Printer Bridge - Setup & API Guide 🚀

The Printer Bridge is a high-performance local service that connects your Web Application to Thermal Printers (USB and Bluetooth/Serial).

🛠️ Setup Guide

1. Installation

1. **Download** the `PrinterBridge_Setup.zip` file.
2. **Unzip** (Extract) the folder to your computer.
3. **Right-click** on `PrinterBridgeService.exe` and select **Run as administrator**.
4. Select **1. Install Service** from the menu.
5. Setup is complete! The bridge now runs in the background.

> [!TIP] *For advanced users or automated deployments, you can use command-line flags:*
>
> - `PrinterBridgeService.exe --install`
> - `PrinterBridgeService.exe --uninstall`

2. Printer Selection

Configure your default printer by sending a POST request or using your Web App's setup UI:

```
POST http://localhost:5000/setup
Content-Type: application/json
{
    "DefaultPrinterName": "Your Printer Name",
    "ConnectionType": "USB"
}
```

📡 API Endpoint Guide

1. List All Printers

Get a list of all connected USB and Bluetooth devices with real-time status.

- **URL**: `GET http://localhost:5000/printers`
- **Output**:

```
[
  {
    "name": "POS-58",
    "type": "SPOOLER",
    "status": "Ready",
    "isOnline": true,
    "message": "OK"
  }
]
```

2. Print Label (TSPL)

Best for barcodes and stickers.

- **URL**: `POST http://localhost:5000/print/label`
- **Payload**:

```
{
  "PrinterName": "Gprinter GP-2120TUA",
  "Content": "SIZE 40 mm, 30 mm\nGAP 3 mm, 0 mm\nCLS\nBARCODE
10,10,\"128\",50,1,0,2,2,\"12345\"\nPRINT 1\n"
}
```

3. Print Receipt (ESC/POS)

Best for sales receipts and invoices.

- **URL**: `POST http://localhost:5000/print/receipt`
- **Payload**:

```
{
  "PrinterName": "POS-58",
  "Content": "      STORE NAME\n-------------------\nTotal: $10.00\n\n"
}
```

4. Direct Status Check

Check a specific printer without loading the whole list.

- **URL**: `GET http://localhost:5000/printers/{name}/status`

💻 Web Integration Tip

Use this logic in your React/Next.js app to auto-detect the bridge:

```
async function checkBridge() {
  try {
    const res = await fetch('http://localhost:5000/');
    return res.ok;
  } catch {
    return false;
  }
}
```

If `false`, show a "Download Printer Bridge" button to your user.

🛠 Troubleshooting

"Popup remains open / Console window is visible"

If you see a black console window (the popup), it means the bridge is running in **Console Mode** instead of as a **Windows Service**.

- **Issue**: Closing this window will stop the printer bridge.
- **Fix**: Run the `PrinterBridgeService.exe` and select **1. Install Service**. This will install it as a background service that starts automatically with Windows and has no visible window.

"Service fails to start"

1. Ensure you have the [.NET Runtime](#) installed.
2. Check the **Windows Event Viewer** under "Windows Logs > Application" for errors from `PrinterBridgeService`.