Shipment Operations Dashboard - User Manual

This manual will guide you through setting up and using the Shipment Operations Dashboard, a tool that analyses your shipping data and finds cost optimization opportunities.

What This App Does

- Analyses your shipment data from Excel files
- Shows interactive maps of your shipping routes
- Generates charts and statistics about your operations
- Finds cost-saving opportunities by comparing with market rates
- Exports detailed reports for further analysis

Prerequisites - What You Need to Install First

Step 1: Install Node.js

1. Open Terminal (Press Command + Space, type "Terminal", press Enter)
2. Download Node.js by running:
3. curl -O https://nodejs.org/dist/v20.11.1/node-v20.11.1.pkg
4. Check if the download completed:
5. ls ~ | grep node
6. Install Node.js:
7. open ~/node-v20.11.1.pkg
8. Follow the installation wizard
9. Verify installation:
10. node -v # should show v20.11.1npm -v # npm version prints too

Setting Up the Application

Step 2: Prepare Your Files

Save all files into: Users/yourusername/parcelmonkey-backend

This folder should contain:

- server.js (the backend server file)
- Shipment Operations Dashboard.html (the dashboard interface)

- Your Excel data file

Step 3: Initial Setup (First Time Only)

1. Open Terminal
2. Navigate to the project folder:
3. cd parcelmonkey-backend
4. Initialize the project:
5. npm init -y
6. Install required packages:
7. npm install express cors axios dotenvnpm install --save-dev nodemon

Step 4: Start the Backend Server

For development (with auto-restart):

npm run dev

For regular use:

node server.js

You should see:

ParcelMonkey proxy server running on port 3001

Health check: http://localhost:3001/api/health

Important: Keep this terminal window open - the server needs to run while using the app.

Step 5: Verify the Server is Running

Open a new terminal window (Command + N) without closing the first one:

cd parcelmonkey-backend

curl http://localhost:3001/api/health

You should see a response confirming the server is healthy.

Step 6: Open the Dashboard

1. Navigate to your Shipment Operations Dashboard folder
2. Double-click on Shipment Operations Dashboard.html to open it in your default browser
3. Or right-click and select "Open with" → "Google Chrome" (recommended)

Using the Dashboard

Step 7: Prepare Your Excel File

Your Excel file must have these exact column names at least:

Required Column	Description
Unique identifier	Unique identifier for each shipment
Collection Date	When the shipment was picked up
Collection Area Name	Pickup location (e.g., "Bath", "SW1A")
Delivery Area Name	Delivery location
Origin Country	Country of origin
Destination Country	Destination country
Transport Mode	Air, Sea, Road, Rail
Shipper	Shipping company name
Emission type by shipper mode	Type of emission calculation
Emission factor of emission type	CO2 emission factor
Weight	Weight in kg
Cost of shipment	Cost in £

Step 8: Load Your Data

1. Click "Choose Excel File" in the sidebar
2. Select your Excel file
3. Click "Process Data"
4. Wait for processing (shows CO2 facts while loading)
5. The dashboard will display your data with maps, charts, and statistics

Step 9: Using the Features

Filtering Data Use the sidebar filters to narrow down your data:

- Search: Find specific shipments by ID, location, or shipper
- Location Search: Search by postal codes (e.g., "SW1A" for London)

- Country Filters: Filter by origin/destination countries
- Date Range: Select specific time periods
- Weight/Cost Ranges: Filter by shipment size or value

Interactive Statistics

- Click on any statistic card to see trends over time
- Hover over map markers to see location details
- Click routes on the map to see route statistics

Cost Optimization Analysis

1. Click "Analyse Cost Optimization" in the top-right
2. View top 10 routes by total cost
3. Click any route for detailed analysis and savings opportunities
4. The system will show:
    - Current vs. market rates
    - Potential savings per shipment
    - Monthly and annual savings projections

Exporting Data

- Click "Export Full Analysis CSV" to download a comprehensive report
- The export includes:
    - Summary statistics
    - Transport mode analysis
    - Top routes analysis
    - Detailed shipment data

Starting the Dashboard Again Later

After initial setup, you only need to:

1. Open Terminal
2. Navigate to the folder:
3. cd parcelmonkey-backend
4. Start the server:

5. node server.js
6. Open Shipment Operations Dashboard.html in your browser

Troubleshooting

Common Issues

1. "Backend proxy is not available" error

- Make sure the backend server is running
- Check the terminal window is still open
- Restart the backend: Press Control+C, then node server.js

2. "Missing required columns" error

- Check your Excel column names match exactly (including spaces)
- Make sure there are no extra spaces or special characters
- Try saving your Excel file as a new copy

3. Maps not loading

- Check your internet connection
- Ensure your browser allows JavaScript
- Try refreshing the page

4. No data showing after upload

- Verify your Excel file has data in the rows (not just headers)
- Check for empty cells in required columns
- Make sure dates are in a recognizable format

5. Cost optimization not working

- Ensure the backend server is running
- Check your internet connection
- The system will use fallback rates if the API is unavailable

Getting Help

If the backend server won't start:

1. Make sure Node.js is installed correctly (node -v)
2. Try deleting node_modules folder and running npm install again

3. Check that port 3001 isn't being used by another application

If the dashboard won't open:

1. Try a different browser (Chrome recommended)
2. Check that JavaScript is enabled
3. Disable browser extensions that might block scripts

Data Privacy and Security

- Your data stays local - shipment details are processed in your browser
- Only generic weight queries are sent to external APIs for rate comparison
- No sensitive shipment information is transmitted externally
- All analysis is performed locally on your computer

Tips for Best Results

1. Use consistent naming in your Excel file (especially for countries and locations)
2. Include postal codes in area names when possible (e.g., "Bath BA1" instead of just "Bath")
3. Keep the backend server running while using the dashboard
4. Use Chrome or Firefox for best performance
5. Have a good internet connection for geocoding and rate comparisons

Regular Maintenance

- Update Node.js occasionally by downloading the latest LTS version
- Keep your Excel data clean with consistent formatting
- Restart the backend server if you experience issues

Additional Resources

- ParcelMonkey API Documentation: https://www.parcelmonkey.co.uk/developers/?version=3.1#endpoints

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This dashboard was created for Panavision by Imperial students. For technical support, refer to this manual or consult with your IT department.