

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

Drawer Space Volume Utility MCP

Calculate exact storage capacity and item fitment instantly.

Drawer Space Volume Utility handles the math for your storage needs. It lets your AI client calculate total container volume, check if specific objects will fit inside a drawer, compare different storage units, and determine how much space an item occupies.

A+ Quality Score 100/100

volume

storage

dimensions

capacity

fitment



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.

Drawer Space Volume Utility MCP

4 tools available

Cloud-hosted on Vinkius

Stop guessing if your gear will fit in a specific compartment. This MCP gives your AI client the geometric tools needed to manage physical storage space accurately. Instead of you manually calculating cubic centimeters or worrying about object orientation, your agent does the heavy lifting. You can provide dimensions for a drawer and an object, and the MCP will tell you if it fits, even accounting for rotation. It's useful for organizing workshops, packing kits, or managing inventory where space is at a premium. You can also compare multiple containers to see which one offers the best capacity for your specific items. It turns your AI into a spatial reasoning assistant that understands volume and fitment.

Core Capabilities

01 — Volume Calculation

Your agent calculates the total interior space of any container you describe.

02 — Fitment Validation

The AI checks if an object's dimensions allow it to fit inside a specific drawer.

03 — Spatial Efficiency

Your agent calculates how much room is left over after placing an object in a container.

04 — Capacity Comparison

The AI compares two different storage units to see which holds more.

05 — Rotation Logic

The tool checks if an object can fit by rotating it to match the drawer dimensions.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/drawer-space-volume-utility — connect your AI agent in three steps.

- 01 Connect the MCP to your client like Claude or Cursor via Vinkius.
- 02 Provide the dimensions of your drawer or container to your agent.
- 03 Provide the dimensions of the object you want to store.
- 04 Ask the agent to check for fitment or calculate volume efficiency.
- 05 Receive the calculated results directly in your chat interface.

Connecting this MCP to your AI client gives it immediate access to spatial math tools.

Built For

This MCP is for anyone managing physical inventory or organizing tight storage spaces.

Warehouse Managers

They hand off dimension data to the AI to verify if new stock fits in existing bins.

Workshop Organizers

They use the AI to plan tool storage in specialized cabinets or drawers.

Logistics Coordinators

They use the tool to compare container capacities for shipping or storage efficiency.

What Changes When You Connect

- 01 Eliminates manual volume math for storage planning.
- 02 Prevents ordering items that won't fit in designated spaces.

03 Provides rotation-aware fitment checks.

04 Compares multiple storage options quickly.

Real-World Applications

Tool Organization

Check if a specific wrench set will fit in a new toolbox drawer before buying it.

Inventory Management

Determine how much space a new shipment of parts will take up in a storage bin.

Packing Optimization

Calculate the volume efficiency of a container to minimize wasted space.

Storage Comparison

Compare two different cabinet models to see which one provides more usable volume.

Patterns to Avoid

Ignoring object orientation

❌ AVOID

You tell the AI a box is 10×10×10 and the drawer is 12×8×12, then assume it won't fit because the width is too small.

✓ INSTEAD

Let the agent check different orientations. Use ``validate_item_fit`` to see if rotating the object allows it to fit in the space.

Guessing remaining space

❌ AVOID

You assume a drawer is half full just because you put a large tool inside it.

✓ INSTEAD

Get exact numbers. Use ``calculate_volume_efficiency`` to find the actual percentage of capacity the object takes up.

Comparing unrelated containers

❌ AVOID

You try to decide if a shipment fits by comparing the volume of a small bin to a large cabinet without checking the actual usable space.

✓ INSTEAD

Use ``compare_drawer_capacities`` to find the specific difference in storage capacity between two containers.

The Right Fit

Connect this MCP if you manage physical inventory, workshop tools, or logistics where dimensions matter. If you only deal with digital files or abstract data, you don't need this. The deciding factor is whether you need to know if a physical object fits in a physical space.

Drawer Space Volume Utility: 4 Precision Tools

These tools handle the geometric math for container capacity and object fitment. Your agent uses them to solve spatial problems without manual calculation.

#	TOOL	DESCRIPTION
01	calculate_volume_efficiency	This tool determines the percentage of a drawer's total capacity that a specific object occupies.
02	compare_drawer_capacities	Use this to find the difference in storage capacity between two different drawers or containers.
03	get_drawer_volume	This tool calculates the total interior volume of a drawer based on its dimensions.
04	validate_item_fit	This tool checks if an object will fit inside a drawer, including checks for object rotation.

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 volume of a drawer that is 10cm long, 5cm wide, and 4cm high?



The total capacity of the drawer is 200 cubic centimeters.

U Will a 3×3×3 cube fit in a drawer that is 4×4×4?



Yes, the item will fit inside the drawer.

U How much space does a 2×2×2 object take up in a 5×5×5 drawer?



The object occupies 6.4% of the drawer's total volume.

Frequently Asked Questions

01 How do I use this MCP with Claude?

You connect to the MCP through the Vinkius platform. Once connected, your Claude client can immediately use the tools to perform volume and fitment calculations.

02 Does the fitment check account for rotating an object?

Yes, the `validate_item_fit` tool includes rotation checks to see if an object can fit by changing its orientation.

03 Can I compare two different drawers?

Yes, you can use the `compare_drawer_capacities` tool to see which of two storage units has more capacity.

04 What kind of units can I use for dimensions?

You can provide dimensions in any standard unit, such as centimeters or inches, and the tools will process the math accordingly.

05 Is there a way to see how much empty space is left?

You can use the `calculate_volume_efficiency` tool to determine how much of the drawer's capacity is occupied by an object.

06 How do I calculate the volume of my drawer?

You can use the ``get_drawer_volume`` tool by providing the interior length, width, and height of the drawer.

07 Can the tool check if an object fits if I rotate it?

Yes, the ``validate_item_fit`` tool automatically checks if the item can be rotated to fit within the drawer's dimensions.

08 How do I compare two different drawers?

Use the ``compare_drawer_capacities`` tool by providing the dimensions for both drawers as JSON strings.

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>"drawer-space-volume-utility": { "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

Drawer Space Volume Utility 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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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	<code>https://edge.vinkius.com/{token}/mcp</code>

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