



printreleaf™

Developer Guide

For Commercial Graphic Print (CGP) Applications

Introduction

Introduction to PrintReleaf

PrintReleaf is a software platform that empowers businesses to reduce the environmental impact of printing by certifiably planting trees around the world. PrintReleaf can analyze paper consumption data from a variety of sources to determine the equivalent number of trees that were deforested to harvest that paper. PrintReleaf then reforests those trees back into the natural environment at planting sites across our global network of PrintReleaf Certified Reforestation Projects. In return, PrintReleaf customers receive a certificate of reforestation as a receipt of their transaction.

Purpose and Scope

This document is for designers and architects who need to integrate the PrintReleaf platform with their own software applications. The PrintReleaf platform is well-suited for integration into a wide variety of Commercial Graphic Print (CGP) applications, including MIS, ERP, estimating, quoting, and point-of-sale software. This document serves as a guide for integrating with the PrintReleaf platform and a playbook of best practices.

Definitions



Account

The Account is the central business object in PrintReleaf; everything relates to an account. An account can be a PrintReleaf reseller or end customer. Accounts in PrintReleaf are hierarchical, meaning a reseller account can have an arbitrary number of subordinate end customer accounts that it owns and controls.



Transaction

A Transaction is an exchange of paper consumption for reforested trees, representing the paper consumption in Standard Pages and the equivalent number of Standard Trees. A transaction is always linked to an end customer account. When a transaction is created, the customer receives a certificate of reforestation as a receipt of the transaction. The certificate of reforestation is a PDF document that is posted to the customer's PrintReleaf dashboard and emailed to the customer.



Quote

A Quote is a way to calculate paper consumption and pricing before executing a transaction. To generate a quote, you supply the paper consumption data for the print job: the number of pages, paper width and height, as well as paper type or density. PrintReleaf uses the supplied paper consumption data to calculate the number of normalized Standard Pages and the equivalent number of Standard Trees. Once created, a quote can be used to create a transaction for the quoted value.



Standard Page

In PrintReleaf, all paper consumption data is normalized to a "Standard Page". This is PrintReleaf's standard unit of a single physical sheet of paper. A standard page is 0.2159m × 0.2794m (8.5" × 11") on conventional 20# Bond/Writing/Ledger (74 GSM). In normalizing paper consumption to standard pages, PrintReleaf takes into account the physical dimensions of the paper (width and height) as well as the surface density (commonly known as "paper weight", measured in g/m² or "GSM") of the type of paper consumed.



Standard Tree

In PrintReleaf, a "Standard Tree" is a standard unit for equating paper consumption to equivalent forest impact. A standard tree is 40 feet x 7 inches DBH and is equivalent to 8,333 Standard Pages. See the PrintReleaf Standard for more information.

Using the PrintReleaf API

The PrintReleaf API is organized around REST to have predictable, resource-oriented URLs, and uses HTTP response codes to indicate API errors. It uses built-in HTTP features, like HTTP authentication and HTTP verbs, which are understood by off-the-shelf HTTP clients. JSON is returned in all responses from the API, including errors, and is expected as the body for all requests.

Conventions

- All data is sent and received as JSON
- All resource IDs are UUID strings
- Blank fields are included as null instead of being omitted
- All timestamps are returned in ISO 8601 format: YYYY-MM-DDTHH:MM:SSZ
- All units are metric: m for units of length; m² for area; g for mass; g/m² for density

Access Patterns

Accounts in PrintReleaf are hierarchical, meaning a reseller account can have an arbitrary number of subordinate end customer accounts that it owns and controls.

By default, all resources of the Core API are scoped to the account that issued the API request. PrintReleaf Resellers may use the API to execute requests on behalf of their end customer by scoping the request to the customer account. Scoping takes place in the request URL.

Example: Retrieving a list of transactions

Default scope

```
GET https://api.printreleaf.com/v1/transactions
```

Scoped to Account ID=123

```
GET https://api.printreleaf.com/v1/accounts/123/transactions
```

Using the PrintReleaf API

Authentication

You authenticate to the PrintReleaf API by including an API key in the request. As a PrintReleaf Integration Partner, it is likely your software will perform API requests on behalf of an existing PrintReleaf Reseller. To do so, the reseller will generate an API key in their PrintReleaf Dashboard specifically for use with your integration, and will supply this API key to you. Use this API key for performing all API requests on behalf of the reseller. It is your responsibility to safely store the reseller's API key.

Resellers can manage their API keys from their PrintReleaf Dashboard.

Authentication to the PrintReleaf API is performed via HTTP Basic Auth. Provide the API key as the basic auth username value. You do not need to provide a password.

All API requests must be made over HTTPS. Calls made over plain HTTP will fail. API requests without authentication will also fail.

Example: Creating a Transaction

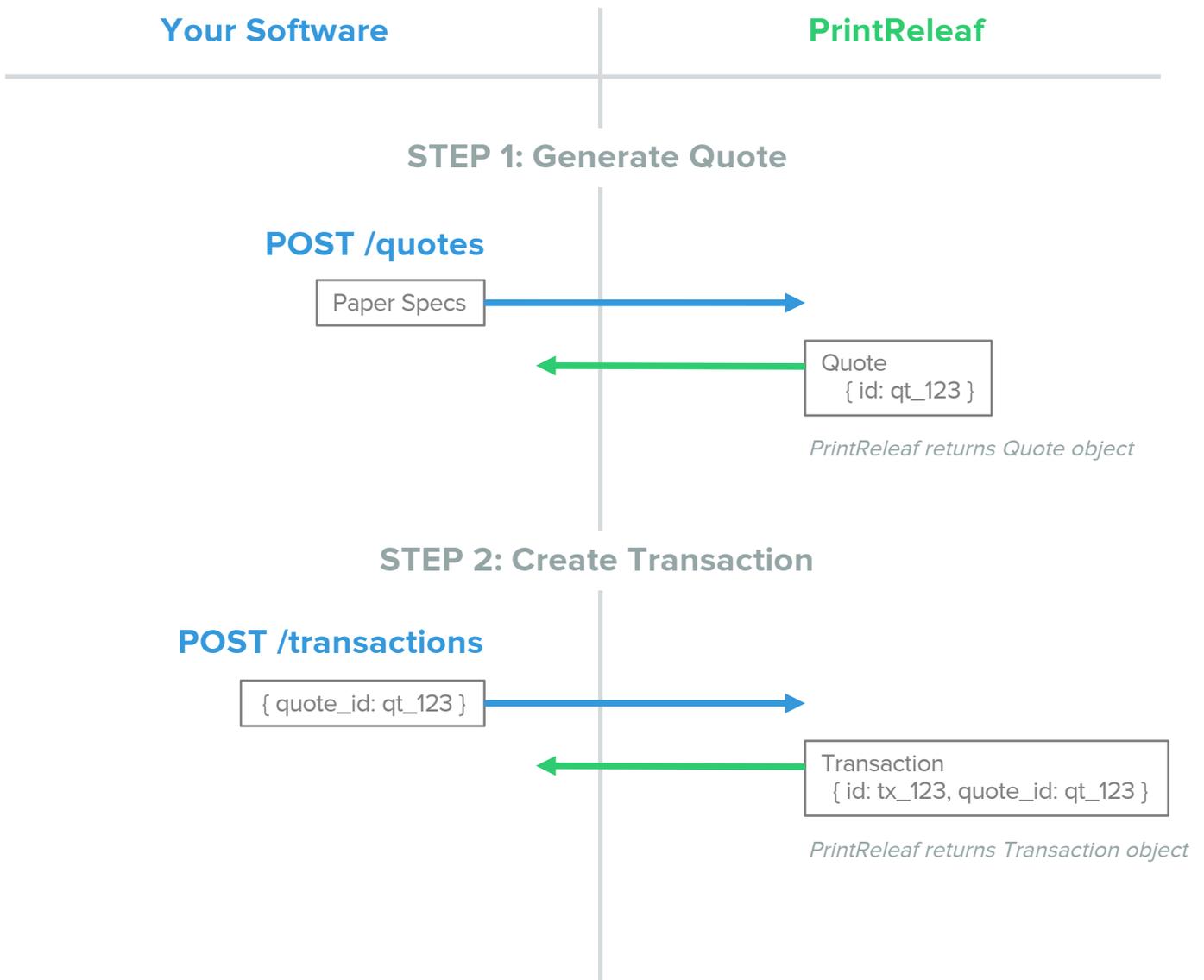
For this example, we will be using a magazine print job:

- **Quantity** 10,000 units
- **Trim Size** 8.3750" × 10.8750"
- **Cover** 2 pages of 80# #2 Gloss Cover (216 gsm)
- **Guts** 40 pages of 60# #3 Gloss Text (89 gsm)

The process of creating a Transaction has two steps:

1. First generate a Quote by providing the paper consumption data.
2. Then create a transaction by providing the `quote_id` to convert the quote to a transaction.

A typical quote-to-transaction workflow might look like this:



Example: Creating a Transaction

Step 1: Generate a Quote

To generate a quote, you simply provide the paper consumption data for the print job: the number of pages, paper width and height, as well as paper type or density. PrintReleaf uses the supplied paper specs to calculate the number of normalized Standard Pages and the equivalent number of Standard Trees.

Forming the API request

POST /quotes

Request Body:

```
{
  "items": [
    {
      "quantity": 20000,
      "width": 0.2127,
      "height": 0.2762,
      "density": 216
    },
    {
      "quantity": 400000,
      "width": 0.2127,
      "height": 0.2762,
      "density": 89
    }
  ]
}
```

Response Body:

```
{
  "id": "e9ad2b00-...",
  "account_id": "971d10ac-...",
  "created_at": "2015-10-22T00:37:11Z",
  "trees": 63.048,
  "standard_pages": 525485,
  "msrp_rate": 0.0003,
  "msrp_price": 157.65,
  "transaction_id": null,
  "items": [
    {
      "quantity": 20000,
      "width": 0.2127,
      "height": 0.2762,
      "density": 216,
      "paper_type_id": null
    },
    {
      "quantity": 400000,
      "width": 0.2127,
      "height": 0.2762,
      "density": 89,
      "paper_type_id": null
    }
  ]
}
```

Example: Creating a Transaction

Step 2: Creating the Transaction

Once the quote has been created, now you can create the transaction from that quote by executing an API call that provides the `quote_id` you would like to transact against.

Forming the API request

POST /transactions

Request Body:

```
{
  "quote_id": "e9ad2b00-..."
}
```

Response Body:

```
{
  "id": "70af5540-...",
  "account_id": "971d10ac...",
  "quote_id": "83d12ee9-...",
  "project_id": "692bb68d-...",
  "certificate_id": "70af5540-...",
  "date": "2015-10-22T01:52:12Z",
  "trees": 63.048
}
```

Appendix

API Reference

Full API reference & documentation

<https://printreleaf.com/docs/api>

The PrintReleaf Standard

<https://printreleaf.com/standard>

Support & Questions

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