

LocationService API Documentation

1. Get Address Suggestions (Autocomplete)

Endpoint: GET /location/autocomplete

Headers:

```
Authorization: Bearer <jwt_token>
```

Query Parameters:

- **text** (required): Text to search for
- **maxResults** (optional): Maximum number of results (default: 5)
- **language** (optional): Language code (default: en)

Response Format:

```
[
  {
    "text": "123 Main St, Toronto, ON",
    "placeId": "AQAAIAADsxtODU5LWI5ZjAtNDFiYS05MjQ0LTRlZDQ0ZTQ0ZWVlZQ",
    "description": "123 Main St, Toronto, ON"
  }
]
```

2. Geocode Address

Endpoint: POST /location/geocode

Headers:

```
Authorization: Bearer <jwt_token>
Content-Type: application/json
```

Request Body:

```
{
  "address": "123 Main St, Toronto, ON"
}
```

Response Format:

```
{
  "lat": 43.6532,
  "lng": -79.3832
}
```

3. Calculate Route Matrix

Endpoint: POST /location/matrix

Headers:

```
Authorization: Bearer <jwt_token>
Content-Type: application/json
```

Request Body:

```
{
  "fromAddress": "123 Main St, Toronto, ON",
  "toAddress": "456 Queen St, Toronto, ON"
}
```

Response Format:

```
{
  "from": {
    "address": "123 Main St, Toronto, ON",
    "lat": 43.6532,
    "lng": -79.3832
  },
  "to": {
    "address": "456 Queen St, Toronto, ON",
    "lat": 43.6544,
    "lng": -79.3807
  },
  "distanceKm": 2.5,
  "durationMinutes": "8.33"
}
```

4. Get Detailed Route

Endpoint: POST /location/route

Headers:

```
Authorization: Bearer <jwt_token>
Content-Type: application/json
```

Request Body:

```
{
  "fromAddress": "123 Main St, Toronto, ON",
  "toAddress": "456 Queen St, Toronto, ON"
}
```

Response Format:

```
{
  "from": {
    "address": "123 Main St, Toronto, ON",
    "lat": 43.6532,
    "lng": -79.3832
  },
  "to": {
    "address": "456 Queen St, Toronto, ON",
    "lat": 43.6544,
    "lng": -79.3807
  },
  "summary": {
```

```

    "distance": 2.5,
    "durationMinutes": "8.33"
  },
  "legs": [
    {
      "distance": 2.5,
      "durationMinutes": "8.33",
      "steps": [
        {
          "distance": 0.1,
          "durationSeconds": 20,
          "startPosition": [-79.3832, 43.6532],
          "endPosition": [-79.3825, 43.6535]
        }
      ]
    }
  ],
  "route": {
    "geometry": [
      [-79.3832, 43.6532],
      [-79.3825, 43.6535],
      [-79.3807, 43.6544]
    ]
  }
}

```

Cache Management APIs

5. Clear All Cache

Endpoint: DELETE /location/cache

Headers:

```
Authorization: Bearer <jwt_token>
```

Response Format:

```

{
  "message": "Cache cleared successfully"
}

```

6. Clear Cache by Prefix

Endpoint: DELETE /location/cache/:prefix

Headers:

```
Authorization: Bearer <jwt_token>
```

Path Parameters:

- `prefix`: Cache prefix (e.g., coordinates, route, detailedRoute, suggestions)

Response Format:

```
{
  "message": "Deleted 15 cache keys with prefix coordinates"
}
```

7. Get Cache Statistics

Endpoint: GET /location/cache/stats

Headers:

```
Authorization: Bearer <jwt_token>
```

Response Format:

```
{
  "totalKeys": 156,
  "typeCounts": {
    "coordinates": 78,
    "routes": 45,
    "detailedRoutes": 22,
    "suggestions": 11
  },
  "redisInfo": "# Server\r\nredis_version:6.2.6\r\n..."
}
```

System APIs

8. Service Information

Endpoint: GET /location

Response Format:

```
{
  "status": "ok",
  "service": "location-service",
  "version": "1.0.0",
  "endpoints": ["/autocomplete", "/geocode", "/matrix", "/route", "/health"]
}
```

9. Health Check

Endpoint: GET /location/health

Response Format:

```
{
  "status": "ok",
  "service": "location-service"
}
```

Error Responses

All APIs may return the following error responses:

400 Bad Request

```
{
  "status": "error",
  "message": "Address is required",
  "timestamp": "2023-04-15T12:34:56.789Z"
}
```

401 Unauthorized

```
{
  "status": "error",
  "message": "Authorization token is required",
  "timestamp": "2023-04-15T12:34:56.789Z"
}
```

403 Forbidden

```
{
  "status": "error",
  "message": "Insufficient permissions to access this resource",
  "timestamp": "2023-04-15T12:34:56.789Z"
}
```

404 Not Found

```
{
  "status": "error",
  "message": "The requested resource was not found",
  "path": "/location/unknown",
  "method": "GET",
  "timestamp": "2023-04-15T12:34:56.789Z"
}
```

500 Internal Server Error

```
{
  "status": "error",
  "message": "Internal Server Error",
  "timestamp": "2023-04-15T12:34:56.789Z"
}
```

Authentication

All endpoints (except health checks) require JWT authentication with appropriate scopes:

- `location.read`: Required for read operations (autocomplete, geocode, matrix, route)
- `location.admin`: Required for administrative operations (cache management)