

AXIS OfficeBasic USB Wireless User's Manual

Regulatory Information



Safety Notices - Take some time to read through the safety notices before installing the AXIS OfficeBasic USB Wireless. Please observe all safety markings and instructions when using this product.

Important! - must be observed to avoid operational impairment. Do not proceed any of the above notices, until you have fully understood the implications.

Radio Transmission Regulatory information - Tested to comply with FCC Standards FOR HOME OR OFFICE USE.

This product must be installed and used in strict accordance with the instructions given in the user documentation. The AXIS OfficeBasic USB Wireless complies with the following radio frequency and safety standards:

Europe - This digital equipment fulfils the requirements for radiated emission according to limit B of EN55022, and the requirements for immunity according to EN55024 residential, commercial, and light industry.

Technical requirements for radio equipment according to EN 300 328-1 (2001-12) and 300 328-2 (2001-12)

USA - Federal Communications Commission FCC. This device complies with Part 15 of FCC Rules. Operation of the device is subject to the following two conditions:

- (1) This device may not cause harmful interference
- (2) This device must accept any interference that may cause undesired operation.

Important! - The channel must be set according to the radio frequency requirements in your country:

Japan - This is a class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Liability - Every care has been taken in the preparation of this manual; if you detect any inaccuracies or omissions, please inform your local Axis office, which can be found on the cover of this document. Axis Communications AB cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. Axis Communications AB makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Axis Communications AB shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Safety: EN60950

Trademark Acknowledgments - Apple, Ethernet, Hewlett Packard, Mac OS, Microsoft Windows, are registered trademarks of the respective holders.

Support Services - Should you require technical assistance, please contact your Axis dealer. If your questions cannot be answered immediately, your Axis dealer will forward your queries through the appropriate channels to ensure you a rapid response. If you are connected to the Internet, you can find on-line manuals, technical support, software updates, application software, corporate information, etc. at <http://www.axis.com/techsup>

USERS MANUAL AXIS OBW
Part No: 20426 r1
Date: May 2004 Copyright © Axis Communications AB, 2004

Table of Contents

Product Overview	5
Print Server Management	5
Wireless Operating Modes	5
Infrastructure (Access Point)	6
Ad Hoc (Peer to Peer)	6
Wireless Frequency Bands and Channels	7
Print Server Setup	8
Hardware Inventory	8
Quick Installation Overview for Windows and Mac OS	8
Hardware Installation	9
Print Server's Serial Number	9
IP Addressing	10
Obtaining an IP Address Using DHCP	10
Set a Temporary IP Address with Arp/Ping:	11
Windows Setup	13
Setup in Windows 2003/2000/XP	13
Setup in Windows NT	17
Setup in Windows 98/Me	18
Alternative Windows Printing Methods	19
Standard TCP/IP - Raw TCP Method in Windows 2000/XP/2003	19
Adding Printers in Windows NT4 Using the Microsoft LPR Monitor	23
Adding Printers in W2K/XP Using the Microsoft LPR Monitor	23
IPP (Internet Printing Protocol) Configuration	25
Mac OS Setup	27

AppleTalk Printing (Mac OS X).....	27
IP Printing (Mac OS X).....	28
Installation on MacOS 9.1 or older, using AppleTalk	28
Choosing a Printer	28
Print Server Management	30
Print Server Management from a Web Browser	30
Status Menu	31
Setup Menu	33
Maintenance	38
Restart	38
Print server management using the Reset button	39
Reset the Print Server:	39
Print a Test Page:	39
Perform a Factory Default:	40
Upgrading the Print Server's Firmware	41
Upgrading the Firmware	41
Appendix 1: Print Server Setup in Ad Hoc Mode	43
Appendix 2: Enabling WEP in the AXIS OfficeBasic USB Wireless	45
Appendix 3: Troubleshooting	46
Frequently Asked Questions	48
Technical Specifications	49
Index	51

Product Overview

This User's Manual includes installation instructions for the AXIS OfficeBasic USB Wireless print server in Microsoft **Windows** (95, 98, NT, Me, 2000, XP, Server 2003) and **Mac OS** (TCP/IP and AppleTalk) environments.

The instructions in this manual are based on the settings found in a new and non-configured AXIS OfficeBasic USB Wireless. To establish this status in a previously configured AXIS OfficeBasic USB Wireless, you can reset it to factory default settings. See for *Perform a Factory Default*; on page 40 for instructions.

Print Server Management

The embedded web server provides access to configuration and management pages for the print server and the connected printer, see *Print Server Management from a Web Browser*, on page 30,

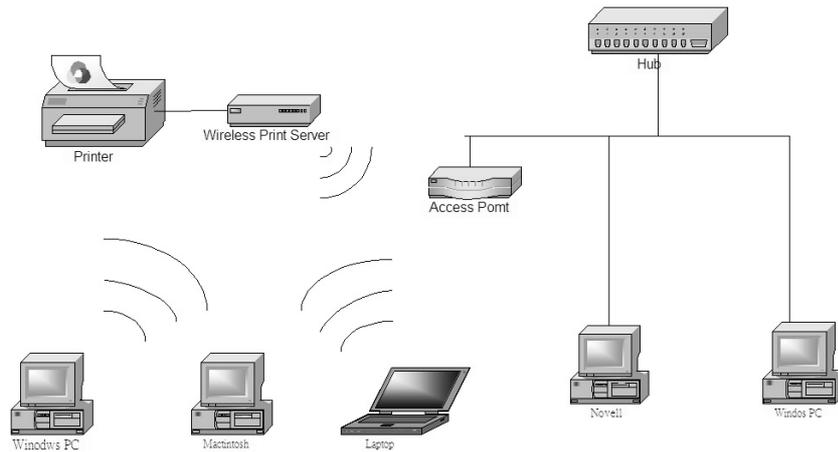
Alternatively, the print server can be configured from the provided Windows-based software OBW Setup Wizard, see *Windows Setup*, on page 13.

Wireless Operating Modes

The AXIS OfficeBasic USB Wireless print server communicates either in *Infrastructure mode*, where there is an 802.11b Access point acting as a bridge between the workstation/laptop and the print server, or *Ad-hoc mode*, where the workstation/laptop communicates directly with the print server.

Infrastructure (Access Point)

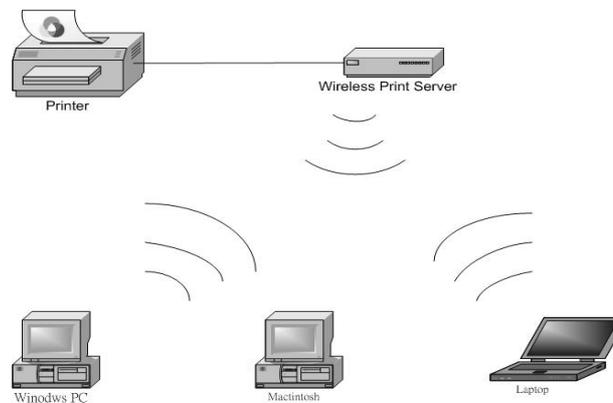
Workstations and laptops communicate over the WLAN and the LAN through an Access Point with the print server.



Infrastructure mode is most commonly used, both for printing and configuration purposes. See *Windows Setup*, on page 13 or *Mac OS Setup*, on page 27 for installation instructions.

Ad Hoc (Peer to Peer)

Workstations and laptop computers communicate directly over the WLAN with the print server.



Ad Hoc is used for configuration and for printing purposes. If you lose contact with the print server, you can try reaching it from the Ad Hoc mode, see *Appendix 1: Print Server Setup in Ad Hoc Mode*, on page 43.

Wireless Frequency Bands and Channels

When setting up a wireless network, it is important that the radio frequency channel setting is the same on all communicating clients and that the channel is set according to the requirements in your country.

Frequency bands and channels:

Country	Frequency	Available Channels	Default Channel
Europe	2.412-2.472 GHz	1-13	11
France	2.457-2.472 GHz	10-13 (indoor use*)	11
Japan	2.484 GHz	14	14
US/Canada	2.412-2.462 GHz	1-11	11

* (France) outdoor use permitted on private property with prior authorization

Print Server Setup

Hardware Inventory

Unpack and check all the items using the following check list. Contact your dealer if anything is missing or damaged. All packing materials are recyclable.

Print Server	Model	Part Number
AXIS OfficeBasic USB Wireless	PROD UNIT AXIS OB USB W <EUR> ch 1-13	0208-001-01
	PROD UNIT AXIS OB USB W <US> ch 1-11	0208-004-01

Media	Title	Part Number
CD	AXIS OfficeBasic USB Wireless CD	21965
Printed Material	AXIS OfficeBasic USB Wireless User's Guide	21962

Accessories	Description	Part Number
Cable	USB	20208

Power Adapter	Model	Part Number
PS-M	Australia	21822
	Europe	21819
	UK	21820
	USA/Japan	21821

Quick Installation Overview for Windows and Mac OS

Follow these steps to install and configure the AXIS OfficeBasic USB Wireless in Windows or Mac OS.

Step	Windows	Mac OS X
1	<i>Hardware Installation, on page 9</i>	<i>Hardware Installation, on page 9</i>
2	<i>IP Addressing, on page 10</i>	<i>IP Addressing, on page 10</i>
3	<i>Windows Setup, on page 13</i>	<i>Mac OS Setup, on page 27</i>

Hardware Installation

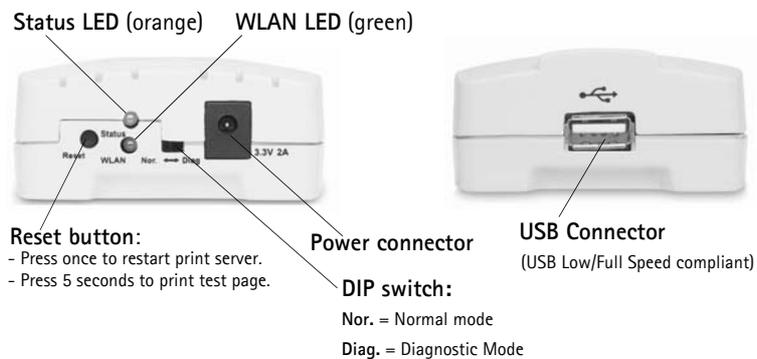
Before you start, you should prepare the following items:

- One Win98/Me/2000/XP/2003 PC with AXIS OfficeBasic USB Wireless CD
 - One 802.11b Access Point*
 - One Printer with a USB Port
- * Alternatively, a laptop with wireless adapter card for Ad Hoc configuration.

1. Turn off the printer's power.
2. Connect the print server to your printer with the supplied USB cable.
3. Turn the printer's power on.
4. Plug the AC power adapter into the power connector on the backside of the wireless print server.
5. Wait 1 minute.
6. Press the print server's external **Reset** button for 5 seconds. A test page will be printed on the connected printer, displaying information about the print server's IP address, firmware number, etc.

Note:

- The Status LED will flicker whenever data is being transmitted and printed.
- When the print server is powered on, the Status LED will flash 5 times as part of the unit's Power On Self Test (POST). If the LED doesn't flash 5 times when you power on the unit, disconnect all cables and repeat the installation procedure described here.



Print Server's Serial Number



All Axis print server's have a unique serial number (S/N), which is displayed on the backside label. The Ethernet address is based on the serial number:

Serial number example:	MAC/Ethernet address:
00408c181cf0	00-40-8c-18-1c-f0 (Windows) 00:40:8c:18:1c:f0 (Mac OS)

IP Addressing

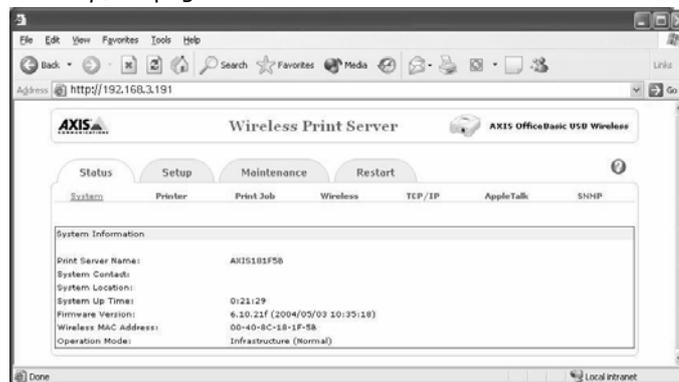
To enable network communication with the print server, it must have a proper IP address. Use one of these methods to assign an IP address to the print server:

Method:	Server Required:	Operating System	Comment:
DHCP	DHCP server	Windows Mac OS	DHCP provides the print server with an IP address automatically from a DHCP server. The print server's DHCP support is enabled by default. Most broadband routers have a built-in DHCP server.
Arp/Ping		Mac OS Windows	Manual assignment of a temporary IP address.

Obtaining an IP Address Using DHCP

If you are working in a network with dynamic IP address assignment, your print server will obtain an IP address automatically when you connect it to the network. Follow these instructions on this page to verify the IP address:

1. Print a test page by pressing the reset button for 5 seconds. Locate the print server's IP address on the test page.
2. Open a web browser (e.g. Internet Explorer).
3. In the Web browser's **Location/Address** field, enter the print server's IP address and press **Enter**.
4. If the **Wireless Print Server** web page appears in your Web browser, the IP address is fully functional. Continue with *Windows Setup*, on page 13 or *Mac OS Setup*, on page 27.



- If the **Wireless Print Server** web page does not appear, you need to set the print server's IP address manually, described in *Set a Temporary IP Address with Arp/Ping*; on page 11.

Set a Temporary IP Address with Arp/Ping:

You can assign a **temporary** IP address to the print server using arp/ping and then access the print server's internal web pages to assign a fixed IP address:

- Locate the print server's serial number (S/N) found on the print server's underside label. The Ethernet address is based on the serial number:

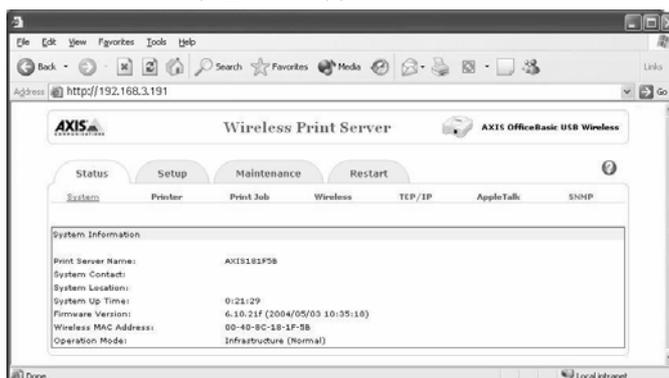
Serial number:	MAC/Ethernet address:
00408c181cf0	00-40-8c-18-1c-f0 (Windows) 00:40:8c:18:1c:f0 (Mac OS X)

- Open a Command Prompt or Terminal and enter the following syntax:

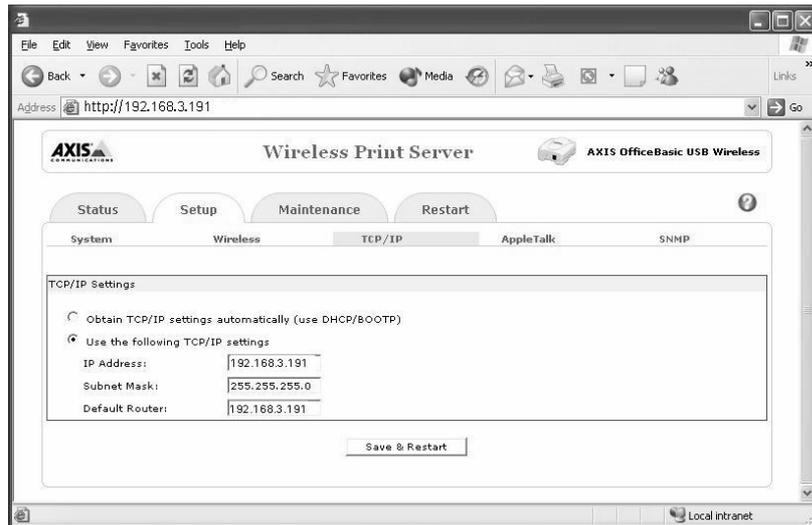
Syntax	Example Windows (Command prompt)
1 arp -s <IP address> <Ethernet address>	arp -s 192.168.3.191 00-40-8c-18-1c-f0
2 ping <IP address>	ping 192.168.3.191

Syntax	Example Mac OS (Terminal)
1 arp -s <IP address> <Ethernet address>	arp -s 192.168.3.191 00:40:8c:18:1c:f0
2 ping <IP address>	ping 192.168.3.191

- The host will return **psname is alive (Mac OS Terminal) or Reply from 192.168.3.191...** (Windows Command prompt) or a similar message. This indicates that a temporary IP address has been set and that communication is established.
- Next, open a web browser (e.g. Internet Explorer).
- In the Web browser's **Location/Address** field, enter the print server's IP address and press **Enter**.
- The print server's web page will appear:



7. Go to Setup | TCP/IP:



8. Select the **Use the following TCP/IP settings** radio-button and enter a valid IP address, Subnet Mask and Default Router.

9. Click **Save and Restart**. The new IP address will be loaded.

10. Check the communication by entering the new IP address in the browser and that the print server's web pages appear again.

- When you execute the `ping` command for the first time, you may experience a significantly longer response time than usual.
- The IP address and serial number used here are sample values. You should acquire a new and unused IP address from your network administrator.

Continue with *Mac OS Setup*, on page 27 or *Windows Setup*, on page 13.

Windows Setup

This chapter describes how to locate and configure the networked printer in Windows over **Infrastructure** mode.

See also *Alternative Windows Printing Methods*, on page 19

For Ad Hoc installation and configuration, see *Appendix 1: Print Server Setup in Ad Hoc Mode*, on page 43.

Setup in Windows 2003/2000/XP

Before You Start:

- Make sure you have an Access Point in your network and that it has a valid IP address. *Example: 192.168.1.100*
- Check that the TCP/IP protocol is installed on your computer.
- Make sure the print server's DIP switch is in Normal mode (Nor.)

1. Insert the AXIS OfficeBasic USB Wireless CD into your CD-drive.
2. Choose **Setup Wizard** to install the wireless print server and configure the connected printer.

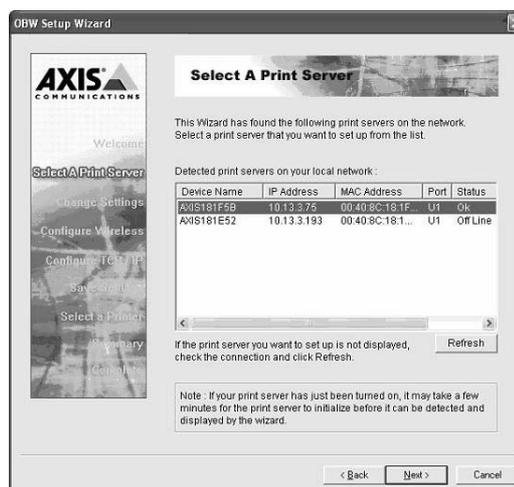
The Wizard will automatically install these components in C:\Program Files\Axis Communications\AXIS OBW Wizard:

- AXIS OBW Wizard.exe
- AXIS OBW Network Printer Port. DLL (Wireless Print Monitor)

After installation, AXIS OBW Wizard will be available from Start | Programs | Axis Communications.

AXIS OBW Wizard will start in the same language as your operating system, see *Technical Specifications*, on page 49 for supported languages.

3. From the **Select A Print Server** screen, select the print server that you want to configure and click **Next**.



4. On the Change Settings screen, select No or Yes:



Click **No** if you want the print server to keep using the assigned DHCP address and keep the default Infrastructure settings:

- Infrastructure mode
- SSID = <ANY>
- Data transmit rate = Auto
- No WEP encryption
- Authentication Type = Open System
- DHCP enabled

Click **Next** in the program until you reach *Figure: Select an already configured printer or click Add New Printer*, on page 15. Follow the instructions from there on.

Click **Yes** if you want change wireless settings or assign a static IP address to the print server:

- On the **Basic Wireless Settings** screen, select **Communications Type** according to your network:
 - Infrastructure
 - 802.11b Ad-hoc
- Enter the proper **SSID** of your wireless network. The default value <ANY> will connect with the Access Point that has the best signal in your wireless network.
 - **Channel**: optional.
 - **Data Transmit Rates**: select Auto, 1,2Mbps, 5.5Mbps or 11Mbps.
- On the **Security and WEP Encryption Settings** page, enable or disable WEP Encryption, configure according to your wireless network and click **Next**.
- On the **802.1X Settings** page, select **None** or **MD5** as your authentication type. If you choose MD5 you must enter the Login Name and Password used when logging on to the Radius server.
- Specify a fixed or dynamic IP address for the print server, a fixed IP address is highly recommended. Click **Next**.

Click **Next** in the program until you reach *Figure: Select an already configured printer or click Add New Printer*, on page 15. Follow the instructions from there on.

Notes:

- If you use WEP encryption on your WLAN and by mistake change the WEP format or keys in the print server, you will lose contact with the print server. Follow the steps in *Reinstating contact with the wireless network*, on page 46 to recover the connection.
 - The IP address of the wireless print server must be within the same subnet as your wireless adapter
 - A quick way of finding the print server's IP address is to press the reset button for 5 seconds to print a test page. The print server's DHCP address or static IP address is normally displayed on the test page. See page 9 for details.
5. In the Wizard, select an already configured printer from the list, click **Next** and then **Finish** to complete the installation.
- or**
- Select **Add New Printer** if the print server is connected to a printer that hasn't been installed before and does not appear in the list.

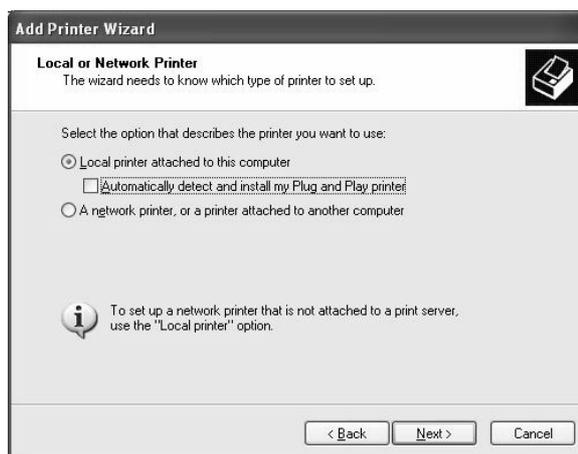


Figure: Select an already configured printer or click Add New Printer

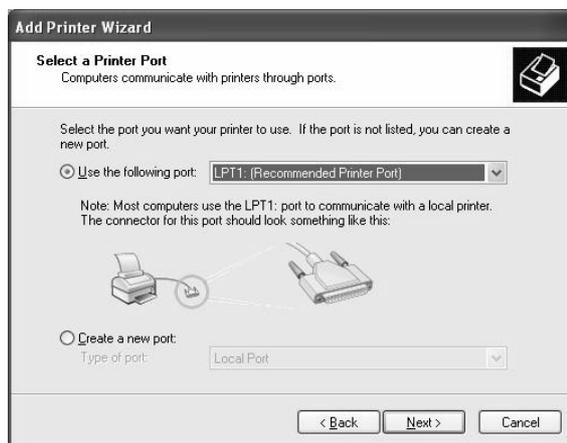
- For Windows NT/98/Me, go to page 17.

For Windows 2000/XP/2003:

Click **Add New Printer** to launch **Windows Add Printer Wizard**. Click **Next** and select **Local Printer**, make sure the **Automatically detect and install my Plug and Play printer** check box is **NOT** checked:



- Make sure the **Use the following port** radio-button is clicked and select **LPT1: (Recommended Printer Port)** from the drop-down list. Click **Next**.



- Select **Manufacturer** and **Printer** from the driver lists. Click **Next**.



9. If you already have the printer's driver installed, you will be asked whether to keep it or to replace it. Click **Next**. Supply a name for the printer and choose whether you want to make it your default printer. Click **Next**.
10. Choose whether you want to share the printer with other network users, print a test page, etc. Select the appropriate radio button and click **Next** and **Finish**.
11. In AXIS OBW Wizard, finish the installation by highlighting the installed printer in the **Select a Printer** list and click **Next => Finish**.



12. From Windows, go to **Start | Printers (and Faxes)** and highlight your newly installed printer.
13. Right-click, select **Properties** and verify that the AXIS OfficeBasic USB Wireless port appears as **OBWXXXXXX-1** (the Xs represent the last six digits of the print server's serial number).
14. Print a test page to verify the configuration.

If you wish to install more print servers, start AXIS OBW Wizard from your Windows Start menu: **Start | Programs | Axis Communications | AXIS OBW Wizard** and repeat the installation procedure.

Setup in Windows NT

1. Configure according to the description in *Windows Setup*, on page 13 until you reach *Figure: Select an already configured printer or click Add New Printer*, on page 15. Click **Add New Printer** to launch **Windows Add Printer Wizard**.
2. Select **My Computer** and click **Next**.
3. Select **LPT1** as Local Port and click **Next**.
4. Select Printer Manufacturer and Printer model, click **Next** and **Finish**.
5. In the AXIS OBW Wizard, select the newly added printer from the list, click **Next** and **Finish** to complete the installation.
6. From Windows, go to **Start | Settings | Printers** and highlight your newly installed printer.

7. Right-click, select **Properties** and verify that the AXIS OfficeBasic USB Wireless port appears as **OBWXXXXXX-1** (the Xs represent the last six digits of the print server's serial number).
8. Print a test page to verify the configuration.

Setup in Windows 98/Me

1. Configure according to the description in *Windows Setup*, on page 13 until you reach *Figure: Select an already configured printer or click Add New Printer*, on page 15. Click **Add New Printer** to launch **Windows Add Printer Wizard**.
2. Select **Local Printer** and click **Next**.
3. Select **Printer Manufacturer** and **Printer model**. Do not print a test page.
4. Select **LPT1 (ECP Printer Port)** and click **Next** and **Finish** to complete the installation.
5. From Windows, go to **Start | Settings | Printers** and highlight your newly installed printer.
6. Right-click, select **Properties** and verify that the AXIS OfficeBasic USB Wireless port appears as **OBWXXXXXX-1** (the Xs represent the last six digits of the print server's serial number).
7. Print a test page to verify the configuration.

Alternative Windows Printing Methods

Standard TCP/IP – Raw TCP Method in Windows 2000/XP/2003, on page 19

Adding Printers in Windows NT4 Using the Microsoft LPR Monitor, on page 23

IPP (Internet Printing Protocol) Configuration, on page 25

Standard TCP/IP – Raw TCP Method in Windows 2000/XP/2003

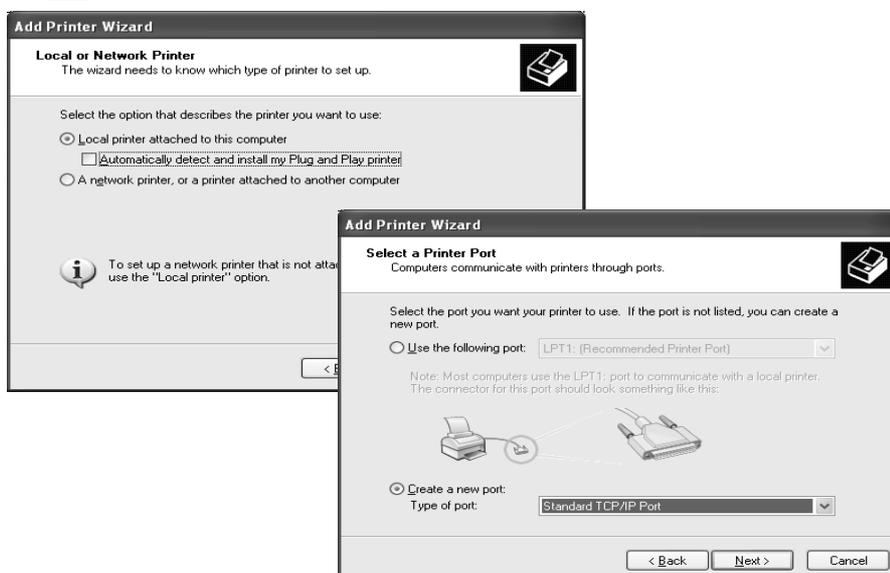
To add a network printer to your printer list in Windows 2000/ Windows XP/2003 using Standard TCP/IP – Raw TCP:

1. Make sure your print server has a valid IP address, see *IP Addressing*, on page 10.
2. **Windows XP/ Server 2003:**
Go to **Start | (Settings) | Printers and Faxes** and click the **Add a Printer** icon to start the **Add Printer Wizard**. Click **Next**.

Windows 2000:

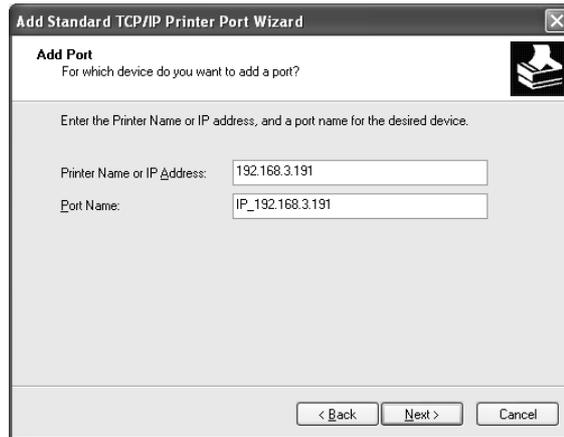
Go to **Start | Settings | Printers** and click the **Add Printer** icon to start the **Add Printer Wizard**. Click **Next**.

3. Select **Local Printer attached to this computer** and make sure the **Automatically detect and install my Plug and Play printer** check box is not checked. Click **Next**.

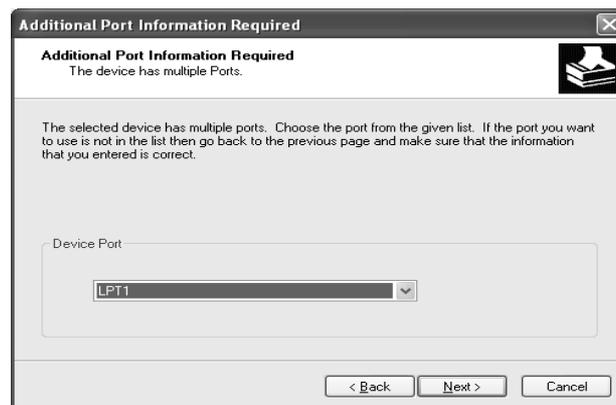


4. Click the **Create a new port** radio button and select **Standard TCP/IP Port** from the list. Click **Next** and the **Add Standard TCP/IP Printer Port Wizard** starts. Click **Next**.

- In the **Printer Name or IP Address** field, enter the IP address of the AXIS OfficeBasic USB Wireless (*Example: 192.168.3.191*)
The **Port Name** field will be filled in automatically. Click **Next**.



- Select **Device Port: LPT1** (if you want the USB port to appear as an option you must install Axis software*). Click **Next**

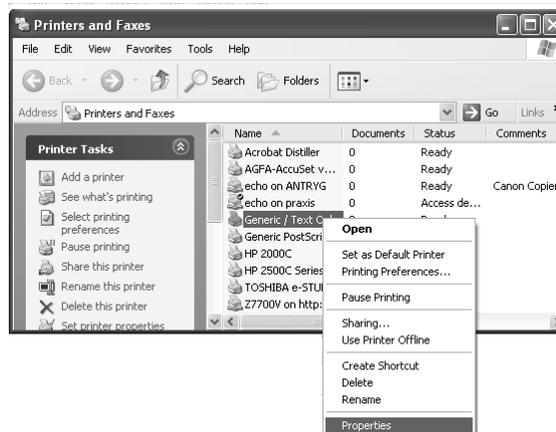


- Select **Manufacturer and Printer** from the lists. Click **Next** and **Finish**.
- If you already have the printer's driver installed, you will be asked whether to keep it or to replace it. Click **Next**. Supply a name for the printer and choose whether you want to make it your default printer. Click **Next**.

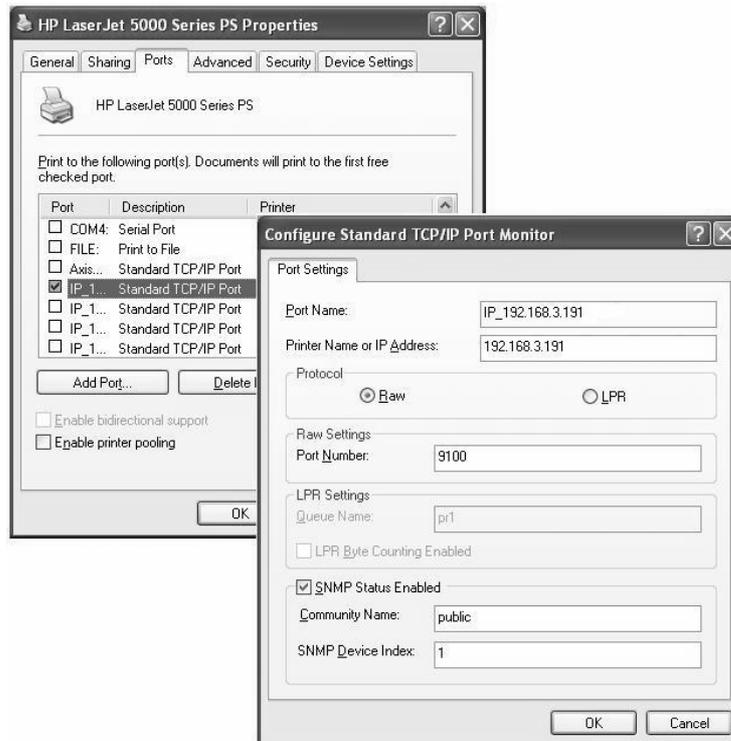
- Choose whether you want to share the printer with other network users, print a test page, etc. Select the appropriate radio button and click **Next** and **Finish**.



- Next, from **Printers (and Faxes)**, highlight the installed printer and right-click, choose **Properties**, then **Ports | Configure Port**.



11. Change Protocol from LPR to Raw. Port number 9100 is automatically selected. Click OK.



12. Print a test page to verify the installation.

* If you want the USB port to appear as an option in the Device Port drop-down list you can install AXIS tcpmon Upgrade Utility, a script that aids Windows in recognizing the USB port. Once installed on your computer, the script upgrades the tcpmon.ini file (in the system32 directory) so that new Axis print server ports are added in Available ports list in the Add Printer Wizard. No other data will be affected, the old tcpmon.ini will be saved as tcpmon.ini_bak in the same directory. You have to be logged in as an Administrator to use this program. Download it here: ftp.axis.com/pub_soft/prt_srv/utility/tcpmon

Adding Printers in Windows NT4 Using the Microsoft LPR Monitor

Preparing for LPR Printing In the **Control Panel**, double-click the **Network** icon. Select the **Services** tab. If the TCP/IP Printing entry appears, then TCP/IP is already installed. Close the **Network** folder and go on to *Installing an LPR printer*, below.

First, prepare for LPR printing:

1. Open the **Control Panel** and double-click the **Network** icon.
2. Select **Protocols**.
3. Add **TCP\IP Protocol**.
4. Select **Services**.
5. Add **Microsoft TCP\IP Printing**.

- Installing a Network Printer
1. Make sure your print server has a valid IP address, see *IP Addressing*, on page 10.
 2. Select **My Computer** and click **Next**.
 3. From the **Available Ports** list, click **Add Port**.
 4. Choose **LPR Port** and click **New Port**.
 5. Type the name of your AXIS OfficeBasic USB Wireless or IP address in the **Name or address of server providing lpr** field (*Example: 192.168.3.191*). Then enter which port to use in the **Name of printer or print queue on that server** field (*Example: usb or lp1*). Click **OK** then **Close**.
 6. The added print server will now appear in the **Available Ports** list. Click **Next**, choose a driver and finish the installation as usual.

Adding Printers in Windows 2000/Windows XP Using the Microsoft LPR Monitor

This section describes how to set up a Windows 2000/XP server for LPR printing, using the built-in Microsoft LPR Monitor, **Print Services for UNIX**.

Basic Setup If you have not already done so, you should perform the TCP/IP basic setup procedures prior to installing a printer for LPR printing.

Preparing for LPR Printing Follow the following steps to prepare for LPR printing:

1. Open the **Control Panel**.
2. Click **Add/Remove Programs**.
3. Click **Add/Remove Windows Components**.
4. Check **Other Network File and Print Services** and click **Details**.
5. Check **Print Services for Unix** and click **OK**.
6. Click **Next** and **Finish**.
7. Close **Add/Remove Programs** and the **Control Panel**.

Installing an LPR printer Follow the instructions below to use the standard Windows method for installing an LPR printer in Windows 2000/XP/Server 2003:

Windows 2000/XP/Server 2003:

1. Make sure your print server has a valid IP address, see *IP Addressing*, on page 10.
2. **Windows XP/ Server 2003:**
Go to **Start | (Settings) | Printers and Faxes** and click the **Add a Printer** icon to start the **Add Printer Wizard**. Click **Next**.

Windows 2000:

Go to **Start | Settings | Printers** and click the **Add Printer** icon to start the **Add Printer Wizard**. Click **Next**.

3. Select **Local Printer**. Click **Next**.
4. Click the **Create a new port** radio button and select **LPR Port** from the list. Click **Next**.
5. Type the name of your AXIS OfficeBasic USB Wireless or IP address (*Example: 192.168.3.191*) in the **Name or address of server providing LPD** field and enter the port you want to use in the **Name of printer or print queue on that server** field (*Example: usb or lp1*). Click **OK**.
6. End the wizard in the usual manner, select **Manufacturer and Printer**, keep/replace driver, name the printer, make it default or not, share it or not and finally decide whether you want to print a test page.

Important!

- Make sure that the **Automatically detect and install my Plug and Play printer** checkbox is not checked
- Press **F1** to access the Windows online help system if you need additional help when installing a printer/print server using this method.

IPP (Internet Printing Protocol) Configuration

With IPP, you can send a document to any Internet-connected printer. IPP is platform-independent and can be used to print over any LAN or WAN that supports TCP/IP.

In order to print to a remote printer using IPP, you need the following:

- An *IPP client* installed on your computer together with appropriate printer drivers. The IPP client is a tool that adds destination printers to your printer list. A list of available IPP clients can be viewed in *IPP clients*, on page 25.
- The printer to which you want to send your print job needs to be connected to *a print server with IPP functionality*. Axis print servers make it possible for a printer to receive print jobs from an IPP client. The IPP-functionality of the print server is automatically activated upon installation.

IPP Printing Requirements

Before you print to an IPP printer you need to know:

- the print server's IP-address or host name
- the local printer port name, which for AXIS OfficeBasic USB Wireless is `lp1`.
- the brand and model of the printer in order to install the appropriate printer driver.
- the port number 631 (only used in the 1.0 standard)

Address-scheme for IPP printers

The AXIS OfficeBasic USB Wireless supports the IPP 1.0 standard (which uses the `http:` address scheme) and the IPP 1.1 standard (which uses the `ipp://` standard).

Example using host name in the 1.0 standard:

If "192.168.3.191" is the IP address of the print server, "631" is the port number and "lp1" is the local printer port name, then the syntax of the address scheme will be `http://192.168.3.191:631/lp1` in the 1.0 standard.

Example using host name in the 1.1 standard:

If "192.168.3.191" is the IP address of the print server and "lp1" is the local printer port name, then the syntax of the address scheme will be `ipp://192.168.3.191/lp1` in the 1.1 standard.

IPP clients

An *IPP client* needs to be installed on your computer together with an appropriate printer driver for proper IPP functionality. An IPP client is a tool that adds destination printers to your printer list.

Examples of available IPP clients

- **For Windows NT/2000:** the Internet Printer Connection software from Hewlett Packard (can be downloaded from the Hewlett Packard web site).
- **For Windows 2000/XP/2003:** the Microsoft IPP Client (automatically installed with OS).

Microsoft Windows IPP client **does not** support IPP 1.1!

- **For Windows 95/98, NT 4.0:** The Microsoft IPP client can be downloaded from the Microsoft web site.

Firewall Considerations If there are one or more firewalls between the IPP Client and the server, you may have to make some changes to the firewall configuration. IPP uses TCP Port 631 for printing, so any firewalls between client and server must be configured to allow bi-directional traffic on that port.

IPP Printing from Windows In this example the print server's IP address is 192.168.3.191. Thus, the IPP printer's syntax is `http://192.168.3.191:631/lp1`.

1. **Windows XP/ Server 2003:**

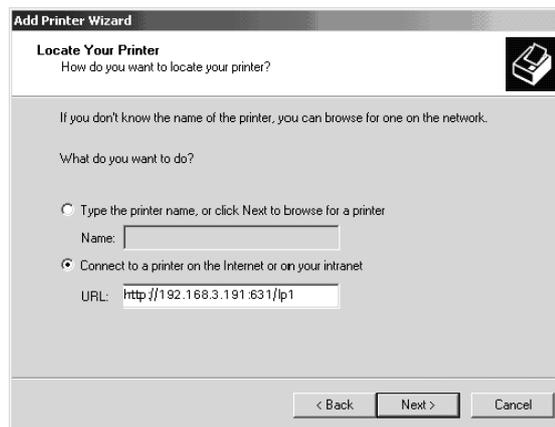
Go to **Start | (Settings) | Printers and Faxes** and click the **Add a Printer** icon to start the **Add Printer Wizard**. Click **Next**.

Windows 2000:

Go to **Start | Settings | Printers** and click the **Add Printer** icon to start the **Add Printer Wizard**. Click **Next**.

2. The Wizard will ask you if you want to install a local printer or a network printer. Choose **Network Printer** and click **Next**.

3. Enter the printer address in the **URL** field, e.g. `http://192.168.3.191:631/lp1` and click **Next**:



4. If you do not have a driver corresponding to the destination printer installed on your computer, the Wizard will prompt you to install one. Click **OK**. The Installation Wizard will ask you to select a printer driver corresponding to the destination printer. Select the printer driver from the list and click **OK**.

5. The Wizard will ask you if you want the printer to be your default destination printer. Make your choice and click **Next** to complete the Add Printer Wizard installation.

6. The new printer is added to your **Select Printer** window. Print a test page to verify the installation.

Mac OS Setup

This chapter contains instructions for the following setup procedures:

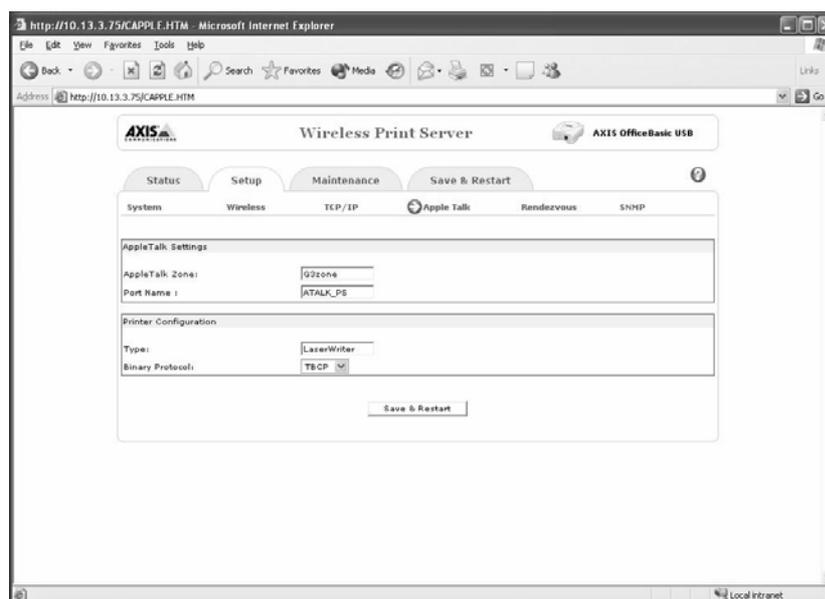
AppleTalk Printing (Mac OS X), on page 27

IP Printing (Mac OS X), on page 28

Installation on MacOS 9.1 or older, using AppleTalk, on page 28

AppleTalk Printing (Mac OS X)

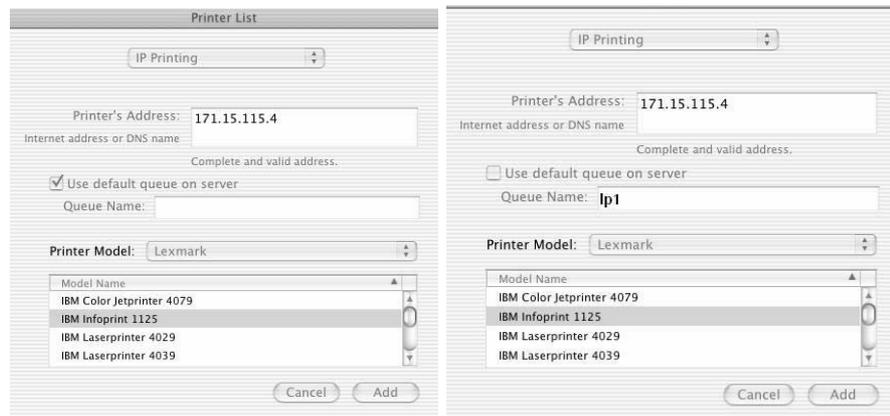
1. Make sure the print server has a valid IP address and that you can access its web interface, see page 10.
2. In the print server's web interface, select **Setup | AppleTalk**.
3. In the **AppleTalk Zone** field, enter the zone in which your Mac OS operates. Click **Save and Restart**.



4. From the Apple menu, select **Go | Applications | Utilities** and start the **Print Center**.
5. Click **Add** in the **Printer List**.
6. Select **AppleTalk** from the top drop-down menu.
7. Select the AppleTalk zone in which your Mac OS operates (same as entered in step 3 above).
8. Your networked printer will appear in the **Printer List** (the default name is **AXxxxxxx_USB**, where the Xs represent the last 6 digits of the print server's serial number).
9. From the **Printer Model** drop-down list, select the printer manufacturer and model. Click **Add**.

IP Printing (Mac OS X)

1. Make sure the print server has obtained a valid IP address, see page 10.
2. Make sure the USB cable is properly connected to the printer.
3. From the **Apple** menu, select **Go | Applications | Utilities** and start the **Print Center**.
4. Click **Add** in the **Printer List**.
5. Select **IP Printing** from the top drop-down menu.
6. In the **Printer's Address** field, enter the print server's IP address or DNS name.
7. Either accept using the default user queue on the server by making sure the **Use default queue on server** check box is checked, or enter **lp1** in the **Queue name** field:



8. From the **Printer Model** drop-down list, select the printer manufacturer and model. Click **Add**.
9. Your newly added printer will appear in the **Printer List** as the default printer (bold). Test the installation by sending a print job to the printer.

Installation on MacOS 9.1 or older, using AppleTalk

Basic Configuration On MacOS 9.1 or older, basic configuration in AppleTalk is performed simply by opening the Chooser window and selecting a printer.

Choosing a Printer

Selecting a Printer The method for choosing a printer varies depending on which version of

LaserWriter printer driver you are using.

- The LaserWriter 7.0 driver assumes that you use a standard PostScript driver, and cannot take advantage of any printer specific features.
- The LaserWriter 8.0 driver uses PPD files that contain printer descriptions. This gives you full control over any features your printer might have.

LaserWriter 7.0 Printer Driver

Follow the instructions below to choose a printer:

1. Select **Chooser** from the **Apple** menu.
2. Click the **LaserWriter** icon.
3. If your network has more than one zone, click on the zone you want. (If your network does not have any zones, this box will not appear.)
4. Click the name of the printer you want – the ports are shown as <host name>_<port>. **Example: AX100086_USB.**
5. Click the **Close** box. This completes the configuration and closes the Chooser.

Repeat this procedure for each Macintosh computer on the network using the print server.

LaserWriter 8.0 Printer Driver

Follow the instructions below to choose a printer:

1. Select **Chooser** from the **Apple** menu.
2. Click the **LaserWriter 8.0** icon.
3. If your network has more than one zone click on the zone you want. (If your network does not have any zones, this box will not appear.)
4. Click the name of the printer you want – the ports are shown as <host name>_<port>. **Example: AX100086_USB.**
5. Click **Setup...**, choose the PPD file matching your printer and click **OK**. If your printer does not appear in the PPD file list, please contact your printer vendor. Use the Generic PPD if you do not need any printer specific features.
6. Click **OK**, and then click the **Close** box. This completes the configuration and closes the Chooser.

Repeat this procedure for each Macintosh computer on the network using the print server.

Print Server Management

There are several tools and options to manage and edit print server settings:

- *Print Server Management from a Web Browser*, on page 30
- *Print server management using the Reset button*, on page 39

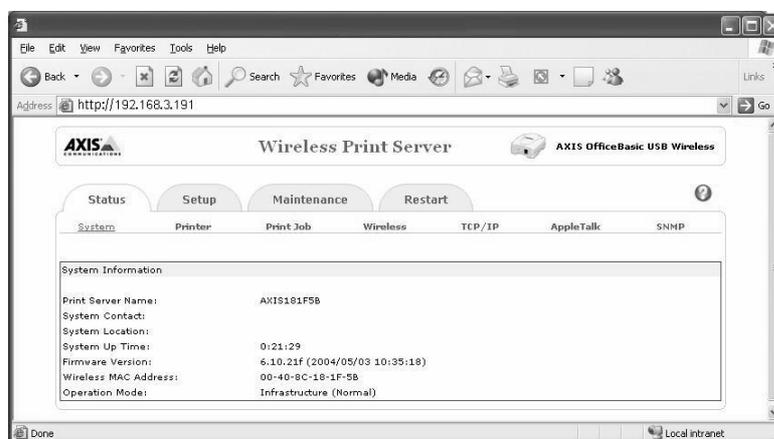
Alternatively, the provided Windows-based software AXIS OBW Wizard, can be used for basic print server configuration. See *Windows Setup*, on page 13.

Print Server Management from a Web Browser

All Axis print servers contain an embedded web server that can be accessed through a web browser. The embedded web server provides access to configuration and management pages for the print server and the connected printer.

Before you can use the embedded web server, the print server must be configured with an IP address, See *IP Addressing*, on page 10.

1. Enter the print server's IP address in the **Location/Address** field of your Web browser. Press **Enter**.
2. The **Wireless Print Server** page will appear. From here you can configure all print server settings.



The print server has a default User name = root
default Password = pass

Notes:

- A quick way of finding the print server's IP address is to press the reset button for 5 seconds to print a test page. The DHCP address or static IP address is normally displayed on the test page.
- The print server's web interface will appear in the same language as your browser uses, see *Technical Specifications*, on page 49 for supported languages.

Status Menu

The **Status** menu displays the status of the System, Printer, Print Jobs, Wireless settings, TCP/IP, AppleTalk and SNMP. The entries in the Status menu are for viewing only, they are edited from the **Setup** menu, explained on page 33.

- System Status**
- Print Server Name:** Displays the name of the print server. If nothing is modified, the default name is AXISXXXXXX, where X represent the last six digits of the print server's serial number, found on its backside label.
 - System Contact:** Displays the name of the contact person in charge of the print server.
 - System Location:** Displays the name of the print server's physical location.
Example: "Room A, color printer"
 - System UpTime:** Displays the uptime of the print server. When the print server is powered on, it will start counting.
 - Firmware Version:** Displays the print server's firmware version. See *Upgrading the Print Server's Firmware*, on page 41 for more information on firmware.
 - Wireless MAC Address:** Displays the Mac Address (Node ID) of the print server. All print servers have a unique Mac Address, which is based on the serial number. See *Print Server's Serial Number*, on page 9 for more information.
 - Wireless Operation Mode:** Displays the current wireless operation mode of the print server.
- Printer Status**
- Manufacturer:** Displays the manufacturer of the connected printer.
 - Model:** Displays the model of the connected printer.
 - Supported Printing Language:** Displays the printer languages supported by the connected printer.
 - Current Status:** Displays the connected printer's status.
 - Printer Usage:** Displays information about Job Count and Printed Pages.
- Print Job Status**
- Displays the current print jobs, including information on the Job, User, Elapsed Time, Protocol, Port, Status and Bytes Printed.
- Wireless Status**
- Mode:** Displays the wireless operation mode of your print server.
 - AP's MAC Address:** Displays the MAC address of your wireless Access Point.
 - SSID:** Displays the SSID of your wireless network.
 - Channel Number:** Displays the current channel number.
 - Data Transmit Rate:** Displays the current transmit rate.
 - WEP Encryption:** Displays the WEP encryption status.

TCP/IP Status **Use DHCP/BOOTP:** Displays DHCP/ BOOTP status. If there is a DHCP/BOOTP server on your network, the print server can obtain IP settings automatically, provided that this parameter is **On**.

IP Address: Displays the IP address of the print server. The IP address must meet the IP addressing requirements of the network segment.

Subnet Mask: Displays the subnet mask of the print server. The subnet mask must meet the IP addressing requirements of the network segment.

Default router: Displays the default router used by the print server.

AppleTalk Status **AppleTalk Zone:** If no zone exists, the zone name is displayed as an asterisk (*).

Port Name: AXxxxxxx_USB, where xxxxxx represent the last six digits of the print server's serial number, found on its backside label.

Type: Displays the printer type connected to the print server.

Binary protocol:

- **TBCP** enables the print server to use the TBCP (Tagged Binary Communication Protocol) to transfer print data to the printer
- **BCP** enables the print server to use the BCP (Binary Communications Protocol) to transfer print data to the printer.
- **ASCII** disables all binary transfers, select this alternative for all non-PostScript printers and for ASCII PostScript printing.

SNMP Status **SNMP Communities:** Displays SNMP communities from the print server. There are two communities (**SNMP Community 1, 2**) that control messages from the network management of the print server.

SNMP Trap Settings: Displays SNMP traps sent from the print server.

Send SNMP Traps: Displays if the print server's ability to send SNMP Traps is Enabled or Disabled.

Use Authentication Traps: If Enabled, an authentication failure trap is sent to the trap destination address if you have entered the wrong trap community.

Trap Address 1: Displays the first IP address to which SNMP traps are sent. It corresponds to the trapAddress SNMP object.

Trap Address 2: Displays the second IP address to which SNMP traps are sent. It corresponds to the trapAddress SNMP object.

Setup Menu

All print server parameters are configured from the **Setup** menu. From here the Network Administrator can edit settings that govern System, Printer, TCP/IP, SNMP, AppleTalk, etc.

All print server settings have *default values* that have been carefully selected by Axis. In most instances, there is no need to change these default values.

Print Server Name: Enter a name for the print server if you wish. If nothing is specified, the default print server name is **AXISXXXXXX**, where X represent the last 6 digits of the print server's serial number. The serial number is displayed on a label on the backside of the print server.

System Contact: Enter the name of the contact person in charge of the print server if you wish.

System Location: Enter a descriptive name for the physical location of the print server if you wish. *Example: "Room A, color printer".*

Password: Enter an access password for the print server's web pages if you wish. *The default password is **pass**. The default user name is **root**.*

Wireless Setup Basic Settings:

Mode: Select the wireless setting mode you wish to use in your network.

- **Infrastructure** (Workstations and laptops communicate over the WLAN and the LAN through an Access Point with the print server).
- **802.11b Ad-Hoc** (Workstations and laptop computers communicate directly over the WLAN with the print server).

Select SSID: Select or manually enter an SSID. Click **Site Survey** to scan your wireless network for available Access Points.

Default SSID in Infrastructure mode = <ANY>

Default SSID in Ad-Hoc (Diagnostic) mode= WLAN-PS.

SSID = Service Set Identifier: The SSID identifies a specific wireless LAN. Before associating with a particular wireless LAN, a station must have the same SSID as the Access Point. By default, Access Points include the SSID in the beacon frame to enable sniffing functions and automatically configure the wireless network interface card with the proper SSID.

In order to communicate in a WLAN, the print server, Access Point and laptop must all have the same **Basic Settings** and **WEP Settings**.

If you use WEP encryption on your WLAN and by mistake change the WEP format or keys in the print server, you will lose contact with the print server. Follow the steps in *Reinstating contact with the wireless network*, on page 46 to recover the connection.

By default, this print server acts as a wireless station in the Infrastructure mode.

Basic Settings	
Mode:	Infrastructure
Select SSID:	document
Enter SSID manually (optional):	document Site Survey
Channel:	4
Data Transmit Rates:	Auto
Advanced Settings	
Beacon Interval:	100 (0 - 65535, default value: 100 ms)
Preamble:	Long (default value: Long)
Authentication Type:	Open System
WEP Settings	
Use WEP:	Disabled

Channel: Specify a channel number corresponding to your wireless environment. See *Wireless Frequency Bands and Channels*, on page 7.

Default Channel= 6

Data Transmit Rates: Select the data transmission rate of your wireless print server: Auto, 1,2Mbps, 5.5Mbps or 11Mbps.

Default = Auto.

Advanced Settings:

Beacon Interval: This setting specifies the amount of time between beacons in kilo-microseconds (Kmsec). One kilo-microsecond equals 1024 microseconds.

Default = 100 msec (ms).

Before a station enters power save mode, the station needs the beacon interval to know when to wake up to receive the beacon (and learn whether there are buffered frames at the access point).

Preamble: (Long/Short) The radio preamble is a section of data at the head of the packet containing information that the access point and the client devices need when sending and receiving packets. It allows you to select a long or short radio preamble. A short preamble improves throughput performance.

- **Long** uses a 128 bit sync field
- **Short** uses a 56 bit sync field

Default = Long.

Authentication Type:

- **Open System:** This is the default value, which is most commonly used. This is an option for users who don't wish to use WEP for strong authentication. Any device is allowed to authenticate and communicate with the Access Point. If the Access Point is using WEP encryption and the other station is not, the device does NOT attempt to authenticate with the Access Point.
- **Shared Key:** When chosen, Shared Key is the print server's only means of authentication. Shared Key requires that WEP is enabled! First the Access Point sends an un-encrypted challenge text string to any device attempting to communicate with it. The device requesting authentication encrypts the challenge text and sends it back to the Access Point. If the challenge text is encrypted correctly, the Access Point allows the requesting device to authenticate.
- **Auto-Sense:** Open System is first tried, if this fails Shared Key is used.

IMPORTANT! The default Infrastructure settings in the print server are:

- Infrastructure mode
- SSID = <ANY> (will connect with the Access Point that has the best signal in your wireless network)
- Data transmit rate = Auto
- WEP disabled
- Authentication Type = Open System
- Channel = 6
- DHCP Enabled

Wireless communication is only possible if the wireless settings in the print server, laptop card and Access Point are synchronized. If you accidentally change these settings so that the devices in your WLAN are asynchronous, you will lose communication with the WLAN. To correct this, See "Reinstating contact with the wireless network" on page 46.

Use WEP:

When this parameter is enabled (**64** or **128-bit**), the print server will not allow access to clients attempting to transmit data without WEP encryption.

- **Disabled**
- **64 (40-bit)**
- **128-bit.** 128 Bit encryption is the highest level of security but may reduce the performance level.
Default = Disabled

WEP Key: Enter your WEP key.

Key Format: Select **Hexadecimal** or **Alphanumeric**.

- An **alphanumeric** character is 'a' through 'z', 'A' through 'Z', and '0' through '9'.
- A **hexadecimal** digit is '0' through '9' and 'A' through 'F'. Depending on the key format you select:
 - For 64-bit (sometimes called 40-bit) WEP encryption, enter the key which contains 5 alphanumeric characters or 10 hexadecimal digits.
For example: AbZ12 (alphanumeric format) or ABCDEF1234

(hexadecimal format).

- For 128-bit WEP encryption, enter the key which contains 13 alphanumeric characters or 26 hexadecimal digits. *Note: Depending on the number of characters you enter, a number of zeroes (0) will be added after your entry to reach 26 digits.*

802.1X (EAP) Settings: Select Authentication Type:

- **None**
- **MD5.** If you select MD5 you must enter the Login Name and Password used when logging on to the Radius server.

Note: A Radius server is used for remote user authentication and accounting. Its primary use is for Internet Service Providers, though it may as well be used on any network that needs a centralized authentication and/or accounting service for its workstations.

TCP/IP Setup **Obtain TCP/IP settings automatically (use DHCP/BOOTP):** If you click this radio button, the print server will obtain IP settings automatically, provided there is a DHCP/BOOTP server on your network.

Use the following TCP/IP settings: if you click this radio button, you will disable DHCP in the print server and you must enter the below parameters manually:

- **IP Address:** Enter the IP address of the print server. The IP address must meet the IP addressing requirements of the network segment.
- **Subnet Mask:** Enter the subnet mask of the print server. The subnet mask must meet the IP addressing requirements of the network segment. Specify the subnet mask used for determining when the traffic should be sent via a router. This number combined with the IP address identifies on which network the print server is located. The normal class C subnet mask value is usually 255.255.255.0. The value: 0.0.0.0, indicates that all network segments are accessible.
- **Default router:** Enter the default router used by the print server. Specify the IP address for the default router. All traffic directed outside the local network, defined by the subnet mask, is sent to the default router. Any re-routing via other routers is done automatically. The setting 0.0.0.0 indicates that no default router is set. If that is the case, the print server anticipates that there is a router available that automatically senses and redirects the print server's packets to destinations outside the local network segment.

AppleTalk Setup Zone Name:

Enter an AppleTalk Zone name that you want the print server to belong to or leave it in default (the print server automatically searches and links itself to the default zone that is set on the AppleTalk router, if found).

If no zone exists, the print server displays the zone name as an asterisk (*).

Port Name: Enter a name for identification purposes or leave the default value (recommended). The print server's default port name is **AXxxxxxx_USB**, where xxxxxx represent the last six digits of the print server's serial number, found on its backside label. The print server will append the last six digits to the name you specify. *Example: AX181cf0_USB*

Printer Configuration Type: Enter a descriptive name for the type of printer connected to the print server.

Binary protocol: Select printing protocol used by the print server:

- **TBCP** enables the print server to use the TBCP (Tagged Binary Communication Protocol) to transfer print data to the printer
- **BCP** enables the print server to use the BCP (Binary Communications Protocol) to transfer print data to the printer.
- **ASCII** disables all binary transfers, select this alternative for all non-PostScript printers and for ASCII PostScript printing.

SNMP Setup

TCP/IP networks use a standard management protocol called Simple Network Management Protocol (SNMP). SNMP is widely used in the industry as a solution for remote network management and monitoring of networking devices. SNMP includes a protocol, a database structure specification, and a set of database objects. The print server's SNMP implementation runs in a TCP/IP environment.

SNMP Community Name 1, 2: Provide a community name for each SNMP request for authentication purposes. There are two communities (**SNMP Community 1, 2**) that control messages from the network management of the print server. The default community name is **public** (case-sensitive), with Read Only access rights.

Privilege: Grant **Read-Only** or **Read-Write** access rights to the above communities.

Send SNMP Traps: **Enable** or **Disable** the print server's ability to send SNMP Traps. When an unusual condition or activity occurs, the SNMP agent alerts the SNMP manager through SNMP traps. Enable the function of sending SNMP Authentication Failure trap message to the network administrator, if the community name within a SNMP request is not correct.

Use Authentication Traps: If **Enabled**, an authentication failure trap is sent to the trap destination address.

Trap Address 1: Enter an IP address to which SNMP traps are sent.

Trap Address 2: Enter a second IP address to which SNMP traps are sent.

Maintenance

- Click **Factory Default** then **OK** to reload all default settings in the print server.
- Performing a Factory Default will erase all settings of the print server to default and should be performed with caution!
- After performing a Factory Default, the default wireless settings will be:
 - Infrastructure mode
 - SSID = <ANY> (will connect with the Access Point that has the best signal in your wireless network)
 - Data transmit rate = Auto
 - WEP disabled
 - Authentication Type = Open System
 - Channel = 6
 - DHCP enabled
- Click **Firmware Upgrade** to browse to your firmware directory and reload the print server with new firmware. (You must first download firmware from www.axis.com/techsup/firmware, select the appropriate print server model and click **Download flash file**. Save the firmware flash file locally on your computer or in a network directory.)

Restart

Click **OK** to restart the print server.

The print server can also be restarted by disconnecting and the re-connecting the external power supply, or by pushing the external Reset button once.

Print server management using the Reset button

The reset button can be used for several operations, see *Print Server Setup*, on page 8 for the physical location of the Reset button.

Reset the Print Server:

1. Verify that the DIP switch is on "Nor."
2. Press the reset button once.

WARNING! This will restart the print server and stop all on-going and pending print jobs!

Print a Test Page:

Print a Test Page in
"Normal Mode"

1. Verify that the DIP switch is on "Nor."
2. Hold down the reset button for 5 seconds. The test page will be printed on the connected printer.

The test page printed in "Normal" mode displays information about the print server's:

- Device Name (print server name)
- Firmware version
- MAC address
- SSID
- Channel
- WEP enabled or disabled
- IP address
- Subnet Mask
- Default Router
- AppleTalk Port Name

Print a Test Page in
"Diag" Mode

1. Verify that the DIP switch is on "Diag."
2. Hold down the reset button for 5 seconds. The test page will be printed on the connected printer.

The test page printed in "Diag" mode displays information about all available Access Points within your wireless network, including SSID, network type, serial number, channel and signal.

Perform a Factory Default:

1. Verify that the DIP switch is on "Nor."
2. Disconnect the external power supply.
3. Hold down the reset button.
4. Reconnect the external power supply. Wait until the orange and green LED indicators have blinked twice simultaneously.
5. Release the reset button.
6. The print server will restart (orange Status LED will blink 5 times).

Important!

- Performing a Factory Default will erase all settings of the print server to default and should be performed with caution!
- After performing a Factory Default, the default wireless settings will be:
 - Infrastructure mode
 - SSID = <ANY> (will connect with the Access Point that has the best signal in your wireless network)
 - Data transmit rate = Auto
 - WEP disabled
 - Authentication Type = Open System
 - Channel = 6
 - DHCP enabled

Upgrading the Print Server's Firmware

The print server's *firmware** is stored in its Flash memory. This memory retains data content even after the power is removed. Flash memory allows data to be erased and re-written, which is why you can install firmware updates in your print server as they become available, without having to replace any parts. New firmware can simply be loaded into the AXIS OfficeBasic USB Wireless over the network.

* Firmware is internal print server software that determines its functionality.

You can obtain all print server firmware free of charge from the following locations:

- www.axis.com
- your local dealer

Caution!

- Be careful not to interrupt the file transfer. If the transfer is interrupted, the print server may have to be re-initialized by your dealer.
- Before upgrading the print server, ensure that it is not printing jobs. You have to wait until the print job is finished before you can proceed.

Upgrading the Firmware

You can upgrade the AXIS OfficeBasic USB Wireless firmware from the print server's internal Web pages (TCP/IP).

Note:

Updating instructions are supplied with the firmware release notes.

Upgrading from the Print Server's Internal Web Pages

Follow these instructions to upgrade the firmware of your print server from its internal Web pages:

1. Go to www.axis.com/techsup/firmware, select your print server model and click **Download flash file**. Save the firmware flash file locally on your computer or in a network directory.
2. Open a Web browser, enter the IP address of your print server and press **Enter**. The print server's internal web pages will appear. (See *Print Server Management*, on page 30) for detailed instructions).
3. Click **Maintenance | Firmware Upgrade**.
4. Click the **Browse** button. A new window will open. Browse to the directory where you saved the new firmware and click **Upgrade**.
5. The new firmware will be loaded into the print server and the print server will restart (orange Status LED will blink 5 times).

Appendix 1: Print Server Setup in Ad Hoc Mode

If you do not have an Access Point in your network or the print server cannot be discovered, please follow these steps:

1. Switch the print server's DIP switch to **DIAG** mode.
2. Check that the TCP/IP protocol is installed in your computer and you have assigned an IP address to your wireless adapter, *E.g 192.168.1.100*
3. On your laptop, run your wireless adapter's software utility and change it to **Ad-hoc** (i.e. PEER-TO-PEER) mode, with the following settings:
 - SSID = WLAN-PS
 - Channel = 6
4. Click **Connect** (or similar) to establish communication with the print server. Make sure a connection is established.
5. Install and run **AXIS OBW Wizard** software.
6. From the **Select A Print Server** screen, select your print server and click **Next**.
7. On the **Change Settings** screen select **Yes** and click **Next**.
8. On the **Basic Wireless Settings** screen, change from default Infrastructure (in NOR mode) to **802.11b Ad-hoc mode**.
9. Create a new SSID of your choice and select Channel according to your country regulations.
Example: SSID = AXISOBW, Channel = 9
10. Keep **Auto** as default Data transmit rate or change it to match your WLAN settings. Click **Next**.
11. On **Security and WEP Encryption Settings** screen, enable or disable WEP (default = disabled).
12. Click **Next** on the **802.1X Settings** screen if you do not use any kind of authentication. If MD5 is selected, you must enter the same Login Name and Password as defined on the Radius server.
Note: A Radius server is used for remote user authentication and accounting. Its primary use is for Internet Service Providers, though it may as well be used on any network that needs a centralized authentication and/or accounting service for its workstations.
13. In **TCP/IP Settings**, specify a fixed or dynamic IP address, then click **Next**. A fixed IP address is highly recommended; select Specify an IP address and fill the settings to match your WLAN settings. Click **Next**.
14. Click **Next** again to save your settings.
15. Click **Cancel** on the **Select A Printer** screen (as you are not going to install a printer).
16. Switch the DIP back to **NOR** mode and restart the print server by pressing the print server's reset button once.

17. On your laptop, run your wireless adapter's software utility again, keep it in **Ad-hoc** (i.e. PEER-TO-PEER) mode, and adjust settings according to those set in step 9 in order to reconnect to the print server.
18. Run the AXIS OBW Wizard again as described in *Windows Setup*, on page 13 in order to install the print server on your local machine.

Note: In DIAG mode, the print server ALWAYS has the below default settings. These settings cannot be modified!

- Communication type = **802.11b Ad Hoc**
- SSID = **WLAN-PS**
- Channel = **6**
- Data transmit rates = **Auto**
- WEP = **Disabled**

Appendix 2: Enabling WEP in the AXIS OfficeBasic USB Wireless

If your WLAN is Infrastructure-based (with an Access Point) and uses WEP encryption, follow these instructions to connect and install the AXIS OfficeBasic USB Wireless print server:

1. Switch the print server's DIP switch to DIAG mode.
2. Create a new profile or use an existing one on your laptop to connect to the print server, as described in *Appendix 1: Print Server Setup in Ad Hoc Mode*, on page 43.
3. Install and run AXIS OBW Wizard.
4. From the **Select A Print Server** screen, select your print server and click **Next**.
5. On the **Change Settings** screen select **Yes** and click **Next**.
6. On the **Basic Wireless Settings** screen keep Infrastructure (default) as communication type.
7. Keep **<ANY>** as default SSID or change it to match your WLAN settings.
8. Keep **Auto** as default Data transmit rate or change it to match your WLAN settings. Click **Next**.
9. On **Security and WEP Encryption Settings** screen, check **Enable WEP Encryption**.
10. Choose Type (64-bit or 128-bit), Key Format (Alphanumeric or Hexadecimal) and enter an Encryption Key to match your WLAN settings. Click **Next**.
11. Click **Next** on the **802.1X Settings** screen if you do not use any kind of authentication. If MD5 is selected, you must enter the same Login Name and Password as defined on the Radius server.
Note: A Radius server is used for remote user authentication and accounting. Its primary use is for Internet Service Providers, though it may as well be used on any network that needs a centralized authentication and/or accounting service for its workstations.
12. In **TCP/IP Settings**, specify a fixed or dynamic IP address, then click **Next**. A fixed IP address is highly recommended; select **Specify an IP address** and fill the settings to match your WLAN settings. Click **Next**.
13. Click **Next** again to save your settings.
14. Click **Cancel** on the **Select A Printer** screen (as you are not going to install a printer).
15. Switch the print server's DIP switch back to **NORMAL**.
16. From a workstation on your LAN, open a Web browser, enter the IP address of your print server to verify the AP connection in the WEP encrypted WLAN and press **Enter**. The print server's internal web pages will appear.

For detailed information about WEP settings, see *Setup Menu*, on page 33.

Appendix 3: Troubleshooting

Check the following if you experience problems when trying to print over the WLAN:

- Check that the WLAN network interface is properly configured in the workstation/laptop trying to access the print server.
- All communicating clients must be in the same operating mode, i.e. Ad Hoc or Infrastructure mode.
- Check that the SSID and the WEP keys are set according to your WLAN network settings.
- Check that the radio frequency channel setting is the same on all communicating clients and that the channel is set according to the requirements in your country.

Frequency bands and channels:

Country	Frequency	Available Channels	Default Channel
Europe	2.412-2.472 GHz	1-13	11
France	2.457-2.472 GHz	10-13 (indoor use*)	11
Japan	2.484 GHz	14	14
US/Canada	2.412-2.462 GHz	1-11	11

* (France) outdoor use permitted on private property with prior authorization

Reinstating contact with the wireless network

In order to communicate with the print server, the laptop must have the same settings as the print server under **Setup | Basic Settings** and **WEP Settings**. If you use WEP encryption on your WLAN and accidentally change the WEP format or keys in the print server, you will lose contact with the print server.

Default Ad Hoc settings in the Print Server

The print server has these default Ad Hoc settings (under **Setup | Wireless**). These settings cannot be modified!

- Communication type = 802.11b Ad Hoc
- SSID = WLAN-PS
- Channel = 6
- Data transmit rates = Auto
- WEP disabled

Follow these steps to recover the connection:

1. Switch the print server's DIP switch to DIAG.
2. On your laptop, create a new profile using the wireless PCCARD/PCMCIA's management program. The settings in this profile must correspond with the print server's Ad Hoc settings, described in *Default Ad Hoc settings in the Print Server*, on page 46. Make sure a connection is established with the print server.



Ad Hoc settings in print server and corresponding settings in laptop's WLAN management program

3. In the print server's web interface, configure all wireless settings under **Setup | Wireless** according to your WLAN settings (Wireless mode, WEP encryption, WEP keys, etc.) Click **Save and Restart**.

These changes will not affect settings when the print server is in DIAG Mode. The changes will take place when the DIP switch is switched to NORMAL and the print server is re-powered.

4. Switch the print server's DIP switch back to Normal mode and re-power the print server (disconnect then reconnect the external power supply).
5. On your laptop, access the previous profile used before losing contact with the print server and reactivate it. You should now be able to make contact with the print server again.

Frequently Asked Questions

Q: Print jobs are sent to the print queue successfully, but fail to be sent to the printer?

A: Possible explanations:

The printer is off-line, jammed or out of paper.

Solutions:

1. Check that all cables are properly connected.
2. Recheck the print server connection by logging into the print server's web pages.

Q: Print jobs start printing, but print very slowly or print unknown characters.

A: Possible explanation and solution:

A printer driver is missing or is incompatible with that printer. Using a print driver that is not specific for the printer can cause printing errors. Install the proper printer driver. If these printer drivers are not available to you, please contact your printer manufacturer.

Q: The Status LED light keeps blinking after POST.

A: Possible explanation and solution:

The last upgrade process was not completed. The print server must be upgraded again via the print server's web interface.

Q: The setup Wizard can't find the print server

A: Possible Explanation:

The Personal Firewall installed in your computer blocks the connection.

Solution:

Disable the Personal Firewall or adjust the security level to lower.

Technical Specifications

Supported Printers: Support for printers and digital copiers from Brother, Canon, Epson, HP, IBM, Kyocera, Lexmark, Minolta, NEC, Oce, OKI, Ricoh, Sharp, Star, TEC, Toshiba, Zebra, Xerox, etc.

AXIS OfficeBasic USB Wireless does not support printing with host-based printers, e.g. CAPT, GDI, PPA.

Supported Systems:

- Microsoft Windows 98, Me, NT, 2000, XP and 2003
- Apple Mac OS 9, Mac OS X version 10.X

Supported Web Browsers: Any standard web browser (Netscape 6x or higher and MS Internet Explorer 5x or higher).

Supported Protocols:

- TCP/IP: ARP, DHCP, BOOTP, TFTP, LPR, IP, TCP, UDP, HTTP, SNMPv1, ICMP, Raw TCP, IPP.
- Apple EtherTalk: AARP, ATP, DDP, NBP, PAP, RTMP, ZIP
- NetBIOS/NetBEUI
- WEP, 802.1X (EAP)

Print Server Management:

- Internal web pages for configuration, monitoring and firmware upgrade.
- Windows AXIS OBW Wizard software for installation, configuration and monitoring.

Supported Languages: English, German, French, Italian, Spanish.

Firmware Upgrade: Firmware upgrade from the print server's web pages.

Network Connection: IEEE 802.11b DSSS (Direct Sequence Spread Spectrum) technology in Infrastructure and Ad Hoc modes.

11 Channels (USA and Canada)

13 Channels (Europe)

14 Channels (Japan)

Printer Connection:

- USB 1.1 Low and Full speed
- Compliant with USB 2.0 Low and Full speed
- Bi-directional support for Apple EtherTalk and Reverse Telnet.

Hardware:

- ARM7-based RISC microprocessor, operating at 50 MHz.
- Memory: 1 MB Flash, 2 MB RAM

- Front Panel:**
- 2 LED indicators: Status and WLAN
 - Diagnostic DIP switch
 - Reset button to reset, print test page and perform factory default.
- Power Consumption:** Power provided by external power supply (Type PS-M, 3.3 V 2A).
Maximum consumption 4,0 W.
- Dimensions:**
- Height 2,9 cm / 1.2 in
 - Width 6,5 cm / 2.5 in
 - Depth 7,4 cm / 2.9 in
 - Weight 0,06 kg / 0.13 lb
- Environmental:**
- Temperature: 40-105F (5 - 40 C)
 - Humidity 0- 70 %
- Approvals:**
- EMC:
 - EN 55022/1998
 - EN 55024: 1997
 - EN 61000-3-2
 - EN 61000-3-3
 - VCCI Class B
 - C-Tick
 - FCC Part 15 subpart C, Class B
 - Safety:
 - EN 60950
- Included Accessories:**
- Printed installation guide
 - power supply
 - CD
 - USB cable

All specifications are subject to change without prior notice.

Index

Numerics

128-bit 35

64 (40-bit) 35

A

Address-scheme for IPP printers 25

Advanced Settings

Alphanumeric 35

ALTERNATIVE METHOD FOR INSTALLING THE USB PORT 22

AP's MAC Address 31

AppleTalk 28

AppleTalk Status 32

AppleTalk Zone 32

ASCII 32, 37

Autodetect 29

AXIS OfficeBasic USB Wireless port - Windows 17, 18

B

BCP 32, 37

Beacon Interval 34

C

Channel Number 31

Current Status 31

D

Data Transmit Rate 31

Data Transmit Rates 34

default AD HOC settings 44, 46

Default Ad Hoc settings in the Print Server 46

default Infrastructure settings 14, 35

default password 33

Default router 32, 36

default SSID 33

Default SSID in Ad-Hoc (Diagnostic) mode 33

default user name 33

default values 33

Device Name (print server name) 39

E

Example using host name in the 1.0 standard 25

Example using host name in the 1.1 standard 25

F

firmware 41

Firmware Version 31

Flash memory 41

H

Hexadecimal 35

I

IP Address 32, 36

IPP client 25

IPP Printing Requirements 25

IPrinter Information 37

K

Key Format 35

L

List of available IPP clients on the market 25

Local Printer 24

M

Macintosh

Choosing a Printer 28

Installing the Print Server 28

Manufacturer 31

MD5 14, 36

MD5 (Radius) server. 14, 36

MD5 password 14, 36

Mode 31

Model Number

N

Node ID 31

O

OBWXXXXXX-1 17, 18

P

pass 33

Password 33

password 33

port 17, 18

Port Name 32

Preamble 34

Print a Test Page in Diag Mode 39

Print Job Status 31

Print Server Name 31, 33

Print Server's Serial Number 9

Printer

Autodetect 29

Printer Status 31

Printing Language Supported 31

R

Reinstating contact with the wireless network 46
root 33

S

Send SNMP Traps 32
Service Set Identifier 34
Setup Menu 33
SNMP Communities 32
SNMP Status 32
SNMP Trap Settings 32
SNMP traps 37
SSID 34
Subnet Mask 32, 36
System Contact 33
System Location 33
System Status 31
System Up Time 31

T

TBCP 32, 37
TCP IP Setup 36
TCP/IP Status 32
Trap Address 1 32, 37
Trap Address 2 32, 37
Type 32

U

Upgrading the Firmware 41
Use Authentication Traps 32
Use DHCP/BOOTP 32
Use WEP 35
user name 33

W

WEP Encryption 31
WEP Key 35
Windows 2000/XP/2003 16
Windows 98/Me/NT 17, 18
Windows Setup 13
Wireless MAC Address 31
Wireless Operation Mode 31
Wireless Status 31
WLAN-PS 33, 43, 44, 46