

Printers and printing

A print task names its printer by the `printerName` of the VeloxFactory printer master data (see [Printers: master data for your print targets](#)). The Print Service calls this the **queue name** and maps it to a Windows printer on its machine. This page covers that mapping, the per-printer settings, how pages are printed and which printers are not suitable.

Installing printers for the service

The headless service runs under its own account without a desktop. What that account cannot see, it cannot print on.

Installation	Shown as	Suitable
Local printer (USB, TCP/IP port)	Local	Yes
Print server connection installed for all users	Machine-wide	Yes
Print server connection added by a user (<code>\\server\printer</code>)	User profile only	No. Only that user sees it, the service account does not.

Install a print server connection machine-wide (as administrator, takes effect after the spooler restarts or the next logon):

<code>rundll32</code>	<code>printui.dll,PrintUIEntry</code>	<code>/ga</code>	<code>/n\\printsrv01\WH-LABEL-01</code>
<code>Restart-Service</code>			Spooler

i The default printer is never used. The default printer is a per-user setting. The service always prints on the printer named in the task (or its alias). A task without printer name fails with `PrinterNotFound`.

The printer list

The **Printers** page of the window compares four sources:

- 1. the VeloxFactory printer master data (GET /api/v1/printer , needs printer:read), filtered on the own broadcast ids. Printers without broadcast id only appear with includeWithoutBroadcastId ,
- 2. the printers installed on this machine,
- 3. printers with own settings in config.json ,
- 4. printers that received jobs in the last 7 days but are in none of the sources above (Only in recent print jobs).

Local printers that no row points to are listed at the end as **Not in VeloxFactory**, useful as alias targets and for test pages.

Column	Content
Printer	Display name from VeloxFactory and queue name; an alias shows as → local name
Type, Location	From VeloxFactory
Local	Local, Machine-wide, User profile only, Installed (scope unknown) or Missing
Status	Windows queue: Ready, Offline, Paper problem, Error, Paused, Unknown, plus the number of jobs in the queue
Hint	Not installed on this machine, Only connected for this user profile, Prints with a dialog, not suitable headless, Inactive in VeloxFactory, tasks are printed nevertheless

Actions per row: copy the printer name, print a test page, edit the printer settings, open the Windows print queue.

⚠ **A printer shows as "Not in VeloxFactory" although it exists there?** Its broadcast id is not one of this instance's broadcast ids, or it has none and includeWithoutBroadcastId is off. Set the broadcast id of the printer in VeloxFactory, or turn on *Also take tasks without broadcast id* under **Settings → Receiving**, which also takes all print tasks without broadcast id.

Alias: local printer name

The alias (localName) sends the jobs of a queue name to a Windows printer with a different name. VeloxFactory does not need to know about it.

```
"printers":
[
  {
    "queueName": "WH-LABEL-01",
    "localName": "\\.\printsrv01\WH-LABEL-01"
  },
  {
    "queueName": "OFFICE-A4",
    "localName": "Brother HL-L3210CW series Printe
  ]
```

1. Without alias the Windows printer must have exactly the queue name (case-insensitive).
2. Typical uses: the same printer has a different name on every workstation, a temporary replacement printer, or a PDF printer for tests.
3. The alias is set in the printer editor, field *Local name*. The same name as the queue name, or empty, stores no alias.
4. The alias lives in the local `config.json`. Every machine needs its own entry.

Printer settings

`printerDefaults` in **Settings** → **Printer defaults** applies to all printers. The printer editor on the **Printers** page overrides single values for one printer (*Use default* keeps the default). The effective value is: printer override, else default, else the driver's setting.

Setting	Effect
Scaling	<i>Actual size</i> : 1:1, placed at the physical paper corner (labels, forms). <i>Fit to page</i> : scaled into the printable area and centred.
Auto rotate	Switches to landscape for a page only when page and paper orientation differ. Label papers are often defined landscape already.
DPI	Selects this output resolution of the driver if the driver offers exactly it; otherwise the driver default stays. For label printers use the resolution of the print head (203 or 300).
Copies	<i>One job, copies by the driver</i> or <i>One job per copy</i> . Use the second for drivers that ignore the copy count. PDF24 and Microsoft Print to PDF report copy support but produce only one copy.
Paper source	Tray by name, the editor lists the trays of the driver
Duplex	Driver default, simplex, long edge (vertical), short edge (horizontal)
Color	Driver default, colour, monochrome

Setting	Effect
Confirmation	Not a driver setting: when the task is confirmed to VeloxFactory, after spooling or after the spooler job completed

All settings apply to the single print job only. The service never changes the configuration of the Windows printer. Some drivers ignore job settings for duplex, colour or tray and use their own defaults; in that case change the setting in the printing preferences of the Windows printer.

How pages are printed

1. The PDF stays in memory, nothing is written to disk.
2. PDFium (the PDF engine of Chromium) draws every page directly onto the device context of the printer, in the device resolution and without an intermediate bitmap. Text, lines and barcodes are sent as vector graphics and print as sharp as the printer can.
3. The target rectangle is computed per page from the printer's resolution and printable area, so pages of different size or orientation in one document work.
4. Output uses the Windows spooler without any print dialog. The document name in the spooler is `VF #{task id} {file name}`.
5. PDFium is not thread-safe; its calls are serialised inside the service, jobs on different printers still run in parallel.

Limitations:

1. Pages with transparency (for example PNG images with alpha channel) are output by PDFium as an image in device resolution.
 2. Form fields (AcroForm) are not printed.
 3. Lines with width 0 in the PDF are drawn as the thinnest line the device can print, one printer dot. On high-resolution printers they become very thin. Give lines and borders in the JRXML an explicit width, e.g. `lineWidth="0.5"`.
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Printers that open a dialog

Some printers ask for a file name or open an application window when printing. In the headless service there is no desktop: the dialog is invisible and waits forever. The job ends after `printTimeoutSeconds` and is reported as `Timeout`.

The service marks these printers with *Prints with a dialog, not suitable headless*. Detected by port (`PORTPROMPT:`, `XPSPort:`, `PDF24:`, `FAX:`, `SHRFAX:`) or driver name (Microsoft Print To PDF, Microsoft XPS Document Writer, OneNote, PDF24, Fax). In the window they work, the test page asks for confirmation first. For PDF tests without dialog use the [dry run](#) or configure PDF24 with automatic saving.

Test page

The test page is an A4 PDF in the VeloxFactory design, generated locally without API access. It contains instance name, printer, time and account, a line pair pattern that shows the effective resolution, grey scale steps, a Code 39 barcode and a frame 10 mm from the paper edge to check margins and scaling. It is printed with the settings of the printer, including alias.

Print it from the **Printers** page or on the command line:

```
& "C:\kiwisoftware\VeloxPrint\app\bin\kiwisoftware.VeloxFactory.PrintService.App.exe" --test-print WH-LABEL-01
```

i Test under the right account. A test page from the window runs under your account, the headless service under the service account. A printer connected only for your profile prints the test page but fails in production. Check the column *Local*: it must say *Local* or *Machine-wide*.

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