

MCP SERVER

NO CODE

CLOUD HOSTED

Big Wave Surf Safety MCP

Get precise safety data for high-stakes ocean conditions.

Big Wave Surf Safety MCP gives your AI client the math it needs to handle heavy water. It calculates physical impact pressure, estimates hold-down times, and compares your physiological capacity against predicted wave severity to help you decide if a session is safe or if you need specific rescue gear.

A+ Quality Score 100/100

surfing

big-wave

safety

ocean

rescue



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.

Big Wave Surf Safety MCP

4 tools available

Cloud-hosted on Vinkius

When you're staring down a massive swell, guessing is dangerous. This MCP turns your AI agent into a technical safety consultant for big wave surfing. Instead of vague estimates, you get hard numbers on impact pressure and how long you might be held under. You can check your training against the predicted conditions to see if your breath-hold capacity actually covers the expected submersion time. It also helps you prep your gear and plan for the worst by defining specific rescue protocols before you even paddle out. It's about having a data-driven second opinion when the ocean is at its most volatile.

Core Capabilities

01 — Impact Analysis

Your agent uses this to find the physical severity of a wave encounter.

03 — Gear Selection

Your agent suggests specific equipment based on wave severity.

02 — Readiness Checks

Your agent compares your training data against predicted submersion times.

04 — Emergency Planning

Your agent defines the exact rescue protocols needed for a specific swell.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/big-wave-surf-safety — connect your AI agent in three steps.

- 01 Connect your MCP-compatible client like Claude or Cursor to Vinkius.
- 02 Provide wave data like height and period to your agent.
- 03 The agent uses the MCP tools to run impact and readiness calculations.
- 04 Receive specific safety, gear, or rescue recommendations.

Connect your client to Vinkius and start running safety calculations immediately.

Built For

This MCP is built for people operating in high-consequence ocean environments where data-driven safety decisions matter.

Big Wave Surfers

They hand off their physiological stats and wave observations to check their safety margins.

Water Safety Teams

They use the tool to define rescue protocols and gear requirements for specific sessions.

Surf Coaches

They use the readiness assessments to determine if a student is prepared for a specific swell.

What Changes When You Connect

- 01 Calculates hold-down duration based on wave dynamics.
- 02 Matches physiological capacity against predicted submersion times.
- 03 Provides specific rescue protocols for different risk levels.

04 Suggests gear based on the actual severity of the wave.

Real-World Applications

Pre-Session Safety Check

You input wave height and period to see if your breath-hold capacity matches the expected hold-down time.

Gear Preparation

You get gear recommendations based on the calculated impact pressure of a swell.

Rescue Planning

You define a rescue protocol like Jet Ski Extraction before a high-risk session begins.

Risk Assessment

You determine the risk level of a specific wave encounter to decide if it is safe to paddle out.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_wave_impact	This tool determines the physical severity of a specific wave encounter. It calculates the pressure and force you'll face during an impact.
02	determine_rescue_protocol	This tool defines the necessary emergency response based on the wave encounter. It tells you which rescue methods are required for specific risk levels.
03	evaluate_surfer_readiness	This tool assesses if a surfer's training is sufficient for the predicted wave conditions. It compares your physiological capacity to the expected hold-down time.
04	recommend_safety_gear	This tool suggests necessary equipment based on the severity of the wave. It helps you pick the right gear for the specific swell you're facing.

See It in Action

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

U A wave is 10 meters high with a 15 second period. What is the impact and risk?



The impact pressure is high, the estimated hold-down time is 45 seconds, and the risk level is Extreme.

U I have a 90 second breath-hold capacity. Is it safe for a 60 second hold-down?



Yes, you are Well-Prepared with a 30 second safety margin.

U What rescue protocol is needed for an Extreme risk wave with a 50 second hold-down?



The required protocol is Jet Ski Extraction with high response urgency using a Rescue Driver.

Frequently Asked Questions

01 How does this MCP calculate wave impact?

It uses the `calculate_wave_impact` tool to determine the physical severity and pressure of a specific wave encounter.

02 Can I use this with Claude or Cursor?

Yes, you can connect this MCP to any MCP-compatible client including Claude, Cursor, and Windsurf.

03 Does it help with rescue planning?

Yes, the `determine_rescue_protocol` tool defines the necessary emergency response based on the wave encounter.

04 How does it assess if I am ready to surf?

The evaluate_surfer_readiness tool compares your training and physiological capacity against predicted submersion times.

05 Do I need to host the MCP 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>"big-wave-surf-safety": { "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

Big Wave Surf Safety 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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