MCP SERVER | NO CODE | CLOUD HOSTED

Cycling Climb Rate Analyzer MCP

Turn raw climbing data into actionable performance metrics.

Cycling Climb Rate Analyzer MCP gives your AI client the math needed to evaluate vertical ascent. It handles VAM calculations, validates segment data, and compares different climbing attempts to see exactly how your performance changes over time.

A+ Quality Score 100/100

cycling | vam | climbing | performance | sports-analytics

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vinkius.com/en/ai-agent-connect/cycling-climb-rate-analyzer

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.

Cycling Climb Rate Analyzer MCP

4 tools available
Cloud-hosted on Vinkius

You can stop manually calculating vertical ascent rates and trying to make sense of messy climbing data. This MCP gives your agent the specific tools it needs to act as a high-level cycling coach. Instead of you doing the math, your AI client uses get_climb_rate to find your VAM instantly. You can hand over raw segment data and have your agent check if the numbers are even valid using validate_climb_segment. If you want to know if a ride was actually hard, the agent uses get_climb_intensity_tier to categorize the effort. When you're training for a specific mountain, you can use compare_climb_segments to see if you're actually getting faster or just riding differently. It turns your climbing logs into a clear picture of your fitness.

Core Capabilities

01 — VAM Calculation

Your agent calculates vertical ascent rates for any given segment.

02 — Intensity Categorization

The AI assigns a standard intensity tier to your climbing efforts.

03 — Segment Validation

The agent verifies that climb data is mathematically sound for analysis.

04 — Performance Comparison

Your AI client compares two different climbs to identify performance shifts.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/cycling-climb-rate-analyzer** — connect your AI agent in three steps.

01 Connect the MCP to your client like Claude or Cursor via Vinkius.

02 Provide your climbing data or segment details to your agent.

03 The agent uses the specific tools to calculate or validate the data.

04 Your agent delivers the analyzed results, such as VAM or intensity tiers.

Connecting this MCP to your AI client gives your agent immediate access to climbing math tools.

Built For

This MCP is built for anyone looking to quantify their climbing progress through precise mathematical analysis.

Cycling Coaches

Hand off raw ride data to an agent to get instant intensity tiers and performance comparisons for athletes.

Competitive Cyclists

Use your AI client to track VAM improvements across specific mountain segments.

Data Analysts

Provide raw climbing logs to an agent to validate and categorize segment data automatically.

What Changes When You Connect

01 Automates VAM math so you don't have to do it manually.

02 Provides standardized intensity tiers for consistent effort tracking.

03	Identifies performance gains by comparing different climb attempts.
04	Ensures data integrity by validating segment math before analysis.

Real-World Applications

Tracking Training Progress

Compare a climb from last month to today's attempt to see your percentage improvement.

Effort Assessment

Ask your agent to categorize a ride to see if you hit a high intensity tier.

Data Cleaning

Use the validation tool to ensure your recorded segments are accurate for further study.

Climb Profiling

Calculate the exact VAM for a specific mountain pass to benchmark your fitness.

Patterns to Avoid

Analyzing Corrupt Data

AVOID

You feed a messy, broken segment file into your agent and ask for a performance comparison. The agent gives you nonsense numbers because the math doesn't add up.

✓ INSTEAD

Run the data through validate_climb_segment first. This ensures the segment is mathematically sound before you attempt any analysis.

Manual VAM Calculation

AVOID

You spend ten minutes with a calculator trying to figure out your vertical ascent rate for a specific mountain pass.

✓ INSTEAD

Just give the segment data to your agent and let it use get_climb_rate to find your VAM instantly.

Guessing Effort Levels

AVOID

You look at a ride log and try to guess if it was a high-intensity effort based on your feeling alone.

✓ INSTEAD

Use get_climb_intensity_tier to get a standardized intensity tier for that specific climb.

The Right Fit

Connect this MCP if you need to turn raw climbing data into precise VAM and intensity metrics. Do not connect it if you only care about total distance or average speed. The decision depends on whether you need to quantify vertical climbing performance specifically.

Cycling Climb Rate Analyzer: 4 Specialized Tools

These tools handle the heavy lifting of vertical ascent math and effort categorization. Your agent uses them to turn raw climbing logs into actionable performance metrics.

#	TOOL	DESCRIPTION
01	`compare_climb_segments`	This tool compares two different climb attempts to show you exactly how your performance changed between rides.
02	`get_climb_intensity_tier`	Your agent uses this to categorize a specific climb rate into standard performance intensity levels.
03	`get_climb_rate`	This tool calculates the vertical ascent rate (VAM) for any specific segment you provide.
04	`validate_climb_segment`	It checks if a recorded climb segment is mathematically valid before you try to run an analysis on it.

See It in Action

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

U What is my climb rate if I gained 500 meters in 1200 seconds?

Your climb rate (VAM) is 1500 meters per hour.

U Is a climb rate of 1200 VAM considered high intensity?

A climb rate of 1200 VAM is categorized as High intensity.

U Compare a climb of 300m in 1000s to a climb of 350m in 900s.

The second climb showed an improvement with a performance increase of approximately 11.11%.

Frequently Asked Questions

01 **How do I calculate VAM with this MCP?**

You provide the vertical gain and time to your AI client, which then uses the get_climb_rate tool to find the VAM.

02 **Can I compare two different rides?**

Yes, you can use the compare_climb_segments tool to see the performance difference between two attempts.

03 **What is an intensity tier?**

The get_climb_intensity_tier tool categorizes your climb rate into standard levels to show how hard the effort was.

04 **Which AI clients work with this MCP?**

This MCP works with any compatible client, including Claude, Cursor, and Windsurf.

05 **Do I need to host this myself?**

No, Vinkius hosts and manages the MCP for you, so it is ready to use as soon as you connect.

06 **What is VAM?**

VAM (Velocità Ascensionale Media) is the vertical meters gained per hour, a standard metric for measuring climbing intensity in cycling.

07 **How can I compare two different climbs?**

You can use the `compare_climb_segments` tool by providing the elevation gain and duration for both attempts.

08 **Can I check if my climb data is valid?**

Yes, the `validate_climb_segment` tool checks if your elevation gain and duration are mathematically valid for analysis.

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 `"cycling-climb-rate-analyzer": { "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

Cycling Climb Rate Analyzer 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

INDEPENDENT PLATFORM DISCLAIMER

DOCUMENT INFORMATION

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MCP Server	Cycling Climb Rate Analyzer MCP
Server ID	`01a0cd44-348d-7282-970a-113112c91e23`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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