MCP SERVER | NO CODE | CLOUD HOSTED

Currency Math Engine MCP for AI Agents

Calculate precise invoice totals and taxes with integer arithmetic

Currency Math Engine performs rigorous, integer-based financial calculations for any amount or operation. Forget the float errors that wreck billing systems: this MCP guarantees mathematical precision when your AI agent calculates taxes, discounts, cart totals, or invoices. It's built specifically to shield your financial payloads from floating-point rounding mistakes.

F Quality Score 43.65/100

financial-math | integer-arithmetic | precision-calculation | invoice-processing | tax-calculation | data-integrity

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vinkius.com/mcp/currency-math-engine

SCAN TO VIEW

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.

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.

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.

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	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	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.

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.

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.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken 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.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

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.

Currency Math Engine MCP

1 tools available
Cloud-hosted on Vinkius

When an AI client needs to crunch numbers for money—like totaling a shopping cart or applying sales tax—it runs into a serious problem: standard computing arithmetic uses decimals (floating-point math). This often creates tiny, invisible errors that look like $0.30000000000000004 instead of $0.30. Those small errors are enough for billing systems to reject an entire payment payload.

This MCP solves that problem completely. It forces all calculations through integer math, meaning the results are always clean and mathematically perfect. Whether you're processing payments with Stripe or generating invoices in Xero, your agent gets reliable numbers every time. Vinkius hosts this engine so any compatible AI client can access guaranteed financial integrity, letting you stop worrying about decimal points and start focusing on selling.

Core Capabilities

01 — Calculate combined totals

You can accurately sum multiple values together for sub-totals or grand totals.

02 — Apply discounts and taxes

The engine calculates specific percentages off a base amount, handling sales tax and coupons flawlessly.

03 — Perform complex arithmetic operations

It supports all core mathematical functions: addition, subtraction, multiplication, and division for financial data.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/currency-math-engine** — connect your AI agent in three steps.

01 Your AI agent identifies the financial calculation needed—for instance, adding shipping costs to a subtotal.

02 The agent passes the base amount, the second value, and the operation type (add/subtract) to this MCP.

03 The engine executes the math using integer-based logic and returns a mathematically perfect currency result.

The bottom line is that your AI client receives numbers that billing systems will accept without error.

Built For

This MCP is essential for anyone whose job involves money and data integrity. If you're an e-commerce developer, a financial analyst, or a billing operations manager who gets frustrated by failed payment payloads because of decimal errors, this is for you. You need reliable numbers every time.

E-commerce Developer

You use it to ensure that shopping cart totals and tax calculations pass validation checks before sending a final order payload.

Billing Operations Manager

You rely on it to automate complex invoicing, guaranteeing that discounts and multiple line items sum up correctly every month.

Financial Analyst

You use it for accurate data modeling when calculating year-over-year revenue changes or profitability margins.

What Changes When You Connect

01 Stops billing system failures. Instead of getting rejected payloads due to float errors, your agent sends mathematically perfect financial data.

02 Ensures calculation accuracy across all transactions. Whether it's tax, discount, or shipping, the result is always reliable using `calculate_currency`.

03 Reduces manual verification time. Your AI client gets trustworthy math immediately, meaning you spend less time checking decimals and more time building features.

04 Supports standard financial operations. You can handle addition, subtraction, multiplication, division, and formatting through one place.

05 Builds trust in automated billing. By guaranteeing integer-based results, your agent becomes a reliable source for all monetary calculations.

Real-World Applications

Processing complex checkout totals

A user asks their agent to 'Calculate the final total: subtotal of $89.99 plus 12% tax and a $5 shipping fee.' The agent uses `calculate_currency` to accurately combine all three components, providing a single, validated grand total for payment.

Applying multi-tiered discounts

A user needs to calculate the final price after multiple promotions. They ask their agent to 'Apply 15% off $150.00.' The engine uses integer math to ensure the discount calculation is flawless, giving a precise result that passes accounting checks.

Generating multi-currency invoices

A billing manager needs to verify if two different currency totals will match after conversion and tax application. The agent runs `calculate_currency` multiple times, providing definite proof of the final amount for international payment.

Verifying product pricing during development

A developer needs to test if a unit price ($14.99) multiplied by bulk quantity (3) equals the correct total before deployment. The agent calls `calculate_currency` and gets back a precise, verifiable number.

Patterns to Avoid

Relying on native AI math

✗ AVOID

The agent calculates '0.1 + 0.2' and assumes the result is exactly 0.3. The underlying system, however, processes this as a floating point number that is slightly off.

✓ INSTEAD

Always pipe financial calculations through `calculate_currency`. This MCP forces integer math, guaranteeing the correct $0.30 output every time.

Mixing currencies without conversion

✗ AVOID

Trying to add a subtotal in USD and a shipping cost in EUR directly in the prompt, leading to ambiguous or incorrect sums.

✓ INSTEAD

Ensure all figures are standardized and then run them through `calculate_currency` for addition. This tool keeps math strictly integer-based.

Using simple arithmetic functions

✗ AVOID

Writing code that uses standard floating point types (like Python's float) when dealing with currency values.

✓ INSTEAD

Use the `calculate_currency` tool. It wraps native math in an integer-based protocol, eliminating precision loss entirely.

The Right Fit

Use this MCP if your workflow involves any money—invoices, payments, taxes, or pricing. If you're doing basic arithmetic and the numbers must be perfect for a bank transfer, this is non-negotiable. Don't use it if you just need to count things (like listing user IDs) or manipulate pure text strings; those are better handled by general-purpose AI clients. But if your task requires reliable addition, multiplication, or percentage calculation, `calculate_currency` ensures the data integrity you can't get anywhere else.

Currency Math Engine: Solving Floating-Point Errors in Billing Payloads

Right now, when your agent calculates an invoice discount or sums up a shopping cart total, it relies on standard floating-point math. This is inherently messy; tiny decimal errors pop up constantly. You end up with payloads that look correct to a human but fail validation checks on Stripe, Xero, and other payment gateways.

With this MCP, your agent doesn't guess at the math. It sends all financial figures through integer-based calculation via `calculate_currency`. The result is always clean, precise, and ready for transmission, eliminating entire classes of billing errors.

Currency Math Engine: Guaranteeing Tax and Discount Accuracy

Manual calculations often require complex steps: first calculating the tax base, then applying a percentage discount to that new amount, and finally adding shipping. Doing this in a chain of prompts is prone to rounding mistakes at every single step.

This MCP makes it simple. You feed your agent the original amounts, the percentages, and the operation type. The engine handles the entire sequence internally with guaranteed accuracy, giving you one definitive answer.

1 Tools for Financial Math Calculations (Billing & Accounting)

Use the available tools to perform complex financial mathematics, guaranteeing absolute precision across all monetary calculations.

#	TOOL	DESCRIPTION
01	`calculate_currency`	This function takes a base amount, an operation (add, subtract, multiply, divide), and a second value to perform mathematically accurate currency calculations.

See It in Action

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

U What is the final cost if I add a 7% sales tax to $250?

Invoice Breakdown:
- Subtotal: $250.00
- Tax Rate: 7%
- Taxes Calculated: $17.50

Total Due: $267.50
(Calculation successful.)

U Calculate the total for three items priced at $14.99 each, plus $3 shipping.

Order Summary:
- Item Price: $14.99 (x 3)
- Subtotal: $44.97
- Shipping Cost: $3.00

Grand Total: $47.97
(Calculation successful.)

U I need to calculate the final price after a 20% discount on a base amount of $500.

Discount Calculation:
- Base Amount: $500.00
- Discount Applied: 20%
- Amount Saved: $100.00

Final Price: $400.00
(Calculation successful.)

Frequently Asked Questions

01 **Does the Currency Math Engine help with billing errors?**

Yes, absolutely. This MCP solves a common problem where standard AI calculations mess up money totals due to decimal points. It guarantees that every number your agent uses for invoicing or payments is mathematically sound.

02 **How do I calculate sales tax using the Currency Math Engine?**

You simply ask your agent to apply a specific percentage, like 7%, to your subtotal. The MCP handles all the complex math, providing you with the exact tax amount and the final total.

03 **Is this better than just doing the math in the prompt?**

Definitely. Typing out the math in a simple chat is unreliable because it uses standard floating-point numbers. This MCP forces integer arithmetic, giving you results that real billing systems will accept.

04 **Can I use Currency Math Engine for complex totals?**

Yes, you can combine multiple operations—like adding shipping costs to a discounted subtotal—and the engine keeps all the numbers accurate through each step of the calculation.

05 **What kind of amounts does this MCP support? Is it just USD?**

It handles financial math for any currency payload you feed it. The focus isn't on the specific currency symbol, but on ensuring the underlying numerical calculations are perfect.

06 **If I use Currency Math Engine, will my payment payloads work correctly?**

Because this MCP guarantees mathematically flawless numbers for invoices and cart totals, your agent's output is much more likely to pass validation checks when connecting to services like Stripe or Xero.

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 `"currency-math-engine": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → 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

Currency Math Engine 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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