



Suchy **MIPS**

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BENS G3

Manual

Suchy MIPS



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1 Introduction

BENS G3 is an intelligent printer server which filters and modifies print data streams before forwarding them to other devices like printers or printer servers.

The print data stream is checked for special tokens – up to the installed and assigned filters – and modified at these places. For example, the PCL print data stream can be searched for PCL barcode commands. If found, these commands will be exchanged by appropriate barcode graphics and forwarded to the predefined target printer. In a similar way, the print data stream can be checked whether or not it is Unicode encoded. In this case, all Unicode characters will be exchanged by other non-Unicode characters with an identical appearance. For this reason, virtual printers will be defined on **BENS**. These printers will be connected to existing physical printers in the network. This can include printers with a network card or printers installed on other printer servers or clients. Supported printing protocols are IP, LPR, SMB and IPP. This procedure enables the use of printers from different providers and requires minimal or no integration into existing applications.

Example:

A user prints barcodes from the SAP System on a printer with a barcode module. The printer is connected via the “U-Berkeley protocol” method. This means that the print data stream is redirected to a printer server on which physical printers are defined. Let us assume that the printer on the printer server is the “D1” printer and its IP No. is 192.168.20.101:9100 (Port 9100).

BENS is given its own IP No. during the installation. Let it be 192.168.20.200. Virtual printers have to be defined on **BENS**. All printers will have the same IP address (in this example, 192.168.20.101), but different port numbers, e.g. 9100, 9101, 9102 and so on.

In the next step, physical printers have to be defined on **BENS**. Let us assume that one of these printers has the IP address 192.168.20.101, Port 9100.

At the end, virtual printers should be linked to physical printers. The appropriate configuration on **BENS** will be made using a standard Web browser.

Let us assume that a virtual printer 192.168.20.200 Port 9100 has been defined on **BENS** and connected to the physical printer 192.168.20.101.

The only change which has to be made to print barcodes from the SAP system is to change the printer connection on the printer server used (thus, not in the SAP system). In our example, it was previously the printer “D1” 192.168.20.100:9100, port 9100. Now it will be 192.168.20.200:9100.

No changes need to be made in the SAP system. It will still send print data via the “U” connection to the printer server 192.168.20.101. (Read more about SAP connection types in the **BENS and SAP Connections** document which is located

on the BENS CD). The printer server will now redirect the data stream to **BENS** 192.168.20.200:9100. **BENS** – up to the configuration – modify the print job and send it to the physical destination printer 192.168.20.101:9100.

BENS G3 is a technology from Suchy MIPS, Germany, which can be provided on a physical Appliance or as a Virtual Server Image. There is no difference in handling printing between the Appliance and the virtual version and this manual is valid for both versions, except parts, which describe the hardware Appliance.

2 System Requirements

Network

- RJ 45 Ethernet network connection
- Network with TCP/IP protocol

Printer

- PCL 5 enabled printer(s)

WEB Browser

- IE from 5.x, Mozilla from 1.x, Netscape from 7.x or higher

3 Installation and Maintenance

Installation of **BENS** takes place in two steps:

- Connection of the device to the existing network.
- Definition of input and target printers which are connected to each other via the WEB

3.1 Connecting BENS to the existing network



BENS – Front view



BENS- Rear view

- 1 Network connector
- 2 DVI (not in use)
- 3 2 x USB (not in use)
- 4 12 V DC power connector Power supply
- 5 220 V AC power cable

Note: *Switching off the BENS will not cause any damages on the operating system, but jobs in process may be destroyed.*

BENS will be delivered with the following IP address:

10.0.0.10, Subnet Mask: **255.255.255.0**

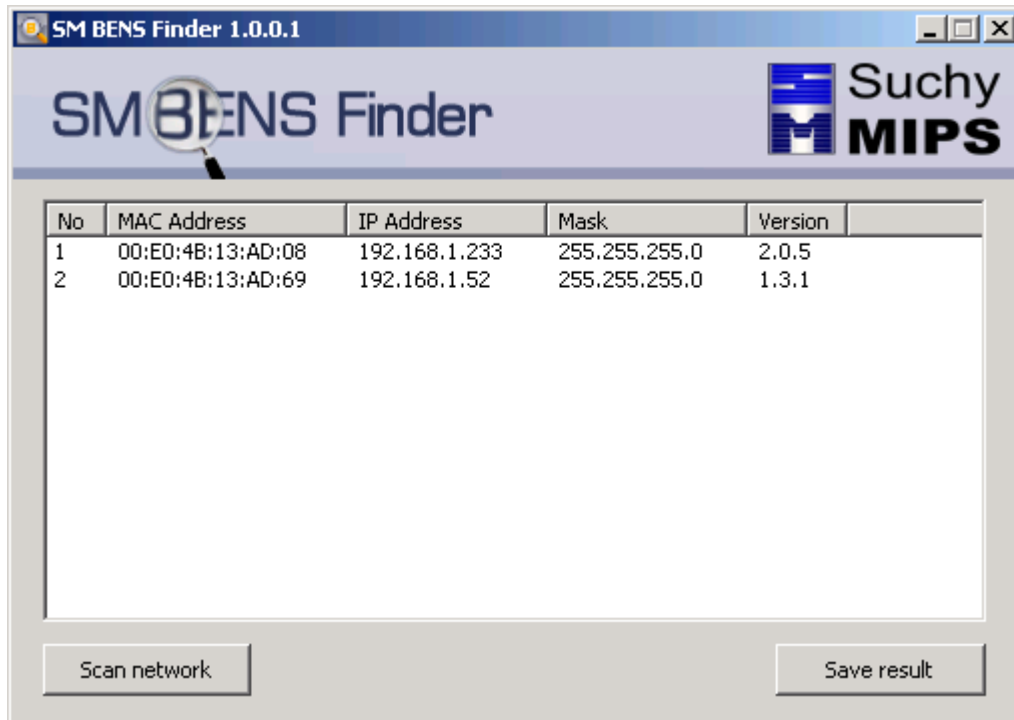
To make communication with **BENS** possible through the network, an IP address from your LAN has to be assigned to it at first.

To do this, proceed as follows:

- Plug one end of the network cable (not delivered) into the RJ45 socket No. 1 located on the rear side of the device (sockets 2-4 are not active in this model and for this reason closed by a dummy plug).
- Plug the second end of the network cable into a free socket of your network connection. (For the first installation, it is also possible to connect **BENS** directly to a PC using an RJ45 network cable).
- Switch **BENS** on. After about 1 min. **BENS** is ready to work.
- Choose the PC from which the configuration should be made from **BENS**.
- Change the IP address of this PC temporarily to e.g. 10.0.0.11. (PC and **BENS** should be in one subnet). If you use Windows XP, this change applies immediately. To check if **BENS** was connected properly, execute the shell command

ping 10.0.0.10

If there is no answer, **BENS** is not connected properly. Check whether the correct network cable has been used and also check whether or not a collision has occurred. If it was not possible to get an answer from **BENS** via ping, you can use the "BENSFINDER.EXE" which you can download from the Internet via www.suchymips.de, sub-item Support/Firmware and Patches".



To find **BENS** in a network, the device must be connected to the same logical subnet as the PC on which BENSFINDER is running. After starting the program, click on the scan network button to find **BENS** devices connected to the network.

Note: *It can happen that BENSFINDER cannot find any devices, even if there are some connected to the network, e.g. in the case that your firewall blocks broadcasts on x.x.x.255 or if the device is broken.*

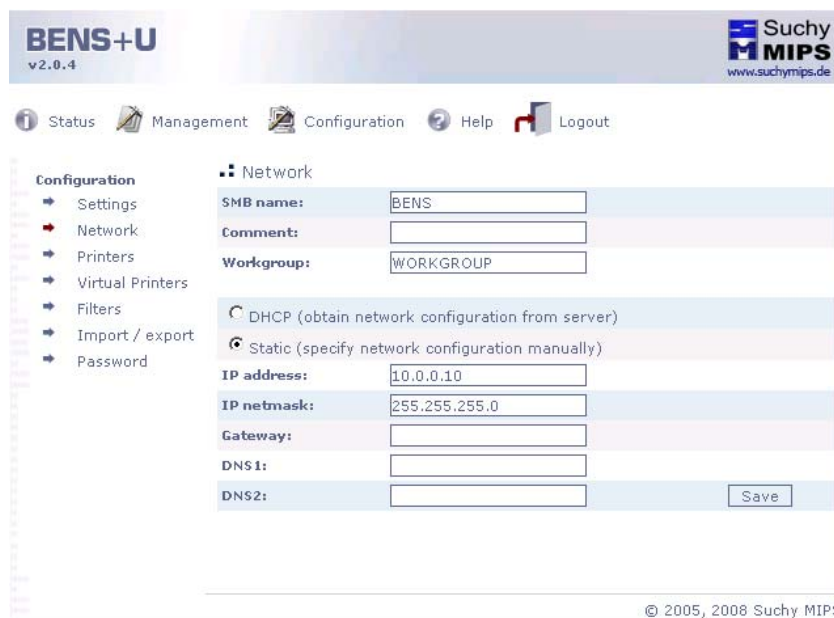
3.2 Assigning a new IP address to BENS

After **BENS** has been connected, start the Web Browser (IE 5.x, Netscape 7.x, Mozilla 1.x or higher) and insert the following address into the navigation field: <http://10.0.0.10>.

- The following login dialog will appear:



- On initial installation, the password is blank. Click **OK**.
- The status dialog will appear.
- Click on **Configuration** in the top menu and then on **Network**.
- The following dialog will appear:



- Insert the new IP address into the “IP address” field and the subnet mask of your network into the “IP net mask” field.
If **BENS** is located in a logical network other than printing clients or destination printer, insert the appropriate gateway address into the “Gateway” field (otherwise this field can stay blank).
Fields “DNS1” and “DNS2” are not required at this time.

Note: ***BENS** can also get its IP address from an existing DHCP Server. For this reason, check on the DHCP box. Please remember that in this case you will not know the IP address of **BENS**. You must check it on the DHCP server. You also have to make sure that **BENS** always gets the same IP address. Otherwise, the printer will not work properly, because the application will not find predefined printers.*

- Click on **Save** to finish. Changes will be saved and the client will lose the connection to **BENS**.
- To regain the connection to **BENS**, recover the original IP address from your client, restart the Web Browser and insert the new IP address of BENS.

3.3 BENS configuration

BENS should be configured in the following steps:

- Start the WEB configurator.
- Make the administrative settings.
- Network settings.
- Definition of destination printers.
- Definition of “virtual“ printers.

3.3.1 Starting the WEB Configurator

To start the WEB configurator of **BENS**, start the WEB Browser and insert “http://” followed by the IP address of **BENS**.

- The login dialog appears. No password is required for the first login.



- Click on OK to come to the main dialog (status dialog) of **BENS**.
- Now click on **Configuration** to begin the configuration.

3.3.2 Setting of date, time and job parameters

- Click on **Settings** in the **Configuration** dialog:

The screenshot shows the BENS+U v2.0.4 Configuration dialog. The 'Settings' tab is active, displaying the following fields and controls:

- Date:** 2008.01.07 13:22:44 (with an 'Update date' button)
- Max job age:** 7 days
- Max spool job count:** 100 jobs
- Min free space avail:** 100 MB
- PDF export IP address:** [text input]
- PDF export share name:** [text input]
- PDF export directory:** [text input]
- PDF export user:** [text input]
- PDF export password:** [text input] (with a 'Save' button)

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- To set the date and time, insert values in the appropriate fields in the following format:
Date: YYYY.MM.DD Time: H.M.S
 Click on the **Update Date** button to apply changes.
- The **Max job age**, **Max spool count** and **Min free space avail** fields control the buffer for archived print jobs. **BENS** stores print jobs in a ring buffer. Jobs will be deleted from the buffer automatically if one of the defined criteria has been fulfilled.
- **Max job age:** jobs will be deleted if their age reaches the defined value (in days)
- **Max job spool count:** the oldest jobs will be deleted automatically, if the number of jobs reaches the value defined in this field. If the value "0" has been entered here, no jobs will be saved temporarily.
- **Max free space avail:** the oldest jobs will be deleted automatically if the free space (in MB) on **BENS** is less than the value defined in this field.
- **BENS** comes with a free PDF converter, which – if it fulfils your requirements – converts print jobs to a PDF and saves them in a shared network folder. For this reason, the appropriate data must be set in the following fields.
- **PDF export IP address:** IP address of the machine holding the shared folder.
- **PDF share name:** name of the shared folder where PDF files will be saved.
- **PDF export user:** user name which allows connection to the shared folder.
- **PDF export password:** password for connecting the shared folder.

3.3.3 Network settings

Click on **Network** in the **Configuration** dialog to enter network parameters. This procedure has already been described under 3.1 and 3.2.

3.3.4 Definition of destination printers

Click on **Printers** in the **Configuration** dialog to define destination printers. The dialog lists all defined printers.

The screenshot shows the BENS+U v2.0.4 web interface. The top navigation bar includes Status, Management, Configuration, Help, and Logout. The left sidebar shows the Configuration menu with options: Settings, Network, Printers (selected), Virtual Printers, Filters, Import / export, and Password. The main content area is titled 'Printers' and features a 'Type:' dropdown menu set to 'All types'. Below this is a table of printers:

Name	Type	Remote IP	Remote port	Queue	Share name	User	Password	Description	Operations	Ping
D01 (hp2050)	Socket	84.154.95.130	9105	-	-	-	-	SLH		✓
LoopPrint	Socket	192.168.1.233	9109	-	-	-	-	Entpacker	Delete	✓
D03	Socket	10.0.0.2	9100	-	-	-	-		Delete	✗
D02 (lexmark T640)	Socket	192.168.1.102	9100	-	-	-	-	Raum 03	Delete	✓
D21	LPR	10.0.0.4	-	PQ01	-	-	-		Delete	✗
D04 (OKI color)	Socket	192.168.1.103	9100	-	-	-	-	OKI		✓
D11	SMB	10.0.0.3	-	-	DSM615	public	***		Delete	✗
smbprinter	SMB	192.168.1.103	-	-	printer	sascha	***	test	Delete	✓

An 'Add printer' button is located at the bottom left of the table area. The footer of the interface reads '© 2005, 2008 Suchy MIPS'.

BENS supports 4 types of printer connection:

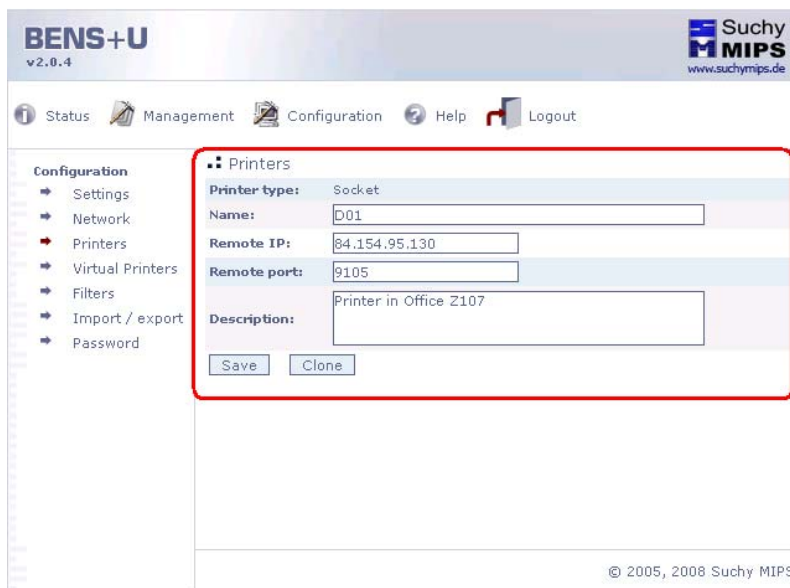
- **Socket:** printers which have their own IP address. Such printers are connected to the LAN via a network card or, for example, via a pocket print server.
- **SMB:** printers which are defined on Windows PCs (shared printers on Windows clients or servers).
- **LPR:** printers defined on Unix or Linux machines using a queue. Some printers have a network card supporting the LPR protocol.
- **IPP:** printers that are defined on Unix or Linux based computers via so-called queues and that can also be addressed via the HTML Port 631 due to the IPP (Internet Printing Protocol). Some printers also directly support the IPP protocol via their own network card.

The connection type of listed printers can be selected in the **Type** field. Select **All Types** to view all printers.

To add a printer, click on the **Add Printer** button in the bar with the appropriate type of printer.

3.3.4.1 Defining a printer connected via “Socket”.

The **Socket** connection means printers with their own network card or connected to the LAN via a pocket printer server. Such printers have their own IP address and a port number. The standard port number for socket printers is 9100.



The screenshot shows the BENS+U v2.0.4 configuration interface. The 'Printers' configuration form is highlighted with a red border. The form contains the following fields:

- Printer type:** Socket
- Name:** D01
- Remote IP:** 84.154.95.130
- Remote port:** 9105
- Description:** Printer in Office Z107

At the bottom of the form, there are 'Save' and 'Clone' buttons. The interface also shows a navigation menu on the left with options like Settings, Network, Printers, Virtual Printers, Filters, Import / export, and Password. The footer of the page indicates '© 2005, 2008 Suchy MIPS'.

To define a socket printer, click on the **Add** button under the bar with socket printers and insert data into the following fields:

- **Printer Type:** the printer connection type. Select **Socket**.
- **Name:** a freely chosen printer name, which lets you identify the printer
- **Remote IP:** IP address of the printer
- **Remote Port:** printer port. The standard value is 9100, but maybe you have to check recent settings directly on the printer.
- **Description:** Comment field

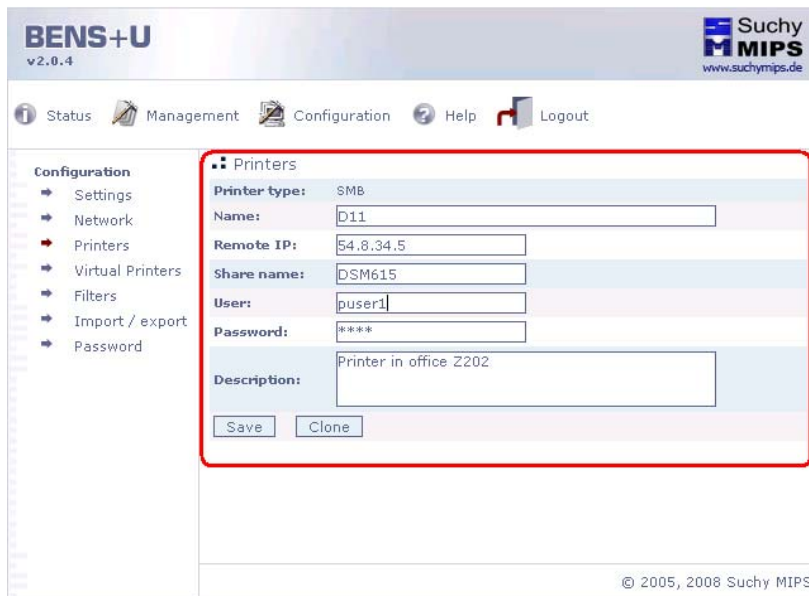
Click on **Save** to make the settings permanent.

Info: If you do not know the IP address and port number of the printer, print the configuration page of the printer.

3.3.4.2 Defining a printer connected via “SMB”

SMB (Server Message Block) connection means printers which are defined and shared on a Windows Server or client.

To define a **SMB** printer, click on the **Add Printer** button under the bar with **SMB** printers and insert data into the following fields.



The screenshot shows the BENS+U v2.0.4 configuration interface. The 'Printers' form is highlighted with a red border. The form contains the following fields:

- Printer type: SMB
- Name: D11
- Remote IP: 54.8.34.5
- Share name: DSM615
- User: puser1
- Password: ****
- Description: Printer in office Z202

Buttons: Save, Clone

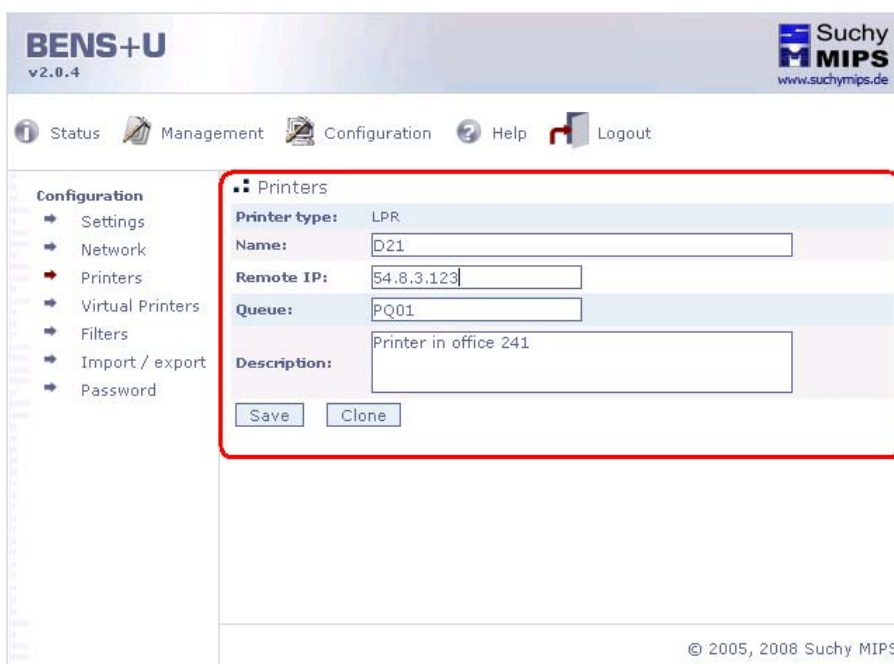
- **Printer type:** the printer connection type. Select **SMB**.
- **Name:** a freely chosen printer name which lets you identify the printer.
- **Remote IP:** IP address of the machine on which the printer has been defined.
- **Share name:** shared name of the printer. Remember that shared printer names are mostly different from printer names defined under Windows.
- **User:** if required, insert the user name which has rights to access this printer here.
- **Password:** insert the password for the user defined above here.
- **Description:** comment field

Click on **Save** to make the settings permanent.

3.3.4.3 Defining a printer connected via “LPR”

LPR (Line Printer Remote) is a printing protocol which uses TCP/IP to connect a LPD Server. LPD (Line Printer Daemon) usually runs on a server (Unix, Linux) or directly on the printer. LPD provides a print queue for each printer through which the print job is handled with LPD. You must know the name of the print queue for a printer to print on it.

To define a **LPR** printer, click on the “Add” button under the bar with **LPR** printers and insert data into the following fields:



The screenshot shows the BENS+U v2.0.4 web interface. The top navigation bar includes 'Status', 'Management', 'Configuration', 'Help', and 'Logout'. The left sidebar shows a 'Configuration' menu with options: Settings, Network, Printers (selected), Virtual Printers, Filters, Import / export, and Password. The main content area displays the 'Printers' configuration form, which is highlighted with a red border. The form fields are: 'Printer type' (set to LPR), 'Name' (D21), 'Remote IP' (54.8.3.123), 'Queue' (PQ01), and 'Description' (Printer in office 241). There are 'Save' and 'Clone' buttons at the bottom of the form. The footer of the page contains the copyright notice '© 2005, 2008 Suchy MIPS'.

- **Printer Type:** the printer connection type. Select **LPR**.
- **Name:** a freely chosen printer name which lets you identify the printer.
- **Remote IP:** IP address of the machine where the LPDF runs.
- **Queue:** name of the queue for this printer. Note that this queue must already exist. When in doubt, ask your administrator.
- **Description:** Comment field.

Click on **Save** to make the settings permanent.

- **Defining a printer connected via "IPP"**

The connection type *IPP* (Internet Printing Protocol) defines a printer protocol that is using the network protocol TCP/IP in order to set up a printer communication with an IPP server. IPP (Internet Printing Daemon) as a rule runs on a server (Unix, Linux or Windows IIS) or directly on the printer. IPP provides a printer queue for each existing printer via which the printing process is executed. It is necessary for you to know the name of the printer queue for each printer you wish to set up. In order to define an IPP printer, you have to insert data into the following fields:

The screenshot shows the BENS G3 configuration interface. The main content area is titled "Printers" and contains the following fields:

- Printer type:** A dropdown menu set to "IPP".
- Name:** A text input field containing "Druckername".
- IP or Hostname:** A text input field containing "10.20.30.20".
- Queue:** A text input field containing "QName".
- Description:** A text input field containing "Drucker 2. Stock".

A "Save" button is located below the description field. The footer of the page reads "© 2005, 2010 Suchy MIPS".

- **Printer Type:** connection type via which the printer is addressed. Here, you have to enter *IPP*.
- **Name:** a freely chosen name enabling you to identify the printer.
- **Remote IP:** IP-address of the computer on which the printer runs.
- **Queue:** here you have to enter the name of the printer queue. Please note that this queue has to exist. When in doubt, ask your administrator.
- **Description:** Field for comments.

Click on **Save** to save the changes.

- **Changing the definition of a destination printer**

Settings for an existing destination printer can be changed at any time.

- Start the **BENS** configurator
- Click on **Configuration** in the main dialog and then on **Printers**.
- The list of defined printers appears. Click on the name of the printers which have to be changed.
- The printer configuration dialog appears. You can now change the settings.
- Click on **Save** to make the changes permanent.

3.3.5 Deleting a destination printer

- Start the **BENS** configurator.
- Click on **Configuration** in the main dialog and then on **Printers**.
- The list of defined printers appears. Click on the word **Delete** in the **Operations** column to delete the printer.

Info: Destination printers which are connected to a virtual printer cannot be deleted. If you want to delete such a printer, change to virtual printers and release all connections to that printer and then delete it.

3.3.6 Cloning of a new printer

If you have to create many printers, you can use the **Clone** function to create a new destination printer from an existing one.

- Open the edit window of the source destination printer. (**Configuration/Printer/Name**).
- Click on **Clone**.
- Change at least the name of the new printer.
- Click on **Save** to save the changes.

3.3.7 Defining a virtual printer

Virtual printers are definitions which **BENS** uses to enable network printers for applications. The procedure is similar to defining a shared printer on a printer server. To define a virtual printer, proceed as follows:

Click on **Virtual Printers** in the **Configuration** dialog. The dialog with a list of defined virtual printers will appear.

The screenshot shows the BENS+U v2.0.4 Configuration dialog. The 'Virtual Printers' section is active, displaying a table of defined printers. The table has the following data:

Name	Type	Port	Queue	Comment	Assoc printer	Printout type	Description	Operations
VD03	Socket	9102	-	-	D04 (OKI color)	PCL5		Delete
VD01	Socket	9101	-	-	D01 (hp2050)	PCL5		Delete
VD02	Socket	9100	-	-	D04 (OKI color)	PCL5		Delete
VD11	SMB	-	-	-	D04 (OKI color)	PCL5		Delete
VD21	LPR	-	queue	-	D04 (OKI color)	PCL5		Delete
entpacker	Socket	9109	-	-	D04 (OKI color)	PCL5		Delete

Below the table is an 'Add printer' button. The interface also includes a search bar and a 'Type' dropdown menu set to 'All types'.

BENS supports three types of printer connections for virtual printers:

- **Socket:** simulate a printer with a network card or connected via a pocket printer server. Such printers have the same IP address, but different port numbers.
- **LPR:** similar to printers defined on Unix or Linux machines using queues and LPD.
- **IPP:** virtual printers defined like this act in the network like printers that were set up on a Unix, a Linux computer or on a Windows IIS Server or like printers that directly support LPR protocol.
- **SMB:** similar to printers which are defined on Windows PCs (shared printers on Windows clients or servers). **BENS** name or IP address is the hostname and the name of the virtual printer is the shared printer name. [Different to German]

The connection type of listed printers can be selected in the **Type** field. Select **All Types** to view all printers.

To add a printer, click on the **Add printer** button.

3.3.7.1 Defining a virtual printer with a “Socket” connection

The socket connection usually applies to printers with their own network card or connection to the LAN via a pocket printer server. These printers have their own IP address and port number (standard port is 9100). If a socket printer is defined on BENS, it automatically gets the same IP address as **BENS**. For this reason, you do not have to define it.

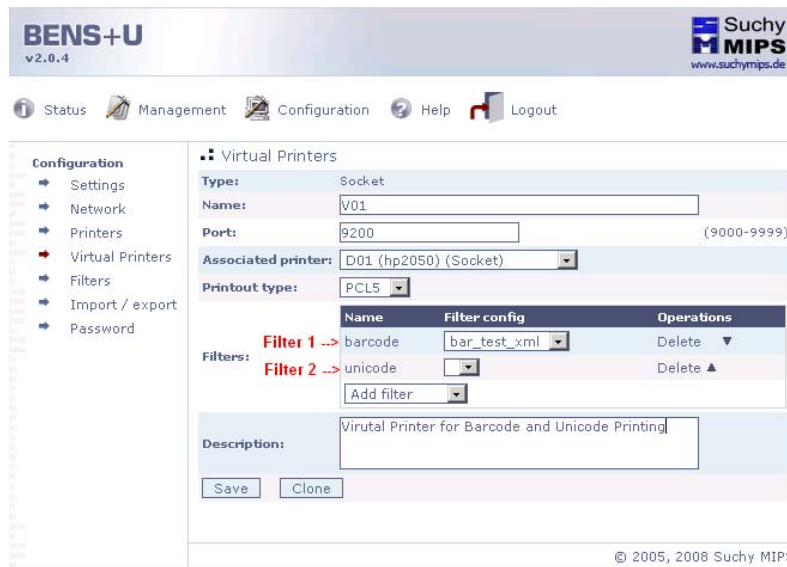
To define a socket printer, insert data into the following fields:

The screenshot shows the 'Virtual Printers' configuration page in the BENS+U v2.0.4 web interface. The page is titled 'Virtual Printers' and contains several input fields: Type (Socket), Name (V01), Port (9200), Associated printer (D01 (hp2050) (Socket)), and Printout type (PCL5). There is also a table for Filters with columns Name, Filter config, and Operations, showing a filter named 'unicode' with a 'Delete' button. A Description field and 'Save' and 'Clone' buttons are at the bottom. The interface includes a navigation menu on the left and a status bar at the top.

- **Printer Type:** the printer connection type. Select **Socket**.
- **Name:** a freely chosen printer name which allows you to identify the printer.
- **Port:** insert the port number for this printer here. All virtual printers will have the same IP address (from BENS), but different port numbers. Available port numbers 9000 to 9999. In this way, up to 10 virtual printers can be defined on BENS. Further virtual printers have to be licensed.
- **Associated printer:** choose the destination printer.
- **Printout type:** choose **PCL only** if only PCL-5 print data stream will be redirected through this virtual printer. In this case, the print preview of the first page and the number of pages will be displayed in the spool management. If different data streams are to be redirected through this virtual printer, choose “PCL or raw”. In this case, no preview and number of pages is displayed in the spool management. PDF files cannot be generated in this mode either.
- **Filters:** filters are programs delivered by Suchy MIPS for the purpose of modifying the original print data stream. There are many filters available at Suchy MIPS (eg. the Barcode or Unicode Filter). Filters may be installed and licensed additionally. Some filters may be preinstalled on the server in a demo

version; however, a "Demo" watermark appears on each printout. Filters may be piped. To do this, choose **Add Filter** from the combo-box and select an appropriate filter. The selected filter appears in the list of filters activated for the recent virtual printer. The filters work in the selected order. To change the order of filters, click on the arrow buttons at the right side of the list. Click on **Delete** to remove a filter from the selection. Removing a filter from the selection releases one licence for this filter, which can now be used by another virtual printer. Currently, the "Barcode" and "Unicode" filters are available at delivery point. Additional filters may be delivered on customer request.

Important. Filters may be controlled by parameters. Read more in 3.3.12



Click on **Save** to apply changes.

3.3.7.2 Defining a virtual printer with an “LPR” connection

LPR (Line Printer Remote) is a printing protocol which uses TCP/IP to communicate with an LPD Server. If you choose an LPR, **BENS** will provide the LPD (Line Printer Demon) to install queues with the names you have set.

The screenshot shows the BENS+U v2.0.4 web interface. The main content area is titled "Virtual Printers" and contains the following fields:

- Type:** LPR (dropdown menu)
- Name:** (text input field)
- Queue:** (text input field)
- Associated printer:** D01 (hp2050) (Socket) (dropdown menu)
- Printout type:** PCL5 (dropdown menu)
- Filters:** Add filter (dropdown menu)
- Description:** (text input field)

A "Save" button is located at the bottom of the form. The footer of the page reads "© 2005, 2008 Suchy MIPS".

To define an LPR virtual printer, insert data into the following fields:

- **Name:** freely chosen printer name which allows you to identify the printer.
- **Queue:** name of the queue for this printer.
- **Associated printer:** destination printer.
- **Printer type:** choose “PCL only” if only PCL-5 print data streams are to be redirected through this virtual printer. In this case, the print preview of the first page and the number of pages will be displayed in the spool management. If different data streams are to be redirected through this virtual printer, choose “PCL or raw”. In this case, no preview or page numbers will be displayed in the spool management. PDF files can also not be generated in this mode.

- Filters:** filters are programs delivered by Suchy MIPS for the purpose of modifying the original print data stream. There are many filters available at Suchy MIPS (eg. the Barcode or Unicode Filter). Filters may be installed and licensed additionally. Some filters may be preinstalled on the server in a demo version; however, a "Demo" watermark appears on each printout. Filters may be piped. To do this, choose **Add Filter** from the combo-box and select an appropriate filter. The selected filters appear in the list of filters activated for the recent virtual printer. The filters work in the selected order. To change the order of filters, click on the arrow buttons at the right side of the list. Click on **Delete** to remove a filter from the selection. Removing a filter from the selection releases one licence for this filter, which can now be used by another virtual printer. Currently, the "Barcode" and "Unicode" filters are available at delivery point. Additional filters may be delivered on customer request.

Important: Filters may be controlled by parameters. Read more in 3.3.12

BENS+U v2.0.4 **Suchy MIPS**
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Status Management Configuration Help Logout

Configuration

- Settings
- Network
- Printers
- Virtual Printers**
- Filters
- Import / export
- Password

Virtual Printers

Type: LPR

Name:

Queue:

Associated printer: D01 (hp2050) (Socket)

Printout type: PCL5

Name	Filter config	Operations
Filter 1 --> barcode	bar_test_xml	Delete ▼
Filter 2 --> unicode		Delete ▲

Add filter

Description:

Save

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Click on **Save** to apply changes.

3.3.7.3 Define a virtual printer with the connection „IPP“

The connection type **IPP** (Internet Printing Protocol) defines a printer protocol that is using the network protocol TCP/IP in order to set up a printer communication with an IPP server. IPP (Internet Printing Daemon) as a rule runs on a server (Unix, Linux or Windows IIS) or directly on the printer. IPP provides a printer queue for each existing printer via which the printing process is executed. You have to know the name of the printer queue for every printer you wish to set up.

:

BENS G3
v2.0.22p

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Status Management Configuration Help Logout

Configuration

- Settings
- Network
- Printers
- Virtual Printers**
- Filters
- PCL fonts
- Macros
- Import / export
- Password

Virtual Printers

Type: LPR

Name: Sharename

SNMP index: 0

Queue: PrintQ

Associated printer: D31 (IPP)

Printout type: PCL5

Name	Filter config	Operations
PrintWithOverlay		Delete ▼
CarbonCopyXML		Delete ▲
Add filter ▼		

Description: Drucker 1

Save

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To define an IPP printer, enter data into the following fields:

- **Name:** a freely chosen name enabling you to identify the printer.
- **Queue:** here, you enter the name of the queue for the printer you wish to set up.
- **Associated printer:** select the destination printer to which the print data are forwarded that were received via the virtual printer you have just set up.
- **Printer type:** if only PCL-data are printed via this printer, select „PCL only“. In this case the page number is displayed in the spool management and a preview is created. However, should varying data streams be printed via this printer, select „PCL or raw“. In this case the page numbers are not shown and no preview is created. PDF files can also not be created in this mode.

3.3.7.4 Defining a virtual printer with an “SMB” connection

SMB (Server Message Block) is a printing protocol used by Windows for sharing printers. The IP address of BENS is the hostname and the name of the virtual printer is the shared printer name.

The screenshot shows the 'Virtual Printers' configuration page in the BENS+U v2.0.4 web interface. The page is titled 'Virtual Printers' and contains several form fields: 'Type' (SMB), 'Name' (VP07), 'Comment' (SMB Printer), 'Associated printer' (D01 (hp2050) (Socket)), and 'Printout type' (PCL5). Below these fields is a table for 'Filters' with columns 'Name', 'Filter config', and 'Operations', and an 'Add filter' button. A 'Description' text area and a 'Save' button are at the bottom. The interface includes a navigation menu on the left and a header with 'Suchy MIPS' logo and version information.

- **Name:** freely chosen printer name which allows you to identify the printer. To print on this virtual printer, use the connection \\BENS-IP-Adress\Name.
- **Associated printer:** destination printer.
- **Printer type:** choose **PCL only** if only PCL-5 print data stream are to be redirected through this virtual printer. In this case, the print preview of the first page and the number of pages will be displayed in the spool management. If different data streams are to be redirected through this virtual printer, choose **PCL or raw**. In this case, no preview and number of pages will be displayed in the spool management. PDF files cannot be generated in this mode either.
- **Filters:** filters are programs delivered by Suchy MIPS for the purpose of modifying the original print data stream. There are many filters available at Suchy MIPS (eg. the Barcode or Unicode Filter). Filters may be installed and licensed additionally. Some filters may be preinstalled on the server in a demo version; however, a "Demo" watermark appears on each printout. Filters may be piped. To do this, choose **Add Filter** from the combo-box and select an

appropriate filter. The selected filter appears in the list of filters activated for the recent virtual printer. The filters work in the selected order. To change the order of the filters, click on the arrow buttons at the right side of the list. Click on **Delete** to remove a filter from the selection. Removing a filter from the selection releases one licence for this filter, which can now be used by another virtual printer. Currently, the "Barcode" and "Unicode" filters are available at delivery point. Additional filters may be delivered on customer request.

Important: Filters may be controlled by parameters. Read more in 3.3.12

The screenshot shows the BENS+U v2.0.4 web interface. The top navigation bar includes Status, Management, Configuration, Help, and Logout. The left sidebar shows the Configuration menu with options: Settings, Network, Printers, Virtual Printers, Filters, Import / export, and Password. The main content area is titled 'Virtual Printers' and shows the configuration for a printer named 'WP07'. The configuration includes: Type: SMB, Name: WP07, Comment: SMB Printer, Associated printer: D01 (hp2050) (Socket), and Printout type: PCL5. Below these fields is a table of filters:

Name	Filter config	Operations
Filter 1 --> barcode	bar_test_xml	Delete ▼
Filter 2 --> unicode		Delete ▲

There is an 'Add filter' button below the table. At the bottom of the configuration area is a 'Description' field and a 'Save' button. The footer of the page reads '© 2005, 2008 Suchy MIPS'.

Click on **Save** to apply changes

3.3.8 Changing a virtual printer

Settings for a virtual printer can be changed at any time.

- Start the **BENS** configurator.
- Click on **Configuration** in the main dialog and then on **Virtual Printers**.
- The list of defined virtual printers will appear. Click on the name of the virtual printer you want to change.
- The configuration dialog for the virtual printer will appear. Change settings in accordance with your needs.
- Click on **Save** to apply changes.

Info: Changes apply immediately. You do not need to have restarted BENS

3.3.9 Deleting a virtual printer

- Start the **BENS** configurator.
- Click on **Configuration** in the main dialog and then on **Virtual Printers**.
- The configuration dialog for the virtual printer will appear. Click on delete in the **Operations** to delete the printer.

3.3.10 Cloning of existing virtual printers

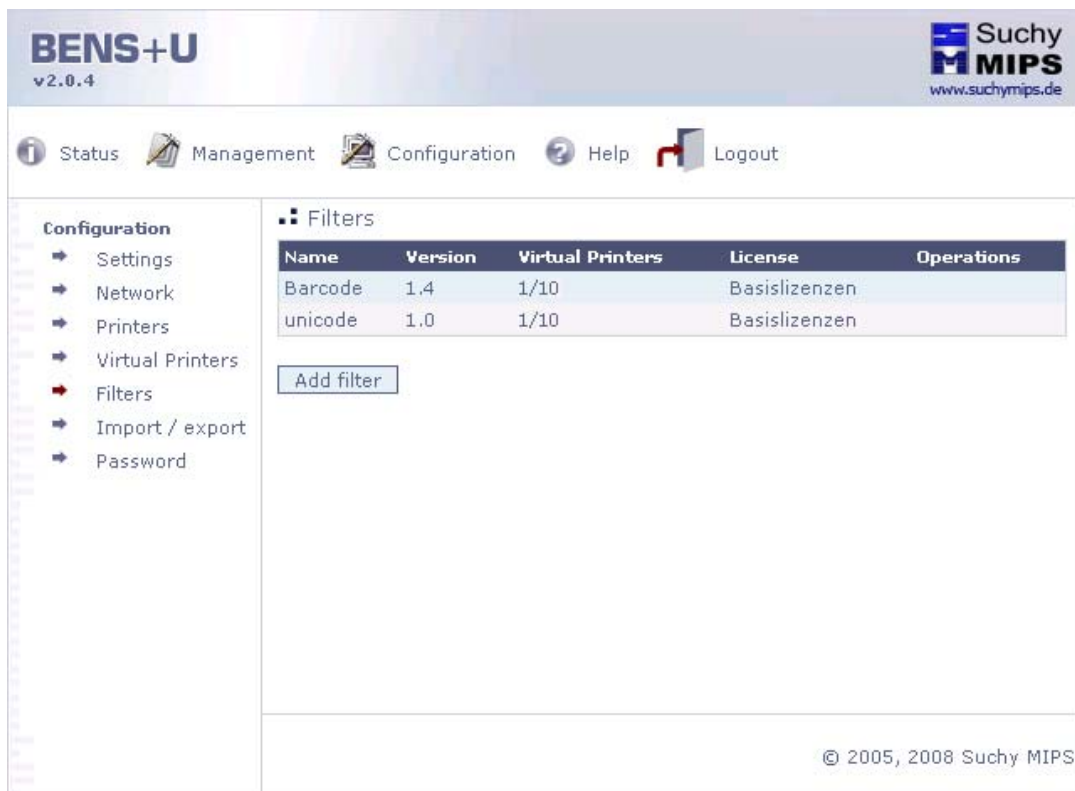
If you have to create many virtual printers, you can use the **Clone** function to create a new virtual printer from an existing one.

- Open the edit window of the source virtual printer (**Configuration/Virtual Printers/Name**).
- Click on **Clone**.
- Change at least the name of the virtual printer.

Click on **Save** to save the new virtual printer.

3.3.11 Filters

This function enables the uploading of filters (spool modifiers). Only filters from Suchy MIPS may be uploaded. The number of filters is not limited. In order to use filters, the filters and their order may be defined using **Configuration/Virtual Printers**. In this edit menu, the administrator may apply filters to a virtual printer and define their order. Different filters may apply to different virtual printers.



The screenshot shows the BENS+U v2.0.4 web interface. The top navigation bar includes Status, Management, Configuration, Help, and Logout. The left sidebar shows the Configuration menu with options: Settings, Network, Printers, Virtual Printers, Filters (selected), Import / export, and Password. The main content area displays the Filters configuration page, which includes a table of installed filters and an 'Add filter' button.

Name	Version	Virtual Printers	License	Operations
Barcode	1.4	1/10	Basislizenzen	
unicode	1.0	1/10	Basislizenzen	

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To upload a filter:

- Click on the **Add filter** button and choose a filter from a local source.
- Click on **Save**.

To delete a filter:

- Click on **Delete** in the list of installed filters. A filter may be deleted only if it is not assigned to any virtual printer.

Depending on the variant, it could be that **BENS** will be shipped with one or more filters working in the demo mode. To activate the full mode, an appropriate licence, which may be ordered from the **BENS** supplier, is required.

Note: *Usually filters have to be licensed. After uploading a filter, which has to be licensed, it works in the demo mode. To activate the full mode, the administrator must upload an additional licence file for a filter, which enables the full functionality for the licensed number of virtual printers. Select **Management/Licences** to upload the ordered licence file.*

The handling of filters is independent from the filter itself and always the same, following this scheme:

- Uploading the filter (**Configuration/Filters**)
- Uploading the configuration file for the filter (**Configuration/Filters/Filtername**)

Note: *The purpose of configuration files is the control over the filter process. It could be that a particular filter does not need a configuration file. In this case, no configuration file shall be assigned to a filter. For such details refer to the filters manual.*

- Uploading the licence for the filter (**Management/Licenses**).
- Assigning the filter to a virtual printer (**Configuration/Virtual Printers/Printername**).

Note: *Assigning a filter to a virtual printer consumes one licence. The number of available licences can be checked using **Configuration/Filters**. The used and available licences are displayed in the "Virtual Printers" line.*

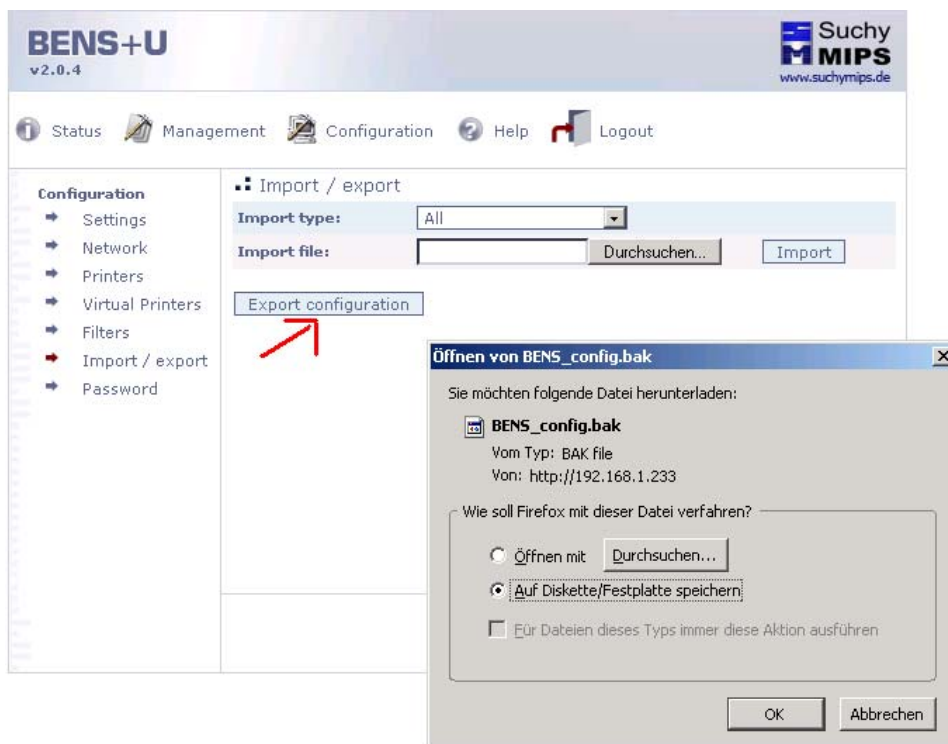
3.3.12 Exporting and restoring the BENS configuration

3.3.12.1 Exporting the BENS configuration

All settings made in **BENS** can be stored outside of **BENS** and restored, if required.

To export **BENS** settings, proceed as follows:

- Click on “Configuration” in the main dialog and then on **Import/Export**. The following dialog will appear:



- Click on the **Export Configuration** button and select a folder where the file can be saved. The default file name is “**BENS_Config.bak**”, but it can be changed. Because it is the “Export” function, leave the import fields empty.

Note: The password will not be stored in the export file.

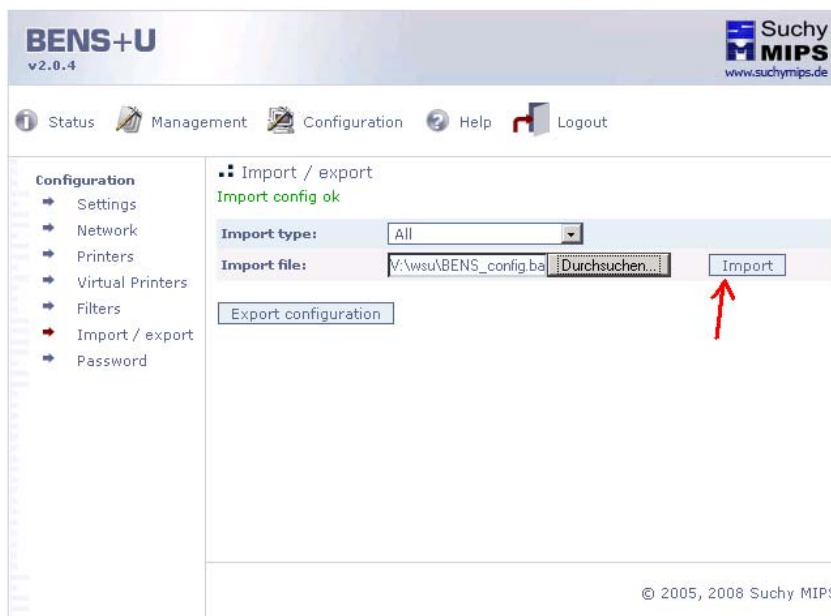
3.3.12.2 Restoring the BENS configuration

Restoring the configuration file is useful in different cases, e.g.:

- The configuration was changed and you want to restore the previous settings.
- You have a second device and want to make the same settings as on the first one.
- One device was broken and you have got a new one.

To restore the BENS configuration, proceed as follows:

- Click on **Configuration** in the main dialog and then on **Import/Export**. The following dialog will appear:



- Select one of the available options in the **Import type** field:
- **IP settings only**: only the network settings will be restored.
- **All except IP settings**: all settings except network settings will be restored. This option makes sense if you want, for example, to install a second device with the same configuration
- **All**: all settings will be restored. Remember that after restoring using that option, the device maybe gets a new IP address from the restored file.

Note: *The restored file does not contain the password. After executing the restore function, a new password has to be set.*

Attention! *Restoring applies immediately after importing. If the restore file contains a different IP address, the connection to BENS is lost after restoring. If you are not sure which IP address the restored file contains, choose the option "All except IP settings".*

Attention! *Older configuration may partly not be imported to a more recent firmware status as the BENS architecture has changed compared to the release statuses 2.0.10 to 2.0.22. In this case, Suchy MIPS offers a free service to make older configuration files usable for newer firmware. Please contact our Support in such cases.*

Here you can see a short overview of the compatibilities:

*2.0.6 to 2.0.9 are compatible among each other
2.0.10 to 2.0.17 are compatible among each other
2.0.18 to 2.0.22 are compatible among each other*

Not possible are for example:

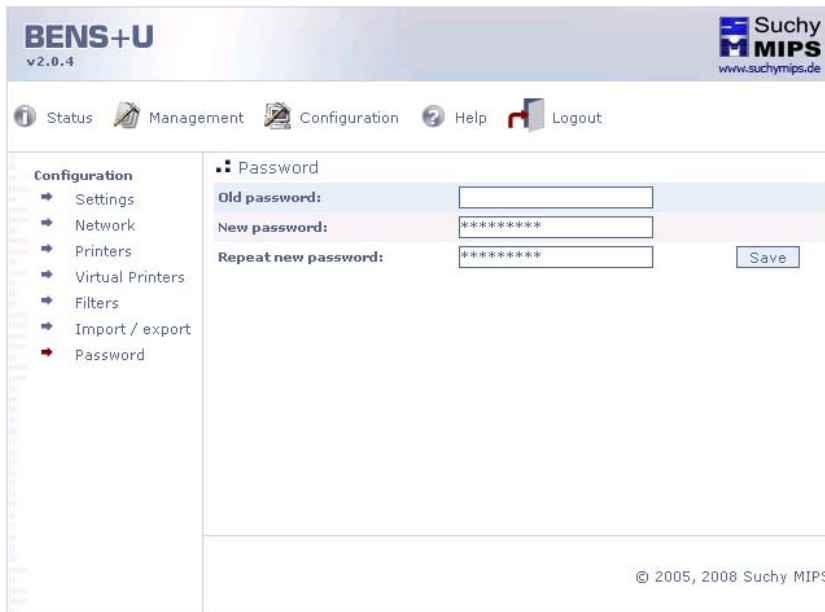
*2.0.6 to 2.0.17 or 2.0.6 to 2.0.22
2.0.17 to 2.0.22 or 2.0.10 to 2.0.22*

3.3.13 Changing the password

The access to **BENS** Configurator can be protected by password. To change the password, proceed as follows:

- Start the **BENS** configurator by starting the Web browser and inserting the IP address of **BENS** into the link field of the browser.
- Click on **Configuration** and then on **Password**. The password dialog will appear.
- If you are inserting a new password for the first time, leave the field **Old password** empty, because **BENS** was delivered with an empty password.
- Insert the password into the **New password** field.
- Repeat the password in the **Repeat new password** field.
- Click on the **Save** button.

Attention! *BENS does not contain any back door password. If you forget the password, the device can only be restored in the factory at the customer's expense.*



3.4 Further maintenance

There are further maintenance actions which can be handled in the **Management** dialog. Click on **Management** in the main **BENS** dialog to see all the **Maintenance** options.

3.4.1 Spool Management

BENS stores print jobs in a ring buffer. Files in this ring buffer will be deleted regularly following rules which have to be set in **Configuration/Settings**. In this way, older jobs will be deleted automatically if

- either the number of jobs exceeds the number of allowed jobs
- or the free space was exceeded
- or the age of some jobs has exceeded the allowed age.

The rule is that jobs from the ring buffer will be deleted if one of the conditions described above is fulfilled.

SM BENS - Barcode Engine Network Server v2.0.2

Suchy MIPS

Status Management Configuration Help Logout

Management

- Spool management
- System log
- Upgrade firmware
- Upgrade engine
- Filters
- Licenses
- Help upload

Spool management

Clear spool

Date	Client	User	Title	Size	Pages	Status	Operations
<input type="checkbox"/> 2007-11-19 13:16	192.168.1.10	-	-	4 KB	1	ok	Reprint Input Output Preview PDF Delete

Reprint Delete

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The print job overview contains the following fields:

- **Date:** Date and time
- **Virtual printer:** The virtual printer that has accepted this job.

- **Client:** IP address of source client.
- **User:** User who printed the job (if ascertainable)
- **Title:** Title of the print job (if ascertainable)
- **Size:** Size of the print job
- **Pages:** Number of pages in a PCL job
- **Status:** "OK" if job was printed, otherwise "failed"

Note: Some fields can be empty, because not all protocols support all features.

The **Operations** column contains the following commands:

- **Reprint:** reprints the selected print job
- **Input:** allows the downloading of the input print job
- **Output** allows the downloading of the processed print job.
- **Preview:** previews the print job (only first page)
- **PDF:** generates a PDF file.
- **Delete:** deletes the selected print job

Note: *The print preview is not 1:1. It is only an orientation preview in case of problems identifying jobs. The PDF converter is free of charge. It can be that results from this converter do not fulfill your requirements. Mostly when printing from mainframes or ERP systems like SAP System, the results are very good, but Suchy MIPS does not guarantee that this will satisfy you.*

The functions **Delete** and **Reprint** can apply to multiple print jobs at once. Select the jobs to be performed by clicking on the check box at the left site of each print job. Scroll then to the bottom end of the page and click on the appropriate function.

3.4.2 System log

BENS logs some important activities which are helpful in troubleshooting. The log file can be exported. To export the log file, click on the **Export log file** button.

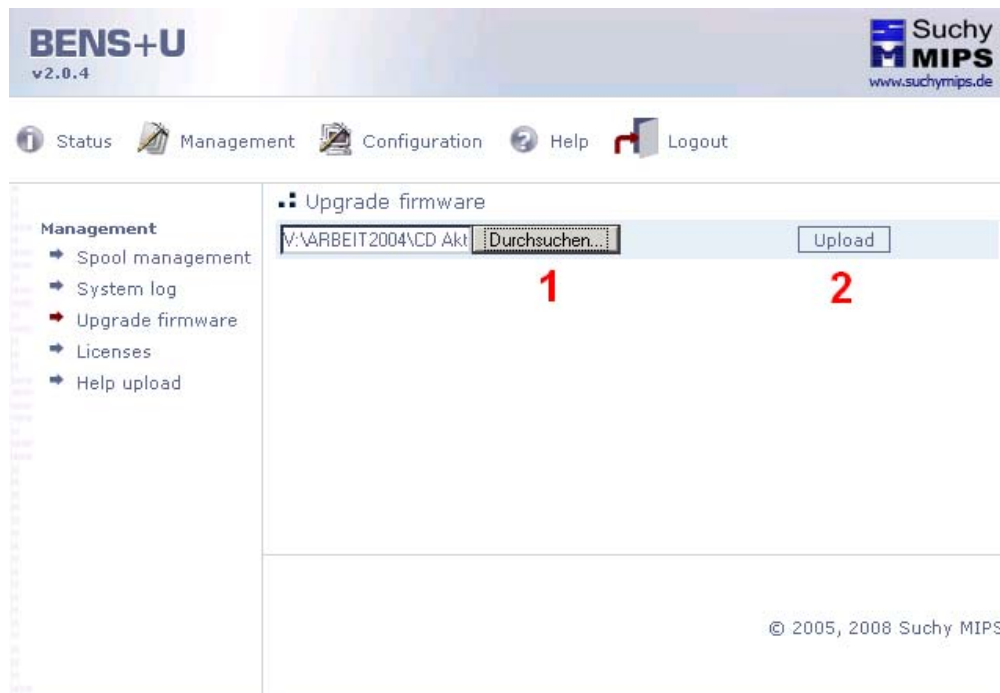
To delete the log file, press on the **Clear Log file** button at the end of the list.

The screenshot shows the BENS+U v2.0.4 web interface. The header includes the 'Suchy MIPS' logo and the website 'www.suchymips.de'. The navigation menu on the left lists 'Management' options: Spool management, System log (selected), Upgrade firmware, Licenses, and Help upload. The main content area is titled 'System log' and features two buttons: 'Export log file' and 'Clear log file'. Below these buttons is a pagination control showing page 1 of 10. The log entries are as follows:

Date	Process	Message
2008.01.08 10:41:43	bens[28393]	job finished
2008.01.08 10:41:43	bens[28393]	removing job 2008010810414228393
2008.01.08 10:41:42	bens[28393]	sending job to #7 192.168.1.103:9100
2008.01.08 10:41:42	bens[28393]	job info: host 192.168.1.21, user -, title -, size 0 KB
2008.01.08 10:41:42	bens[28393]	number of pages: 1
2008.01.08 10:41:42	bens[28393]	counting job's pages
2008.01.08 10:41:42	bens[28393]	processing job: unicode
2008.01.08 10:41:42	bens[28393]	starting job 2008010810414228393 for vprinter #1 VD02

3.4.3 Upgrade firmware

To upgrade the system with new developments, Suchy MIPS provides you with new firmware, which can be uploaded to **BENS**.



- Save the firmware on the local network.
- Export the **BENS** configuration.

The firmware upgrade will be done in 2 steps:

- in the first step, the new firmware will be uploaded to **BENS**
- in the second step, the firmware upgrade will apply.
 - Click on the **Explore** button and select the file with the new firmware version.
 - Click on the **Upload** button. The firmware is decrypted to protect it against damage and exchange. If the file is not recognised as **BENS** firmware after uploading, the error message: "Upload failed (broken config)" appears. After uploading the firmware to **BENS**, the message "Firmware upgraded successfully" will appear as well as a new button "Install new Firmware". Note that until now, the system has not yet been upgraded, but only the upgrade file was imported.
 - Click on the **Install new Firmware** button to install the new firmware.

- The following message will appear:

BENS is about to update the system now.
This can take more than 15 min.
During this time, **BENS** is not available in the network.
Check with ping if ready.
If **BENS** answers the ping request, the
procedure has been completed.
Don't interrupt this procedure!!!
Do not turn **BENS** off !!!"

Attention! *Please remember that **BENS** will be disconnected from the network during upgrading. This procedure can take more than 15 min. **Do not turn off the device during this time!!!***

- Check with the command
`ping <IP address of BENS>`
if the device is active.
If **BENS** answers the ping, the firmware upgrade is ready and **BENS** can be used again.

Attention! There also are smaller, so-called incremental upgrades for BENS that do not initiate a reboot of the system. These are displayed in the top area of the main window showing the message „Update installed successfully“. BENS now can immediately continue running with the new firmware.

Existing settings, filters, configurations, print jobs, log files, licences and so on will NOT be overwritten by the firmware upgrade.

3.4.4 Licences

With this function, additional licences for filters can be installed. Additional licences can be ordered by your provider.

The screenshot shows the BENS+U v2.0.4 web interface. The top navigation bar includes 'Status', 'Management', 'Configuration', 'Help', and 'Logout'. The left sidebar shows 'Management' with sub-items: 'Spool management', 'System log', 'Upgrade firmware', 'Licenses', and 'Help upload'. The main content area is titled 'Licenses' and contains a 'Summary' section with a table of license options, an 'Import license file' section with a search and upload button, and a 'Licenses list' section with a table of installed licenses.

Option	Value
Licensed for	
Max Virtual Printers	500
Used Virtual Printers	3
Available Virtual Printers	497
License description	

Licensed for	Description	Virtual Printers
unicode	+10 08.01.2008	10
barcode	Basislizenzen	1
unicode	Basislizenzen	3

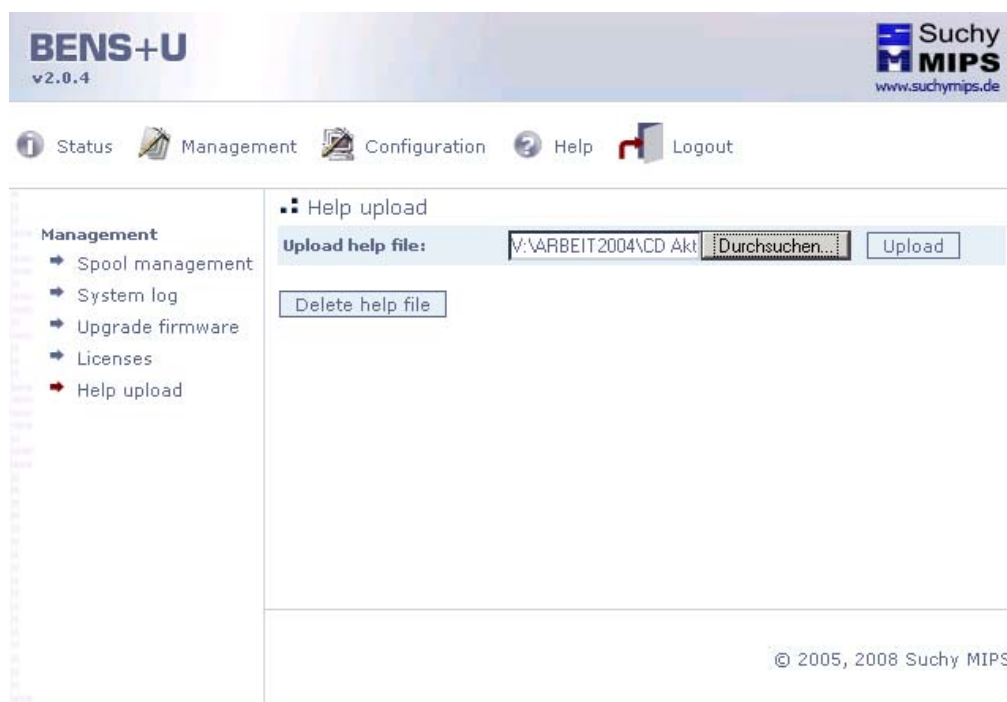
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- Click on the **Explore** button and select the licence file.
- Click on the **Import Licence file** button to upload the licence file to **BENS**. The licence file is encrypted to protect it from destruction or manipulation. If the licence file cannot be recognised, the following message will appear: "Import licence failed (broken file)". Otherwise, the file will be installed.
- **BENS** automatically recognises the filter for which the licence file is valid. You can check it by choosing **Configuration/Filters**.

3.4.5 Help upload

If information concerning **BENS** changes, Suchy MIPS will provide you with a new manual in PDF format, which can be uploaded directly to **BENS**.

- Click on the **Explore** button and select the file which has to be uploaded to **BENS**.
- Click on the **Upload** button.



3.4.6 The Master / Slave function (mirroring via the network)

3.4.6.1 Configuration of the Slave BENS G3 server (failover)

To ensure a failover operation it is possible to connect 2 BENS devices to form a mirrored pair. One device, the „Master“, takes over productive operations and mirrors at regular intervals the entire contents of the SSD memory onto a second BENS device, the „Slave“. Licences for filters only have to be purchased for the „Master“. The „Master“ passes them on to the „Slave“, which in itself will take over productive operations with the inherited licences in case the „Master“ suffers a failure.

„Master“ as well as „Slave“ are regular BENS devices. Each BENS device can be declared „Master“ and/or „Slave“.

Note: Should a BENS device be subsequently declared a „Slave“, any data stored on this device so far will all be lost (configuration, print jobs, logs etc.).

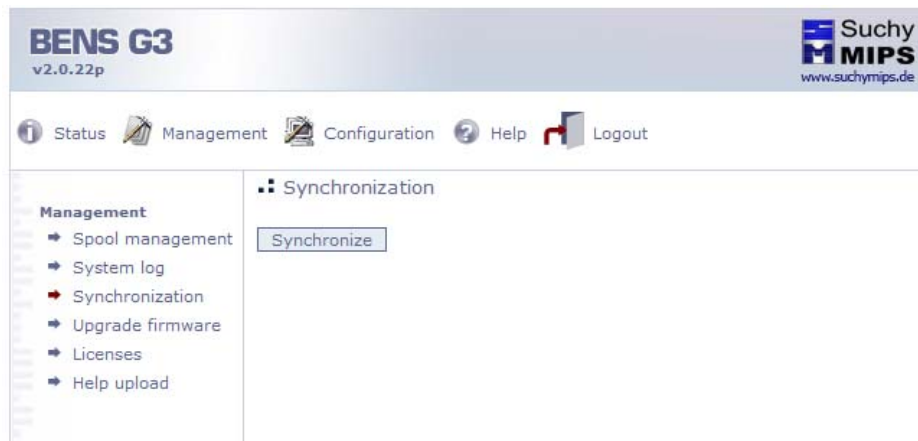
For the configuration of a mirrored system, 2 BENS devices are needed. Both devices have to be up and running and have to be configured for network operations. This configuration will only be carried out on the „Master“, no modifications have to be made on the „Slave“.

In order to configure a mirrored system, please proceed as follows:

Select **Configuration → Settings** and enter the IP address or the DNS name of the second BENS G3 that is supposed to serve as a fallback server into the field „**Slave IP address**“. From now on, every full half hour (BENS G3-time) the data of the master BENS G3 are mirrored onto the slave BENS G3. This function is available starting with version 2.0.22. Older versions, such as for example the 2.0.17 can be updated to 2.0.22.

Manual synchronisation

The mirroring process can also be initiated manually. This process is carried out via the menu item „**Management → Synchronisation**“. When activating the synchronisation it can take several minutes for the process being carried out in the background, depending on the active printers and settings on the „Master“ BENS G3.



3.4.6.2 Procedure in case the „Master“ suffers a failure

In case the „Master“ BENS G3 fails, change the IP address of the „Slave“ into the IP-address of the previous „Master“. The previous „Slave“ will from then on be a single operating device until a new „Slave“ is defined (as a rule the fixed „Master“ will turn to be the new „Slave“).

3.4.7 The automatic reprint of jobs marked as „failed“

A print job is marked as being a success as soon as BENS has forwarded the completed print job to the printer. If the destination printer cannot be contacted or if the destination printer interrupts the data reception during the transfer, the job will be marked as „failed“. Using the BENS administration tool, you can determine how such jobs should be treated by BENS. Depending on the setting, BENS will automatically try several times to transfer a failed print job to the printer.

In the menu item **„Configuration → Settings“** you will find the fields „Max print retries“ and „Min print delay“.

„Max print retries“:

Here, you enter how often BENS G3 should try to print the print job marked as „failed“ in the spool management. By default, 100 attempts are set. If the number is 0, BENS G3 will no longer try to reprint this print job.

„Min print delay“

This field determines the intervals between the printing attempts in minutes. Pre-set are 5 minutes.

BENS G3
v2.0.22p

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Status Management Configuration Help Logout

Configuration

- Settings
- Network
- Printers
- Virtual Printers
- Filters
- PCL fonts
- Macros
- Import / export
- Password

Settings

Date: 2010.12.30 11:47:02

Max job age: 7 days

Max spool job count: 100 jobs

Min free space avail: 100 MB

Slave IP address:

Filter timeout: 0 seconds

Max print retries: 100

Min reprint delay: 1 minutes

PDF export IP address:

PDF export share name:

PDF export directory:

PDF export user:

PDF export password:

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3.4.8 Upload and use of PCL Fonts with BENS G3

In the menu item „**Configuration → PCL Fonts**“, BENS G3 provides an upload function for PCL fonts. For being able to use these fonts, you need a special filter that you can purchase from Suchy MIPS or you can download it from the Suchy MIPS homepage (www.suchymips.de). This last offer is subject to charges. After having uploaded the fonts and following the installation of the relevant filter, BENS G3 is now able to forward a PCL font to the printer.

Detailed information about the filter's functionality you will find on our homepage www.suchymips.de.

BENS G3
v2.0.22p

Suchy
MIPS
www.suchymips.de

Status Management Configuration Help Logout

Configuration

- Settings
- Network
- Printers
- Virtual Printers
- Filters
- PCL fonts**
- Macros
- Import / export
- Password

⚡ PCL fonts
Font has been uploaded

Name	Operations
SM_Special_font.pcl	Delete
comicus_font.pcl	Delete

Font file:

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3.4.9 Upload and use of Macros with BENS G3

In the menu item „**Configuration → Macros**“, BENS G3 provides an upload function for macros. For being able to use these macros, you need a special filter that you can purchase from Suchy MIPS or you can download it from the Suchy MIPS homepage (www.suchymips.de). This last offer is subject to charges. After having uploaded the macros and following the installation of the relevant filter, BENS G3 is now able to enter macros and macro calls into the print data stream.

Detailed information about the filter's functionality you will find on our homepage www.suchymips.de.

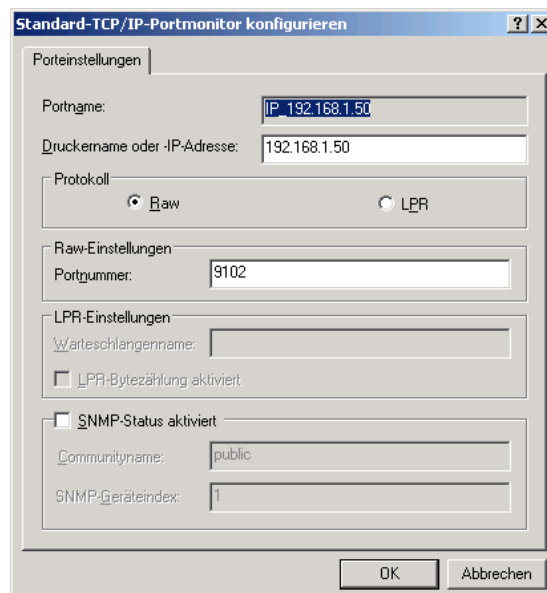
4 Operation

4.1 Printing on virtual socket printers

To print on socket printers, the IP address and the port number are required. The IP address of all virtual printers on **BENS** is the same as the IP address of **BENS**.

The port number will be set by the **BENS** administrator and should be in the range 9000 to 9999.

If **BENS** had the IP address 192.168.1.50 and the virtual printer was set to port number 9102, then the Windows printer port settings should look like the following:



4.2 Printing on virtual LPR printers

The LPR command (Line Printer Remote) is a command that comes from Unix, but in the meantime it is also available under Windows. The syntax can differ from system to system. Here is an example for Windows XP:

```
LPR -S 192.168.1.50 -P PQL1 filename
```

After the parameter “-S” (Server) becomes the IP address from **BENS**, and after the parameter “-P” (Printer) the name of the queue, which was created for the virtual printer.

To print on a SMB virtual printer of **BENS** from the SAP SYSTEM, use the connection type “L”, the name of the virtual SMB printer as Host Printer and the IP address of **BENS** as the Target Host.

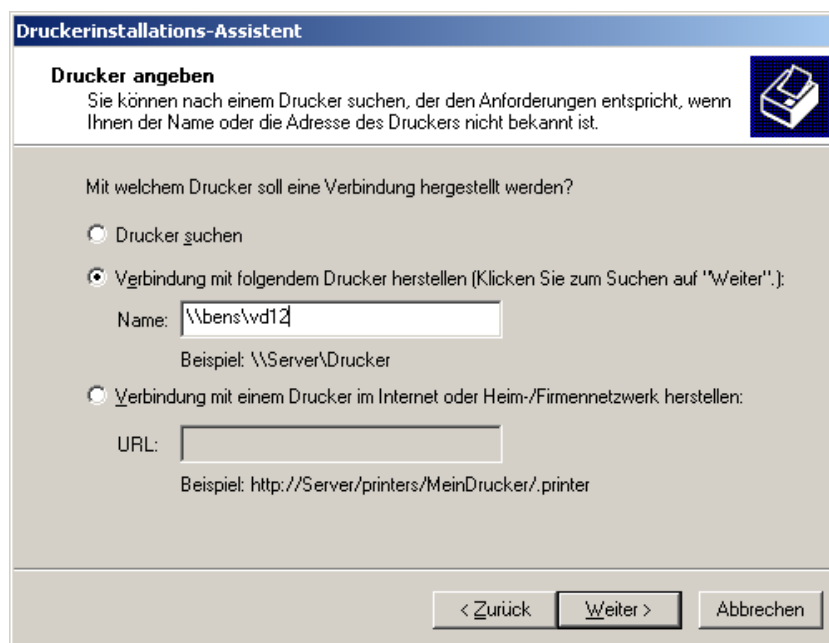
4.3 Printing on virtual SMB printers

The SMB virtual printer works like a shared printer installed under Windows. The connection name is:

[\\BENS-IP-Adress\Virtel Printer Name.](#)

To install this kind of printer under Windows, choose Start/Settings/Printers and Faxes and then select "Add printer".

Add a network printer and enter as server name the name or IP address of **BENS** and as printer name the name of the virtual SMB printer you have installed previously on **BENS**.



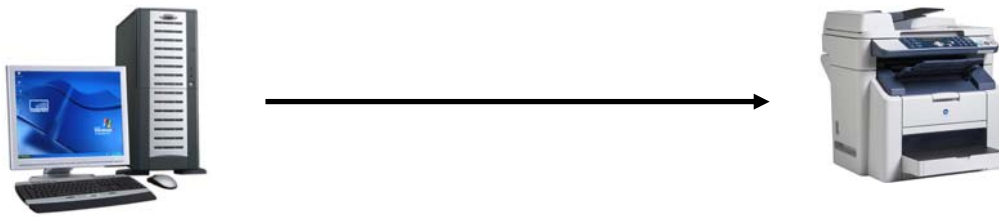
For printing on a SMB virtual printer of **BENS** from the SAP SYSTEM, use the connection type "U", the name of the virtual SMB printer as Host Printer and the IP address of **BENS** as the Target Host. (Read more about SAP connection types in the document **BENS and SAP Connections** which is located on the BENS CD).

A1 Integration of BENS into existing environments

BENS can be integrated under different conditions into an existing environment. In the following, we present some examples which show the printer environment before the integration of **BENS** and after the integration of **BENS**.

A1.1 Direct printing client → printer

before:



after:

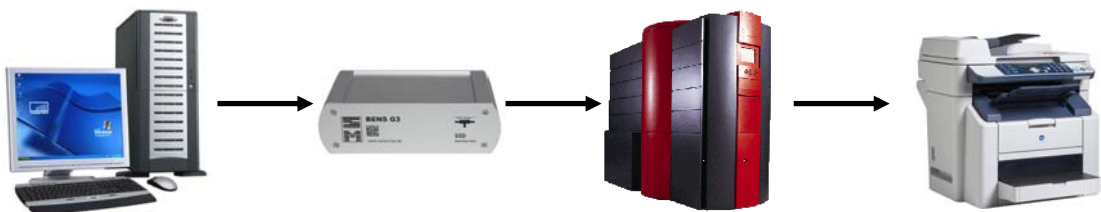


A1.2 Direct printing client → printer server → printer

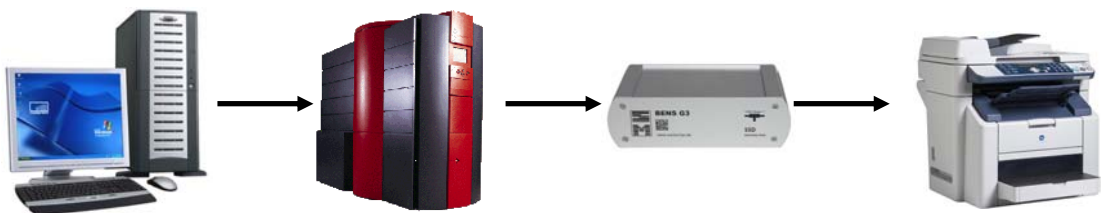
before:



after – first option - :



after – second option - :



In general, **BENS** can be integrated at any point to handle the print data (client, printer server, output management system) and redirect print data through **BENS** to the destination point (printer server, output management system, pocket printer server, printer). The condition is that the output point has to support either the socket or the LPR and the destination point has to support the socket, the LPR or the SMB.

A2 Technical Data (Appliance)

- Network connection: RJ45, 1000-Base T (1 Gigabit)
- 1 GB RAM
- SATA SSD 2 GB (optional 40 GB)
- funless

- Supported protocols: LPR, SMB, Socket, IPP, SNMP, DHCP
- Crossprotokolling available (eg.. input via LPR, output via socket)
- HTML Interface for server maintenance, password protected
- Automatical reprint of failed print jobs
- Download of unfiltered in filtered print jobs
- Print preview
- Firmware updateable
- Filter updateable
- New Filters can be added
- Customized filters capability
- Multiple filters per printer possible
- Up to 50 printers may be maintained with the Appliance

- Backup and restore of the configuration
- High availability thru server mirroring

- Dimensions: w/h/d in mm: 165 / 50 / 90
- temperature: 0° bis 50° C^
- Power supply:: 5V DC
- Weight: 570 Gramm

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