MCP SERVER | NO CODE | CLOUD HOSTED

DataFrame Aggregator Engine MCP for AI Agents

Performing GroupBy Calculations on Massive Data Exports

The DataFrame Aggregator Engine takes massive CSV files, regardless of size, and runs complex mathematical calculations like GroupBy aggregations, pivots, and sums locally. Instead of overwhelming your AI client's context window with millions of raw rows—which often leads to crashes or incorrect numbers—this MCP processes the data deterministically on a high-performance engine. You get mathematically perfect summaries (sums, means, counts) without wasting valuable AI tokens.

C Quality Score 71.43/100

data-wrangling | csv-processing | data-aggregation | group-by | high-performance-computing | data-processing

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vinkius.com/mcp/dataframe-aggregator-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.

DataFrame Aggregator Engine MCP

1 tools available
Cloud-hosted on Vinkius

You hit a wall when dealing with big datasets in an LLM chat. If you hand your agent a CSV file with millions of rows and ask it to calculate the average revenue per region, one of two things happens: your conversation crashes because the data is too large, or worse, the AI hallucinates the numbers. This MCP changes that. It delegates the heavy lifting—the actual math—to an industry-standard engine designed for performance. Your agent handles the query logic; this connector runs the calculations on the raw CSV you provide. You feed it a massive spreadsheet and ask for specific breakdowns, like summing revenue grouped by department or finding counts across countries. The result your AI client gets back is just the clean, final summary table, keeping your tokens low and your numbers accurate. Connecting to Vinkius gives you access to this powerful data wrangling capability right alongside other specialized tools.

Core Capabilities

01 — Perform high-speed GroupBy aggregations

Calculates sums, means, and counts for specific columns based on grouping keys across millions of rows.

02 — Execute data pivoting

Restructures tabular data to summarize values by moving categories from row labels into column headers.

03 — Calculate deterministic statistics

Ensures that mathematical results are computed using the processor's actual math, eliminating language model estimation errors.

One Click on Vinkius — From Prompt to Execution

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

01 Your agent reads the large CSV data and determines which metrics need calculating (e.g., sum of Revenue, average Discount).

02 The engine takes the raw CSV string and executes the required GroupBy or aggregation logic offline using high-performance computing.

03 You receive a compact, final output—a clean summary table with only the results, not the millions of source rows.

The bottom line is that this MCP lets your agent focus on *what* to calculate while the engine focuses entirely on *how* to calculate it accurately and quickly.

Built For

This is for data analysts, business intelligence specialists, and operations managers who regularly deal with large CSV exports that crash standard AI contexts. If your job involves summarizing complex spreadsheets or cross-referencing metrics across massive datasets, you need this.

Business Analyst

Needs to group sales data by region and calculate both the total revenue and average discount for executive reports.

Operations Manager

Has massive log files or user export sheets they need to count active users per country without crashing their current workflow.

Data Scientist

Requires deterministic aggregation (sums, means) on raw data exports for model training inputs, where hallucination isn't an option.

What Changes When You Connect

01 Stop wasting tokens. Instead of sending millions of rows to your agent, the `aggregate_dataframe` tool only returns the final summary table, drastically cutting down context size.

02 Get perfect math results. The calculations run deterministically on a high-performance JS engine, meaning you never have to worry about language model hallucinations or estimation errors.

03 Handle truly massive files. Process CSVs containing millions of rows instantly without risking a context limit crash that simple LLM queries face.

04 Multi-metric reporting. You can calculate different types of metrics (sum, average, count) on multiple columns in one single call to `aggregate_dataframe`.

05 Speed matters. The engine is built for speed, allowing your agent to process and return complex data insights faster than traditional methods.

Real-World Applications

Analyzing regional sales performance

A user has a multi-gigabyte CSV of sales transactions. Instead of trying to prompt their AI client to 'Group by Region and sum the Revenue,' they use the engine's `aggregate_dataframe` tool. The agent instantly returns clean metrics like: North America: $4.2M Revenue, 12% Avg Discount.

HR dataset analysis for departmental averages

An HR specialist needs to know the average age and salary per department from a large employee list. The agent calls `aggregate_dataframe` with 'Department' as the grouping key, getting precise stats like: Engineering averages 34 years and $120k salary.

Counting users across global markets

A marketing team uploads a 4.5 million row user export. They use this MCP to count active users by country, getting an instant summary: US has 2.1M active users, UK has 800k.

Financial pivot table creation

A finance analyst needs a complex report that summarizes multiple metrics (e.g., total sales and average return) across different product lines. They feed the raw data to `aggregate_dataframe` to generate the required pivoted summary.

Patterns to Avoid

Giving the whole CSV file

✗ AVOID

Asking your agent: 'Can you group this 10 million row spreadsheet by State and sum up the total Sales?' You'll hit context limits, or worse, get wrong numbers.

✓ INSTEAD

Don't pass the raw data. Use the `aggregate_dataframe` tool; it accepts the CSV data but only passes the calculated summary to your agent.

Relying on LLM estimation

✗ AVOID

Trusting an AI client that says, 'The average salary is around $95k,' when you need a precise figure for budgeting.

✓ INSTEAD

Use this MCP. The engine calculates the mean deterministically and gives you the exact number needed for accurate financial planning.

Ignoring data volume limits

✗ AVOID

Trying to process an entire year's worth of transactional logs (5M+ rows) through a single chat prompt.

✓ INSTEAD

The `aggregate_dataframe` tool handles large volumes. It processes the massive CSV string offline, letting your agent focus on interpreting the final results.

The Right Fit

Use this MCP if your primary bottleneck is data volume or mathematical precision. If you need to calculate sums, means, counts, or pivot tables from a large CSV export (millions of rows), this tool works perfectly. Don't use it if you just want the AI client to *interpret* what the data means; it handles the math, not the interpretation itself. Also, don't use it if your data is stored in a structured database like SQL Server—you still need to connect that first. This MCP is strictly for processing raw CSV strings and performing calculations on them.

DataFrame Aggregator Engine: Solving Massive Data Grouping Issues

Right now, if you're working with business reports in Excel or Google Sheets, the process is manual. You export a massive CSV, then you have to copy-paste chunks of data back and forth between different tabs just to calculate totals or averages by category. It takes hours of tedious clicking, filtering, and cross-referencing.

With this MCP, your agent handles it all. You give the raw CSV file—no matter how big—to the engine's `aggregate_dataframe` tool. The system instantly returns a clean, calculated summary table that tells you exactly what you need without any manual work.

DataFrame Aggregator Engine: Accurate Metrics on Large Datasets

The biggest time sink is data size. Passing multi-million row files to an AI client either fails, or the model 'guesses' the numbers because it can't process everything at once. You lose trust in your analysis because the math isn't verifiable.

This MCP fixes that by offloading the calculations to a dedicated engine. The results are deterministic, meaning they are based on actual CPU math, giving you reliable figures for decision-making every single time.

DataFrame Aggregator Engine: 1 tool for Data Aggregation

Use the available tools to perform high-performance GroupBy, Pivot, and aggregation calculations on large datasets.

#	TOOL	DESCRIPTION
01	`aggregate_dataframe`	Calculates GroupBy, Pivot, and Aggregations extremely fast and accurately on massive CSV strings without needing to send the raw data to the AI client.

See It in Action

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

U Group this sales CSV by 'Region' and calculate the sum of 'Revenue' and the average 'Discount'.

Aggregation complete. North America: Revenue $4.2M, Avg Discount 12%. Europe: Revenue $3.1M, Avg Discount 8%. Asia: Revenue $2.8M, Avg Discount 15%.

U Find the average 'Age' and 'Salary' grouped by 'Department' in this HR dataset.

I've rolled up the data by Department.

- **Engineering:** Average Age: 34 years | Avg Salary: $120k
- **Marketing:** Average Age: 31 years | Avg Salary: $95k

U Count the number of active users in each country from this 4.5 million row export.

Arquero processed 4.5 million rows in 1.2 seconds.

COUNTRY	ACTIVE USERS
US	2.1M
UK	800k
Germany	420k
France	310k

Frequently Asked Questions

01 **Does the DataFrame Aggregator Engine MCP handle CSV files that are too big for my AI client?**

Yes, it does. The engine processes data offline, meaning you don't have to worry about context window limits when dealing with millions of rows. You only get back the final summary.

02 **Is the math performed by this MCP accurate, or is it just estimated?**

The results are mathematically deterministic. The calculations use a high-performance engine running on your CPU, eliminating any risk of numbers being hallucinated or approximated by the language model.

03 **Can I calculate multiple metrics at once using DataFrame Aggregator Engine MCP?**

Absolutely. You can ask it to sum up one column while simultaneously calculating the average of a different column, all within the same single request.

04 **What kind of data formats does this MCP support for aggregation?**

This MCP is designed specifically for raw CSV strings. It's built to ingest and process massive amounts of tabular text data efficiently.

05 **How do I use DataFrame Aggregator Engine MCP if my data is in a database?**

You first need to export the relevant subset of your database into a CSV file. Then, you feed that raw CSV string into this MCP for fast aggregation.

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 `"dataframe-aggregator-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

DataFrame Aggregator 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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