

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

Backcountry Route Finder MCP

Plan safer mountain routes based on terrain and fitness.

Backcountry Route Finder MCP gives your AI client the ability to plan mountain expeditions. It calculates distance and elevation, checks if terrain matches your group's fitness, and evaluates environmental hazards like avalanche zones to keep your trips safe.

backcountry

routing

terrain

avalanche

hiking



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.

Backcountry Route Finder MCP

4 tools available

Cloud-hosted on Vinkius

You can use this MCP to turn your AI client into a specialized mountain guide. Instead of guessing if a trail is too steep or if a slope is dangerous, you can feed your route data directly to your agent to get hard numbers on distance and elevation gain. It helps you avoid dangerous mistakes by checking if the terrain actually matches the physical capabilities of your group. You can also run safety checks on specific paths to see if they intersect with high-risk areas like avalanche zones. It's a practical way to balance topographic difficulty with real-world safety constraints before you ever head out the door.

Core Capabilities

01 — Route Metric Calculation

Your agent calculates precise distance and elevation gain for any path.

02 — Fitness Matching

The AI checks if the terrain is too difficult for your specific group's fitness.

03 — Hazard Assessment

Your agent evaluates if a route passes through dangerous environmental zones.

04 — Physiological Modeling

The tool uses fitness multipliers to predict how a route will impact different people.

05 — Terrain Validation

Your agent confirms if the physical landscape is compatible with your planned movement.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/backcountry-route-finder — connect your AI agent in three steps.

- 01
- Connect the MCP to Claude, Cursor, or your preferred client via Vinkius.
- 02
- Provide your route details or terrain features to your AI agent.
- 03
- The agent uses the tools to calculate metrics and check safety.
- 04
- Receive a detailed report on route feasibility and hazards.

Connect the MCP to your client and start asking about routes.

Built For

This MCP is built for anyone planning movement through rugged, unmanaged environments.

Expedition Leaders

They hand off route planning and safety verification to the AI.

Backcountry Hikers

They use the tool to ensure their planned trails match their physical ability.

Search and Rescue Planners

They use terrain and hazard data to model potential movement paths.

What Changes When You Connect

- 01
- Reduces risk by checking terrain against group fitness levels.
- 02
- Provides objective distance and elevation data for route planning.
- 03
- Identifies dangerous slope angles and avalanche hazards.

04 Adjusts route difficulty using physiological impact factors.

Real-World Applications

Group Trip Planning

Ensure a group of varying fitness levels can actually complete a specific mountain loop.

Route Optimization

Get exact elevation and distance metrics for a proposed backcountry path.

Avalanche Risk Mitigation

Check if a planned path crosses through high-risk slope angles or active zones.

Safety Auditing

Verify if a technical scramble is appropriate for the skill level of your party.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_route_metrics	This tool provides the core distance and elevation data for any proposed route.
02	check_terrain_feasibility	Use this to see if specific terrain features are actually doable for your group's fitness level.
03	evaluate_safety_rating	This tool determines if a planned path is safe by looking at environmental hazards.
04	get_fitness_multipliers	This tool retrieves physiological impact factors to help adjust route difficulty for different fitness levels.

See It in Action

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

U Calculate a route starting at 1200m and ending at 1800m for an intermediate group through a forest.



The route is 5.2 km long with 600m of elevation gain. The estimated time is 2.5 hours, passing through waypoints at the forest edge and the ridge line.

U Is a technical scramble safe for a beginner group?



No, a technical scramble is not considered feasible for a beginner fitness level.

U Check the safety of a path with a 35-degree slope in an avalanche zone.



The route is not passable because the path intersects an active avalanche zone and the slope angle exceeds safety thresholds.

Frequently Asked Questions

01 How does this MCP help with safety?

It evaluates environmental hazards and checks if terrain features like steep slopes are safe for your planned path.

02 Can I use this to plan for different fitness levels?

Yes, the MCP uses fitness multipliers to check if the terrain is feasible for your specific group.

03 What kind of data does it provide for a route?

It provides distance, elevation gain, and estimated time based on the terrain.

04 Does it account for avalanche risks?

Yes, it can evaluate if a path intersects with active avalanche zones or dangerous slope angles.

05 Which AI clients can I use this with?

You can use this with any MCP-compatible client like Claude, Cursor, or Windsurf.

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>"backcountry-route-finder": { "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

Backcountry Route Finder 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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Server ID	01a0a258-8d25-729c-bf3a-2d912f815115
Platform	Vinkius Cloud for AI Agents
Endpoint	<code>https://edge.vinkius.com/{token}/mcp</code>

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