

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

Endurance Training Zones MCP

Optimize your surfing and land training with physiological data.

Endurance Training Zones MCP uses heart rate reserve methodology to give surfers precise physiological insights. It calculates specific intensity ranges for both water-based paddle sessions and land-based conditioning. Your AI client can use these tools to plan workouts, check effort distribution, and predict exactly how much downtime you need to avoid overtraining.

surfing

heart-rate

training

physiology

endurance



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.

Endurance Training Zones MCP

4 tools available

Cloud-hosted on Vinkius

You can use this MCP to bring professional-grade physiological analysis to your training routine. Instead of guessing if you're working hard enough during a paddle session or if you've pushed too far during a gym workout, you get specific numbers based on your own biometric data. The math relies on heart rate reserve, which accounts for your resting heart rate and maximum heart rate to create zones that actually fit your fitness level.

Whether you are prepping for a heavy swell or building base endurance on land, your AI agent can handle the heavy lifting. It can determine how your effort will be distributed across different intensity levels during a planned session. It also acts as a safeguard against burnout by calculating the specific recovery time you need based on how hard you just worked. This keeps your training consistent and prevents the physical setbacks that come from overtraining.

Core Capabilities

01 — Heart Rate Zone Calculation

Your agent uses heart rate reserve to define your specific intensity ranges.

02 — Workout Effort Planning

The AI calculates how much time you will spend in each physiological zone during a session.

03 — Overtraining Prevention

Your agent predicts necessary downtime based on the intensity of your recent sessions.

04 — Biometric Validation

The tool verifies that your heart rate data is within realistic physiological bounds.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/endurance-training-zones — connect your AI agent in three steps.

- 01
- Connect the MCP to Claude, Cursor, or Windsurf via Vinkius.
- 02
- Provide your biometric data like max heart rate and resting heart rate.
- 03
- Ask your AI agent to calculate zones or plan a specific session.
- 04
- Receive specific physiological targets or recovery recommendations.

You connect the MCP to your preferred AI client and start asking questions about your training.

Built For

This MCP is built for athletes who need precise physiological data to manage their training loads.

Surfers

Use the tool to balance paddle-based water sessions with land conditioning.

Endurance Coaches

Hand off biometric data to the AI to generate recovery schedules for athletes.

Fitness Enthusiasts

Use the tool to ensure land-based workouts hit the correct intensity targets.

What Changes When You Connect

- 01
- Uses heart rate reserve for more accurate zone targeting.
- 02
- Distinguishes between water-based and land-based training needs.
- 03
- Provides specific recovery hours to prevent overtraining.

04 Validates biometric inputs to ensure data accuracy.

Real-World Applications

Paddle Session Planning

Calculate exactly which heart rate zones you should target while out on the water.

Recovery Management

Get a clear recommendation on how many hours of rest you need after a high-intensity workout.

Land Training Optimization

Determine how much time you will spend in specific intensity zones during a gym session.

Training Load Monitoring

Use the AI to check if your planned workout distribution aligns with your fitness goals.

4 Tools Available

#	TOOL	DESCRIPTION
01	validate_physiological_bounds	This tool checks your biometric data to ensure the numbers you provide are within realistic human limits.
02	analyze_session_distribution	This tool determines how a planned workout will split your effort across different physiological zones.
03	calculate_recovery_needs	This tool predicts the specific amount of downtime you need after a session to prevent overtraining.
04	get_training_zones	This tool calculates your specific heart rate ranges for various training intensities.

See It in Action

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

U What are my training zones if my max HR is 190, resting HR is 60, I am an Intermediate athlete, and I am planning a paddle session?



Your training zones for a paddle session are: Zone 1 (135-145 bpm), Zone 2 (145-158 bpm), Zone 3 (158-171 bpm), Zone 4 (171-182 bpm), and Zone 5 (182-190 bpm).

U I just finished a high-intensity paddle session. My max HR is 190, resting HR is 60, I am Intermediate, and I hit Zone 4. How long should I recover?



Based on your Zone 4 paddle session, it is recommended that you take 48 hours of recovery, focusing on light movement or complete rest.

U How much time will I spend in Zone 2 if I do a 45-minute land training session with a max HR of 185, resting HR of 65, and Intermediate fitness?



In a 45-minute land session, you will spend approximately 28 minutes in Zone 2.

Frequently Asked Questions

01 How does this MCP calculate training zones?

It uses the heart rate reserve methodology, which factors in your resting and maximum heart rate to create personalized intensity ranges.

02 Can I use this for gym workouts?

Yes, the tool is designed to calculate zones for both paddle-based water sessions and land-based conditioning.

03 What AI clients can I use with this MCP?

You can connect this MCP to any compatible client, including Claude, Cursor, and Windsurf.

04 How does it help prevent overtraining?

The tool analyzes your session intensity and predicts the specific amount of downtime you need to recover properly.

05 Do I need to host this myself?

No, Vinkius hosts and manages the MCP for you. You just connect your client and start using the tools.

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>"endurance-training-zones": { "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

Endurance Training Zones 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

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Platform	Vinkius Cloud for AI Agents
Endpoint	https://edge.vinkius.com/{token}/mcp

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