MCP SERVER | NO CODE | CLOUD HOSTED

Finance Toolkit MCP

Run mathematically precise financial formulas.

The Finance Toolkit MCP lets your AI agent run complex financial math that standard LLMs fail at. It calculates loan amortization (SAC/PRICE), compound interest rates, ROI percentages, and simple interest using an exact V8 JavaScript engine. This ensures the calculations are precise every time.

A+ Quality Score 100/100

financial-math | roi-calculation | amortization | loan-projections | deterministic-math | v8-engine

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vinkius.com/mcp/finance-toolkit

SCAN TO VIEW

The infrastructure that powers AI agents in the real world.

Vinkius connects AI to the world's software through secure, enterprise-grade infrastructure — enabling real-world execution at scale, built on the Model Context Protocol (MCP).

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the cloud infrastructure where AI agents connect 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.

Finance Toolkit MCP

4 tools available
Cloud-hosted on Vinkius

Running accurate financial models requires more than just language understanding; it demands absolute mathematical precision. When you need to calculate things like bond schedules or investment growth, relying on a standard large language model is risky—they can hallucinate figures that lead to bad business decisions. This MCP solves that problem by handling all the math using an exact V8 JavaScript engine, keeping sensitive data local and secure. Instead of trying to compute these formulas internally, your agent delegates the work. You can generate detailed amortization tables comparing SAC or PRICE methods, track return on investment (ROI), or calculate compound interest over years. This functionality is hosted within the comprehensive Vinkius catalog, meaning you connect once to access deterministic math for all your financial needs.

Core Capabilities

01 — Generate Amortization Schedules

Creates summarized loan payment tables, comparing Constant Amortization (SAC) and French Price (PRICE) methods.

02 — Calculate Compound Interest Growth

Determines the future value of an investment using customizable compounding frequencies over time.

03 — Compute Return on Investment

Calculates the percentage return (ROI) based on initial costs versus generated profit.

04 — Calculate Simple Interest

Determines the total interest accrued over a period using basic, non-compounding formulas.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/finance-toolkit** — connect your AI agent in three steps.

01 You instruct your agent to perform a complex calculation, like finding ROI or running an amortization schedule.

02 Your agent calls this MCP and sends the required parameters (e.g., principal amount, rate type).

03 The V8 engine runs the math deterministically, returning only the exact numerical result or structured table data.

The bottom line is your AI client gets guaranteed accurate numbers for financial modeling without relying on built-in LLM calculations.

Built For

This MCP is essential for finance analysts, quantitative researchers, and business operations managers. If you're tired of manually cross-checking spreadsheets or dealing with rounding errors from generic AI answers, this tool gives you deterministic math on demand.

Financial Analyst

Uses the MCP to compare SAC vs. PRICE loan tables instantly and model different repayment scenarios for clients.

Quantitative Researcher

Calculates compound interest over long periods with specific compounding frequencies, ensuring mathematical consistency for models.

Business Operations Manager

Determines the exact Return on Investment (ROI) of marketing campaigns or internal projects to justify budget spend.

What Changes When You Connect

01 Avoid hallucinated math. Because this tool uses a deterministic V8 JavaScript engine, you get calculations for ROI and amortization that are 100% accurate, every time.

02 Compare complex loan types instantly. Use calculate_amortization to generate detailed SAC or PRICE schedules, letting you visualize different repayment paths in one step.

03 Model long-term growth with confidence. Calculate compound interest accurately, setting customizable compounding frequencies for precise investment projections.

04 Determine true profitability fast. The calculate_roi tool gives you an immediate percentage of return on any project, simplifying budget justification.

05 Keep your data private. All sensitive financial plans and proprietary rates are processed locally, meaning the math never leaves your secure infrastructure.

Real-World Applications

Modeling a Mortgage Refinance

A client needs to compare two different loan structures. They ask their agent to run calculate_amortization for both SAC and PRICE schedules based on new rates, immediately seeing the total interest paid difference without opening multiple spreadsheets.

Evaluating Marketing Spend

The marketing team needs to know if a $50k campaign was worth it. They use calculate_roi with sales data ($2M revenue) and get an exact 390% ROI instantly, proving the budget spend.

Forecasting Retirement Savings

A user wants to know their retirement savings goal. They ask for a compound interest calculation over 30 years with 7% annual compounding, getting a precise projected final amount.

Analyzing Short-Term Debt

The business needs quick estimates on short-term loans where compounding isn't the primary factor. They use calculate_simple_interest to get reliable baseline calculations immediately.

Patterns to Avoid

Asking general questions about loan math

✗ AVOID

My agent simply asks, 'What is amortization?' and gets a generic definition with no specific numbers or schedules.

✓ INSTEAD

Instead, use the calculate_amortization tool. Provide specific inputs like the principal amount, term length, and rate type ('SAC' or 'PRICE') to get an actionable schedule.

Manually calculating ROI in text prompts

✗ AVOID

I write: 'If I spent $10k and made $50k, what is the ROI?' and the agent guesses a number.

✓ INSTEAD

Use calculate_roi. Give it the exact numbers ($10,000 investment, $60,000 profit) to guarantee the correct percentage output.

Trying to predict interest growth with vague terms

✗ AVOID

I prompt: 'How much will my money grow in 20 years?' and get a non-specific, rounded estimate.

✓ INSTEAD

Use calculate_compound_interest. Specify the initial principal, the exact annual rate (e.g., 7%), and the compounding frequency for an accurate forecast.

The Right Fit

Use this MCP if your financial task requires mathematically deterministic output—meaning you need absolute certainty regarding formulas like amortization or compounded growth. If you are calculating ROI, use calculate_roi; never rely on conversational text generation. Don't use this if you just need qualitative advice (e.g., 'Should I invest in stocks?'). For simple conceptual understanding of interest rates, a general AI model is fine. But the moment you need to model money—comparing SAC vs PRICE tables using calculate_amortization, or projecting future value via calculate_compound_interest—you must use this specialized tool set. It's built for precision; don't use it for chat.

Spreadsheets are rigid, and generic AI is unreliable when money is involved.

When running financial models today, you're usually stuck in a loop: opening Excel to run amortization schedules, cross-referencing interest rates in a second tab, and then manually calculating ROI using formulas that are prone to rounding errors. If your agent can't access the right spreadsheet or formula, you end up spending hours correcting small discrepancies just to get a single answer.

With this MCP, those complex calculations happen instantly via your AI client. You tell your agent what needs modeling—like comparing SAC and PRICE tables—and it executes the math with deterministic precision, giving you an immediate, verifiable summary without ever leaving your workflow.

Get guaranteed results with calculate_roi.

Before this MCP, determining a campaign's actual ROI meant grabbing sales data and inputting it into specific cells in a spreadsheet. It was slow, required multiple steps of copy-pasting numbers between systems, and always felt like a manual bottleneck.

Now, your agent uses calculate_roi directly. You simply provide the investment cost and the resulting revenue figures, and you get the precise ROI percentage back immediately. The calculation is done in one clean step.

Finance Toolkit: 4 Tools Available

These four tools allow you to run specific financial calculations—like calculating profit return or running detailed loan tables—using guaranteed accurate mathematical formulas.

#	TOOL	DESCRIPTION
01	`calculate_amortization`	Generates a full loan payment schedule, comparing SAC and PRICE methods using an exact rate input.
02	`calculate_compound_interest`	Calculates future investment value based on compound interest rates over a set time period.
03	`calculate_roi`	Computes the percentage return (ROI) to measure profit against initial expenditures.
04	`calculate_simple_interest`	Calculates basic interest accrual over time, using a straightforward non-compounding formula.

See It in Action

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

U I need to finance a $500,000 property over 360 months at a 0.8% monthly interest rate. Give me the summary using the SAC table.

Using the calculate_amortization tool: The first installment is $5,388.89, the last is $1,400.00. Total interest paid will be $722,000.00.

U If I invest $10,000 for 5 years with an annual compound interest rate of 7%, what will be the final amount?

Using the calculate_compound_interest tool: The final amount will be $14,025.52, generating $4,025.52 in pure interest.

U Calculate the ROI for a marketing campaign where we invested $2,500 and generated $8,700 in sales.

Using the calculate_roi tool: The net profit is $6,200, resulting in a phenomenal ROI of 248%.

Frequently Asked Questions

01 **How does the Finance Toolkit MCP handle complex loan math?**

The toolkit uses a deterministic V8 JavaScript engine to perform calculations like calculate_amortization. This means it guarantees mathematical accuracy, preventing the hallucination of figures common in standard AI models.

02 **Can I use this MCP for different types of interest?**

Yes. It offers tools for calculating both compound interest using calculate_compound_interest and basic interest using calculate_simple_interest, covering most financial needs.

03 **What is the difference between SAC and PRICE amortization with this MCP?**

The calculate_amortization tool lets you compare these two methods directly. SAC (Constant Amortization) keeps the principal reduction constant, while PRICE (French) spreads payments evenly.

04 **Is the data I use for ROI calculations private?**

Yes. The MCP processes sensitive financial planning and proprietary rates locally within your infrastructure, meaning the data never leaves your controlled environment.

05 **Does calculate_compound_interest handle varying compounding periods?**

It does. You can specify the frequency of compounding (times per year) beyond just annual compounding, ensuring highly accurate projections for investments.

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 `"finance-toolkit": { "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

Finance Toolkit 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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