PD-CURA-1

PRINTDECK

CURA PLUGIN

For Cura 5 and the Printdeck



The Printdeck plugin for Cura is part of the Printdeck repository, in slicer/cura-plugin/.

Plugin version 0.1.0. https://github.com/beetlebugorg/printdeck

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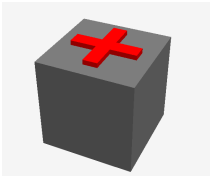
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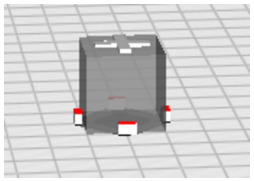
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Test print: the cube

The files are in slicer/test-prints/onpart/ of the repository. The test is a 20 mm cube, then a cross on its top in another color. The cross is 1 mm high, with arms of 14 x 3 mm.





JOB 1: THE CUBE

1. Open cube.stl in Cura, and print it (about 16 minutes).
2. Take the cube off the bed.

JOB 2: THE HOLDER AND THE CROSS

1. Clear the build plate. Open cube.stl and cross.stl.
2. Select the cube, and click Set as base. Cura adds the holder (the pocket) around the cube, and does not print the cube.
3. Select the cross, and click Place as in the files. The cross goes on the top of the cube.
4. Print. The deck prints the holder, then lifts the nozzle and pauses.
5. Put the cube in the holder.
6. Change the filament to the second color.
7. Tap Check the height, and do the paper test on the top of the cube.
8. Tap Resume. The deck prints the cross.

WHAT TO LOOK AT

- XY: the cross is at the center of the top. Measure the 3 mm from each arm end to the edge of the cube.
- Z: the first layer of the cross sticks to the cube. It is not squashed, and it is not in the air.
- The purge after the filament change does not go on the cube.

At the printer

1. Click Print to Printdeck. The deck prints the pocket on the bed.
2. The nozzle lifts, and the print pauses. The touch screen shows the message of the pause.
3. Put the part in the pocket.
4. For another color, change the filament now.
5. Tap Check the height. The nozzle goes over the part.
6. Put a sheet of paper under the nozzle. Lower the nozzle until the paper drags a little, then tap Accept.
7. Tap Resume. The new models print on the part.

> After the height check, the screen shows the difference from the file, for example +0.12 mm. If you tap Resume with no height check, the deck asks first.

THE NEXT COLOR

Keep the part in its pocket. In the tool, check The pocket is on the bed, and send the next file. That file has no pocket. It homes Z up first, does not probe or heat the bed, and purges beside the pocket.

> The pause and the height check need the deck bundle with [printdeck_pause]: v0.2.0-beta.1-9 or later.

What the plugin does

The Printdeck plugin connects Cura to the Printdeck. It uses the address and the API key of the OctoPrint connection plugin. A message in Cura shows each action of the plugin.

The deck in the Printdeck tab of Cura



- The print button says Print to Printdeck. After a send, Cura opens the Printdeck tab.
- The Printdeck tab shows the touch screen of the deck, live. You click it as you tap the touch screen.
- When the roll in the deck changes, Cura changes to the material of the roll.
- Each roll on the deck has a material in Cura, at the top of the material menu.
- After a slice, Cura warns you when the roll is too short for the model.
- During a print, the Preview of Cura shows the layer that prints.
- The Print on a part tool prints new models on a part that is printed already.

The plugin needs Cura 5. Cura LulzBot Edition (Cura 4.13) does not show the tab and the tool.

Install the plugin

FROM THE RELEASE

1. Open the releases of the Printdeck: https://github.com/beetlebugorg/printdeck/releases.
2. Download the file Printdeck.curapackage from the latest release.
3. Drag the file onto the Cura window. Cura installs the plugin.
4. Close Cura, and start it again.

FROM THE REPOSITORY

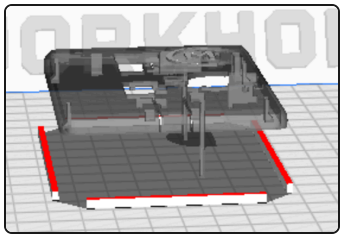
1. In Cura, select Help > Show Configuration Folder.
2. Copy the folder slicer/cura-plugin/Printdeck of the Printdeck repository into the plugins folder of the configuration folder.
3. Close Cura, and start it again.

> To make the package yourself, run slicer/cura-plugin/package.sh. It writes Printdeck.curapackage.

Prepare the job

1. Open the part and the new models in Cura. Lay the part on the bed with its face for the new models up.
2. Keep the part away from the front and the left edge. The print primes the nozzle there.
3. Select the part, and click Set as base. Cura adds the pocket: a low wall around the part, with open corners.
4. Select a new model, and click Place on the base. The model goes to the top of the part, and stays at that height.
5. Move the model on the face as usual. To print into a pocket of the part, lower the model with the Z of the Move tool.

A part in its pocket



FILES FROM ONE ASSEMBLY

When the part and the new models come from one assembly, their files share one frame. Select the new models, and click Place as in the files. The models go to their exact place on the part, also after you turned the part.

LETTERING

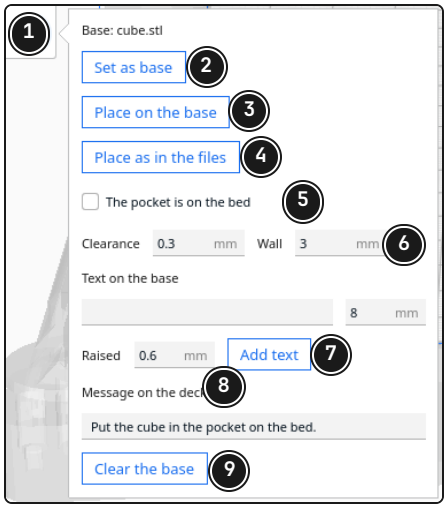
Type the text, its size, and its height over the face (Raised). Then click Add text. The text goes on the top of the part, at its middle. Move and turn it as usual.

> While a part is the base, the tool turns off "Ensure models are kept apart" in Cura. Click Clear the base to turn it on again.

Print on a part

The Print on a part tool prints new models on a part that is printed already, for example a logo on a lid. The part goes into a pocket on the bed. The deck checks the height of the part with a paper test.

The tool



1. **Print on a part.** The tool, at the bottom of the left toolbar of Prepare.
2. **Set as base.** The selected model is the base: the part that is printed already. Cura does not print it, and adds the pocket.
3. **Place on the base.** Puts the selected model on the top of the base.
4. **Place as in the files.** Puts the selected model where its file has it, for files from one assembly.
5. **The pocket is on the bed.** For the next color. The file then has no pocket.
6. **Clearance and Wall.** The gap around the part, and the height of the pocket wall, in mm.
7. **Add text.** Raised text on the top of the base: the text, its height, and how high it stands, in mm.
8. **Message on the deck.** The text of the pause on the touch screen.
9. **Clear the base.** The base is a usual model again, and Cura removes the pocket.

Connect the Printdeck

Cura sees the deck as an OctoPrint printer named Printdeck. Install the OctoPrint connection plugin first.

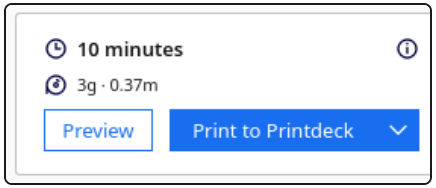
1. In Cura, open the Marketplace. Install OctoPrint Connection, and restart Cura.
2. Select Preferences > Configure Cura > Printers. Select your printer, and click Connect OctoPrint.
3. Select Printdeck in the list. If the list does not show it, click Add, and type the address printdeck.local.
4. Click Request to get the API key.
5. The touch screen asks "Allow Cura to use the Printdeck?". Tap Allow.
6. Click Connect, and close the preferences.

When Cura connects, a card next to the slice button shows the roll in the printer.

> The system page of the deck also shows the API key for slicers: http://printdeck.local/system.

Send a print

The print button



1. Slice the model as usual.
2. Click Print to Printdeck. Cura sends the file to the deck.
3. Cura opens the Printdeck tab. The tab shows the deck as the print starts.

The print starts after the upload when the option "Automatically start print job after uploading" of the OctoPrint connection is on.

Follow the print

During a print of the file that Cura has open, the Preview shows the layer that prints.

A PRINT THAT CURA DOES NOT HAVE OPEN

1. Open the Printdeck tab.
2. Click Show in Preview, under the screen of the deck. Cura downloads the file from the deck, and opens it in the Preview.
3. The Preview follows the layer that prints.

PLAY WITH THE PRINTER

In the Preview of the file that prints, click Play. The nozzle of the Preview then moves with the nozzle of the printer. To see other layers, click Pause, or drag a slider.

The Printdeck tab shows the time left. When the print ends, Cura shows a message.

The roll and the material

The plugin reads the roll in the printer every 10 seconds.

CURA FOLLOWS THE ROLL

When the roll in the deck changes, Cura changes to its material. A message shows the change, for example: "The Printdeck has Black (PLA). Cura now prints with Generic PLA." With no Cura profile for that material, Cura keeps its material.

YOUR ROLLS IN THE MATERIAL MENU

Each roll on the deck has a material in Cura, with the name, the color, the price and the weight of the roll. The rolls are favorites, at the top of the material menu. When you remove a roll from the deck, its material leaves the favorites and stays in Cura.

A SHORT ROLL

After a slice, Cura compares the grams of the model with the grams left on the roll. When the roll is too short, a message stays until you close it: "The model needs 120.4 g of filament. Black has 80.0 g left."

A FILE FOR ANOTHER MATERIAL

Before the deck prints a file for another material, the touch screen asks first, for example: "The file is for Black ABS. White (PLA) is in the printer." Tap Print anyway, or change the roll first.

The Printdeck tab

The Printdeck tab is next to Monitor. Click a key in the tab as you tap it on the touch screen.



1. **Printdeck.** The tab of the plugin, next to Monitor.
2. **Printer display.** The temperatures, the fan, and the progress of the print.
3. **Pause.** Pauses the print.
4. **Tune.** Opens the speed, the flow, the Z offset, the fan and the heaters.
5. **Cancel.** Cancels the print. The deck asks first.
6. **The file.** The name of the file, the layer, and the time left.
7. **The layer.** The model up to the layer that prints now.

Tune, after a click on Tune



While the tab connects, it shows the start screen of the deck with "Connecting to printdeck.local".

The start screen, while the tab connects



During a print, Show in Preview under the screen opens the file of the print in the Preview.

WHEN THE TAB SHOWS NO DECK

Cura has no connection to a Printdeck	Connect the printer with the OctoPrint connection plugin. See Connect the Printdeck.
The Printdeck refused the screen	Update Printdeck OS, and check the API key of the OctoPrint connection.