OctoPrint Documentation

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Contents

This is a work in progress. The goal is to document OctoPrint's REST API, event system, configuration etc in way that allows different documentation per development branch in Git, which so far did not scale well with the Github-Wiki-based approach.

CHAPTER 1

Contents

1.1 API Documentation

1.1.1 General information

Contents

Authorization

OctoPrint's API expects an API key to be supplied with each request. This API key can be either the globally configured one or a user specific one if "Access Control" is enabled. Users are able to generate and revoke their custom API key via the "Change password" dialog.

The API key must be supplied in the custom HTTP header `X-Api-Key`, e.g.

```
GET /api/files HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
```

If it is missing or included but invalid, OctoPrint will directly return a response with status 401 Unauthorized.

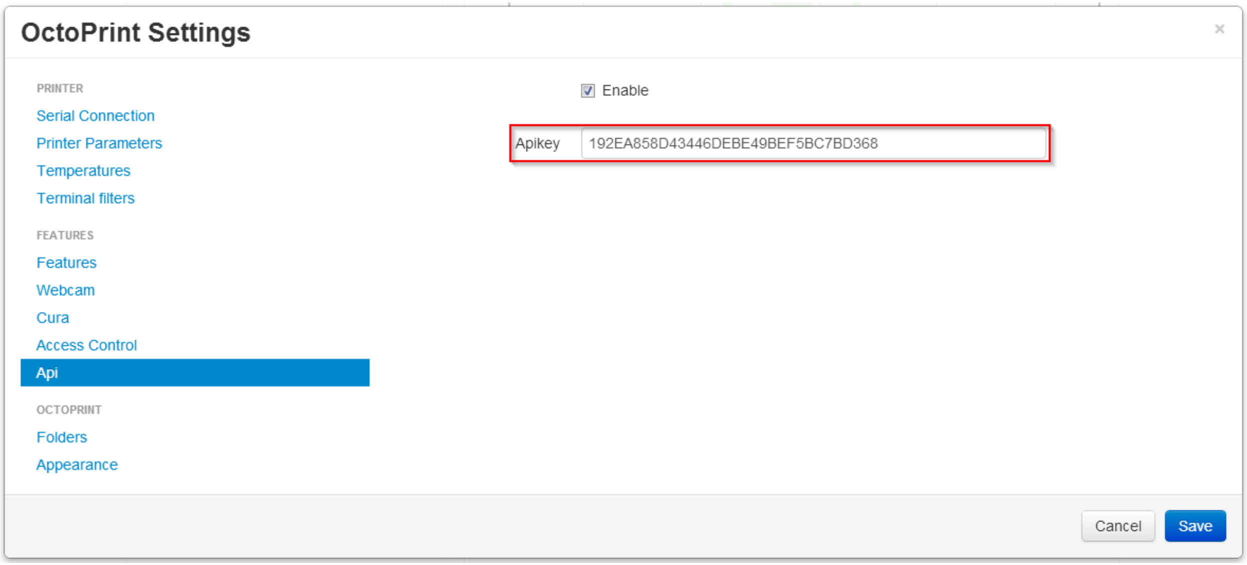
For testing purposes it is also possible to supply the API key via a query parameter `apikey`, e.g.

```
GET /api/files?apikey=abcdef... HTTP/1.1
Host: example.com
```

Please be advised that clients should use the header field variant if at all possible.

Content Type

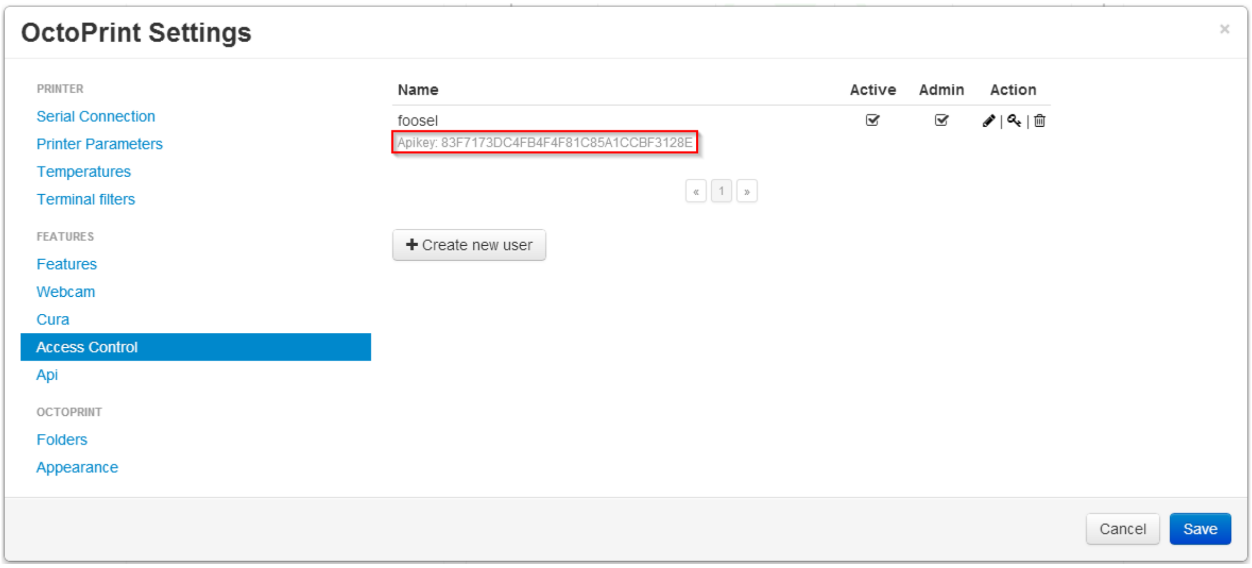
If not otherwise stated OctoPrint's API expects request bodies and issues response bodies as `Content-Type: application/json`.



☑ Enable

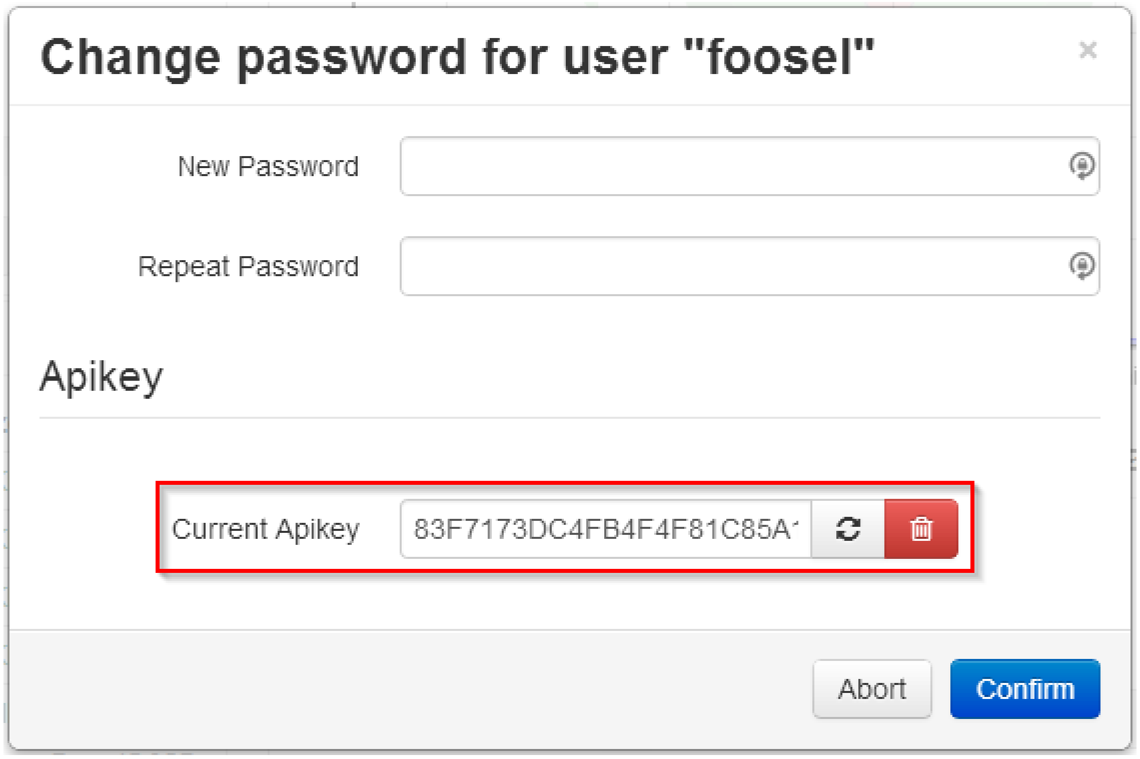
Apikey 192EA858D43446DEBE49BEF5BC7BD368

Figure 1.1: The global API key can be found in the "API" settings



Name	Active	Admin	Action
foosel Apikey: 83F7173DC4FB4F4F81C85A1CCBF3128E	☑	☑	✎ | 🔑 | 🗑

Figure 1.2: The user list in the "Access Control" settings shows the API key for users (if available)



Change password for user "foosel"

New Password

Repeat Password

Apikey

Current Apikey 83F7173DC4FB4F4F81C85A

Figure 1.3: The API key options in the “Change password” dialog. Users can generate and revoke their custom API key here.

Encoding

OctoPrint uses UTF-8 as charset.

1.1.2 Version information

GET /api/version

Retrieve information regarding server and API version. Returns a JSON object with two keys, `api` containing the API version, `server` containing the server version.

Example Request

```
GET /api/version HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
```

Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "api": "0.1",
  "server": "1.1.0"
}
```

Status Codes

- 200 OK – No error

1.1.3 File operations

Contents

Retrieve all files

GET /api/files

Retrieve information regarding all files currently available and regarding the disk space still available locally in the system.

Returns a *Retrieve response*.

Example request:

```
GET /api/files HTTP/1.1
Host: example.com
```

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "files": [
    {
      "name": "whistle_v2.gcode",
      "size": 1468987,
      "date": 1378847754,
      "origin": "local",
      "refs": {
        "resource": "http://example.com/api/files/local/whistle_v2.gcode",
        "download": "http://example.com/downloads/files/local/whistle_v2.gcode"
      },
      "gcodeAnalysis": {
        "estimatedPrintTime": 1188,
        "filament": {
          "length": 810,
          "volume": 5.36
        }
      },
      "print": {
        "failure": 4,
        "success": 23,
        "last": {
          "date": 1387144346,
          "success": true
        }
      }
    },
    {
      "name": "whistle_.gco",
      "origin": "sdcard",
      "refs": {
        "resource": "http://example.com/api/files/sdcard/whistle_.gco"
      }
    }
  ],
  "free": "3.2GB"
}
```

Status Codes

- 200 OK – No error

Retrieve files from specific location

GET /api/files/ (**string:** *location*)

Retrieve information regarding the files currently available on the selected *location* and – if targeting the `local` location – regarding the disk space still available locally in the system.

Returns a *Retrieve response*.

Example request:

```
GET /api/files/local HTTP/1.1
Host: example.com
```

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "files": [
    {
      "name": "whistle_v2.gcode",
      "size": 1468987,
      "date": 1378847754,
      "origin": "local",
      "refs": {
        "resource": "http://example.com/api/files/local/whistle_v2.gcode",
        "download": "http://example.com/downloads/files/local/whistle_v2.gcode"
      },
      "gcodeAnalysis": {
        "estimatedPrintTime": 1188,
        "filament": {
          "length": 810,
          "volume": 5.36
        }
      },
      "print": {
        "failure": 4,
        "success": 23,
        "last": {
          "date": 1387144346,
          "success": true
        }
      }
    }
  ],
  "free": "3.2GB"
}
```

Parameters

- **location** – The origin location from which to retrieve the files. Currently only `local` and `sdcard` are supported, with `local` referring to files stored in OctoPrint's `uploads` folder and `sdcard` referring to files stored on the printer's SD card (if available).

Status Codes

- 200 OK – No error
- 404 Not Found – If *location* is neither `local` nor `sdcard`

Upload file

POST /api/files/(**string:** *location*)

Upload a file to the selected *location*.

Other than most of the other requests on OctoPrint's API which are expected as JSON, this request is expected as `Content-Type:  multipart/form-data` due to the included file upload.

Returns a 201 Created response with a `Location` header set to the management URL of the uploaded file and an *Upload Response* as the body upon successful completion.

Example request

```
POST /api/files/sdcard HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
Content-Type: multipart/form-data; boundary=----WebKitFormBoundaryDeC2E3iWbTv1PwMC

------WebKitFormBoundaryDeC2E3iWbTv1PwMC
Content-Disposition: form-data; name="file"; filename="whistle_v2.gcode"
Content-Type: application/octet-stream

;Generated with Cura_SteamEngine 13.11.2
M109 T0 S220.000000
T0
;Sliced at: Wed 11-12-2013 16:53:12
;Basic settings: Layer height: 0.2 Walls: 0.8 Fill: 20
;Print time: #P_TIME#
;Filament used: #F_AMNT#m #F_WGHT#g
```

```
;Filament cost: #F_COST#
;M190 S70 ;Uncomment to add your own bed temperature line
;M109 S220 ;Uncomment to add your own temperature line
G21        ;metric values
G90        ;absolute positioning
...
------WebKitFormBoundaryDeC2E3iWbTv1PwMC
Content-Disposition: form-data; name="select"

true
------WebKitFormBoundaryDeC2E3iWbTv1PwMC
Content-Disposition: form-data; name="print"

true
------WebKitFormBoundaryDeC2E3iWbTv1PwMC--
```

Example response

```
HTTP/1.1 200 OK
Content-Type: application/json
Location:

{
  "files": {
    "local": {
      "name": "whistle_v2.gcode",
      "origin": "local",
      "refs": {
        "resource": "http://example.com/api/files/local/whistle_v2.gcode",
        "download": "http://example.com/downloads/files/local/whistle_v2.gcode"
      }
    },
    "sdcard": {
      "name": "whistle_.gco",
      "origin": "sdcard",
      "refs": {
        "resource": "http://example.com/api/files/sdcard/whistle_.gco"
      }
    }
  },
  "done": true
}
```

Parameters

- **location** – The target location to which to upload the file. Currently only `local` and `sdcard` are supported here, with `local` referring to OctoPrint's `uploads` folder and `sdcard` referring to the printer's SD card. If an upload targets the SD card, it will also be stored locally first.

Form Parameters

- **file** – The file to upload, including a valid `filename`.
- **select** – Whether to select the file directly after upload (`true`) or not (`false`). Optional, defaults to `false`.
- **print** – Whether to start printing the file directly after upload (`true`) or not (`false`). If set, *select* is implicitely `true` as well. Optional, defaults to `false`.

Status Codes

- 201 Created – No error
- 400 Bad Request – If no *file* is included in the request, or the request is otherwise invalid.
- 404 Not Found – If *location* is neither `local` nor `sdcard` or trying to upload to SD card and SD card support is disabled
- 409 Conflict – If the upload of the file would override the file that is currently being printed or if an upload to SD card was requested and the printer is either not operational or currently busy with a print job.
- 415 Unsupported Media Type – If the file is neither a `gcode` nor an `stl` file (or it is an `stl` file but slicing support is disabled)
- 500 Internal Server Error – If the upload failed internally

Retrieve a specific file's information

GET /api/files/(**string:** *location*)**/**
path: *filename* Retrieves the selected file's information.

If the file is unknown, a 404 Not Found is returned.

On success, a 200 OK is returned, with a *file information item* as the response body.

Example Request

```
GET /api/files/local/whistle_v2.gcode HTTP/1.1
Host: example.com
```

Example Response

```
HTTP/1.1 200 Ok
Content-Type: application/json

{
  "name": "whistle_v2.gcode",
  "size": 1468987,
  "date": 1378847754,
  "origin": "local",
  "refs": {
    "resource": "http://example.com/api/files/local/whistle_v2.gcode",
    "download": "http://example.com/downloads/files/local/whistle_v2.gcode"
  },
  "gcodeAnalysis": {
    "estimatedPrintTime": 1188,
    "filament": {
      "length": 810,
      "volume": 5.36
    }
  },
  "print": {
    "failure": 4,
    "success": 23,
    "last": {
      "date": 1387144346,
      "success": true
    }
    }
  }
```

Parameters

- **location** – The location of the file for which to retrieve the information, either `local` or `sdcard`.
- **filename** – The filename of the file for which to retrieve the information

Status Codes

- 200 OK – No error
- 404 Not Found – If *target* is neither `local` nor `sdcard`, `sdcard` but SD card support is disabled or the requested file was not found

Issue a file command

POST /api/files/(**string:** *target*)**/**

path: *filename* Issue a file command to an existing file. Currently supported commands are:

select Selects a file for printing. Additional parameters are:

- `print`: Optional, if set to `true` the file will start printing directly after selection. If the printer is not operational when this parameter is present and set to `true`, the request will fail with a response of `409 Conflict`.

Upon success, a status code of 204 No Content and an empty body is returned.

Example Select Request

```
POST /api/files/local/whistle_v2.gcode HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "select",
  "print": true
}
```

Parameters

- **target** – The target location on which to delete the file, either `local` (for OctoPrint's `uploads` folder) or `sdcard` for the printer's SD card (if available)
- **filename** – The filename of the file for which to issue the command

JSON Parameters

- **command** (*string*) – The command to issue for the file, currently only `select` is supported
- **print** (*boolean*) – `select` command: Optional, whether to start printing the file directly after selection, defaults to `false`.

Status Codes

- 200 OK – No error
- 400 Bad Request – If the *command* is unknown or the request is otherwise invalid

- 404 Not Found – If *target* is neither `local` nor `sdcard` or the requested file was not found
- 409 Conflict – If a selected file is supposed to start printing directly but the printer is not operational.

Delete file

DELETE /api/files/(**string:** *target*)**/**

path: *filename* Delete the selected *filename* on the selected *target*.

If the file to be deleted is currently being printed, a 409 Conflict will be returned.

Returns a 204 No Content after successful deletion.

Example Request

```
DELETE /api/files/local/whistle_v2.gcode HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
```

Parameters

- **target** – The target location on which to delete the file, either `local` (for OctoPrint's `uploads` folder) or `sdcard` for the printer's SD card (if available)
- **filename** – The filename of the file to delete

Status Codes

- 204 No Content – No error
- 404 Not Found – If *target* is neither `local` nor `sdcard` or the requested file was not found
- 409 Conflict – If the file to be deleted is currently being printed

Datamodel

Retrieve response

Name	Multiplicity	Type	Description
`files`	0..*	Array of *File information items*	The list of requested files. Might be an empty list if no files are available
`free`	0..1	String	The amount of disk space in bytes available in the local disk space (refers to OctoPrint's `uploads` folder). Only returned if file list was requested for origin `local` or all origins.

Upload response

Name	Multiplicity	Type	Description
files	1	Object	Abridged information regarding the file that was just uploaded. If only uploaded to local this will only contain the local property. If uploaded to SD card, this will contain both local and sdcard properties.
files.local	1	*File information*	The information regarding the file that was just uploaded to the local storage (only the fields name, origin and refs will be set).
files.sdcard	0..1	*File information*	The information regarding the file that was just uploaded to the printer's SD card (only the fields name, origin and refs will be set).
done	1	Boolean	Whether the file processing after upload has already finished (true) or not, e.g. due to first needing to perform a slicing step (false). Clients may use this information to direct progress displays related to the upload.

File information

Name	Multiplicity	Type	Description
name	1	String	The name of the file
size	0..1	Number	The size of the file in bytes. Only available for local files.
date	0..1	Unix timestamp	The timestamp when this file was uploaded. Only available for local files.
origin	1	String, either local or sdcard	The origin of the file, local when stored in OctoPrint's uploads folder, sdcard when stored on the printer's SD card (if available)
refs	0..1	*References*	References relevant to this file
gcodeAnalysis	0..1	*GCODE analysis information*	Information from the analysis of the GCODE file, if available.
prints	0..1	*Print information*	Information regarding prints of this file, if available.

GCODE analysis information

Name	Multiplicity	Type	Description
estimatedPrintTime	0..1	Integer	The estimated print time of the file, in seconds
filament	0..1	Object	The estimated usage of filament
filament.length	0..1	Integer	The length of filament used, in mm
filament.volume	0..1	Float	The volume of filament used, in cm^3

Print information

Name	Multiplicity	Type	Description
failure	1	Number	The number of failed prints on record for the file
success	1	Number	The number of successful prints on record for the file
last	0..1	Object	Information regarding the last print on record for the file
last.date	1	Unix timestamp	Timestamp when this file was printed last
last.success	1	Boolean	Whether the last print on record was a success (true) or not (false)

References

Name	Multiplicity	Type	Description
resource	1	URL	The resource that represents the file (e.g. for issuing commands to or for deleting)
download	0..1	URL	The download URL for the file
model	0..1	URL	The model from which this file was generated (e.g. an STL, currently not used)

1.1.4 Connection handling

Contents

Get connection settings

GET /api/connection

Retrieve the current connection settings, including information regarding the available baudrates and serial ports and the current connection state.

Example Request

```
GET /api/connection HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...
```

Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "current": {
    "state": "Operational",
    "port": "/dev/ttyACM0",
    "baudrate": 250000
  },
  "options": {
    "ports": ["/dev/ttyACM0", "VIRTUAL"],
    "baudrates": [250000, 230400, 115200, 57600, 38400, 19200, 9600],
    "portPreference": "/dev/ttyACM0",
    "baudratePreference": 250000,
    "autoconnect": true
  }
}
```

Status Codes

- 200 OK – No error

Issue a connection command

POST /api/connection

Issue a connection command. Currently available command are:

connect Instructs OctoPrint to connect to the printer. Additional parameters are:

- `port`: Optional, specific port to connect to. If not set the current `portPreference` will be used, or if no preference is available auto detection will be attempted.
- `baudrate`: Optional, specific baudrate to connect with. If not set the current `baudratePreference` will be used, or if no preference is available auto detection will be attempted.
- `save`: Optional, whether to save the request's `port` and `baudrate` settings as new preferences. Defaults to `false` if not set.
- `autoconnect`: Optional, whether to automatically connect to the printer on OctoPrint's startup in the future. If not set no changes will be made to the current configuration.

disconnect Instructs OctoPrint to disconnect from the printer.

Example Connect Request

```
POST /api/connection HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "connect",
  "port": "/dev/ttyACM0",
  "baudrate": 115200,
  "save": true,
  "autoconnect": true
}
```

Example Disconnect Request

```
POST /api/connection HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...
```

```
{
  "command": "disconnect"
}
```

JSON Parameters

- **command** (*string*) – The command to issue, either `connect` or `disconnect`
- **port** (*string*) – `connect` command: The port to connect to. If left out either the existing `portPreference` will be used, or if that is not available OctoPrint will attempt auto detection. Must be part of the available ports.
- **baudrate** (*number*) – `connect` command: The baudrate to connect with. If left out either the existing `baudratePreference` will be used, or if that is not available OctoPrint will attempt autodetection. Must be part of the available baudrates.
- **save** (*boolean*) – `connect` command: Whether to save the supplied connection settings as the new preference. Defaults to `false` if not set.
- **autoconnect** (*boolean*) – `connect` command: Whether to attempt to automatically connect to the printer on server startup. If not set no changes will be made to the current setting.

Status Codes

- 204 No Content – No error
- 400 Bad Request – If the selected *port* or *baudrate* for a `connect` command are not part of the available options.

1.1.5 Printer operations

Warning: This part of the API is still heavily in development, especially anything that has to do with temperature control. If you happen to want to develop against it, you should drop me an email to make sure I can give you a heads-up when something changes.

Contents

Printer control is mostly achieved through the use of commands, issued to resources reflecting components of the printer. OctoPrint currently knows the following components:

Print head Print head commands allow jogging and homing the print head in all three axes. See *Issue a print head command*.

Heater Heater commands allow setting the temperature and temperature offsets for the printer's hotend and bed. Currently OctoPrint only supports one hotend heater (this will change in the future). See *Issue a heater command*.

Feeder Feeder commands allow extrusion/extraction of filament. Currently OctoPrint only supports one feeder (this will change in a future version). See *Issue a feeder command*.

SD card SD commands allow initialization, refresh and release of the printer's SD card (if available). See *Issue a SD command*.

Issue a print head command

`POST /api/printer/printhead`

Print head commands allow jogging and homing the print head in all three axes. Available commands are:

jog Jogs the print head (relatively) by a defined amount in one or more axes. Additional parameters are:

- `x`: Optional. Amount to jog print head on x axis, must be a valid number corresponding to the distance to travel in mm.
- `y`: Optional. Amount to jog print head on y axis, must be a valid number corresponding to the distance to travel in mm.
- `z`: Optional. Amount to jog print head on z axis, must be a valid number corresponding to the distance to travel in mm.

home Homes the print head in all of the given axes. Additional parameters are:

- `axes`: A list of axes which to home, valid values are one or more of `x`, `y`, `z`.

All of these commands may only be sent if the printer is currently operational and not printing. Otherwise a 409 Conflict is returned.

Upon success, a status code of 204 No Content and an empty body is returned.

Example Jog Request

Jog the print head by 10mm in X, -5mm in Y and 0.02mm in Z.

```
POST /api/printer/printhead HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "jog",
  "x": 10,
  "y": -5,
  "z": 0.02
}
```

Example Home Request

Home the X and Y axes.

```
POST /api/printer/printhead HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "home",
  "axes": ["x", "y"]
}
```

JSON Parameters

- **command** (*string*) – The command to issue, either `jog` or `home`.
- **x** (*number*) – `jog` command: The amount to travel on the X axis in mm.
- **y** (*number*) – `jog` command: The amount to travel on the Y axis in mm.
- **z** (*number*) – `jog` command: The amount to travel on the Z axis in mm.
- **axes** (*array*) – `home` command: The axes which to home, valid values are one or more of `x`, `y` and `z`.

Status Codes

- 204 No Content – No error
- 400 Bad Request – Invalid axis specified, invalid value for travel amount for a jog command or otherwise invalid request.
- 409 Conflict – If the printer is not operational or currently printing.

Issue a heater command

Todo

Update to current implementation!

`POST /api/printer/heater`

Heater commands allow setting the temperature and temperature offsets for the printer's hotend and bed. Available commands are:

temp Sets the given target temperature on the printer's hotend and/or bed. Additional parameters:

- `targets`: Target temperature(s) to set, allowed properties are:
  - `hotend`: New target temperature of the printer's hotend in centigrade.
  - `bed`: New target temperature of the printer's bed in centigrade.

offset Sets the given temperature offset on the printer's hotend and/or bed. Additional parameters:

- `offsets`: Offset(s) to set, allowed properties are:
  - `hotend`: New offset of the printer's hotend temperature in centigrade, max/min of +/-50°C.
  - `bed`: New offset of the printer's bed temperature in centigrade, max/min of +/-50°C.

All of these commands may only be sent if the printer is currently operational and not printing. Otherwise a 409 Conflict is returned.

Upon success, a status code of 204 No Content and an empty body is returned.

Example Target Temperature Request

Set the printer's hotend target temperature to 220°C and the bed target temperature to 75°C.

```
POST /api/printer/heater HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "temp",
  "temps": {
    "hotend": 220,
    "bed": 75
  }
}
```

Example Offset Temperature Request

Set the offset for hotend temperatures to +10°C and for bed temperatures to -5°C.

```
POST /api/printer/heater HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "offset",
  "offsets": {
    "hotend": 10,
    "bed": -5
  }
}
```

JSON Parameters

- **command** (*string*) – The command to issue, either `temp` or `offset`
- **temps** (*object*) – `temp` command: The target temperatures to set. Valid properties are `hotend` and `bed`
- **offsets** (*object*) – `offset` command: The offset temperature to set. Valid properties are `hotend` and `bed`

Status Codes

- 204 No Content – No error
- 400 Bad Request – If `temps` or `offsets` contains a property other than `hotend` or `bed`, the target or offset temperature is not a valid number or outside of the supported range, or if the request is otherwise invalid.
- 409 Conflict – If the printer is not operational.

Issue a feeder command

`POST /api/printer/feeder`

Feeder commands allow extrusion/extraction of filament. Available commands are:

extrude Extrudes the given amount of filament. Additional parameters:

- `amount`: The amount of filament to extrude in mm. May be negative to retract.

All of these commands may only be sent if the printer is currently operational and not printing. Otherwise a 409 Conflict is returned.

Upon success, a status code of 204 No Content and an empty body is returned.

Example Extrude Request

Extrudes 1mm of filament

```
POST /api/printer/feeder HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "extrude",
  "amount": 1
}
```

Example Retract Request

Retracts 3mm of filament

```
POST /api/printer/feeder HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "extrude",
  "amount": -3
}
```

JSON Parameters

- **command** (*string*) – The command to issue, only `extrude` is supported right now.
- **amount** (*number*) – `extrude` command: The amount of filament to extrude/retract in mm.

Status Codes

- 204 No Content – No error
- 400 Bad Request – If the value given for *amount* is not a valid number or the request is otherwise invalid.
- 409 Conflict – If the printer is not operational or currently printing.

Issue a SD command

POST /api/printer/sd

SD commands allow initialization, refresh and release of the printer's SD card (if available).

Available commands are:

init Initializes the printer's SD card, making it available for use. This also includes an initial retrieval of the list of files currently stored on the SD card, so after issueing that command a *retrieval of the files on SD card* will return a successful result.

Note: If OctoPrint detects the availability of a SD card on the printer during connection, it will automatically attempt to initialize it.

refresh Refreshes the list of files stored on the printer's SD card. Will return a 409 Conflict if the card has not been initialized yet (see the `init` command and *SD state*).

release Releases the SD card from the printer. The reverse operation to `init`. After issuing this command, the SD card won't be available anymore, hence and operations targeting files stored on it will fail. Will return a 409 Conflict if the card has not been initialized yet (see the `init` command and *SD state*).

Upon success, a status code of 204 No Content and an empty body is returned.

Example Init Request

```
POST /api/printer/sd HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "init"
}
```

Example Refresh Request

```
POST /api/printer/sd HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "refresh"
}
```

Example Release Request

```
POST /api/printer/sd HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "release"
}
```

JSON Parameters

- **command** (*string*) – The command to issue, either `init`, `refresh` or `release`.

Status Codes

- 204 No Content – No error
- 409 Conflict – If a `refresh` or `release` command is issued but the SD card has not been initialized (e.g. via `init`.

Retrieve the current SD state

GET /api/printer/sd

Retrieves the current state of the printer's SD card. For this request no authentication is needed.

If SD support has been disabled in OctoPrint's settings, a 404 Not Found is returned.

Returns a 200 OK with an *SD State Response* in the body upon success.

Example Request

```
GET /api/printer/sd HTTP/1.1
Host: example.com
```

Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "ready": true
}
```

Status Codes

- 200 OK – No error
- 404 Not Found – If SD support has been disabled in OctoPrint's config.

Datamodel

SD State Response

Name	Multiplicity	Type	Description
`ready`	1	Boolean	Whether the SD card has been initialized (`true`) or not (`false`).

1.1.6 Job operations

Contents

Issue a job command

POST /api/job

Job commands allow starting, pausing and cancelling print jobs. Available commands are:

start Starts the print of the currently selected file. For selecting a file, see *Issue a file command*. If a print job is already active, a 409 Conflict will be returned.

restart Restart the print of the currently selected file from the beginning. There must be an active print job for this to work and the print job must currently be paused. If either is not the case, a 409 Conflict will be returned.

pause Pauses/unpauses the current print job. If no print job is active (either paused or printing), a 409 Conflict will be returned.

cancel Cancels the current print job. If no print job is active (either paused or printing), a 409 Conflict will be returned.

Upon success, a status code of 204 No Content and an empty body is returned.

Example Start Request

```
POST /api/control/job HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "start"
}
```

Example Restart Request

```
POST /api/control/job HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "restart"
}
```

Example Pause Request

```
POST /api/control/job HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "pause"
}
```

Example Cancel Request

```
POST /api/control/job HTTP/1.1
Host: example.com
Content-Type: application/json
X-Api-Key: abcdef...

{
  "command": "cancel"
}
```

JSON Parameters

- **command** (*string*) – The command to issue, either `start`, `restart`, `pause` or `cancel`

Status Codes

- 204 No Content – No error
- 409 Conflict – If the printer is not operational or the current print job state does not match the preconditions for the command.

Retrieve information about the current job

`GET /api/job`

Retrieve information about the current job (if there is one).

Returns a 200 OK with a *Job information response* in the body.

Example Request

```
GET /api/job HTTP/1.1
Host: example.com
```

Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "job": {
    "file": {
      "name": "whistle_v2.gcode",
      "origin": "local",
      "size": 1468987,
      "date": 1378847754
    },
    "estimatedPrintTime": 8811,
    "filament": {
      "length": 810,
      "volume": 5.36
    }
  },
  "progress": {
    "completion": 0.2298468264184775,
    "filepos": 337942,
    "printTime": 276,
    "printTimeLeft": 912
  }
}
```

Status Codes

- 200 OK – No error

Datamodel

Job information response

Name	Multiplicity	Type	Description
`job`	1	*Job information*	Information regarding the target of the current print job
`progress`	1	*Progress information*	Information regarding the progress of the current print job

Job information

Name	Multiplicity	Type	Description
`file`	1	Object	The file that is the target of the current print job
`file.name`	1	String	The file's name
`file.origin`	1	String, either `local` or `sdcard`	The file's origin, either `local` or `sdcard`
`file.size`	0..1	Integer	The file's size, in bytes. Only available for files stored locally.
`file.date`	0..1	Unix timestamp	The file's upload date. Only available for files stored locally.
`estimatedPrintTime`	0..1	Integer	The estimated print time for the file, in seconds.
`filament`	0..1	Object	Information regarding the estimated filament usage of the print job
`filament.length`	0..1	Integer	Length of filament used, in mm
`filament.volume`	0..1	Float	Volume of filament used, in cm^3

Progress information

Name	Multiplicity	Type	Description
`completion`	1	Float	Percentage of completion of the current print job
`filepos`	1	Integer	Current position in the file being printed, in bytes from the beginning
`printTime`	1	Integer	Time already spent printing, in seconds
`printTimeLeft`	1	Integer	Estimate of time left to print, in seconds

1.1.7 Log file management

Note: All log file management operations require admin rights.

Contents

Retrieve a list of available log files

`POST /api/logs`

Retrieve information regarding all log files currently available and regarding the disk space still available in the system on the location the log files are being stored.

Returns a *Logfile Retrieve response*.

Example Request

```
GET /api/logs HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
```

Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json

{
  "files" : [
    {
      "date" : 1393158814,
      "name" : "octoprint.log",
      "size" : 43712,
      "refs": {
        "resource": "http://example.com/api/logs/octoprint.log",
        "download": "http://example.com/downloads/logs/octoprint.log"
      }
    },
    {
      "date" : 1392628936,
      "name" : "octoprint.log.2014-02-17",
      "size" : 13205,
      "refs": {
        "resource": "http://example.com/api/logs/octoprint.log.2014-02-17",
        "download": "http://example.com/downloads/logs/octoprint.log.2014-02-17"
      }
    },
    {
      "date" : 1393158814,
      "name" : "serial.log",
      "size" : 1798419,
      "refs": {
        "resource": "http://example.com/api/logs/serial.log",
        "download": "http://example.com/downloads/logs/serial.log"
      }
    }
  ],
  "free": 12237201408
}
```

Status Codes

- 200 OK – No error
- 403 Forbidden – If the given API token did not have admin rights associated with it

Delete a specific logfile

DELETE /api/logs/(**path:** *filename*)

Delete the selected log file with name *filename*.

Returns a 204 No Content after successful deletion.

Example Request

```
DELETE /api/logs/octoprint.log.2014-02-17 HTTP/1.1
Host: example.com
X-Api-Key: abcdef...
```

Parameters

- **filename** – The filename of the log file to delete

Status Codes

- 204 No Content – No error
- 403 Forbidden – If the given API token did not have admin rights associated with it
- 404 Not Found – If the file was not found

Datamodel

Logfile Retrieve Response

Name	Multiplicity	Type	Description
files	0..*	Array of *File information items*	The list of requested files. Might be an empty list if no files are available
free	1	String	The amount of disk space in bytes available in the local disk space (refers to OctoPrint's `logs` folder).

File information

Name	Multiplicity	Type	Description
name	1	String	The name of the file
size	1	Number	The size of the file in bytes.
date	1	Unix timestamp	The timestamp when this file was last modified.
refs	1	*References*	References relevant to this file

References

Name	Multiplicity	Type	Description
resource	1	URL	The resource that represents the file (e.g. for deleting)
download	1	URL	The download URL for the file

1.2 Events Documentation

Contents

With release of OctoPrint 1.1.0, the payload data has been harmonized, it is now a key-value-map for all events. Additionally, the format of the placeholders in both system command and gcode command triggers has been changed to accommodate for this new format. Last but not least, the way of specifying event hooks has changed, OctoPrint no longer separates hooks into two sections (gcodeCommandTrigger and systemCommandTrigger) but instead event hooks are now typed to indicate what to do with the command contained.

1.2.1 Configuration

Event hooks are configured via OctoPrint's configuration file `config.yaml`. There they are contained in a `subscriptions` list located directly under the `events` node. The `command` node accepts either a single string or a list of strings so that multiple commands can be executed in one go. Each hook carries an additional node type that must be either `gcode` (for GCODE commands to be sent to the printer based on the event) or `system` (for commands to be executed on the system OctoPrint is running on).

All event hooks can be disabled completely by setting `event > enabled` to `false`. You can also disable individual hooks by setting the (optional) node `enabled` to false, see the example below.

Example

```
events:
  enabled: True
  subscriptions:
  - event: Disconnected
    command: python ~/growl.py -t mygrowlserver -d "Lost connection to printer" -a OctoPrint -i http
    type: system
    enabled: false
  - event: PrintStarted
    command: python ~/growl.py -t mygrowlserver -d "Starting {file}" -a OctoPrint -i http://raspi/Oct
    type: system
  - event: PrintDone
    command: python ~/growl.py -t mygrowlserver -d "Completed {file}" -a OctoPrint -i http://raspi/Oc
    type: system
  - event: Connected
    command:
    - M115
    - M117 printer connected!
    - G28
    type: gcode
```

1.2.2 Placeholders

You can use the following generic placeholders in your events:

- `{__currentZ}`: the current Z position of the head if known, -1 if not available
- `{__filename}`: filename of the currently selected file, "NO FILE" if not available
- `{__progress}`: the progress of the print in percent, 0 if not available
- `{__data}`: a string representation of the payload
- `{__now}`: the date and time of the event in ISO 8601

Additionally, all data from the payload can be accessed by its key. Example: If the payload happens to be defined something like this:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

then you'll be able to access the filename via the placeholder `{file}` and the origin via the placeholder `{origin}`.

1.2.3 Available Events

Server

Startup The server has started

ClientOpened A client has connected to the web server.

Payload:

- `remoteAddress`: the remote address (IP) of the client that connected

Note: Name changed in version 1.1.0

ClientClosed A client has disconnected from the webserver

Printer communication

Connected The server has connected to the printer.

Payload:

- `port`: the connected serial port
- `baudrate`: the baud rate

Disconnected The server has disconnected from the printer

Error An error has occurred in the printer communication.

Payload:

- `error`: the error string

File handling

Upload A file has been uploaded.

Payload:

- `file`: the file's name
- `target`: the target to which the file was uploaded, either `local` or `sdcard`

UpdatedFiles A file list was modified.

Payload:

- `type`: the type of file list that was modified, currently only `gcode` is supported here

MetadataAnalysisStarted The metadata analysis of a GCODE file has started.

Payload:

- `file`: the file's name

MetadataAnalaysisFinished The metadata analysis of a GCODE file has finished.

Payload:

- `file`: the file's name
- `result`: the analysis result – this is a python object currently only available for internal use

FileSelected A GCODE file has been selected for printing.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

FileDeselected No file is selected any more for printing.

TransferStarted A GCODE file transfer to SD has started.

Payload:

- `local`: the file's name as stored locally
- `remote`: the file's name as stored on SD

Note: Name changed in version 1.1.0

TransferDone A GCODE file transfer to SD has finished.

Payload:

- `time`: the time it took for the transfer to complete in seconds
- `local`: the file's name as stored locally
- `remote`: the file's name as stored on SD

Printing

PrintStarted A print has started.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

PrintFailed A print failed.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

PrintDone A print completed successfully.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`
- `time`: the time needed for the print, in seconds (float)

PrintCancelled The print has been cancelled via the cancel button.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

PrintPaused The print has been paused.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

PrintResumed The print has been resumed.

Payload:

- `file`: the file's name
- `origin`: the origin of the file, either `local` or `sdcard`

GCODE processing

PowerOn The GCode has turned on the printer power via M80

PowerOff The GCODE has turned on the printer power via M81

Home The head has gone home via G28

ZChange The printer's Z-Height has changed (new layer)

Paused The print has been paused

Waiting The print is paused due to a gcode wait command

Cooling The GCODE has enabled the platform cooler via M245

Alert The GCODE has issued a user alert (beep) via M300

Conveyor The GCODE has enabled the conveyor belt via M240

Eject The GCODE has enabled the part ejector via M40

EStop The GCODE has issued a panic stop via M112

Timelapses

CaptureStart A timelapse image has started to be captured.

Payload:

- `file`: the name of the image file to be saved

CaptureDone A timelapse image has completed being captured.

Payload:

- `file`: the name of the image file that was saved

MovieRendering The timelapse movie has started rendering.

Payload:

- `gcode`: the GCODE file for which the timelapse would have been created (only the filename without the path)
- `movie`: the movie file that is being created (full path)
- `movie_basename`: the movie file that is being created (only the file name without the path)

MovieDone The timelapse movie is completed.

Payload:

- `gcode`: the GCODE file for which the timelapse would have been created (only the filename without the path)
- `movie`: the movie file that has been created (full path)
- `movie_basename`: the movie file that has been created (only the file name without the path)

MovieFailed There was an error while rendering the timelapse movie.

Payload:

- `gcode`: the GCODE file for which the timelapse would have been created (only the filename without the path)
- `movie`: the movie file that would have been created (full path)
- `movie_basename`: the movie file that would have been created (only the file name without the path)
- `returncode`: the return code of `ffmpeg` that indicates the error that occurred

Slicing

SlicingStarted The slicing of a file has started.

Payload:

- `stl`: the STL's filename
- `gcode`: the sliced GCODE's filename

SlicingDone The slicing of a file has completed.

Payload:

- `stl`: the STL's filename
- `gcode`: the sliced GCODE's filename
- `time`: the time needed for slicing, in seconds (float)

SlicingFailed The slicing of a file has failed.

Payload:

- `stl`: the STL's filename
- `gcode`: the sliced GCODE's filename
- `reason`: the reason for the slicing having failed

HTTP Routing Table