration. The CDC is a J2ME configuration and is comprised of a virtual machine, core libraries, classes and API:s. Designed for devices with constrained CPU and memory resources.

**DHCP** -Dynamic Host Configuration Protocol allows a computer to join an IP-based network without a pre-configured IP address. The protocol assigns unique IP addresses to devices, and releases and renews these addresses as devices leave and join the network.

**DNS** -Domain Name System translates Internet domain and host names to IP addresses.

**ESSID** -Extended Server Set ID.

**FP** -Foundation Profile. The FP is a J2ME profile and contains sets of classes.

**HTTP** -HyperText Transfer Protocol.

**IP** -Internet Protocol.

**IP address** -An address defined in the Internet Protocol, like (10.0.1.10)

**IrDA** -Infrared Data Association.

**ISA** -Industry Standard Architecture, an expansion slot on the motherboard of your computer.

**J2ME** -Java 2 Micro Edition is a small Java application environment. It is a framework for the deployment and use of Java technology in devices with limited memory.

**J9** -A Java Virtual Machine from IBM.

**JAR** -Java Archive, files are compressed with the ZIP-file format, so you can use them for 'ZIP-like' tasks such as lossless data compression, archiving, decompres- sion and archive unpacking. i http://java.sun.com/products/jdk/1.1/docs/guide/jar/

**JDK** -
Java Development Kit.

**JNI** -
The Java Native Interface is the native programming interface for Java that is part of the JDK. By writing programs using JNI you ensure that your code is completely portable across all platforms.

**JVM** -
Java Virtual Machine. Part of the Java Runtime Environment, responsible for interpreting bytecodes.

**LAN** -
Local Area Network.

**LED** -
Light Emitting Diode.

**Manifest** -
The manifest is a special textfile that contains information about the files packaged in a JAR file. By tailoring this meta information about the manifest contents you enable the JAR file for a variety of purposes in
http://java.sun.com/docs/books/tutorial/jar/basics/manifest.html

**MIB** -
Management Information Base.

**NAT** -
Network Address Translation

**NIC** -
Network Interface Card or network interface adapter. The NIC is an expansion card for the ISA, PCI or PCMCIA slot which provides high-speed network serv- ices.

**OSGi** -Open Services Gateway initiative.

**PCI** -Peripheral Component Interconnect is an expansion slot standard for personal computers.

**PCMCIA** -Personal Computer Memory Card International Association. A standard for expansion slots in laptop computers, PDAs, and other small devices.

**PDA** -Personal Digital Assistant.

**PIN** -Personal Identification Number.

**PPP** -Point-to-Point Protocol.

**SMF** -Standard Messaging Format.

**SNMP** -Simple Network Management Protocol.

**TCP** -Transmission Control Protocol.

**URL** -Uniform Resource Locator.

**WLAN** -Wireless Local Area Network, also named 802.11b or WiFi.