

MCP SERVER

NO CODE

CLOUD HOSTED

Split-Bill Grace Period Calculator MCP for AI Agents

Accurate Shared Expense Tracking and Interest Calculation for Joint Bills

Split-Bill Grace Period Calculator handles complex shared expenses involving payment delays. It accurately determines how much a delayed contributor owes an upfront payer, factoring in accumulated interest charges. Use it to calculate adjusted repayment totals and confirm that all initial payments plus late fees fully cover the original bill.

A+ Quality Score 100/100

split-bill

interest-calculator

repayment

expense-sharing

financial-tool



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.

Split-Bill Grace Period Calculator MCP

3 tools available

Cloud-hosted on Vinkius

Managing split bills gets complicated fast—especially when someone pays for everything upfront but another person is late with their share. This MCP handles that 'float' money calculation. Instead of guessing or using complex spreadsheets, you feed your agent the details and it calculates exactly how much needs to be paid back. The tool determines the principal amount due plus any accrued interest from the delay. It also confirms whether the combination of upfront payments and final repayments fully covers the total bill. For a centralized view of financial utilities like this, check out the entire catalog on Vinkius. Your agent can calculate repayment totals, determine how much extra money is owed due to delays, and verify that the combined amounts satisfy the original expense.

Core Capabilities

01 — Calculate Adjusted Repayment

Determines the final dollar amount a delayed party must send to the upfront payer.

02 — Isolate Accrued Interest Charges

Pinpoints exactly how much extra money is being charged solely due to the timing delay.

03 — Validate Bill Coverage Status

Verifies if the combined initial payment and final repayment fully cover the original bill amount.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/mcp/split-bill-grace-period-calculator — connect your AI agent in three steps.

- 01 Provide your agent with the details: the total shared expense, who paid upfront, and how many days the delayed party is late.
- 02 The MCP processes this data by calculating the interest accrued over the delay period and determining the final required payment amount.
- 03 Your agent returns a clear calculation showing both the adjusted repayment figure and confirmation that the original bill has been fully covered.

The bottom line is, you get an accurate financial audit of shared expenses without manual calculations or guesswork about late fees.

Built For

This MCP serves anyone who frequently handles joint finances, especially those involved in group travel, shared household costs, or professional project overhead. It's for people tired of tracking complex payment schedules across multiple apps and spreadsheets.

Project Manager

Uses this tool to settle expenses between team members after a client site visit, calculating who owes what when payments are staggered.

Accountant / Bookkeeper

Processes reimbursed shared costs for multiple parties, ensuring every transaction accounts for late fees and opportunity cost accurately.

Group Trip Organizer

Manages the finances after a group trip, determining the exact final settlement amount for delayed contributions among friends or family.

What Changes When You Connect

- 01** Stop guessing on repayments. The `calculate_repayment_total` tool delivers the precise final dollar amount, so you know exactly what needs to be paid.
- 02** Pinpoint late fees instantly. Use `get_interest_accrual` to isolate and identify only the extra money charged because of a delay—nothing else.
- 03** Verify your finances immediately. The `validate_bill_coverage` tool confirms if every payment, upfront or delayed, covers the entire original bill amount.
- 04** Save hours on spreadsheets. Your agent handles complex interest math instantly, giving you clear answers when dealing with shared overhead costs.
- 05** Eliminate disputes over money. Getting an objective calculation of the debt minimizes arguments and keeps group finances clean.

Real-World Applications

Handling a Shared Trip's Overdue Hotel Bill

A project manager paid \$800 for hotel rooms, but one team member is 15 days late paying their share. The agent runs the numbers using ``get_interest_accrual`` and calculates the precise total owed, including interest.

Auditing Event Overhead Costs

An event organizer paid \$5,000 upfront. After all payments come in, they use ``validate_bill_coverage`` to confirm that the total money collected exceeds the original expense amount, confirming zero overage.

Settling a Complex Joint Lease Payment

Three roommates paid \$300 for rent, but one person's portion is late. The agent uses ``calculate_repayment_total`` to determine the adjusted payment that makes sure all three shares are accounted for.

Patterns to Avoid

Using simple division for splits

X AVOID

Just dividing the bill by the number of people assumes everyone pays on time and ignores any penalties or initial upfront payments.

✓ INSTEAD

You need to run ``calculate_repayment_total`` first. This takes into account not just the principal debt, but also the accrued interest from the delay, giving you the true amount.

Manually calculating late fees

X AVOID

Trying to track daily accrual rates and manually multiplying them by days is slow, error-prone, and tedious.

✓ INSTEAD

Use ``get_interest_accrual`` in your agent. It isolates the exact interest charge without you having to worry about the daily rate calculation.

Ignoring initial payments

X AVOID

Just summing up what everyone sends back doesn't tell you if that total actually covers the original, higher upfront cost.

✓ INSTEAD

Always use ``validate_bill_coverage``. This tool checks your entire payment history against the starting bill to confirm satisfaction.

The Right Fit

Use this MCP when splitting costs requires factoring in a time delay or initial advance payments. Specifically, if you need to know the adjusted amount due (using `calculate_repayment_total`) or verify that all money collected matches the original expense plus interest (using `validate_bill_coverage`), this is your tool. Don't use it if you are simply splitting a bill where everyone pays simultaneously and there's no delay—standard division works fine then. Also, don't rely on it to track general spending; it only handles calculating the financial consequence of *late payments* against a fixed total.

Split-Bill Grace Period Calculator: Resolving Complex Shared Expense Debts

Right now, settling shared expenses is a mess. You're bouncing between texts, emails, and spreadsheets trying to figure out who paid what, when they paid it, and if late fees apply. It feels like you need an accountant just to pay for dinner.

With this MCP, your agent does the heavy lifting. Instead of tedious calculations, you provide the facts—the initial cost, the delay period, and the payments received. You get one clear answer: the exact amount needed to close out the debt.

Split-Bill Grace Period Calculator: Verifying Complete Financial Coverage

The worst part is confirming coverage. Did Person B pay enough? Is that small payment going to cover the interest accrued? You have to manually check if the total payments equal or exceed the original bill, and even factor in penalties.

This MCP runs a full audit for you. It doesn't just calculate who owes money; it confirms, using `validate_bill_coverage`, that the entire financial obligation is met, leaving zero doubt about the final status.

Split-Bill Grace Period Calculator: 3 Tools for Shared Expense Finance

These tools allow your agent to calculate precise repayments, isolate interest charges due to delay, and validate if combined payments cover the full expense.

#	TOOL	DESCRIPTION
01	<code>calculate_repayment_total</code>	Calculates the total adjusted dollar amount that Person B must send to Person A.
02	<code>get_interest_accrual</code>	Identifies exactly how much extra money is being charged due to a payment delay.
03	<code>validate_bill_coverage</code>	Verifies if the initial combined payments and final repayment cover the total bill amount.

See It in Action

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

- U** My apartment shared utility bill was \$450. I paid it all last month. My roommate hasn't sent their half yet and is 21 days late. How much do they owe me now?



Calculation Summary: Shared Utility Bill

METRIC	AMOUNT
Original Principal Debt	\$225.00
Interest Accrued (21 Days)	\$3.75
Total Repayment Due	\$228.75

Send them a reminder that the total required payment is \$228.75.

- U** We paid \$10 upfront for supplies, and I just sent in a check for \$12. Does that cover the full cost? What about any interest?



Based on your payments, here's the breakdown:

- **Original Bill:** \$10.00
- **Total Payments Received:** \$22.00 (\$10 + \$12)
- **Interest Accrued:** \$0.00 (No delay detected)

✅ **Status: SATISFIED.** The total amount covered is \$22.00, which exceeds the original bill of \$10.00.

- U** I paid \$800 for a venue deposit. My partner is paying back their share and it's late by 35 days. What should they send?



Invoice Settlement Report

DETAIL	VALUE
Initial Expense (Upfront)	\$800.00
Due Contribution	\$400.00
Interest Accrued (35 Days)	\$12.60
Total Final Payment Required	\$412.60

Please confirm this adjusted payment amount with them.

Frequently Asked Questions

01 How does the Split-Bill Grace Period Calculator determine late fees for shared expenses?

It calculates interest based on a fixed daily rate applied to the delayed portion of the bill. You just need to provide the original debt amount and the number of days it was overdue, and the tool provides the exact accrued charge.

02 Is this MCP for Split-Bill Grace Period Calculator useful if we paid an upfront deposit?

Yes. The calculator is designed to account for initial payments. It confirms whether your original advance payment, combined with all subsequent repayments, covers the full amount due.

03 What if I need to know if my total collected money actually pays off a large bill?

The tool has a specific function to validate coverage. You provide the initial expense and all payments made, and it gives you a clear status: satisfied or short on funds.

04 Can I use Split-Bill Grace Period Calculator for group trip finances?

Absolutely. It's perfect for settling shared travel costs where people pay back at different times, ensuring the interest and final totals are accurate across all members.

05 Does using the Split-Bill Grace Period Calculator prevent arguments over money?







It provides an objective financial calculation. Instead of relying on memory or manual math, you get a concrete report showing exactly what is owed and why.

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>"split-bill-grace-period-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

Split-Bill Grace Period 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](https://cloud.vinkius.com) →

vinkius.com · support@vinkius.com

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