

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

Cellar Space Optimization MCP

Manage your winery floor space and tank capacity with precision.

Cellar Space Optimization MCP handles the math behind your cellar layout. It calculates how to distribute wine batches into tanks, finds the best way to stack barrels without blocking forklift paths, and predicts when you'll run out of room during peak harvest seasons.

A+ Quality Score 100/100

winemaking

spatial-optimization

inventory-management

cellar-management

logistics



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.

Cellar Space Optimization MCP

4 tools available

Cloud-hosted on Vinkius

Running a cellar is a constant game of Tetris. You have to balance tank volumes, barrel density, and enough floor space to actually move equipment around. This MCP gives your AI client the specific tools needed to solve those spatial problems. Instead of guessing if a new batch will fit, you can use it to distribute wine across your available tanks or figure out the tightest barrel configuration that still respects your ceiling height. It also looks ahead to your seasonal needs so you aren't caught staring at an empty tank when the harvest hits. You can even check your proposed layouts to make sure you haven't accidentally blocked a forklift aisle. It turns your production data into a functional floor plan.

Core Capabilities

01 — Tank Management

Your agent uses this to assign specific wine batches to available tank volumes.

02 — Barrel Density

The AI calculates stacking patterns to maximize the number of barrels in a given area.

03 — Capacity Forecasting

Your client predicts future space shortages based on your production schedule.

04 — Layout Validation

The tool evaluates if your equipment and storage won't block essential forklift paths.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/cellar-space-optimization — connect your AI agent in three steps.

01 Connect your preferred client like Claude or Cursor to Vinkius.

02 Provide your current tank and barrel data to your agent.

03 Ask your agent to run specific tools for allocation or forecasting.

04 Receive actionable layout and capacity instructions.

Connect your AI client to Vinkius to start managing your cellar space immediately.

Built For

This is built for professionals managing winery operations and cellar logistics.

Cellar Master

Uses the MCP to manage tank volumes and barrel storage during production.

Winery Operations Manager

Uses the tool to forecast seasonal capacity and prevent harvest bottlenecks.

Logistics Coordinator

Uses the layout tools to ensure forklift access and efficient floor movement.

What Changes When You Connect

- 01 Reduces the risk of running out of tank space during harvest.
- 02 Maximizes barrel storage density within existing cellar footprints.
- 03 Prevents forklift access issues by validating floor layouts.
- 04 Automates the math for batch distribution across tanks.

Real-World Applications

Harvest Planning

Predict if your current tank capacity can handle the incoming grape volume for the season.

Batch Allocation

Decide exactly which tanks should hold specific wine batches to optimize volume.

Barrel Storage Optimization

Find the most efficient way to stack barrels to save floor space.

Cellar Reorganization

Test new equipment or storage layouts to ensure they don't block movement paths.

4 Tools Available

#	TOOL	DESCRIPTION
01	analyze_workflow_efficiency	This tool checks if your current or proposed cellar layout leaves enough room for movement and equipment access.
02	forecast_seasonal_capacity	Use this to predict space availability and catch potential shortages before they happen during the production year.
03	get_barrel_configuration	This tool calculates the best stacking arrangement to get the most barrels into your available space.
04	get_tank_allocation	This tool determines the most efficient way to distribute your wine batches into your existing tanks.

See It in Action

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

U How should I distribute these wine batches into my available tanks?



Batch A (500L) should go to Tank 1, and Batch B (300L) should go to Tank 2.

U What is the best way to stack my barrels in the current cellar?



The optimal configuration is 5 stacks, each 3 barrels high, with 1.5m aisles between them.

U Will I have enough space for the harvest peak in October?



No, the forecast shows a capacity bottleneck in October due to high tank volume requirements.

Frequently Asked Questions

01 How does this MCP help with tank management?

It uses the `get_tank_allocation` tool to calculate how to best distribute wine batches into your available tanks.

02 Can I use this to plan for harvest?

Yes, the `forecast_seasonal_capacity` tool predicts space availability to help you identify potential shortages before they happen.

03 Will it help with barrel storage?

The `get_barrel_configuration` tool calculates the best stacking arrangements to maximize your density.

04 Does it account for forklift movement?

Yes, the `analyze_workflow_efficiency` tool checks if your layout allows for sufficient movement and access.

05 What AI clients can I use with this?

You can use any MCP-compatible client, including Claude, Cursor, Windsurf, and VS Code.

06 How does the tool handle forklift access?

The `'analyze_workflow_efficiency'` tool evaluates if the layout allows for sufficient movement by checking if assets are blocked based on required aisle widths.

07 Can I predict when I will run out of tank space?

Yes, you can use `'forecast_seasonal_capacity'` to identify potential bottlenecks and predict space availability throughout the production year.

08 How is barrel stacking calculated?

The `'get_barrel_configuration'` tool calculates stacking arrangements by considering cellar dimensions, barrel sizes, and the minimum width required for forklift access.

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>"cellar-space-optimization": { "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

Cellar Space Optimization 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	https://edge.vinkius.com/{token}/mcp

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