

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Aurora Forecast MCP

Get real-time space weather and aurora probability for your exact location.

Aurora Forecast MCP connects your AI agent to live space weather data from NOAA's Space Weather Prediction Center. Instead of checking multiple dashboards, you can ask your agent for the current Kp index, solar wind speeds, or the OVATION model's aurora probability at your specific coordinates. It provides the raw data and the verdict you need to decide if it is worth heading out tonight.



Quality Score 96.67/100

aurora

northern-lights

space-weather

kp-index

solar-wind

noaa



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.

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.

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.

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

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

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.

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.

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.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot 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.

FinOps

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

Firewall & DLP

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

Agent Activity

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

Tool Health

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

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.

Aurora Forecast MCP

7 tools available

Cloud-hosted on Vinkius

Stop refreshing three different NOAA dashboards just to see if the sky might light up. This MCP gives your AI client direct access to the same live space weather measurements used by professional forecasters. You can ask your agent for a plain-language verdict on aurora visibility at your exact latitude and longitude. It pulls the latest Kp index, NOAA storm scales, and solar wind data, including Bz magnetic field strength and F10.7 radio flux. While the MCP handles the geomagnetic activity and solar wind data, you still need to keep an eye on cloud cover and dark skies. If the OVATION model shows a probability of 50 or higher, the aurora is likely to be directly overhead your position. It is a fast, direct way to turn raw space weather telemetry into actionable plans for your next night out.

Core Capabilities

01 — Real-time Kp Monitoring

Your agent checks the latest 3-hourly planetary Kp index to gauge geomagnetic activity.

02 — Localized Aurora Probability

The agent uses the OVATION model to predict if the aurora will be overhead at your specific coordinates.

03 — Solar Wind Analysis

Your agent monitors solar wind speed and Bz magnetic field strength to identify incoming storms.

04 — Storm Scale Forecasting

The agent retrieves NOAA R/S/G scales to predict the intensity of upcoming geomagnetic events.

05 — Official Alert Tracking

Your agent monitors NOAA SWPC for any newly issued watches or warnings.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/aurora-forecast — connect your AI agent in three steps.

- 01 Subscribe to the MCP via Vinkius.
- 02 Connect your preferred MCP-compatible client like Claude or Cursor.
- 03 Ask your agent a question about aurora probability or Kp levels.
- 04 The agent pulls live data from NOAA SWPC through the MCP tools.
- 05 Your agent provides a direct answer based on real-time measurements.

Connect your agent to the MCP and start asking questions about space weather.

Built For

This MCP is built for people who need to turn complex space weather telemetry into simple, actionable decisions.

Aurora Photographers

They ask the agent for a location-specific verdict to decide when to pack their gear.

Tour Operators

They use the data to communicate aurora chances to customers in high-latitude regions.

Radio Operators

They monitor R/S/G scales and solar wind to track potential radio interference.

What Changes When You Connect

- 01 Eliminates the need to manually check multiple NOAA dashboards.

-
- | | |
|----|--|
| 02 | Provides location-specific aurora probability using the OVATION model. |
| 03 | Translates raw solar wind and Kp data into plain-language answers. |
| 04 | Delivers real-time updates on official NOAA geomagnetic warnings. |
-

Real-World Applications

Nightly Planning

Ask your agent if the aurora is likely overhead at your current coordinates before driving out into the dark.

Storm Tracking

Check the Kp forecast for the next three days to see when the next geomagnetic peak will occur.

Solar Wind Monitoring

Verify if a sustained southward Bz is occurring to confirm if a solar wind stream will drive an aurora.

Alert Verification

Quickly check if NOAA has issued a specific Kp-5 or radio blackout warning.

Patterns to Avoid

Ignoring local coordinates

❌ AVOID

Asking your agent if the aurora is active globally without specifying where you are standing.

✓ INSTEAD

Provide your exact latitude and longitude to get a localized forecast using ``get_aurora_probability``.

Missing the peak window

❌ AVOID

Checking the current Kp index and assuming the activity will stay at that level for the whole night.

✓ INSTEAD

Use ``list_kp_forecast`` to see the predicted peaks over the next three days so you can time your trip.

Overlooking solar wind drivers

❌ AVOID

Waiting for a high Kp index to be reported before deciding to head out for photos.

✓ INSTEAD

Monitor the magnetic field strength and solar wind speed with `'get_solar_wind'` to catch a storm before the Kp index spikes.

The Right Fit

Connect this MCP if you need to turn raw NOAA telemetry into a clear plan for night photography or radio monitoring. Do not connect it if you only care about cloud cover or local weather. The decision depends on whether you need space weather data to drive your physical movements.

Aurora Forecast 7 Tools for Space Weather Monitoring

This MCP provides direct access to NOAA telemetry, Kp index forecasts, and OVATION model probability data.

#	TOOL	DESCRIPTION
01	list_space_weather_alerts	This tool lists the most recent aurora warnings, watches, and alerts issued by NOAA SWPC. You can filter results by product ID, such as K04 for Kp-4 warnings.
02	get_aurora_conditions	This tool reports current aurora and geomagnetic conditions including the Kp index, NOAA storm scales, and solar wind. Providing latitude and longitude adds a point forecast for aurora probability at that specific spot.
03	list_kp_forecast	This tool provides the observed and predicted Kp index for a window covering roughly seven days of history and three days of forecast. The peak value in the window is highlighted to help you time your observation.
04	list_recent_kp_index	This tool retrieves the most recent planetary Kp index measurements. It defaults to the last 24 hours of 3-hourly data.
05	get_aurora_probability	This tool fetches the OVATION model's aurora probability for a specific latitude and longitude. It is a lightweight way to check the likelihood of aurora at a single point.
06	get_storm_scales	This tool returns the current NOAA R/S/G storm scales for today and the next three days. It includes the probability percentages for minor and major geomagnetic events.
07	get_solar_wind	This tool provides live solar wind measurements including speed, magnetic field strength, and F10.7 radio flux. It is useful for checking if a southward Bz is present to drive aurora activity.

See It in Action

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

U Can I see the aurora from 64.8, -147.7 tonight? Give me the current conditions and the Kp forecast for the next 24 hours.



Right now the Kp index is 1.7, which NOAA rates as quiet. The aurora oval sits near 70 degrees latitude, so from 64.8, -147.7 the OVATION model gives a low probability overhead. No geomagnetic warning is in effect. Over the next 24 hours the forecast peaks around Kp 3, so conditions may improve slightly after dark.

U Has NOAA issued any geomagnetic storm warnings recently? List the latest alerts and today's NOAA space weather scales.



No geomagnetic warnings are in effect right now. Today's NOAA scales put the G1 minor storm probability at a few percent over the next 24 hours, with radio blackout R1 and solar radiation S1 probabilities also low. The most recent issued alert is listed below; nothing in it rises to warning level for high latitudes.

U What is the solar wind doing right now? Is a fast stream arriving?



At 06:09 UTC on 20 Sep 2026 the solar wind is slow and quiet. Proton speed is 408 km/s with a total field of 5 nT and Bz at -3 nT. A stream that would drive aurora typically needs 500 km/s or more and a sustained southward Bz, so nothing is arriving. The F10.7 radio flux was 97 solar flux units at 20:00 UTC yesterday.

Frequently Asked Questions

01 How often is the space weather data updated?

The Kp index and solar wind data are refreshed every few minutes. The OVATION aurora model refreshes roughly every 10 minutes.

02 Does a high aurora probability mean I will definitely see it?

No. A probability of 50 or higher means the aurora is likely to be overhead, but you still need dark skies and clear weather to see it.

03 Do I need an API key to use this?

No, you do not need an account or an API key. Vinkius hosts the connection for you.

04 What does a Kp index of 5 mean?

A Kp index of 5 marks the beginning of the G1 minor storm scale.

05 Can I get forecasts for my specific city?

Yes. If you provide your latitude and longitude, the agent can use the OVATION model to give you a probability for your exact spot.

06 Does this need an API key?

No. All endpoints used here are NOAA's public space weather products. Subscribe and ask away.

07 The aurora probability at my location is high but I see nothing. Why?

The probability comes from NOAA's OVATION model, which reports what the upper atmosphere is doing. It cannot see your clouds or your midnight sun. You still need a dark, clear sky — and aurora near the equator edge of the oval is often faint, low on the horizon, and best photographed with a long exposure rather than judged by eye.

08 How often does the data refresh?

The Kp index and solar wind summaries refresh every few minutes. The OVATION aurora model refreshes roughly every 10 minutes, and this server caches the ~1 MB grid for that long so it does not re-download it on every question.

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 <code>"aurora-forecast": { "url": "..."</code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → 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

Aurora Forecast 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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