MCP SERVER | NO CODE | CLOUD HOSTED

Open-Meteo MCP

Resolve Place Names into Precise Coordinates and Elevation

Open-Meteo Geocoding & Elevation resolves any place name, city, or address into precise GPS coordinates. It gives you more than just latitude and longitude; it returns population density, time zone data, postal codes, and high-accuracy terrain elevation (up to 90m precision). This is the essential layer for building location-aware applications that require deep geographic context.

A+ Quality Score 98.33/100

location-services | gps-coordinates | elevation-data | timezone-lookup | spatial-data

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vinkius.com/mcp/open-meteo-geocoding-elevation

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Open-Meteo Geocoding & Elevation MCP

3 tools available
Cloud-hosted on Vinkius

If your application needs to know exactly where something is—and what's happening at that spot—this MCP handles it. You stop guessing or relying on generalized maps. Instead, you can feed any city name, from anywhere in the world and in any language, into this system and get a full data packet back. This includes precise coordinates, whether the location has a specific time zone, population counts, and postal codes.

For example, if you're building a travel app or a logistics tracker, knowing just the name 'Boston' isn't enough. You need to know its exact elevation profile, which is exactly what this MCP gives you. It lets your agent determine terrain elevation for any given coordinate pair using detailed digital models. Because Vinkius hosts and manages this entire catalog of location services, connecting it means your agent gains reliable access to global spatial data right where it needs it.

It’s the foundational toolset that takes a vague concept—like 'the mountain near Denver'—and turns it into actionable coordinates with elevation metrics.

Core Capabilities

01 — Find locations globally

You can search for any city or village by name, regardless of the language used, receiving full location details like population and time zone.

02 — Filter searches by country

The system restricts your searches to specific countries using their ISO codes, narrowing down results quickly.

03 — Calculate terrain height

You obtain the precise elevation in meters for any set of GPS coordinates based on a 90-meter digital model.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/open-meteo-geocoding-elevation** — connect your AI agent in three steps.

01 Your agent first requests location data, providing either a place name or a list of known country codes.

02 The MCP processes the request across its internal databases to resolve the specific geographical details and coordinates for the area in question.

03 You receive a structured JSON output containing latitude, longitude, population metrics, time zone info, and—if requested—the terrain elevation.

The bottom line is that you get clean, structured geographic data without having to write complex API calls or manage multiple lookup services.

Built For

This MCP is built for developers and data engineers who deal with real-world location data. If your job requires turning a street address or city name into reliable, actionable coordinates that include elevation, you need this. It helps the GIS analyst tired of manually cross-referencing multiple databases.

Logistics Planner

Determining the optimal route and verifying if a delivery site is at an altitude high enough for specialized vehicles.

Data Engineer

Building pipelines that ingest unstructured place name data and normalize it into standardized, geo-tagged records with elevation context.

Travel App Developer

Adding features that calculate the altitude of a destination or show historical population changes for different cities.

What Changes When You Connect

01 Get complete location context. Instead of just knowing a city's name, you get population data, time zones, postal codes, and precise coordinates using the search_location tool.

02 Calculate terrain height instantly. You can use the get_elevation function to determine the exact altitude for any known GPS point without complex modeling.

03 Build targeted searches. The search_location_by_country tool lets you filter out noise, ensuring your agent only looks at locations within a specific country’s borders.

04 Improve data quality across languages. Since the search_location function supports multiple languages, you don't have to worry about translating place names before processing them.

05 Future-proof your location services. This MCP provides foundational spatial data—coordinates and elevation—that works as a reliable companion for any weather or mapping tool.

Real-World Applications

Planning an international supply route

A logistics manager needs to check the altitude of three different checkpoints along a new railway line. The agent uses get_elevation on each checkpoint's coordinates, providing immediate operational feasibility data.

Building a global directory app

A developer wants to list all major historical sites in France. They use search_location_by_country with the ISO code 'FR' and then use search_location to find specific regional centers, gathering populating data for each.

Writing a travel itinerary generator

A user asks for details on an obscure village in Latin America. The agent uses search_location, which handles the non-English name and returns coordinates, time zone information, and population metrics needed to build the full trip plan.

Validating database records

A data team uploads a spreadsheet of addresses. The agent systematically runs search_location on every address to validate if it's a real place and automatically retrieves its standardized coordinates, reducing manual data cleanup time.

Patterns to Avoid

Using basic mapping APIs

✗ AVOID

A developer only uses a simple map API that returns Lat/Lon pairs but fails to provide associated metrics like population or elevation.

✓ INSTEAD

Don't stop at coordinates. Use search_location first to get the rich data set, then run get_elevation on those specific coordinates for full context.

Hardcoding country codes

✗ AVOID

Writing logic that assumes users will always input English names and forgetting to validate the location against a country filter.

✓ INSTEAD

Always start by using search_location_by_country. This forces your agent to confirm the geopolitical context before attempting any searches.

Mixing up coordinate sources

✗ AVOID

Trying to use an elevation value from a general weather API that isn't based on a precise digital model.

✓ INSTEAD

For reliable altitude data, always run the coordinates through get_elevation. It uses a dedicated 90-meter digital elevation model.

The Right Fit

Use this MCP if your workflow requires turning vague place names into structured, deep spatial records that include not only latitude

and longitude but also population counts, time zone data, and reliable terrain elevation. Think of it as the geographic layer for complex systems.

Don't use this if you simply need to display a marker on a map or find basic routing between two points; general mapping services handle that. Also, don't rely on this solely for historical analysis; while it provides population data, its core strength is real-time location resolution and elevation calculation using search_location and get_elevation.

If your need is purely to validate if a coordinate pair exists in the world without needing associated metrics, you might be over-indexing. But if you need *all* the metadata that comes with a valid location—the whole package—this MCP is what you need.

The Pain of Manual Location Data Lookup

Today, gathering comprehensive geographic data is a pain. If you're building an application that tracks field operations or global inventory, you often start with a list of place names and addresses. Then, for each one, you have to manually copy those names into three different tools: one for coordinates, another for population stats, and yet a third for elevation checks. It's tedious clicking through multiple tabs and cross-referencing spreadsheets just to build one accurate record.

With this MCP, your agent handles the whole process in one go. You give it a name—say, 'Rocher de Fontainebleau'—and you get back coordinates, population data, time zone details, *and* the specific terrain elevation, all structured and ready for use. The output is clean, comprehensive, and immediately actionable.

Get Full Location Context with Open-Meteo Geocoding & Elevation

You eliminate the need to switch between a dedicated geocoder, a census database, and a

What's different now is reliability. You move from fragmented, incomplete location estimates to

digital elevation model. The MCP consolidates all these disparate data sources into one reliable output stream.

mathematically accurate coordinates and validated metrics that power truly intelligent applications.

Open-Meteo Geocoding & Elevation with 3 Tools

These three tools allow you to search for locations globally, filter by specific countries, and calculate precise terrain elevations from any given coordinate pair.

#	TOOL	DESCRIPTION
01	search_location	Search for any city or place globally, supporting multiple languages and returning coordinates.
02	get_elevation	Retrieve the specific terrain elevation in meters for a given set of latitude and longitude coordinates.
03	search_location_by_country	Search for locations, filtering results only to those within a specified country using its ISO code.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U Where exactly is Machu Picchu? Give me coordinates and elevation.

📍 **Machu Picchu**

Latitude: -13.1631
Longitude: -72.5450
Elevation: 2,430m above sea level
Timezone: America/Lima (UTC-5)
Country: Peru PE
Admin region: Cusco

U Find all cities named 'Springfield' in the United States

🏘️ **Springfield — US Results**

1. Springfield, IL — Pop: 114,394 (39.80°N, 89.64°W)
2. Springfield, MO — Pop: 169,176 (37.22°N, 93.29°W)
3. Springfield, MA — Pop: 155,929 (42.10°N, 72.59°W)
4. Springfield, OH — Pop: 58,662
5. Springfield, OR — Pop: 62,979

10 results found across 10 different states.

U What's the elevation of Mount Kilimanjaro's summit?

Mount Kilimanjaro — Uhuru Peak

Elevation: 5,895m (19,341 ft)
Coordinates: -3.0674°S, 37.3556°E
Country: Tanzania TZ

Highest point in Africa and the tallest free-standing mountain in the world.

Frequently Asked Questions

01 **How does Open-Meteo Geocoding & Elevation handle non-English place names?**

It supports any language. The search_location tool resolves global city and village names regardless of the language they are written in, giving you standardized coordinates.

02 **Can I use Open-Meteo Geocoding & Elevation to find elevation?**

Yes, absolutely. Use get_elevation by providing any set of GPS coordinates; it returns the precise terrain height in meters using a 90m digital model.

03 **What if I only have a country code and no city name?**

You can start with search_location_by_country. This tool filters all possible results to that specific ISO country, narrowing your scope before you try searching for a particular location.

04 **Does Open-Meteo Geocoding & Elevation provide time zone data?**

Yes, the search_location function includes timezone information for resolved locations. This is critical for scheduling and multi-region operations.

05 **Is this MCP better than using Google Maps API for location data?**

This MCP excels because it bundles elevation (get_elevation) with metadata like population and timezone, which many general mapping APIs treat as separate services. It provides a richer data set out of the box.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"open-meteo-geocoding-elevation": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Open-Meteo Geocoding & Elevation is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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Endpoint	`https://edge.vinkius.com/{token}/mcp`

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