Bing maps

Bing Maps Distance Matrix API

The Bing Maps Distance Matrix API calculates distances and travel times between origins and destinations with an optional travel-time histogram. Using predicted traffic and various modes of transportation, the Distance Matrix API can optimize routing performance in many-to-many scenarios, which can save time, increase ROI, and improve CRM.

Routing and Fleet Management

The Distance Matrix API is a routing component feature of our Bing Maps V8 Web Control. The matrix itself is often used as a baseline to solve a single user scenario, also known as the Travelling Salesman Problem (TSP) or a multiple user scenario, otherwise known as the Vehicle Routing Problem (VRP). With the Bing Maps Distance Matrix API, users can view the recommended route, between specified start and end points, for many different types of routing and fleet management use case scenarios.

Delivery optimization:

- Trucking logistics with single or multiple start points and numerous end-points - Time Windows, Vehicle Capacity, Multiple Depots, Split Deliveries, Backhauls, etc.
- Taxi/car service application - see the driver's location and estimated time of arrival

Data Analysis:

- Determine a new location or add locations to optimize deliveries (retail, manufacturing, etc.)
- Moving to a new office - determine the impact on commute times for the staff

Location Grouping - Grouping locations based on their travel time or distance (closeness to each other):

- Bus stop / transportation planning
- Real estate - find homes within x distance from a hospital, school, etc.
- Store locator - determine the relative distance from a store

Whether it's planning the route from one location to another or in a many-to many scenario, users can create a direction-enabled solution to minimize time and maximize efficiency.

Who benefits from a distance matrix application? Any vertical needing routing and fleet management, such as: Retail, Logistics Manufacturing, Finance, Education, Government, Healthcare, Real Estate, and more.

For example, an electrician has three job sites to visit on the same day. Looking at the locations on the map in Figure 1, the purple location is the closest from the starting location (as designated by the star) at 2.9 miles away. Using the Bing Maps Distance Matrix API, the electrician can view all the locations using the optional histogram to access travel times based on a time-window and predicted traffic to each location, to which the red location is actually closer to the office.

Bing Maps Distance Matrix API helps customers optimize performance and assess business opportunities:

Business Intelligence (BI) and CRM:
Optimize performance with intelligent apps that plan your route more effectively, saving time, money, and resources.

Business Opportunities:
Identify underserved markets and new locations:

- Delivery optimization
- Data Analysis
- Location Grouping

Fleet and Asset Management:
Effectively plan, monitor, and utilize assets to save time and reduce transportation costs.

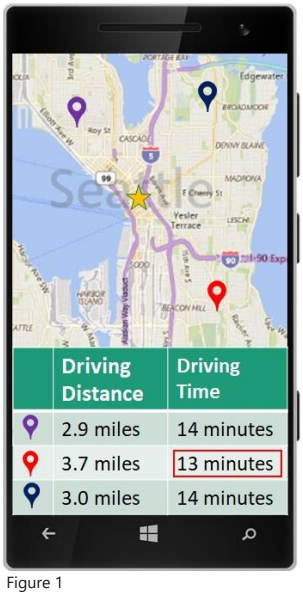

Figure 1

Microsoft

Another common truck routing scenario involves the many-to-many calculation of matrix locations, such as a local baker distributing baked goods from two bakery locations. In this case, the baker needs to determine how to optimize deliveries to 11 nearby supermarkets. To do so, they will need to factor which bakery should deliver to each supermarket, and consider the number of trucks, the capacity of those trucks, each bakery's inventory, distance, and so forth (see Figure 2). With the Bing Maps Distance Matrix API, managing and optimizing routing can help increase efficiency, productivity, and improve CRM. Additionally, the baker can use the Distance Matrix API to better understand the business metrics and performance, to determine future supermarkets in which to expand or where to place a third bakery.

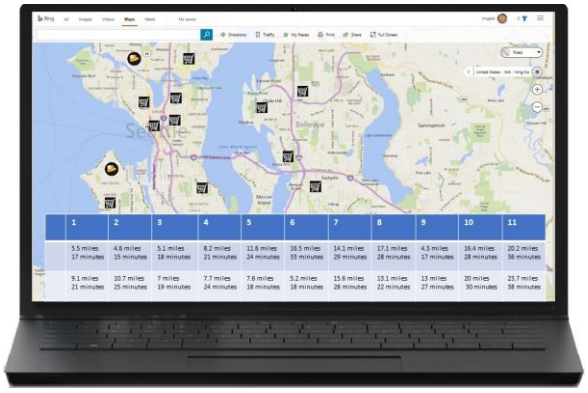

Figure 2

There are many opportunities where the Distance Matrix API can help businesses gain deeper insights, maximize opportunities, and improve business performance. Whether it's a real estate application that helps clients locate a property near a desired school location, an insurance agent optimizing potential clients and policyholder visits, or a company who needs to optimize its tracked assets, the Bing Maps Distance Matrix API can help businesses of all sizes make smarter day-to-day routing decisions to boost efficiency, improve customer satisfaction, and increase profitability.

Features and Capabilities

- Based on mapping information, the API calculates the linear distance in miles from a matrix of locations using road information vs. straight lines (from point A to point B).
- Calculates one days worth of travel times in 15-minute intervals using historic traffic information to predict travel time for the time-of-day and day-of-week as specified in the call.
- Supports multiple transport modes: Driving, Public transit (coming in October), Walking (coming in November)
- Create a matrix up to 625 origin/destination pairs (Ex. 25 x 25, 1 x 625, 5 x 125, etc.). When requesting a histogram, the limit is 100 pairs (Ex. 1 x 10, 10 x 0, etc.).
- Get and Post requests are supported for large requests with numerous pairs.
- Asynchronous requests are supported, which is ideal for large computationally intensive requests.
- Must pass in coordinates; addresses should be geocoded with the REST API first.
- Response format is JSON. Support for XML is coming soon.
- Caching of result is permitted up to 72-hours before the user needs to cache the results again.

Get Started

Distance Matrix API uses billable transactions. If you have a Bing Maps key, review the Distance Matrix API documentation to learn more and start developing your distance matrix solution. If you don't have a Bing Maps key, create a Bing Maps account and create a key to authenticate your application. Then follow the documentation to start developing your distance matrix solution.
For Licensing questions, contact a Bing Maps Sales Specialist.

Learn More

Explore the following resources to learn more about the Bing Maps Distance Matrix API:

Distance Matrix API website & FAQ https://www.microsoft.com/en-us/maps/distance-matrix

Documentation https://msdn.microsoft.com/en-us/library/mt827298.aspx

Bing Maps Dev Center to create account https://www.bingmapsportal.com/

Bing Maps Terms of Use https://www.microsoft.com/en-us/maps/product/terms

.Net Toolkit for developers https://github.com/Microsoft/BingMapsRESTToolkit

Bing Maps Sales Specialist mailto:maplic@microsoft.com

Contact your Microsoft Reseller or visit our website for licensing advice at www.microsoft.com/maps/Licensing/licensing.aspx