

MCP SERVER

NO CODE

CLOUD HOSTED

Bankroll Kelly Calculator MCP

Calculate precise betting stakes using the Kelly Criterion.

Bankroll Kelly Calculator MCP gives your AI agent the mathematical framework to manage betting capital. It uses the Kelly Criterion to determine optimal stake sizes based on your bankroll, decimal odds, and estimated win probabilities. You can apply fractional multipliers to control risk or set caps to protect your capital.

A+ Quality Score 100/100

kelly-criterion

betting

bankroll-management

football

mathematical-modeling



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.

Bankroll Kelly Calculator MCP

4 tools available

Cloud-hosted on Vinkius

You can stop guessing how much to wager on a match. This MCP gives your AI client the exact math needed to apply the Kelly Criterion to your betting strategy. Instead of relying on gut feeling, you provide your agent with your current bankroll, the decimal odds, and your estimated probability of a win. The agent then runs the numbers to find the mathematically optimal stake. If you want to play it safer, you can instruct your agent to use fractional Kelly multipliers, which helps reduce volatility. It also handles the heavy lifting of checking if a bet is even worth taking by comparing your estimated probability against the implied probability of the odds. Whether you are managing a large bankroll or testing a new strategy, this tool keeps your risk management consistent and grounded in probability theory.

Core Capabilities

01 — Optimal Stake Sizing

Your agent calculates exactly how much to wager based on the Kelly Criterion.

02 — Risk Mitigation

The agent applies fractional multipliers to lower your exposure to volatility.

03 — Mathematical Validation

Your agent verifies that your estimated probabilities justify the given odds.

04 — Capital Oversight

The agent tracks and summarizes your total betting capacity.

05 — Strategy Comparison

Your agent compares different risk profiles to show how they impact your bankroll.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/bankroll-kelly-calculator — connect your AI agent in three steps.

- 01
- Connect the MCP to Claude, Cursor, or Windsurf via Vinkius.
- 02
- Provide your agent with your bankroll, the odds, and your estimated probability.
- 03
- The agent uses the Kelly Criterion tools to process the math.
- 04
- Receive the optimal stake or risk comparison immediately.

Connect the MCP to your client and start running math-based betting queries.

Built For

This MCP is built for anyone using AI to manage betting capital through mathematical modeling.

Sports Bettors

Hand off your bankroll data and odds to the agent to get instant stake recommendations.

Quantitative Analysts

Use the agent to run risk profile comparisons and validate betting parameters.

Algorithmic Traders

Integrate Kelly Criterion math into your agent's decision making process.

What Changes When You Connect

- 01
- Removes emotional guesswork from stake sizing.
- 02
- Provides a mathematical basis for risk management via fractional Kelly.
- 03
- Prevents bad bets by validating probability against odds.

04 Maintains a clear view of total betting capacity.

Real-World Applications

Single Bet Sizing

Input your bankroll and the match odds to get a specific dollar amount for your next wager.

Risk Adjustment

Ask your agent to calculate a Half-Kelly or Quarter-Kelly stake to protect your bankroll from swings.

Bet Viability Checks

Verify if your predicted win probability actually provides an edge over the bookmaker's odds.

Strategy Testing

Compare how different fractional multipliers would have affected your bankroll management.

Patterns to Avoid

Ignoring edge validation

❌ AVOID

You tell your agent to calculate a stake for a bet where your estimated win probability is actually lower than what the odds imply.

✓ INSTEAD

Always run ``verify_betting_parameters`` first to ensure you actually have a mathematical edge before committing capital.

Overleveraging on single bets

❌ AVOID

You ask for a full Kelly stake on a high-volatility event and end up wiping out your bankroll during a bad run.

✓ INSTEAD

Use ``compare_risk_profiles`` to find a safer fractional multiplier that protects your total capital.

Manual bankroll tracking

❌ AVOID

You try to do the math for your total available funds in a separate spreadsheet while your agent calculates individual bets.

✓ INSTEAD

Use ``get_bankroll_summary`` to keep your agent synced with your actual betting capacity.

The Right Fit

Connect this MCP if you want to replace gut feeling with probability theory. If you prefer gambling based on intuition rather than mathematical edge, this isn't for you. The decision comes down to whether you value consistent risk management over the thrill of unpredictable wagering.

Bankroll Kelly Calculator: 4 Precision Betting Tools

These tools handle the mathematical heavy lifting for stake sizing, risk profile comparisons, and bankroll oversight.

#	TOOL	DESCRIPTION
01	calculate_kelly_stake	This tool calculates the optimal stake size by processing your bankroll, the decimal odds, and your estimated win probability.
02	compare_risk_profiles	Use this to see how different fractional Kelly strategies change your risk exposure.
03	get_bankroll_summary	This tool provides a quick overview of your current betting capacity.
04	verify_betting_parameters	This tool checks if your input odds and probabilities are mathematically sound before you place a bet.

See It in Action

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

U Calculate the stake for a \$1000 bankroll with decimal odds of 2.0 and a 55% estimated probability.



The edge is 10%, the full Kelly stake is \$100.00, and the applied stake is \$100.00.

U I have \$500. What is the stake for odds of 3.0 and a 40% probability using a Half-Kelly approach?



The edge is 20%, the full Kelly stake is \$50.00, and the applied stake is \$25.00.

U Check if a bet with odds of 1.5 and a 60% probability is mathematically viable.



Yes, the bet is mathematically viable as the estimated probability is greater than the implied probability.

Frequently Asked Questions

01 What is the Kelly Criterion?

It is a mathematical formula used to determine the optimal size of a bet to maximize long term growth of a bankroll.

02 Can I use fractional Kelly staking?

Yes, you can instruct your agent to apply fractional multipliers to reduce the amount wagered and lower risk.

03 How do I connect this to my AI client?

Vinkius hosts the MCP, so you just connect your client once to the Vinkius catalog to start using the tools.

04 Does this MCP work with different betting odds?

Yes, it is designed to work with decimal odds provided by the user.

05 Can the agent tell me if a bet is a bad idea?

Yes, the `verify_betting_parameters` tool checks if your estimated probability is higher than the implied probability of the odds.

06 How do I use fractional Kelly sizing?

You can use the `calculate_kelly_stake` tool and provide a `kellyFraction` value (e.g., 0.5 for Half-Kelly) to reduce volatility and protect your bankroll.

07 Can I limit my maximum bet amount?

Yes, the `calculate_kelly_stake` tool accepts a `maxStakeCap` parameter to ensure the calculated stake does not exceed a specific limit.

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>"bankroll-kelly-calculator": { "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

Bankroll Kelly Calculator 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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