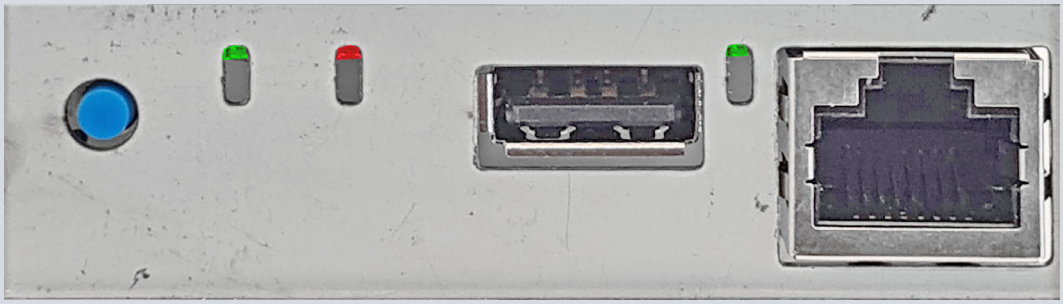
professional printing solutions

Quick Reference Guide
PM Ethernet PP 40x / PP 80x
1000 MBit



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Doument:	Ethernet Reference Manual
Title:	PM Ethernet PP 40x and PP 80x Family
Version:	1.0.1d

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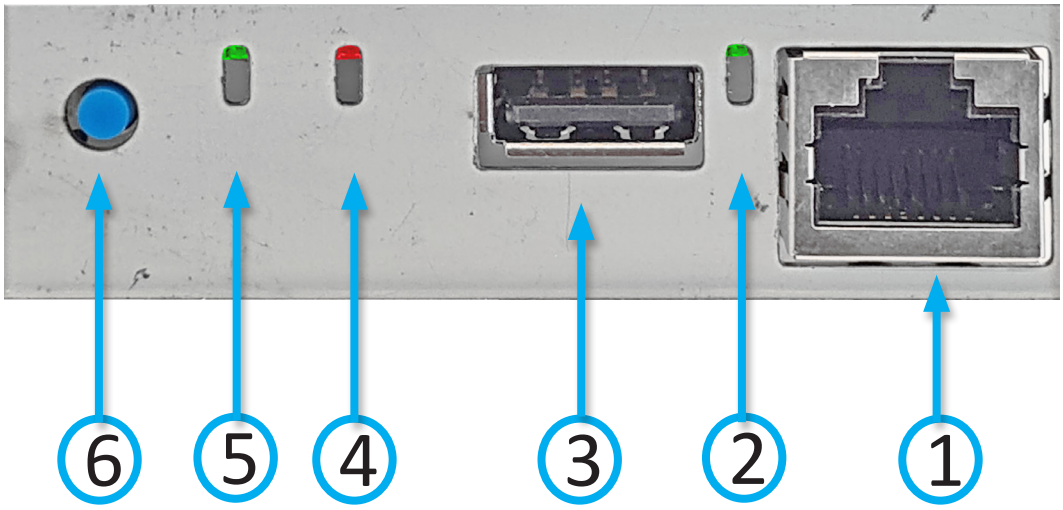
A publication of the PSi Matrix GmbH
November 2022

Content

This manual is intended to support PSi service partners. Printer functions, options and settings are described in detail.

1. Overview

1. Network connector (RJ-45)
2. Link LED (green)
3. USB port (only WLAN module)
4. Activity LED (orange)
5. Status LED (green)
6. Status button



Properties		Values
Network connection	logisch: physisch:	IEEE 802.3 (1000Base-T/100Base-TX and 10Base-T) RJ-45 (STP Cat. 5)
Printer connection		Internal interface connector
Power input		400 mA
Operating environment		Ambient temperature: 5–40 °C relative humidity:20–80 %

LED display
The LEDs of the print server provide information about its status.

LED	Action	Colour	Description
Link	permanently on	grün	There is a connection to the network.
	flashes at regular intervals		Network search (WLAN only)
	permanently off	------	There is no connection to the network.
Activity	flashes at regular intervals	orange	Indicates the exchange of network data packets.
Status	permanently on	grün	The print server is operational.
	permanently off	------	The print server has no power.

When the device starts, the behavior of the LEDs differs from this description.

2.0 Find the print server in the network

As soon as the print server is connected to the network, it checks whether an IP address can be obtained via the boot protocol BOOTP or DHCP. If this is not the case, the print server uses Zeroconf to assign itself an IP address from the address range (169.254.0.0/16) reserved for Zeroconf.
The ‚Smart Product Manager' is a software tool for managing and managing network devices. With this software you can determine the IP address of the print server as described below and, if required, save a freely definable IP address in the print server.

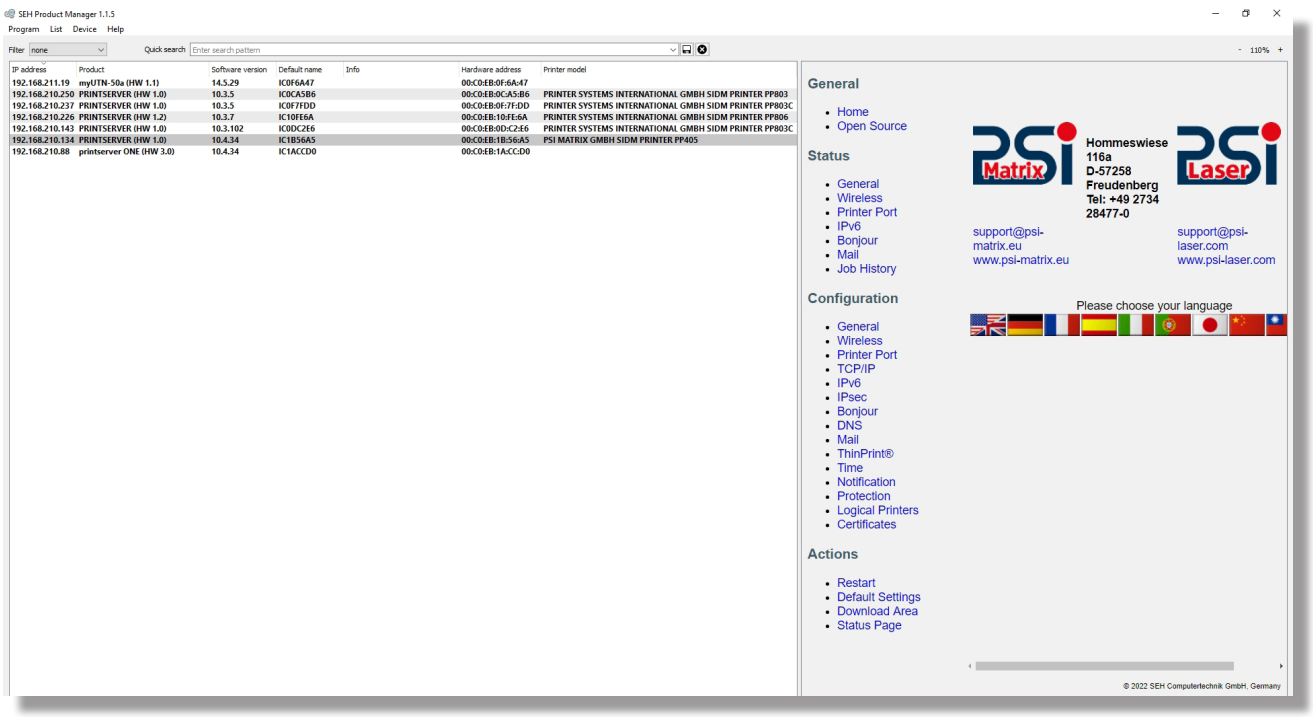
- Install and start Smart Product Manager
- Find print server (determine IP address via scan)
- Change P address
- Change zeroconf IP address

2.1 Install and start Smart Product Manager

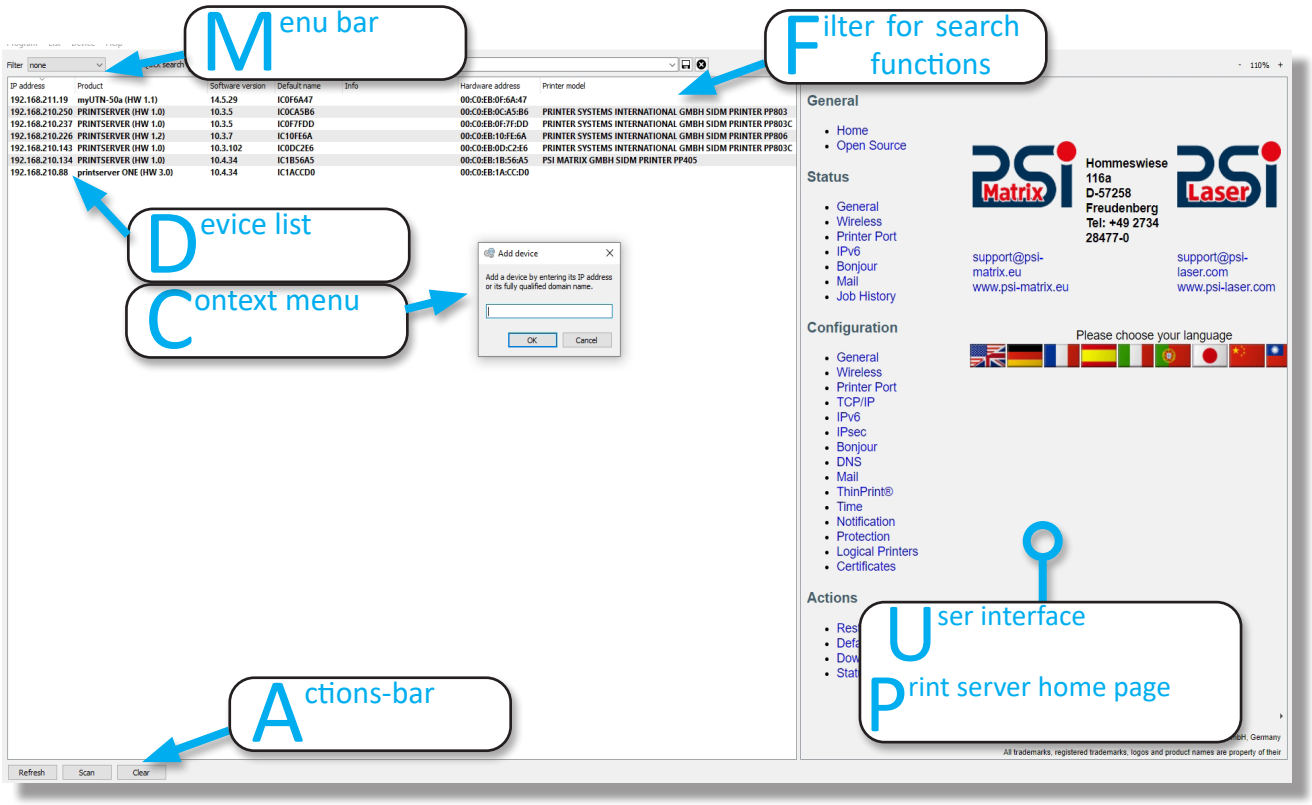
- Windows 10, Windows Server 2012 or higher
  https://psi-matrix.eu/wordpress/wp-content/uploads/2022/09/sehproductmanager-win-1.1.5.zip
- macOS 10.12.x or higher
  https://psi-matrix.eu/wordpress/wp-content/uploads/2022/09/sehproductmanager-mac-1.1.5.zip

Download the corresponding product manager via link and start it.

ⓘ Existing print servers are listed immediately and are available for selection.



2.1.3 Product Manager - main dialog



2.1.3 Call up the user interface of a print server

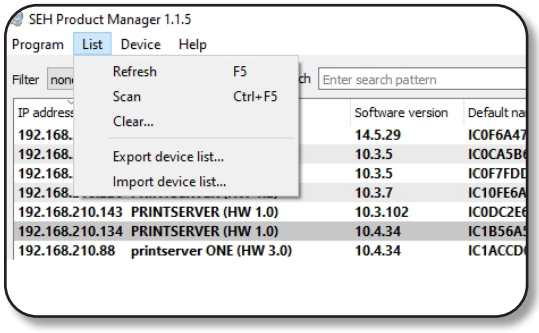
Highlight a print server in the device list to open the print server‘s user interface. By default, the user interface is displayed to the right of the device list. Most configurations of the print server are performed using the user interface.

The user interface of the print server can be opened in an Internet browser as the PRINTSERVER homepage using the Smart Product Manager.

Functional scope and configuration of user interface and PRINTSERVER homepage are identical. The functions and configurations described in the next chapters are therefore explained using the Smart Product Manager user interface.

2.1.4 Find print server (scan)

Newly added print servers only appear in the device list if a current scan is carried out.
It is advisable to clear the list beforehand.

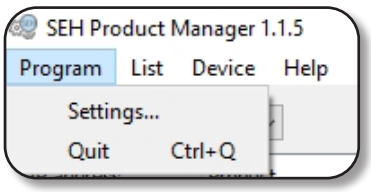


Scan or Strg+F5

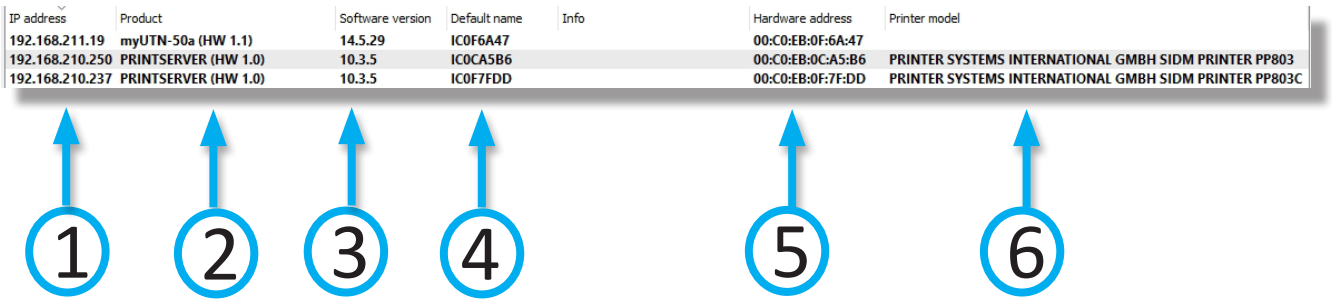
All available print servers are displayed.

2.1.5 Device list dialog

1. IP-Adresse
2. Printserver-Version
3. Software-Version
4. Default-Name
5. Hardware-Adresse



Info: Die Reihenfolge der Menüpunkte und derenAnzeige ist abhängig von der Einstellung.



2.2 Print server homepage user interface

In addition, the PRINTSERVER homepage can be accessed via the ‚Smart Product Manager' software tool. Proceed as follows

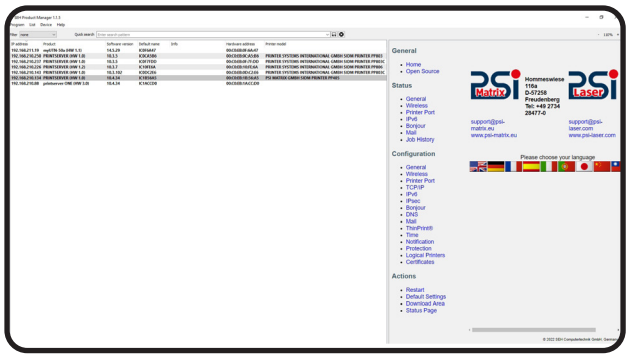
- Mark the print server in the device list.
- From the Actions menu, choose Launch Browser.
- The PRINTSERVER homepage is displayed in the browser.

2.3 The user menu

General

- Home

Displays the home page



2.3.1 Status

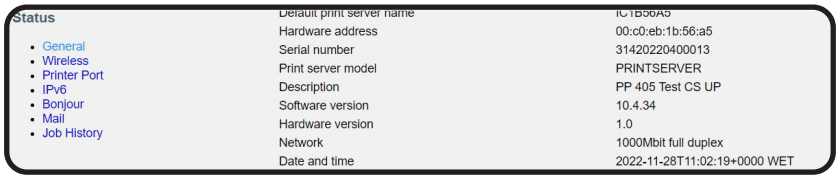
Status

- General
- Wireless
- Printer Port
- IPv6
- Bonjour
- Mail
- Job History

Status information

- General

The General page displays status information such as the print server name, hardware address, serial and version numbers, network type, etc. ‚Description' displays the text previously entered under ‚Configuration - General'. A description can be freely defined and used to get a better overview of the print servers and printers in the network.



Status

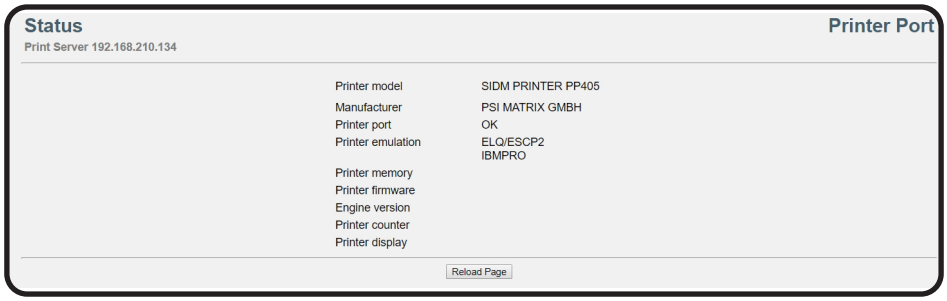
- General
- Wireless
- Printer Port
- IPv6
- Bonjour
- Mail
- Job History

Default print server name	ICTB56A5
Hardware address	00:c0:eb:1b:56:a5
Serial number	31420220400013
Print server model	PRINTSERVER
Description	PP 405 Test CS UP
Software version	10.4.34
Hardware version	1.0
Network	1000Mbit full duplex
Date and time	2022-11-28T11:02:19+0000 WET

- Printer Port

Printer Port Status

The Printer Port page shows information about the connected printers. It contains e.g. information about the manufacturer, the printer model or the total number of pages printed. The printer control panel and printer status messages can also be displayed. The information that can be displayed depends on the printer and print server model. For print server models with multiple physical printer ports, the information for each port is shown separately.



Status — Printer Port

Print Server 192.168.210.134

Printer model	SIDM PRINTER PP405
Manufacturer	PSI MATRIX GMBH
Printer port	OK
Printer emulation	ELQ/ESCP2 IBMPRO
Printer memory	
Printer firmware	
Engine version	
Printer counter	
Printer display	

Reload Page

- IPv6

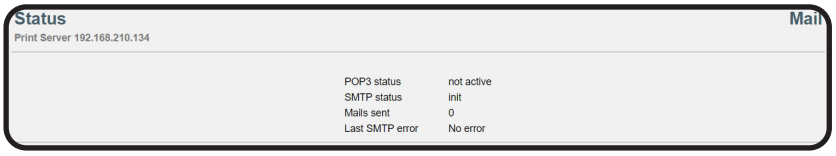
The IPv6 page displays assigned IPv6 addresses. The print server receives IPv6 addresses if it is connected to an IPv6-capable network. (Only available via the PRINTSERVER homepage.)

- Bonjour

The Bonjour page displays the Bonjour name. For print server models with multiple physical printer ports, the Bonjour name is displayed for each port.

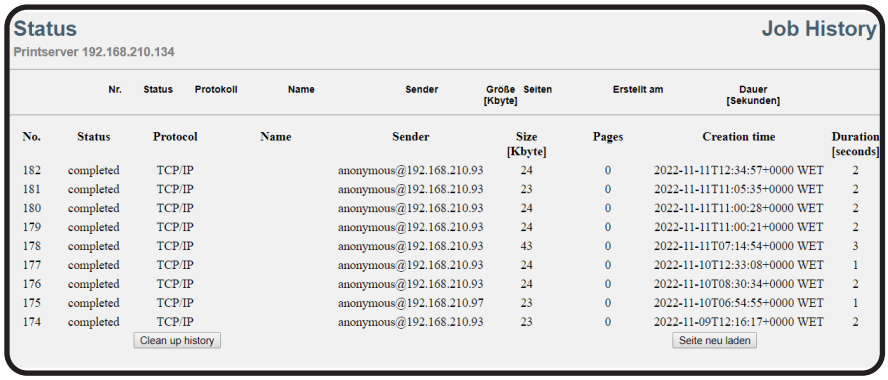
- Mail

The Mail page shows the status of the POP3 and SMTP settings. ‚Emails retrieved' shows the number of emails received. Last POP3 Error' shows the last POP3 error. Next mail retrieval in' shows the remaining time until the next mail retrieval.Replies sent' shows the number of emails sent. Last SMTP Error' shows the last SMTP error.



- Job History

The Job History page displays information about the print jobs that have been sent to the print server. A maximum of 64 print jobs are displayed. The FIFO principle (First In - First Out) applies from the 65th print job. Switching off or resetting the print server or the printer deletes the saved print jobs. The jobs are retained when the print server is restarted. The information displayed depends on the connected printer model.

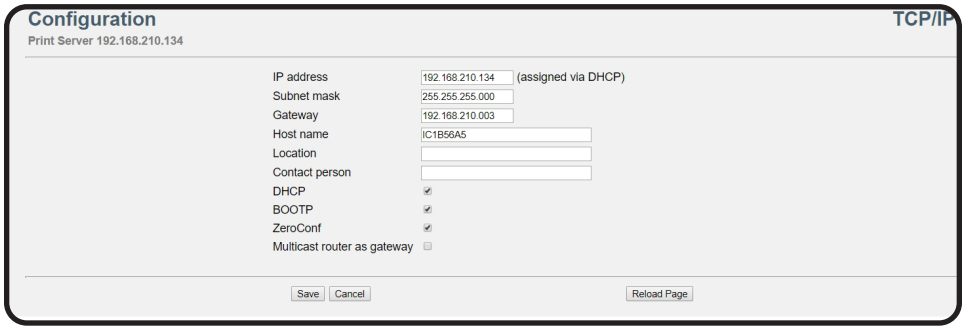


3.0 Configuration

3.1 Configuration IPv4 Parameter

The TCP/IP (Transmission Control Protocol over Internet Protocol) is responsible for forwarding data packets over several connections and establishing connections between network participants on this basis.
The TCP/IP protocol family includes the boot protocols DHCP and BOOTP. You can define various IPv4 parameters for optimal integration of the print server into a TCP/IP network.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the Configuration - TCP/IP menu item.



4. Configure the TCP/IP parameters
5. Confirm with Save. The settings are saved.

Parameter	Description
IP-Address	IP address of the print server
Net-Mask	Net mask of the print server
Gateway	Gateway-Address of the print server
Multicastrouter as Gateway	If the parameter is activated, an attempt is made to automatically enter the address of the multicast router found as the gateway address. If the parameter is deactivated, the gateway address must be entered manually.
Hostname	Hostname of the print serer
Contact Person	Freely definable description
Location	Freely definable description
DHCP	• Enables/disables the ‚DHCP', ‚BOOTP' and ‚ZeroConf' protocols. • The logs represent different ways of storing the IP address in the print server. • It is advisable to deactivate these options as soon as the print server has been assigned an IP address.
BOOTP	
ZeroConf	

3.2 IPv6 Parameter

IPv6 (Internet Protocol Version 6) is the successor to the Internet Protocol Version 4 that is currently predominantly used. Both protocols are standards for the network layer of the OSI model and regulate the addressing and routing of data packets through a network. The introduction of IPv6 offers many advantages:

- Enlargement of the address space from 232 (IPv4) to 2128 (IPv6) IP addresses.
- Auto configuration and renumbering
- Increased efficiency in routing through reduced header information.
- Standard integrated services such as IPSec, QoS, Multicast
- Mobile IP

3.3 How is an IPv6 address represented?

IPv6 addresses are 128 bits long and are represented as 8 x 16 bits in hexadecimal. The eight blocks are separated by a colon.

Example: fe80 : 0000 : 0000 : 0000 : 0000 : 10 : 1000 : 1a4

Leading zeros can be neglected for simplicity.

Example: fe80 : 0 : 0 : 0 : 0 : 10 : 1000 : 1a4

A block of contiguous zeros can be combined with two consecutive colons. In order for the address to remain unique, this rule may only be applied once.

Example: fe80 : : 10 : 1000 : 1a4

In a URL, an IPv6 address is enclosed in square brackets. This notation prevents incorrect interpretation of port numbers as part of the IPv6 address.
Example: http://[2001:608:af:1::100]:443

3.3.1 What are the IPv6 address types?

IPv6 addresses can be divided into different types. IPv6 address types can be derived based on the prefixes in the IPv6 addresses.

- Unicast addresses are routable, globally unique and therefore unambiguous addresses. A packet sent to a unicast address only arrives on the interface associated with that address. Unicast addresses have the prefixes ‚2' or ‚3'.
- Anycast addresses can be received by several participants at the same time. A data packet that is sent to this address arrives at several devices. Anycast addresses do not differ in their syntax from unicast addresses, but they select one interface from several interfaces. A packet destined for an anycast address arrives at the closest (according to the router metric) interface. Anycast addresses are only used by routers.
- With the multicast address, data packets can be sent to several interfaces at the same time without the bandwidth increasing in proportion to the participants. A multicast address can be recognized by the prefix ‚ff'.

3.3.2 Configuration IPv6 parameters

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - IPv6

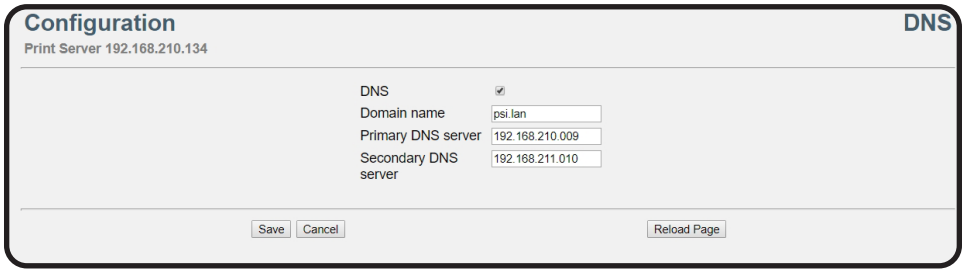
4. Configure the IPv6-Parameters
5. Confirm with Save. The settings are saved.

Parameter	Description
IPv6	Enables/disables the IPv6 functionality of the print server.
IPv6-Address	Defines a manually assigned IPv6 unicast address in the format n:n:n:n:n:n:n:n. for the print server. Each ‚n' represents the hexadecimal value of one of the eight 16-bit elements of the address. A block of contiguous zeros can be summarized with two consecutive colons.
Router	Defines the IPv6 unicast address of the router to which the print server sends its ‚Router Solicitations' (RS).
Multicastrouter as Gateway	If the parameter is activated, an attempt is made to automatically enter the address of the multicast router found as the gateway address. If the parameter is deactivated, the gateway address must be entered manually.
Prefix length	Defines the length of the subnet prefix for the IPv6 address. The value 64 is preset. Address ranges are specified by prefixes. For this purpose, the prefix length (number of bits used) is shown as a decimal number with a preceding ‚/' appended to the IPv6 address.
Automatic configuration	Activates/deactivates the automatic assignment of IPv6 addresses for the print server.

3.4 Configuration DNS

DNS (Domain Name Service) allows the mutual assignment of names and addresses. If a DNS server is operated in your network, you have the option of using the DNS for your print server.
benefit and purpose
If you use a domain name in a configuration, DNS must first be activated and configured. The DNS is used, for example, when configuring the time server.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - DNS



4. Configure the DNS-Parameters
5. Confirm with Save. The settings are saved.

Parameter	Description
DNS	De-/aktiviert die IPv6-Funktionalität des Printservers.
Domain-Name	Definiert eine manuell vergebene IPv6-Unicast-Adresse im Format n:n:n:n:n:n:n:n. für den Printserver. Jedes ‚n' stellt den hexadezimalen Wert von einem der acht 16-Bit-Elemente der Adresse dar. Ein Block aus zusammenhängenden Nullen kann mit zwei aufeinander folgenden Doppelpunkten zusammengefasst werden.
Erster DNS-Server	Definiert die IP-Adresse des ersten DNS-Servers.
Zweiter DNS-Server	Definiert die IP-Adresse des zweiten DNS-Servers. Der zweite DNS-Server wird benutzt, wenn der erste nicht verfügbar ist.

3.5 Konfiguration Bonjour

Bonjour' ermöglicht die automatische Erkennung von Computern, Geräten und Netzwerkdiensten in TCP/IP-basierten Netzwerken.

Der Printserver nutzt Bonjour zu folgenden Zwecken:
- Überprüfung der über ZeroConf zugewiesenen IP-Adresse
- Zuordnung von Hostnamen zu IP-Adressen
- Bekanntgabe seiner Bonjour-Dienste (Druckdienste, Smart Product Manager)

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - Bonjour

4. Configure the Bonjour Parameters

5. Confirm with Save. The settings are saved.

Parameter	Description
Bonjour	Enables/disables Bonjour.
Bonjour-Name	Defines the Bonjour name of the print server. The print server announces its Bonjour services under this name. If no Bonjour name is entered, a default name is used (printer name@ICxxxxxx). A maximum of 63 characters can be entered. The name cannot begin with an underscore.

3.6 How to use SNMP

SNMP (Simple Network Management Protocol) has become the standard protocol for managing and monitoring network elements. The protocol regulates the communication between the monitored devices and the monitoring station.

SNMP allows reading and changing management information provided by the network elements. The collection of management information for a device is called MIB.

Private MIB of the print server
The print server provides the standard ‚MIB-II' and a ‚Private MIB' (Management Information Base). All print server parameters and status information are stored in the ‚Private MIB'. The ‚Private MIB' is stored in the print server upon delivery and can be used immediately.

Benefit and purpose

The print server parameters can be queried and configured by a management tool using the SNMP protocol.

Requirement

- The print server is connected to the network and the printer.
- The print server is known with an IP address in the network

3.6 Configuration Mail

Mail configuration The POP3 and SMTP protocols must be configured on the print server so that the notification service and administration via e-mail can function on the print server.

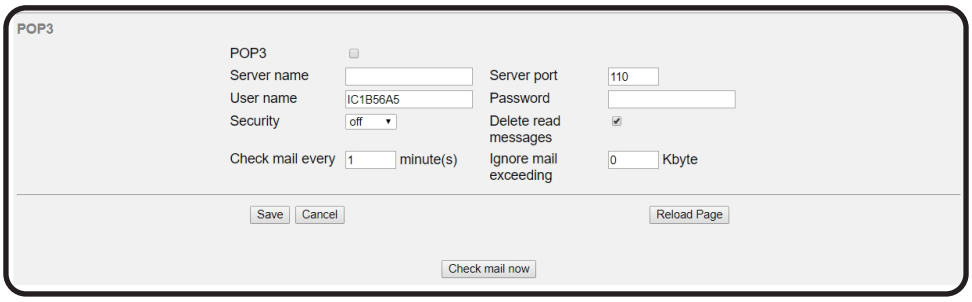
3.6.1 Configuration POP3

‚POP3' (Post Office Protocol Version 3) is a transfer protocol that a client can use to retrieve e-mails from an e-mail server. POP3 is required in the print server in order to administrate the print server via e-mail.

Requirement

The print server is set up as a user with its own e-mail address on a POP3 server.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - Mail / POP3



4. Configure thePOP3 Parameter

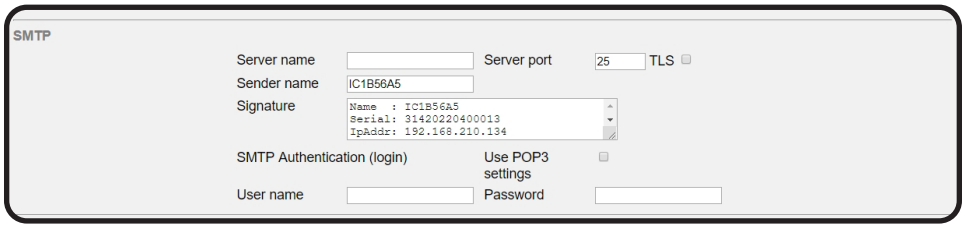
s5. Confirm with Save. The settings are saved.

Parameter	Description
POP3	Enables/disables POP3 functionality
Server name	Defines the POP3 server by IP address or hostname. A hostname can only be used if a DNS server has been previously configured.
User name	Defines the username that the print server uses to log on to the POP3 server.
Security	Defines the authentication method (APOP / SSL/TLS).
Check mail every	Define the time interval (in minutes) for checking emails on the POP3 server.
Server port	Defines the port via which the print server receives e-mails. The port number 110 is preset. When using SSL/TLS, enter 995 as the port number.
Password	Defines the password that the print server uses to log on to the POP3 server.
Delete read messages	Activates/deactivates the automatic deletion of read e-mails
Ignore mail exceeding	Define the maximum size (in kByte) of the e-mails accepted by the print server. (0 = unlimited)

3.6.2 Configuration SMTP

The print server is set up as a user with its own e-mail address on an SMTP server.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration- MAIL



4. Configure the SMTP Parameters
5. Confirm with Save. The settings are saved.

Parameter	Description
Server name	Defines the SMTP server by IP address or hostname. A host name can only be used if a DNS server has been configured beforehand.
Server Port	Defines the port number via which the SMTP server receives e-mails from the print server. Port number 25 is preset. When using SSL/TLS, enter 995 as the port number.
TLS	Disabled/enabled TLS. The transmission path from the print server to the SMTP server is encrypted using the Transport Layer Security (TLS) security protocol.
Sender‘s name	Defines the e-mail address that the print server uses to send e-mails. ***Note:*** The sender‘s name and username are often the same.
Signature	Defines the signature that an e-mail generated by the print server should contain. The print server name, the serial number and the IP address of the print server are used as default values. A maximum of 128 characters can be entered. A signature created by the sender allows the recipient to verify the identity of the sender and ensures that the email has not been tampered with.
Apply POP3 settings	Defines whether the POP3 settings for authentication should be used or whether other login data (user name and password) should be used.
User name	Defines the username that the print server uses to log on to the SMTP server.
Password	Defines the password that the print server uses to log on to the SMTP server.

4.0 WLAN

The print server can become a wireless device by plugging a specific wireless module into the appropriate port. The print server can be operated via in the network. During the initial start-up, the print server is initially connected via an Ethernet cable. After you have made the WLAN settings, simply restart the device and remove the Ethernet cable. The device automatically switches to wireless operation.
WLAN is a radio technology that makes it possible to provide wireless connections between network components. The WLAN technology is defined as a standard in the IEEE 802.11 family. The print server supports the standards IEEE 802.11b, IEEE 802.11g and IEEE 802.11n.
An optional WLAN antenna is required.

The following model variants are supported.

	Description	Typ	Product ID	Vendor ID	Speed Mb/s	Manufacturer
Asus	AC1200 USB-AC53 nano	OEM/ODM Edimax EW-7822UNC	0x184c	0x0b05	Up to 480	Realtek
TP-Link	AC600 Archer T2U V.3		0x012e	0x2357	Up to 480	
	AC600 Archer T2U Nano V.1:		0x011e			
	AC600 Archer T2U Plus V.1:		0x0120			
	AC1300 Archer T3U V1 (EU)		0x012d			
	AC1300 Archer T3U Plus V1 (EU)		0x0138			
Buffalo	WI-U2-433DMS		0x0242	0x0411	Up to 480	Realtek
Edimax	EW7822ULC		0xb822	0x7392		
	EW7822UNC					
	EW7822UTC (USB3.0)					
	EW7822UAD (USB3.0)		0xf822			
Renkforce	AC1200	OEM/ODM Edimax EW-7822UNC	0xb822	0x7392		
Netgear	AC1200 A6150 V1	OEM/ODM Edimax EW-7822UNC	0x9055	0x0846		
D-Link	DWA-181 rev A1	OEM/ODM Edimax EW-7822UNC	0x331E	0x2001		

The print server with a WLAN module has additional WLAN parameters.
The current connection status is displayed on the Smart Product Manager under STATUS - WLAN. For more information about the connection status

4.1 WiFi security

With a wireless LAN, it must be ensured that no unauthorized users can log in and thus use the Internet access or shared network resources. Your print server provides several security mechanisms.

Default	Mechanism	
	Encryption	Authentication
WEP	WE (Open System / Shared Key	---
WEP+EAP	WEP (Open System)	EAP (TLS / MD5 / LEAP / TTLS / PEAP / FAST)
WPA (Personal Mode)	TKIP/MIC	PSK
WPA2 (Personal Mode)	AES-CCMP	PSK
WPA (Enterprise Mode)	TKIP/MIC	EAP (TLS / MD5 / LEAP / TTLS / PEAP / FAST)
WPA2 (Enterprise Mode)	AES-CCMP	EAP (TLS / MD5 / LEAP / TTLS / PEAP / FAST)
WPA (Auto)---	AES-CCMP	PSK

4.1.1 WEP

WEP (Wired Equivalent Privacy) is an encryption method according to IEEE 802.11 based on RC4 encryption. WEP provides data encryption and authentication functions. WEP encrypts all communication using a key. With encrypted base stations, the same WEP key must be used on the base station and on the print server.

If your base station supports multiple WEP keys, make sure the key num are identical on the base station and print server. Example: The key ABCDE must have the number 2 on both devices (and not 1 on the base station and 2 on the print server.)
Some base stations convert WEP keys, which are entered as ASCII text, into arbitrary hexadecimal values using a mechanism. In this case, the keys on the base station and on the print server do not match. It is therefore recommended to use hexadecimal WEP keys.

WEP is outdated and insecure. We recommend using WPA (Auto).

4.1.2 WPA/WPA2

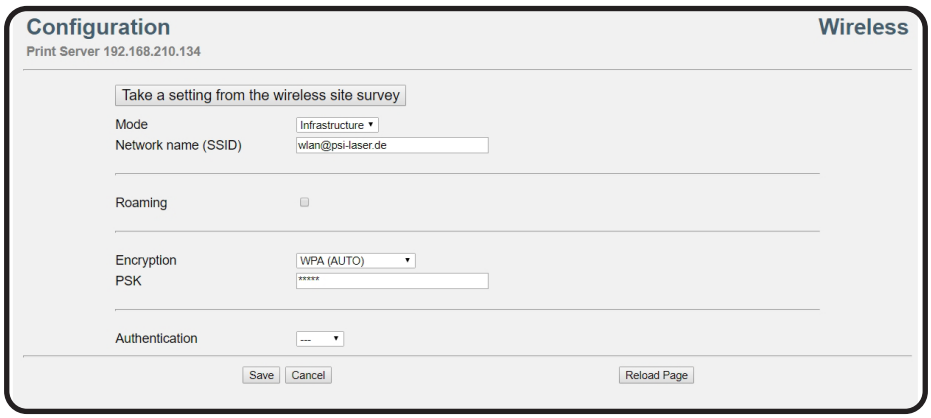
WPA (Wi-Fi Protected Access) beinhaltet eine gegenüber WEP verbesserte Aushandlung von Schlüsseln. DWPA (Wi-Fi Protected Access) includes improved key negotiation compared to WEP. The negotiation key is only used at the beginning of a session. A session key is then used. The key is regenerated at periodic intervals. The WPA mechanism provides authentication during connection establishment.

In ‚Personal Mode', authentication is implemented via the pre-shared key (PSK). The PSK is a password of 8-63 alphanumeric characters. In ‚Enterprise Mode' an EAP authentication method is used. After authentication, an individual 128-bit key is used for data encryption.

The encryption methods TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) are available for data encryption.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.

3. Select the menu item Configuration- WLAN



4. Configure the WLAN Parameter

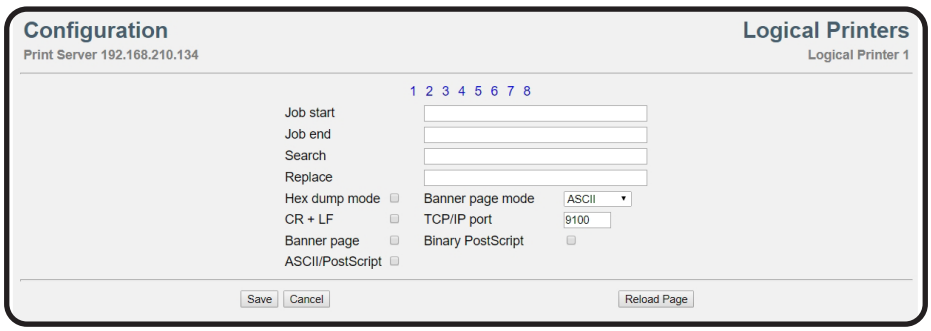
5 Confirm with Save. The settings are saved.

Parameter	Description
Modus (Kommunikations-modus)	You use the communication mode to specify the wireless network structure in which the print server is to be operated. Two modes are available: • The ‚SoftAP' mode (factory setting) is suitable for initial setup and simple initial access to the device. In this mode, the device becomes.an access point and only communicates with WLAN clients that are connected to its own network. The wireless network name and passphrase used in SoftAP mode are hard-coded into each device and are derived from the unique hardware address (also called MAC address) of the print server. A client can connect to the network using these credentials (replace xxxxxx with the last six digits of the MAC address): Wireless Network Name (SSID): DIRECT-ICxxxxx Passphrase (PSK): EBxxxxxx Encryption: any WPA or WPA2 mode • The „Infrastructure" mode is suitable for standard operation and is used in larger wireless networks. The communi cation between the devices takes place via an access point, which z. B. is connected to other wired networks. Access to the network usually requires authentication since it is encrypted and protected with a passphrase (PSK). The settings for the infrastructure mode can be taken from the wireless site overview by selecting a wireless network that has already been found.
Netzwerkname (SSID)	Defines the SSID. A wireless network identifier is known as an SSID (Service Set Identifier) or network name. Every wireless LAN has a configurable SSID in order to be able to clearly identify the wireless network. The SSID is configured in the base station of a wireless LAN. Each device (PC, print server, etc.) that is to have access to the wireless network must be configured with the same SSID.

Parameter	Description
Roaming	Disables/enables the use of roaming. Roaming refers to ‚wandering' from one radio cell to the next. The print server then uses the access point that supplies the better signal. If the print server is moved into the area of influence of another access point, it automatically switches to the next radio cell without losing the connection. The ‚Roaming' parameter is only configurable in ‚Infrastructu re' mode.
Encryption method	see: ‚WLAN Security' 4.1
Authentication method	see: 'Network authentication'

5.0 Logical Printers

What are logical printers?
Logical printers are preinstalled filters that are assigned to a print object. The filters contain information on how to handle print data.



The print data received from the print server is interpreted and converted depending on the filter settings. For example, print data streams can be manipulated, converted and routed via defined TCP/IP ports and printer connections. The print server can be perfectly adapted to different printing requirements and networks via logical printers. All print server models have eight logical printers.

What features do logical printers offer? The following

- Newline functions are encoded differently in different systems. The print server supports the conversion of the print data from LF (Line Feed) to CR+LF (Carriage Return with Line Feed) so that the desired print result can be achieved depending on the system
- The logical printer is used to define the TCP/IP port used to send the print data.

- The print server supports the hex dump mode. The hex dump mode is used for troubleshooting faulty or missing print data in order to locate communication problems between the computer and the printer. In hex dump mode, each character is displayed as a hexadecimal code and as ASCII characters Page by Page. Printer control commands are printed as hexadecimal values and have no effect on the print result.
- The print server allows a separator page to be printed automatically when using the LPD protocol. ASCII or PostScript format can be selected for displaying the separator page.
- The print server supports the conversion of print data from ASCII format to PostScript format.
- The print server supports the printing of binary PostScript files.
- The print server enables start sequences and end sequences to be sent before or after a print job. The sequences can e.g. PRESCRIBE or ESC commands, which trigger a form feed on the printer; see: ‚How do I modify print data?' The print server supports a search and replace function. This allows the print data

sent to the print server to be searched for character strings and, if necessary, replaced with new character strings; see: ‚How do I modify print data?'.

Preset functions of the print serer

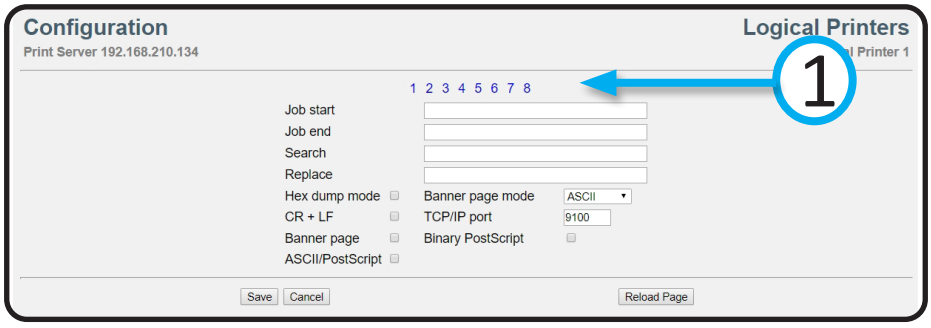
The following functions are preset.

Logical printer	Default function	Default port
1	default setting	9100
2	Line Feed (LF) to Carriage Return conversion with Line Feed (CR+LF).	9101
3	Conversion of ASCII data to PostScript data.	9102
4	Printing a separator page when using the LPD protocol.	9103
5	Activated hex dump mode	9104
6	not assigned	9105
7	not assigned	9106
8	not assigned	9107

5.1 How do I use logical printers?

To use the logical printers optimally, configure the logical printer with the desired function. You then assign the logical printer to a print object. (The procedure can also be carried out in reverse order.)
The functions and printer ports assigned to the logical printers can be adjusted as required.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration- Logical printer



4. Select the logical printer (1) to be configured
5. Configure the Logical Printer Parameter
6. Confirm with Save. The settings are saved.

Parameter	Description	
Start sequences/ end sequences	Depending on the application, it may be necessary to add control sequences in advance or at the end of a print job.	
Search / Replace	With ‚Search' and ‚Replace' you can search for character strings in the data sent to the print server and replace them with new character strings. Wildcards or truncations cannot be used. The character string can have a maximum of 256 characters	
Hex-Dump-Mode	Enables/disables the Hex Dump Mode option. The hex dump mode is primarily used for troubleshooting incorrect or missing print data. In hex dump mode, each character is displayed as a hexadecimal code and as ASCII characters Page by Page. Printer control commands are printed as hexadecimal values and have no effect on the print result.	
CR + LF	Enables/disables line feed (LF) to carriage return conversion with line feed (LF+CR).	
Separation page	Enables/disables the printing of a separator page when using the LPD protocol.	
Mode separation page	Enables/disables conversion of ASCII data to PostScript data.	
TCP/IP-Port	TCP/IP port corresponding to the logical printer. The following default values apply:	
	No, 1 = 9100	No, 5 = 9104
	No, 2 = 9101	No, 6 = 9105
	No, 3 = 9102	No, 7 = 9106
	No, 4 = 9103	No, 8 = 9107
Binary PostScript	Enables/disables printing of binary PostScript files. ‚Binary PostScript' should be activated if binary PostScript files are to be printed in heterogeneous networks.	

Logical printers are addressed differently depending on the system. The assignment takes place when you create the printer connected to the print server as a printer on the client system. In Windows, the corresponding TCP/IP ports are used instead of the logical printers; see: ‚TCP/IP port'. In macOS, the logical printers are addressed with ‚lp1' to ‚lp8'.

5.2 How do I modify print data

5.2.1 Start/stop sequences

With start/stop sequences, they can be placed in front or at the end of the data sent to the print server by strings. The string can have a maximum of 256 characters. Multiple control sequences can be used and separated by a double semicolon (;;). Decimal and ASSCI codes can be mixed.
Decimal starts with a backslash (\) followed by a 3-digit code. Example \027 = Hex 1B
Enter ASSCI as plain text. Mixing ASSCI and decimal is allowed

Example: You have print data that was not generated by a PSi printer driver and would like to use PSi functions at the start of printing, such as selecting tractor above, page length = 11 inches, font = Roman 10 cpi. At the end a reset should be done.

Job start	\027[6s;;\027C\066;;\027[2;1x
Job end	\027@

The corresponding control sequences can be found in the printer user manual.

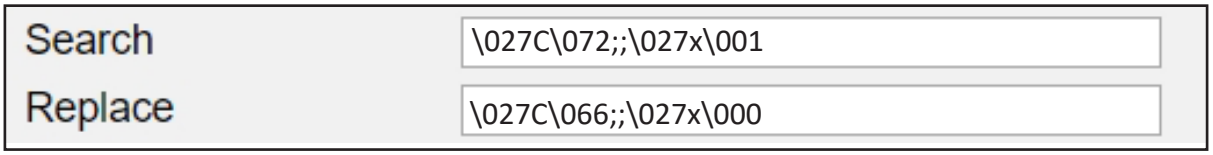
5.2.1 Search/replace

With ‚Search' and ‚Replace' you can search for strings in the data sent to the print server and replace them with new strings. Wildcards or truncations cannot be used. The string can have a maximum of 256 characters. Multiple search/replacements can be separated by double semicolons (;;). Decimal and ASSCI codes can be mixed.

Decimal starts with a backslash (\) followed by a 3-digit code. Example \027 = Hex 1B
Enter ASSCI as plain text. Mixing ASSCI and decimal is allowed

Example	Search	Replace
Page length from 12“ to 11“	\027C\072	\027C\066
Page length from 12“ to 11“ with reset in advance	\027C\072	\027\040\027C\066
Page length from 12“ to 11“ and quality from LQ to draft	\027C\072;;\027x\001	\027C\066;;\027x\000
Deleting a string (alone)	\027x\001	
Deleting a string (in a chain)	\027x\001;;\027\C\048	;; ;;
Replace strings	dog;;house;;rain	Cat;;Street;;Sun

Example: Page length from 12“ to 11“ and quality from LQ to draft



6.0 Printing in Windows

The print server integrates a printer into the network. In order to be able to print via the print server, the printers connected to the print server must be created as printers on the client system.

6.1 How do I configure socket printing?

Socket printing uses direct TCP/IP ports to print.

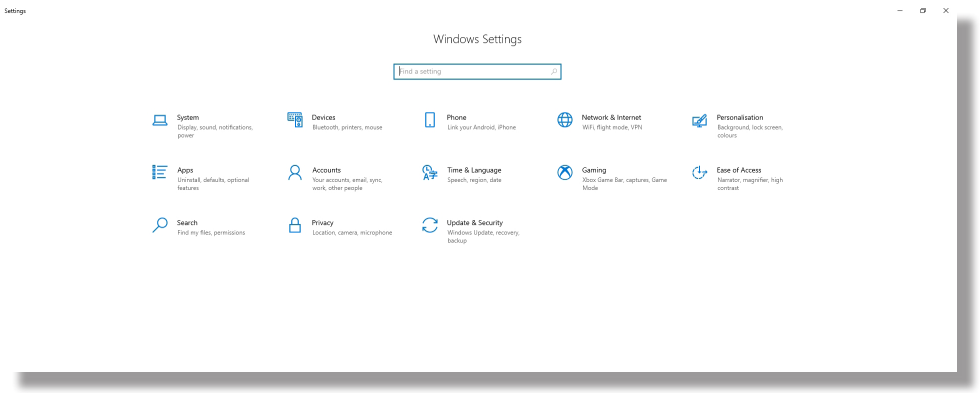
⏩ Procedure:

To print, follow the points:

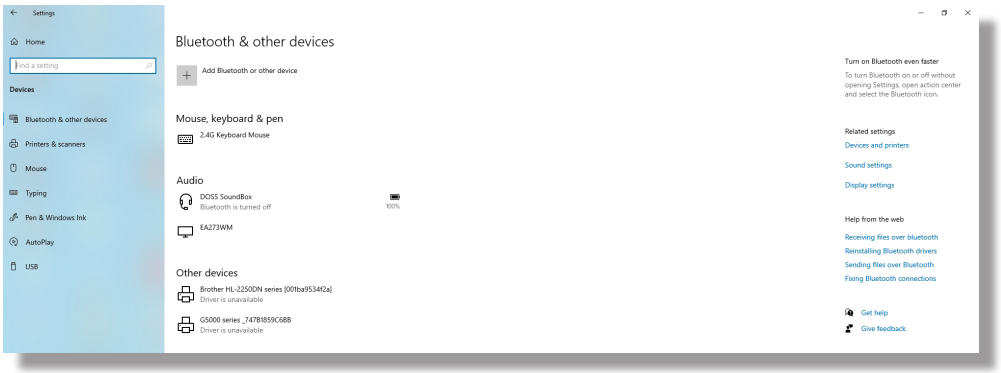
- The print server is connected to the network and the printer; see: Quick Installation Guide.
- The print server and the printer are switched on.
- The print server has a suitable IP configuration
- You know the IP address of the print server

⏩ Proceed as follows

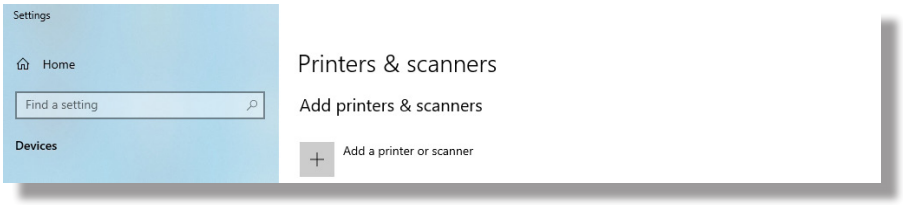
1. Go to the Start menu.
2. Select the Settings menu item. The Settings dialog appears.



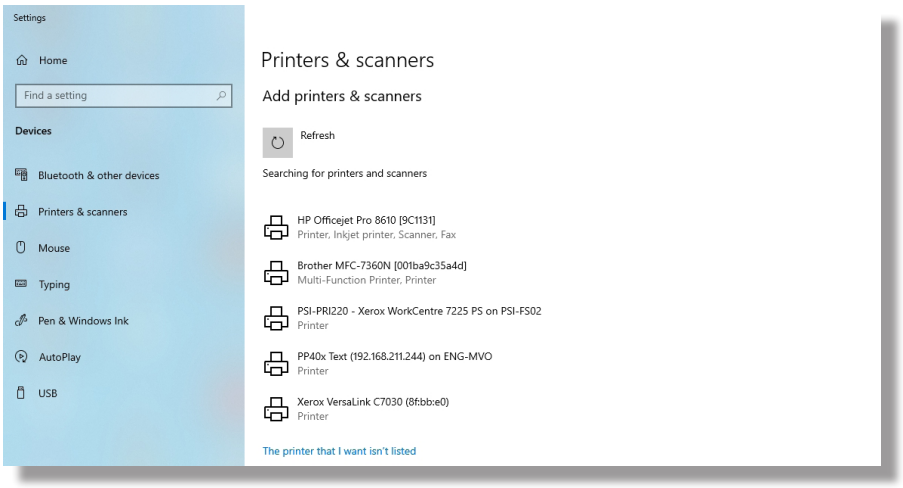
3. Select the Devices menu item Bluetooth & other devices



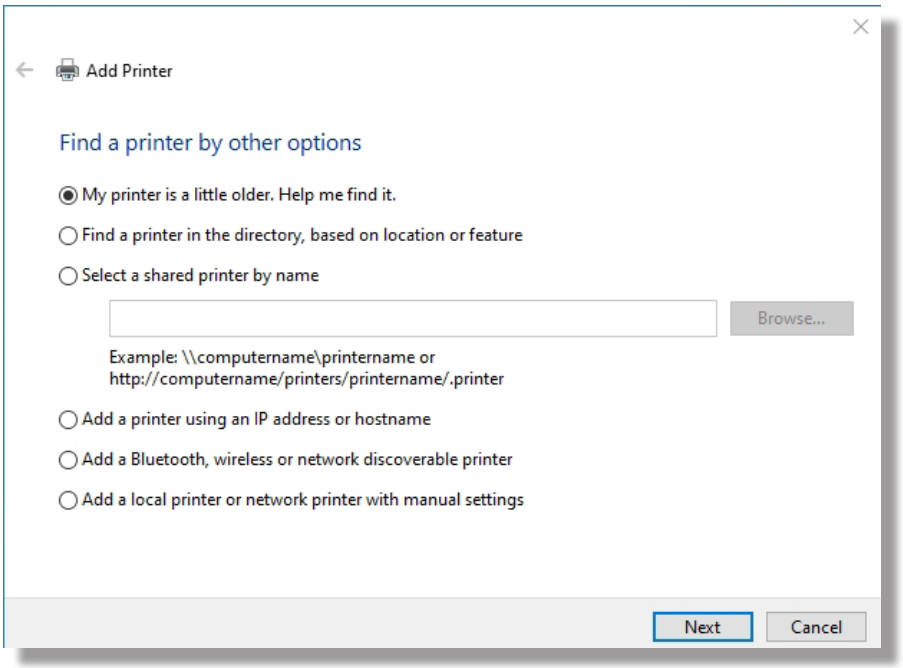
4 Select the menu item Printers and scanners

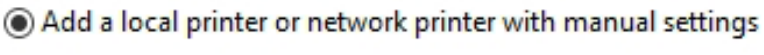


5. Scroll to the bottom of the list of results and select The printer I want isn‘t listed. The Add Printer dialog appears.

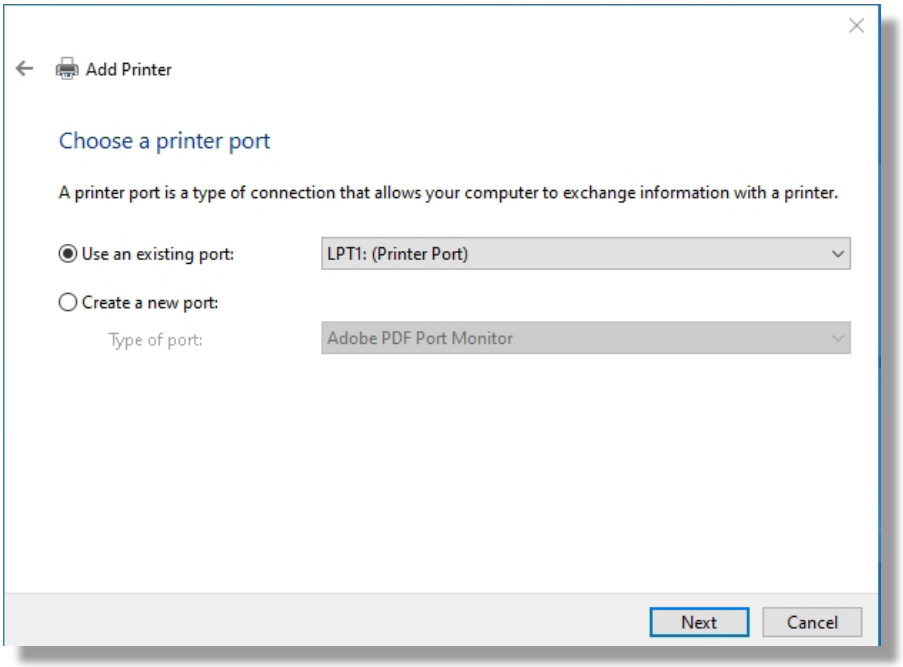


6. Enable the Add a local printer or network printer with manual settings option.

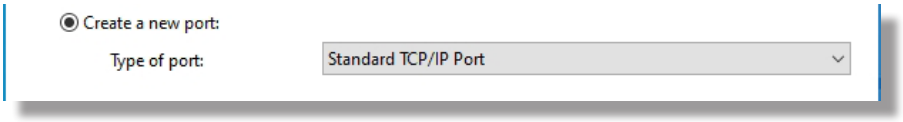




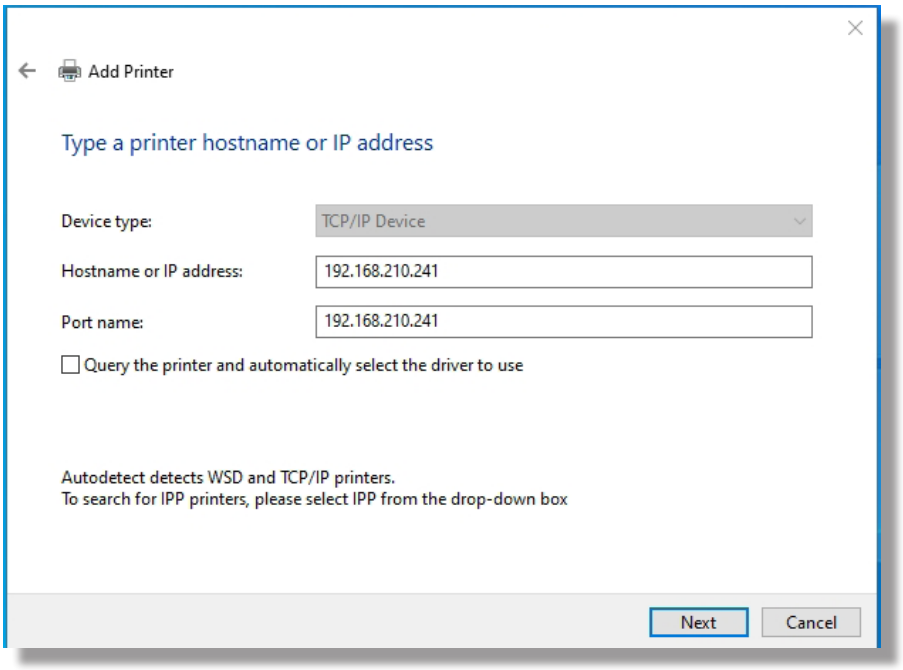
7. Enable the Create a new port option.



8. From the Port Type list, select Standard TCP/IP Port.

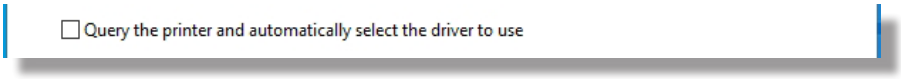


9. Choose the Next button.
10. In the Hostname or IP Address field, enter the IP address of the print server.

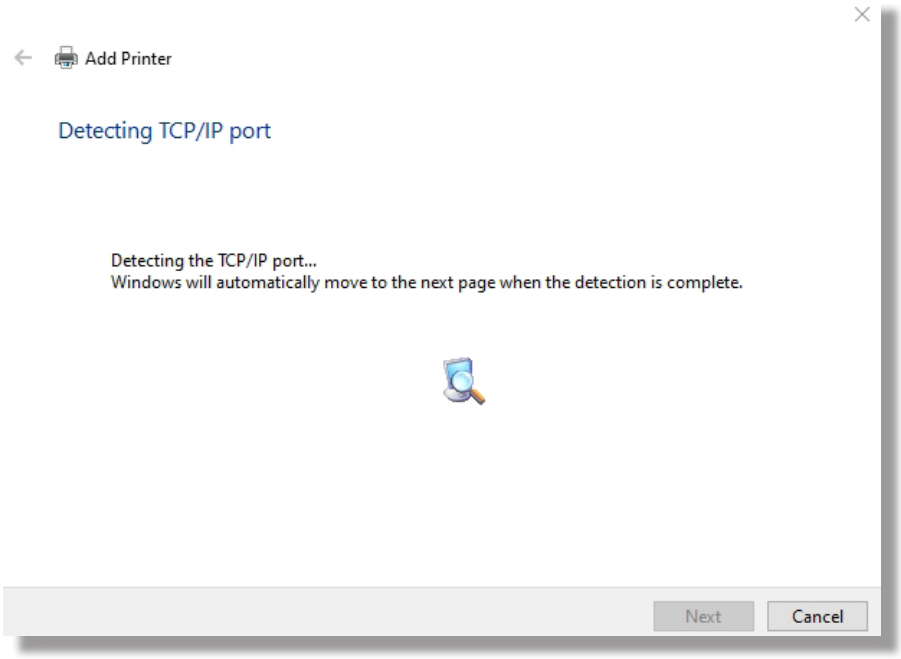


11. In the Port Name field, enter a Description. Otherwise the IP address is automatically entered there.

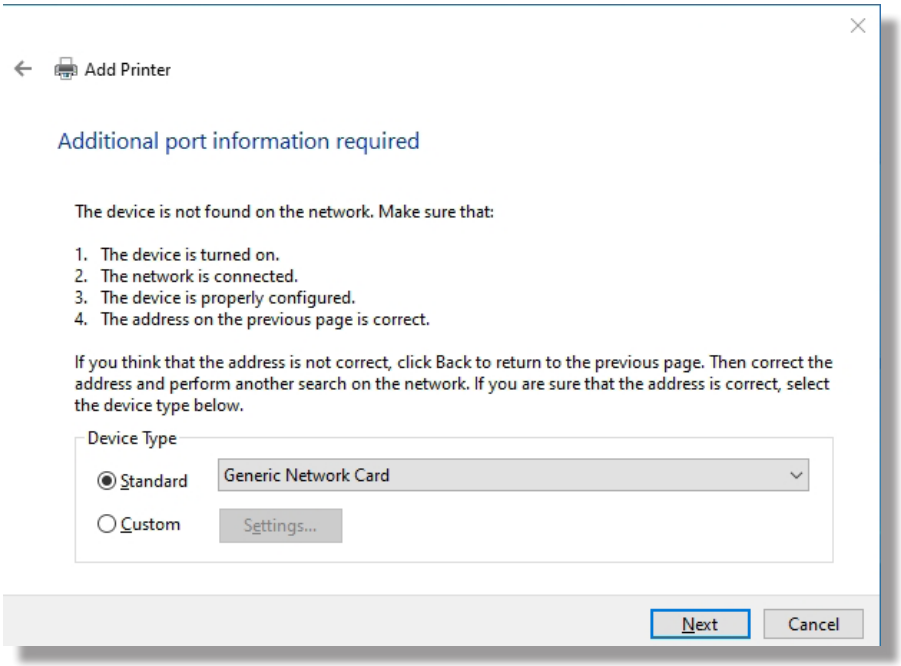
12. Uncheck Query the printer and automatically select the driver to use.



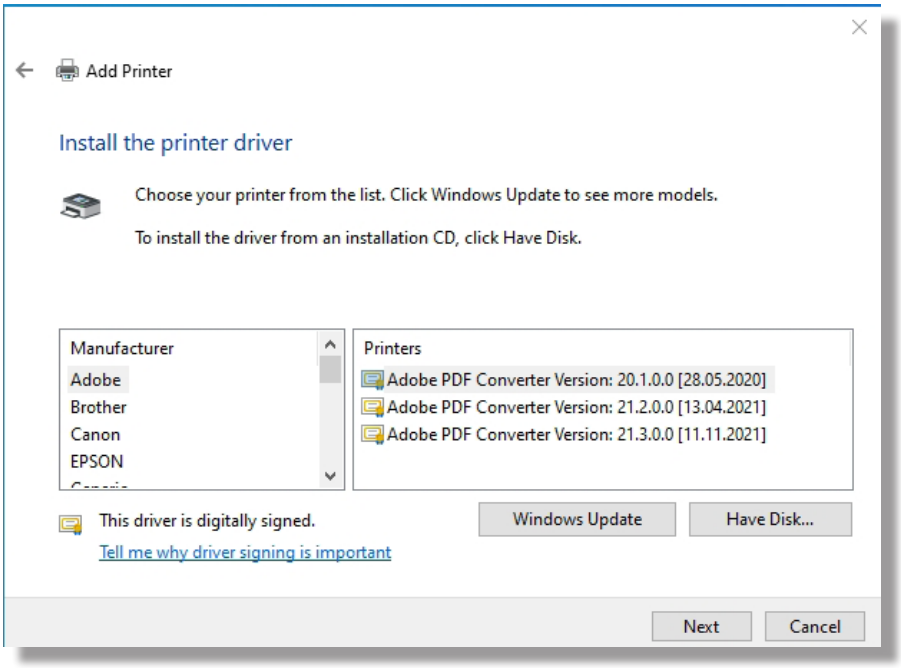
13. Choose the Next button.

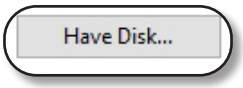


14. In the Device Type area, highlight Standard.
15. Select Generic Network Card from the list.

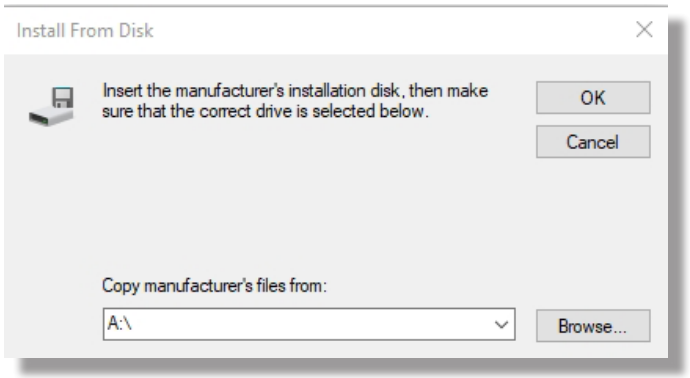


16. Select the Next button.
17. Select the Have Disk button.

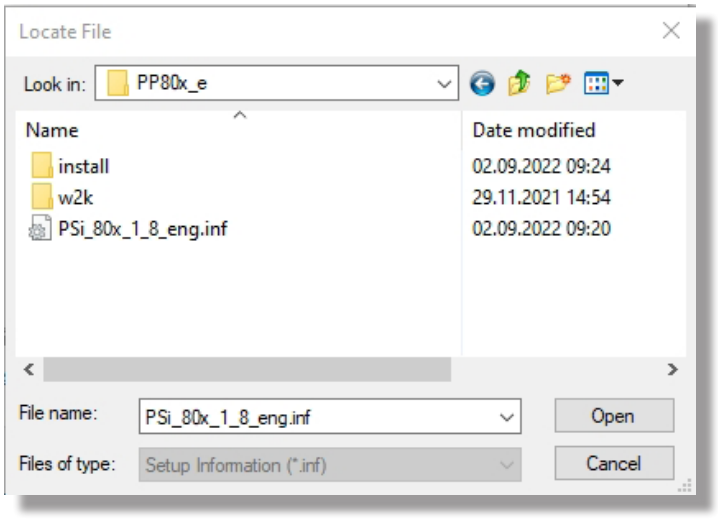




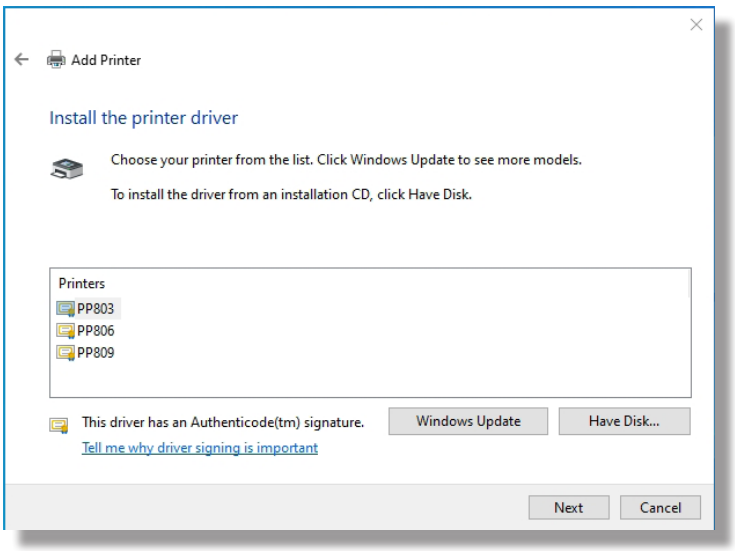
18. Specify (Browse) the path to the printer driver (*.inf).



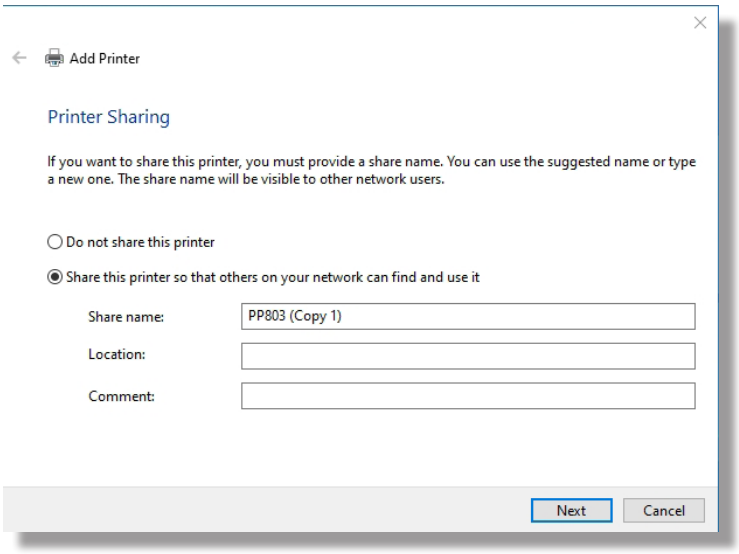
19. Select the *.inf file and „Open“ it



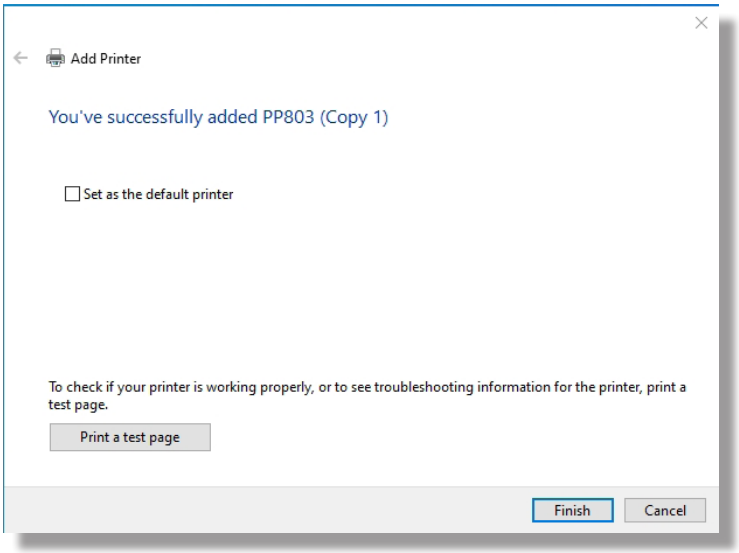
20. Continue with „OK“. Select the desired printer variant.



21. Choose the Next button. If necessary, enter a name. The printer will be installed.
22. Check the Don‘t share this printer option, or provide a share name.



23. Choose the Next button.



24. Choose the Print Test Page button. A test page is printed.
25. Choose the Finish button.

The printer is created on the client. If you print via the created printer, the print job is output on the printer connected to the print server.

5.1 How do I configure LPD/LPR printing

The Line Printer Daemon/Line Printer Remote Protocol (LPD/LPR) print protocol prints over a TCP/IP connection.

Functionality

LPD/LPR consists of two components:

- Line Printer Daemon (LPD) refers to the process that accepts print jobs from the LPR client. LPD runs on the print server, which is therefore referred to as the LPD server.

Line Printer Remote (LPR) describes the process that sends print jobs to a print server. The client (PC, etc.) that sends the print job is the LPR client in this process and must be equipped with the appropriate software.

Procedure

To print, follow the points:

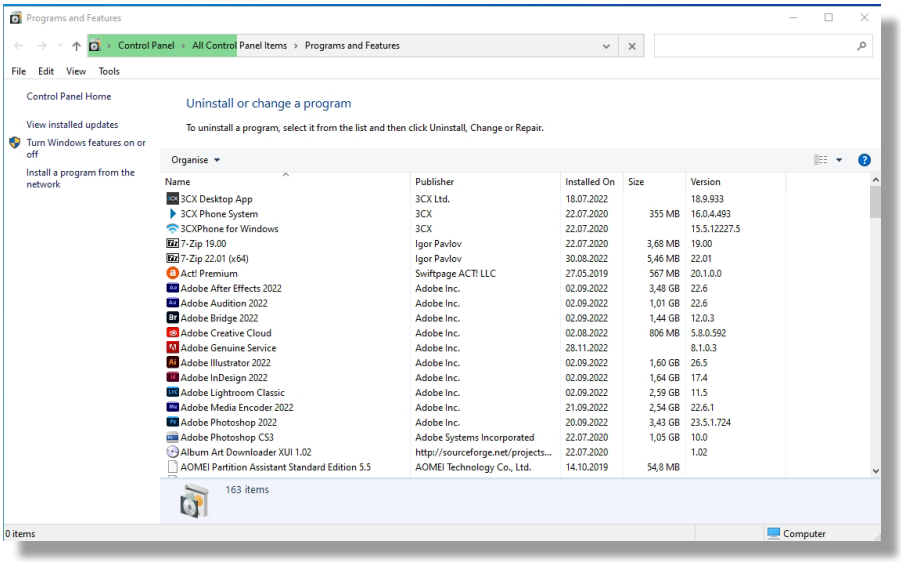
- 'LPR auf dem Client aktivieren.
- 'Drucker auf dem Client anlegen

5.1.1 LPR auf dem Client aktivieren

Proceed as follows

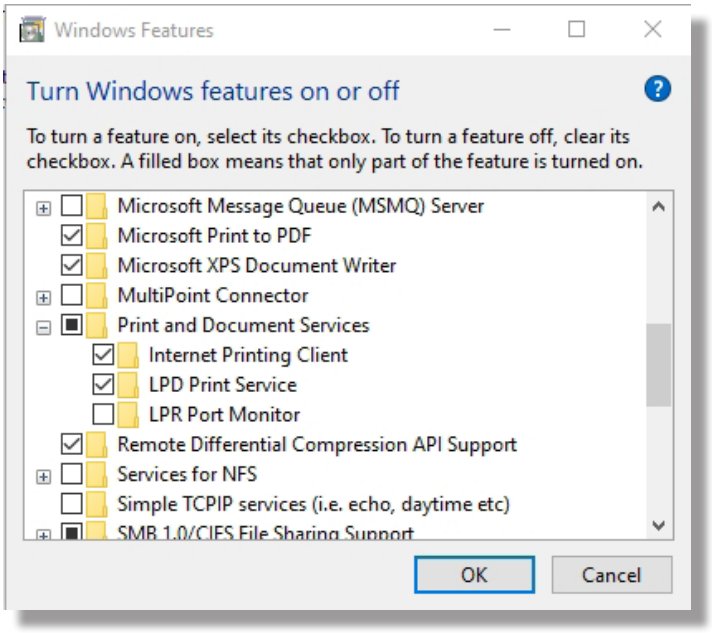
1. In the search box on the taskbar, type ‚Programs and Features'. The search results are displayed.

In the search results, select Turn Windows features on or off. The Windows Features dialog appears.



2. Under Print and Document Services, enable the LPR Port Monitor feature.

3. Confirm with OK.



↳ LPR is enabled on the client.

5.1.2 Create a printer on the client

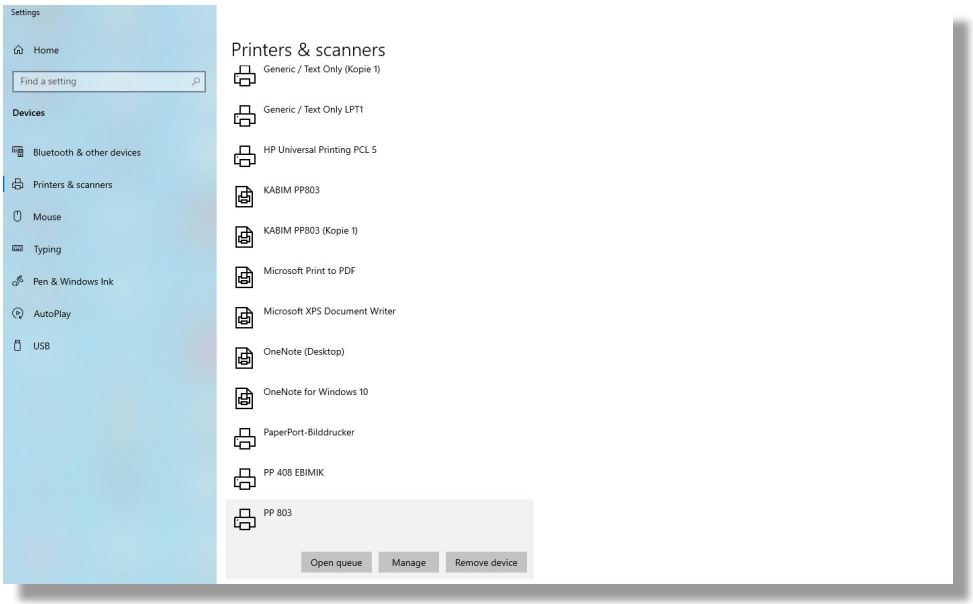
Requirement

☑ The print server is connected to the network and the printer; see: Quick Installation Guide.
☑ The print server and the printer are switched on.
☑ The print server has a suitable IP configuration
☑ You know the IP address of the print server

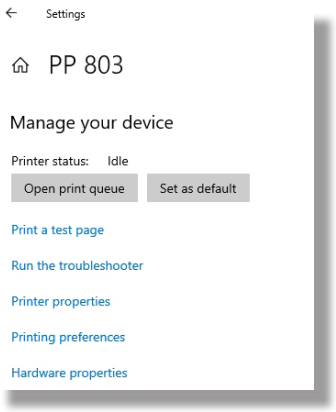
Procedure

To print, follow the points:

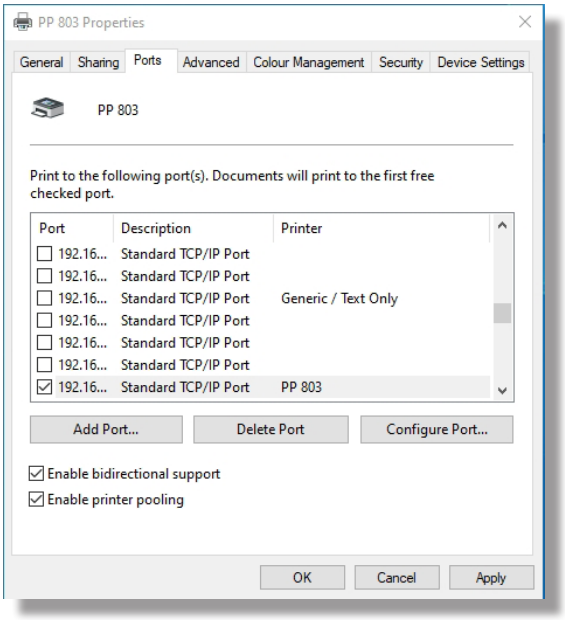
1. Select the Printers & Scanners menu item and open “Manage”



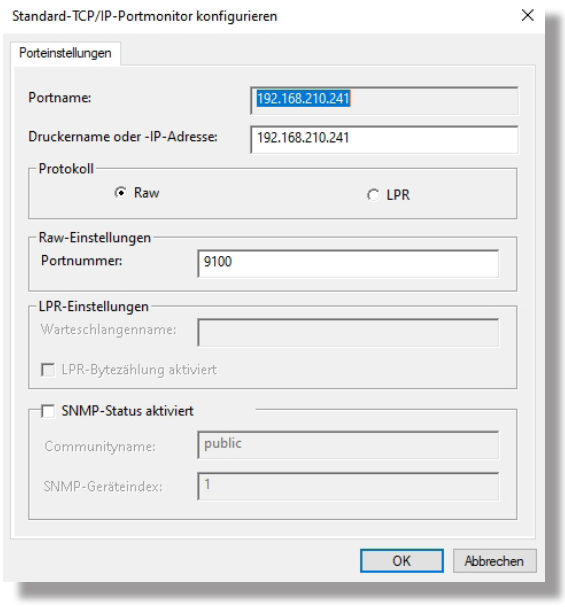
2. Select the Printer Properties menu item



3. Select the Printer Properties -> Ports menu item.

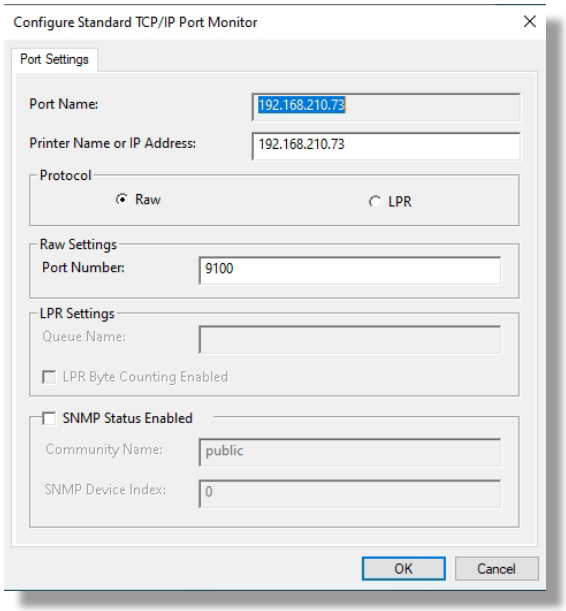


4. Choose Config Port 

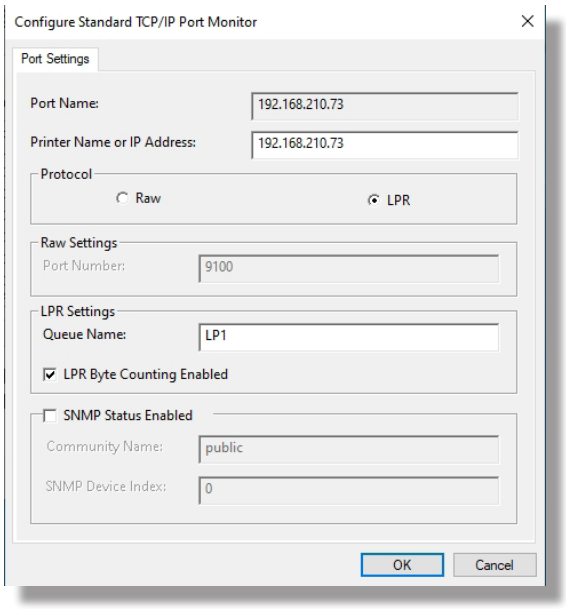


5. Select the following parameters

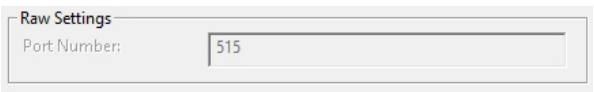
- Protocol = LPR
- Queue Name = LP1
- Enable LPR byte counting



LPR is activated on the client.



When creating the port address initially remains at 9100. After reopening, the PORT 515 (LPR port) is set.



6.0 Important settings in the printer and print server

6.1 Check the printer‘s interface settings.

In the printer menu, the interface setting must be „Parallel“. The status is only transmitted to the Ethernet interface with this setting.

6.2 Porteinstellungen der Ethernet-Schnittstelle kontrollieren.

In the printer menu, the interface setting must be „Parallel“. The status is only transmitted to the Ethernet interface with this setting.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - Printer connection.

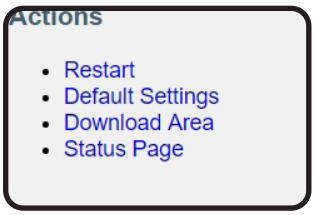
4. Configure the parameters

The following information is important:

- 1284.4 MLC = No
- PJL = N0
- ECP-Mode = Yes
- Port mode = Undirectional

5. Confirm with Save. ⇨ The settings are saved.

7.0 Action



- Restart restarts the print server.

- Default Settings resets the print server settings to the default

7.1 Firmwae-Update

An update can be performed manually (standard) or automatically (dynamic).

- With the standard update, the update file is loaded manually from a server or data medium and saved on the print server.
- With a dynamic update, when the print server is restarted, it is queried whether a higher version of the update file has been stored on a specified file server in the meantime. If this is the case, this update file is automatically saved in the print server via FTP.

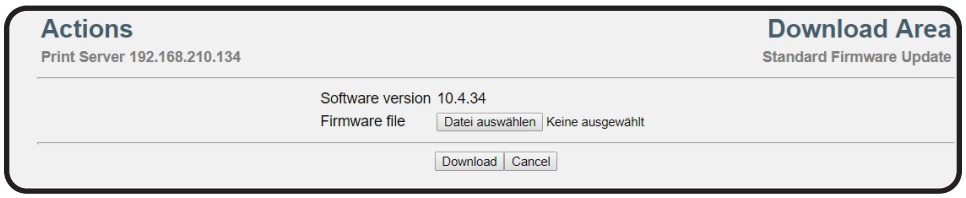
ⓘ The dynamic update cannot be used to save a lower software version on the print server. In this case, use the standard update.

7.1.1 Standard-Update

▸▸ Requirement

☑ All print jobs are finished.

1. Select the Standard Firmware Update menu item.



2. Choose the button Durchsuchen / Datei auswählen.
3. Specify the update file.
4. Choose the Download button.
5. Das Update wird ausgeführt. ↳ The print server restarts

7.1.2 Dynamic update

For automatic (dynamic) updates, enter a directory on a file server. The directory contains the current update files. During a print server restart, you will be asked whether a higher version of the update file has been stored in the directory in the meantime. If this is the case, the update is carried out automatically on the print server.

Requirement

☑ All print jobs are finished.
☑ The update files are stored in a directory.
☑ the file server on which the update files are stored uses ‚anonymous login' or the print server is set up on the file server as ‚user'.

1. Select the Dynamic Firmware Update menu item.

2. Enable the Dynamic firmware update option.
3. In the Update URL field, enter the IP address of the file server on which the new update files are stored.

Syntax: ftp://<Fileserver-IP-Adresse>/<Software-Dateiname>

Example: ftp://192.168.0.100/a-fw-ps-12.bin
(Instead of the IP address of the file server, the name of the file server can also be used if the system supports name resolution via DNS.)

Example: ftp://file.server.de/a-fw-ps-12.bin

If you are using a proxy server, enable the Use proxy server option and specify the IP address of the proxy server.

5. Confirm with Save. The settings are saved.

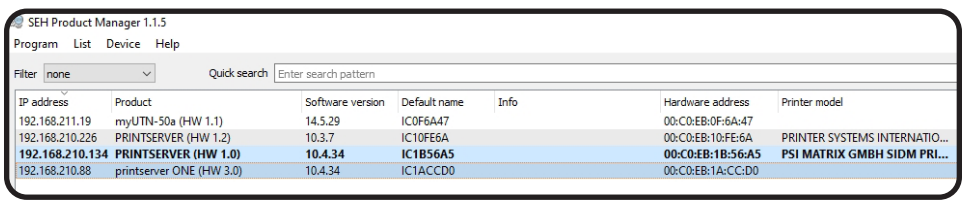
7.1.3 Run updates on multiple print servers

Using the Smart Product Manager, it is possible to run an update on several print servers at the same time.

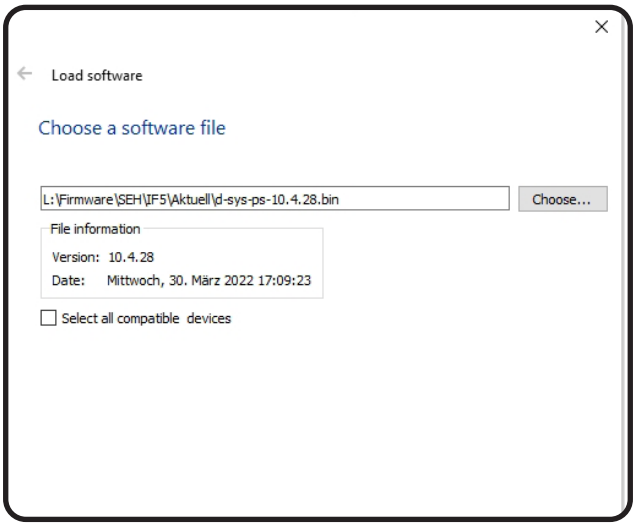
Requirement

☑ All print jobs are finished.
☑ The update files are in a directory.

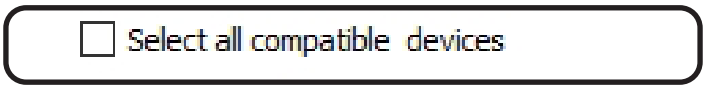
1. Start the Product Manager
2. Mark several print servers in the device list.



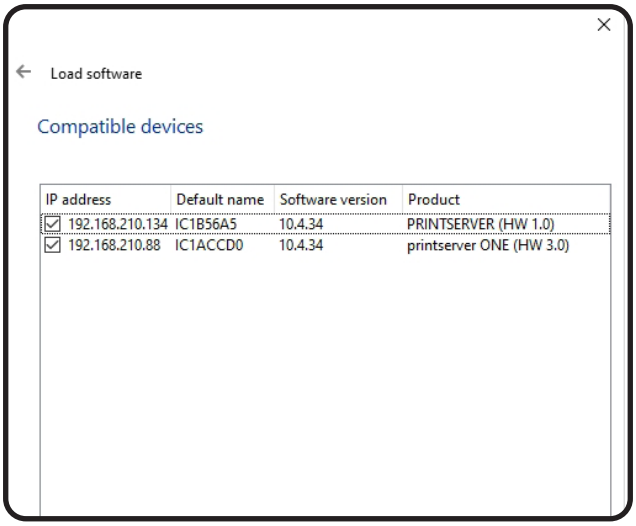
3. Open the context menu with a right click.
4. Select Load software.



5. Choose the Browse / Select file button.
6. Select the update file.



7. Select the compatible devices.8. Confirm the selection with Next.



9. Enter a password if required.
10. Confirm with Next.
11. Choose the Upload button.

The update is running. The print servers restart

8.0 ThinPrint®

What is ThinPrint®?

ThinPrint® is a software-based technology that offers the option of compressing print jobs and bandwidth control for network printing, among other things. The data traffic between print server and local printer is reduced considerably and relieves the network.

Functionality

Compression is performed by the ThinPrint Engine server component. The server sends the compressed print data to a device on which a ThinPrint Client is implemented, e.g. the print server. The ThinPrint Client decompresses the print data and forwards it to any printer.

The settings described here refer to the client side (print server). Information on installing, configuring and administering the ThinPrint environment can be found in the ThinPrint documentation at http://www.thinprint.de. How is the print server addressed in the ThinPrint environment?

To address the print server in the ThinPrint environment, the following syntax must be used:

Syntax:

<IP address or hostname of the print server>:<logical printer number>#<any name>

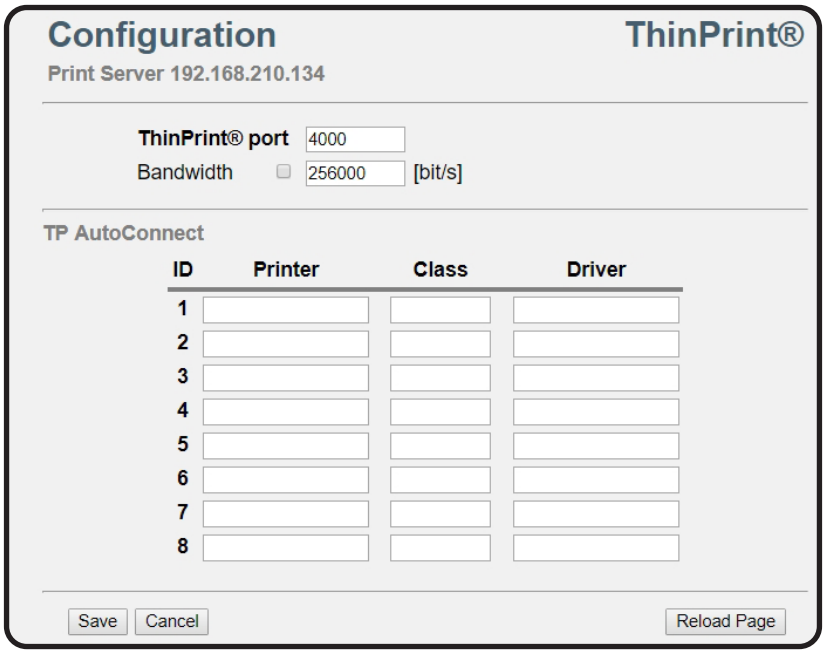
Example: 192.168.0.123:1#IC0001FF

8.1 How do I define the ThinPrint port?

In the ThinPrint environment, a socket connection is used to print to a TCP/IP port. The port number on the print server must be identical to the port number defined on the ThinPrint Server.

Port 4000 is preset on the print server. You have the option to configure a different port number if required.

1. Start the Smart Product Manager.
2. Mark the print server in the device list.
3. Select the menu item Configuration - ThinPrint.



4. Enter the port number in the ThinPrint® port field.
5. Enter the desired bandwidth (bit/s) in the field.

Bandwidth describes the capacity of a data connection. With the print server, the bandwidth is specified in bits/second (bit/s).

On the server side, the bandwidth required for print jobs can be limited to a freely definable value for each ThinPrint port. You have the option of further reducing the bandwidth limit on the port on the client side (i.e. on the print server).

6. Configure the AutoConnect parameters;

Parameter	Description
ID	The printers are identified on the ThinPrint Server via the ID.
PRINTER	Defines the printer name. This is purely a description and is used to differentiate between the printers.
CLASS	Printers whose drivers are mutually compatible can be grouped together in a class..
DRIVER	Defines the printer driver for the integrated printer.

7. Confirm with Save.

↳ The setting is saved.