



# **Intermate100 Plus**

## **ThinPrint .print Guide**

**Version 1.0.0**

**Applies to software G22\_6431 or higher**

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# Table of Contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	The Intermate100 Plus in a ThinPrint .print solution	5
1.1.1	Target Printers on the Intermate100 Plus	5
1.1.1.1	Local Printer vs Network Destinations	6
1.1.2	Configuration example	6
1.2	System requirements and other pre-requisites	7
1.2.1	ThinPrint software and licenses	7
1.2.2	The Intermate100 Plus	7
1.2.3	Target Printer system requirements	7
1.2.4	IP Address of the Intermate100 Plus	8
1.3	For additional information	8
1.3.1	Additional documentation from Intermate A/S	8
1.3.2	Recommended Documentation from ThinPrint GmbH	9
<b>2</b>	<b>Configuration of the Intermate100 Plus</b>	<b>10</b>
2.1	Initial contact and IP assignment	10
2.2	Login	10
2.3	General Parameters	12
2.3.1	Administrative parameters	12
2.3.2	Enable Front Panel Messages	13
2.3.3	System Target Printer	13
2.4	Network parameters	14
2.4.1	Media speed and duplex	14
2.4.2	Enable Local MAC Address	15
2.4.3	Local MAC Address Rules	15
2.5	TCP/IP	16
2.5.1	Enable DHCP, BOOTP, RARP or none of these	17
2.5.2	Hostname for the Intermate100 Plus	17
2.5.3	IP address, subnet mask, and default gateway for the Intermate100 Plus	18
2.5.4	DNS server(s) for look-ups	18
2.5.5	WINS server	19
2.5.6	Disable DHCP lease-release-on-reboot	19
2.6	Target Printer configuration	19
2.6.1	Local Printer Parallel Port	20
2.6.1.1	IEEE settings	21
2.6.1.2	PJL Support	21
2.6.1.3	Report Compatible Mode <.> as	21
2.6.1.4	Enable Power Detection	22
2.6.1.5	Enable Parallel Init Timing	22
2.6.2	Network Destination Option - NDO printers	23
2.6.2.1	Hostname for a Network Destination	24
2.6.2.2	Print method - LPR or Raw Socket	24
2.6.2.3	Raw Socket TCP port number	25
2.6.2.4	LPR Queue Name and LPR Count Byte	26

---

2.7	Select ThinPrint for configuration.....	27
2.8	Enable and configure ThinPrint .....	28
2.9	Reboot to activate changes .....	29
<b>3</b>	<b>ThinPrint Server: port and printer configuration</b>	<b>30</b>
<hr/>		
3.1	TCP/IP Port on the ThinPrint Server.....	30
3.2	ThinPrint printers (printer objects) on the ThinPrint Server .....	31
<b>4</b>	<b>Printing</b>	<b>32</b>
<hr/>		
4.1	Using printer objects names to address printers .....	32
4.1.1	Examples of how to address printers .....	32
4.1.2	Explanations of how the names are constructed .....	33
4.2	Printer_ID table for direct targetting .....	33
4.3	Printer_ID table for targetting via Logical Printers.....	34
<b>5</b>	<b>Troubleshooting</b>	<b>35</b>
<hr/>		
5.1	No output.....	35
5.2	Output isn't where you expect it to be .....	36
<b>6</b>	<b>Fine-tune the ThinPrint configuration</b>	<b>37</b>
<hr/>		
6.1	Bandwidth (bit/sec) .....	37
6.2	Client Reject Timeout (minutes) .....	38
6.2.1	Client Reject Timeout - why and how .....	38
6.3	Current Printer.....	38
6.4	Enable ThinPrint RAM Spooling.....	39
<b>7</b>	<b>Glossary of Terms</b>	<b>41</b>
<b>8</b>	<b>Index</b>	<b>45</b>
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# 1 Introduction

This guide explains how to use the Intermate100 Plus as a ThinPrint .print® Client Gateway for up to five printers. The Intermate100 Plus replaces the following products: Intermate100, Intermate101, and LAN FS3.

## 1.1 The Intermate100 Plus in a ThinPrint .print solution

The Intermate100 Plus is a .print Client Gateway that can target up to five printers associated with a single ThinPrint TCP/IP Port.

Like all other .print Clients, the .print Client Gateway on the Intermate100 Plus receives jobs from a ThinPrint Server, decompresses the data, and directs each job to a Target Printer.

Because this is a hardware-based product, the .print Client is embedded in the Intermate100 Plus. The end-user prints directly to the IP address of the Intermate100 Plus. Using a Printer ID in the printer name, the Intermate100 Plus forwards the print job on to the Target Printer. This means that Target Printers must be defined on the Intermate100 Plus (see "Target Printers on the Intermate100 Plus" page 5).

What makes the Intermate100 Plus different from other .print Client Gateways is the fact that there are two different types of Target Printers - and two different ways of addressing Target Printers.

### 1.1.1 Target Printers on the Intermate100 Plus

#### Two types of Target Printers

- **Local Printer:** The Intermate100 Plus snaps on to the parallel port of the Local Printer, which then uses the Intermate100 Plus as its interface to the LAN
- **Network Destinations:** You can target up to four printers attached directly to the LAN. In Intermate100 Plus configuration, each printer is known as a Network Destination. Network Destinations are configured on the Network Destination Option page, so they are sometimes called NDO printers. The term Network Printers is also common. If a Network Printer does not support raw socket printing, the Intermate100 Plus can be configured to stream LPR to that printer (see "Print method - LPR or Raw Socket" page 24).

#### Two ways of addressing of Target Printers

You can address a Target Printer *directly* or target it *indirectly, via a Logical Printer*, which then sends the job on to the physical Target Printer. Logical Printers are mostly used for special processing.

**IMPORTANT:** All ThinPrint printing via the Intermate100 Plus is network printing.

### 1.1.1.1 Local Printer vs Network Destinations

- "Local" is not necessarily a small personal printer. It is simply local for the Intermate100 Plus.
- The Local Printer's parallel port is attached to the Intermate100 Plus, which is in turn attached to the LAN. Thus, the Local Printer is available for all kinds of network printing. The Local Printer uses the IP address of the Intermate100 Plus.
- Printing from the Intermate100 Plus to the Local Printer is parallel-port printing, while printing from the Intermate100 Plus to a Network Destination printer is done via Raw Socket or LPR/LPD.

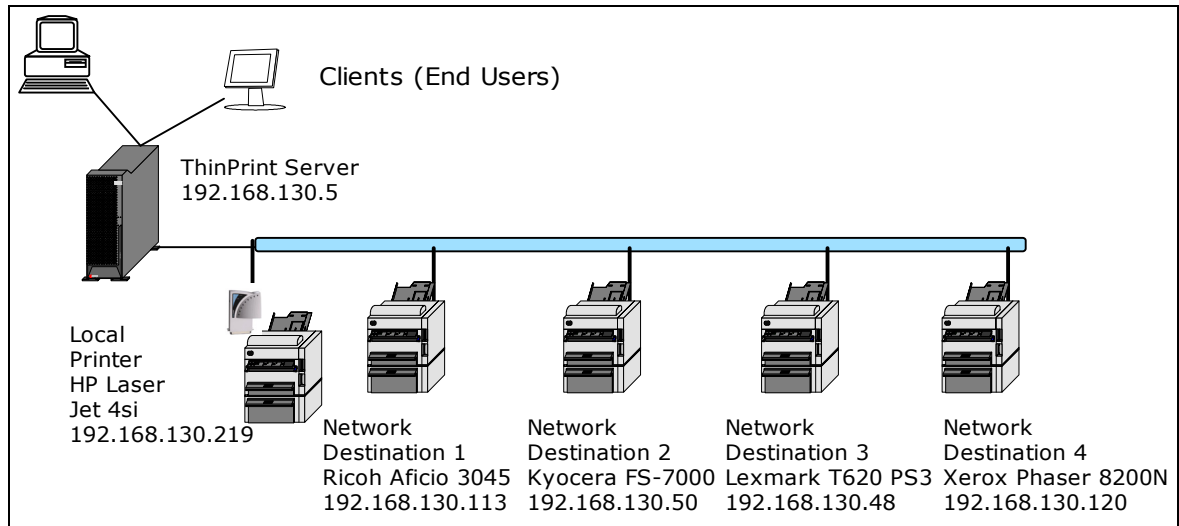
---

**NOTE:** You can attach the Intermate100 Plus to the LAN without attaching a Local Printer. In this case, the Intermate100 Plus can support up to four printers; all of them will be Network Destinations. This guide assumes that you use the Local Printer.

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### 1.1.2 Configuration example

Figure 1: Print Setup - an example



The term "Client" on the drawing refers to the session where an End User initiates a print job. Various types of clients are supported, depending on the particular printing environment.

---

**NOTE:** The Intermate100 Plus is a multi-protocol external print server used for many other things than ThinPrint printing. When working with ThinPrint, however, it is important to avoid confusing this with the ThinPrint server. Therefore, in a ThinPrint context, the Intermate100 Plus is sometimes called a print box or .print Client Gateway hardware, that is, hardware with an embedded .print Client Gateway. You will, however, sometimes see .print Client Gateway hardware referred to as the local server, to distinguish it from the ThinPrint Server.

---

## 1.2 System requirements and other pre-requisites

### 1.2.1 ThinPrint software and licenses

- You need an appropriate ThinPrint .print Engine license.
- The .print Engine must be installed on a server system (Windows, Unix, AS/400, or IBM mainframe), e.g. a Windows terminal server or a dedicated print server
- Before you begin working with your Intermate100 Plus, the ThinPrint Server should be configured to the point where you can create and configure a ThinPrint Port (see "ThinPrint Server: port and printer configuration" page 30).

Consult documentation from ThinPrint GmbH (<http://www.thinprint.com>) for additional information about requirements and licensing.

### 1.2.2 The Intermate100 Plus

The management interface of the Intermate100 Plus is accessed with a web browser. Your browser should be equivalent to Microsoft Explorer 5.5 or higher; it must support frames, and you must enable JavaScript on it.

### 1.2.3 Target Printer system requirements

#### Local Printer

The Local Printer must have a standard or high-speed IEEE 1284 compliant Centronics parallel port - or (if a converter cable is used) a Mini-Centronics port.

#### Network Destinations (NDO Printers)

- must support Raw Socket printing ("port 9100") or LPR (or both).
- must be attached to an Ethernet LAN and be properly configured.
- should support status reporting via SNMP.

In particular, it should support the status information nodes defined in the Printer MIB (RFC1759) and some host information nodes of the Host Resources MIB (RFC1518). If it lacks these features, intervention-required events such as Paper jam, Paper out, Off-line etc.) will be reported as "busy."

#### 1.2.4 IP Address of the Intermate100 Plus

Print jobs must, of course, be able to find their way to the Intermate100 Plus's IP address. Three approaches are supported.

- Use the DHCP IP-setting mode (which is default) and target jobs by the Hostname (configured on the TCP/IP page (see "TCP/IP" page 16)). This assumes, of course, that the DNS server on which the mapping between the Hostname and the IP address is accessible to users.
- Use a manually assigned, fixed IP address.
- Use DHCP and target directly to the IP address; this assumes that the Intermate100 Plus has its lease continually renewed.

---

**NOTE:** The IP address for the Intermate100 Plus also serves as the IP address for the Local Printer, if you use one. 192.168.130.219 is used in our configuration example (page 6).

---

### 1.3 For additional information

#### 1.3.1 Additional documentation from Intermate A/S

This ThinPrint guide is an appendix to the "Intermate100/Intermate101 Print Server Administration Manual", 7th edition, which you can download from our website.

The guide aims at making it unnecessary for you to use this detailed manual for anything except very special situations. It also ensures that you have the newest information. Please use the information in this guide if it is different from the information in the "Intermate100/Intermate101 Print Server Administration Manual".

Instructions for installing the Intermate100 Plus and contacting it for IP configuration are in the "Getting Started" brochure. A printout of this brochure is included in the package. The package also includes a "Documentation & Utilities CD". The most important utility is the Intermate Management and Configuration Utility which makes initial contact and IP configuration very easy.

Visit the Support Portal (<http://www.intermate.com/intermate100plus>) for additional documentation and utilities.

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**NOTE:** Intermate A/S also produces the Intermate Advanced Print Server (IAPS) - ThinPrint. This hardware .print Client Gateway does not have a parallel port connection, but can support up to 64 printers. It includes .print Connection Service, so that the IAPS can be reached on a masked network (NAT), and .print AutoConnect, so that the IAPS with a dynamic IP address and no name resolution can be reached. And it supports multiple .print Clients so that you can optimize how you use your ports.

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### 1.3.2 Recommended Documentation from ThinPrint GmbH

It is very important that you have the documentation for your particular .print Engine.

In addition, the following WhitePapers, which you can download from the ThinPrint home page (<http://www.thinprint.com>) are highly recommended

- "Tips for Configuring ThinPrint .print"
- "ThinPrint .print addressing"
- "ThinPrint ports"

The sections concerning scenarios where bandwidth control is necessary are relevant, while the sections concerning driver free printing are not.

- "Intermate100 Plus as a .print Client Gateway"

## 2 Configuration of the Intermate100 Plus

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.1 Initial contact and IP assignment

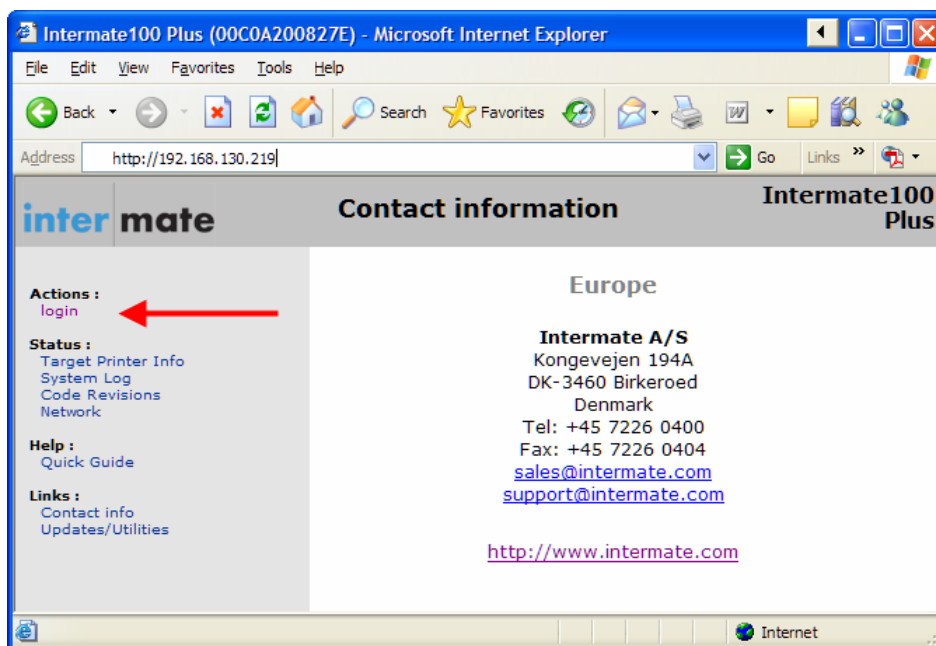
Install and IP-configure the Intermate100 Plus according to the instructions in the "Getting Started" brochure.

### 2.2 Login

Log on to the management interface by typing the IP address into a browser.

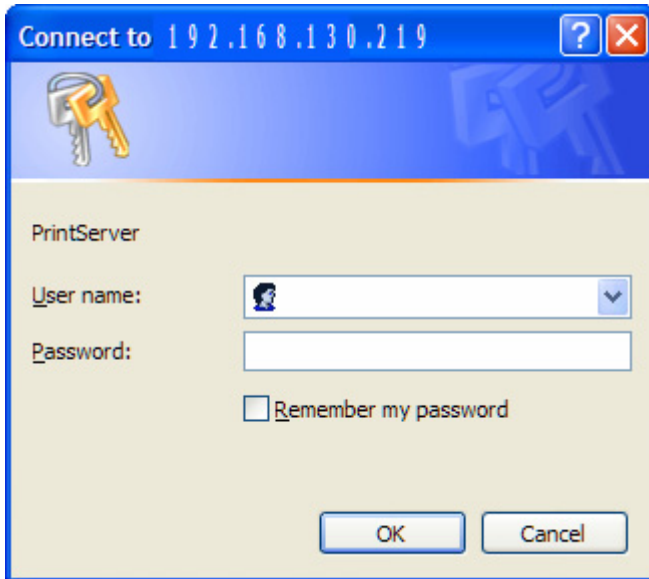
192.168.130.219 is used in our configuration example ("Configuration example" page 6).

Figure 2: Select login from menu



After you click **login**, a window will open.

*Figure 3: Login dialog*



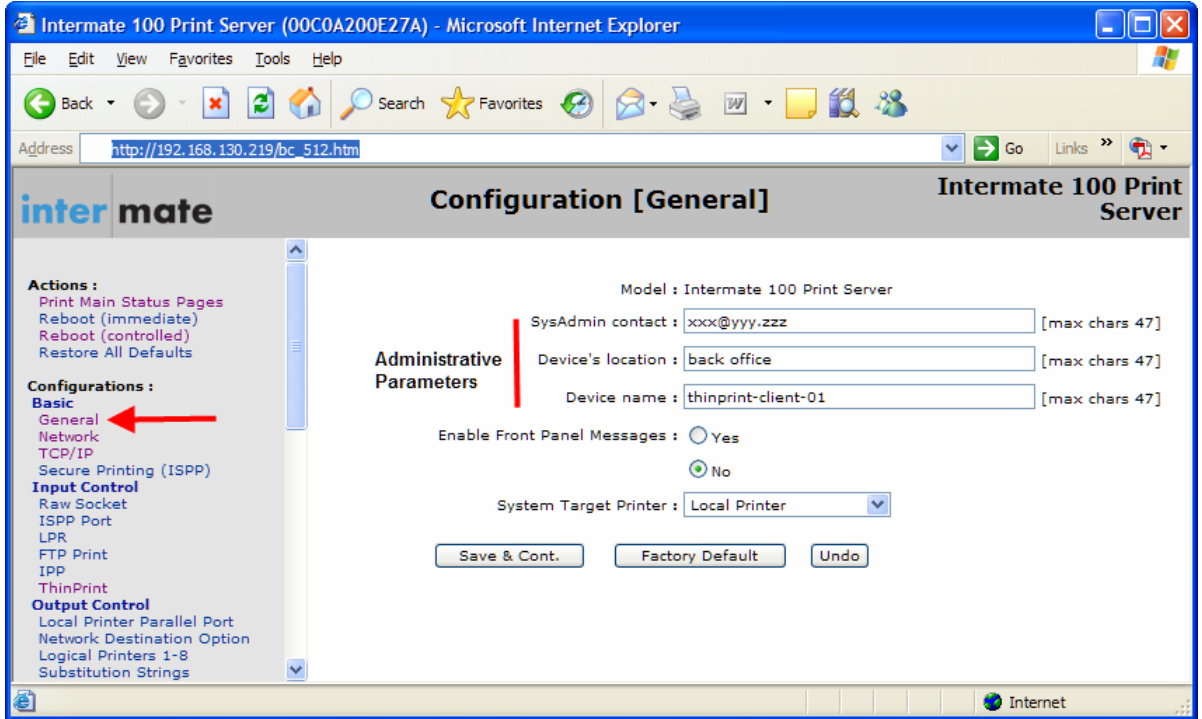
The User name is **admin** (case-sensitive).

Unless someone has worked with this particular device before, the Password is also **admin** (case sensitive).

Click **OK** to connect and close the login window.

## 2.3 General Parameters

Figure 4: General configuration page



The General page is in the Basic group on the Configurations menu.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.3.1 Administrative parameters

The three administrative parameters are used on e-mail and SNMP notifications, should you implement them (these facilities are configured in the **Status Monitoring** menu; refer to the "Interimate100/Interimate101 Print Server Administration Manual" for information about these options).

Field	Comments
SysAdmin contact	Maximum 47 ASCII characters within the decimal ranger 32-126. Use this parameter to specify a contact person or departmenet for local support and troubleshooting for the Interimate100 Plus.
Device's location	Maximum 47 ASCII characters within the decimal ranger 32-126. Use this parameter to specify the physical location of the Interimate100 Plus

Device Name	Maximum 47 ASCII characters within the decimal ranger 32-126. This name is used on e-mail and SNMP notifications, should you implement them.  Do not confuse this with the Hostname, used to identify the Intermate100 Plus on the IMCU and on a DNS Server (configured on the TCP/IP page (see "TCP/IP" page 16)).
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**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.3.2 Enable Front Panel Messages

This parameter enables and disables the PJI commands used for writing messages in the front panel of the Local Printer.

In order to use this, you must also enable PJI support on the configuration page for **Local Printer Parallel Port** in the **Output Control** menu (see "Local Printer Parallel Port" page 20).

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.3.3 System Target Printer

The **System Target Printer** is where the the Intermate100 Plus prints

- configuration information when you select **Print Main Status Pages** in the **Actions** menu.
- the mini-manual when you select **Quick Guide** in the **Help** menu.
- any print jobs targetted to **Logical Printer 0**.

Values	Comments
Local Printer	
Network Destination 1	The Network Destinations are configured on the Network Destination Option page (see "Network Destination Option - NDO printers" page 23).
Network Destination 2	
Network Destination 3	
Network Destination 4	

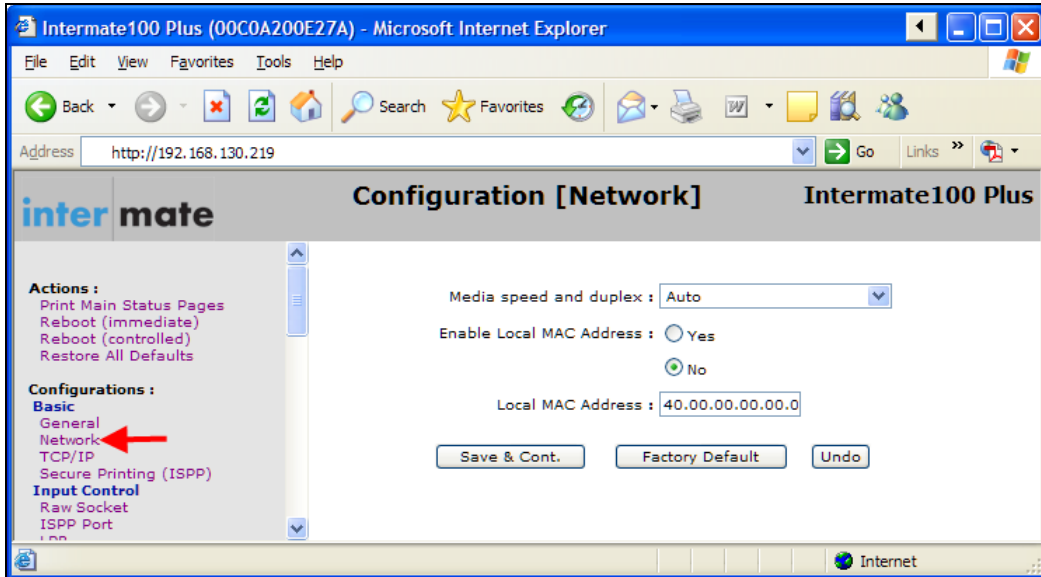
---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

## 2.4 Network parameters

Figure 5: Network configuration page



The Network configuration page is in the Basic menu.

**NOTE:** Click Save & Cont. before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.4.1 Media speed and duplex

This parameter controls Ethernet link speed and duplex settings.

The default setting is Auto-sense (auto-negotiation).

➤ **What to do if Auto-sense does not work**

- Sometimes the Interimate100 Plus must communicate with a device, such as a router, which does not support auto-negotiation. If this is the case, find out which setting the device uses and select the setting in the Interimate100 Plus to match.
- Sometimes Auto-sense fails because of poor quality cable or noise on the lines. These problems can also be solved by selecting a fixed setting. Experiment until you find a setting that works.

Values for fixed settings
10 Mbit/sec. Half duplex
10 Mbit/sec. Full duplex
100 Mbit/sec. Half duplex
100 Mbit/sec. Full duplex

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.4.2 Enable Local MAC Address

Sometimes corporate IT strategy calls for the use of "local" MAC addresses that override the factory default Global IEEE-assigned MAC address.

Value	Comments
No	Default
Yes	<ul style="list-style-type: none"> <li>▪ Please read Local MAC Address Rules (see "Local MAC Address Rules" page 15) before assigning an address in the field provided.</li> <li>▪ The local MAC Address will be shown in the browser's title bar and on the IMCU.</li> <li>▪ The Main Status pages (<b>Actions: Print Main Status Pages</b> —or use the TEST Button) and Code Revisions page (in the Status menu) will show both addresses.</li> </ul>

**IMPORTANT:** The Local MAC address cannot be used when ordering a license key for options.

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.4.3 Local MAC Address Rules

If you enable the use of a Local MAC Address, choose the address with care.

Connecting devices with identical Local MAC addresses to the network may result in faulty network behaviour that can affect other devices in the network.

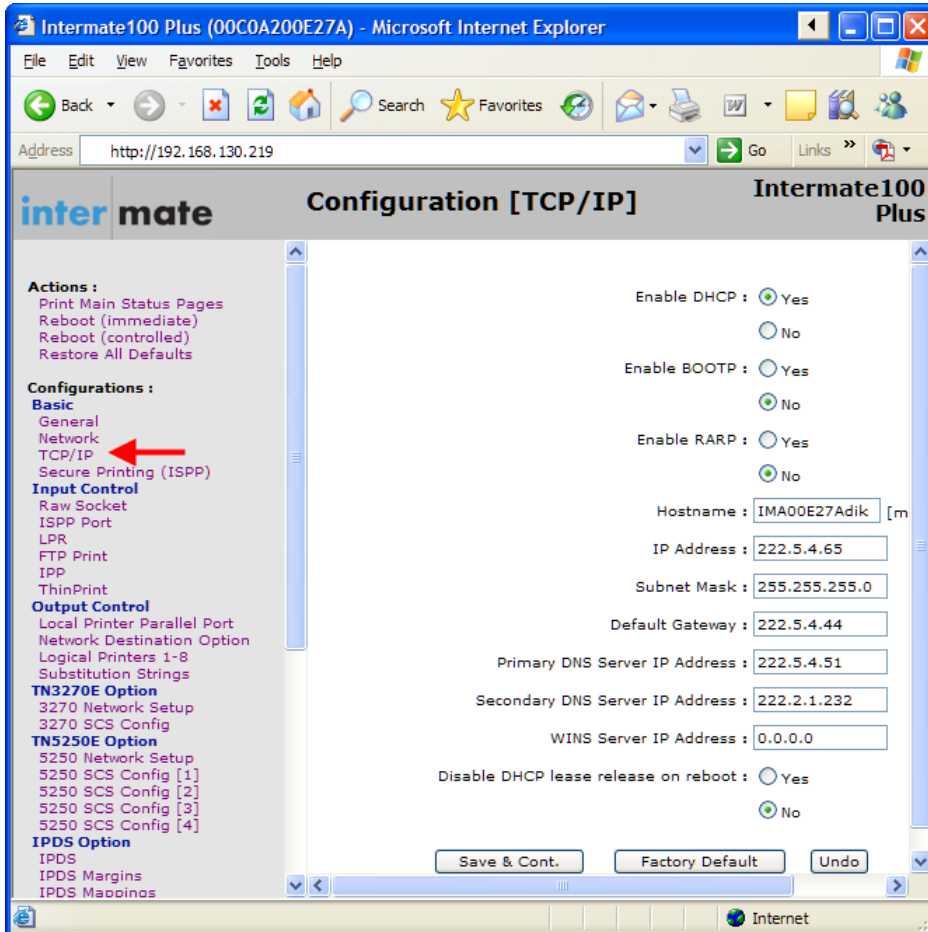
In addition, setting a Local MAC Address outside the range indicated below can result in difficulties which can only be resolved by restoring the factory defaults.

Value range (both included)	Comments
<b>40 . 00 . 00 . 00 . 00 . 00 -</b> <b>7F . FF . FF . FF . FF . FF</b>	Hex values. Use upper case letters ONLY. Six dot-separated values with two digits in each.

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

## 2.5 TCP/IP

Figure 6: TCP/IP configuration page



The TCP/IP configuration page is in the **Basic** menu.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.1 Enable DHCP, BOOTP, RARP or none of these

Be sure that you have only selected one of these options - or, if you are setting the IP address, subnet mask and default gateway manually, be sure that none of these options is selected.

#### Tips:

- The Intermate100 Plus uses DHCP by default, so using DHCP does not require a temporary static IP address as earlier relatives of this product did.
- If you use DHCP, you may want to consider disabling DHCP lease-release-on-reboot (see "Disable DHCP lease-release-on-reboot" page 19).
- If you use BOOTP or RARP, you must first make initial contact with the Intermate100 Plus with the IMCU or arp-ping, as explained in the Getting Started brochure. Instructions for using BOOTP and RARP are found in the online "Quick Guide". If you have the Intermate100 Plus attached to a printer, you can get a printout of the Quick Guide by pressing the TEST button for at least 4 seconds.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.2 Hostname for the Intermate100 Plus

The Intermate100 Plus will automatically generate a hostname for the Intermate100 Plus consisting of IMA plus the last three hex values (6 characters) in the MAC address. For example IMA00801E.

You may change this name. If you do, please follow the DNS naming restrictions for host names, but note that the name you use in an Intermate100 Plus must be no more than 15 characters long.

The hostname is used in the Name column on the IMCU and for targetting an Intermate100 Plus whose IP address is assigned via DHCP without automatic lease renewal.

If you implement e-mail and SNMP notifications, notifications will show the Device Name from the General page (see "General Parameters" page 12) . Information on configuring e-mail and SNMP notifications (in the Status Monitoring menu) can be found in the "Intermate100/Intermate101 Print Server Administration Manual".

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.3 IP address, subnet mask, and default gateway for the Intermate100 Plus

Fill out these fields only if you have not chosen a non-manual assignment mode.

Default for each of these three parameters is **0 . 0 . 0 . 0**.

Syntax: Four address bytes separated by periods. Each address byte must be a number in the interval [**0 . . 255**]. Do not use leading zeros.

Not all combinations of values will constitute a valid address. Ask your system administrator if in doubt.

If Auto Routing (RIP) is used in your environment, you can leave the default gateway set to **0 . 0 . 0 . 0**.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.4 DNS server(s) for look-ups

There are a number of configurations within the Intermate100 Plus where you can choose between entering an IP address or a name. Examples are a mail server, a TN5250E server, and network printers. If you want to use names, make sure that they can be looked up on a DNS server.

Enter one or two (Primary and Secondary) IP addresses. The secondary DNS server is used if the primary DNS server is not responding or if the primary DNS server contains no information about the DNS name being looked up.

Syntax: Four address bytes separated by periods. Each address byte must be a number in the interval [**0 . . 255**]. Do not use leading zeros.

Default is **0 . 0 . 0 . 0**.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.5 WINS server

If you enter WINS Server address, the contents of Hostname and IP Address of the Intermate100 Plus are sent to the WINS server at start up.

Syntax: Four address bytes separated by periods. Each address byte must be a number in the interval [0 . . 255]. Do not use leading zeros.

Default is 0.0.0.0

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.5.6 Disable DHCP lease-release-on-reboot

Value	Comments
Yes	Select this if you want to request the DHCP server <i>not</i> to release the lease when you Reboot (immediately/controlled) from the menu.
No	Default. This conforms to the DHCP RFC stating that a graceful shutdown should result in a lease release. However, some users need an alternative.

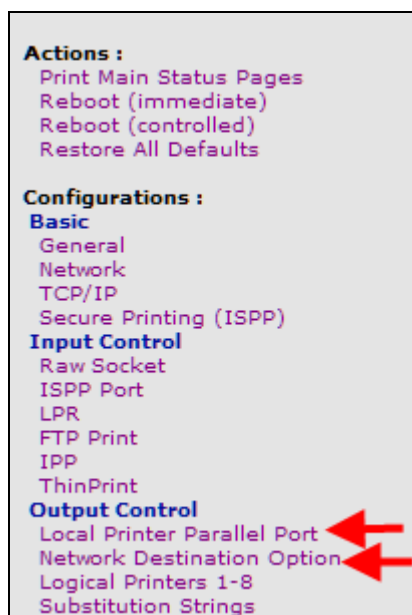
---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

## 2.6 Target Printer configuration

Figure 7: Select Configuration Pages for Target Printers



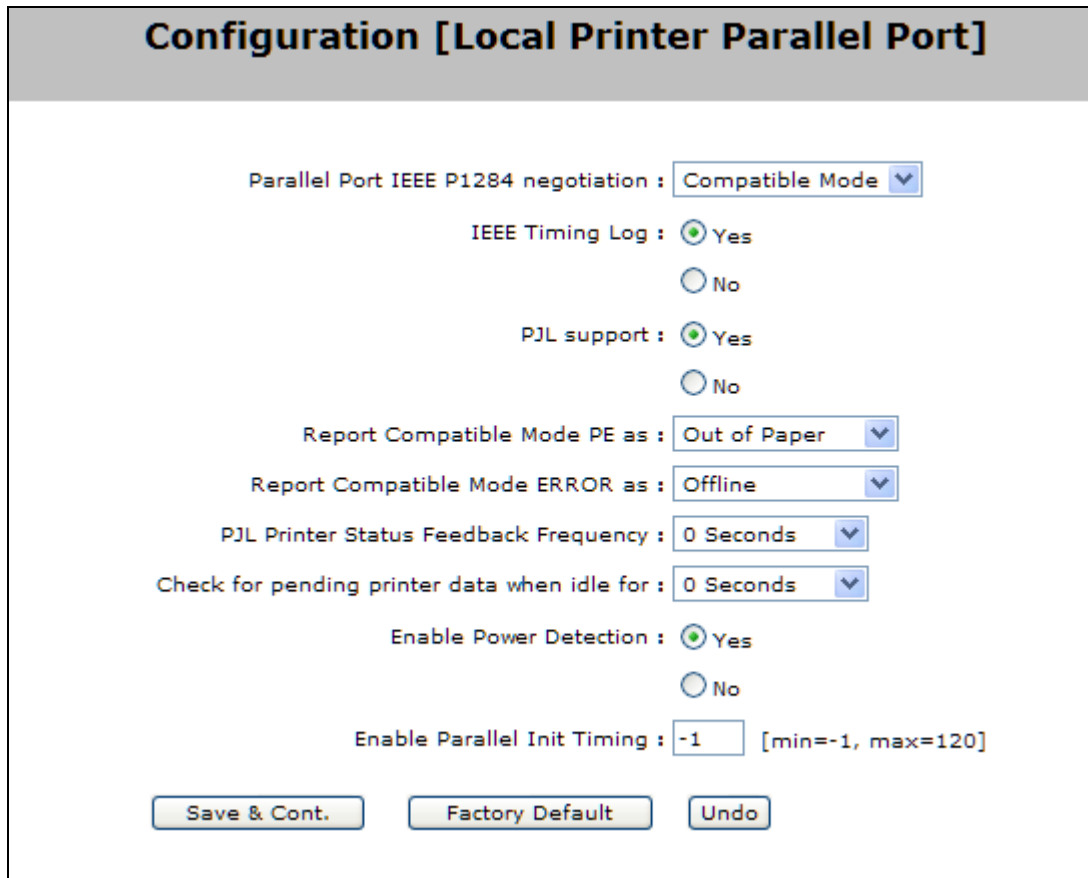
The configuration pages for target printers are on the **Output Control** menu. You can use **Local Printer Parallel Port**, **Network Destination Option** (up to 4 Network Destinations), or both.

**IMPORTANT:** If you are using the Network Destination Option (NDO printers), you should disable power detection on the configuration page for Local Printer Parallel Port (see "Local Printer Parallel Port" page 20).

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.1 Local Printer Parallel Port

Figure 8: Local Printer Paralle Port Configuration Page



The **Local Printer Parallel Port** configuration page is on the **Output Control** menu. This guide does not contain information on Local Printer settings rarely used in connection with ThinPrint. You may want to consult the "Intermate100/Intermate101 Print Server Administration Manual".

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.1.1 IEEE settings

The purpose of the two IEEE settings is to support bi-directional communication with the printer via one of two negotiation modes known as Nibble Mode and ECP Mode.

Field	Comments
Parallel Port IEEE P1284 negotiation	ThinPrint does not exploit the bi-directional control capacities of the Intermate100 Plus. So, unless the local printer will be used for other types of printing, leave the setting at the default <b>Compatible Mode</b> .
IEEE Timing Log	This setting is only relevant if ECP Mode or Nibble Mode is used.

**Tip:**

IF you do use Nibble Mode or ECP mode, the parameters **PJL Printer Status Feedback Frequency** and **Check for pending printer data when idle for ...** may be relevant. Refer to the "Intermate100/Intermate101 Print Server Administration Manual" for further information.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.6.1.2 PJL Support

Enable PJL support if either of the following two conditions apply:

- you want to enable front panel messages on the General configuration page (see "General Parameters" page 12).
- you want to enable PJL capability supported by a printer using a bi-directional negotiation mode (ECP or Nibble (see "IEEE settings" page 21)).

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 2.6.1.3 Report Compatible Mode <...> as

These two settings allow you to customize how reports on intervention-required events are worded if negotiation with the Local Printer is being done in Compatible Mode (see "IEEE settings" page 21).

Report Compatible Mode PE as	Values
This parameter controls how a <i>Paper Empty</i> or <i>Paper Error</i> condition is reported to whatever monitoring aids you use, such as the Intermate100 Plus's Target Printer status, SNMP, or e-mail notification.	<ul style="list-style-type: none"> <li>▪ Out of Paper (default)</li> <li>▪ Paper Jam</li> <li>▪ Offline</li> <li>▪ Undefined Error</li> </ul>

Report Compatible Mode ERROR as	Values
This parameter controls how a <i>general printer error</i> is reported to whatever monitoring aids you use, such as the Intermate100 Plus's Target Printer status, SNMP, or e-mail notification	<ul style="list-style-type: none"> <li>▪ Offline (default)</li> <li>▪ Cover Open</li> <li>▪ Offline</li> <li>▪ Undefined Error</li> </ul>

Information on how to configure the Intermate100 Plus's **Status Monitoring** facilities can be found in the "Intermate100/Intermate101 Print Server Administration Manual".

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

#### 2.6.1.4 Enable Power Detection

With this parameter, you can specify whether or not you want the Intermate100 Plus to reboot automatically if the local printer is powered On.

The default setting is **Yes**. You can use this setting to allow for easier rebooting and to prevent the power socket in the print server from getting worn down.

**IMPORTANT:** Set this parameter to **No** if you are using NDO printers and do not want to risk their print jobs' getting interrupted every time the Local Printer is powered on.

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

#### 2.6.1.5 Enable Parallel Init Timing

If there is no print try using this option, which has been found to work on a CompuPrint 9068 and will probably work on many other printers.

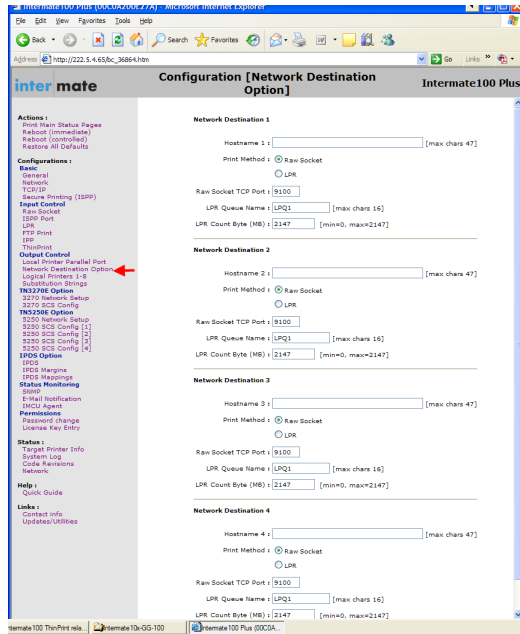
Value	Comments
-1	Default. The option is disabled, so there are no changes made to init timing
0	Enabled - with no wait.
[1-126]	Enabled after waiting the number of seconds entered in the field.

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.2 Network Destination Option - NDO printers

To configure any NDO printer, select Network Destination Option on the Output Control menu.

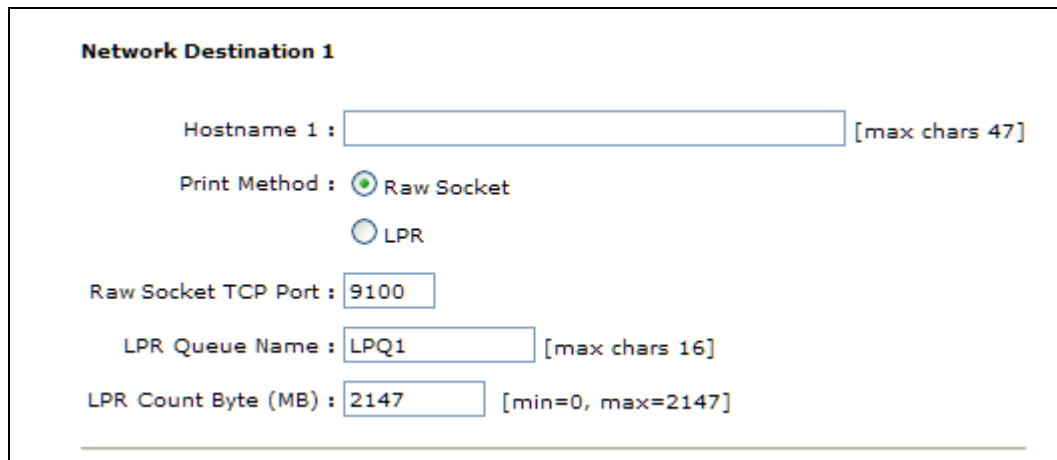
Figure 9: NDO - whole page



**IMPORTANT:** If you are using the Network Destination Option for network printers, you should probably disable power detection on the configuration page for Local Printer Parallel Port (see "Local Printer Parallel Port" page 20).

On the configuration page, each NDO printer is known as a Network Destination. You can configure up to four Network Destinations.

Figure 10: Network Destination - Configuration Details



**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.2.1 Hostname for a Network Destination

This parameter, which perhaps should be called host identification, specifies the IP address or DNS registered hostname of the printer. It must always be configured if you want the Network Destination enabled.

Values	Comments
Blank	Default. If the field is left blank, the particular network destination is regarded as disabled.
IP address <i>or</i>	4 dot-separated bytes, each within the range [0 . . 255]
DNS registered hostname	Maximum 47 ASCII characters. If you will be using the Intermate100 Plus for other types of jobs than ThinPrint and want to target printers by hostname, follow the DNS naming restrictions for host names. Be sure that this name is, in fact, registered on at least one of the DNS servers specified on the TCP/IP configuration page (see "DNS server(s) for look-ups" page 18).

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.2.2 Print method - LPR or Raw Socket

The print method controls the protocol used by the Intermate100 Plus to send print to an NDO printer.

Values	Comments
Raw Socket	Establish a Raw Socket with the NDO printer you are configuring. <ul style="list-style-type: none"> <li>▪ This is default.</li> <li>▪ Raw Socket is also known as port 9100 or reverse telnet or standard TCP/IP printing.</li> <li>▪ If you select Raw Socket, you must also fill out Raw Socket TCP port number (see "Raw Socket TCP port number" page 25).</li> </ul>

LPR	<p>Print to an LPD Daemon.</p> <ul style="list-style-type: none"><li>▪ This is a more complex protocol which should only be used if the NDO printer you are configuring does not support Raw Socket.</li><li>▪ If you select LPR, you must also fill out LPR Queue Name and LPR Count Byte (see "LPR Queue Name and LPR Count Byte" page 26).</li><li>▪ This has <i>nothing</i> to do with server-side use of LPR/LPD. If you configure a Target Printer with LPR, you will still associate the printer with the ThinPrint TCP/IP Port selected for use with your Intermate100 Plus, <i>not</i> with a ThinPrint LPD port.</li></ul>
-----	--

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.2.3 Raw Socket TCP port number

This parameter specifies the Raw Socket TCP port number for the Network Destination in question; it will be ignored if LPR is selected as print method (see "Print method - LPR or Raw Socket" page 24).

Value	Comments
[1024..65500]	Default is <b>9100</b> . Consult the manual for the printer to determine available Raw Socket port numbers.

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 2.6.2.4 LPR Queue Name and LPR Count Byte

#### ➤ *Configurations for printing to an LPD Daemon*

LPD configuration of the Intermate100 Plus only affects how the print job is forwarded from the Intermate100 Plus to the printer. Standard is Raw Socket. If the printer (or MFP/MFC) does not have Raw Socket, then LPD can be used.

In the LPD configuration, usually only one decision needs to be made, and that is the LPR queue name (see "Tips about LPR Queue Name" page 26). This name must be recognizable by the printer (or by the server to which the print job is spooled before going on to the printer).

The ByteCount setting usually does not need to be changed (see "Tips about LPR Count Byte" page 26). We have set it to maximum (2147 MB - approx 2.1 GB) because we don't know what will be available at the receiving end.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

#### **Tips about LPR Queue Name**

The LPR queue name will be ignored if Raw Socket is selected as print method (see "Print method - LPR or Raw Socket" page 24).

Maximum 16 characters. Use a logic for naming queues that fits well into your environment and that is can be recognized as a queue name by the target.

The characters used should be chosen from the ASCII 7-bit character set. Further restrictions might apply depending on your network environment. Using the DNS naming restrictions for host names is a good idea, with one exception: . (dot, period) should never be used in a queue name.

The configuration page shows a default name LPQ1 in each of the four possible slots, and you need not change these names, given that each Network Destination has a different hostname (see "Hostname for a Network Destination" page 24).

If the queue name(s) chosen do not work, there will be no print job and there will probably be an error message in the Intermate100 Plus log. The user initiating the job needs to kill it at the source: the logic is the same as when you need to cancel a hung job sent from a Windows PC to a printer. Then the documentation for the printer (or spooling server) needs to be consulted.

#### **Tips about LPR Count Byte**

##### **Background:**

LPR is a spooling protocol, which normally requires a count byte to indicate the size of the job to the LPD daemon. Because the Intermate100 Plus cannot spool the job in order to verify the total length, it is necessary to specify a "Receive Data File" byte count in MBytes for the LPR job.

Values - size in MegaBytes	Comments
2147	default
0	infinite size

all other values [1 . . 2146]	specified size
-------------------------------	----------------

**How to select a value if you can't use the default:**

There are two situations, where the default might not work:

- a) The receiver requires specification of infinite size, using the value 0. According to the LPR/LPD RFC1179 a byte count of zero will indicate an infinite size. This is for example accepted for the LPD integration in Windows NT.
- b) The receiver requires a lower value; minimum 1, and it must, of course, be bigger than the largest expected LPR print job. LPD Daemons not accepting a count byte of zero may accept a byte count larger than the job (i.e. a client disconnect before the byte count is reached). Defining a byte count value larger than the largest expected LPR print job may therefore have the same effect as a byte count of zero.

To choose the correct value, you may need to investigate how the LPD Daemon is integrated on the Target Printer.

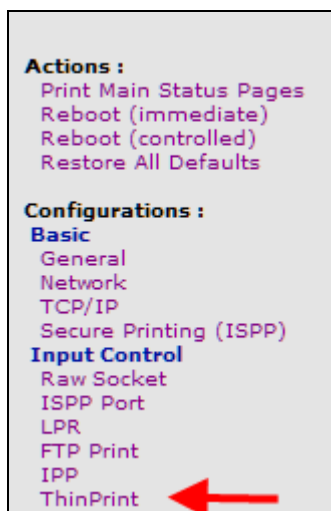
**Troubleshooting:**

If the value chosen does not work, there will be no print job and there will probably be an error message in the Intermate100 Plus log. The user initiating the job needs to kill it at the source: the logic is the same as when you need to cancel a hung job sent from a Windows PC to a printer. Then the documentation for the printer (or spooling server) needs to be consulted.

**2.7 Select ThinPrint for configuration**

ThinPrint is on the Input Control menu.

*Figure 11: Select ThinPrint*



**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

## 2.8 Enable and configure ThinPrint

1. Enable ThinPrint field: If the Yes radio button is not already selected, select it now.
2. Client TCP Port: This is the port that the Intermate100 Plus listens on for ThinPrint .print jobs. The default value is 4000. The port number specified must match the setting for the TCP/IP port on the ThinPrint server (see "TCP/IP Port on the ThinPrint Server" page 30).
3. Click Save & Cont.

Figure 12: Enable ThinPrint and Reboot

**Configuration [ThinPrint]**

Enable ThinPrint :  Yes **1**  
 No

Client TCP Port : 4000 **2**

Bandwidth (Bit/sec) : 0

Client Reject Timeout : 3 [min=0, max=30]

Enable ThinPrint RAM Spooling :  Yes  
 No

Current Printer : Logical Printer 0 **3**

Save & Cont. Factory Default Undo

The other fields on this page can be used for Finetuning the ThinPrint configuration (see "Fine-tune the ThinPrint configuration" page 37).

---

**NOTE:** Click Save & Cont. before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

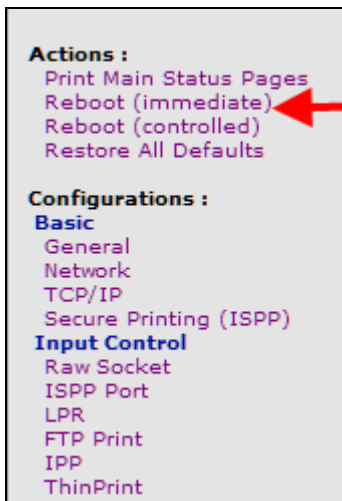
---

## 2.9 Reboot to activate changes

To activate any new setting, the setting must be saved and the Intermate100 Plus must be rebooted.

Use the **Actions** menu as shown here.

*Figure 13: Reboot from menu*



### Alternative reboot methods:

- Power the printer Off, wait about 10 seconds, and then power On.
- Pull the power supply plug out of the print server's power jack, wait, then re-insert the plug.
- Telnet.
- IMCU.

## 3 ThinPrint Server: port and printer configuration

### 3.1 TCP/IP Port on the ThinPrint Server

Each Intermate100 Plus uses a single TCP/IP port. The number of this port must be used in the Client TCP Port field on the Intermate100 Plus's ThinPrint configuration page (see "Enable and configure ThinPrint" page 28).

1. Add, name and configure the ThinPrint TCP/IP Port.

Tip: On Windows servers, use the Microsoft Management Console (MMC; Start → Programs → .print Engine → Port Manager). Consult your .print Engine documentation for instructions for other types of .print Engines.

2. Make sure that

- the **Bandwidth** specified meets your requirements. Using the slider to specify the value will ensure that you select a valid one.
- the port type is **TCP/IP** and the port number specified matches the Client TCP/IP port specified

3. On the **Advanced** tab, make sure that

- the setting to use **Client control Bandwidth** or not is correct for your situation. Allowing client control means that you can ask the port to compress jobs to this Intermate100 Plus even more than it would for jobs sent to other .print Clients or .print Client Gateways. If you want client control of bandwidth used, you must also specify a bandwidth setting on the Intermate100 Plus (see "Bandwidth (bit/sec)" page 37).
- the setting for **Net send service** is chosen. Default is yes. This means that users will be notified if ThinPrint .print experiences print errors. Please consult the documentation for the .print Engine you will be using if you want to know more about this option.
- the setting for **Connection retries** is correct for your situation; please consult your ThinPrint documentation for advice.
- the **Name convention** for printers connected to the port is the one you want - and the one your users know.

The ThinPrint Server supports two naming conventions for printer object names:

**IPAddress:Printer\_ID#printer\_name**

**printer\_name#IPAddress:printer\_ID**

Instead of IP address, a host name can be used, provided that there the Intermate100 Plus can look up the name on a DNS Server (see "DNS server(s) for look-ups" page 18) or a WINS Server (see "WINS server" page 19).

In some environments a "User ID" is used instead of an IP address.

This documentation uses the convention that starts with **IPAddress**. Be sure that your users know and use the relevant convention.

Now you are ready to create printer objects (see "ThinPrint printers (printer objects) on the ThinPrint Server" page 31).

---

**NOTE:** Because a given printer can be assigned to more than one ThinPrint (printer) port, you can target a given physical printer through more than one .print Client. For example, you might have a single printer assigned to two different Intermate100 Pluss, each with its own ThinPrint TCP/IP port. Or you might allow targetting of the printer from an Intermate100 Plus and from a software .print Client - again, each with its own ThinPrint TCP/IP port. For more information, read about Port Pooling in your ThinPrint documentation.

---

### 3.2 ThinPrint printers (printer objects) on the ThinPrint Server

1. Create a printer object.
2. Install the relevant printer driver.
3. Associate the object with the ThinPrint TCP/IP port you have configured for use by this Intermate100 Plus.
4. Rename the object according to the printer object naming convention selected for the port.
5. Check that all of the printer objects representing targets you want to reach via the Intermate100 Plus are associated with the desired port. Tip: In Windows environments, use the Port Manager and select the .print Engine. The object names will be shown in one long line in the Printer field for the port.

Examples of actual printer object names are shown in Using printer objects names to address printers (see "Using printer objects names to address printers" page 32).

## 4 Printing

### 4.1 Using printer objects names to address printers

As shown in Creating ThinPrint printers (printer objects) (see "ThinPrint printers (printer objects) on the ThinPrint Server" page 31), this documentation uses printer object names built up as follows:

**IPaddress:Printer\_ID#printer\_name**

The value for **IPaddress** is the IP address or hostname of the Intermate100 Plus (see "Hostname for the Intermate100 Plus" page 17). In ThinPrint naming conventions, if you use the hostname, the label is known as **clientname**.

The value for **Printer\_ID** points to the desired target printer according to the Printer\_ID table for direct targetting (see "Printer\_ID table for direct targetting" page 33) or the Printer\_ID table for targetting via logical printers (see "Printer\_ID table for targetting via Logical Printers" page 34). If a printer object name without Printer\_ID is used, the print will be sent to the printer designated as Current Printer.

The value for **printer\_name** is not used by the system, but is a good help to administrators and users.

If a printer object name without **Printer\_ID** is used, the print will be sent to the printer designated as Current Printer (see "Current Printer" page 38).

#### 4.1.1 Examples of how to address printers

The following printer object name would directly target Network Destination 1 in our configuration example (page 6):

**192.168.130.219:11#Aficio 3045**

The following printer object name would directly target the Local Printer in that example:

**192.168.130.219:1#HP Laser Jet**

The following printer object name would target Logical Printer 3. Assuming that Logical Printer 3 is set up to create a banner page before each print job and is mapped to the Local Printer, the following name would be appropriate for our example:

**192.168.130.219:23#HP Laser Jet banner page**

#### 4.1.2 Explanations of how the names are constructed

As shown in Creating ThinPrint printers (printer objects) (see "ThinPrint printers (printer objects) on the ThinPrint Server" page 31), this documentation uses printer object names built up as follows:

**IPaddress:Printer\_ID#printer\_name**

The value for **IPaddress** is the IP address or hostname of the Intermate100 Plus (see "Hostname for the Intermate100 Plus" page 17). In ThinPrint naming conventions, if you use the hostname, the label is known as **clientname**.

The value for **Printer\_ID** points to the desired target printer according to the Printer\_ID table for direct targetting (see "Printer\_ID table for direct targetting" page 33) or the Printer\_ID table for targetting via logical printers (see "Printer\_ID table for targetting via Logical Printers" page 34). If a printer object name without Printer\_ID is used, the print will be sent to the printer designated as Current Printer (see "Current Printer" page 38).

The value for **printer\_name** is not used by the system, but is a good help to administrators and users.

#### 4.2 Printer\_ID table for direct targetting

Physical printer on the Intermate100 Plus	ThinPrint Printer_ID
Local Printer	1
Network Destination 1	11
Network Destination 2	12
Network Destination 3	13
Network Destination 4	14

If a printer object name without **Printer\_ID** is used, the print will be sent to the printer designated as Current Printer (see "Current Printer" page 38). Your administration will probably be made easier if you teach your users to always include a Printer\_ID.

### 4.3 Printer\_ID table for targetting via Logical Printers

The Intermate100 Plus allows you to configure and save Logical Printers that can perform special processing. Print jobs are directed to the logical printer, which then forwards the job - plus the special processing - to the Target Printer.

When you configure a logical printer, you indicate which physical printer to target - Local Printer, Network Destination 1, Network Destination 2, Network Destination 3, or Network Destination 4.

For each of the Logical Printers you want to be able to create a printer object on the ThinPrint Server. The naming convention used in this documentation for a printer object name is

**IPaddress:Printer\_ID#printer\_name**

Which printer\_name label you use depends, of course, on which physical printer you have mapped to any given logical printer.

Logical Printer on the Intermate100 Plus	ThinPrint Printer_ID
Logical Printer 1	21
Logical Printer 2	22
Logical Printer 3	23
Logical Printer 4	24
Logical Printer 5	25
Logical Printer 6	26
Logical Printer 7	27
Logical Printer 8	28

## 5 Troubleshooting

### 5.1 No output

If there is no output even though the printer object name used includes the correct IP address for the Intermate100 Plus (see "Using printer objects names to address printers" page 32), investigate the following possibilities:

Condition	Comments
Targetting the Local Printer	The print has been targeted to the Local Printer and there may be a problem with initialization timing (see "Enable Parallel Init Timing" page 22).
Targetting an NDO printer with LPR output	You are printing via LPR/LCD to an NDO printer and there is a problem with the value chosen for LPR Queue Name and or the value of LPR Count Byte (see "LPR Queue Name and LPR Count Byte" page 26).
Target in prolonged intervention mode other than turned off	There has been a Client Reject timeout.
Target turned off (Target Error)	One way of determining whether or not the printer in question is turned off is to choose <b>Target Printer Info</b> in the <b>Status</b> menu.
Fatal addressing error	See next table

When the Intermate100 Plus receives the job, it creates a spool file. If there is a fatal addressing error, this spool file is deleted. A message is written to the System Log in the client hardware. Printer monitoring on the ThinPrint server side will report that the job is completed (i.e. it is no longer in the queue), and you will not find the physical output anywhere.

Fatal addressing errors	Comments
When printing to any target that is turned off, in intervention mode, or wrongly configured	A fatal error is provoked when a <b>printer_ID</b> sends the job to a physical printer which is wrongly configured, turned off, or in an intervention mode. It doesn't matter whether the <b>printer_ID</b> in question is from the set {1, 11, 12, 13, 14}, with direct physical targetting, or from the set {21, 22, 23, 24, 25, 26, 27, 28}, where the job output reaches the physical target via a logical printer.
When printing to a Logical Printer that is wrongly configured	A fatal error is provoked when a <b>printer_ID</b> chosen from the set {21, 22, 23, 24, 25, 26, 27, 28} sends the job to a logical printer which is not fully and correctly set up.
When printing to an NDO printer that is wrongly configured	A fatal error is provoked when a <b>printer_ID</b> chosen from the set {1, 11, 12, 13, 14} sends the job to a Network Destination which is not fully and correctly set up.

## 5.2 Output isn't where you expect it to be

If a printer object name without **Printer\_ID** is used, the print will be sent to the printer designated as Current Printer (see "Current Printer" page 38). The same thing will happen if the **Printer\_ID** is not recognized as valid by the ThinPrint .print Client, i.e. by the Intermate100 Plus. Valid **Printer\_IDs** are shown in Printer\_ID table for direct targetting (see "Printer\_ID table for direct targetting" page 33) and Printer\_ID table for targetting via logical printers (see "Printer\_ID table for targetting via Logical Printers" page 34)

With the Intermate100 Plus, a printer object name might include a valid Printer\_ID, but the user may not be understand the mappings involved.

For example, **192.168.130.219:23#Aficio 3045 with banner page** will only go to the Local Printer if Logical Printer 3 has been mapped to target the Local Printer. If, for example, Logical Printer 3 is mapped to target Network Destination 3, **192.168.130.219:23#Aficio 3045 with banner page** will go to the Lexmark printer.

## 6 Fine-tune the ThinPrint configuration

Figure 14: Client TCP Port

The screenshot shows a configuration window titled "Configuration [ThinPrint]". It contains several settings:

- Enable ThinPrint:** A radio button selection with "Yes" selected (indicated by a green dot) and "No" unselected.
- Client TCP Port:** A text input field containing the value "4000".
- Bandwidth (Bit/sec):** A text input field containing the value "0", with a red circle and the number "1" next to it.
- Client Reject Timeout:** A text input field containing the value "3", with a red circle and the number "2" next to it. To the right of the field is the text "[min=0, max=30]".
- Enable ThinPrint RAM Spooling:** A radio button selection with "Yes" unselected and "No" selected (indicated by a green dot), with a red circle and the number "3" next to it.
- Current Printer:** A dropdown menu showing "Logical Printer 0".

At the bottom of the window are three buttons: "Save & Cont.", "Factory Default", and "Undo".

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

### 6.1 Bandwidth (bit/sec)

The Intermate100 Plus can perform .print client-side reduction of bandwidth so that even less bandwidth is used than specified for the port used on the ThinPrint server.

Default value is 0, which means disabled.

If you want to enable this feature, ask your network or server administrator for a suggested value. It must be lower than the settings on the ThinPrint Port used by this Intermate100 Plus.

You must also be sure that client control bandwidth is selected on the Advanced tab of the port configuration (see "TCP/IP Port on the ThinPrint Server" page 30). Otherwise the value in this field of the Intermate100 Plus will be ignored.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

## 6.2 Client Reject Timeout (minutes)

This parameter tells the ThinPrint .print client how long to wait before rejecting the print job after a printer has entered an intervention mode.

Value	Comment
0	Disable Client Reject Timeout. This will give an indefinite wait for a "target ready."
1	Minimum value in minutes
3	Default value in minutes. Recommended range is from 3 to 5 minutes.
30	Maximum value in minutes

If the target has been in intervention mode more than the time set here, the print job will be rejected.

For more information about this option, see Client Reject Timeout - why and how.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

### 6.2.1 Client Reject Timeout - why and how

If the target has been in intervention mode more than the time set here, the print job will be rejected.

Client Reject Timeout clears the queue of jobs that have been held up by paper out (etc.), so that the other printers' jobs in a shared queue can be processed.

When a spool file is removed from the queue, the messenger service on your PC will indicate that the job is "finished printing". If you cannot find the hard copy output, check the **Event log** on the ThinPrint server, where you will be able to determine whether or not the disappearance is due to a client reject timeout.

Note that this feature cannot help you if a printer is down because it is shut off (target error - Troubleshooting (see "Troubleshooting" page 35)).

## 6.3 Current Printer

This is the printer that will be targetted by a printer object name that has no printer\_ID, or has a printer\_ID that the .print Client in the Intermate100 Plus does not recognize as valid.

Values	Comments
Logical Printer 0	This setting is factory default and targets the System Target Printer (see "System Target Printer" page 13). It should always be used unless you want special processing - or want to designate a physical printer other than the System Target Printer.

---

Any one of Logical Printers 1-8	If you want to be sure that all misdirected jobs end up being processed in some way then choose the logical printer n which provides that processing. The processing in question could, for example, be a string before which creates a banner page at the start of the job. Which physical printer the job ends up at depends on how you configure the Logical Printer.
Local Printer - or any one of Network Destinations 1-4	Any of these can be a good choice if you always want misdirected jobs to end up at a particular physical printer - without any special processing.

---

**NOTE:** Click **Save & Cont.** before leaving any configuration page. After you have saved all the pages you are working on at any particular time, activate the changes by rebooting (see "Reboot to activate changes" page 29).

---

#### 6.4 Enable ThinPrint RAM Spooling

This option makes the Intermate100 Plus spool the compressed jobs to RAM instead of spooling them on the printer. Enabling this option gives the ThinPrint .print Client a chance to restart jobs if it fails to send decompressed data to the printer.



## 7 Glossary of Terms

### D

#### DNS

Domain Name Server

#### DNS naming restrictions for host names

Naming requirements are dependent on where the particular DNS Server looks up a host name in order to find the current IP address. A host name must be unambiguous in a given environment.

For example, on the Internet, the host name must be an FQDN, containing at a minimum a hostname, such as **www**, and a two-level domain name, such as **intermate.com**.

In a closed environment, the hostname is usually enough.

Because a host name may need to function in many different types of name spaces, you can prevent problems by following these guidelines:

- Minimum 2 characters.
- Maximum 256 characters unless otherwise specified for a specific configuration.
- OK: letters a-z. DNS servers do not treat a name as case-sensitive, but the name may end up being treated as case-sensitive in another environment. Sticking to lower case letters is safest.
- OK: digits 0-9, and the hyphen/dash (-).
- Not allowed: any thing else. People are most tempted by spaces, special symbols or extended (international) characters (i.e. above Hex 7E / decimal 126). Don't use them!
- The first character in the name must be a letter (preferred) or a digit (allowable in most modern environments).
- Period / full stop / dot . can be used - but only as a separator for the labels using the DNS naming rules, for example **www.intermate.com**.
- Some environments may permit underscore (\_).

## **F**

### **FQDN**

The Fully Qualified DNS Name is an unambiguous host name given to a network device which can be looked up on a DNS Server.

Usually, the term is reserved for names that can be found in the open Internet environment.

Thus, the name must include three labels: a hostname, a second-level domain name, and a top-level domain. such as **com** or **net**.

An FQDN starts with a hostname and continues all the way up to the top-level domain. So there may be more than three labels. For example **www.parc.xerox.com**

Sometimes an FQDN ends with a dot (period) in order to indicate that no suffixes are to be added.

The DNS naming restrictions for host names should be used.

## **H**

### **hostname**

The name of a single computer (a host) on a network. See also FQDN and DNS naming restrictions for host names.

## **I**

### **intervention mode**

When you cannot print to a printer even though it is not busy printing something else, the printer is probably being controlled by an intervention-required event.

### **intervention-required events**

Examples of intervention-required events are paper out, paper jam, toner low, and off-line. The printer stops printing - and may even stop queueing jobs - until somebody, such as a printer operator, intervenes.

When an intervention-required event controls the printer, it is sometimes said to be in intervention mode. This is to distinguish the situation from ready mode and busy mode.

## **L**

### **Logical Printers**

The Intermate100 Plus uses so-called logical printers so that you can save and re-use instructions for special processing.

Logical printer 0 does no special processing. The chosen printer is directly targetted.

You can define and save up to 8 different logical printers, 1-8. The chosen printer is indirectly targetted. That is, the print job is directed to the logical printer, which then forwards it, along with special processing instructions, to the physical printer.

## **N**

### **NDO**

Network Destination Option. A group of parameters for configuring up to four printers with their own Ethernet LAN attachments. These printers are often called Network Printers or NDO printers.

## **S**

### **special processing**

This refers to string before the job, string after the job, and/or string substitution within the job.

For example, a "string before" can be used to create a banner page at the start of the job.

Detailed information about how to use special processing is in "Intermate100/Intermate101 Print Server Administration Manual", which is available on the CD and on the product support portal.



## 8 Index

### A

Additional documentation from Intermate A/S • 8  
addressing printers • 32  
Administrative parameters • 12

### B

Bandwidth (bit/sec) • 37

### C

Client Reject Timeout - why and how • 38  
Client Reject Timeout (minutes) • 38  
Client TCP Port • 28  
Configuration example • 6  
Configuration of the Intermate100 Plus • 10  
Current Printer • 38

### D

DHCP • 8, 17, 19  
Disable DHCP lease-release-on-reboot • 19  
DNS • 41  
DNS naming restrictions for host names • 41  
DNS server(s) for look-ups • 18

### E

Enable and configure ThinPrint • 28  
Enable DHCP, BOOTP, RARP or none of these • 17  
Enable Front Panel Messages • 13  
Enable Local MAC Address • 15  
Enable Parallel Init Timing • 22  
Enable Power Detection • 22  
Enable ThinPrint RAM Spooling • 39  
Examples of how to address printers • 32  
Explanations of how the names are constructed • 33

### F

Fine-tune the ThinPrint configuration • 37  
For additional information • 8  
FQDN • 42

### G

General Parameters • 12

### H

hostname • 42  
Hostname for a Network Destination • 24  
Hostname for the Intermate100 Plus • 17

## **I**

- IEEE settings • 21
- Initial contact and IP assignment • 10
- intervention mode • 42
- intervention-required events • 42
- Introduction • 5
- IP Address of the Intermate100 Plus • 8
- IP address, subnet mask, and default gateway for the Intermate100 Plus • 18

## **L**

- Local MAC Address Rules • 15
- local printer • 5, 8
- Local Printer Parallel Port • 20
- Local Printer vs Network Destinations • 6
- Logical Printers • 43
- Login • 10
- LPR Queue Name and LPR Count Byte • 26

## **M**

- Media speed and duplex • 14

## **N**

- NDO • 43
- Network Destination • 5, 22
- Network Destination Option - NDO printers • 23
- Network parameters • 14
- No output • 35
- Notices • 2

## **O**

- Output isn't where you expect it to be • 36

## **P**

- parallel init. timing • 22
- PJL • 13, 21
- PJL Support • 21
- Print method - LPR or Raw Socket • 24
- Printer\_ID table for direct targetting • 33
- Printer\_ID table for targetting via Logical Printers • 34
- Printing • 32

## **R**

- RAM spooling • 39
- Raw Socket TCP port number • 25
- Reboot to activate changes • 29
- Recommended Documentation from ThinPrint GmBH • 9
- Report Compatible Mode <...> as • 21

## **S**

- Select ThinPrint for configuration • 27
- special processing • 43

System requirements and other pre-requisites • 7

System Target Printer • 13

## **T**

Target Printer configuration • 19

Target Printer system requirements • 7

Target Printers on the Intermate100 Plus • 5

TCP/IP • 16

TCP/IP Port on the ThinPrint Server • 30

The Intermate100 Plus • 7

The Intermate100 Plus in a ThinPrint .print solution • 5

ThinPrint configuration on the Intermate100 Plus • 27, 28, 37

ThinPrint printers (printer objects) on the ThinPrint Server • 31

ThinPrint Server

    port and printer configuration • 30

ThinPrint software and licenses • 7

Tips about LPR Count Byte • 26

Tips about LPR Queue Name • 26

troubleshooting • 35, 36

Troubleshooting • 35

## **U**

Using printer objects names to address printers • 32

## **W**

WINS server • 19