MCP SERVER | NO CODE | CLOUD HOSTED

NOAA Forecast MCP

Access Official 7-Day and Hourly U.S. Weather Data

The NOAA Forecast MCP provides access to official National Weather Service data covering all US locations. You can pull 7-day daily forecasts, detailed 156-hour hourly conditions, raw quantitative grid arrays (for temperature, wind, precipitation), and technical Area Forecast Discussions from over a dozen offices. It gives your agent comprehensive weather context for any task.

A+ Quality Score 98.33/100

weather-forecasting | meteorology | nws-forecast | grid-data | hourly-weather | climate-modeling

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vinkius.com/mcp/noaa-forecast-us-weather-predictions

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.

NOAA Forecast — US Weather Predictions MCP

5 tools available
Cloud-hosted on Vinkius

This MCP connects your AI client directly to the official National Weather Service forecast engine. Instead of relying on general search results or limited third-party APIs, you get raw, authoritative data sourced from NWS meteorologists and technical grids.

When running an agent through Vinkius, it can interpret complex requests—like comparing 7-day averages with hourly probability changes across a specific region. You're not just fetching a single number; you're pulling structured arrays of temperature, wind speed, precipitation chance, and detailed narrative reports from the official offices.

Your agent uses this MCP to gather everything needed, whether it’s running a programmatic analysis on raw grid data or summarizing complex discussion notes. It means your AI client can handle multi-layered weather reporting for any US location without needing an API key or manual setup.

Core Capabilities

01 — Retrieve 7-Day Forecast Details

Gets a daily summary including high/low temperatures, precipitation probability, and narrative descriptions for a specified US latitude and longitude.

02 — Get Hourly Weather Conditions

Pulls hour-by-hour data across 5 days, detailing temperature, wind direction, humidity levels, and sky conditions.

03 — Fetch Official Discussion Notes

Retrieves technical Area Forecast Discussions (AFD) from specific NWS Weather Forecast Offices using their three-letter code.

04 — Download Raw Grid Data Arrays

Grabs quantitative weather data arrays, useful for deep programmatic analysis of temperature, wind, and precipitation.

05 — Identify Location Metadata

Provides NWS metadata about a US location, including which Weather Forecast Office is responsible and the specific grid coordinates.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/noaa-forecast-us-weather-predictions** — connect your AI agent in three steps.

01 First, specify the required weather data type and provide the target US latitude and longitude. For example, you might ask for a 7-day forecast.

02 Next, your AI client executes the appropriate tool call against the NOAA engine; it handles the specific formatting required for raw grid arrays or office codes.

03 Finally, the MCP returns structured data—whether that's a table of hourly conditions or a technical text summary—which your agent can then interpret and use in its final output.

The bottom line is you get direct, standardized access to official NWS weather reporting for US locations, without needing keys or manual setup.

Built For

Meteorologists, logistics planners, field operations managers, and climate researchers need this. They run into a major pain point when standard APIs only give general summaries; they need the raw technical depth of NOAA's official reporting to make critical decisions.

Field Operations Planner

Uses the hourly forecast tool to plan vehicle routes, ensuring personnel avoid predicted severe weather windows over a 5-day window.

Meteorologist/Researcher

Retrieves raw grid data and uses the get_forecast_discussion tool to perform comparative analyses against historical or current atmospheric conditions.

Disaster Response Coordinator

Checks both 7-day forecasts and point metadata quickly to confirm which specific NWS office is responsible for a newly impacted US zone.

What Changes When You Connect

01 Get the full picture with get_hourly_forecast, which provides a detailed timeline of conditions over five days, going far beyond simple daily high/low numbers.

02 For deep analysis, use get_grid_data to pull raw arrays for temperature and wind. This lets your agent run complex calculations that standard weather summaries can't support.

03 Understand the 'why' behind a forecast by running get_forecast_discussion. This tool gives access to technical text reports written by NWS meteorologists themselves.

04 Never guess where a location falls in the system; use get_point_metadata to instantly confirm the responsible WFO and precise grid zone for any point in the U.S.

05 The combination of getting 7-day weather forecast data with get_hourly_forecast means your agent can build complete, multi-scale operational reports from one source.

Real-World Applications

Planning a cross-state logistics route

A freight company needs to know if an interstate run through the Midwest will be impacted by severe weather. The agent calls get_hourly_forecast for all necessary waypoints, allowing the planner to adjust schedules and avoid predicted thunderstorm paths.

Developing a climate model comparison

A university researcher needs to compare current atmospheric conditions against historical averages. They use get_grid_data to pull raw temperature and precipitation arrays for a specific grid area, enabling complex statistical modeling.

Handling an emergency response deployment

Local government staff need immediate confirmation of the governing authority during a storm. The agent uses get_point_metadata first to identify the correct WFO, then runs get_forecast_discussion for actionable expert commentary.

Building an automated weather report card

A media outlet needs a detailed daily digest. They use get_forecast and get_hourly_forecast in sequence to build a comprehensive narrative, starting with the general 7-day outlook and drilling down into hourly changes.

Patterns to Avoid

Using basic web searches

✗ AVOID

A user asks an agent for 'weather in Dallas next week.' The agent only gets a high-level summary from the first search result, missing hourly detail or raw data.

✓ INSTEAD

Use get_forecast combined with get_hourly_forecast. This combination ensures your agent pulls both the general 7-day overview and the specific hour-by-hour data points needed for accuracy.

Ignoring regional context

✗ AVOID

A planner gets a forecast that says 'rain risk' but doesn't know which office issued it, so they can’t trust the severity.

✓ INSTEAD

Always start by calling get_point_metadata to confirm the specific NWS Weather Forecast Office (WFO) responsible for the location. This validates the entire data set.

Over-relying on general APIs

✗ AVOID

A researcher uses a third-party API that only gives daily averages and lacks technical depth, making advanced comparisons impossible.

✓ INSTEAD

Use get_grid_data for raw quantitative arrays. This bypasses summarized data and provides the necessary mathematical input for professional analysis.

The Right Fit

Use this MCP if your task requires authoritative, multi-layered weather information specific to US locations. If you need a simple 'Will it rain?' answer, other general tools might suffice. But if you're building anything that needs technical rigor—like comparing raw temperature arrays (get_grid_data) against official expert commentary (get_forecast_discussion), or mapping out five days of minute-by-minute conditions (get_hourly_forecast)—you need the depth this MCP provides. Don't use it if you just need a basic general search result; those are surface level. Always check get_point_metadata first to ensure your location is correctly zoned before pulling any data.

The struggle of manual weather reporting

Right now, if you're building a multi-day report for field operations, you have to hop between different systems. You check one API for the 7-day summary, then switch to a second source just to get the hourly breakdown. Finally, if you need to know which office issued that warning, you run another search query just for metadata.

With this MCP connected via Vinkius, your agent handles all those hops automatically. You ask one question—'What are the conditions next week?'—and it pulls the 7-day summary, drills down into hourly changes, and confirms the source office, giving you a single, unified answer.

Getting structured data with get_grid_data

Previously, getting raw weather variables meant downloading massive CSV files and manually mapping temperature arrays to wind speed changes. It was a tedious process of cleaning up quantitative data that wasn't built for programmatic use.

Now, your agent calls get_grid_data, receiving structured, clean arrays ready for immediate mathematical processing or comparison in code. You skip the cleanup; you go straight to analysis.

NOAA Forecast — US Weather Predictions: 5 Tools

Use these tools to pull every type of official NWS data available, from simple daily forecasts to complex raw grid arrays and technical discussion reports.

#	TOOL	DESCRIPTION
01	`get_forecast`	Generates a standard 7-day weather summary for any U.S. location using latitude and longitude, including highs/lows and wind direction.
02	`get_hourly_forecast`	Retrieves detailed hour-by-hour conditions covering five days, listing temperature, humidity, and precipitation chance for a U.S. location.
03	`get_forecast_discussion`	Fetches the technical Area Forecast Discussion (AFD) from specific NWS offices using their 3-letter code.
04	`get_grid_data`	Provides raw quantitative weather data arrays, allowing for deep programmatic analysis of temperature, wind, and humidity across the U.S.
05	`get_point_metadata`	Retrieves specific NWS metadata about a US location, identifying its responsible Weather Forecast Office (WFO) and grid coordinates.

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 New York City this week?

🌤️ NYC 7-Day Forecast

Today: Partly cloudy, High 72°F, Wind SW 10 mph
Tonight: Clear, Low 58°F
Wednesday: Sunny, High 78°F
Thursday: Thunderstorms, High 74°F, 60% chance rain
Friday: Clearing, High 68°F
Weekend: Sunny, Highs 72-75°F

Source: NWS Office OKX (Upton, NY)

U Get hourly forecast for Miami Beach

⏰ Miami Beach — Hourly Forecast

HOUR	TEMP	WIND	RAIN
2pm	88°F	SE 12	10%
3pm	89°F	SE 14	20%
4pm	87°F	SE 15	40%
5pm	84°F	S 18	60%
6pm	82°F	S 12	30%

Afternoon sea-breeze thunderstorms likely.

Frequently Asked Questions

01 **What locations does NOAA Forecast — US Weather Predictions MCP cover?**

This MCP covers all United States locations, including Puerto Rico and other U.S. territories. It is restricted to NWS coverage areas.

02 **Do I need an API key for get_hourly_forecast using NOAA Forecast — US Weather Predictions MCP?**

No, the connection is completely open, meaning you don't need any registration or special keys to use the weather data tools.

03 **How do I check historical weather patterns with NOAA Forecast — US Weather Predictions MCP?**

This MCP provides current and forecast data. For accessing indexed historical records, you would need a different tool set designed for archival retrieval.

04 **Can get_point_metadata help me confirm the responsible NWS office code?**

Yes, this tool gives you critical metadata about any US location, including which Weather Forecast Office (WFO) is assigned to that grid coordinate.

05 **Is the data from get_forecast_discussion reliable for expert analysis?**

The discussion notes are technical Area Forecast Discussions (AFD) written by NWS meteorologists, providing highly authoritative context and explanation for current weather patterns.

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 `"noaa-forecast-us-weather-predictions": { "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

NOAA Forecast — US Weather Predictions 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 →

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