

MCP SERVER

NO CODE

CLOUD HOSTED

BPM Tap Tempo Analyzer MCP for AI Agents

Analyzing Raw Rhythmic Taps and Beat Rates for Music Production

BPM Tap Tempo Analyzer processes raw rhythmic taps—just a sequence of millisecond timings—and turns them into usable musical data. It calculates precise beats per minute (BPM) using advanced metrics, verifies the reliability of your tapping session by detecting timing inconsistencies, and suggests mathematically related tempo changes like half-time or double-time for immediate use in music production.

A+ Quality Score 100/100

bpm

tempo

rhythm

music-production

audio-analysis



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.

BPM Tap Tempo Analyzer MCP

3 tools available

Cloud-hosted on Vinkius

Got a stream of raw rhythmic taps? This MCP takes those messy millisecond timestamps and turns them into actionable musical data. You can feed it your raw tap input, and it calculates the precise beats per minute (BPM) while simultaneously grading how steady or reliable that tapping session was. It doesn't just give you a number; it tells you if your timing is consistent enough to count on. Beyond basic tempo, you can use this MCP to figure out rhythmic alternatives—like what the half-time or double-time versions of your beat should be. Because so much music production relies on accurate rhythm and tempo mapping, having these metrics available directly through a platform like Vinkius makes complex timing analysis straightforward. You stop manually measuring intervals and start focusing on the creative output.

Core Capabilities

01 — Determine primary beat rate (BPM)

Calculates the foundational beats per minute from raw tap data, accounting for weighted averages.

02 — Assess rhythmic stability

Quantifies the quality and consistency of a tapping session by identifying timing outliers.

03 — Generate tempo alternatives

Translates an initial BPM into musically useful ratios, such as half-time or double-time tempos.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/mcp/bpm-tap-tempo-analyzer — connect your AI agent in three steps.

- 01** Provide the MCP with your raw tap data—a list of millisecond timestamps representing your rhythmic input.
- 02** The system processes this array, first calculating primary metrics like BPM and stability scores. You can then ask it to check for timing outliers or suggest musical relatives based on that initial reading.
- 03** You receive a structured output containing the calculated tempo, a reliability score, and immediate suggestions for related rhythms.

The bottom line is you feed in raw rhythm data, and it outputs precise, actionable tempo metrics and variations usable right away.

Built For

This MCP helps audio engineers, beatmakers, and music producers who need to analyze complex rhythmic inputs outside of standard DAW environments. If your workflow involves capturing live performance taps or analyzing raw audio timing data, this is for you.

Music Producer

Needs to quickly gauge the tempo and consistency of a recorded human beat pattern before building out a full track.

Sound Designer

Analyzes rhythmic source material from unconventional inputs, requiring reliable metrics for timing adjustments.

Beatmaker/DJ

Needs to calculate the BPM and stability of a scratch or tap sequence on the fly to adjust looping parameters accurately.

What Changes When You Connect

- 01** Stop guessing your tempo. `compute_tap_metrics` calculates precise BPM using weighted averaging, giving you an accurate starting point regardless of minor timing fluctuations.

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- 02 Instantly check your source material quality. Use `audit_tap_integrity` to quantify the reliability of a tap sequence by flagging any significant timing outliers.

 - 03 Expand your rhythmic options immediately. The MCP generates musical suggestions for half-time and double-time alternatives, saving you manual transposition work.

 - 04 Streamline pre-production analysis. Instead of exporting audio just to measure BPM, feed the raw taps directly into this MCP for immediate results.

 - 05 Improve workflow speed. You get a full spectrum of temporal data—from primary tempo to rhythmic variations—all in one connection.
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Real-World Applications

Transposing a live performance beat

A producer records an impromptu drum tap sequence and needs to know its precise BPM. They ask their agent to use `compute_tap_metrics` on the raw data, instantly getting a stable tempo reading they can then import into their DAW.

Developing rhythmic variations

A beatmaker has a core rhythm at 120 BPM but needs ideas for a half-time breakdown. They use `generate_musical_suggestions` to get the precise, rounded tempo (60 BPM) without needing to manually adjust their project settings.

Verifying source material quality

A sound designer captures rhythmic taps from an experimental piece. They run the sequence through `audit_tap_integrity` to confirm if the timing is consistent enough, ruling out unusable recordings immediately.

Patterns to Avoid

Assuming clean timing data

✗ AVOID

Thinking that because you can hear a beat, your raw tap array is perfectly consistent. You run the BPM number and assume it's reliable.

✓ INSTEAD

Always run ``audit_tap_integrity`` first on any captured taps. This tool tells you if there are timing outliers in the sequence before calculating metrics, preventing inaccurate results.

Forgetting tempo variations

✗ AVOID

Calculating a 120 BPM rate and stopping there. You only know the current speed but need rhythmic context for different sections of music.

✓ INSTEAD

Use ``generate_musical_suggestions`` immediately after calculating the core metrics. This provides both half-time and double-time options, giving you full harmonic range.

Manually recalculating BPM

✗ AVOID

Using external software or formulas to calculate beats per minute from a list of timestamps, which is slow and prone to human error.

✓ INSTEAD

Let ``compute_tap_metrics`` handle the heavy lifting. It uses weighted averaging and outlier detection built into your MCP connection for guaranteed precision.

The Right Fit

Use this MCP if your core problem involves analyzing raw, millisecond-level rhythmic input—like live taps or highly granular audio data—to derive concrete tempo metrics. You need to know not just *what* the beat is, but *how reliable* that beat is and what related tempos exist (half/double time). Don't use this if you already have clean MIDI or DAW-generated tempo information; those tools are better suited for existing project files. If all you need is a simple BPM calculation without checking consistency or generating variations, the basic metric computation tool can handle it, but running `audit_tap_integrity` first always gives you a safety check on your data quality.

BPM Tap Tempo Analyzer for Consistent Rhythmic Analysis

Today, analyzing raw rhythm is a tedious mess. You capture a sequence of taps—a string of millisecond timings. To determine the BPM, you have to manually plot them on a timeline or run through complex formulas just to get an initial number. Then, if that number isn't quite right, you start wondering about timing inconsistencies: was the tapping steady? Did I rush at certain points?

With this MCP, you skip all the manual plotting and math. You feed the raw tap array directly in, and your agent instantly runs `compute_tap_metrics` to give you a highly accurate BPM reading. Better yet, it also provides an immediate stability score so you know if the data is trustworthy.

BPM Tap Tempo Analyzer for Rhythmic Pattern Generation

A huge headache in music production is figuring out rhythmic variations. You nail a tempo, say 120 BPM, but then you need to write the half-time version (60 BPM) or speed it up to double time (240 BPM). Traditionally, this means setting up project templates and manually adjusting ratio parameters.

Now, after getting your core metrics, you just call `generate_musical_suggestions`. The MCP handles all the math for you. It returns clean, ready-to-use tempo alternatives that keep perfect rhythmic harmony with your original tap data.

BPM Tap Tempo Analyzer: 3 Tools for Rhythm Metrics

These three tools let you compute core tempo rates, audit tap quality, and generate musically useful rhythm suggestions from raw input.

#	TOOL	DESCRIPTION
01	<code>audit_tap_integrity</code>	Checks your entire tapping session and tells you how reliable it is by counting timing outliers.
02	<code>compute_tap_metrics</code>	Takes raw tap data to calculate the core beat rate (BPM) and overall consistency metrics.
03	<code>generate_musical_suggestions</code>	Converts a calculated BPM into musically useful alternatives, like half-time or double-time tempos.

See It in Action

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

U What are the musical suggestions if my beat is 130 BPM?



Tempo Analysis Report

Based on your raw taps, the primary tempo was calculated at **130 BPM**. Here are the suggested rhythmic alternatives for use in music production:

- **Rounded Tempo:** 130 BPM
- **Half-Time Suggestion:** 65 BPM (Ideal for halftime breaks)
- **Double-Time Suggestion:** 260 BPM (Perfect for fast fills or double-time effects)

U Check the reliability of this tap sequence: [900, 1850, 3000, 4100]



Tap Integrity Audit

METRIC	VALUE
Total Taps	4
Outliers Detected	1 (The second tap was significantly delayed)
Reliability Score	High - Needs minor cleanup

The audit confirms one outlier. The session is reliable, but the timing needs slight normalization for perfect results.

U Calculate BPM and stability for these taps: [1000, 2050, 3000]



Rhythmic Metrics

- **Calculated BPM:** 67.5 BPM
- **Consistency Score:** Excellent (Minimal deviation detected)
- **Stability Rating:** Highly Reliable

This sequence suggests a stable, moderate tempo with very little timing jitter.

Frequently Asked Questions

01 How does the BPM Tap Tempo Analyzer help me figure out my beat's speed?

It calculates your exact beats per minute (BPM) from raw tap data, providing a stable number even if your taps aren't perfectly consistent. This is better than estimating by ear because it uses weighted averages for precision.

02 Can I check if my tapped rhythm is actually usable?

Yes, the BPM Tap Tempo Analyzer includes an integrity audit tool. It checks your tap sequence for timing inconsistencies and outlier taps, telling you right away if the rhythm needs cleanup before you use it.

03 What does 'half-time' mean when I use this MCP?

When you generate musical suggestions, half-time means halving your current BPM. If your beat is 120 BPM, the suggestion gives you 60 BPM, perfect for a slower, impactful breakdown.

04 Is this MCP only for simple tapping? Can it handle complex rhythms?

It handles raw rhythmic data, which means any sequence of millisecond taps. It doesn't care if the rhythm is simple or complex; it focuses on calculating the underlying tempo and assessing its stability.

05 I need to change my beat speed. What does this MCP do?







The BPM Tap Tempo Analyzer lets you generate rhythmic alternatives. If your current pace works, it also calculates what the corresponding double-time or half-time versions should be, saving you manual tempo adjustments.

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>"bpm-tap-tempo-analyzer": { "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

BPM Tap Tempo 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](https://cloud.vinkius.com) →

vinkius.com · support@vinkius.com

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