

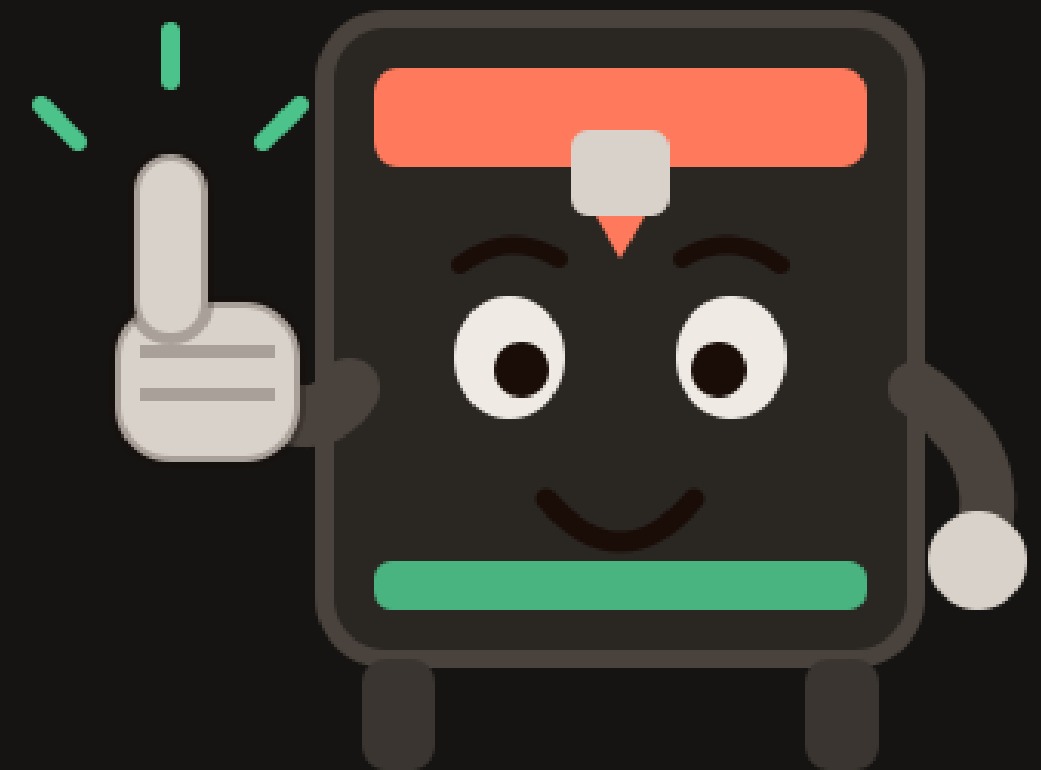
Printer connection: what works, what doesn't

An open look at which printers the app can read filament usage from, what we checked, and what is technically not possible.

Now

With testers

Not planned



WHERE WE ARE

The foundation shipped in v0.14.0

Klipper/Moonraker

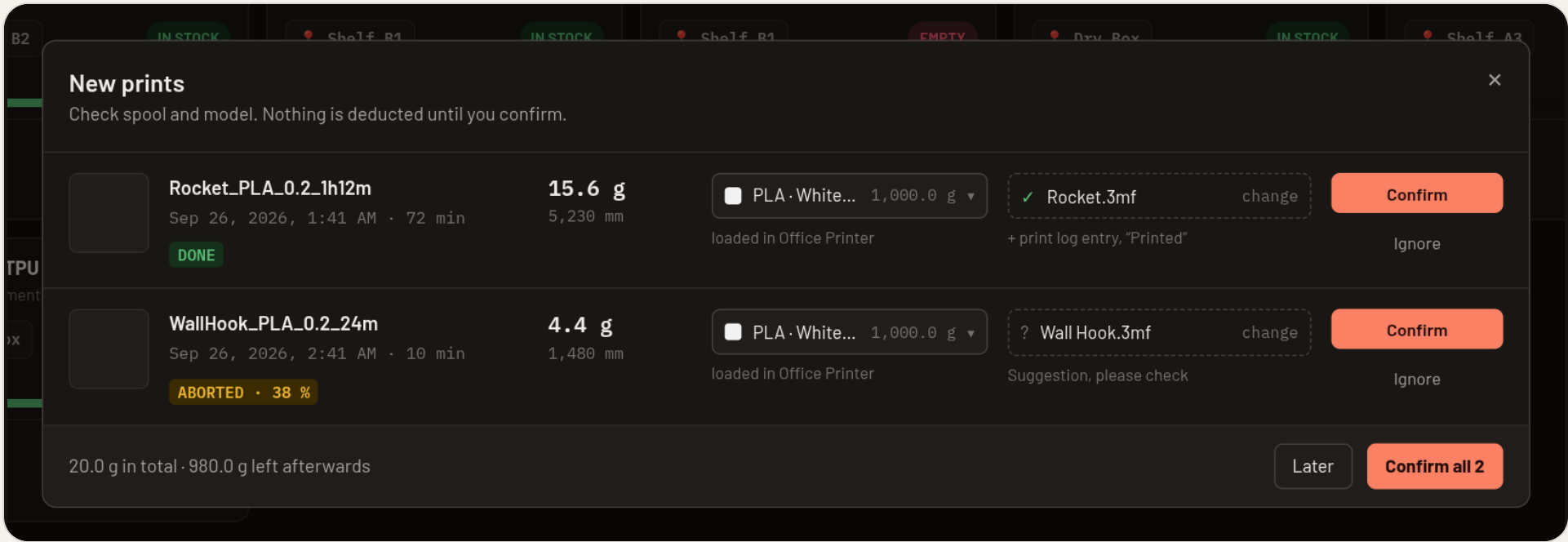
Reads the print history and the filament the printer counted. Read-only, home network only, off by default.

You stay in control

New prints wait for your confirmation. Nothing is deducted from a spool before you confirm.

Tested

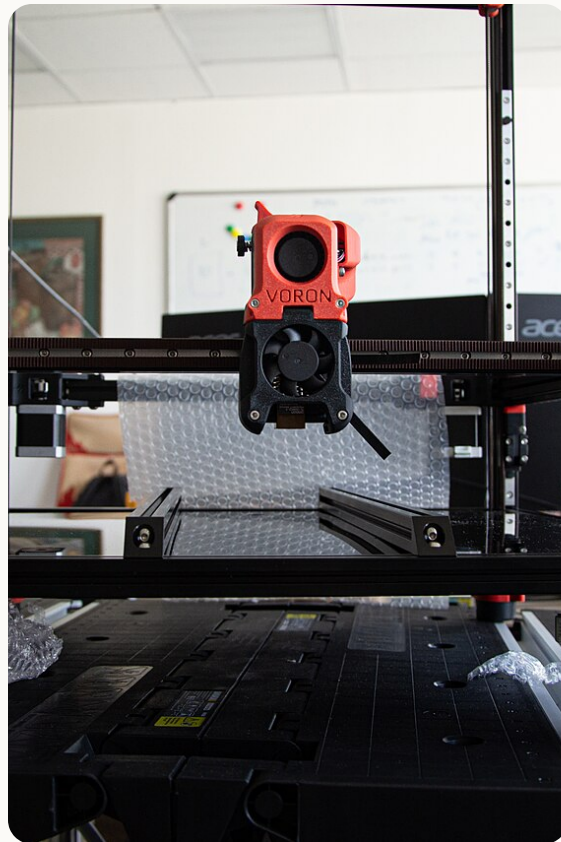
Sovol SV08, Anycubic Kobra S1 with Rinkhals, Qidi Smart 3.



The “New prints” dialog in v0.14.0

THE KEY DIFFERENCE

Two kinds of printers



History on the printer

Moonraker, stock Creality, Elegoo Centauri Carbon, partly OctoPrint.

The app can fetch prints at any time, even if it was closed while they ran.



Live status only

PrusaLink, FlashForge, Bambu, stock Anycubic, detailed OctoPrint data.

The app has to run during the print. If it is closed, that print is missed.

NOW

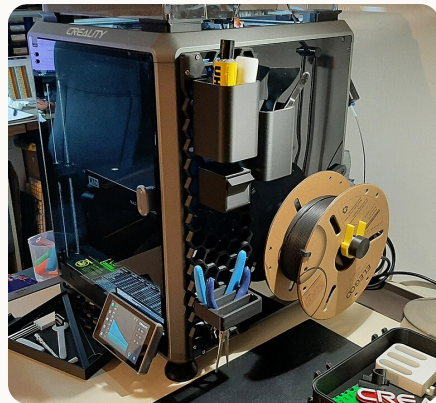
What we are working on next

Topic	What it brings	Status
More reliable deductions	Correct the grams before confirming; prints interrupted by a power cut are no longer lost	next
Shared groundwork	Secure storage for access codes, live tracking, several spools per print	next
OctoPrint	Official API, no plugin needed; covers many USB printers	next
Read slicer files	Usage suggestion even without a printer connection	planned
Wrong printer clocks	Printers without time sync work anyway	done



WITH TESTERS

Possible, once someone can test it



Creality

A device report that confirms the print history



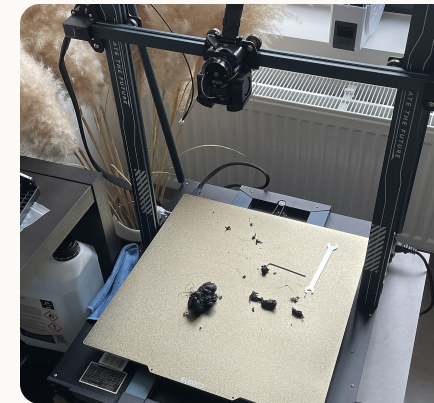
PrusaLink

A tester with an MK4 or Core One and a real .bgcode file



Bambu

Local reading works in cloud mode



Elegoo

A tester; only commands we know are safe



FlashForge

Proof that its filament counter is a real measurement



Duet, Spoolman

Requests from the community

NOT PLANNED

What we decided against, and why

Approach	Reason
Requiring a server (FDM Monster, Bambuddy, The Moment)	The app should keep working on its own, without a service running around the clock
OctoPrint as a bridge for network printers	Just an extra layer; its 2.0 connectors are still in testing
Receiving webhooks or MQTT messages	A desktop app has no server or broker to receive them
Stock Anycubic, FlashForge Adventurer 3/4	No print history and no usage data; Anycubic works via Rinkhals
Using manufacturer clouds	Local network only, no accounts, no cloud
Copying AGPL code	Not compatible with the app's MIT licence; ideas and protocol knowledge are fine

What we are improving in v0.14.0's connection

Next

- Edit the grams before confirming
- Keep prints interrupted by a restart or power cut
- Partial prints don't mark a model as printed
- Show a stock shortfall instead of hiding it

With the new groundwork

- Several spools per print (AMS, MMU, toolchangers)
- Keep "unknown" apart from 0 g
- Material-specific conversion per spool
- Very long prints and edge cases

Done

- Printers with a wrong clock work
- A note tells you to turn on time sync

Every number has a source

Slicer plan

What the whole print needs: 3MF, G-code, OctoPrint analysis

Counted

The firmware counts extrusion: Moonraker, Creality, Duet

Estimated

Plan times progress: PrusaLink, OctoPrint, Bambu when cancelled

Sensor

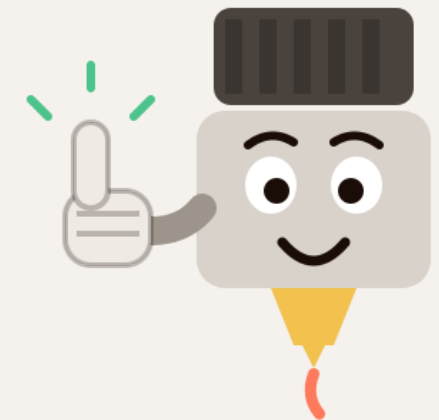
Not available on any system we checked

Weighed

Spool before and after, by hand only

Honest by design: the app shows where a number comes from instead of promising an accuracy it can't deliver. No software API gives an exact weight.

A better value is never replaced by a worse one, and “unknown” is never shown as 0.



OVERVIEW

Printer by printer

Printer	How the app talks to it	Usage data	Status
Klipper/Moonraker	Print history	counted	Works today
OctoPrint (USB printers)	Official API, no plugin	estimated	Now
Stock Creality	WebSocket, print history	counted	With testers
PrusaLink	Live only, reads the print file	estimated	With testers
Bambu Lab	MQTT live, file via FTPS	slicer plan	With testers (M0)
Elegoo Centauri Carbon	WebSocket or MQTT	estimated	With testers
FlashForge AD5M/AD5X	Live only	open	With testers
Duet	HTTP object model	counted	With testers
Stock Anycubic	MQTT with mTLS	none	Not planned (use Rinkhals)

The docs promise more than the firmware delivers



The published API spec

- OpenAPI “1.0.0-draft”, last changed 02/2025
- Endpoints status, job, files
- Grams per tool in the file metadata
- No print history

The firmware source code

- Login with Digest or an API key
- After a print ends, the job and file are gone
- No file metadata, so no grams from the printer
- No partial downloads, no history

What this means: PrusaLink is possible as a live connection; the app reads the grams from the print file itself. Still open: whether real .bgcode files carry the grams, and the MK3 with PrusaLink on a Raspberry Pi.

Bambu is decided on a real printer



The approach

Live status via MQTT, the printed file via FTPS, grams per plate from the app's 3MF reader. Read-only, no printer control.

Go/no-go test

Can the app read locally while the printer stays in cloud mode? If not, we won't build it. Nobody should have to give up the Bambu apps.

Model series matters

On H2 and P2S, "Print" from Bambu Studio lands in internal memory that can't be read. X1 and P1 are not affected, according to Bambuddy.

Builds on

The improved deductions, live tracking, several spools per print for the AMS, clock correction.

What our research turned up

OctoPrint 2.0

In testing, with connectors for Moonraker and Bambu and versioned APIs

Creality keeps a history

Stock firmware, over WebSocket, with counted filament and a file checksum

Careful with Elegoo

Unknown commands can crash the firmware and a running print

PrusaLink without grams

The firmware doesn't serve the file metadata the spec describes

Wrong printer clocks

One tester's printer lived in 2023; the app now corrects this

Licences matter

Many related tools are AGPL, including Prusa's libbgcode

ROADMAP

Four steps, in this order

1 · next

Better deductions and groundwork

Helps everyone who uses Klipper today.

2 · next

OctoPrint, then Bambu

Bambu only if the go/no-go test passes.

3 · after that

PrusaLink and Creality

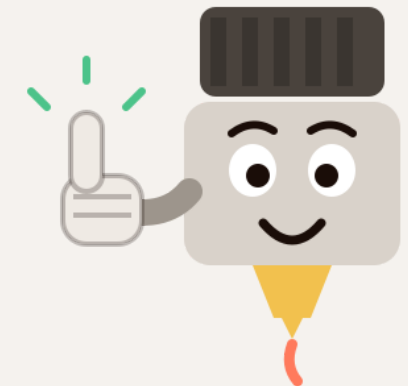
As soon as a device report is in.

4 · on request

More printers

Elegoo, FlashForge, Duet, Spoolman.

The order can change with what testers report. Nothing here is a promised date.



GET INVOLVED

How you can help

If you own ...	What helps us most
A Klipper printer	A print that was interrupted by a restart or power cut
An OctoPrint setup	The answers from the test page, OctoPrint 1.11 or 2.0
A stock Creality K1/K2	Its print history from the test page
A Prusa MK4, XL, MINI+ or Core One	A sliced .bgcode file and the test page answers
A Bambu Lab printer	Model, firmware and whether it runs in cloud or LAN mode
Elegoo, FlashForge or Duet	Tell us on Discord; we need a tester before we start

Test page: 3mfkatalog.de/en/printer-test.html · 5–20 minutes, nothing is changed on your printer.



IMAGE CREDITS

Photos, illustrations, screenshots

Image	Author	Licence	Source
Original Prusa MK4	Majkluss	CC BY-SA 4.0	Wikimedia Commons
Bambu Lab X1 Carbon with AMS	Benlisquare	CC BY-SA 4.0	Wikimedia Commons
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Creality K1C	Mortymore	CC BY 2.0	Wikimedia Commons
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Mascots, screenshot	3MF Katalog Manager	own work	3mfkatalog.de, user guide

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