LOGISTICS+TECH SUMMIT

organized by hypertrack

Getting started with HyperTrack

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What to look forward to

Live Workshops

HyperTrack is going to be on the road hosting workshops and meetups in cities around the world

Podcasts & Interviews

We'll be hosting podcast and interview sessions with engineers in the Logistics Tech space to hear about all the amazing things people like you are working on

Latitude and Longitude Coordinates

What you should know about coordinates

They work in Degrees, Minutes, and Seconds.

For example, the University of Waterloo's coordinates are 43.4723° N, 80.5449° W, which breaks down into 43 Degrees, 47 Minutes, and 23 Seconds North and 80 Degrees, 54 Minutes, and 49 Seconds West

They're Messy

Working with raw GPS data without any interpolation, smoothing, or multi source data can lead to very inaccurate and messy data

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Privacy is vital

Beyond working with Identity based information location is one of the most revealing pieces on info, someone's Lat Long coordinates can tell you EXACTLY where they are

Evolution of Logistics Technology

First Generation Technologies

Era of the DIY Solution

Find your own providers

Before the proliferation of logistics technologies you had to find your own cloud providers, your own mapping providers, and create your own ways to make all that information available for clients

Development took ages

Creating scalable and presentable first generation solutions took companies like Uber, DoorDash, and Lyft years to build and develop with large engineering teams

Major Lack of Efficiency and Predictability

Because of the rush of creating an minimum viable product things like battery efficiency and cost management tend to get pushed to side then becoming ongoing concerns

Second Generation Technologies

App Suites and Platforms

Lacking Customization

Though app suites and platforms were a huge leap forward from DIY solutions, they lack the customizability that modern solutions need and force engineers and companies to adapt to them instead.

Webhooks and Automation

App suites and platforms tend to restrict options for automation and event handling to what the platform can do on their end making complex business logic and support workflows difficult if not impossible to implement

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Not order tracking suites first

Most app suites and platforms started as order management and dispatch tools and as such they tend to be behind the curve when it comes to live order tracking and real time data acquisition

Third Generation Technologies

API based solutions

Cutting Edge

We've only just truly entered the third generation of logistics technology meaning innovation and new features are coming out constantly as the space grows

Own your data

Because API based solutions don't own your data or use proprietary storage types, you can have full control over your data security and customer relationships

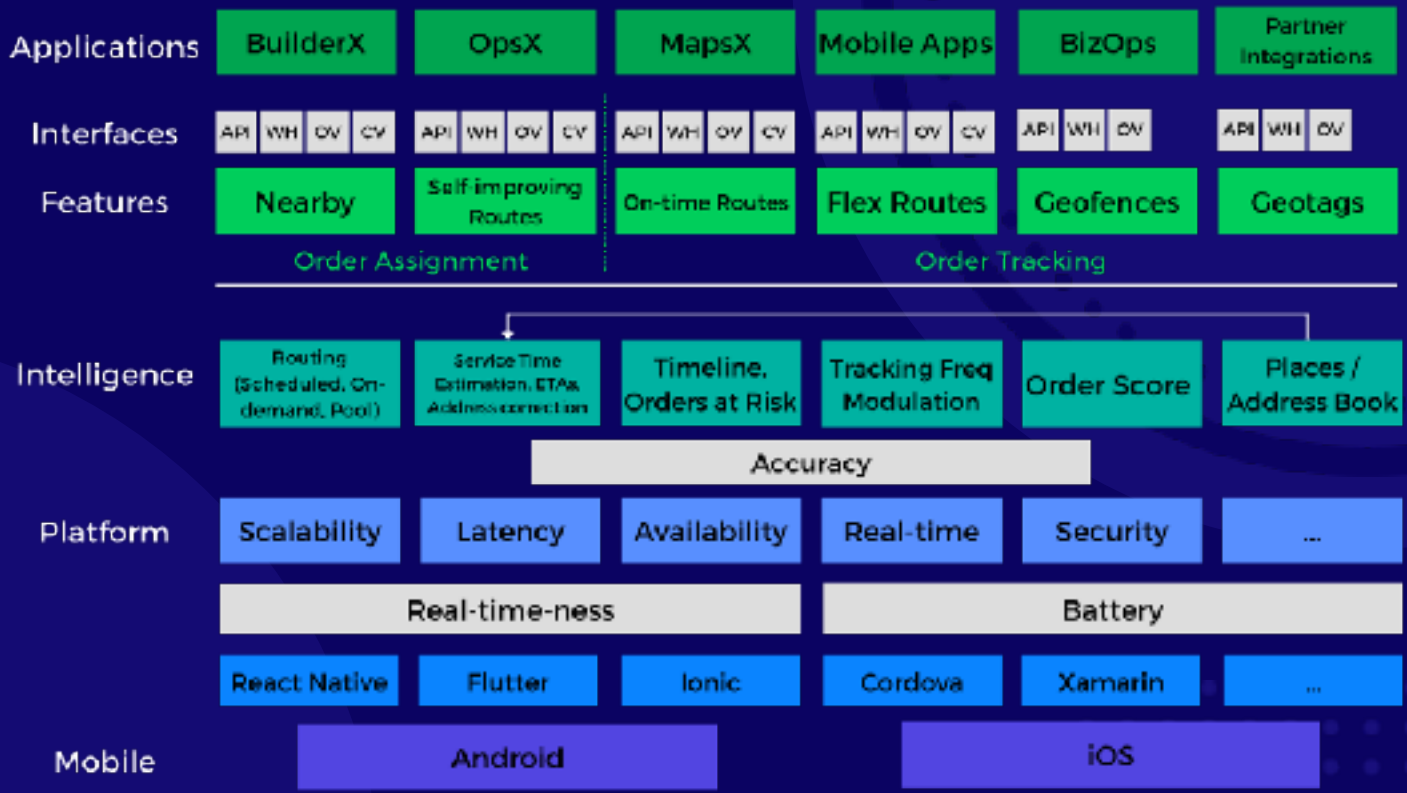
Focus on your Business

Using API Based solutions with a robust set of webhooks enables you to make your business logic as detailed and proactive as possible by making real time data instantly available with a single API call

Designed for Engineers

API Based solutions tend to be built with engineers and engineering teams in mind, minimizing engineering time and costs with implementation times in the days and weeks instead of years

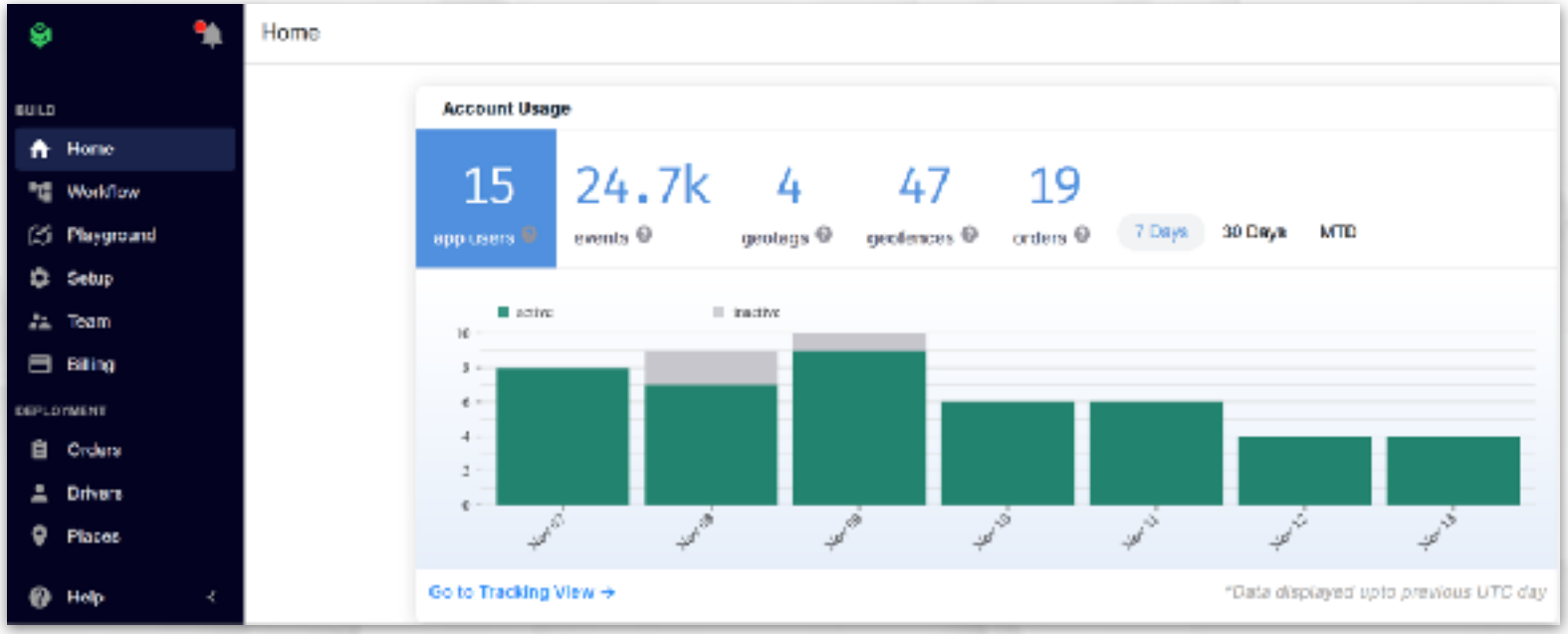
What is HyperTrack?



Let’s get into the tech

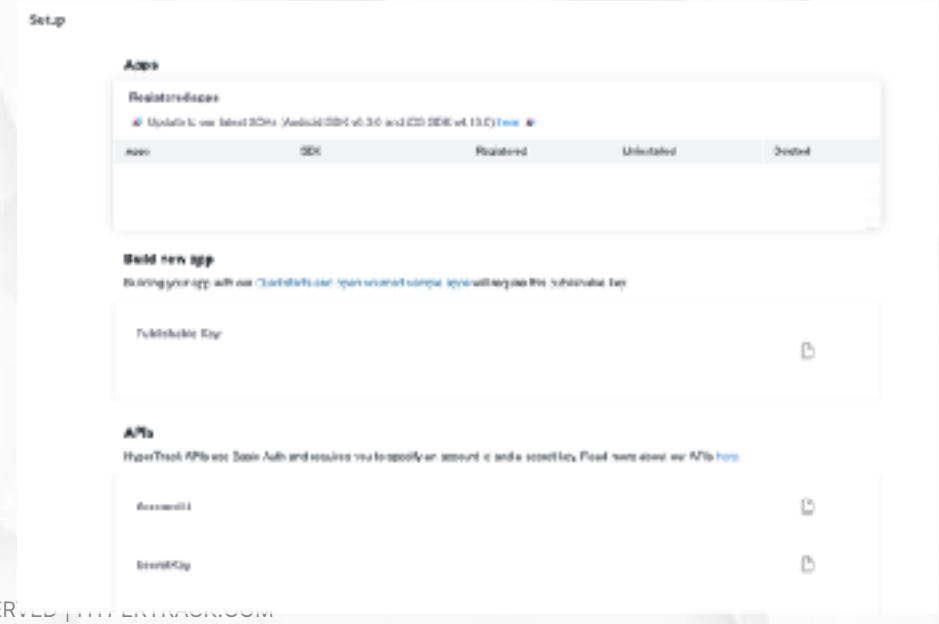
Step 1

Sign up for a free HyperTrack account and log in to the dashboard



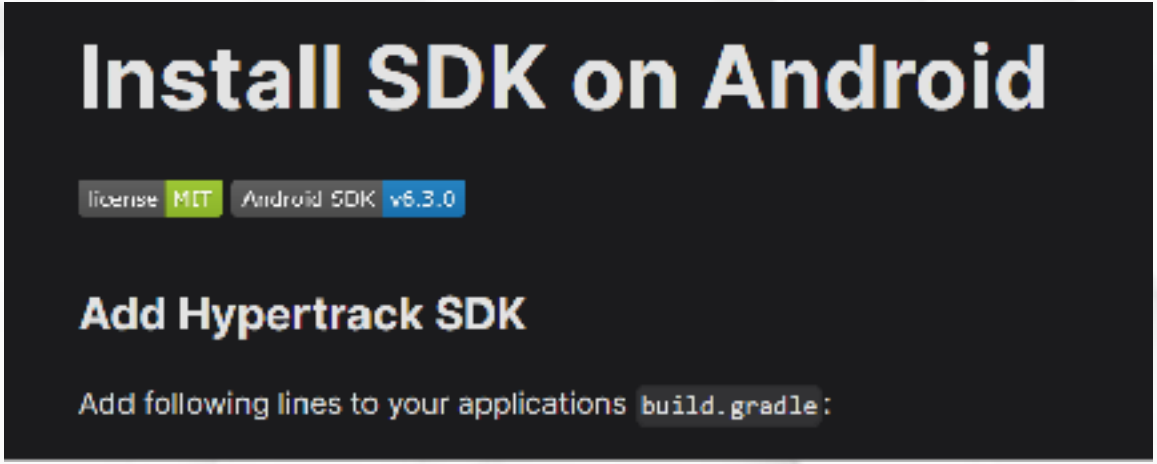
Step 1

From your setup screen you'll want to note down your Account ID, Secret Key, and Publishable Key. You will need these to make API calls and Embed Views



Step 3

Setup the SDK or Install the visits app using the instructions at https://hypertrack.com/docs/install-sdk/



Drivers

How to setup Driver’s to maximize efficiency

- Add different licenses, equipment, and qualifications directly to your Driver profiles and let HyperTrack handle assigning orders to the most qualified drivers
- Import your driver’s schedules so HyperTrack can make sure order’s aren’t assigned to drivers on their days off
- Fully integrate driver’s with Ops Groups to simplify driver management as you grow by automatically grouping drivers

How to setup Driver's to maximize efficiency

Product Types

- Restrict the types of orders a driver can be assigned based on qualifications and equipment

Schedule

- Let us handle making sure your pre scheduled orders are assigned to drivers who are actually working

Home

- This lets us take into account the driver's expected trip start location when routing

Product Types	optional	These are the product types that the driver can fulfill. These must be a subset of the product types enabled for the operations group to which the driver is associated	string[]	['ice-cream', 'grocery']
Home	optional	This is the home destination of the driver which will be used in case the driver is expected to start routes from home	GeoJSON Point	
Schedule	optional	This describes the default work schedule of the driver by day.	object[Date string]	
Unavailable on	optional	This is to define temporary leaves the driver might take that need to be managed.	array[Date string]	

Driver Sample Payload

Geofences

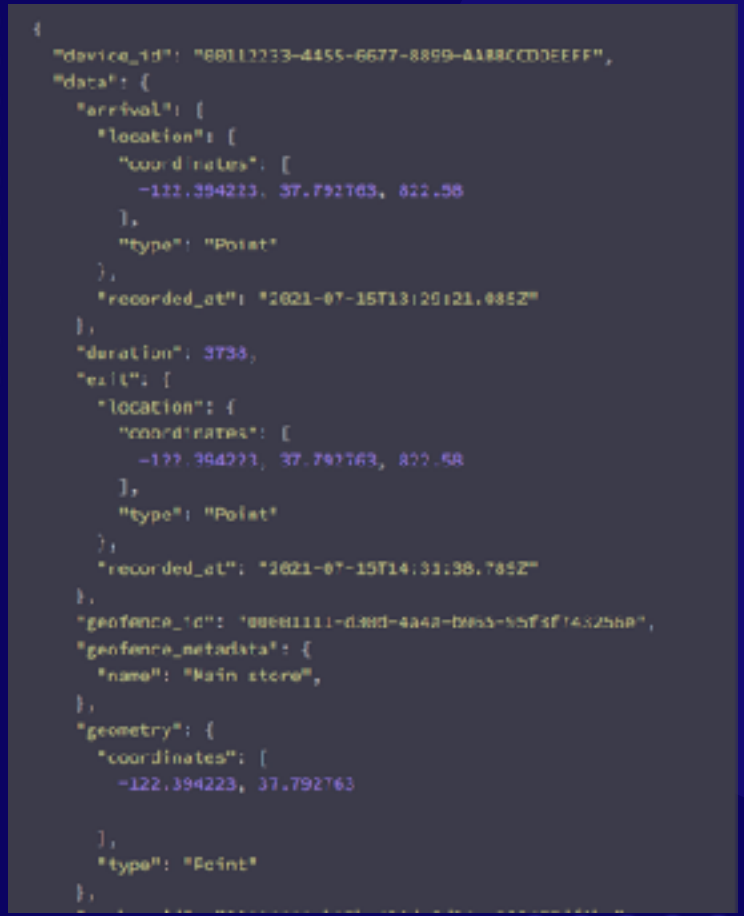
What is a Geofence?

Geofences are coordinate based location fences that let you track information like entries, exits, and time spent in an area

This can be exceptionally useful for things like Arrival notifications or keeping track of field service professionals as they work a job

How do I interact with Geofences?

Via the Webhooks in the Events stream HyperTrack sends you webhooks whenever a driver enters or exits a geofence. Webhooks include information like exact entry exit coordinates and the duration inside the geofence.



How do I interact with Geofences?

Via the Geofences API you can manage and query all your geofences at a moments notice including:

- Creating Geofences
- Getting a list of all active geofences
- Activating and Deactivating geofences
- Get all the events for a particular geofence

```
payload='{
  "geofences": [
      {
          "geometry": {
              "type": "Point",
              "coordinates": [ 122.395223, 37.7947633]
          },
          "metadata": {
              "station": "A"
          },
          "radius": 50
      },
      {
          "geometry": {
              "type": "Polygon",
              "coordinates": [[
                [-122.395237, 37.7947693],
                [-122.402321, 37.794374],
                [-122.401371, 37.790205],
                [-122.389450, 37.791271],
                [-122.395237, 37.7947693]
              ]]
          },
          "metadata": {
              "dropoff": "1ABC"
          }
      }
  ]
}'
```

Nearby Search

What is Nearby Search?

Nearby Search lets you find drivers in a region sorted either by distance or ETA

- Region based Nearby Searches are great for when you just want to find out who's in a particular area and want to prioritize minimizing costs
- If an order is time sensitive you want to use an ETA-Based Nearby Search to help you meet customer commitments and provide transparency to customers in the event of a delay

Driver Device ID	Distance
00000000-047A-431F-BFF9-9B99B56C5E6C	0.18 km
00000000-1F7B-4378-8ED0-3FE16BF413A4	0.28 km
00000000-4933-4781-AB2B-B542D2D441B4	0.31 km
00000000-A450-4074-BD73-DD51341F06B0	0.50 km
00000000-B4B6-467A-BDB7-23C4FDC889DF	0.96 km

Nearby Search API

With our Nearby Search API you can filter your searches for increased control

- Filtering based on driver profiles and metadata
- Include driver's that are already on a trip
- Based on live ETAs

```
payload="""{
  "order":{
    "destination":{
      "geometry":{
        "coordinates":[
          -122.3599933082254,
          37.753651385106075
        ],
        "type":"Point"
      }
    },
    "order_id": "ycur_crder_id",
    "metadata": {"crder_type": "grocery"}
  },
  "search_type":"region",
  "search_filter":{
    "driver_profile":{
      "gig_type":"ridesharing"
    },
    "include_on_trip":true,
  },
}"""
```

How Nearby Search can power your business logic

- Enable On-demand dispatch
- Quick and easy driver filtering
- Queue up orders for drivers to prevent downtime

Geotags

What are Geotags?

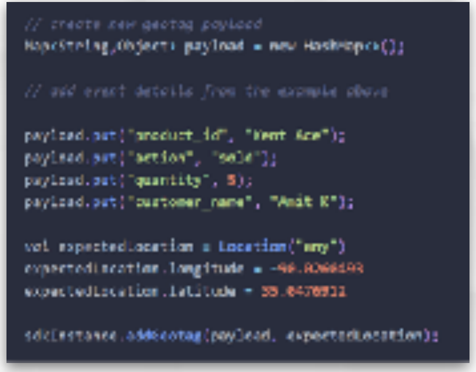
- Geotags are metadata stored on a map at specific geographic locations
- You can implement Geotags using just our SDK and no server side code
- Whenever a driver marks an order completed they drop a geotag with all the relevant information for that order
- HyperTrack then computes the distance, time taken, and tracking rate between geotags to compile trip data
- Geotags can also include expected destinations and calculate deviations to quickly build an address book

Using geotags to track expected location

1. Set the expected order completion location on the geotag

1. Have the driver complete the order as they normally would

1. Post completion check the order completion webhook or go onto the dashboard to get deviation information



Other geotag order tracking functionality

You can also retrieve other detailed order tracking information with only a Geotag implementation

- Route Descriptions
- Time between geotags
- Distance between geotags
- Information on the previous geotag in a trip


```
{
  "created_at": "2019-07-01T14:01:00.000000Z",
  "recorded_at": "2019-07-01T14:00:00.000000Z",
  "data": {
    "metadata": { "orderId": "123490809808" },
     "deviation": 14,
    "route_to":{
      "distance": 238,
      "duration": 63,
      "start_location": {
        "geometry": {
            "coordinates": [ -6.271, 57.6398983 ],
            "type": "Point"
        },
        "recorded_at": "2019-07-01T13:52:08.213000Z"
      }
    }
  },
  "location": {
      "type": "Point",
      "coordinates": [ -6.2755, 57.6398983 ]
  },
  "expected_location": {
    "type": "Point",
    "coordinates": [ -6.2756, 57.6398983 ]
  },
  "device_id": "00112233-4455-6677-8899-AABBCCDDEEFF",
  "type": "geotag",
  "version": "2.0.0"
}
```

Operations Groups

Operations Groups let you define your business segments in HyperTrack

- Operations groups are ways of grouping people and orders based on parameters such as operating area, warehouse, qualifications, etc.
- Operations groups are subdivisions of your Business broken down into regions, cities, warehouses, or other categories depending on your organization
- Simplify your operations teams by giving them views that are prefiltered to what they manage

Planning your Orders

Routing Orders

Flex Routes

- Driver's can complete trips in an order they choose
- Simply track where they went between orders and data about the trip

On-Time Routes

- HyperTrack creates a route for your driver
- Automatically account for scheduled completion windows and ETAs for time sensitive orders

```
payload="""{
    "orders": [
        {
            "order_handle": "test_route_order_1",
            "destination": {
                "geometry": {
                    "type": "Point",
                    "coordinates": [
                        -73.974709,
                        40.790886
                    ]
                },
                "radius": 30
            },
            "scheduled_at": "2022-10-06T14:40:00.000Z",
            "capacity_used": 1,
            "expected_service_time": 1200,
            "metadata": {
                "test_order": true,
                "store_name": "test_store"
            },
            "scheduled_after": "2022-10-06T14:20:00.000Z"
        }
    "driver_handle": "muiz@drivertest",
    "ops_group_handle": NewYork_Manhattan,
    "intent": "on_time",
}"""
```

3 Ways to plan orders

On-Demand

If you want to assign orders as soon as they come in our on-demand dispatch will use our Nearby Search to find the best driver and automatically assign them orders

Pool

Order pooling is best for when you want to Batch and Route orders optimally as they come in and dispatch them in groups to available drivers to maximize driver utilization

Scheduled

Scheduled orders work best for when you just want to route and plan an order to track at a later date. With scheduled orders we'll look at driver schedules and starting points and assign the order to the best driver

Tracking Rate and Outages

Tracking Rate

- Tracking rate is the % amount of time where drivers were tracked successfully, we calculate this by dividing the time tracked vs the intended tracking time.
- Tracking rates can vary drastically if devices are not properly configured or if outages are not handled
- Maximizing your tracking rate is key to having accurate actionable data

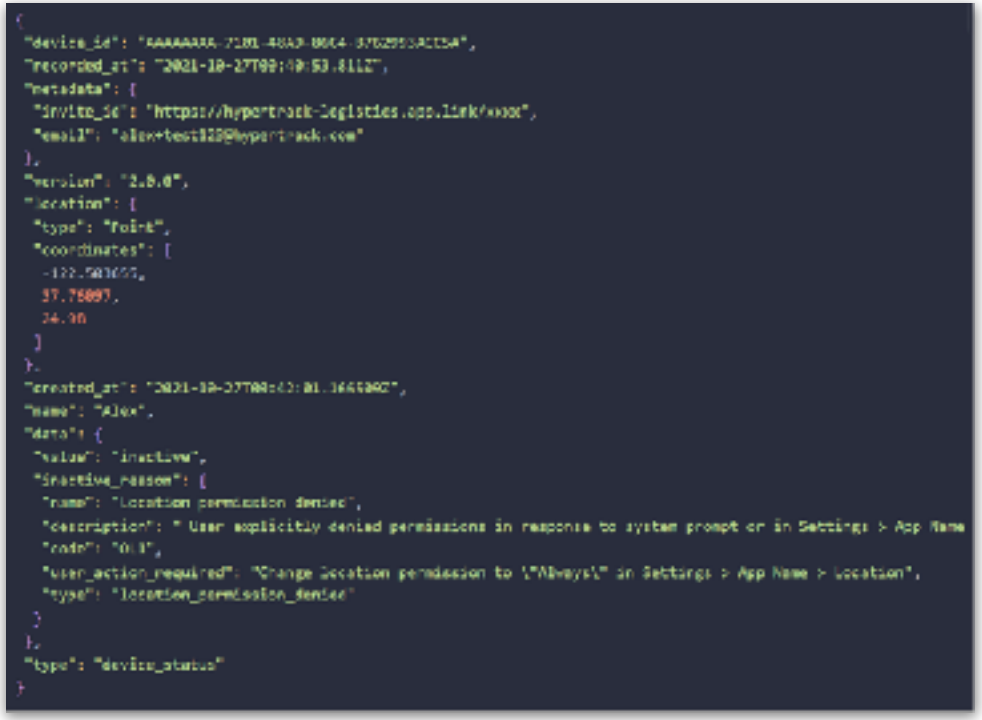
Outages

Outages can occur for a variety of reasons throughout the duration of a trip such as:

- GPS Loss
- Network Outages
- Low Battery

And a whole host of other reasons, to help prevent this we both provide APIs and send webhook alerts whenever an outage is detected.

Currently HyperTrack manages over 40 different outages across operating systems

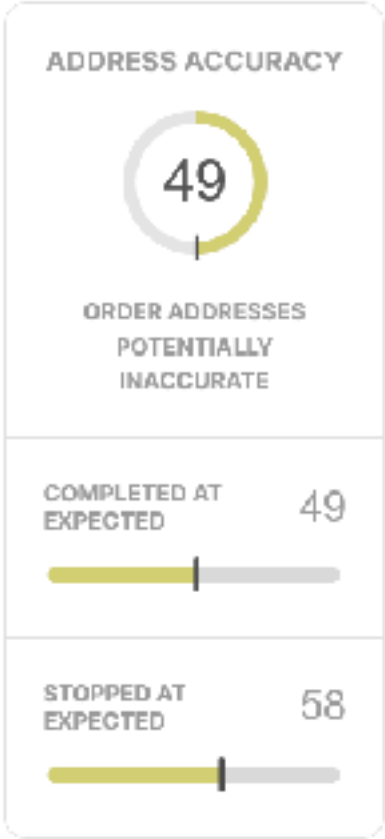


Order Score

Order Score

- Get insights from HyperTrack on the quality of your order based on factors like Address Accuracy, Route Efficiency, Order Delays, Tracking Rate, and more.

- Data from your order score can be directly used to influence your business logic and driver policies.



Now let’s track an order

Now get certified at:

https://hypertrack.com/certification

Got any questions?