User's Guide

Mass Deployment Tool

Table of Contents

1. Background

CLI

GUI

The Brother Mass Deployment Tool provides a configuration interface to help you manage a variety of device settings, and allow users to install and manage multiple locally or network connected devices quickly and easily, without having to install any additional software. The tool consists of two independent interfaces:

- Graphical User Interface (GUI)

- Command Line Interface (CLI)

The intended users of this tool are:

- Pre-sales and after-sales engineers

- Field installation engineers who install devices in a customer environment

- Channel engineers who manage customer devices remotely

- IT administrators at an end-user company with its own device administration system

1.1 Typical Usage

You can use the tool to do the following:

Usage	Interface	Description
Send files	Graphical User Interface

Command Line Interface | Send PJL/PRN/DJF or other files to Brother devices. |
Apply settings		Send JSON/DPK/EDPK settings files to apply customised settings to multiple Brother devices.
Back up settings		Retrieve settings files from Brother devices for further deployment or editing.
		NOTE You can also use a USB flash drive to send files to a Brother device, or to apply and retrieve its settings.
Deploy multiple device configurations across an organisation	Graphical User Interface	Use a deployment profile file (CSV) to configure multiple Brother devices by assigning specific settings files to specific devices. *Example of an organisation deployment table:* |Store|MAC Address|Location|Location
Store1	00:01:02:03:04:05	Store1-1	Store1 Manager
Store1	00:01:02:03:04:06	Store1-2	Store1 Manager
Store2	00:01:02:03:04:07	Store2	Store2 Manager	
Create a customised deployment	Command Line Interface	Write a program or a script to generate configuration files and then use the tool's command line interface with batch scripts or a customer's IT management system.

1.2 Settings Files

The settings profiles are model-independent. If a customer replaces an existing device, settings files may be reused if they are compatible with the new device. The tool uses the following file types and extensions to store device settings:

JSON Files

JSON (JavaScript Object Notation) files allow you to configure device settings without having to understand PCL or PJL commands. For more information, see *Create JSON Settings Files* on page 15.

Package Files

Package files can include a JSON-based settings file and any required external resources.

Package File Type	Description
DPK	A non-encrypted package file.
EDPK	An encrypted package file.

Settings Files

Settings files consist of one or more JSON-based settings.

1.3 System Requirements

OS	Windows® 7 SP1, Windows® 8.1, Windows® 10 (both 32bit/64bit), Windows Server® 2012 R2, Windows Server® 2016
OS Components	• .NET framework 4.5.2 or later • Visual C++ Runtime
Languages	• Graphical User Interface (GUI): English, German, French, Italian, Spanish, Polish, Dutch, Portuguese (Brazilian), Finnish, Danish, Swedish, Russian, Chinese (Simplified), Japanese • Command Line Interface (CLI): English
Interfaces	• USB • Network (Wired/Wireless LAN)

1.4 Installation

You do not need to install the tool to use it.

1. Download the latest version of the Brother Mass Deployment Tool from the Brother Solutions Center at support.brother.com.

2. Copy the contents of the archive into the folder you want.

    NOTE
    Make sure you know which schema file is supported by your model. For a list of available schema files and applicable models, see the README.TXT file in the "schema" folder. You will need this information later.

3. To run the tool, do one of the following:

    • Graphical User Interface
       Click the `DEPLOYAPP.EXE` icon.
       For more information, see *Configure Devices Using the GUI* on page 7.

    • Command Line Interface
       Open the `SETTINGCMD.EXE` file using your operating system's Command Prompt.
       For more information, see *Configure Devices Using the CLI* on page 11.

2. Configure Devices Using the GUI

You can use the tool's graphical user interface (GUI) to:

- Send a PJL, PRN, or DJF file to a Brother device's port.

- Apply a settings file to multiple Brother devices using the JSON, EDPK, and DPK files.

2.1 Send Files and Apply Device Settings

1. Check that the device you want is in the list.

    - If the device is not in the list, go to step 2.

    - If the device is in the list, go to step 4.

2. Click the **Add Devices** button to view a list of available devices.

    NOTE
    The tool discovers new devices continuously. If the device you want has not been discovered, wait until another batch of discovered devices has been listed, and then use the search box to find your device in the list.
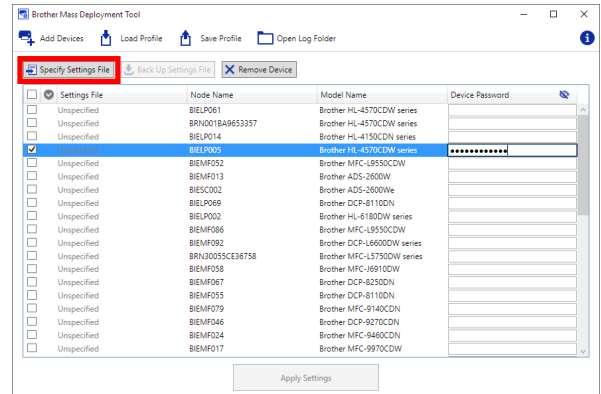
3. Select the check box of the device or devices you want to appear in the list, and then click the **Add** button. The **Add Devices** window closes.

4. In the tool's main window, select the row of the target device or devices.

5. Click the **Specify Settings File** button. Select the file you want to send or the settings file you want to apply, and then click **Open**. The file you selected appears in the Settings File column.

6. If you are applying settings to password-protected devices, enter their passwords in the Device Password column.

7. Select the check box of the device you want, and then click the **Apply Settings** button to finish.

    If unsuccessful, click the **Open Log Folder** button and check the log file to see the operation you have just performed.
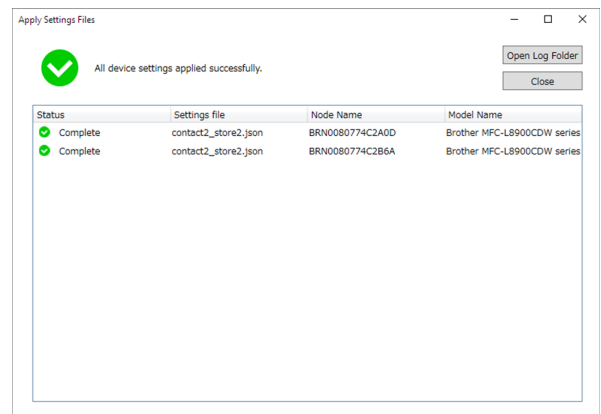
2.2 Use Deployment Profiles

Deployment profiles contain paths to settings files, such as JSON files, and let you assign specific settings files to multiple Brother devices.
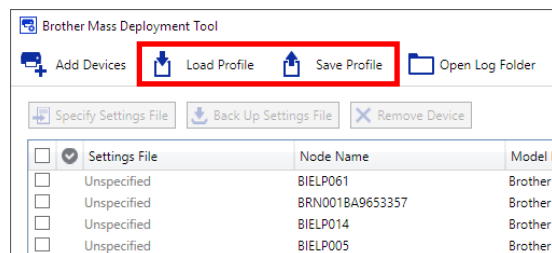
This feature allows you to:

- Save deployment profiles to let others use them to import settings from multiple Brother devices and then send them to other devices.

- Load deployment profiles to restore specific settings files for specific devices.

NOTE
Deployment profiles contain only the relative paths for settings files. When you want to pass a set of deployment profiles and settings files to others, you must copy both the deployment profile and any necessary settings files to ensure that the relative path is correct.

Saving Deployment Profiles	Loading Deployment Profiles
To save a deployment profile, do the following: 1. Make sure the device list contains all the devices you want. To customise the list, use the **Add Devices** and **Remove Device** buttons. 2. Click the **Save Profile** button. 3. Select the destination folder. 4. The tool exports the file and saves it in CSV format.	To load a deployment profile, do the following: 1. Make sure the device list contains all the devices you want. To customise the list, use the **Add Devices** and **Remove Device** buttons. 2. Click the **Load Profile** button. 3. Select the CSV file you want. 4. The tool imports the selected file and deploys the profiles it contains.

Advanced users can create customised deployments and use them to manage multiple devices.
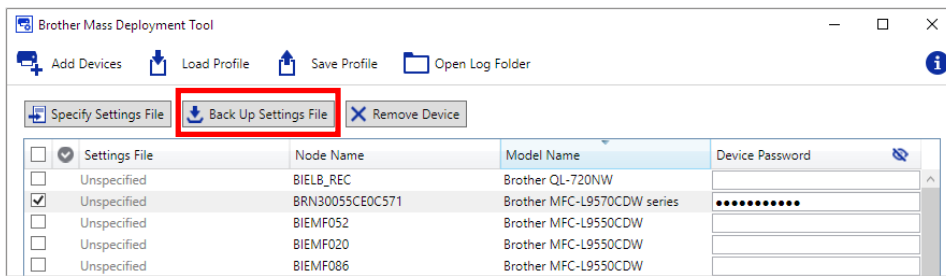
2.3 Back Up Device Settings

You can retrieve Brother device settings to back them up, and use them later to apply the same settings to a different device.

> **NOTE**
> If the **Back Up Settings File** button is greyed out, the selected devices do not support backing up settings.

1. Select the check box of the device or devices you want, and then click the **Back Up Settings File** button.

2. Click the **Browse** button to select the location where you want to save the settings file.

   > **NOTE**
   > If you want the tool to rename the file for easier application of settings, select the **Apply via USB Flash Drive** check box.
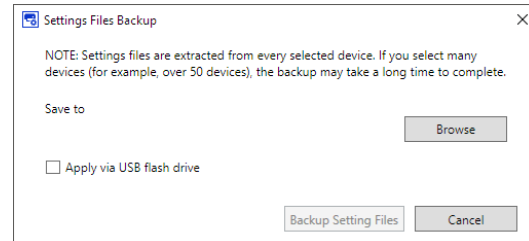
3. Click the **Backup Settings Files** button. The tool saves the settings file in the folder you specified.

4. You can now apply the settings (JSON) files or packed settings (DPK/EDPK) files you extracted to a different device either remotely, using the GUI, or using a USB flash drive at the device.
   For more information, see *Apply and Retrieve Settings Using a USB Flash Drive* on page 10.
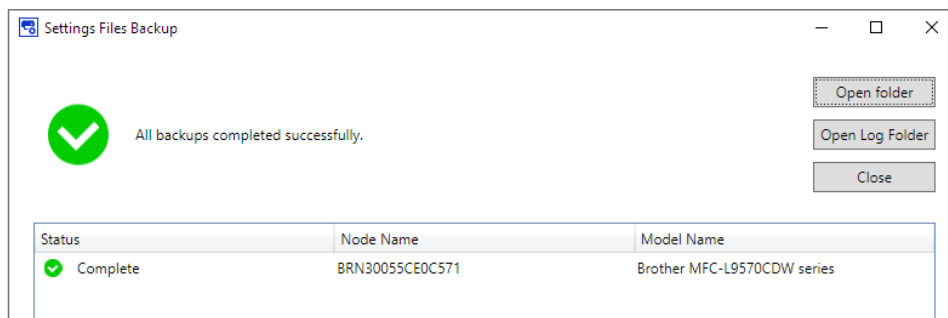
If the device backup was not completed successfully, click the **Open Log Folder** button, check the backup log details, and then try again.

3. Apply and Retrieve Settings Using a USB Flash Drive

Some Brother devices can read settings from the JSON, DPK, or EDPK files and store those settings, or write settings from the Brother device to a USB flash drive.
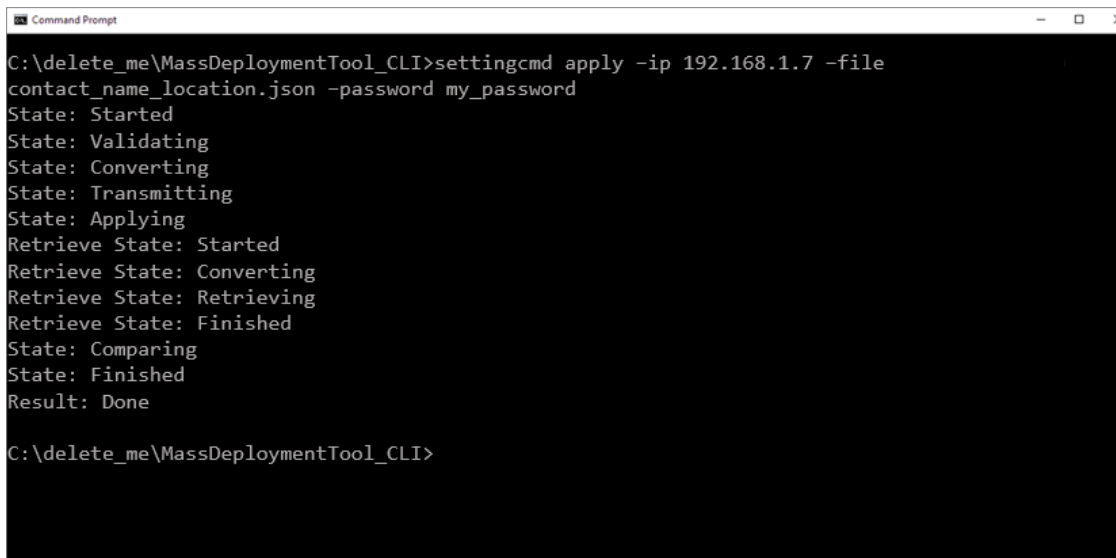
Using a USB flash drive, you can do the following:

- Retrieve settings to a device.

- Apply settings to a device.

Retrieving Settings Files	Applying Settings Files
To extract settings from a device to a USB flash drive: 1. Rename your file: "read_xxxx.json", where xxxx is your original file's name. 2. Copy it onto a USB flash drive. 3. Insert the USB flash drive into the Brother device's USB port. 4. The settings you want will be extracted from the device and saved as a new file in the following format: [settings file name]_[model name]_[index].json /.dpk /.edpk The output log file will be automatically created.	To apply settings to a device from a USB flash drive: 1. Rename your file: "write_xxxx.json", where xxxx is your original file's name. 2. Copy it onto a USB flash drive. 3. Insert the USB flash drive into the Brother device's USB port. 4. Your selected settings will be applied to the device. The output log file will be automatically created.

4. Configure Devices Using the CLI

The tool's command line interface (CLI) allows you to configure devices remotely using the Command Prompt. The CLI automatically converts settings files to an appropriate format and sends them to the device you want. It then retrieves the settings data and verifies whether the settings have been applied correctly.

4.1 How to Use the CLI

To use the tool's CLI, you must run it from the Command Prompt in Windows, and enter correct commands and options to execute specific instructions. The CLI uses the following syntax:

settingcmd *command option option*

Where:

Command: performs a specific task and displays the result

Option: modifies the operation of a command

Examples

Sending settings files:

```
settingcmd apply --ip IP_address --file your_file_name.json
--password your_password
```

Retrieving settings files:

```
settingcmd retrieve --ip IP_address --file your_file_name.json
--output your_file_name.edpk --password your_password
```

For more information about the tool's commands and options, see the *Commands and Options* section on page 12.

4.2 Commands and Options

4.2.1 Commands

Each of the following commands can be used together with one or more options to perform specific device configuration tasks.

Command	Option	Description
send	Required: • Device identifier • file	Allows you to send the specified file to a device's printer port. PRN, PJL and DJF files, as well as settings files, are supported. *Example:* `settingcmd send --ip IP_address --file your_file_name.prn`
apply	Required: • Device identifier • file Additional: • password • schema • pjltbl • enumtbl • forcepjl • forcenative • ignorepjlerror • skipverify	Allows you to apply the specified settings file (JSON, DPK or EDPK) and confirms the result: • Success — Result: Done • Failure Result — Error and error details If the settings file is set to be password-protected, the tool will internally generate an encrypted package file and send it to the specified target device. *Example:* `settingcmd apply --ip IP_address --file your_file_name.json`
retrieve	Required: • Device identifier • file • output Additional: • password • schema • pjltbl • enumtbl • forcepjl • forcenative • ignorepjlerror • skipverify	Allows you to retrieve the specific settings data you want from the specified device. The tool sends a request to the specified target device and stores the retrieved settings data, which includes all the settings in the JSON schema, according to the specified file path. To download only specific settings, use the "--file" option to specify the settings file that includes the items you want. *Example:* `settingcmd retrieve --ip IP_address --file your_file_name.json --output your_file_name.edpk --password your_password`
pack	Required: • packfiles • output Additional: • password	Creates a settings package file from JSON settings files and their resource files. If the files are set to be password-protected, the package file will be encrypted. *Example:* `settingcmd pack --packfiles your_file_name.json your_file_name.xml your_file_name_2.xml --output your_file_name.edpk --password your_password`
unpack	Required: • file • unpackdir Additional • password:	Extracts the specified settings package file from the device. If the file is password-protected, the tool will decrypt the package file and extract the files. *Example:* `settingcmd unpack --file your_file_name.edpk --unpackdir your_output_folder --password your_password`

Command	Option	Description
convertsetting	Required: • source • destination	Converts schema files created in version v1.0 to a format compatible with v1.1.0. *Example:* `settingcmd convertsetting --source your_file_name --destination your_file_name`
eula	agree	An agreement to the EULA (End-user licence agreement) is required to use this tool. When the tool is run for the first time, the user will be prompted to agree to the EULA. By running the "eula" command, the tool will display the EULA confirmation message. If commands other than "eula" are included, this tool will instruct you to run it with the "eula" command first. If the "eula" command is used with the "--agree" option, the tool will automatically accept the EULA without displaying any prompt. (This option is intended for silent execution of this tool.) *Example:* `settingcmd.exe eula --agree`

4.2.2 Device Identifier

Device identifiers specify the device you want to send the commands to.

Device Identifier	Description
--ip *address*	The IP address of the target device (Network-connected devices only).
--mac *address*	The MAC address of the target device (Network-connected devices only).
--node *name*	The node name of the target device (Network-connected devices only).
--usb	Specifying a USB connected device (Multiple USB-connected devices not supported.).
--model *name*	The model name of the target device (USB-connected devices only).
--serial *number*	The serial number of the target device (USB-connected devices only).

4.2.3 Options

Options can be used together with commands to modify their operation. See each command description in section *4.2.1 Commands* to learn which options you can use.

Option	Description
--file *filename*	Specify the file you want to use.
--output *filename*	Specify the output file you want to use.
--password *password*	Specify the password for an encrypted file.
--schema *filename*	Specify an external JSON schema file.
--pjltbl *filename*	Specify an external PJL conversion table.
--enumtbl *filename*	Specify an external Enum conversion table.
--forcepjl	Force a PJL-based configuration.
--forcenative	Force a JSON-based configuration.
--ignorepjlerror	Skip PJL conversion warnings even if no conversion definition is stated in the PJL conversion table.
--skipverify	Skip the confirmation process when applying settings.
--packfiles *filename filename filename*	Specify the files you want to pack (separated with spaces or commas).
--unpackdir *destination*	Specify the path to extract the package contents to.
--log *filename*	Specify the path to the log output file.

4.3 Errors

If an operation is unsuccessful, the tool can display one of the following errors:

Error	Description
AuthenticationError	Incorrect or missing password. Make sure you enter the correct password that matches the device's administrator password.
FileNotFound	The specified file was not found. Make sure the path is correct and then try again.
InvalidSettingFile	Incorrect settings file content or structure. Edit the file and then try again.
InvalidParameter	The input information contains errors. Make sure you enter correct information.
CannotConvertToPjl	No conversion definition is found in the conversion table to convert the input data to PJL. Make sure you are using a compatible PJL conversion table.
CannotConvertFromPjl	No conversion definition is found in the conversion table to analyse the received data. Make sure you are using a compatible PJL conversion table.
TransferError	Cannot transfer the data. Make sure the target device is connected and available.
ReceiveError	Cannot receive the data. Make sure the target device is connected and available.
ComparisonError	The requested settings file has not been applied. Check the log file to identify which setting item has a comparison error, edit the incorrect setting in the settings file, and then try again.
Other	An unidentified error has occurred. Contact your local Brother office's technical support team.

5. Create JSON Settings Files

5.1 Background

JSON (JavaScript Object Notation) files are used to configure device settings. JSON is an open standard that allows you to specify your own settings using a JSON editor, without having to understand PCL or PJL commands.

- For more information about JSON, see www.json.org.

- For more information about JSON schema file structure and setting types, see www.json-schema.org.

5.2 Supported Settings

Brother devices currently support the following settings:

Settings Type	Settings	
General Settings	• Contacts • Location • Sleep time • Auto power-off time	• Volume mode • Panel mode • Scheduled maintenance alerts • Language
Administrator Settings	• Password • Date and time • Restriction management • Solutions • External card reader	• Store print log to network • Stored print jobs • Signed PDF • Logout time

Network Settings	• Network interface (Wired, WLAN, Wi-Fi Direct)
	• ipv4_filter
		• Email
		   – Notification
		   – Report
		   – Protocols
		   – Certificate

Address Book Settings	• Speed dial * • One touch dial *	• Group dial *
Display Settings	• Screen settings • Shortcut *	• Fax preview
Printer Settings	• Toner save • Quiet mode • Continue mode	• 2-sided • Output color
Scan Settings	• Scan job email report • Scan profile *	• Pull scan
Special Settings	Interface Lock	

* This setting must first be exported in XML using BRAdmin.

JSON file format (Example)

```
{
      "attributes": {
            "software_id": "pns_firmware",  <-- fixed value "pns_firmware"
            "schema_revsion": 1,             <-- current schema version is 1
            "setting_version": "V0100",    <-- version (operators can use this field for tracking)
      },
      "settings": {
            "general": {
                  "contact_and_location": {
                        "contact": "store_manager",
                        "location": "store01"
                  },
                  "sleep_mode": {
                        "sleep_time": 3
                  },
                  "auto_power_off_mode": {
                        "auto_power_off_time": "off"
                  }
            }
      }
}
```

Red	Green
Setting	Value

NOTE

The structure of JSON settings files and the placement of individual setting entries are described in JSON schema files. For example, the "sleep_time" setting must be located at `$.settings.general.sleep_mode.sleep_time` and will accept only numerical values.

There are three ways to create and edit JSON setting files:

Method	Description
Using text editors	Edit settings files you want in a text editor. We recommend using JSON-supported text editors such as Notepad++, because they allow for greater control when viewing, editing, and formatting JSON files.
Using JSON-schema supported JSON editors	Edit settings files using a third-party editor that supports JSON-schemas. The interface of such editors allows changing setting values based on a schema-defined structure.
Using scripts/programs	Create settings files using scripts or other software. You can construct a JSON file from scratch, or parse the base JSON file and then modify its setting values.

5.3 Creating JSON files

Any JSON-supported text editor can be used to create and edit settings files. To use JSON settings files, you need a JSON schema file, containing all the configurable elements on Brother devices.

1.   Prepare the JSON schema file.
     Default schema files can be found in /(executable_path)/schema.

     NOTE
     Before you proceed, make sure you have the correct schema file for your model. For a list of available schema files and applicable models, see the README.TXT file in the "schema" folder. You will need this information later.

2.   Edit the JSON settings file in a text editor file.

3.   You can now use the Brother Mass Deployment Tool to apply the settings remotely or use a USB flash drive to apply the settings at the device.

Creating and editing settings files using an online JSON editor (example)

1.   In your web browser, go to www.jeremydorn.com/json-editor.

2.   Open the Brother JSON schema file in a text editor file and copy and paste its contents into the "Schema" field on the web page.
     The **attributes** section appears at the top of the page.

3.   Scroll down to the **settings** section, and select "object" from the **general** drop-down list.
     The **General settings** options appear.

4.   Select "object" from the **contact_and_location** drop-down list.

5.   Enter the contact and location details you want.

6.   Scroll up to the **JSON Output** area at the top of the page, and then click the **Update Form** button.

7.   The updated code appears in the preview field. Copy the JSON output and paste it into the text editor.

8.   Use the Brother Mass Deployment Tool to apply the setting remotely or use a USB flash drive to apply the setting at the device.

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