

# Model C2 API Programming Guide

## Overview

The Model C2 API provides an interface for interacting with Quasi Robotics' autonomous carts. Using this API, developers can authenticate users, list available carts, find specific carts, and command carts to navigate to routes and waypoints.

This guide explains the available API calls and includes example Ruby implementations to demonstrate how to use the API effectively.

## API Functionality

The Model C2 API supports the following operations:

- **Authentication:** Authenticate users to interact with the API.
- **Listing Carts:** Retrieve a list of all available carts.
- **Finding a Cart:** Locate a specific cart by serial number.
- **Navigating a Cart:** Command a cart to move to a specific waypoint.
- **Starting a Route:** Begin a pre-defined route for a cart.

## Authentication

Authentication is required to access and control the carts. The API uses username and password credentials to authenticate a user session. The authentication process is handled using the **Quasi::User.authenticate** method, which returns a user object upon successful login.

```
u = Quasi::User.authenticate(ENV['USERNAME'], ENV['PASSWORD'])
puts "Hello #{u.fullname}"
```

Users must log out when they have finished using the API:

```
u.logout
```

## API Calls

### 1. Listing All Carts

This API call retrieves a list of all available carts associated with the authenticated user.

#### Example: carts\_list.rb

```
require 'dotenv'
require 'async'

require_relative '../lib/quasi-api.rb'

Dotenv.load

Quasi::API.base_url = ENV['BASE_URL']

Async do
  u = Quasi::User.authenticate(ENV['USERNAME'], ENV['PASSWORD'])
  puts "Hello #{u.fullname}"
  puts Cart.list(u)
  u.logout
end
```

### 2. Finding a Specific Cart

This API call retrieves details about a specific cart, including its available waypoints and routes.

#### Example: find\_cart.rb

```
require 'dotenv'
require 'async'

require_relative '../lib/quasi-api.rb'

Dotenv.load

Quasi::API.base_url = ENV['BASE_URL']

Async do
  u = Quasi::User.authenticate(ENV['USERNAME'], ENV['PASSWORD'])
  puts "Hello #{u.fullname}"
```

```
c = Cart.find_by_sn(u, ENV['CART_SN'])
puts 'Waypoints: '
puts c.waypoints
puts 'Routes: '
puts c.routes
u.logout
end
```

### 3. Navigating a Cart to a Waypoint

This API call instructs a cart to navigate to a specific waypoint. The script fetches the list of waypoints and directs the cart accordingly.

#### **Example:** navigate\_cart.rb

```
require 'dotenv'
require 'async'

require_relative '../lib/quasi-api.rb'

Dotenv.load

Quasi::API.base_url = ENV['BASE_URL']

Async do
  u = Quasi::User.authenticate(ENV['USERNAME'], ENV['PASSWORD'])
  puts "Hello #{u.fullname}"

  c = Cart.find_by_sn(u, ENV['CART_SN'])
  puts 'Waypoints: '
  puts c.waypoints
  c.navigate_to(ENV['WAYPOINT'])
  10.times do |i|
    sleep 1
    c.update_status
    puts c.navigation_feedback if c.navigation_feedback
  end
  u.logout
end
```

## 4. Starting a Route

This API call instructs a cart to begin following a pre-defined route.

### Example: start\_route.rb

```
require 'dotenv'
require 'async'

require_relative '../lib/quasi-api.rb'

Dotenv.load

Quasi::API.base_url = ENV['BASE_URL']

Async do
  u = Quasi::User.authenticate(ENV['USERNAME'], ENV['PASSWORD'])
  puts "Hello #{u.fullname}"

  c = Cart.find_by_sn(u, ENV['CART_SN'])
  puts 'Routes: '
  puts c.routes
  c.start_route(ENV['ROUTE'])
  10.times do |i|
    sleep 1
    c.update_status
    puts c.navigation_feedback if c.navigation_feedback
  end
  u.logout
end
```

## Environment Variables

To securely store credentials and API base URLs, the scripts use environment variables. Ensure that your .env file contains the following keys:

```
BASE_URL=https://api.quasirobotics.com
USERNAME=your_username
PASSWORD=your_password
CART_SN=your_cart_serial_number
WAYPOINT=your_waypoint
```

```
ROUTE=your_route_name
```

## Conclusion

The Model C2 API allows seamless interaction with autonomous carts, enabling authentication, cart discovery, and navigation. By following the provided Ruby examples, developers can integrate cart navigation capabilities into their applications efficiently.

For further details and additional examples, visit the [Quasi API GitHub Repository](https://github.com/quasi-robotics/quasi-api-examples).

```
https://github.com/quasi-robotics/quasi-api-examples
```