MCP SERVER | NO CODE | CLOUD HOSTED

Open-Meteo MCP

Global Weather and Air Quality Data on Demand

Open-Meteo provides global weather forecasts and environmental metrics directly through your AI client, requiring zero API keys. Get real-time temperature, multi-day predictions, historical climate data dating back to 1940, comprehensive air quality reports (PM2.5, Ozone), elevation details, and location coordinates—all in one conversation.

A+ Quality Score 100/100

weather-forecast | historical-weather | air-quality | meteorology | environmental-data | open-source

MAINTAINED BY VINKIUS CLOUD FOR AI AGENTS · JUNE 2026
vinkius.com/mcp/open-meteo

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 MCP

5 tools available
Cloud-hosted on Vinkius

Need reliable environmental data without the hassle of managing API keys or complex authentication? This MCP connects your AI client directly to Open-Meteo, giving you instant access to global weather patterns and atmospheric measurements. Whether you're tracking air pollution indices for a city or pulling historical temperature logs for climate research, you don't get stuck on setup steps. You simply ask your agent what you need, and it handles the complex data retrieval. All this information flows through Vinkius, making world-class weather data available to any compatible AI client in plain conversation. It’s pure, open-source environmental intelligence that gets results fast.

Core Capabilities

01 — Find Coordinates

Use a place name to instantly retrieve the precise latitude and longitude needed for all other weather queries.

02 — Get Current Conditions

Pull real-time measurements like temperature, wind speed, humidity, and current weather codes for any location.

03 — Forecast Future Weather

Generate detailed forecasts that span multiple days, providing hourly breakdowns of variables up to 16 days out.

04 — Analyze Air Quality

Get pollutant levels, including PM2.5, Ozone, and Carbon Monoxide, along with UV index predictions for health planning.

05 — View Historical Data

Access archived weather records for a specific location spanning decades, going back to 1940.

06 — Determine Elevation

Calculate the vertical height of any given set of coordinates, useful for terrain analysis or aviation planning.

One Click on Vinkius — From Prompt to Execution

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

01 Subscribe to this MCP in Vinkius. No API key is required; you can start asking questions immediately.

02 Tell your AI client what location and date range you need data for (e.g., 'What was the air quality in London last June?').

03 Your agent invokes the necessary tool, fetches the raw environmental metrics, and presents a clear summary back to you.

The bottom line is that you get reliable, complex weather data from open-source sources without ever needing to worry about authentication or API limits.

Built For

Environmental researchers and outdoor planners who need deep historical context are the primary users. It's also indispensable for developers building apps that require real-time, reliable location metrics without paying third-party rates.

Climate Researcher

Running comparative studies by using get_historical_weather to pull specific climate variables from different decades and locations.

Outdoor Event Planner

Checking the combined forecast—including UV index, wind speed, and precipitation via get_forecast—to ensure an outdoor event is viable for its full duration.

Software Developer

Integrating weather or air quality data into a prototype app by calling tools like get_geocoding first to validate user input coordinates, then using get_air_quality for the payload.

What Changes When You Connect

01 Access historical data without limits. You can use get_historical_weather to pull climate metrics for any location dating back decades, perfect for academic research.

02 No authentication headaches. Since this MCP requires no API key, you never worry about rate limits or paying excessive fees just to check the daily forecast.

03 Comprehensive air quality monitoring. Use get_air_quality to track multiple pollutants—like PM2.5 and Ozone—giving a full picture of local environmental health.

04 Smart location prep. If you only know the city name, start with get_geocoding. It gives you the precise coordinates needed before running any other tool, preventing errors.

05 Plan for terrain challenges. Need to know how high an event site is? Use get_elevation to find the ground level at specific coordinates.

Real-World Applications

Planning a Long-Distance Hike

A guide needs to know if the trail will be wet, windy, or too hot. They first use get_geocoding to find the trailhead coordinates, then run get_forecast for the next 7 days to check wind speeds and precipitation patterns.

Analyzing Climate Change Trends

A scientist needs to compare average summer temperatures in Paris across three different decades. They use get_historical_weather, specifying start and end dates for each period to pull the required data points.

Evaluating Urban Pollution Risk

An urban policy analyst wants a full report on air quality for a major industrial zone. They run get_air_quality to check PM10, NO2, and O3 levels, giving them actionable data on pollution hotspots.

Developing an Event Dashboard

A developer needs background metrics for their app. Instead of asking the user for coordinates, they run get_geocoding first to validate a city input and then pass those results directly into get_forecast to populate the dashboard.

Patterns to Avoid

Skipping Location Lookup

✗ AVOID

Trying to analyze current weather or air quality by simply typing 'New York City' into a tool that requires coordinates, leading to an immediate failure because the data format is wrong.

✓ INSTEAD

Always start with get_geocoding. It takes plain text (like 'New York City') and outputs the precise latitude/longitude required for subsequent calls to get_forecast or get_air_quality.

Mixing Data Sources

✗ AVOID

Using a generic search tool that pulls basic weather facts, but misses crucial metrics like pollutant concentration (PM2.5) or elevation data.

✓ INSTEAD

Use this MCP because it is specialized. You can run get_air_quality *and* get_elevation in the same chain to gather a complete environmental profile for any given spot.

Forgetting Time Constraints

✗ AVOID

Asking for historical weather data without specifying both a start date and an end date, resulting in either no data or only the current day's metrics.

✓ INSTEAD

When using get_historical_weather, make sure you provide four inputs: latitude, longitude, a clear start date (YYYY-MM-DD), and a definitive end date.

The Right Fit

Use this MCP if your primary need is environmental data related to location. This includes weather forecasts, air quality metrics, elevation profiles, or historical climate records. It's the right choice when you are dealing with variables like PM2.5, wind direction, temperature over time, or ground height.

Don't use this if you only need general news updates, stock market prices, or contact information for a business. For those purposes, a dedicated financial or directory tool is better. If your goal is simply to check the current temperature and nothing else, get_forecast works well, but remember that its power comes from its ability to combine multiple complex metrics like air quality via get_air_quality.

Getting Location Data Used To Be a Mess.

Before specialized tools like this MCP, gathering location-based data meant juggling three different websites. You'd find the city name on one site, get coordinates from another, and then cross-reference weather metrics or historical pollution levels across a third service. It was constant copy/pasting between spreadsheets and dashboards.

Now, you tell your agent exactly what you need—say, 'What were the air quality conditions in Denver last fall?'—and it handles the entire chain: finding the coordinates, accessing the correct date ranges, pulling the pollutant data (like NO2), and presenting a single, readable answer. You get instant, accurate context.

Open-Meteo MCP delivers reliable weather and air quality metrics.

Manually compiling this kind of data meant dealing with different formats for historical records versus current forecasts. You'd have to check one API endpoint for temperature, another for wind speed, and a third just for the UV index, making any single report incomplete or outdated.

With this MCP, you get all those variables—temperature_2m, uv_index, precipitation, humidity—sourced from one reliable, open-source stream. It’s not just data; it's a complete environmental picture.

Open-Meteo: Weather & Environment Data (5 Tools)

Use these five tools to query coordinates, predict future weather, check air pollution levels, view historical climate data, and measure ground elevation for any location.

#	TOOL	DESCRIPTION
01	`get_air_quality`	Retrieves pollutant levels (PM2.5, Ozone, CO) and UV index forecasts for a specific location over up to seven days.
02	`get_elevation`	Calculates the vertical height of any given coordinates, useful for mapping or hiking routes.
03	`get_forecast`	Provides detailed weather predictions, including temperature and wind speed, for a location over multiple days.
04	`get_geocoding`	Translates a readable place name into usable latitude and longitude coordinates needed for all other tools.
05	`get_historical_weather`	Retrieves detailed weather metrics for a location across specific date ranges, going back to 1940.

See It in Action

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

U What's the weather forecast for São Paulo this week?

São Paulo (23.55°S, 46.63°W): Today 26°C/18°C, partly cloudy with 30% chance of rain. Tomorrow 24°C/17°C, light rain expected. Wednesday 22°C/16°C, overcast. Wind: 10-15 km/h. Humidity: 65-80%. UV index moderate (5-6).

U What was the temperature in Tokyo on July 15, 2024?

Tokyo on July 15, 2024: High 32°C, Low 25°C. Hourly data shows temperatures peaked at 2 PM. Humidity 70%, light winds 5 km/h from the southeast. No precipitation recorded.

U What's the air quality in Beijing right now?

Beijing air quality: PM2.5 at 85 µg/m³ (unhealthy for sensitive groups), PM10 at 120 µg/m³, NO2 at 45 µg/m³, O3 at 65 µg/m³. Overall AQI: 165 (Unhealthy). Sensitive groups should reduce outdoor exposure.

Frequently Asked Questions

01 **Does Open-Meteo MCP require an API key?**

No, this MCP does not require any API keys to function. It connects directly to the open-source data stream, meaning you can start querying global forecasts immediately.

02 **How far back can I get historical weather using Open-Meteo?**

The tool supports historical records going all the way back to 1940 for most locations. You just need to use get_historical_weather and define your start and end dates.

03 **What is the difference between get_forecast and get_air_quality?**

get_forecast delivers general weather metrics like temperature, wind speed, and rain chance. get_air_quality focuses specifically on pollutant levels (PM2.5, Ozone) for environmental health reports.

04 **Can I use Open-Meteo MCP to find coordinates?**

Yes, if you only have a city name but need precise coordinates, use get_geocoding first. It gives you the latitude and longitude required for all other environmental tools.

05 **Can this MCP handle multi-variable analysis?**

Absolutely. You can combine multiple tool outputs in one request—for instance, running get_air_quality alongside get_forecast to report both pollution levels and temperature trends for a location.

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": { "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 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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DOCUMENT INFORMATION

Generated	June 2026
MCP Server	Open-Meteo MCP
Server ID	`019d8464-46ef-7056-948c-49f553f898c0`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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