



# 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

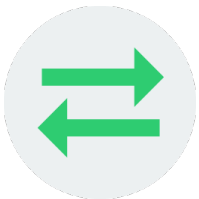
This document is for designers and architects who need to integrate the PrintReleaf platform with their own software applications. The PrintReleaf platform is well-suited for integration into a wide variety of Commercial Graphic Print (CGP) applications, including MIS, ERP, estimating, quoting, and point-of-sale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



## Biomass Offset

A Biomass Offset is an exchange of paper consumption for reforested trees, representing the paper consumption in Standard Pages and the equivalent number of Standard Trees. A biomass offset is always linked to an end customer account. When a biomass offset 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 Biomass Offset. 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 biomass offset 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/m<sup>2</sup> 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; m<sup>2</sup> for area; g for mass; g/m<sup>2</sup> 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 Biomass Offsets**

#### Default scope

GET https://api.printreleaf.com/v1/biomass/offsets

#### Scoped to Account ID=123

GET https://api.printreleaf.com/v1/accounts/123/biomass/offsets

# 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 the integration. 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 Biomass Offset

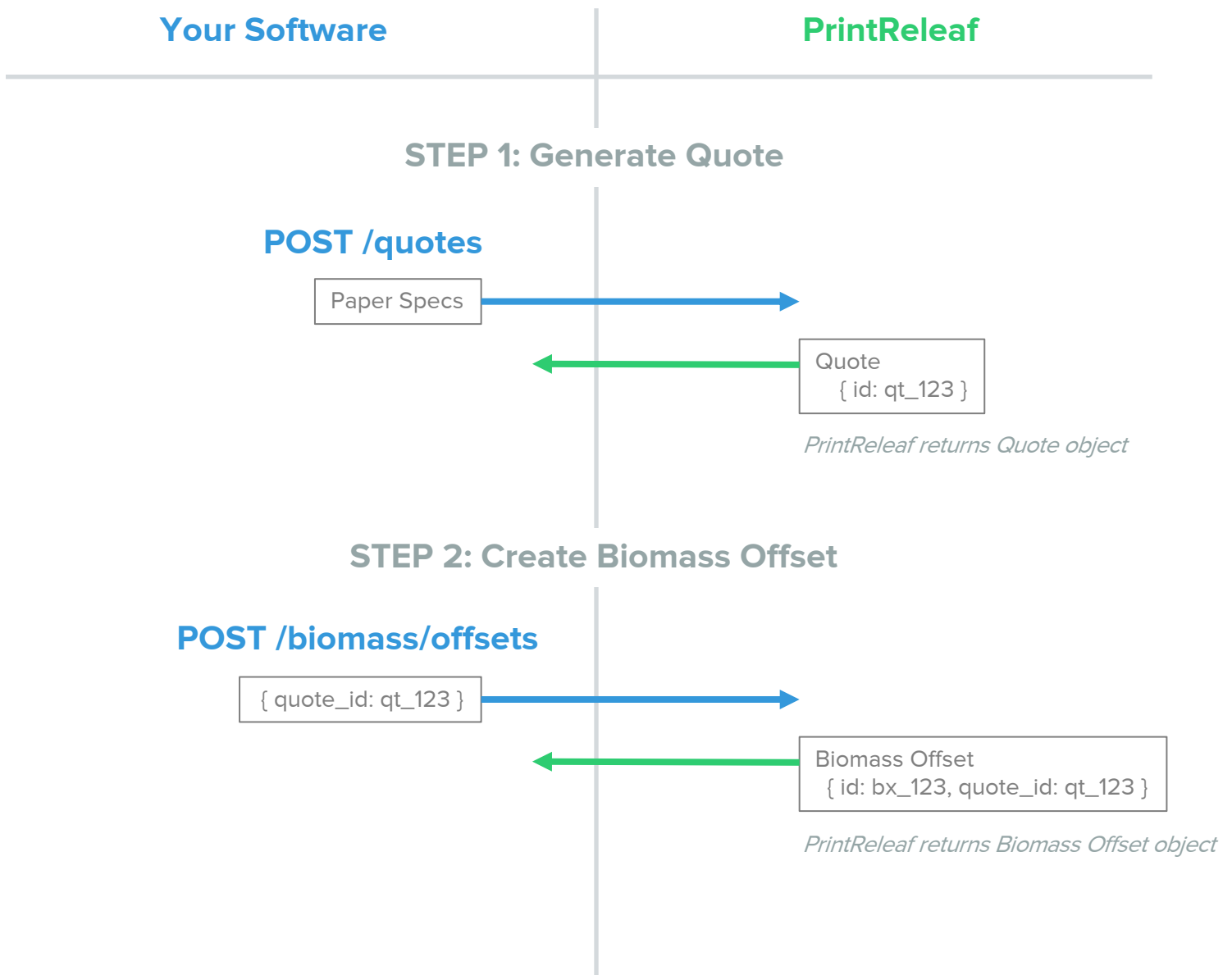
For this example, we will be using a magazine print job:

- **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 Biomass Offset has two steps:

1. First generate a Quote by providing the paper consumption data.
2. Then create a Biomass Offset by providing the `quote\_id`.

A typical workflow might look like this:



# Example: Creating a Biomass Offset

## Step 1: Generate a Quote

To generate a quote, you 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. You must also provide the `project\_id` of the reforestation project where you would like the trees planted for this print job.

## Forming the API request

**POST /quotes**

**Request Body:**

```
{
  "project_id": "692bb68d-...",
  "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",
  "project_id": "692bb68d-...",
  "trees": 63.048,
  "price": 157.65,
  "biomass_offset_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 Biomass Offset

## Step 2: Creating the Biomass Offset

Once the quote has been created, now you can create the biomass offset from that quote by executing an API call that provides the quote\_id you would like to transact against.

### Forming the API request

**POST /biomass/offsets**

**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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