AXIS 1610
for Canon CAPT Printers

User's Manual

Safety Notices

Please, read through the following safety notices before installing the AXIS 1610.

Caution! - implies that if not followed you may lose data or damage your equipment.

Important: - implies that if not followed the operation of the AXIS 1610 may be impaired.

Do not proceed beyond any of the above notices unless you have taken appropriate measures!

Electromagnetic Compatibility (EMC) notices – USA

This equipment generates and radiates radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class A limits.

Electromagnetic Compatibility (EMC) notices – Europe

This digital equipment fulfils the requirements for radiated emission according to limit B of EN55022/1994, and the requirements for immunity according to EN50082-1/1992 residential, commercial, and light industry (Compliance is not valid for unshielded network and printer cables).

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Liability

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Preface

Thank you for purchasing the AXIS 1610 for Canon CAPT printers Network Print Server. This product has been developed to connect your printers anywhere in your network, allowing all network users access to the shared printer resources.

About this manual

This manual provides introductory information as well as detailed instructions on how to set up and manage the AXIS 1610. It is intended for everyone involved in installing and managing the AXIS 1610. To fully benefit from the manual, you should be familiar with basic networking principles.

This manual is applicable for the AXIS 1610, with software release 5.80 or later.

About Axis

Axis Communications is dedicated to providing innovative solutions for network-connected computer peripherals. Since the start in 1984, it has been one of the fastest growing companies in the market and is now a leader in its field.

ThinServer™ Technology
enables Axis' products to act as intelligent file server independent ThinServer devices. A ThinServer device is a network server which includes "thin" embedded server software capable of simultaneous multiprotocol communication, scalable RISC hardware and a built-in Web server which allows easy access and management via any standard Web browser. The ThinServer technology makes it possible to connect any electronic device to the network, thus providing "Access to everything".

Mobile Access by Axis
The *Bluetooth* Access Point from Axis is part of a family of network access solutions that create local "hot spots" of high-speed wireless connectivity areas. These areas provide a wireless communications link to local networks and the Internet for mobile devices equipped with Bluetooth wireless technology, an industry supported technology that provides a low-cost means for supporting short-range wireless communications between portable devices. Axis provides solutions that scale from network access devices to larger, more advanced systems to meet the range of needs for creating new mobile networks and services.

Network Print Servers
offer a powerful and cost-efficient method for sharing printer resources in your network.
They connect to any standard printer, featuring high performance, simple management
and easy upgrading across the network. The print servers are available in Ethernet, Fast
Ethernet and Token Ring versions.

IBM Mainframe and S/3x - AS/400 Print Servers and Protocol Converters
include a wide range of LAN, coax and twinax attached print servers for the IBM host
environment. By emulating IBM devices, these servers provide conversion of the IPDS,
SCS and 3270DS data streams to the major ASCII printer languages.

Network Attached CD/DVD Servers
provide a flexible and cost-efficient solution for sharing CD-ROMs, DVD-ROMs and other
optical media across the network. They are available in Ethernet, Fast Ethernet and Token
Ring versions.

Network Attached Storage Servers
make it possible to easily make hard disk storage available in Ethernet networks. Through
direct access by clients, yet integrating into existing security schemes, and requiring a
minimum of maintenance they also provide a low total cost of ownership for network
storage.

Network Camera Servers
provide live images using standard Internet technology, thus enabling access to live
cameras via any standard Web browser. They offer a perfect solution for remote
surveillance over the Internet; their sharp images can bring life into any web site. These
servers support Ethernet as well as PSTN and GSM phone lines.

Network Document Servers
enable easy distribution of paper-based information across workgroups and the
enterprise. By sending scanned documents to your destination via the Internet/intranet,
you will reduce your faxing/mailing costs, as well as save time, thus improving your
organization's efficiency.

Support Services

Should you require any 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.

Internet

If you are connected to the Internet, you can find on-line manuals, technical support, firmware updates, application software, company information, etc from the Axis web site at http://www.axis.com

E-mail

You can also send a support e-mail to the locations listed on the following page:

Axis support e-mail addresses

Sweden	support-se@axis.com
Australia	support-au@axis.com
Benelux	support-nl@axis.com
China	support-cn@axis.com
France	support-fr@axis.com
Germany	support-de@axis.com
Hong Kong	support-hk@axis.com
Italy	support-it@axis.com
Japan	support-jp@axis.com
Korea	support-kr@axis.com
Singapore	support-sg@axis.com
Spain	support-es@axis.com
Taiwan	support-tw@axis.com
UK	support-uk@axis.com
USA Boston	support-us@axis.com
USA Miami	support-lat@axis.com

Contents

Section 1   Introduction

Based on the ThinServer technology, AXIS 1610 for Canon CAPT printers allows you to share your Canon CAPT printer resources with everyone on your network. You can connect your AXIS 1610 directly to any Canon CAPT printer without any additional cabling.
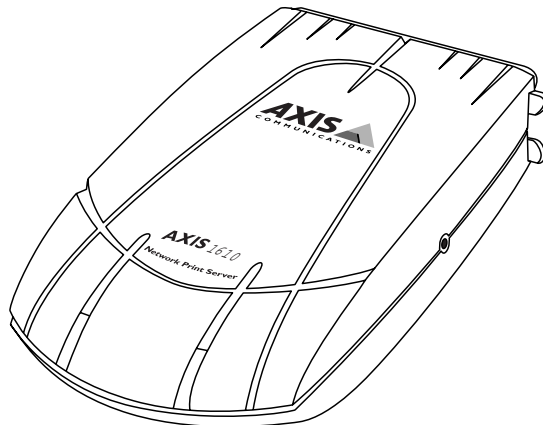
The AXIS 1610 Network Print Server

Supported Printers   The AXIS 1610 is developed to be connected with Canon CAPT printers only.

Where to use it

Supported
Environments

The AXIS 1610 supports printing over TCP/IP or NetBIOS/NetBEUI from the following clients:

- Windows 95

- Windows 98

- Windows NT 4.0

- Windows 2000

- Windows ME

- Windows XP (TCP/IP only)

Management and configuration of your AXIS 1610 can be performed from the internal web pages via any standard Web browser.

How to use it

Installation and Integration

The installation of the AXIS 1610 and its integration into the network is performed using a selection of the following client software:

- AXIS IP Installer

- AXIS CAPT Print Monitor

- AXIS NetPilot

- Canon NetSpot

AXIS IP Installer, AXIS CAPT Print Monitor and AXIS NetPilot are available free of charge from the AXIS 1610 CD or from the Axis web site at www.axis.com

Configuration and Management

Configuration and management of AXIS 1610 can be performed using TCP/IP, NetBIOS/NetBEUI or IPX protocols. The main methods are presented in the following list:

- Any standard Web Server (TCP/IP)

- Canon NetSpot (TCP/IP, IPX)

- AXIS NetPilot (NetBIOS/NetBEUI, IPX)

Printing Protocols

- NetBIOS/NetBEUI

- TCP/IP

Features and Benefits

Reliability
: The AXIS 1610 print server provides high performance and reliability combined with low power consumption. The electronic circuits are based on the improved AXIS ETRAX 100 chip, which comprises an integrated 32 bit RISC processor and associated network controllers.

Speed
: The AXIS ETRAX 100 chip has been specifically designed for LAN products and benefits users with a faster throughput than a direct PC-to-printer connection. With a sustained data throughput of 800 kbytes per second (100baseTX) and 600 kbytes per second (10baseT), the AXIS 1610 is fast. ECP high-speed Centronics communication is supported.

Easy to Install
: Install the AXIS 1610 in minutes, using the provided software utilities.

Security
: You can assign a password that restricts unauthorized configuration of the AXIS 1610.

Monitoring
: The provided AXIS NetPilot software and the internal AXIS 1610 Web pages allow you to continuously monitor printer status.

Additionally, the AXIS 1610 supports SNMP for remote monitoring.

Futureproof
: You can upgrade the AXIS 1610 Flash memory over the network. This allows you to quickly update and enhance the operational features of your AXIS 1610 when new print server software becomes available.

Pocket-sized
: The AXIS 1610 is equipped with one high-speed parallel port connector that plugs directly into the printer's parallel port.

Section 2   Product Overview

Package Contents

Verify that nothing is missing from the print server package by using the check list below. Please contact your dealer if anything should be missing or damaged. All packing materials are recyclable.
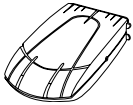
☐ AXIS 1610, part no: 0095-001-01

☐ AXIS 1610 CD, part.no: 18817, Rev.1.1 including: ☐**AXIS 1610 User's Manual**, part no: 18810, Rev.1.1
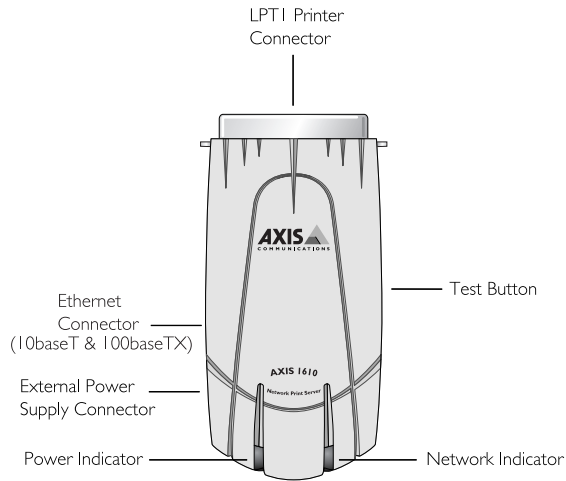
☐ Power Supply:

	Part nos. (AXIS PS-B)
Australia	13269
Europe	13267
Japan	13936
UK	13268
USA	13270

AXIS 1610 Physical Description

LPT1 Printer
Connector

Test Button

Ethernet
Connector
(10baseT & 100baseTX)

External Power
Supply Connector

Power Indicator

Network Indicator

AXIS 1610
Network Print Server

AXIS 1610

Network Connectors

The AXIS 1610 is designed for 10 Mbps Ethernet and 100 Mbps Fast Ethernet networks and connects to the network via a twisted pair category 5 cable (10baseT and 100baseTX) or better. The AXIS 1610 is equipped with an auto-sensing function that detects the speed of the local network segment and varies the speed of its data communication accordingly, between 10 Mbps and 100 Mbps.

Printer Port

The AXIS 1610 print server is provided with a single high-speed IEEE 1284 compatible parallel port that connects directly to the printer, without cables.

|	
Test Button	The test button is used for resetting the AXIS 1610 parameters to the factory default settings. Refer to *Using the Test Button*, on page 49, for more information.
Network Indicator	The network indicator flashes to indicate network activity.
Power Indicator	The power indicator is lit while power is applied. If it is not lit, or it flashes, there is a problem with the AXIS 1610 or its power supply.

Section 3   Installation

Connecting a printer to the Network

Follow the instructions below to connect a printer to the
network via the AXIS 1610 print server.

Caution! ❏ Make sure that the AXIS 1610 external power supply you are
using is marked with the correct voltage!
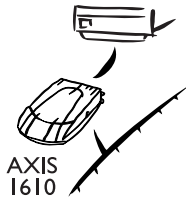
1. Switch off the printer and disconnect the AXIS 1610 external
power supply.

2. Locate the serial number, found on the underside label of the
AXIS 1610, and write it down. You will need this number later
during the network configuration.

3. Connect the AXIS 1610 directly to the printer's parallel printer
port.

4. Connect your AXIS 1610 to the network using a twisted pair
cable, category 5 or better.

5. Switch on the printer and connect the external power supply to
the AXIS 1610. The power indicator lights up. When the network
indicator starts to flash, the AXIS 1610 is successfully connected
to the network.

To establish communication with the TCP/IP network and the
internal web pages, an IP address must be assigned to your AXIS
1610.
If there is a DHCP server on your network, your AXIS 1610 will
already have received an IP address.
If not, refer to the table below for an appropriate method to set
the IP address of your AXIS 1610.

Assigning an IP address

To establish communication with the TCP/IP network and to enable Web browser and Netspot management, an IP address must be assigned to your AXIS 1610.

Before you start

System privileges You need root privileges on your UNIX system, or administrator privileges on a Windows NT server to set the IP address using RARP, BOOTP or DHCP.

Ethernet address You need to know the Ethernet address of your AXIS 1610 to perform the installation. The Ethernet address is based on the serial number of your AXIS 1610. This means, for example, that an AXIS 1610 with the serial number of 00408C100086, will have the corresponding Ethernet address of 00 40 8C 10 00 86. The serial number is located on the label of the print server.

IP address You must obtain an unused IP address from your network administrator, unless you have automatic IPaddress assignment e.g. DHCP on your network.

Important ❏   DO NOT use the IP addresses used in the following examples when installing your AXIS 1610. Always consult your network administrator before assigning an IP address to your AXIS 1610.

Methods for setting the IP Address

You can set the IP address using one of the following methods, depending on your network environment:

Method	Network environments	See...
IP Installer	Windows 95/98/NT/2000/ME	page 17
DHCP	Windows NT/2000/ME, UNIX, NetWare 5	page 18
ARP	Windows 95/98/NT/2000/ME	page 19
	UNIX	page 20
RARP	UNIX	page 20
BOOTP	UNIX, NetWare 5	page 21
Manual setting	Windows 95/98/NT/2000/ME	*Basic Setup with AXIS NetPilot*, on page 30
		Using Netspot, on page 36

Note: ❑   The RARP method operate on single network segments only, i.e. it cannot be used over routers.

Assigning a Host Name to the IP address

If you are using host names, you can map a unique host name to the IP address. Refer to your system manuals or to your network administrator for instructions on how to perform name mapping on your system.

The AXIS 1610 supports WINS (Windows Internet Name Service), which is recommended when you are using DHCP in a Windows NT network.

Note: ❑   If the host name has not been mapped to the IP address, you can still perform the following instructions to download the IP address. In this case, simply replace the host name entry with the IP address wherever required.

Using AXIS IP Installer

Follow the instructions below to set the IP address of your AXIS 1610 using the AXIS IP Installer:

1.   Download the AXIS IP Installer to your host. The software is available on the AXIS Product Resources CD and on the Axis home page at **http://www.axis.com/**

2. Connect the AXIS 1610 to the network. Note the serial number that is located on the underside label of the AXIS 1610.

3. Start AXIS IP Installer.

4. Click the serial number of your AXIS 1610 that appears in the server list.

5. Enter the desired IP address in the designated IP address field and click the **Set IP address** button.

6. The IP setting process will take approximately 10 to 40 seconds. Click **OK** in the confirmation box that appears when the IP address has been set.

Notes:
❑ AXIS IP Installer uses the BOOTP and DHCP protocols to communicate with the AXIS 1610. Make sure that at least one of these protocols is enabled in your print server.

❑ Restart your AXIS 1610, if it does not show up in the server list.

Using DHCP   If you have a DHCP server on your network, the AXIS 1610 will automatically receive an IP address as soon as it is connected to the network.

Notes:
❑ At least one WINS server IP address must be included in the DHCP scope if you are using WINS. Immediately after the IP address has been received, the AXIS 1610 registers its host name and IP address on the WINS server.

❑ The AXIS 1610 can automatically download a customized config file from a TFTP server if the name of the config file and the TFTP server's IP address are added to your DHCP scope. The config file is downloaded immediately after the AXIS 1610 has received its IP address.

Using ARP in Windows 95/98, ME & Windows NT, 2000

Follow the instructions below to set the IP address using ARP:

1. Start a DOS window.
    Type the following commands:

    ```
    arp -s <IP address> <Ethernet address>
    ping <IP address>
    arp -d <IP address>
    ```

    Example

    ```
    arp -s 192.168.3.191 00-40-8c-10-00-86
    ping 192.168.3.191
    arp -d 192.168.3.191
    ```

    The host will return `Reply from 192.168.3.191 ...` or a similar message. This indicates that the address has been set and that the communication is established.

Notes:
❑ When using the Windows 95 implementation of ARP, change the first line to:
`arp -s <IP address> <Ethernet address> <w95host IP address>`, where `<w95host IP address>` is the IP address of your Windows 95 host.

❑ When you execute the `ping` command for the first time, you will experience a significantly longer response time than usual.

❑ By using the `arp -d` command, the static entry in the arp table is removed from the cache memory of the host.

Using ARP in UNIX   Follow the instructions below to set the IP address using ARP. Type the following commands in the shell window:

```
arp -s <host name> <Ethernet address> temp
ping <host name>
```

Example:

```
arp -s npsname 00:40:8c:10:00:86 temp
ping npsname
```

The host will return npsname is alive or a similar message. This indicates that the address has been set and that the communication is established.

Notes: ❏   The ARP command varies between different UNIX systems. Some BSD type systems expect the host name and node address in reverse order. Furthermore IBM AIX systems will require the additional argument ether. For example:

```
arp -s ether <host name> 00:40:8c:10:00:86 temp
```

❏   When you execute the ping command for the first time, you may experience a significantly longer response time than usual.

Using RARP in UNIX   Follow the instructions below to set the IP address using RARP

1. Append the following line to your Ethernet Address table. This is typically located in the /etc/ethers file:

```
<Ethernet address> <host name>
```

Example:

```
00:40:8c:10:00:86 npsname
```

2. Update, if necessary, your host table and alias name databases, as required by your system.

3. If it is not already running, start the RARP daemon. This is typically performed using the `rarpd -a` command.

4. Restart the AXIS 1610 to download the IP address.

Note: ❑ If you are using IBM AIX, you will probably not have access to a RARP daemon. If this is the case, you can use either the ARP or BOOTP methods instead.

Using BOOTP in UNIX

Follow the instructions below to set the IP address using BOOTP

1. Append the following entry to your boot table. This is typically performed by editing the file: `/etc/bootptab`

```
<host name>:ht=<hardware type>:vm=<vendor magic>:\
:ha=<hardware address>:ip=<IP address>:\
:sm=<subnet mask>:gw=<gateway field>
```

Example :

```
npsname:ht=ether:vm=rfc1048:\
:ha=00408c100086:ip=192.168.3.191:\
:sm=255.255.255.0:gw=192.168.1.1
```

Notes: ❑ Enter the `ht` and `vm` fields exactly as shown in the example.

❑ The `ha` field is the Ethernet address/node address and the `ip` field is the IP address of your AXIS 1610.

❑ The `gw` and `sm` fields correspond to the default router address and subnet mask.

2. If necessary, update your host table and alias name databases, as required by your system.

3. If it is not already running, start the BOOTP daemon. This is typically performed using the `bootpd` command.

4. Restart the AXIS 1610 to download the IP address, default router address, and subnet mask.

The AXIS 1610 can automatically download a customized config file from a TFTP server. Just add the name of the config file and the TFTP server's IP address to your boot table. The config file is downloaded immediately after the AXIS 1610 receives its IP address.

Installing Printer Ports using AXIS Print Monitor

About
AXIS Print Monitor

AXIS Print Monitor is a Windows component that has been developed for network printing. It allows your AXIS 1610 to be connected in the same simple fashion as a local printer port and once installed, it is automatically initialized upon system start-up.

Printing Environment

AXIS Print Monitor supports printing over TCP/IP and NetBIOS/NetBEUI. To enable printing, ensure that the TCP/IP or NetBIOS/NetBEUI protocol is running correctly on your client.

❏ You can disable the TCP/IP printing protocol or the NetBIOS/NetBEUI printing protocol from the internal web pages. Click the **Configuration** button and the **TCP/IP** or **NetBIOS/NetBEUI** link and click **No** to disable the protocol. Both protocols are enabled (set to Yes) by default.

AXIS Print Monitor needs to be installed on each workstation for peer-to-peer printing. AXIS Print Monitor allows you to access all network printers, as if they were connected directly to your workstation.

Using
AXIS Print Monitor

Refer to the instructions relevant to your network on how to install and manage a printer using AXIS Print Monitor:

Printing over TCP/IP

- *Using AXIS Print Monitor in Windows 95/98 and Windows ME* on page 24

- *Using AXIS Print Monitor in Windows NT, Windows 2000 and Windows XP* on page 26

Printing over
NetBIOS/NetBEUI

- *Using AXIS Print Monitor in Windows 95/98 and Windows ME* on page 28

- *Using AXIS Print Monitor in Windows NT and Windows 2000* on page 29

Installing Printers for Printing over TCP/IP

Using AXIS Print Monitor in Windows 95/98 and Windows ME

Follow the procedure below to install TCP/IP Ports from a Windows 95/98/Me workstation:

Local Printer Port

1. Install the AXIS Print Monitor on your workstation. The software is available on the AXIS Product Resources CD.

2. Select **Settings** |**Printers** from the **Start** menu and double-click the **Add Printer** icon to start the Add Printer Wizard.

3. Select **Local Printer**, as the AXIS 1610 emulates a local printer port and click **Next>**

4. Choose an appropriate printer driver for your printer.
   Note: If the desired driver appears in the manufacturer and models list dialog, highlight your selection and click **Next>** and proceed to step 7.

5. If the desired printer driver is not available, click the **Have Disk...** button. Insert the printer driver CD that was provided with your printer, select the CD drive and click **OK.**

6. Select the desired printer driver from the CD and click **Next>**

7. Select the **TCP/IP** port you wish to use and click **OK.**
   Note: The ports will appear in the format <name>_TCP/IP: , where <name> is, by default, AXIS followed by the last six digits of the print server's serial number (e.g. AXIS560B35_TCP/IP:)
   Note: If you wish to install a remote TCP/IP port (i.e. if the TCP/IP port does not appear in the list), select the LPT1 port and follow the **Remote Printer Port** instructions below.

8. Enter a descriptive name for your printer and click **Next>**

9. Click the checkbox if you want to print a test page and click **Finish**.

Remote Printer Port

1. The printer you defined above is now displayed in the printers folder. Right-click the printer object and select **Properties** from the menu.

2. Click the **Details** tab and click **Add Port...** to display the available print server monitors.

3. Click **Other**, select **AXIS CAPT Port** and click **OK**.

4. Select TCP/IP as your choice of network printing protocol and click **OK**.

5. Enter the IP address / host name of your print server. Click **Add**.

6. The port will be added to the list and highlighted. Click **OK** to return to the printer ports dialog and click **Close**.

Notes: ❏   **Configure Port**
If you have changed the IP address / host name of a print server located on a different subnet you must enter the new IP address / host name in the Configure AXIS CAPT Port dialog.

The **Configure AXIS CAPT Port** dialog shows the port name and old IP address / host name of the print server. Enter the new IP address / host name of the print server and click OK.

Using
AXIS Print Monitor
in Windows NT,
Windows 2000
and Windows XP

Follow the procedure below to install TCP/IP Ports from a Windows NT, 2000 or XP workstation:

1. Install the AXIS Print Monitor on your workstation. The software is available on the AXIS Product Resources CD.

2. To start the Add Printer Wizard, select **Settings** │ **Printers** from the **Start** menu and double-click the **Add Printer** icon.

3. Select **My Computer**, as the AXIS 1610 emulates a local printer port and click **Next>**

4. If the TCP/IP port you want to use appears in the **Available Ports** list, you can proceed to step 7. If the port does not appear in the list, click **Add Port / Create a new port**. Select AXIS CAPT Port from the drop-down list and click **Next>**

5. Select TCP/IP as your choice of network printing protocol and click **OK**.

6. From the Add Port dialog, enter the IP address / host name of the print server and click **Add**.

7. The port will be added to the list and highlighted. Click **OK** to return to the printer ports dialog and click **Close**.

8. Select the TCP/IP port you wish to use and click **Next>**
    Note: The port will appear in the format <name>_TCP/IP:, where <name> is, by default, AXIS followed by the last six digits of the Axis print server's serial number (e.g. AXIS560B35_TCP/IP:)

9. Choose an appropriate printer driver for your printer.
    Note: If the desired driver appears in the displayed manufacturer and models list dialog, highlight your selection, click **Next>** and proceed directly to step 12.

10. If the desired printer driver is not available, click **Have Disk...** and insert the printer driver CD that was provided with your printer. Select the CD drive and click OK.

11. Select the printer driver you want to install from the CD and click **Next>**

12. Enter a descriptive name for your printer and click **Next>**

13. Choose whether you want to share the printer with other network users and click **Next>**

14. Click the checkbox if you want to print a test page and click **Finish**.

Notes: ❏ **Configure Port**
If you have changed the IP address / host name of a print server located on a different subnet you must enter the new IP address / host name in the Configure AXIS CAPT Port dialog.

The **Configure AXIS CAPT Port** dialog shows the port name and old IP address / host name of the print server. Enter the new IP address / host name of the print server and click OK.

Installing printers for Printing over NetBIOS/NetBEUI

Using AXIS Print Monitor in Windows 95/98 and Windows ME

Follow the procedures below to install NetBIOS/NetBEUI ports from a Windows 95/98 or Windows ME workstation:

1. Install the AXIS Print Monitor on your workstation. The software is available on the AXIS Product Resources CD.

2. To start the Add Printer Wizard, select **Settings** | **Printers** from the **Start** menu and double-click the **Add Printer** icon.

3. Click **Next>** in the first dialog.

4. Select **Local printer** as the AXIS 1610 emulates a local printer port and click **Next>**

5. Choose an appropriate printer driver for your printer.
   Note: If the desired printer driver appears in the manufacturer and models list, highlight your selection, click **Next>** and proceed to step 8.

6. If the desired printer driver is not available in the list, click the **Have Disk...** button. Insert the printer driver CD that was provided with your printer, select the CD drive and click **OK**.

7. Select the printer driver you want to install from the CD and click **Next>**

8. Select the port you want to use from the Available Ports list and click **Next>**.
   Note: The port name is, by default, AXIS followed by the last six digits of the AXIS 1610 serial number, e.g. (AXIS100086:)

9. Enter a descriptive name for your printer and click **Next>**

10. Click the checkbox if you want to print a test page and click **Finish**.

Using
AXIS Print Monitor
in Windows NT
and Windows 2000

Follow the procedure below to install NetBIOS/NetBEUI Ports from a Windows NT 4.0 or Windows 2000 workstation:

1. Install the AXIS Print Monitor on your workstation. The software is available on the AXIS Product Resources CD.

2. Select **Settings** | **Printers** from the **Start** menu and double-click the **Add Printer** icon to start the Add Printer Wizard.

3. Select **My Computer**, as the AXIS 1610 emulates a local printer port and click **Next>**

4. If the port you want to use is in the Available Ports list, you can proceed to step 8.
    If the port does not appear in the list, click **Add Port / Create a New Port**. Select **AXIS CAPT Port** from the drop-down list and click **Next>**

5. Select NetBIOS/NetBEUI as your choice of network printing protocol

6. Select the AXIS Port you want to add. The port appears as <name>, where <name> is AXIS followed by the last six digits of the AXIS 1610 serial number, e.g. AXIS100086. Click **OK**.

7. Close the Printer Ports window and click **Next>**

8. Select the printer port from the Available Printer Ports list if it is not already selected. Click **Next>**.

9. Click the **Have Disk...** button. Insert the printer driver CD that was provided with your printer, select the CD drive and click **OK**.

10. Select the printer driver you want to install and click **Next>**

11. Enter an appropriate name for your printer and click **Next>**

12. Choose whether you want to share the printer with other network users and click **Next>**

13. Print a test page to confirm the installation and click **Finish**.

Basic Setup with AXIS NetPilot

Follow the instructions available on the AXIS Product Resources CD to install the AXIS NetPilot software on to your computer. AXIS NetPilot runs on Windows 95/98, ME, NT 4.0 and 2000

Starting the Installation

Follow the instructions below to install the AXIS 1610 with AXIS NetPilot:

1. Start AXIS NetPilot by double-clicking the NetPilot icon, located in the folder where you installed AXIS NetPilot.

2. Locate the AXIS 1610 in the 'New Axis Units' folder. Select it and click the **Install** button on the AXIS NetPilot toolbar. If your network is large, it may take a few seconds before the print server appears in the folder.

3. Choose the **with Installation Wizard** option and click **OK**. The following screen appears:
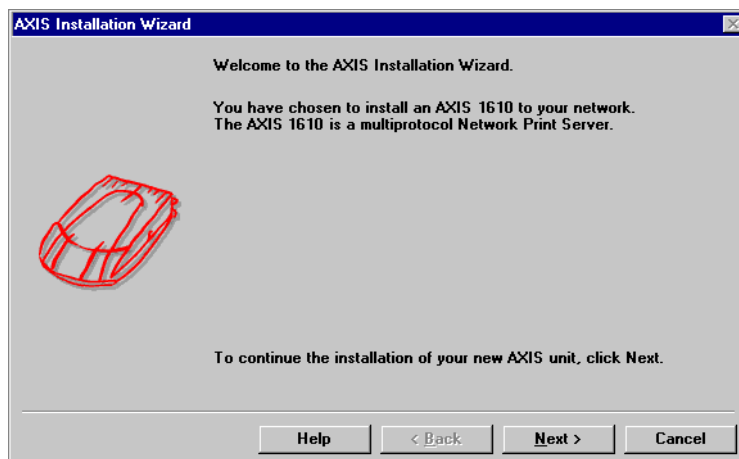
The AXIS NetPilot Installation Wizard Main window

The AXIS NetPilot Installation Wizard guides you through the installation process. The following options are available:

Printer Port Name   The default printer port name consists of <name>, where <name> is AXIS followed by the last six digits of the AXIS 1610 serial number, e.g. AXIS100086. If you want to change the default printer name, just type the new name in the available text field. The maximum length of the printer port name is 15 characters. If you enter more than 15 characters, the name will be truncated.

IP address   If you want to assign an IP address to your AXIS 1610, indicate which method the AXIS 1610 should employ for obtaining an IP address. DHCP, ARP, RARP and BOOTP are supported. You can also set the IP address manually. Refer to *Assigning an IP address*, on page 16 for more information.

Set Configuration Password   The final user prompt in the Installation Wizard allows you to set a password that protects the AXIS 1610 parameters and settings from unauthorized users.

Notes: ❏   The parameters entered during installation are not permanent, they can be altered at any time according to your network printing requirements.

❏   No serious or permanent damage will be caused if you make a mistake during installation. If at any time you find that printing is not satisfactory, the parameters can easily be changed to tune the system to your requirements.

Section 4   Management & Configuration

The management and configuration tools that are supported by the AXIS 1610 allow you to:

- Change the print server parameters, i.e. editing the *config* file

- Receive extended information about the print jobs

- Receive printer port status

- Monitor your printers

- Reset the AXIS 1610

- Upgrade the AXIS 1610 firmware (Refer to *Section 5 Upgrading the Firmware*, on page 50)

Configuration Overview

The method you should use to manage and configure your AXIS 1610 is dictated by the operating system protocols of your network. The table below displays which method to use for supported network protocols:

| Network Protocols	Configuration/Management methods
TCP/IP	• Web Browser - See page 33 • Netspot - See page 36 • FTP - See page 44 • SNMP - See page 47
NetBIOS/NetBEUI	• AXIS NetPilot - See page 37
IPX	• AXIS NetPilot - See page 37 • Netspot - See page 36

Using a Web browser

Once you have established the AXIS 1610 in the TCP/IP environment, as described in *Assigning an IP address*, on page 22, you can access the AXIS 1610 Web pages from any standard Web browser.

Accessing the Web Pages

Follow the steps below to access the internal home page of the AXIS 1610. The browser used in the following example is Netscape Navigator 4.3.

1. Start your Web browser.

2. From the **File** menu, select **Open Page...**

3. Type the host name or the IP address of your AXIS 1610 in the Open Page dialog, as detailed below:
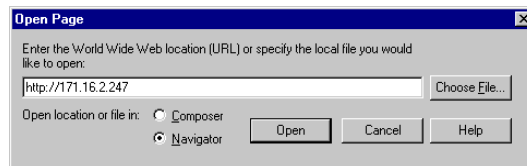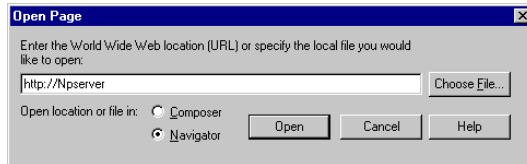
Alternatively, type the host name or the IP address directly into the Web browser's Location/Address text field.

The home page of your AXIS 1610 appears in your browser.
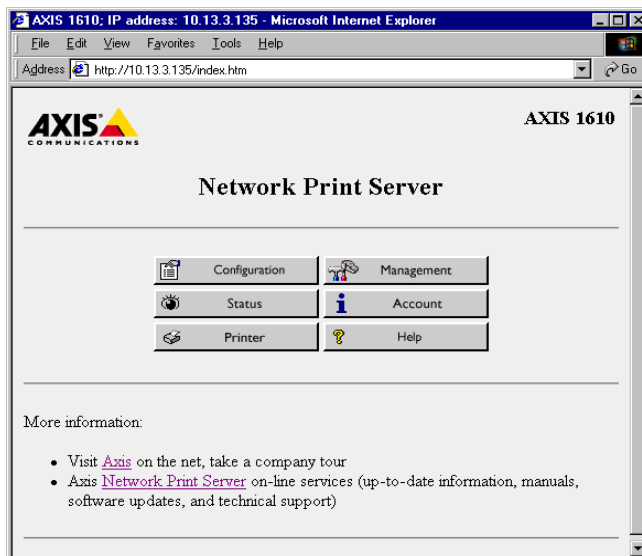
The AXIS 1610 Home Page

Web interface
Services

Links to the following services are available from the internal home page of the AXIS 1610:

- Configuration
- Management
- Status
- Account
- Printer
- Help
- Axis web site

Overview

From the Configuration pages you can:

- Modify configuration parameters, including the printer port name and root password. A complete parameters list can be found in *The Parameter List*, on page 52.

- Enable or disable any of the available networking protocols and modify their operation from the appropriate configuration pages.

Note: ❑ When clicking on either Management or Configuration, you will be prompted to provide a user name and a password, unless you are using the default values root and pass.

Caution! ❑ Any network configuration should involve the Network Administrator.
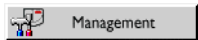
From the Management page, you can reset the print server parameters to the factory default values. You can also view basic information about your AXIS 1610, e.g. the current software version, Ethernet address, serial number.

From the Status page, you can view the status of the connected printer ports, such as the number of bytes printed for each print job, etc.

The Account page maintains and displays a historical record of print jobs that includes the user, logical printer, protocol, file size, elapsed time and off-line time.

The Printer page displays the current status and management information of the printer connected to the AXIS 1610, including printer model, printer languages, etc. The extent of this information is depending on the printer model.

The Help page contains a short description of the configuration and management activities that can be performed via the internal Web pages of the AXIS 1610.

Using Netspot

The Canon NetSpot utility provides easy network management of your devices by allowing you to set up those devices and display device status and features.

Installing NetSpot

Before installing NetSpot, refer to the NetSpot user documentation, provided with the NetSpot software, with information on the installation procedure and the minimum requirements for NetSpot.

Viewing AXIS 1610 using NetSpot

As NetSpot communicates with the AXIS 1610 via the TCP/IP protocol (and SNMP), it is necessary to configure the TCP/IP settings of the AXIS 1610 as described in *Assigning an IP address*, on page 16. Alternatively, you can configure these settings using NetSpot as follows:

1. Start NetSpot.

2. From the Device menu, select **New**...

3. Type the MAC address (Ethernet address) of the AXIS 1610 and the IP address you want to assign to the AXIS 1610, and select the **Continue...** button.

4. Select the frame type of your TCP/IP network, and click the **Add to List** button.

Notes: ❏ If you want to configure the TCP/IP settings of the AXIS 1610 using NetSpot, it is necessary to use the Administrator version of NetSpot. See the NetSpot user documentation for more information.

❏ If you use DHCP, RARP or BOOTP for the IP address, use a temporary IP address in step 3 of the procedure. Reconfigure the TCP/IP settings after completing the procedure.

Using AXIS NetPilot

AXIS NetPilot is the recommended tool to use for configuring the AXIS 1610 in networks that support communication via the NetBIOS/NetBEUI or IPX protocols.

AXIS NetPilot allows you to:

- Change the AXIS 1610 parameter values

- Modify network environment settings

- Monitor your printers on the network

- Create logical groups of print servers to simplify administration

- Upgrade the AXIS 1610

Starting AXIS NetPilot   Start AXIS NetPilot by clicking the AXIS NetPilot icon, which resides in the folder where you installed AXIS NetPilot.
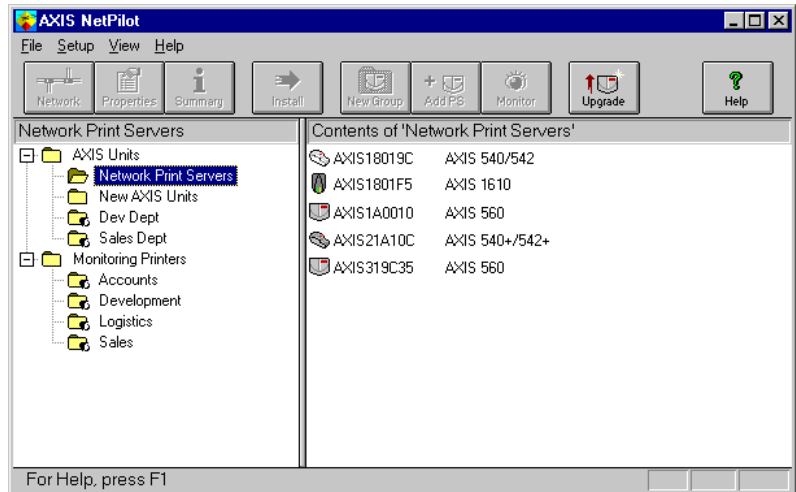
The main window of AXIS NetPilot

Changing the
parameter values

AXIS NetPilot provides you with two useful tools for changing parameter values:

- Property pages: Use the Property pages if you have lim-
                            ited experience in editing *config* files. A
                            user-friendly interface helps you to set
                            the AXIS 1610 parameters.

- Parameter List Editor: Use this fast and efficient tool if you
                            have considerable experience in editing
                            config files.

The Property Pages

The Property pages provide an easy way to view and change the parameters. Each property page comprises a set of selection tabs that are appropriate to your operating environments. Each parameter can be edited by selecting the relevant box.

Follow the instructions below to open and edit an arbitrary Property Page:

1. Select the AXIS 1610 from the 'Network Print Servers' folder.

2. Click the **Properties** button on the AXIS NetPilot toolbar or choose **Properties** from the **Setup** menu.

3. Select the tab that includes the parameter you want to change.

4. Change the value.

5. Click **Apply** to save the change to the print server. (If you select **OK** instead, the Property page closes automatically after the change has been saved).

The Parameter
List Editor

The Parameter List Editor is a simple editor that enables you to:

• Edit the AXIS 1610 *config* file.

• Save customized *config* files to your hard disk.

• configure several network print servers simultaneously.

Follow the instructions below to use the Parameter List Editor:

1. Choose **Edit Parameter List** from the **Setup** menu.

2. Download a *config* file from a print server or from your hard disk by selecting **from File** or **from Print Server**.

3. Click the **Load** button and the *config* file opens in the editor.

4. Edit the *config* file.

5. Select the appropriate radio button, **To File** or **To Print Server**.

6. Click **Save** after you have made your choice, to save the modified *config* file.

Modifying the
network
environments

From the Network Environment window you can modify the network settings for each supported network environment.

To gain access to the Network Environment window, follow the instructions below:

1. Select the AXIS 1610 from the 'Network Print Servers' folder.

2. Click on the **Network** button on the toolbar or select **Network** from the **Setup** menu.

3. Select the tab corresponding to the environment that you want to modify.

Monitoring Printers

To simplify printer monitoring, you can create logical groups of printers. The printer status of each printer is displayed in the AXIS NetPilot window.
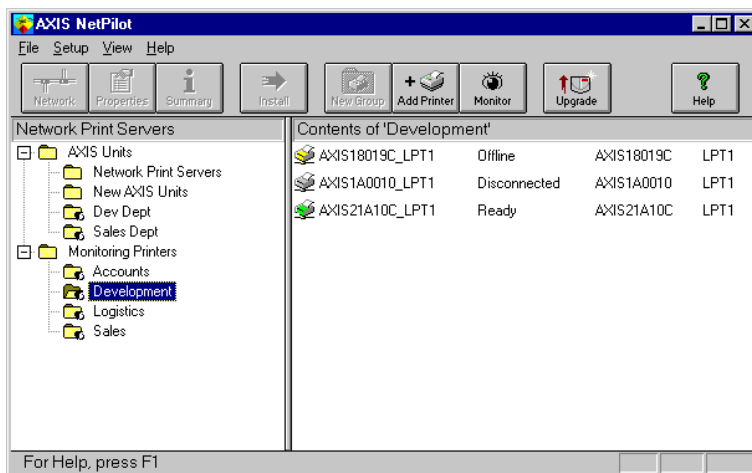
AXIS NetPilot's Monitoring Window

Creating a printer group

Follow the instructions below to create a printer group:

1. Select the 'Monitoring Printers' folder.

2. Click on the **New Group button** on the toolbar or select **New Printer Group** from the **File** menu.

3. Type a printer group name in the text field and click **OK**.

You can create as many printer groups as you want.

Adding a printer to a printer group

Follow the instructions below to add a printer to a printer group:

1. Select the printer group folder, located in the 'Monitoring Printers' folder.

2. Click on the **Add Printer button** on the toolbar or select **Add Printer** from the **File** menu.

3. The Add Printer window appears. Double-click the print server, to which the desired printer is connected and select the printer port. Click **OK**.

Examining printers

Follow the instructions below to monitor the printers:

1. Select the printer group folder, located in the 'Monitoring Printers' folder. The printer status appear in the right-hand frame of AXIS NetPilot.

2. If you want the status to appear in a new window, click the **Monitoring** button on the AXIS NetPilot toolbar.

Grouping logically connected Print Servers

AXIS NetPilot allows you to create logical groups of print servers in order to simplify administration. Installed print servers are displayed in the 'Network Print Servers' folder and shortcuts to these print servers can be added to the print server groups. Management operations performed on the shortcuts affects the functionality of the print servers.

Creating a Print Server Group

Follow the instructions below to create a print server group:

1. Select the 'AXIS Units' folder.

2. Click on the **New Group button** on the toolbar or select **New Print Server Group** from the **File** menu.

3. Type a print server group name in the text field and click **OK**.

You can create as many print server groups as you want, but you cannot include a print server in more than one group.

Adding a Print Server to a Print Server Group

Follow the instructions below to add a print server to a print server group:

1. Select the print server group folder, located in the 'AXIS Units' folder.

2. Click on the **Add PS button** on the toolbar or select **Add Print Server** from the **File** menu.

3. The Add Network Print Server window appears. Select the print server and click **OK**.

Examining
Print Servers

Follow the instructions below to monitor the print servers:

1. Select the print server group folder, located in the 'AXIS Units' folder.

2. Select the print server.

Printer Information

Follow the instructions below to obtain detailed printer information from printers appearing in the monitoring window:

Note: ❏ The extent of the detailed printer information depends on your printer model.

1. Select the desired printer folder, located in the 'Monitoring Printers' folder.

2. Click the desired printer icon and choose **Printer Information** from the **File** menu.

```
Printer Information                              ⊠

 Manufacturer:  Canon
 Model:         LBP-800
 Printer Characteristics:
 Key  Value
 CMD  CAPT
 VER  1.0
 CLS  PRINTER




            Close              Help
```
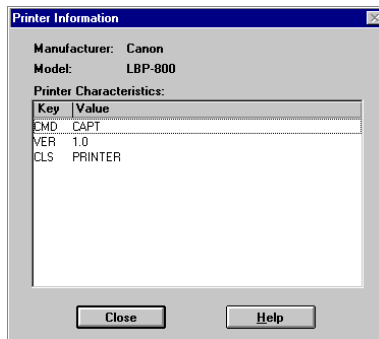
AXIS NetPilot Printer Information window

You can also view the detailed printer information in the Summary window.
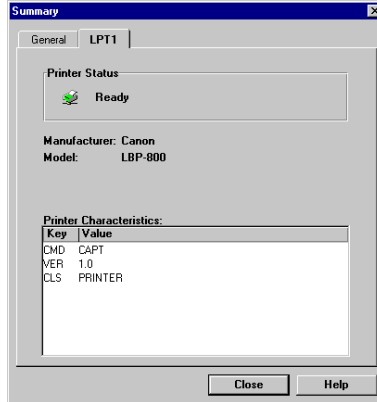
AXIS NetPilot Summary window

Upgrading the Print Server

You can use the AXIS NetPilot Upgrade Wizard to upgrade the AXIS 1610 software. Please refer to *Section 5 Upgrading the Firmware*, on page 50, for details.

Additional information

Refer to the AXIS NetPilot on-line help for further information about this tool.

Using FTP

Having assigned an IP address to your AXIS 1610, as described in *Assigning an IP address*, on page 22, you can change the AXIS 1610 parameter settings using the File Transport Protocol (FTP).

Editing the *config* file

Follow the instructions below to edit the *config* file using FTP:

1. Log in to the AXIS 1610 by typing:
    `ftp <host name>` or `ftp <IP address>` in a DOS window.

2. Enter the user id and the password. (The default entries are `root` and `pass`.)

3. Download the *config* file to your host by typing:
    `get config`

4. Edit the file using your preferred text editor.

5. Save the *config* file to the AXIS 1610 by typing:
    `put config CONFIG`

Note: ❑ It is important that the destination file is specified in capital letters. Otherwise the edits are temporary and will be lost once the AXIS 1610 has been powered down.

The example on the next page shows how to edit the *config* file using FTP from a DOS window.

Example:

```
> ftp npserver
connected to npserver.
220 AXIS 1610 FTP Print Server v5.80 Nov 1 2001
ready.
Name (npserver:thomas): root
331 User name ok, need password
Password: pass            (not visible)
230 User logged in
ftp> get config
200 PORT command successful.
150 Opening data connection for config
(192,36,253,4,13,223), (mode ascii).
226 Transfer complete.
8588 bytes received in 0.24 seconds (35.63 kbytes/s)
ftp> put config CONFIG
200 PORT command successful.
150 Opening data connection for CONFIG
(192,36,253,4,13,223), (mode ascii).
226 Transfer complete.
8588 bytes received in 0.45 seconds (19.04 kbytes/s)
ftp> bye
221 Goodbye.
>
```

Viewing
the *Status* File

The status command shows which printer port the logical printers are assigned to, and their current status.

Follow the instructions below to view the *status* file using FTP:

1. Log in to the AXIS 1610 by typing:
   `ftp <host name>` or `ftp <IP address>` in a DOS window.

2. Enter the user id and the password. (The default entries are `root` and `pass`.)

3. Download the *status* file to your host by typing:
   `get status`

4. View the status file using your preferred text editor.

Viewing
the *Account* File

The *account* file contains data concerning the ten last print jobs. It specifies an internal job number, the user that initiated the job, the protocol and logical printer that was used, current status (Completed, Off-line, or Printing), number of bytes printed, elapsed time and off- line time.

Follow the instructions below to view the *account* file using FTP:

1. Log in to the AXIS 1610 by typing:
   `ftp <host name>` or `ftp <IP address>` in a DOS window.

2. Enter the user id and the password. (The default entries are `root` and `pass`.)

3. Download the *account* file to your host by typing:
   `get account`

4. View the *account* file using your preferred text editor.

FTP Help

By typing `help` in step 3 in the FTP instructions described above, a list of all available files and commands will be displayed.

Using SNMP

You can use SNMP (Simple Network Management Protocol) for remotely monitoring and configuring the AXIS 1610. All major functions for print servers are supported.

General Information SNMP refers to a set of standards for network management, including a protocol, a database structure specification, and a set of data objects. The AXIS 1610 SNMP implementation runs in TCP/IP networks.

The management is handled by NMS (Network Management System) software running on a host on your network. The NMS software communicates with network devices by the means of messages, which are references to one or more objects.

A message can be a question or an instruction to a device, or an alarm triggered by a specific event in a device. Objects are contained in data bases called MIBs (Management Information Base), where MIB-II is a standard database.

The AXIS 1610 supports the following MIBs:

- relevant parts of MIB-II
- AXIS MIB
- relevant parts of the Host Resource MIB
- relevant parts of the Printer MIB
- relevant parts of the CANON-MIB

The AXIS MIB | In order to make full use of the AXIS 1610 SNMP support, you are required to use NMS software that allows you to install private enterprise MIBs, like the AXIS MIB.

The AXIS MIB contains a large number of objects which may be categorized as follows:

- Menu objects – used for viewing and changing the AXIS 1610 configuration from the NMS program. Refer to *The Parameter List*, on page 52.

- Printer status and unit administration objects – used for monitoring AXIS 1610 print jobs and storing parameter changes permanently.

- Trap objects – used for alarms at various error conditions.

For technical details, you can view the MIB file (*axis.mib*) with any text editor. The MIB file is stored internally in the print server and can be retrieved via ftp.

The AXIS MIB can also be downloaded from the Axis web site at **http://www.axis.com/**

Using the Test Button

The test button is located on the front right hand side of the AXIS 1610 and is used for resetting the AXIS 1610 parameters to the factory default settings.

Factory Default Settings

Follow the instructions below to reset the AXIS 1610 to the factory default settings:

1. Remove the external power supply to switch off the AXIS 1610.

2. Press and hold down the test button, while you plug the external power supply back in. Continue to hold down the test button, until the network indicator begins to flash at one second intervals. This should take at least 5 seconds.

3. Release the test button and wait until the network indicator flashes at least five times.

4. Press and hold the test button again until the network indicator remains constantly lit.

5. Restart the AXIS 1610 by disconnecting and reconnecting the external power supply.

The AXIS 1610 is now reset to factory default settings.

Note: ❏ All parameters except the IP Address (IP_ADDR.) and the DHCP Enable/Disable (DHCP_ENB) parameters are reset. If you want to change these parameters, please use any of the tools presented in *Configuration Overview*, on page 32.

Section 5   Upgrading the Firmware

You can upgrade the AXIS 1610 firmware in the flash memory using one of the following methods:

- FTP (TCP/IP)
- AXIS NetPilot Upgrade Wizard (IPX/SPX)

Note: ❑   Updating instructions are also supplied with the software update.

Upgrading over the Network using FTP

To upgrade over the network using FTP you will need the file with the new print server software. The name of this file is in the form `product_version.bin`, e.g. `1610_580.bin` for software release 5.80. You can download the print server software from the Axis web site at http://www.axis.com

Note: ❑   You must assign the AXIS 1610 with an IP address, as described in *Assigning an IP address,* on page 22, before you can use this upgrading method.

Follow the procedures below to upgrade the AXIS 1610:

1. Log in to the AXIS 1610 with the command:
   `ftp <host name>`, or `ftp <IP address>`

2. You will be prompted for user id and password.
   Default user id: **root**
   Default password: **pass**

3. To change to binary transfer mode, type the command:
   `binary`

4. Type the command:
   `put <software name> flash`

   (`<software name>` is the name of the new print server software, e.g. `1610_580.bin`)

5. Wait for the flash loading operation to finish. This normally takes 1 to 4 minutes. The unit automatically restarts with the new print server software.

6. Log out using the command `quit, bye` or `exit` depending on your FTP version.

Notes:
❏ If the upgrading process fails, just repeat the instructions presented above.

❏ If you lose contact with the AXIS 1610 after an upgrading failure, just restart the AXIS 1610 to restore contact.

❏ If the network diode flashes at regular half second intervals, the AXIS 1610 cannot process any print jobs. In order to leave this state, you must repeat the instructions above.

Upgrading using AXIS NetPilot

This method is recommended for upgrading the flash memory in networks supporting the IPX protocol. An Upgrade Wizard will guide you through the necessary procedures.

Follow the instructions below to upgrade your print servers:

1. Obtain the firmware file. You can download print server software from the Axis web site at http://www.axis.com

2. Put the file in the AXIS NetPilot 'Upgrade' folder. This folder resides in the same folder as the AXIS NetPilot program and was created when AXIS NetPilot was installed on your client.

3. Start the Upgrade Wizard by clicking on the **Upgrade** icon on the AXIS NetPilot toolbar.

4. Proceed the installation by following the instructions that are presented to you in the Upgrade Wizard.

If you need more information, please refer to AXIS NetPilot on-line help.

Appendix A   The Parameter List

The left-hand column shows the parameters and their default values as they appear in the *config* file and the right-hand column shows the name of the parameters as they appear in the internal Web pages.

Please refer to *Section 4 Management & Configuration*, on page 32, for more information about how to change the parameters.

Note: ❏ The password parameter, ROOT_PWD, only appears when you are logged in to the AXIS 1610 using *root*.

```
--- GENERAL MENU
```

NETWORK_SPEED.: AUTO_SENSE	AUTO_SENSE, 10_HALF_DX, 100_HALF_DX
PS_NAME. : AXIS100086	Print Server Name ('AXIS' followed by the last six digits of the serial number)
ROOT_PWD. : pass	Root Password
SYS_LOC. :	System Location
SYS_CONT. :	System Contact

```
--- TCP/IP MENU
```

TCP_ENB. : YES	TCP/IP printing enabled
INT_ADDR. : 0 0 0 0	Internet Address
DEF_ROUT. : 0 0 0 0	Default Router Address *(0.0.0.0 for no router)*
NET_MASK. : 0 0 0 0	Net Mask *(e.g. 255.255.255.0 for class C, 0.0.0.0 for auto-sense)*
DHCP_ENB. : YES	DHCP Enabled
BOOTP_ENB. : YES	BOOTP Enabled
RARP_ENB. : YES	RARP Enabled
WINS_ENB. : YES	WINS Enabled
WINS_ADDR1. : 0 0 0 0	Primary WINS server Address
NBT_SCOPE ID. :	NBT Scope ID (Defines the NetBIOS scope to be used with WINS name registration)

```
---  SNMP MENU
```

TRAPADDR. : 0 0 0 0	Trap Address
TRAP_COM. : public	Trap Community
SYS_NAME. :	System Name

```
---  NetBIOS/NetBEUI Menu
```

LSLM_ENB. : YES	NetBIOS/NetBEUI printing enabled

Appendix B   Technical Specifications

Supported Systems

Microsoft Windows:	Windows 95/98, ME, NT 4.0, 2000 and XP
WWW:	Netscape Navigator 3.0 and above and MS Internet Explorer 3.0 and above

Printing Protocols

Windows:	TCP/IP, NetBIOS/NetBEUI

Management Protocols

NetWare:	IPX
Windows:	NetBIOS/NetBEUI or TCP/IP, WINS
TCP/IP:	FTP, BOOTP, ARP, RARP, DHCP ICMP, IGMP, IP, TCP, UDP, HTTP, SNMP, TFTP

Network Management

SNMP-MIB II compliant (over UDP/IP), private enterprise MIB, Host Resources MIB, Printer MIB, CANON-MIB and AXIS MIB included

Hardware

32 bit 100 MHz RISC Controller, 1 Mbyte Flash memory
2 Mbytes DRAM

Logical Connection

Running simultaneously any combination of the supported protocols. Use of IEEE802.2, IEEE802.3, SNAP and Ethernet II frame types simultaneously

Attachments

RJ-45 connector (Category 5 Unshielded Twisted Pair) for
10baseT Ethernet and 100baseTX Fast Ethernet

Security

A Root password protects the configuration settings

Parallel Printer

One IEEE 1284 compliant high-speed parallel port, 36-pin
Centronics connector. Sustained throughput of 800 kbytes/s
(100baseTX) and 600 kBytes/s (10baseT). ECP support

Front Panel

2 LED indicators: Power and Network
Test button

Power Consumption

external power supply　Maximum 200 mA at 12 VDC. (Type PS-B, 12V, 500 mA)

Dimensions

Height x Width x Depth
0.9 x 2.4 x 4.8 inches (2.4 x 6.1 x 12.1 cm)

Weight

0.22 lb. (0.1 kg)

Environmental

Temperature: 40 - 105° F (5 - 40° C)
Humidity: 10 - 95% non-condensing

Approvals

EMC:　EN 55022/1994, EN50082-1/1992. FCC Class A $\mathsf{C}\mathsf{E}$
Safety:　EN 60950.

Appendix C   Glossary

BOOTP   A TCP/IP protocol, used for downloading start-up information such as the IP address to hosts on the network. BOOTP requires a BOOTP daemon on your system. A request made to an active BOOTP daemon initiates a search of the Boot Table for an entry matching the print server's Ethernet address. If a matching entry is found, the daemon downloads the IP address to the print server

config **file**   A file that resides in the print server's memory and contains all the parameters that determine the functionality of the AXIS 1610. By editing the *config* file (i.e. changing the parameter settings), you can configure the AXIS 1610 to match the network printing requirements

DHCP   Dynamic Host Configuration Protocol. DHCP is available in Windows NT, NetWare 5 and UNIX systems, and allows for the automatic but temporary assignment of IP addresses from a central pool. DHCP causes the selected host to automatically allocate and download an unused IP address to the requesting print server. It also provides validation data that defines how long the IP addresses will remain valid

To fully benefit from this method, the AXIS 1610 also supports the WINS host name resolution protocol, which is available in Windows NT networks

Firmware   Print server software that determines the functionality of the print server

Flash Memory   The print server software is stored in Flash Memory. The Flash Memory is a Non-volatile RAM that retains data content even after power is removed. As the memory allows its data to be erased and re-written, you can install software updates for your server as soon as they become available, without having to replace any parts. The new software is simply loaded into the server over the network

FTP   File Transfer Protocol. A TCP/IP protocol used for logging in to network servers and for transferring files

HTML   Hypertext Markup Language. A standard hypertext language used for creating World Wide Web pages and other hypertext documents

HTTP   Hypertext Transfer Protocol. The TCP/IP protocol for Web based communication

IP   Internet Protocol. The TCP/IP session-layer protocol that regulates packet forwarding by tracking IP addresses, routing outgoing messages and recognizing incoming messages

LED   Light Emitting Diode

MIB   Management Information Base. A database of network configuration information used by SNMP and CMIP to monitor or change network settings

RARP   Reverse Address Resolution Protocol. A TCP/IP protocol used for downloading IP addresses in UNIX networks. It requires a RARP daemon on your system, and only operates within a single network segment. A request made to an active RARP daemon initiates a search of the Ethernet Address Table for an entry matching the print server's Ethernet address. If a matching entry is found, the daemon downloads the IP address to the print server

RISC   Reduced Instruction Set Computing. A processor that recognizes only a limited number of assembly-language instructions

SNMP   Simple Network Management Protocol. A TCP/IP protocol for managing and monitoring nodes on a network

TCP   Transmission Control Protocol. The connection-oriented, transport-level protocol used in the TCP/IP suite of protocols

TFTP   Trivial File Transport Protocol. A simpler version of the FTP protocol that is used by the print server for automatic downloading of config files

URL   Uniform Resource Locator. A way of specifying the location of publicly available information on the Internet

WINS   Windows Internet Name Service. A NetBIOS Name Server that maps NetBIOS names to dynamically assigned IP addresses

Wizard   A special form of user assistance that automates a task through a dialog with the user. The Wizard helps the user to accomplish tasks that are complex and require experience, and can help to speed up an operation even for an experienced user

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