

Geospatial System

– Location Profile

MCP Servers / Tools

Demonstration on how to connect MCP
servers to
Claude, GPT, VS Code, Gemini & modern
agents

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2026-07-01

✳ All 8 MCP Tools + Prompts

All tools require a trial or paid key. Ask these questions in any agent:

<code>list_datasets</code>	→ catalogue	[Free]
<code>LP_Get_Elevation</code>	→ single pixel	[Free]
<code>LP_Get_Elevation_Batch</code>	→ ≤100 pts	[Free]
<code>LP_Get_Elevation_Stats</code>	→ nbhd elev	[Pro]
<code>LP_Get_Slope_Stats</code>	→ nbhd slope	[Pro]
<code>LP_Get_Elevation_Chart</code>	→ chart URL	[Pro]
<code>LP_Get_Slope_Chart</code>	→ chart URL	[Pro]
<code>LP_Get_Terrain_Map</code>	→ map URL·PNG	[Pro]
<code>LP_Get_Terrain_3D</code>	→ 3-D·PNG/HTML	[Pro]

```
"Elevation and slope at -30.0, 150.0?"  
"Batch query 20 property coordinates."  
"3-D terrain map as HTML for this site."  
"Which 5 sites in this list have slope >5°?"  
"Show me both elevation & slope charts PNG for this spot."  
"Show me terrain map including contours for this address."  
"Include all charts & maps for a location profile report."
```

Claude Desktop – Option 1

Settings | Connectors | Add | ... Add custom connector |
copy & paste MCP endpoint: *https://api.geospatialsystem.com/mcp?api_key=YOUR_KEY*

The image displays a sequence of four screenshots from the Claude Desktop settings interface, illustrating the process of adding a custom connector.

- Screenshot 1:** Shows the 'Connectors' section in the settings. The 'Add' button is highlighted in yellow.
- Screenshot 2:** Shows the 'Add custom connector' dialog box. The 'Location Profile MCP Tools' connector is selected, and the MCP endpoint URL `https://api.geospatialsystem.com/mcp?api_key=grk_...` is pasted into the input field.
- Screenshot 3:** Shows the 'Connect' button being clicked for the 'Location Profile MCP Tools' connector.
- Screenshot 4:** Shows the 'Location Profile MCP Tools' connector successfully added to the list of connectors. The tool permissions are set to 'Always allow'.

Orchestrated comprehensive geospatial systems overview and execution guidance

Here's the full rundown. The Geospatial system is an elevation and terrain analysis server with nine tools, all keyed to a latitude/longitude coordinate (WGS-84 decimal degrees) plus a dataset ID.

Data lookup tools

- **list_datasets** — lists all available elevation datasets on the server. This is the starting point, since every other tool needs a `dataset_id`.
- **LP_Get_Elevation** — returns the elevation in metres at a single lat/lon point. Available on all tiers, including Free.
- **LP_Get_Elevation_Batch** — same thing for up to 100 points in one call; you pass a list of `{lat, lon, dataset_id}` objects. Also free-tier.
- **LP_Get_Elevation_Stats** — min/average/max elevation across 3x3, 5x5, and 7x7 pixel windows centred on the point. Requires a Pro or Enterprise key.
- **LP_Get_Slope_Stats** — min/average/max terrain slope in degrees across the same three window sizes. Requires a Pro key.

Visualization tools (all Pro-key)

- **LP_Get_Elevation_Chart** and **LP_Get_Slope_Chart** — range-box charts showing min/avg/max across the three neighbourhood window sizes; output as PNG, SVG, or PDF.
- **LP_Get_Terrain_Map** — a composite 2D map combining Google Hybrid satellite imagery, smoothed labelled contours, flow-direction arrows, and a location pin. You can tune the arrow density (`n_arrows`) and area size (`offset`, default 20 pixels half-window = 41x41 px).
- **LP_Get_Terrain_3D** — an interactive 3D Plotly terrain surface coloured by elevation, with a red pin at your query point. You can set the camera azimuth and elevation angles, and output as PNG or HTML.

How to run them: just ask in plain language — you don't need to call anything yourself. For example: "What's the elevation at the summit of Mount Kosciuszko?" or "Show me a 3D terrain view around Katoomba" or "Compare slopes at these five coordinates." I'd typically start with `list_datasets` to find the right dataset for your region, then run whichever lookup or visualization fits.

Want me to list the available datasets now, or to sample query somewhere?

Write a message...



can you show me the elevation chart for the spot

Thinking about identifying the specific location referenced as "the spot"

Here's the elevation range chart for the Kosciuszko summit point, generated from the SRTM 30m dataset:

View elevation chart

The chart shows the minimum, average, and maximum elevation across three neighbourhood window sizes centred on your coordinate — 3x3, 5x5, and 7x7 pixels (roughly 90m, 150m, and 210m squares at this dataset's resolution). Since this is the summit, you'd expect the average to drop and the min-max spread to widen as the window grows and takes in more of the surrounding slopes.

If you'd like, I can also generate the slope chart, a 2D terrain map with contours, or a 3D terrain surface for the same spot.



2D terrain map with contours

Loaded tools, used Location Profile MCP Tools integration

Here's the 2D terrain map for the Kosciuszko summit:

View terrain map

It's a composite of Google Hybrid satellite imagery with smoothed, labelled elevation contours, flow-direction arrows showing which way water would drain off the slopes, and a pin marking your query point. The area covered is a 41x41 pixel window — at SRTM's ~28m resolution, that's roughly a 1.1 km x 1.1 km patch centred on the summit.

If you want a wider view, I can regenerate it with a larger `offset` (e.g. 50 would give you about a 2.8 km square), or adjust the flow-arrow density. The 3D terrain surface is also an option if you'd like to see the peak in perspective.



Write a message...



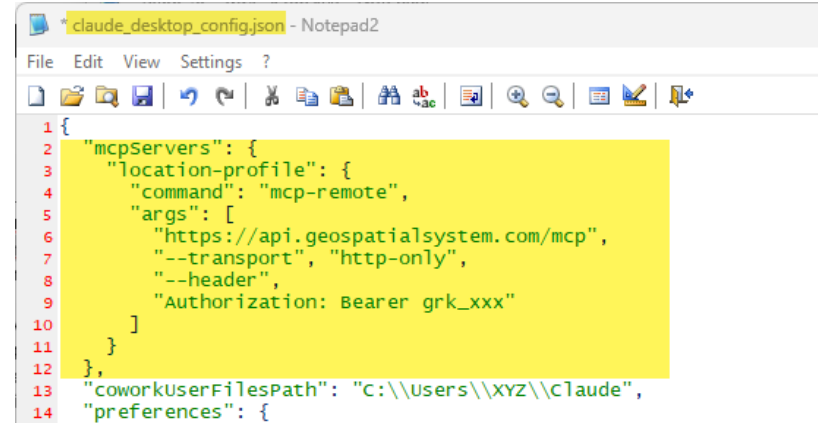
Claude Desktop – Option 2

- Insert the left code snippets into the config file (Windows):
%APPDATA%\Roaming\Claude\
claude_desktop_config.json
- Start Claude Desktop

```
"mcpServers": {  
  "location-profile": {  
    "command": "mcp-remote",  
    "args": [  
      "https://api.geospatialsystem.com/mcp",  
      "--transport", "http-only",  
      "--header",  
      "Authorization: Bearer grk_YOUR_KEY"  
    ]  
  }  
},
```

- Or -


```
"mcpServers": {  
  "location-profile": {  
    "command": "cmd",  
    "args": [  
      "/c", "npx", "-y", "mcp-remote",  
      "https://api.geospatialsystem.com/mcp",  
      "--transport", "http-only",  
      "--header",  
      "Authorization: Bearer grk_YOUR_KEY"  
    ]  
  }  
},
```



```
1 {  
2   "mcpServers": {  
3     "location-profile": {  
4       "command": "mcp-remote",  
5       "args": [  
6         "https://api.geospatialsystem.com/mcp",  
7         "--transport", "http-only",  
8         "--header",  
9         "Authorization: Bearer grk_xxx"  
10      ]  
11    }  
12  },  
13  "coworkUserFilesPath": "C:\\Users\\XYZ\\Claude",  
14  "preferences": {
```

* Assume you have installed mcp-remote and npx already on Windows OS

< Back X



Geospatial System — Location Profile

Install

Property location intelligence: elevation, slope, terrain maps and 3-D surfaces for any address — worldwide (30 m), US (10 m), Australia & NZ (5 m). Ask in plain English; Claude picks the right tool.

⚠ Installing will grant this extension access to everything on your computer. Any developer information shown has not been verified by Anthropic. Ensure you trust the source of this extension before installation.

Terrain intelligence at three zoom levels — site, neighbourhood and wide area. Ask *"What's the elevation and slope at this address?"* or *"Which of these 50 coordinates has the steepest average slope?"* and Claude calls the right tool: single-pixel elevation (<30 ms, batchable to 100 points), min/avg/max elevation and slope across 3×3, 5×5 and 7×7 pixel windows, range-box charts (PNG/SVG/PDF), composite satellite + contour terrain maps, and interactive 3-D surfaces.

Coverage: NASA SRTM worldwide (~30 m) · USGS CONUS (~10 m, with ~3 m and 1 m city datasets) · Geoscience Australia DTM (5 m) · LINZ New Zealand DTM (5 m).

Built for people who weigh up locations every day — real estate and property-information professionals, insurance & risk analysts, asset managers, and disaster & emergency management teams. Screen a listing's slope before inspection, profile the terrain around an exposure, or flag flood- and landslide-prone landforms across a portfolio.

Free to start: a trial key (sent by email, no credit card) unlocks elevation queries and the dataset catalogue, plus a trial allowance of neighbourhood analysis and terrain-mapping calls. Pro keys unlock all tools at volume. Get a key at <https://www.geospatialsystem.com> — your key is used per-request and never stored server-side.

Developed by [Geospatial System](#)

Only use extensions from developers you trust. Anthropic does not control which tools developers make available and cannot verify that they will work as intended or that they won't change.

Settings

← Settings R

General

Account

Privacy

Billing

Usage

Capabilities

Connectors

Claude Code

Cowork

Claude in Chrome


Desktop app

General

Extensions

Developer

← All extensions



geospatial-system X

Enabled

Uninstall

Geospatial System API Key (Required)

Your key (starts with grk_) arrives by email when you request free trial access at [geospatialsystem.com](https://www.geospatialsystem.com) — no credit card needed.

.....

Save

Tool permissions

Choose when Claude is allowed to use these tools.

Other tools 9

Always allow

List datasets	🔄 🖱️ 🚫
LP Get Elevation	🔄 🖱️ 🚫
LP Get Elevation Batch	🔄 🖱️ 🚫
LP Get Elevation Stats	🔄 🖱️ 🚫
LP Get Slope Stats	🔄 🖱️ 🚫
LP Get Elevation Chart	🔄 🖱️ 🚫
LP Get Slope Chart	🔄 🖱️ 🚫
LP Get Terrain Map	🔄 🖱️ 🚫
LP Get Terrain 3D	🔄 🖱️ 🚫

Claude Code – Terminal

Claude Code – Terminal

One-line install in your terminal

```
> claude mcp add --transport http Location-Profile
https://api.geospatialsystem.com/mcp --header "X-API-Key:
grk_YOUR_KEY"
```

restart Claude Code

```
> /exit
```

```
> claude
```

```
> claude mcp list
```

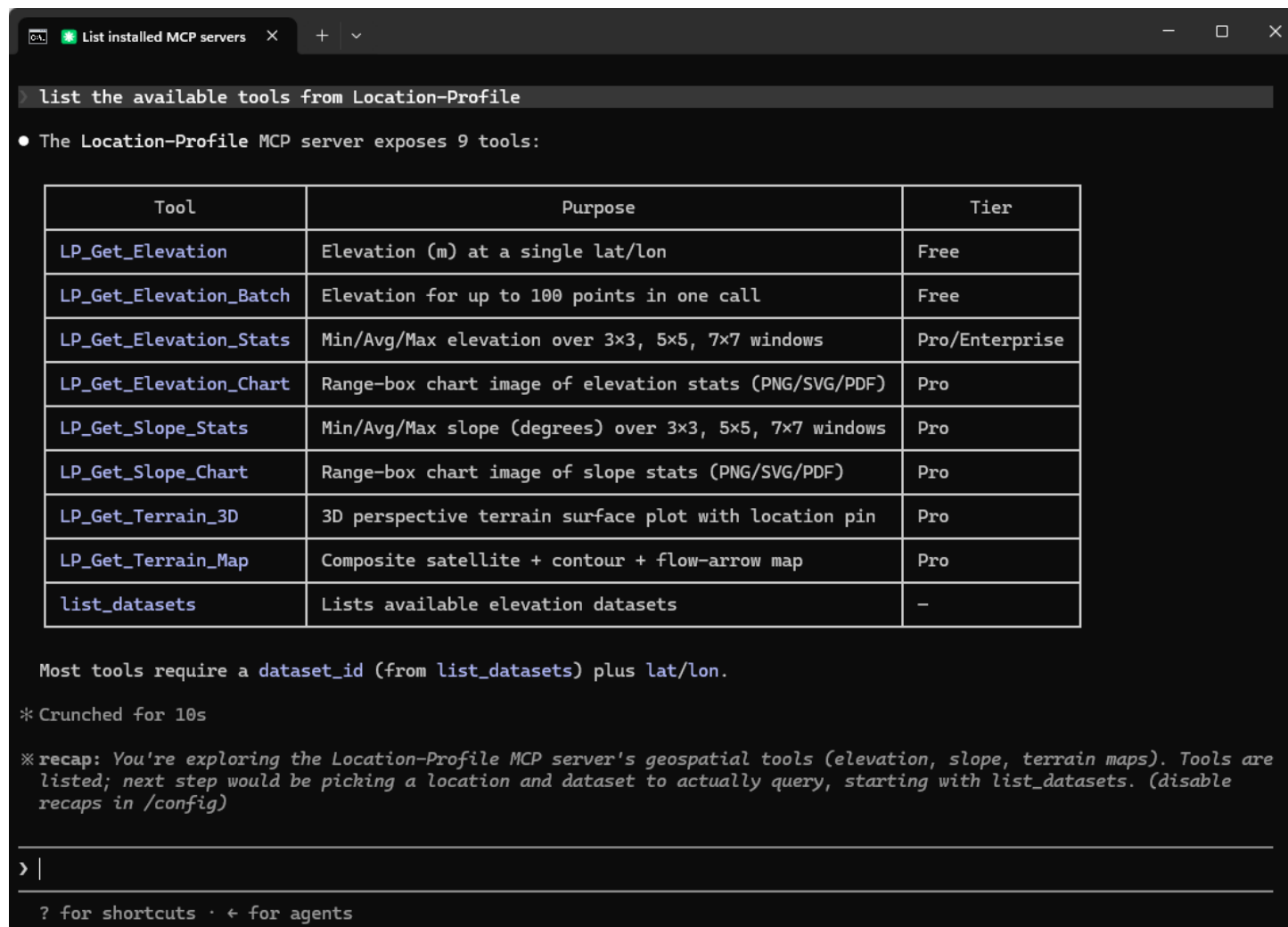
One MCP server is configured: Location-Profile
(https://api.geospatialsystem.com/mcp, HTTP transport) —
connected and healthy.

```
> list the available tools from Location-Profile
```

```
...
```

Remove the mcp

- > claude mcp remove Location-Profile -s local



```
List installed MCP servers x + v
list the available tools from Location-Profile
• The Location-Profile MCP server exposes 9 tools:
```

Tool	Purpose	Tier
LP_Get_Elevation	Elevation (m) at a single lat/lon	Free
LP_Get_Elevation_Batch	Elevation for up to 100 points in one call	Free
LP_Get_Elevation_Stats	Min/Avg/Max elevation over 3x3, 5x5, 7x7 windows	Pro/Enterprise
LP_Get_Elevation_Chart	Range-box chart image of elevation stats (PNG/SVG/PDF)	Pro
LP_Get_Slope_Stats	Min/Avg/Max slope (degrees) over 3x3, 5x5, 7x7 windows	Pro
LP_Get_Slope_Chart	Range-box chart image of slope stats (PNG/SVG/PDF)	Pro
LP_Get_Terrain_3D	3D perspective terrain surface plot with location pin	Pro
LP_Get_Terrain_Map	Composite satellite + contour + flow-arrow map	Pro
list_datasets	Lists available elevation datasets	-

```
Most tools require a dataset_id (from list_datasets) plus lat/lon.
* Crunched for 10s
* recap: You're exploring the Location-Profile MCP server's geospatial tools (elevation, slope, terrain maps). Tools are
listed; next step would be picking a location and dataset to actually query, starting with list_datasets. (disable
recaps in /config)
> |
? for shortcuts · ← for agents
```

```
Add locationProfile MCPs x + v
LP_Get_Elevation_Batch | Free | Elevation for up to 100 points
LP_Get_Elevation_Stats | Pro | Elevation min/avg/max over 3x3-7x7 windows
LP_Get_Slope_Stats | Pro | Terrain slope stats in degrees
LP_Get_Elevation_Chart | Pro | Range-box chart (PNG/SVG/PDF)
LP_Get_Slope_Chart | Pro | Slope chart (PNG/SVG/PDF)
LP_Get_Terrain_Map | Pro | Satellite + contours + flow arrows (PNG)
LP_Get_Terrain_3D | Pro | 3D Plotly surface map (PNG/HTML)

Available Datasets (live data confirmed)
- file100_elevation - NASA SRTM-GL1, 30m global (-56° to 60° lat)
- file200_elevation - USGS NED 1/3 arc-sec, 10m (continental US)
- file251_elevation - USGS NED 1/9 arc-sec (Houston, TX)
- file300_elevation - Geoscience Australia DTM 5m
- file301_elevation - Geoscience Australia DTM 5m (QLD/NSW coast)
- file321_elevation - Geoscience Australia DTM 5m (Sydney AOI)
- file341_elevation - Queensland DTM 1m (Brisbane AOI)
- file400_elevation - LINZ DTM 5m (New Zealand)

* Worked for 1m 40s

get elevation for Sydney Opera House

• Sydney Opera House is at lat -33.8568, lon 151.2153 - well within the Sydney AOI dataset (file321_elevation).

Ran 1 shell command

• Sydney Opera House elevation: 3.36 metres above sea level

Details from the API:
- Elevation: 3.36 m (above sea level, WGS-84)
- Dataset: Geoscience Australia DTM 5m (file321_elevation)
- Pixel resolution: 5 m x 5 m
- Query time: 5.71 ms

That makes sense - the Opera House sits on Bennelong Point, right at the harbour's edge, just a few metres above the waterline.

* Baked for 16s

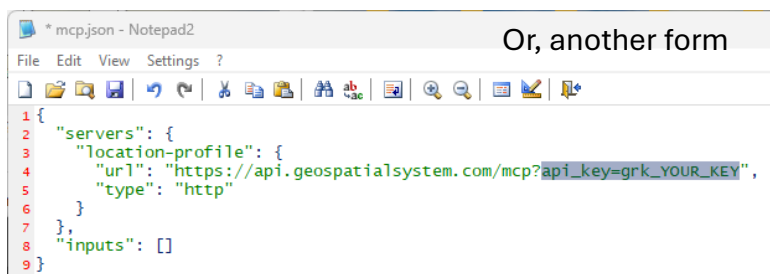
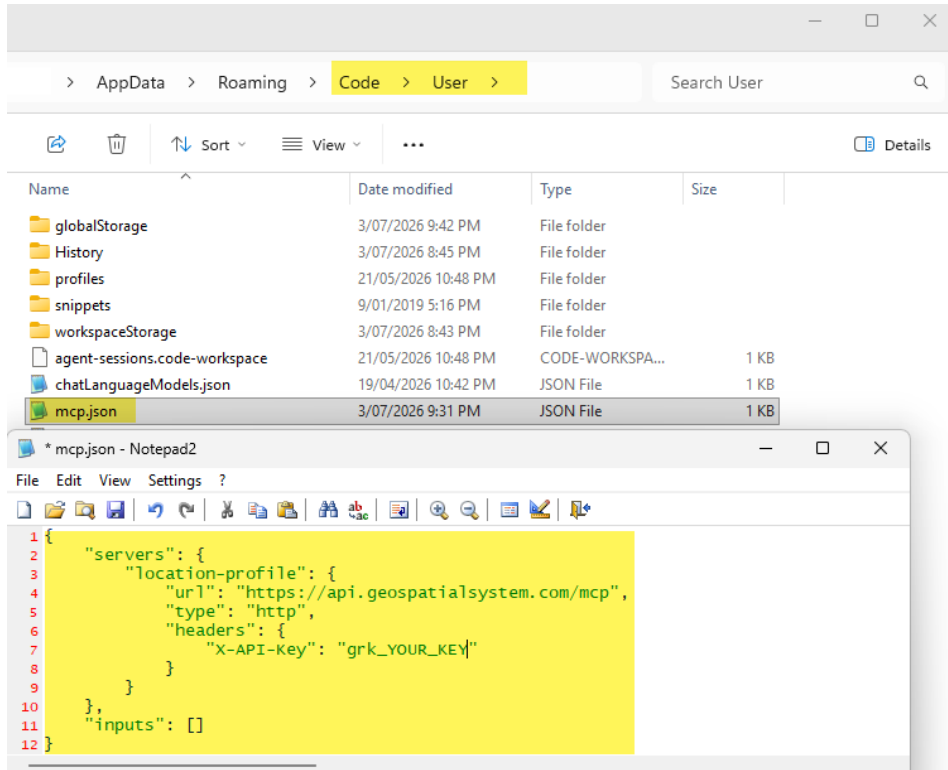
> get elevation stats for Sydney Opera House

? for shortcuts · ← for agents
```

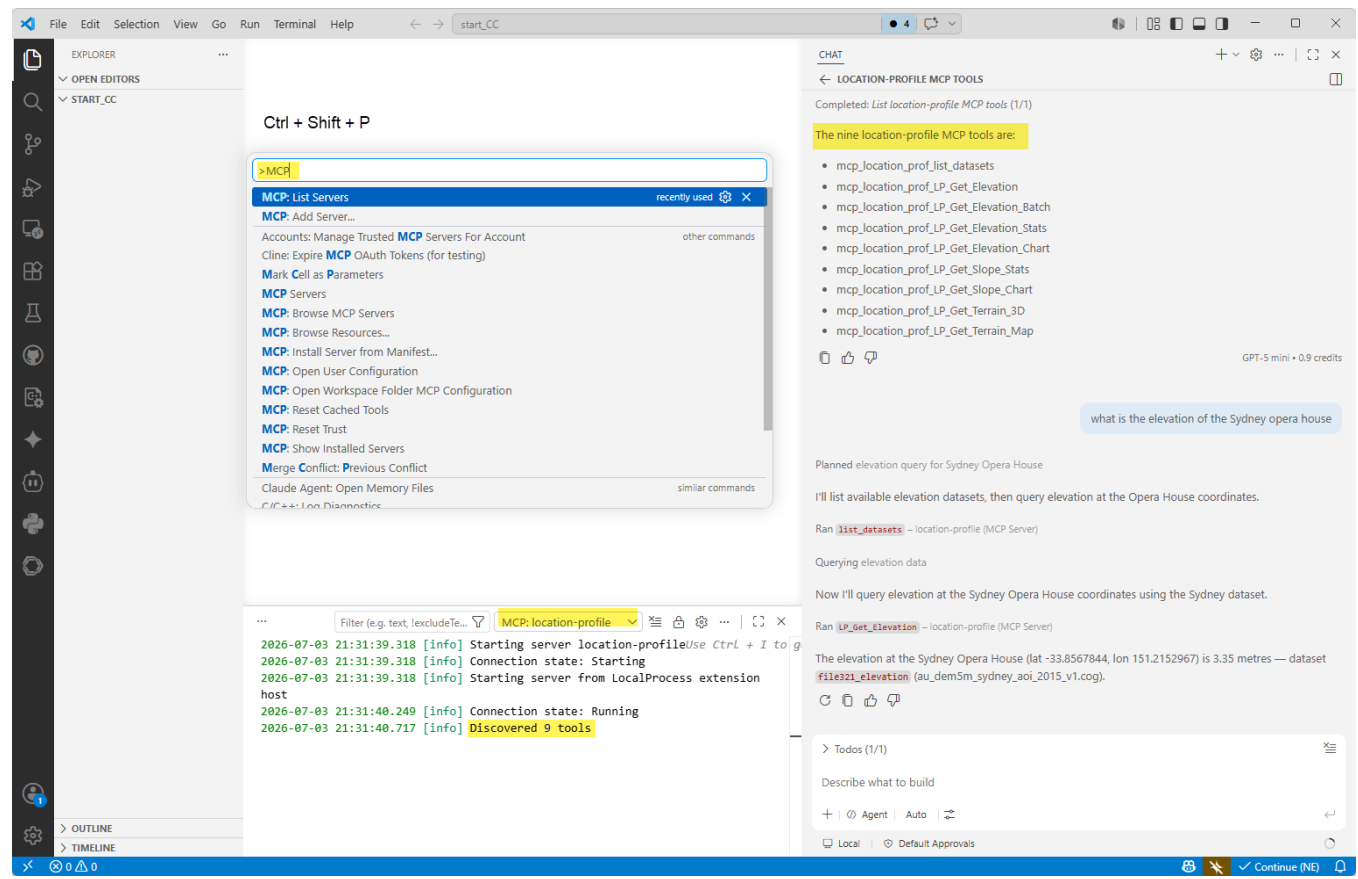
VS Code

VS Code – Options

- Create `.vscode/mcp.json` in your project root. Works with Copilot Agent mode, Cline, and Continue extensions.



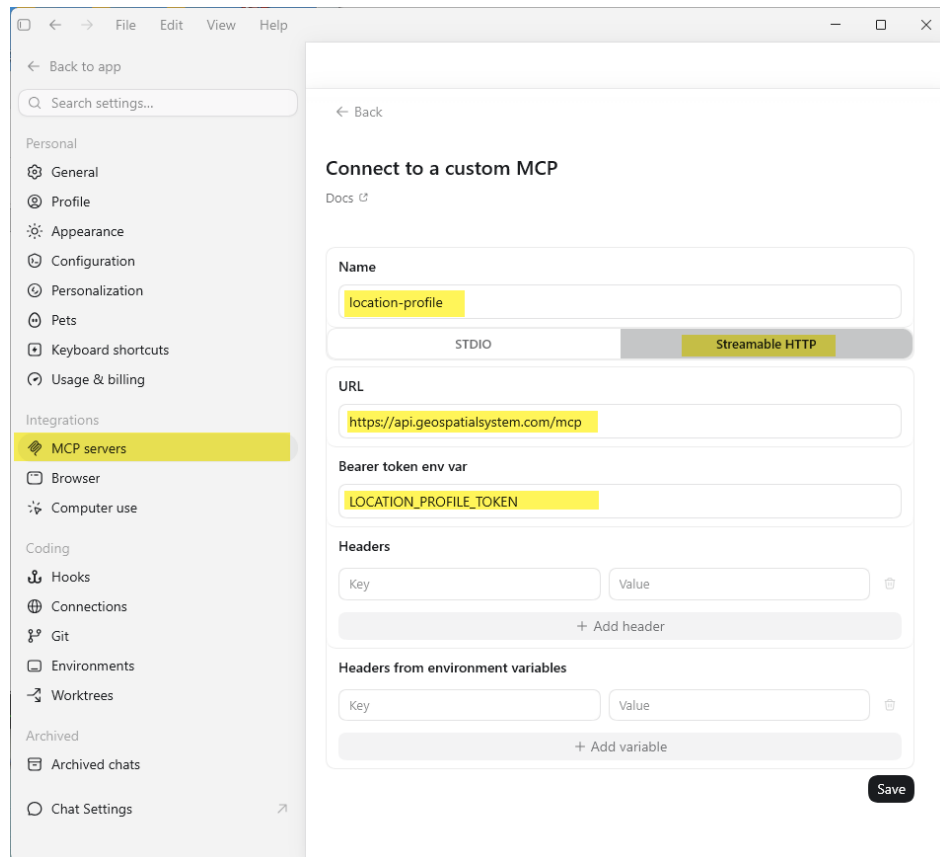
Manage MCP server directly in VS Code



OpenAI Codex

OpenAI Codex – Option 1

Settings | MCP servers | + Add server
(hide API key)

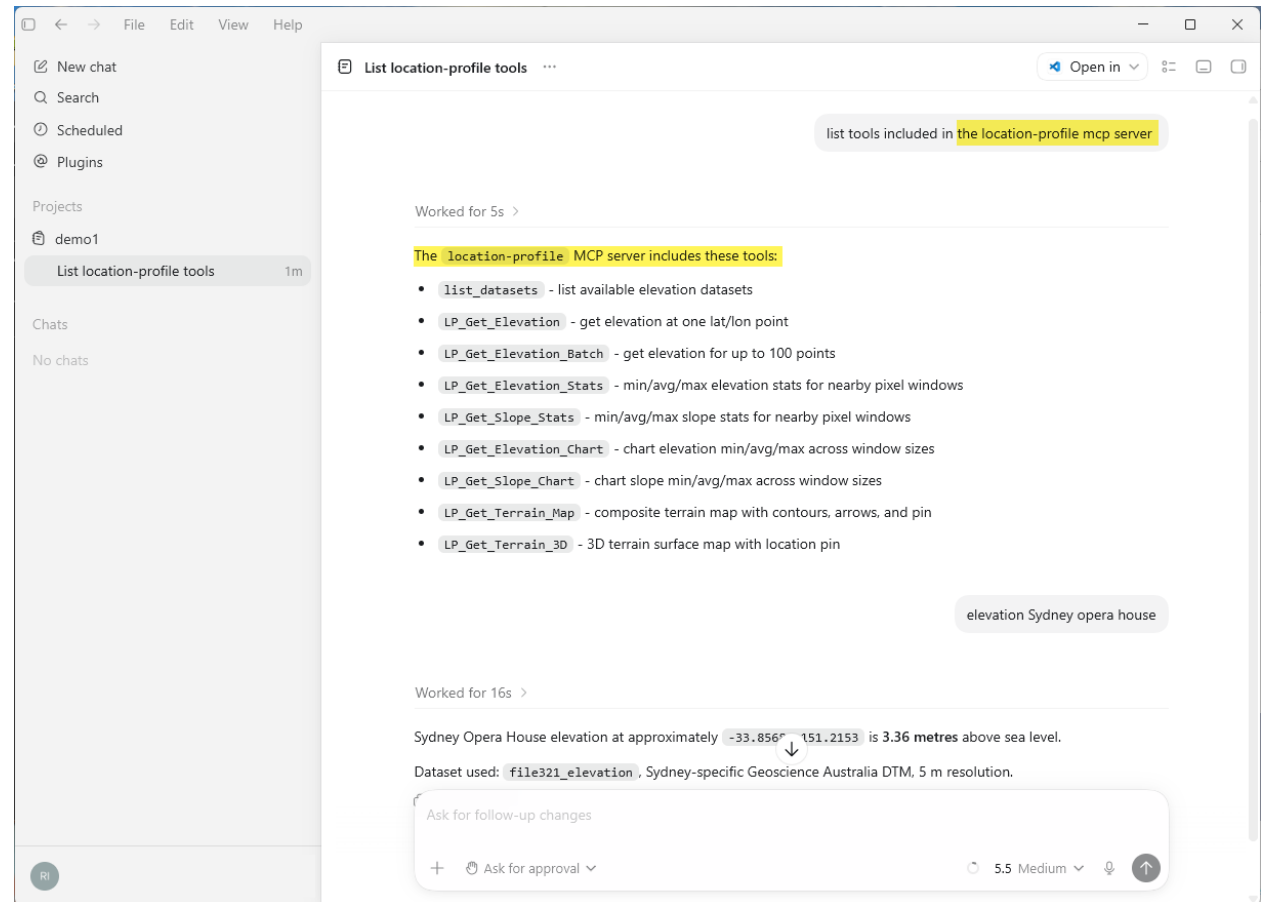


- After that, close Codex (remove from system tray).
- Then, in DOS or PowerShell console, restart Codex

```
setx LOCATION_PROFILE_TOKEN "grk_YOUR_KEY"
```

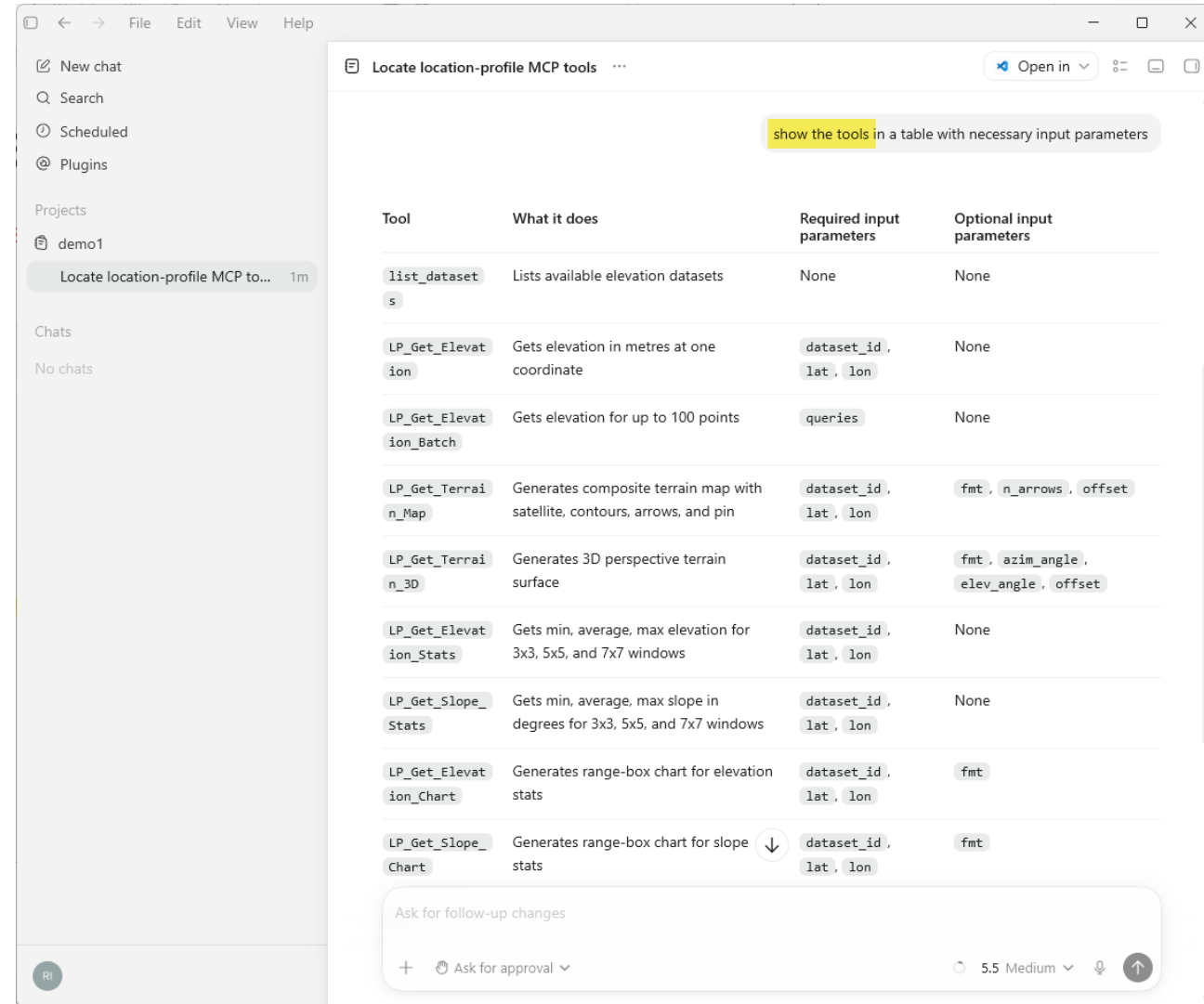
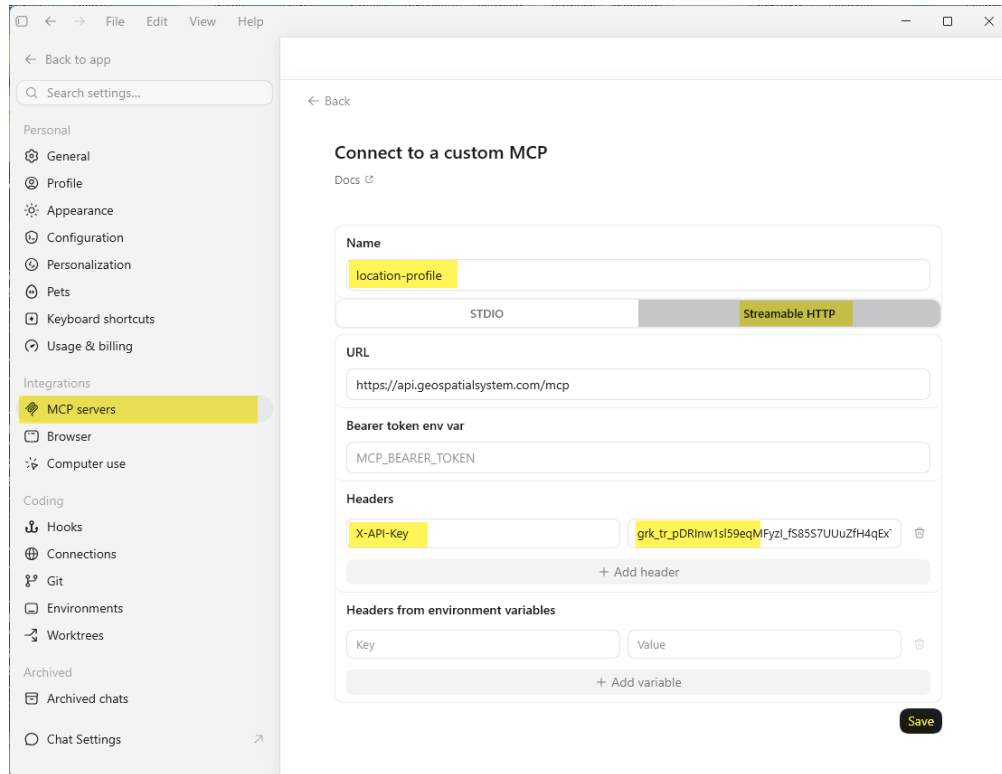
Codex

(Assume codex.exe is included in your Windows system path already)



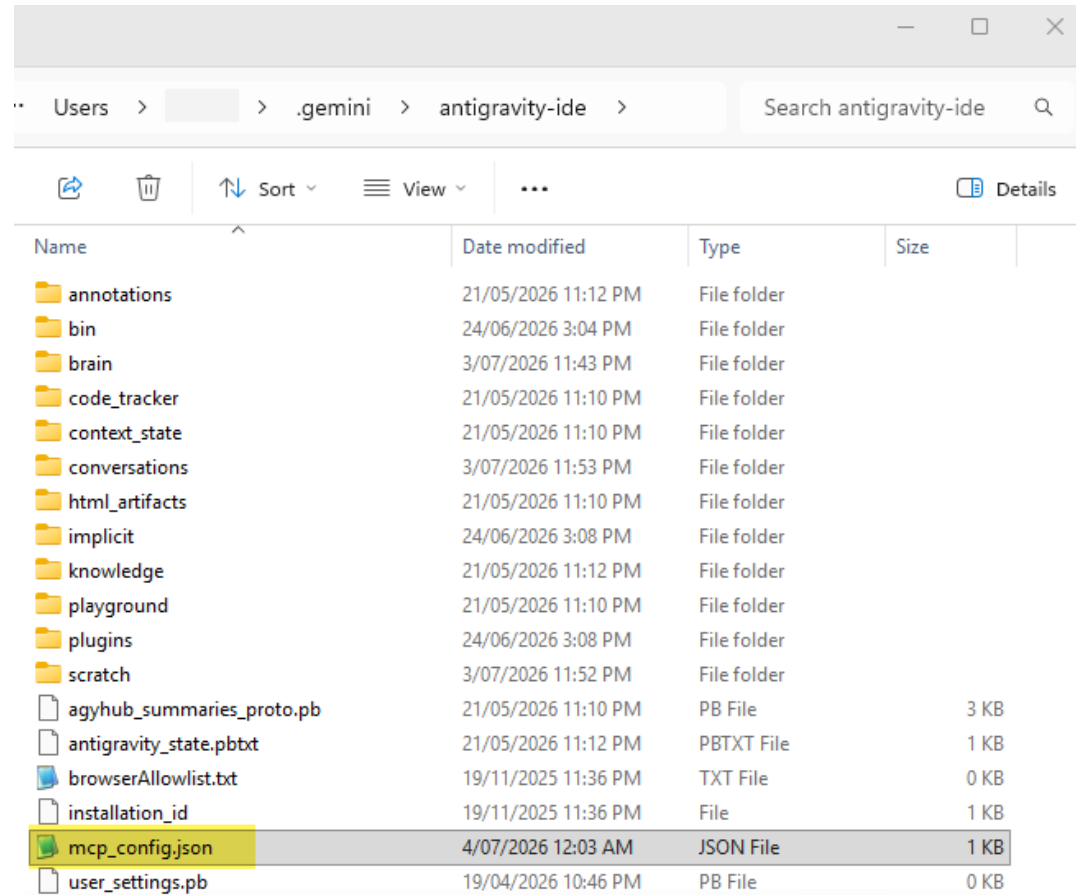
OpenAI Codex – Option 2

Settings | MCP servers | + Add server
(use API key directly)



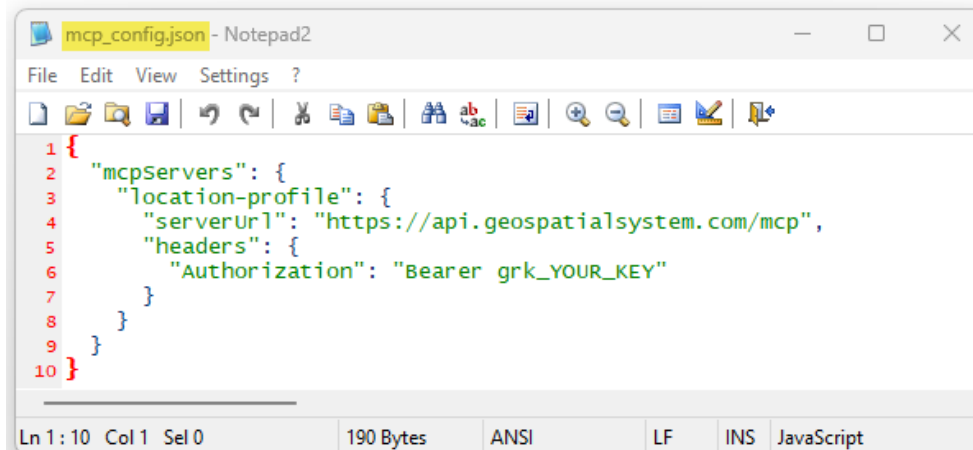
Gemini Antigravity IDE

Gemini Antigravity IDE – Option 1



Users > [User] > .gemini > antigravity-ide > Search antigravity-ide

Name	Date modified	Type	Size
annotations	21/05/2026 11:12 PM	File folder	
bin	24/06/2026 3:04 PM	File folder	
brain	3/07/2026 11:43 PM	File folder	
code_tracker	21/05/2026 11:10 PM	File folder	
context_state	21/05/2026 11:10 PM	File folder	
conversations	3/07/2026 11:53 PM	File folder	
html_artifacts	21/05/2026 11:10 PM	File folder	
implicit	24/06/2026 3:08 PM	File folder	
knowledge	21/05/2026 11:12 PM	File folder	
playground	21/05/2026 11:10 PM	File folder	
plugins	24/06/2026 3:08 PM	File folder	
scratch	3/07/2026 11:52 PM	File folder	
agyhub_summaries_proto.pb	21/05/2026 11:10 PM	PB File	3 KB
antigravity_state.pbbxt	21/05/2026 11:12 PM	PBTXT File	1 KB
browserAllowlist.txt	19/11/2025 11:36 PM	TXT File	0 KB
installation_id	19/11/2025 11:36 PM	File	1 KB
mcp_config.json	4/07/2026 12:03 AM	JSON File	1 KB
user_settings.pb	19/04/2026 10:46 PM	PB File	0 KB



```
1 {
2   "mcpServers": {
3     "location-profile": {
4       "serverUrl": "https://api.geospatialsystem.com/mcp",
5       "headers": {
6         "Authorization": "Bearer grk_YOUR_KEY"
7       }
8     }
9   }
10 }
```

Ln 1: 10 Col 1 Sel 0 | 190 Bytes | ANSI | LF | INS | JavaScript

geospatial_site_v7_edited - Antigravity IDE - mcp_config.json

```
File Edit Selection View Go Run Terminal Help
() mcp_config.json x
C: > Users > >.gemini > antigravity-ide > { mcp_config.json > ...
1  {
2    "mcpServers": {
3      "location-profile": {
4        "serverUrl": "https://api.
5          geospatialsystem.com/mcp",
6        "headers": {
7          "Authorization": "Bearer
8            grk_YOUR_KEY"
9        }
10   }
}
```

Configuring HTTP MCP Server

okay it is done. list tool in this mcp tool

Available Tools (9 total)

Tool Name	Description	Required Parameters
<code>list_datasets</code>	List all available elevation datasets on the Geospatial System server.	None
<code>LP_Get_Elevation</code>	Get the elevation in meters at a specific lat/lon coordinate (WGS-84). Available on all tiers.	<code>lat</code> , <code>lon</code> , <code>dataset_id</code>
<code>LP_Get_Elevation_Batch</code>	Get elevation for up to 100 points in one call. Takes a list of objects.	<code>queries</code>
<code>LP_Get_Elevation_Stats</code>	Get elevation statistics (Min, Average, Max) for 3×3, 5×5, and 7×7 pixel windows. <i>Requires Pro or Enterprise key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code>
<code>LP_Get_Slope_Stats</code>	Get terrain slope statistics in degrees for 3×3, 5×5, and 7×7 pixel windows. <i>Requires Pro key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code>
<code>LP_Get_Elevation_Chart</code>	Generate a range-box chart showing elevation Min/Avg/Max across window sizes. Returns a chart URL. <i>Requires Pro key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code> (optional: <code>fmt</code>)
<code>LP_Get_Slope_Chart</code>	Generate a range-box chart showing terrain slope Min/Avg/Max across window sizes. Returns a chart URL. <i>Requires Pro key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code> (optional: <code>fmt</code>)
<code>LP_Get_Terrain_Map</code>	Generate a composite terrain map: Google Hybrid satellite + smoothed contours + flow-direction arrows + location pin. <i>Requires Pro key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code> (optional: <code>offset</code> , <code>n_arrows</code> , <code>fmt</code>)
<code>LP_Get_Terrain_3D</code>	Generate a 3D perspective terrain surface map (coloured by elevation) with a location pin. <i>Requires Pro key.</i>	<code>lat</code> , <code>lon</code> , <code>dataset_id</code> (optional: <code>offset</code> , <code>elev_angle</code> , <code>azim_angle</code> , <code>fmt</code>)

How to use these tools

Since this server is configured in your global `() mcp_config.json`, you (or any agent) can now run them. For example, you can query elevation by asking:

```
"What is the elevation at lat -37.8136, lon 144.9631 using the default dataset?"
```

← 0 Files With Changes Review Changes

Ask anything, @ to mention, / for actions

+ Gemini 3.5 Flash (Medium) ^

Ln 1, Col 2 Spaces: 2 UTF-8 LF {} JSON with Comments Antigraivty - Settings

*** END ***