Yojee
API Integration Intro Guide

June 2021
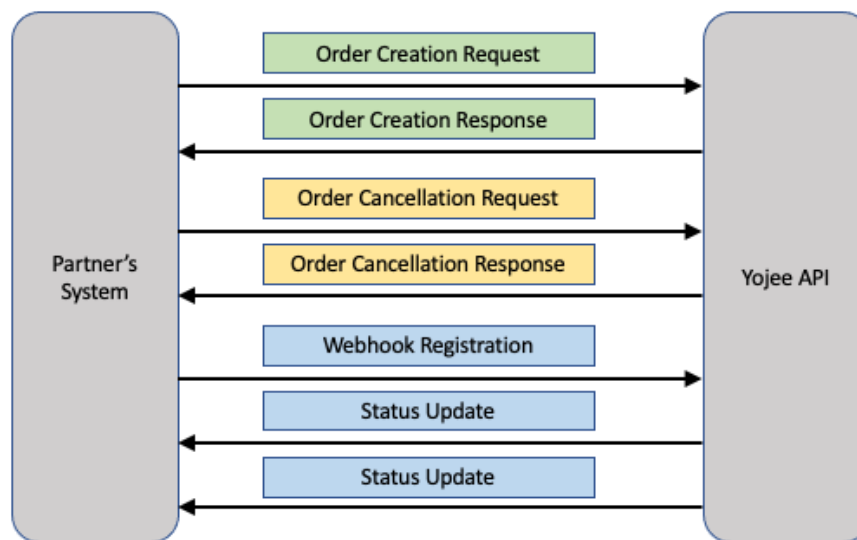
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Overview

The following diagram details the data flow between an external system and Yojee.

The three primary RESTFul API calls related to this project are:
- Multi-leg Order Creation
  (https://umbrella.yojee.com/api/swagger/index.html#/[Dispatcher]%20Order/ApiWeb_V3_Dispatcher_OrderController_create_multi_leg)
- Cancel Order
  (https://umbrella.yojee.com/api/swagger/index.html#/[Dispatcher]%20Order/ApiWeb_V3_Dispatcher_OrderController_cancel_order)
- Create Webhook
  (https://umbrella.yojee.com/api/swagger/index.html#/[Dispatcher]%20Webhook/ApiWeb_V3_Dispatcher_WebhookController_create)

Basic information on APIs

Base URL

Notice that the above URLs to the API information starts with
https://umbrella.yojee.com. This is the base URL for the PRODUCTION API
For development and testing purposes, please use
https://umbrella-staging.yojee.com. In this document we will use [BASEURL] to
represent the base URL

Mandatory Parameters

Most of the API calls will require the following parameters in the header:

Parameter	Type
company_slug	string
access_token	string

Obtain this information from the Yojee team working with you. In this document we
will use [SLUG] and [TOKEN] to represent the company_slug and access_token
respectively.

Multi-leg Order Creation

This API call will create an order in Yojee.

POST	[BASEURL]/api/v3/dispatcher/orders_multi_leg

Request Headers

Parameter	Required?	Description
company_slug	Y	Dispatcher company slug
access_token	Y	Access token
Content-Type	Y	Use 'application/json'

Request Body

Main

Parameter	Required?	Description
items	Y	An array of items to be transported in this order. See **Item** below for the item object definition
steps	Y	An array of steps (pickup/dropoff) for the order. See **Step** below for the step object definition
item_steps	Y	An array defining the sequence for the steps for the items to be transported. See **ItemStep** below for the item_step object definition
sender_id	Y	The id of the sender for this order
sender_type	Y	For most integration this is 'organisation'
placed_by_user_profile_id	N	Only in cases where there are Corporate Users created under Corporate Sender
external_id	N	For entering any tracking number from partner system

container_no	N	

Item

Parameter	Required?	Description
description	N	
height	N	
length	N	
width	N	
weight	N	
volume	N	
volumetric _weight	N	
payload_type	Y	Item Type defined in Yojee Dispatcher
service_type	Y	Service Type define in Yojee Dispatcher
service_type_id	Y	Service Type ID of Service Type
external_customer_id	N	For storing external reference
external_customer_id2	N	For storing external reference
external_customer_id3	N	For storing external reference
info	N	

Step

Parameter	Required?	Description
position	Y	Start from 0 and increment 1 for each step
address	Y	Pickup/Dropoff Address
address2	N	
country	Y	
state	N	

postal_code	N	
contact_company	N	
contact_name	N	
contact_phone	N	The phone number if SMS notification is required. The corresponding notification setting also needs to be enabled in Yojee Dispatcher
contact_email	N	The email address if email notification is required. The corresponding notification setting also needs to be enabled in Yojee Dispatcher
from_time	Y	Start of time slot for this step
to_time	Y	End of time slot for this step
lat	N	If lat/lng for the location is not provided, Yojee will attempt to geocode using the address
lng	N	If lat/lng for the location is not provided, Yojee will attempt to geocode using the address

ItemStep

Parameter	Required?	Description
order_step_id	Y	
item_id	Y	
step_group	Y	
step_sequence	Y	
type	Y	'pickup' or 'dropoff'

Sample Request Body Payload

```
{
  "items": [
```

```json
    {
      "description": null,
      "height": 333,
      "length": 333,
      "weight": 33,
      "width": 333,
      "volume": 36926037,
      "volumetric_weight": 7385.2074,
      "payload_type": "package",
      "service_type": "region2",
      "service_type_id": 325,
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "info": null
    }
  ],
  "steps": [
    {
      "position": "0",
      "address": "Outram Road, Singapore General Hospital, Singapore",
      "address2": null,
      "country": "Singapore",
      "state": "",
      "postal_code": "169608",
      "contact_company": null,
      "contact_name": null,
      "contact_phone": "+65",
      "contact_email": null,
      "from_time": "2020-12-28T17:00:00.000Z",
      "to_time": "2020-12-29T17:00:00.000Z",
      "lat": 1.279677,
      "lng": 103.835984
    },
    {
      "position": "1",
      "address": "Singapore Zoo, Singapore",
      "address2": null,
      "country": "Singapore",
      "state": "",
      "postal_code": "729826",
      "contact_company": null,
      "contact_name": null,
      "contact_phone": "+65",
      "contact_email": null,
      "from_time": "2021-01-01T17:00:00.000Z",
      "to_time": "2021-01-04T17:30:00.000Z",
      "lat": 1.4043485,
      "lng": 103.793023
    }
  ],
```

```
  "item_steps": [
    {
      "order_step_id": 0,
      "item_id": 0,
      "step_group": 1,
      "step_sequence": 1,
      "type": "pickup"
    },
    {
      "order_step_id": 1,
      "item_id": 0,
      "step_group": 1,
      "step_sequence": 2,
      "type": "dropoff"
    }
  ],
  "sender_id": 1437,
  "sender_type": "organisation",
  "placed_by_user_profile_id": "1437",
  "external_id": null,
  "container_no": null
}
```

Responses

HTTP Response Code	Description
200	Order creation is successful
422	Order creation failed. Reason is included in the payload

Sample Success Response

```
{
    "data": {
        "cancelled_at": null,
        "container_no": null,
        "display_price": null,
        "external_id": null,
        "id": 245215,
        "inserted_at": "2021-01-13T17:09:52.218457Z",
        "number": "O-1NEB0HTXJFVW",
        "order_items": [
            {
                "cod_price": null,
```

```
                "id": 268096,
                "tracking_number": "YOJ-7HSZ5YYUJP1A"
            }
        ],
        "paid": false,
        "placed_by_user_profile_id": 1437,
        "price": null,
        "sender_id": 1437,
        "status": "created"
    },
    "message": "Order created!"
}
```

Same Failure Response

HTTP Response Code: 422

```
{
    "data": {
        "00000": [
            "item_steps is referring the items or steps which doesn't exist or
steps or items has extra entries that item_steps is not referring to"
        ]
    }
}
```

Order Cancellation

This API call will cancel an order in Yojee.

POST	[BASEURL]/api/v3/dispatcher/orders/cancel

Request Headers

Parameter	Required?	Description
company_slug	Y	Dispatcher company slug
access_token	Y	Access token
Content-Type	Y	Use 'application/json'

Request Body

Parameter	Required?	Description
order_number	Y	The Yojee order number to cancel
external_id	N	An external ID for the order entered during Order Creation. This can be the tracking number from partner system

Responses

HTTP Response Code	Description
200	Order cancellation is successful
422	Order cancellation failed. Reason is included in the payload

Sample Success Response

```
{
    "message": "Order canceled."
}
```

Same Failure Response

HTTP Response Code: 422

```json
{
    "data": {
        "BK0510": [
            "Order not found"
        ]
    }
}
```

Webhooks

Webhook URLs can be registered with Yojee and the Yojee system will make HTTP calls to the URL with the relevant payload when a status update of the Order is triggered.

Events Supported

Events currently being supported are:

Event Name	Description
sender.created	When a Sender is created
order.created	When an Order is created
task.accepted	When a task (assigned to a driver - pickup / drop-off) is accepted
task.completed	When a task (assigned to a driver - pickup / drop-off) is completed
task.failed	When a task (assigned to a driver - pickup / drop-off) is reported
task.reassigned	When a task (assigned to a driver & not accepted yet) is reassigned
task.transferred	When a task is transferred to an upstream / downstream partner
order_item.cancelled	When an Order Item is cancelled
driver.arrived	When a driver has arrived at the pickup / drop-off destination point
driver.departed	When a driver has departed from the pickup / drop-off destination point
order.transfer.rejected	When a transferred Order is rejected by the downstream partner

To register a webook,

POST	[BASEURL]/api/v3/dispatcher/webhooks

Request Headers

Parameter	Required?	Description
company_slug	Y	Dispatcher company slug
access_token	Y	Access token

Request Body

Note: Send the following as form data in the POST request body

Parameter	Required?	Description
url	Y	The endpoint to register the webhook with
events[]	Y	The event to register the webhook with. For multiple events, repeat with another events[] parameter

To illustrate the params needed please take the following cURL command as reference, remember to replace the [BASEURL], [SLUG] and [TOKEN]. [WEBHOOK_URL] will be the URL where you will receive the webhook HTTP POST calls. Note that you can choose the events you want to register for and it is not mandatory to register for all events.

```
curl --location --request POST '[BASEURL]/api/v3/dispatcher/webhooks' \
--header 'COMPANY_SLUG: [SLUG]' \
--header 'ACCESS_TOKEN: [TOKEN]' \
--form 'url="[WEBHOOK_URL]"' \
--form 'events[]="sender.created"' \
--form 'events[]="task.accepted"' \
--form 'events[]="task.reassigned"' \
--form 'events[]="task.transferred"' \
--form 'events[]="task.completed"' \
--form 'events[]="task.failed"' \
--form 'events[]="driver.arrived"' \
--form 'events[]="driver.departed"' \
--form 'events[]="order.created"' \
--form 'events[]="order_item.cancelled"' \
--form 'events[]="order.transfer.rejected"'
```

Responses

HTTP Response Code	Description
200	Webhook registration is successful
422	Webhook registration failed. Reason is included in the payload

Sample Success Response

```
{
    "data": {
        "company_id": 1,
        "events": [
            "sender.created",
            "task.accepted",
            "task.reassigned",
            "task.transferred",
            "task.completed",
            "task.failed",
            "driver.arrived",
            "driver.departed",
            "order.created",
            "order_item.cancelled",
            "order.transfer.rejected"
        ],
        "id": 125,
        "inserted_at": "2021-01-13T07:59:08.542587",
        "secret_token": "OQGAM5JKCXYRYPIQ6MLI5KRTQJ6OUZL6",
        "status": "active",
        "updated_at": "2021-01-13T07:59:08.542587",
        "url": "https://kcyyojee.free.beeceptor.com"
    },
    "message": "Webhook was created."
}
```

Same Failure Response

HTTP Response Code: 422

```
{
    "data": {
        "EC401": [
            "url can't be blank"
        ]
    }
}
```

Webhook Payload Samples

When the respective event is triggered, a HTTP POST will be called to the registered Webhook URL with the following sample payloads.

Request Body

This is the format of the HTTP Post request body your system will receive in the webhook call

Parameter	Description
id	Unique identifier for the event
event_type	Event type triggered
company_slug	Company slug the event belongs to
webhook_id	The id of the webhook that has subscribed to this event
created_at	Time at which the event was created. Measured in seconds since the Unix epoch
data	Object containing the data associated with the event. For a different event type the data is different. See sample payloads below for examples

Event: order.created

```
{
  "company_slug": "yojee",
  "created_at": 1573616200,
  "data": {
    "cancelled_at": null,
    "completion_time": null,
    "container_no": null,
    "display_price": null,
    "external_id": null,
    "id": 3465,
    "inserted_at": "2019-11-13T03:36:19.446090Z",
    "number": "O-IWWYG6ADYLLW",
    "order_items": [
      {
        "external_customer_id": null,
        "external_customer_id2": null,
        "external_customer_id3": null,
```

```
        "id": 14411,
        "inserted_at": "2019-11-13T03:36:19.473411Z",
        "item": {
          "description": null,
          "global_tracking_number": "Y-V6QYRPCGCU9B",
          "height": "50",
          "id": 14279,
          "length": "50",
          "payload_type": "package",
          "quantity": null,
          "volume": "125000",
          "volumetric_weight": "25",
          "weight": "30",
          "width": "50"
        },
        "service_type": "next_day",
        "status": "created",
        "tracking_number": "YOJ-ZWRW1ZBWF5MZ",
        "transfer_info": null
      }
    ],
    "price": null,
    "sender": {
      "id": 745,
      "name": null,
      "organisation_name": "Nikola Test Company",
      "type": "organisation"
    },
    "status": "accepted"
  },
  "event_type": "order.created",
  "id": "72574e3c-77e1-445f-805a-5c246d4dda55",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: order_item.cancelled

```
{
  "company_slug": "yojee",
  "created_at": 1573616529,
  "data": {
    "event_time": "2019-11-13T03:40:44.802915Z",
    "external_customer_id": null,
    "external_customer_id2": null,
    "external_customer_id3": null,
    "tracking_number": "YOJ-ZWRW1ZBWF5MZ"
  },
  "event_type": "order_item.cancelled",
  "id": "1c0d2750-b75b-4831-b7d2-2c79a1ef36ce",
```

```json
    "webhook_id": 96,
    "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: task.accepted (Pickup)

```json
{
  "company_slug": "yojee",
  "created_at": 1573618207,
  "data": {
    "driver": {
      "id": 683,
      "name": "Nikola Test Driver"
    },
    "event_time": "2019-11-13T04:08:36.848982Z",
    "id": 35852,
    "inserted_at": "2019-11-13T04:02:50.850823Z",
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-VBBS9LFIOBG9"
    },
    "task_type": "pickup"
  },
  "event_type": "task.accepted",
  "id": "4f8d2be4-1306-465e-8651-1e0d5b86c8e6",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: task.accepted (Drop-off)

```json
{
  "company_slug": "yojee",
  "created_at": 1573618207,
  "data": {
    "driver": {
      "id": 683,
      "name": "Nikola Test Driver"
    },
    "event_time": "2019-11-13T04:08:36.848982Z",
    "id": 35851,
    "inserted_at": "2019-11-13T04:02:50.850823Z",
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-VBBS9LFIOBG9"
```

```
    },
    "task_type": "dropoff"
  },
  "event_type": "task.accepted",
  "id": "16f40019-424e-4a29-baa2-a7886c661921",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: driver.arrived

```
{
  "company_slug": "yojee",
  "created_at": 1573618472,
  "data": {
    "driver": {
      "id": 683,
      "name": "Test Driver"
    },
    "event_time": "2019-11-13T04:12:47.529000Z",
    "id": 35852,
    "inserted_at": "2019-11-13T04:02:50.850823Z",
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-VBBS9LFIOBG9"
    },
    "task_type": "pickup"
  },
  "event_type": "driver.arrived",
  "id": "6e450fe1-973c-4056-b588-11b433095718",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: driver.departed

```
{
  "company_slug": "yojee",
  "created_at": 1573618776,
  "data": {
    "driver": {
      "id": 683,
      "name": "Nikola Test Driver"
    },
    "event_time": "2019-11-13T04:18:11.016000Z",
    "id": 35852,
    "inserted_at": "2019-11-13T04:02:50.850823Z",
```

```
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-VBBS9LFIOBG9"
    },
    "task_type": "pickup"
  },
  "event_type": "driver.departed",
  "id": "f17246f9-35ab-44c6-96c8-0061cb1dcf08",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: task.completed

```
{
  "company_slug": "yojee",
  "created_at": 1573619045,
  "data": {
    "driver": {
      "id": 683,
      "name": "Nikola Test Driver"
    },
    "event_time": "2019-11-13T04:22:18.000000Z",
    "id": 35851,
    "inserted_at": "2019-11-13T04:02:50.850823Z",
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-VBBS9LFIOBG9"
    },
    "pod_url":
"https://umbrella-dev.yojee.com/api/v3/public/pods/order_item/YOJ-VBBS9LFIOBG9
",
    "task_type": "dropoff"
  },
  "event_type": "task.completed",
  "id": "4b067931-b83b-45f4-92ff-85c908a6f417",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Event: task.failed

```
{
  "company_slug": "yojee",
  "created_at": 1573619526,
```

```
  "data": {
    "driver": {
      "id": 683,
      "name": "Nikola Test Driver"
    },
    "event_time": "2019-11-13T04:31:09.000000Z",
    "id": 35854,
    "inserted_at": "2019-11-13T04:29:51.353982Z",
    "order_item": {
      "external_customer_id": null,
      "external_customer_id2": null,
      "external_customer_id3": null,
      "tracking_number": "YOJ-MDMSLHECUDWP"
    },
    "task_type": "pickup"
  },
  "event_type": "task.failed",
  "id": "730d3078-7c55-4afe-a90d-890f64545a9b",
  "webhook_id": 96,
  "yojee_instance": "https://umbrella-dev.yojee.com"
}
```

Delivery Headers

HTTP POST payloads that are delivered to your webhook's configured URL endpoint will contain a header.

Header	Description
yojee-signature	The HMAC hex digest of the response body. The HMAC hex digest is generated using the SHA256 hash function and the secret as the HMAC key.
yojee-request-timestamp	Timestamp used as input for verifying signature

Verifying Signatures

Yojee signs the webhook events it sends to your endpoints. We do so by including a signature using a hash-based message authentication code (HMAC) with SHA-256 in each event's **yojee-signature** header. This allows you to validate that the events were sent by Yojee, not by a third party.

> Note: Before you can verify signatures, you need to retrieve your endpoint's **secret** from us. Each secret is unique to the endpoint to which it corresponds.

The following are the steps to verify the signature:

1. Retrieve **yojee-signature** and **yojee-request-timestamp** from header
2. Prepare signed payload string
   Concatenate: yojee-request-timestamp (as string), the character '.', and the JSON request body
3. Determine Expected Signature
   Compute an HMAC with the SHA256 hash function. Use the endpoint's signing **secret** as the key, and use the prepared signed payload string as the message.
4. Compare signatures

Compare the signature in the HTTP Header to the Expected Signature. If the signatures match, compute the difference between the current timestamp and the received timestamp to decide if the difference is within the tolerance of your system.

Responding to a Webhook

To acknowledge receipt of a webhook, your endpoint should return a **2xx HTTP status code**. All response codes outside this range, including **3xx codes**, will indicate to Yojee that you did not receive the webhook.

We will attempt to deliver your webhooks for up to five times with an exponential back off, according to the following table:

Retry	Seconds
1	120
2	360
3	840
4	1800
5	3720

Best Practice

If your webhook script performs complex logic, or makes network calls, it's possible that the script would time out before Yojee sees its complete execution. For that reason, you might want to have your webhook endpoint immediately acknowledge receipt by returning a **2xx HTTP status code**, and then perform the rest of its duties.