

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Fuel Refill Calculator MCP

Plan every fuel stop for your long distance trips.

Fuel Refill Calculator handles the math for your trip logistics. It calculates how many times you need to stop, determines the distance between refills, and checks if your vehicle configuration meets safety reserve requirements. Your AI client uses these tools to build a complete refueling strategy based on tank capacity and fuel needs.

A+ Quality Score 100/100

fuel

refill

logistics

trip-planning

vehicle-management



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.

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.

Fuel Refill Calculator MCP

4 tools available

Cloud-hosted on Vinkius

You can hand off your trip logistics to your AI client using this MCP. Instead of manually calculating how many times you'll need to stop, you give your agent the trip distance, tank size, and safety reserve requirements. The MCP handles the math to ensure you never run dry. It looks at your vehicle's usable capacity against the total fuel needed to map out a reliable schedule. You can use it to verify if a specific vehicle is even capable of making a trip without violating safety margins. It's a practical way to build a refueling plan that accounts for the reality of fuel consumption and mandatory reserves.

Core Capabilities

01 — Stop Frequency Calculation

Your agent uses this to find out how many times you'll need to pull over for fuel.

02 — Safety Margin Verification

The AI checks if your tank size and safety reserves allow for a successful trip.

03 — Distance Interval Mapping

Your agent calculates the specific distance covered between each refueling event.

04 — Strategy Summarization

The AI generates a full overview of your refueling plan for the entire journey.

One Click on Vinkius — From Prompt to Execution

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

- 01 Connect your AI client to the Vinkius hosted MCP.
- 02 Provide your trip fuel needs, tank capacity, and safety reserve amounts.
- 03 The AI agent calls the relevant tools to run the math.
- 04 Your agent delivers the stop count, intervals, or safety confirmation.

Connect the MCP to your AI client and start asking about fuel needs.

Built For

This MCP is built for anyone managing vehicle logistics for long distance travel. You can hand off the math to your agent to ensure safety and planning accuracy.

Logistics Coordinators

They hand off trip fuel requirements and vehicle specs to the AI to build refueling schedules.

Fleet Managers

They use the tool to verify if vehicle configurations meet safety reserve constraints for long routes.

Long Distance Drivers

They use the agent to quickly calculate how many stops they'll need for a specific trip.

What Changes When You Connect

- 01 Calculates stop frequency based on tank capacity and safety reserves.
- 02 Verifies vehicle safety against mandatory fuel margins.
- 03 Maps out distance intervals between refills.

04 Provides a complete summary of the refueling strategy.

Real-World Applications

Long Haul Planning

Calculate exactly how many times a truck needs to stop for fuel on a cross country route.

Safety Auditing

Check if a specific vehicle can complete a journey without dipping into its safety reserve.

Route Optimization

Determine the distance between refills to better time your stops along a route.

Fleet Capacity Checks

Use the safety validation tool to ensure all vehicles in a fleet meet trip requirements.

Patterns to Avoid

Ignoring safety reserves

❌ AVOID

You tell your agent the trip is 500 miles and the tank holds 50 gallons, assuming you can use every drop.

✓ INSTEAD

Always include your mandatory safety margin in the input. Use ``validate_fuel_safety`` to confirm your vehicle configuration actually works for the trip.

Manual stop planning

❌ AVOID

You try to guess how many times you'll need to pull over by dividing total distance by tank size.

✓ INSTEAD

Let the agent do the math. Use ``calculate_refills_needed`` to get the exact number of stops required based on your specific tank capacity.

Vague refueling plans

❌ AVOID

You ask your agent if the trip is possible without asking for a specific breakdown of the stops.

✓ INSTEAD

Request a full breakdown of the journey. Use ``get_refill_schedule_summary`` to see the entire refueling strategy in one view.

The Right Fit

Connect this MCP if you manage vehicle logistics or long distance driving where fuel margins are critical. Do not connect it if you are only calculating short, local trips where fuel capacity isn't a constraint. The decision rests on whether your trip requires strict adherence to safety reserves.

Fuel Refill Calculator 4 Tools

These tools handle the math for trip logistics, from calculating stop counts to verifying safety margins.

#	TOOL	DESCRIPTION
01	estimate_refill_intervals	This tool calculates the distance you can travel between each fuel stop. It expresses these intervals in fuel units.
02	get_refill_schedule_summary	This tool provides a high level overview of your entire refueling strategy. It summarizes the plan for the whole trip.
03	validate_fuel_safety	This tool checks if your vehicle configuration is safe for the intended journey. It ensures you stay within your required safety reserves.
04	calculate_refills_needed	This tool determines the exact number of times you must stop for fuel. It uses your trip requirements and tank capacity to find the answer.

See It in Action

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

U How many times will I need to refill if my trip needs 500L of fuel, my tank is 100L, and I need a 10L safety reserve?



You will need to refill 4 times.

U Is it safe to travel with a 50L tank and a 5L safety reserve if the trip requires 60L of fuel?



Yes, the configuration is safe as the usable capacity is 45L and you can perform refills to cover the total need.

U What is the refueling strategy for a 200L tank, 20L reserve, and 1000L trip need?



You will need 5 refills in total, with a total usable fuel provided of 900L across the journey segments.

Frequently Asked Questions

01 How does this MCP calculate fuel stops?

It analyzes your total trip fuel requirements against your tank capacity and the safety reserves you define.

02 Can I use this with Claude or Cursor?

Yes, you can connect this MCP to any MCP-compatible client like Claude, Cursor, or Windsurf.

03 Does it account for safety reserves?

Yes, the tool includes a validation step to ensure your vehicle configuration meets your specific safety reserve constraints.

04 What information do I need to provide?

You typically need to provide the total fuel required for the trip, the vehicle tank capacity, and your desired safety reserve.

05 Is there a way to see the whole plan at once?

Yes, you can use the tool that provides a high level summary of the entire refueling strategy.

06 How does the tool account for fuel safety?

The tool uses the ``validate_fuel_safety`` logic to ensure that the usable capacity (tank capacity minus safety reserve) is sufficient for the trip without ever dipping into the mandatory reserve.

07 Can I use this to plan heavy transport routes?

Yes, by using ``get_refill_schedule_summary``, you can plan refueling strategies for any vehicle tier, including heavy-transport vehicles.

08 What is a safety reserve?

A safety reserve is a mandatory buffer of fuel that must remain in the tank at all times to prevent fuel pump damage or running dry.

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>"fuel-refill-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

Fuel Refill 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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