

DRIVE.connect

1.2

Reference Guide



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Getting started with DRIVE.connect

About DRIVE.connect

DRIVE.connect is an application programming interface (API) that allows customers and partners to access the data of their vehicles and drivers which are stored in the Webfleet Telematics Service Platform (WTSP). This document provides all the information you need to integrate driver and vehicle data into your system or application using the DRIVE.connect API.

This is an introduction to using the DRIVE.connect API, how to access the service and how to interpret the output that is returned. In order to access the DRIVE.connect service you need the consent of the relevant Webfleet Solutions customer enabled. Otherwise you will not be able to test the integration for your application.

At any time, the communication must be performed using the HTTPS protocol and the hostname of the API is wfdriveapi.webfleet.com.

API Authorisation

API overview

API design

DRIVE.connect follows the Representational State Transfer (REST) design approach. It exposes data stored on the Webfleet Telematics Service Platform (WTSP) as resources, reflected by the HTTP URI. These resources are manipulated using HTTP requests methods.

The results of an API call are returned in the HTTP response body, in JSON format.

Authentication

Every request to the API needs to contain an access token obtained from the WTSP Authentication Server, following the OAuth 2.0 standard defined in [RFC 6750](#), i.e. in the "Authorization field" of the HTTP request header. See chapter 0 for details on obtaining an access token.

Authorization flow

Before starting to integrate with Webfleet Solutions APIs, a pair of [OAuth 2.0](#) client credentials are required. These credentials identify your application as a client ([OAuth 2.0](#)). Ask the Webfleet Solutions customer support about the right procedure to register your application as a client to obtain your credentials.

Client credentials cannot be used to log in to the Webfleet Solutions platform. These identify a client application and do not refer to a customer's credentials.

Once provided with a pair of client credentials you can request through **Webfleet Solutions Authorization Server** authorisation and token endpoints a claim granting you access to Webfleet Solutions APIs.

WTSP Authentication server

For obtaining an access token, the client application must communicate with the WTSP Authentication Server under the **auth.webfleet.com** domain name.

Client authentication

Every client application that wants to use DRIVE.connect needs to be registered on the WTSP before as part of a project setup phase.

After registration, you receive a unique client ID and client secret that needs to be used for HTTP request authentication when communicating with the Authentication Server.

User authorisation

In addition to the client authentication, user credentials are required to obtain an access token. The user credentials define the access level and visibility of the data via the API. The same client application can be used with different user credentials.

Token request

To request an access token, the client application needs to issue an HTTP POST request to the Authentication Server, secured by HTTP Basic Authentication using its client ID and client secret, following the OAuth2 "Resource Owner Password Credentials Grant" flow as defined in the OAuth [RFC-6749](#).

Example:

```
POST /uaa/oauth/token HTTP/1.1
Host: auth.webfleet.com
Content-Type: application/x-www-form-urlencoded
Authorization: Basic df5ea29924d39c3be8785734f13169c6
Cache-Control: no-cache

username=webfleetdriveconnectdemo&password=demo&grant_type=password
```

When successful, the Authentication Server returns the access token in the JSON encoded response (shortened for better readability).

```
{
  "access_token": "df5ea29924d39c3be8785734f13169c6[...]",
  "token_type": "bearer",
  "refresh_token": "df5ea29924d39c3be8785734f13169c6[...]",
  "expires_in": 3599,
  "scope": "ccs service_nextfleet [...]"
}
```

With the access token, the client application can now access the resources defined in the DRIVE.connect API.

Error handling

Errors in the token request call are handled according to the RFC, i.e., the server returns HTTP status code 400 and includes error code and error description in the response body.

Example:

```
{
  "error": "invalid_grant",
  "error_description": "Bad credentials"
}
```

Token expiration

The access token only has a limited life time (indicated by the `expires_in` parameter in the token request response). When an access token has expired, the client application needs to request a new access token from the Authentication Server.

Reference

Vehicles

Getting a list of all vehicles

Description

This endpoint returns a list of all available vehicles within the account including the vehicle-specific data stored in the account.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJI...

Parameter	Type	Description
vehicleUsage	string	Filter vehicles by vehicle usage. Valid values are: <ul style="list-style-type: none">FIXED_DRIVERPOOL_CARUNDEFINED

Response details

The list of vehicles is provided in a JSON array.

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform.
number	string	The number of the vehicle. Unique within an account.
name	string	The name of the vehicle. Unique within an account.
odometer	integer	The mileage of the vehicle in metres, rounded down.
licensePlate	string	The number plate of the vehicle.
driverName	string	The name of the currently assigned driver to the respective vehicle.
vin	string	The Vehicle Identification Number (VIN) of the vehicle.

Parameter	Type	Description
batteryLevel	number	<p>The current battery level of the vehicle in percentages. Values are within [0.00, 100.00].</p> <hr/> <p>Note: This parameter is provided only for electric vehicles.</p> <hr/>
range	integer (32)	<p>The total range of the vehicle (distance that the vehicle is able to drive with the current charging level). In case of hybrid vehicles it combines both, the fossil fuel and electric. The value is represented in metres.</p> <hr/> <p>Note: This parameter is provided only for electric vehicles.</p> <hr/>
charging	boolean	<p>The status if the vehicle is charging.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> • <code>true</code> Vehicle is charging • <code>false</code> Vehicle is not charging <hr/> <p>Note: This parameter is provided only for electric vehicles.</p> <hr/>
vehicleUsage	string	<p>Specifies driver assignment to the vehicle. A vehicle can be either a pool car, which is dynamically used by multiple drivers, have a fixed driver assignment, or it can be free from restriction in usage.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> • <code>FIXED_DRIVER</code> has one driver fixed assigned • <code>POOL_CAR</code> can be used dynamically by multiple drivers • <code>UNDEFINED</code> free from restriction
specification	object	<p>Details on the vehicle model.</p> <p>Contains the following parameters:</p> <ul style="list-style-type: none"> • <code>description</code> string The vehicle model name. • <code>makeName</code> string The vehicle manufacturer.

Following an example of a request and a response for GET /vehicles:

Request

```
GET /vehicles HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
```

```

"vehicleId": "string",
"number": "012",
"name": "Walter's vehicle",
"odometer": 1200,
"licensePlate": "LE-7789-U",
"driverName": "Walter",
"vin": "WDB2110161A007734",
"batteryLevel": 50.15,
"range": 42195,
"charging": true,
"vehicleUsage": "FIXED_DRIVER",
"specification": {
  "description": "E 270 CDI",
  "makeName": "Mercedes-Benz"
}
}
]

```

Getting all details of one vehicle

Description

This endpoint returns a list of all available details for a specific vehicle within the account.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The list of vehicle details is provided in a JSON object.

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform.
number	string	The number of the vehicle. Unique within an account.
name	string	The name of the vehicle. Unique within an account.
odometer	integer	The mileage of the vehicle in metres, rounded down.
licensePlate	string	The number plate of the vehicle.

Parameter	Type	Description
driverName	string	The name of the currently assigned driver to the respective vehicle.
vin	string	The Vehicle Identification Number (VIN) of the vehicle.
batteryLevel	number	The current battery level of the vehicle in percentages. Values are within [0.00, 100.00]. Note: This parameter is provided only for electric vehicles.
range	integer (32)	The total range of the vehicle (distance that the vehicle is able to drive with the current charging level). In case of hybrid vehicles it combines both, the fossil fuel and electric. The value is represented in metres. Note: This parameter is provided only for electric vehicles.
charging	boolean	The status if the vehicle is charging. Valid values are: <ul style="list-style-type: none"> <code>true</code> Vehicle is charging <code>false</code> Vehicle is not charging
vehicleUsage	string	Specifies driver assignment to the vehicle. A vehicle can be either a pool car, which is dynamically used by multiple drivers, have a fixed driver assignment, or it can be free from restriction in usage. Valid values are: <ul style="list-style-type: none"> <code>FIXED_DRIVER</code> has one driver fixed assigned <code>POOL_CAR</code> can be used dynamically by multiple drivers <code>UNDEFINED</code> free from restriction
notificationLogbook	object	Status if notifications on logbook-relevant incidents are enabled. Contains the following parameters: <ul style="list-style-type: none"> <code>enabled</code> boolean If enabled, all notifications on incidents relevant to the logbook functionality will be reported. Valid values are <code>true</code> and <code>false</code>. <code>privateUsePermitted</code> boolean If enabled, reporting of private trips are allowed with this vehicle. If not, the fleet manager gets a notification that a private trip was driven and reported. Valid values are <code>true</code> and <code>false</code>.

Parameter	Type	Description
specification	object	<p>Details on the vehicle model.</p> <p>Contains the following parameters:</p> <ul style="list-style-type: none"> description string The vehicle model name. makeName string The vehicle manufacturer. fuelType string The type of fuel that the vehicle uses. Valid values are: PETROL, DIESEL, HYBRID_PETROL, HYBRID_DIESEL, LPG, ELECTRIC, CNG, LNG, HYDROGEN, UNKNOWN constructionYear integer The year in which the vehicle was constructed.
referenceSpecification	object	<p>Details on the reference model.</p> <p>Contains the following parameters:</p> <ul style="list-style-type: none"> energyConsumption number The energy consumption calculated in kWh/100km energyConsumptionPreference string The energy consumption preference type. Either calculated from the average of the vehicle, entered vehicle specific by user the or retrieved from account settings. Valid values are:VEHICLE_DATA, VEHICLE_SPECIFIC, ACCOUNT_SETTING fuelConsumption number The fuel consumption calculated in l/100km. fuelConsumptionPreference string The energy consumption preference type. Either calculated from the average of the vehicle, entered vehicle specific by the user or retrieved from account settings. Valid values are: FMS, MANUAL, ACCOUNT_SETTING
vehicleGroups	list of strings	The names of the groups, this vehicle is assigned to.

Following an example of a request and a response for GET /vehicles/{vehicleId}:

Request

```
GET /vehicles/{vehicleId} HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
{
  "vehicleId": "string",
  "number": "012",
  "name": "Walter's vehicle",
  "odometer": 1200,
  "licensePlate": "LE-7789-U",
  "driverName": "Walter",
  "vin": "WDB2110161A007734",
  "batteryLevel": 50.15,
  "range": 42195,
```

```

"charging": true,
"vehicleUsage": "FIXED_DRIVER",
"notificationLogbook": {
  "enabled": true,
  "privateUsePermitted": true
},
"specification": {
  "description": "E 270 CDI",
  "makeName": "Mercedes-Benz",
  "fuelType": "DIESEL",
  "constructionYear": 2002
},
"vehicleGroups": ["Super fleet", "Green fleet"],
"referenceSpecification": {
  "fuelConsumption": 12.50,
  "fuelConsumptionPreference": "MANUAL"
}
}

```

Getting the current odometer mileage of one vehicle

Description

This endpoint returns the current odometer-mileage of one specific vehicle within the account.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/odometer
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The odometer details are provided in a JSON object.

Parameter	Type	Description
value	integer (64)	The odometer-mileage of the vehicle, in metres, rounded down.
lastModified	string	The date-time of the last update of the odometer value. ISO 8601 -formatted. Example: 2020-11-26T09:48:30Z

Following an example of a request and a response for GET /vehicles/{vehicleId}/odometer:

Request

```
GET /vehicles/{vehicleId}/odometer HTTP/1.1
```

```
Host: wfdriveapi.webfleet.com
```

```
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
{
  "value": 1200,
  "lastModified": "2020-11-26T09:48:30Z"
}
```

Getting KPI trends for one vehicle

Description

This endpoint returns the following metrics of a single vehicle like fuel consumption, CO₂ emission, the total OptiDrive score, the overall driven distance, the overall driving time and the overall fuel consumption of all trips. The data is aggregated per month and available at maximum for the last four months, as long the data is available. The result always includes the current month.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/kpi-trends
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJI...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The KPI trend details are provided in a JSON array.

Parameter	Type	Description
timeSlice	object	It shows information about the period and the aggregation level. Contains the following parameters: <ul style="list-style-type: none">year integer (32) The year of the current period.monthOfYear integer (32) The month of the year of the current period.
fuelConsumption	integer (64)	The total fuel consumption of the vehicle in millilitres.

Parameter	Type	Description
fuelConsumptionDistance	integer (64)	The distance driven in metres with the measured <code>fuelConsumption</code> . Note: Some trips do not allow fuel consumption and CO ₂ emission reporting. The distances for those trips are not included in <code>fuelConsumptionDistance</code> .
co2Emission	integer (64)	The total CO ₂ emission of the vehicle in grams (g), for the month.
optiDriveScore	number	The total OptiDrive Score from 0 to 1, based on the up to eight subscores.
tripDistance	integer (64)	The total distance the vehicle was driving in the respective month, in metres. Note: <code>tripDistance</code> includes distances for trips that do not report fuel consumption.
drivingTime	integer (64)	The time the vehicle was driving in the respective month, in seconds.
energyConsumption	integer (64)	The total energy consumption of the vehicle in watt-hour (Wh)
energyConsumptionDistance	integer (64)	The Distance driven in meters with the measured energy consumption.

Following an example of a request and a response for GET `/vehicles/{vehicleId}/kpi-trends`:

Request

```
GET /vehicles/{vehicleId}/kpi-trends HTTP/1.1
```

```
Host: wfdriveapi.webfleet.com
```

```
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
    "timeSlice": {
      "year": 2021,
      "monthOfYear": 7
    },
    "fuelConsumption": 23600,
    "fuelConsumptionDistance": 392341,
    "co2Emission": 62520,
    "optiDriveScore": 0.288,
    "tripDistance": 392336,
    "drivingTime": 28792
  },
  {
    "timeSlice": {
```

```

    "year": 2021,
    "monthOfYear": 8
  },
  "fuelConsumption": 20449,
  "fuelConsumptionDistance": 417317,
  "co2Emission": 54185,
  "optiDriveScore": 0.51,
  "tripDistance": 417317,
  "drivingTime": 27129
}
]

```

Getting current issues for one vehicle

Description

This endpoint returns all current issues for the specified vehicle within the account. The issues that can be reported by the vehicle are vehicle malfunctions reported by the CAN bus, power disconnections of the LINK device installed and Digital Trouble Codes (DTC).

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/current-issues
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJI...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The list of current issues is provided in a JSON array.

Parameter	Type	Description
description	string	A description of the issue.
type	string	The type of issue. Valid values are: <ul style="list-style-type: none"> CAN_WARNING – Warning signals from the CAN bus. For possible CAN warnings see below table for CAN malfunction codes. DIAGNOSTIC_TROUBLE_CODE – Diagnostic Trouble codes from the OBD using the standard SAE J2012. POWER_DISCONNECT – Power disconnection of the LINK device detected.
code	string	The code specific to the issue.

Parameter	Type	Description
createdAt	date-time	The date and time the issue was created, ISO 8601 -formatted.

Malfunction codes – possible values for parameter CAN_WARNING

Malfunction code	Description
10	Battery
20	Battery voltage
30	Lights
40	Exhaust system
50	Tyre pressure
60	Brake fluid
70	Coolant level
80	Engine oil level
90	Engine oil pressure
100	Diesel particulate filter
110	Coolant temperature
120	Engine cooling
130	ABS
140	Brake system
150	Airbag
160	EPC
170	ESP
180	Preheat or engine malfunction
190	Brake pads

Following an example of a request and a response for GET /vehicles/{vehicleId}/current-issues:

Request

```
GET /vehicles/{vehicleId}/current-issues HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
```

```

    "description": "Preheat or engine control system fault warning",
    "type": "CAN_WARNING",
    "code": 22,
    "createdAt": "2020-11-26T09:48:30Z"
  }
]

```

Getting the date for the next service for one vehicle

Description

This endpoint returns the information for the next planned service or inspection for the specified vehicle within the account. It can contain the scheduled odometer of the vehicle and the scheduled date of the next needed inspection.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/next-service
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The next service information is provided in a JSON object.

Parameter	Type	Description
scheduledDate	date-time	The date reported by the vehicle at which the next service is planned, ISO 8601 -formatted.
scheduledOdometer	integer (64)	The odometer value reported by the vehicle at which a service is planned, in metres.

Following an example of a request and a response for GET /vehicles/{vehicleId}/next-service:

Request

```

GET /vehicles/{vehicleId}/next-service HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...

```

Response

```

{
  "scheduledDate": "2020-11-26T10:30:00Z",
  "scheduledOdometer": 150000
}

```

Getting the driver assignment for one vehicle

Description

This endpoint returns the currently assigned primary driver for the specified single vehicle within the account. It contains all available driver details.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/driver
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Response details

The details of the assigned driver is provided in a JSON object.

Parameter	Type	Description
name	string	The name of the driver.
number	string	The driver number assigned in the account.
company	string	The name of the company associated with the driver in the account.
additionalInformation	string	Any additional information related to the driver.
status	string	The status of the driver that indicates their availability. Valid values are: <ul style="list-style-type: none">ACTIVEINACTIVE
optiDriveScore	number	The current total OptiDrive Score of the driver. Values range from 0.00 to 1.00. Based on up to eight subscores. Tip: Use <code>GET /drivers/{driverId}/optidrive</code> to get all subscores.

Parameter	Type	Description
contact	string	<p>The contact and address details of the driver, including the following parameters:</p> <ul style="list-style-type: none"> address object Full address information of the driver <ul style="list-style-type: none"> street string Street postalCode string Postal code city string City country string Country mobilePhone string Mobile phone number of the driver privatePhone string Private phone number of the driver email string Email address of the driver
driverIdentification	string	<p>Provides details for identification of the driver to authenticate to a Driver Terminal from Webfleet Solutions.</p> <p>The following parameter is returned</p> <ul style="list-style-type: none"> identificationNumber string The PIN the driver to be used for authenticating to the Driver Terminal from Webfleet Solutions.
accessToMyCarApp	string	<p>Flag indicating the access of the driver to the My-Car app.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ENABLED DISABLED
driverID	string	<p>The unique identifier of the driver within the account.</p>

Following an example of a request and a response for GET /vehicles/{vehicleId}/driver:

Request

```
GET /vehicles/{vehicleId}/driver HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
{
  "name": "Jane Doe",
  "number": "ABC-1234",
  "company": "carMobility",
  "additionalInformation": "Favorite color red.",
  "status": "ACTIVE",
  "optiDriveScore": 0.98,
  "contact": {
    "address": {
      "street": "Career d'Àlaba 140",
```

```

    "postalCode": 8018,
    "city": "Barcelona",
    "country": "Spain"
  },
  "mobilePhone": 491601234567789,
  "privatePhone": 4934112345678,
  "email": "jane.doe@example.com"
},
"driverIdentification": {
  "identificationNumber": 1234
},
"accessToMyCarApp": "ENABLED",
"driverId": "2234"
}

```

Getting logbook information for one vehicle

Description

This endpoint returns the logbook information for the specified vehicle within the account. It contains all trips driven up to three months in the past with trip mode, time and odometer information.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/logbook
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.
endTime-interval	date	<p>Indicates the start and end date and time for the period for which logbook trip data for the indicated driver shall be retrieved, indicated in ISO 8601 format. Oldest date is maximum three months past from current date.</p> <p>This parameter is optional. If not indicated all data of the past three months are retrieved.</p> <p>Example:</p> <pre>endTime-interval=2019-12-24T13:00:00Z/2020-01-02T15:30:00Z</pre>

Response details

The vehicle logbook information is provided in a JSON array.

Parameter	Type	Description
tripMode	string	The type of the trip. Valid values are: <ul style="list-style-type: none"> BUSINESS COMMUTE PRIVATE UNKNOWN CORRECTION
startTime	string(date-time)	The date and time the trip started. ISO 8601 formatted date and time in the UTC time-zone, combined representation in the extended format. Example: 2020-11-26T10:30:00Z
endTime	string(date-time)	The date and time the trip ended. ISO 8601 formatted date and time in the UTC time-zone, combined representation in the extended format. Example: 2020-11-26T10:30:00Z
startOdometer	int(64)	The mileage of the vehicle at the time the trip started, in metres.
endOdometer	int(64)	The mileage of the vehicle at the time the trip ended, in metres.
detourDistance	int(64)	The distance of the private detours of the trip, in metres.
fuelConsumption	int(64)	The fuel consumed during the trip, in milliliters.
vehicleId	string	The ID of the vehicle.
driverID	string	The ID of the driver if available.
purpose	string	The purpose of the logbook entry. A text describing the purpose of the trip as indicated by the driver.
contact	string	The contact information of the logbook entry. The contact for the trip, indicated by the driver.
comment	string	A text including additional comments regarding the trip as indicated by the driver.

Following an example of a request and a response for GET /vehicles/{vehicleId}/logbook:

Request

```
GET /vehicles/{vehicleId}/logbook HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
    "tripMode": "BUSINESS",
    "startTime": "2021-08-26T10:30:00Z",
    "endTime": "2021-08-26T11:30:00Z",
    "startOdometer": 15000000,
    "endOdometer": 15085000,
    "detourDistance": 3500,
    "fuelConsumption": 5500,
    "vehicleId": "123456",
    "driverId": "0815",
    "purpose": "Visit customer XYZ to speak about new products",
    "contact": "Jane Doe", "comment": "Some comment for the trip"
  },
  {
    "tripMode": "COMMUTE",
    "startTime": "2021-08-26T16:30:00Z",
    "endTime": "2021-08-26T16:50:00Z",
    "startOdometer": 15085000,
    "endOdometer": 15098000,
    "detourDistance": 1500,
    "fuelConsumption": 2500,
    "vehicleId": "123456",
    "driverId": "0815",
    "purpose": "Driving to the office for a department meeting",
    "contact": "Jane Doe",
    "comment": "Some comment for the trip"
  }
]
```

Getting accidents for one vehicle

Description

This endpoint returns accident information for the specified single vehicle within the account for past 90 days. The accident information includes time and position of the accident and more accident related information. The endpoint additionally provides an expand parameter to include more detailed information about a accident.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/vehicles/{vehicleId}/accidents	
Response format	application/json	
HTTP Header	Authorization: Bearer eyJhbGciOiJl...	
Parameter	Type	Description
vehicleId	string	The unique identifier for the vehicle in the whole platform. This parameter is required.

Parameter	Type	Description
crashLog	string	The expand parameter <code>crashLog</code> extends every existing accident event of the vehicle with all available data points of the accident itself containing time and acceleration information.

Response details

The list of current issues is provided in a JSON array.

Parameter	Type	Description
location	object	<p>The location details of the accident, provided as address details and coordinates.</p> <p>Contains the following parameters</p> <ul style="list-style-type: none"> address object The address details of accident location, containing: <ul style="list-style-type: none"> street string Street postalCode string Postal code city string City country string Country position object The geo-location coordinates of the accident location provided in longitude and latitude: <ul style="list-style-type: none"> latitude number Latitude – Geographic latitude in the WGS84 coordinate system. longitude number Longitude – Geographic longitude in the WGS84 coordinate system.
positionOfImpact	integer (32)	The position of the impact in the x-y-plane in degrees (0° = rear impact, 180° = front impact).
time	date-time	The date and time of the accident, ISO 8601 -formatted.
odometer	integer (64)	The current odometer-mileage at the time of the accident. Measured by the vehicle odometer in metres.

Parameter	Type	Description
roadType	string	<p>The type of the road.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> • MOTORWAY • MAJOR_ROAD_OF_HIGH_IMPORTANCE • MAJOR_ROAD • SECONDARY_ROAD • CONNECTING_ROAD • LOCAL_ROAD_OF_MAJOR_IMPORTANCE • LOCAL_ROAD • DESTINATION_ROAD • OTHER_ROAD • FERRY_WATER • FERRY_RAILROAD • RAILROAD • REFERENCE_LINE
situation	string	<p>The situation of the vehicle in which the accident happened.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> • DRIVING • PARKED
speed	integer	The speed at the time of the impact.
g-Force	number	The maximum acceleration measured during the accident, in multiples of earth gravity (e.g. '2.5g').
crashLog	array of objects	<p>Provides time and acceleration details of the accident (50Hz acceleration data and 1Hz GPS location).</p> <p>Contains the following parameters:</p> <ul style="list-style-type: none"> • timestamp date-time Timestamp of the acceleration measurement, ISO 8601-formatted. • acceleration object Acceleration on x-, y- and z-axis, in milli-G (multiples of gravity). Contains the following dimensions: x integer (64) Acceleration on x-axis – Longitudinal acceleration (in 10^{-3} g). Negative values indicate braking, positive values indicate forward acceleration of the vehicle. y integer (64) Acceleration on y-axis – Lateral acceleration (in 10^{-3} g). Negative values indicate a movement to the right (right curve), positive values indicate a movement to the left (left curve). z integer (64) Acceleration on z-axis – Normal acceleration (in 10^{-3} g). Negative values indicate a downward movement of the vehicle, positive values indicate an upward movement.

Following an example of a request and a response for GET /vehicles/{vehicleId}/accidents:

Request

```
GET /vehicles/{vehicleId}/accidents?crashLog HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
    "location": {
      "address": {
        "street": "Career d'Àlaba 140",
        "postalCode": 8018,
        "city": "Barcelona",
        "country": "Spain"
      },
      "position": {
        "latitude": 51.34,
        "longitude": 12.39
      }
    },
    "positionOfImpact": 177,
    "time": "2020-11-26T10:30:00Z",
    "odometer": 12000000,
    "roadType": "MOTORWAY",
    "situation": "DRIVING",
    "g-Force": 2.5,
    "speed": 30,
    "crashLog": [
      {
        "timestamp": "2020-11-26T10:30:00Z",
        "acceleration": {
          "x": 336,
          "y": -512,
          "z": -1728
        }
      },
      {
        "timestamp": "2020-11-26T10:31:00Z",
        "acceleration": {
          "x": 338,
          "y": -514,
          "z": -1736
        }
      }
    ]
  }
]
```

Drivers

Getting a list of all available drivers

Description

This endpoint returns a list of all available drivers within the account including the driver-specific data stored in the account.

Request details

This is an HTTP GET request with no extra parameters. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/drivers
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJI...

Response details

The list of drivers is provided in a JSON array.

Parameter	Type	Description
name	string	The name of the driver.
number	string	The driver number assigned in the account.
company	string	The name of the company associated with the driver in the account.
additionalInformation	string	Any additional information related to the driver.
status	string	The status of the driver that indicates their availability. Valid values are: <ul style="list-style-type: none">ACTIVEINACTIVE
optiDriveScore	number	The current total OptiDrive Score of the driver. Values range from 0.00 to 1.00. Based on up to eight subscores. <hr/> Tip: Use GET /drivers/{driverId}/optidrive to get all subscores. <hr/>

Parameter	Type	Description
contact	string	<p>The contact and address details of the driver, including the following parameters:</p> <ul style="list-style-type: none"> address object Full address information of the driver <ul style="list-style-type: none"> street string Street postalCode string Postal code city string City country string Country mobilePhone string Mobile phone number of the driver privatePhone string Private phone number of the driver email string Email address of the driver
accessToDriverApp	string	<p>Flag indicating the access of the driver to the mobile app.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ENABLED DISABLED
driverID	string	<p>The unique identifier of the driver within the account.</p>
vehicleAssignment	string	<p>Information to which vehicle the driver is assigned and in which role.</p> <p>The following parameters are returned:</p> <ul style="list-style-type: none"> vehicleID string The unique identifier of the vehicle within the account. driverRole string The role of the person in relation to the vehicle assignment. <p>Valid values for driverRole are:</p> <ul style="list-style-type: none"> DRIVER CO_DRIVER WORKER UNKNOWN

Following an example of a request and a response for GET /drivers:

Request

```
GET /drivers HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
{
```

```
[
  {
    "name": "Jane Doe",
    "number": "ABC-1234",
    "company": "XYZ company",
    "additionalInformation": "Favorite color red.",
    "status": "ACTIVE",
    "optiDriveScore": 0.98,
    "contact": {
      "address": {
        "street": "Career d'Àlaba 140",
        "postalCode": 8018,
        "city": "Barcelona",
        "country": "Spain"
      },
      "mobilePhone": 491601234567789,
      "privatePhone": 4934112345678,
      "email": "jane.doe@example.com"
    },
    "driverId": "2234",
    "vehicleAssignment": {
      "vehicleId": "1235",
      "driverRole": "DRIVER"
    }
  }
]
```

Getting all details of one driver

Description

This endpoint returns a list of all details for one driver within the account.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/drivers/{driverId}
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
driverId	string	The unique identifier of the driver within the account. This parameter is required.

Response details

The list of driver details is provided in a JSON array.

Parameter	Type	Description
name	string	The name of the driver.
number	string	The driver number assigned in the account.

Parameter	Type	Description
company	string	The name of the company associated with the driver in the account.
additionalInformation	string	Any additional information related to the driver.
status	string	The status of the driver that indicates their availability. Valid values are: <ul style="list-style-type: none"> ACTIVE INACTIVE
optiDriveScore	number	The current total OptiDrive Score of the driver. Values range from 0.00 to 1.00. Based on up to eight subscores. <u>Tip: Use GET /drivers/{driverId}/optidrive to get all subscores.</u>
contact	string	The contact and address details of the driver, including the following parameters: <ul style="list-style-type: none"> address object Full address information of the driver <ul style="list-style-type: none"> street string Street postalCode string Postal code city string City country string Country mobilePhone string Mobile phone number of the driver privatePhone string Private phone number of the driver email string Email address of the driver
accessToDriverApp	string	Flag indicating the access of the driver to the mobile app. Valid values are: <ul style="list-style-type: none"> ENABLED DISABLED
driverID	string	The unique identifier of the driver within the account.

Parameter	Type	Description
vehicleAssignment	string	<p>Information to which vehicle the driver is assigned and in which role.</p> <p>The following parameters are returned:</p> <ul style="list-style-type: none"> vehicleID string The unique identifier of the vehicle within the account. driverRole string The role of the person in relation to the vehicle assignment. <p>Valid values for driverRole are:</p> <ul style="list-style-type: none"> DRIVER CO_DRIVER WORKER UNKNOWN

Following an example of a request and a response for GET /drivers/{driverId}:

Request

```
GET /drivers/{driverId} HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
{
  "name": "Jane Doe",
  "number": "ABC-1234",
  "company": "XYZ company",
  "additionalInformation": "Favorite color red.",
  "status": "ACTIVE",
  "optiDriveScore": 0.98,
  "contact": {
    "address": {
      "street": "Career d'Àlaba 140",
      "postalCode": 8018,
      "city": "Barcelona",
      "country": "Spain"
    },
    "mobilePhone": 491601234567789,
    "privatePhone": 4934112345678,
    "email": "jane.doe@example.com"
  },
  "accessToDriverApp": "ENABLED",
  "driverId": "2234",
  "vehicleAssignment": {
    "vehicleId": "1235",
    "driverRole": "DRIVER"
  }
}
```

Getting all logbook trip details for one driver

Description

This endpoint returns a list of all logbook trips including their details for one driver within the account.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/drivers/{driverId}/logbook
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJI...

Parameter	Type	Description
driverId	string	The unique identifier of the driver within the account. This parameter is required.
endTime-interval	date	Indicates the start and end date and time for the period for which logbook trip data for the indicated driver shall be retrieved, indicated in ISO 8601 format. Oldest date is maximum three months past from current date. This parameter is optional. If not indicated all data of the past three months are retrieved. Example: <code>endTime-interval=2019-12-24T13:00:00Z/2020-01-02T15:30:00Z</code>

Response details

The list logbook trip details is provided in a JSON array.

Parameter	Type	Description
tripMode	string	The type of the trip. Valid values are: <ul style="list-style-type: none">BUSINESSCOMMUTEPRIVATEUNKNOWNCORRECTION
startTime	string(date-time)	The date and time the trip started. ISO 8601 formatted date and time in the UTC time-zone, combined representation in the extended format. Example: <code>2020-11-26T10:30:00Z</code>

Parameter	Type	Description
endTime	string(date-time)	The date and time the trip ended. ISO 8601 formatted date and time in the UTC time-zone, combined representation in the extended format. Example: 2020-11-26T10:30:00Z
startOdometer	int(64)	The mileage of the vehicle at the time the trip started, in metres.
endOdometer	int(64)	The mileage of the vehicle at the time the trip ended, in metres.
detourDistance	int(64)	The distance of the private detours of the trip, in metres.
fuelConsumption	int(64)	The fuel consumed during the trip, in milliliters.
vehicleId	string	The ID of the vehicle.
driverID	string	The ID of the driver if available.
purpose	string	The purpose of the logbook entry. A text describing the purpose of the trip as indicated by the driver.
contact	string	The contact information of the logbook entry. The contact for the trip, indicated by the driver.
comment	string	A text including additional comments regarding the trip as indicated by the driver.

Following an example of a request and a response for GET /drivers/{driverId}/logbook:

Request

```
GET /drivers/{driverId}/logbook?endTime-interval=2019-12-24T13:00:00Z/2020-01-02T15:30:00Z
```

```
Host: wfdriveapi.webfleet.com
```

```
Accept: application/json
```

```
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
[
  {
    "tripMode": "BUSINESS",
    "startTime": "2021-08-26T10:30:00Z",
    "endTime": "2021-08-26T11:30:00Z",
    "startOdometer": 15000000,
    "endOdometer": 15085000,
    "detourDistance": 3500,
    "fuelConsumption": 5500,
    "vehicleId": "123456",
    "driverId": "0815",
    "purpose": "Visit customer XYZ to speak about new products",
    "contact": "Jane Doe", "comment": "Some comment for the trip"
  },
]
```

```

{
  "tripMode": "COMMUTE",
  "startTime": "2021-08-26T16:30:00Z",
  "endTime": "2021-08-26T16:50:00Z",
  "startOdometer": 15085000,
  "endOdometer": 15098000,
  "detourDistance": 1500,
  "fuelConsumption": 2500,
  "vehicleId": "123456",
  "driverId": "0815",
  "purpose": "Driving to the office for a department meeting",
  "contact": "Jane Doe",
  "comment": "Some comment for the trip"
}
]

```

Getting OptiDrive scores for one driver

Description

This endpoint returns the OptiDrive scores for a single driver of the account for the last 30 days. These scores are about driving behaviour and how the driving style impacts the safety and sustainability.

Request details

This is an HTTP GET request. The access token needs to be used as bearer-token authorisation method.

REST endpoint	GET/drivers/{driverId}/opti-drive
Response format	application/json
HTTP Header	Authorization: Bearer eyJhbGciOiJl...

Parameter	Type	Description
driverId	string	The unique identifier of the driver within the account. This parameter is required.

Response details

The OptiDrive values are provided in a JSON array.

Parameter	Type	Description
totalScore	number	The current total OptiDrive Score of the driver. Values range from 0.00 to 1.00. Based on up to eight subscores.
subScores	object	An object containing up to eight subscores for the different OptiDrive variables on which the total OptiDrive score is based. For more information on subcores please refer to table of subscores, below.

Subscore parameters

Parameter	Type	Description
speedingScore	number	OptiDrive score for speeding events from 0 to 1. Evaluates the driving style by looking at the amount and value of over speeding.
idlingScore	number	OptiDrive score for idling events from 0 to 1. Evaluates the amount of time the engine was in standstill to reduce fuel consumption.
drivingScore	number	OptiDrive score for driving events from 0 to 1. Evaluates the driving style by looking at the number and severity of harsh steerings and harsh brakings.
fuelScore	number	OptiDrive score for fuel consumption values from 0 to 1. Comparing fuel consumption over a base fleet.
coastingScore	number	OptiDrive score for coasting events from 0 to 1. Evaluates the driving style by looking at the braking behaviour, checking how often engine brake/gear brake is used not to wear brakes out too much.
constantSpeedScore	number	OptiDrive score for constant speed values from 0 to 1. Evaluates the driving efficiency by looking at the acceleration/deceleration behaviour compared to the average behaviour on the actual road.
greenSpeedScore	number	OptiDrive score for green speed calculation from 0 to 1. Evaluates the driving efficiency by looking at the speed and checking if it is below the green speed threshold.
gearShiftingScore	number	OptiDrive score for gear shifting (high revving) events from 0 to 1. Evaluates the driving style by looking at the engine RPM, checking if it is over a threshold wearing the engine too much and consuming too much fuel.

Following an example of a request and a response for GET /drivers/{driverId}/opti-drive:

Request

```
GET /drivers/{driverId}/opti-drive HTTP/1.1
Host: wfdriveapi.webfleet.com
Authorization: Bearer eyJhbGciOiJI...
```

Response

```
{
  "totalScore": 0.98,
  "subScores": {
    "speedingScore": 0.48,
    "idlingScore": 0.32,
```

```
"drivingScore": 0.51,  
"fuelScore": 0.72,  
"coastingScore": 0.95,  
"constantSpeedScore": 0.56,  
"greenSpeedScore": 0.13,  
"gearShiftingScore": 0.72  
}  
}
```

Appendix

Response codes

Response code	Message	Description
200	The operation was successful	
400	The server cannot or will not process the request	A request parameter is missing or not properly specified.
401	Unauthorized	The access token used is not valid anymore. It needs to be refreshed with refresh token.
403	Forbidden	The access token is not valid for the required scopes.
404	The requested resource is not found	The vehicle or driver card requested doesn't exist in the system or the client has no access over it.
500	An internal error occurred.	The server encountered an unexpected condition that prevented it from fulfilling the request.

Error response

All endpoints can throw an error with code 40x and the following structure:

Element	Type	Description
description	string	Detailed description of the error.
url	string	Requested URL.
traceId	string	unique identifier for the request.
timestamp	string	The timestamp of the failed request in an ISO 8601 date time format.

Example:

Response

```
{
  "description": "Brief description of error",
  "url": "http://example.com/endpoint",
  "traceId": "42iuh101f8723r"
  "timestamp": "2021-08-05T11:17:05.472348+02:00"
}
```

Revision history

DRIVE.connect

Webfleet Solutions, DRIVE.connect 1.2

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Revision history

Revision	Date	Description	Author
1.0.0	2021-08-05	Initial release	5RH
1.2.0	2022-05-22	Added reference and consumption values for energy and fuel consumption to detailed vehicle endpoint. Added energy consumption and distance to vehicle KPI trends.	RG

Revision history