MCP SERVER | NO CODE | CLOUD HOSTED

Container Drainage Material Planner MCP

Get exact material counts for your planting projects.

Container Drainage Material Planner MCP handles the math for your containerized planting setups. It calculates the specific volume of drainage media you need, determines the total liner surface area for your containers, and estimates costs based on bag counts. You can then pull everything into a single procurement report to keep your logistics organized.

A+ Quality Score 100/100

drainage | planting | containers | logistics | calculation

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vinkius.com/en/ai-agent-connect/container-drainage-material-planner

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.

Container Drainage Material Planner MCP

4 tools available
Cloud-hosted on Vinkius

Planning large scale planting projects usually involves a lot of manual math and guesswork regarding how much substrate or liner you actually need. This MCP removes that friction. Instead of running calculations in a spreadsheet, you tell your AI client the dimensions of your containers and the number of units you're working with. The MCP handles the geometry and volume math for you. You can figure out exactly how many bags of media to order so you don't end up with half-empty containers or expensive leftover stock. It also covers the liner requirements, ensuring you have enough surface area to cover every pot. Once the numbers are set, you can generate a consolidated report that summarizes the entire material list. It's a direct way to turn project dimensions into a clear procurement plan.

Core Capabilities

01 — Volume Calculation

Your agent uses this to find the exact amount of drainage media required for your container setup.

02 — Liner Area Estimation

Your agent uses this to determine the total surface area of liner material needed for all pots.

03 — Cost Projections

Your agent uses this to estimate how much you will spend on media based on bag counts.

04 — Report Generation

Your agent uses this to combine all material and area data into a single summary.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/container-drainage-material-planner** — connect your AI agent in three steps.

01 Connect the MCP to Claude, Cursor, or Windsurf via Vinkius.

02 Provide your container dimensions and quantities to your AI client.

03 The AI uses the MCP tools to run the volume and area math.

04 Request a cost estimate or a final project summary report.

You connect the MCP to your AI client and start asking for calculations.

Built For

This MCP is built for professionals managing large scale containerized planting operations.

Horticulturists

They hand off container dimensions to the AI to get precise material requirements.

Greenhouse Managers

They use the tool to estimate procurement costs and material needs for upcoming seasons.

Agricultural Logisticians

They use the summary reports to organize material orders and inventory planning.

What Changes When You Connect

01 Reduces manual math errors in substrate and liner calculations.

02 Provides specific bag counts for more accurate ordering.

03 Consolidates disparate data into a single procurement report.

04 Estimates costs based on real bag quantities.

Real-World Applications

New Project Setup

Calculate all necessary media and liner amounts before a new planting cycle begins.

Budget Planning

Get a high level cost estimate for drainage media to set project budgets.

Inventory Management

Use the project summary to check if current stock covers your planned container volume.

Procurement Preparation

Generate a consolidated report to send to suppliers for material orders.

Patterns to Avoid

Manual Spreadsheet Math

AVOID

You try to calculate the total volume for 500 pots by typing dimensions into a spreadsheet and adding them up manually.

✓ INSTEAD

Give your container dimensions and unit counts to your AI client and use `calculate_drainage_volume` to get the exact volume instantly.

Guessing Bag Counts

AVOID

You order 50 bags of media based on a gut feeling, hoping you have enough for the new planting cycle.

✓ INSTEAD

Use `estimate_material_costs` to get a precise bag count and cost estimate before you place the order.

Fragmented Data Sheets

AVOID

You keep separate notes for liner surface area, media volume, and total costs, making it hard to present a single plan to your manager.

✓ INSTEAD

Run `generate_project_summary` to pull all your calculated data into one clean, consolidated report.

The Right Fit

Connect this MCP if you manage large scale containerized planting operations and need to turn dimensions into procurement plans. Do not connect it if you only handle small, single-pot hobby setups where manual math is trivial. The decision depends on whether the scale of your project makes manual volume and area calculations a liability.

Container Drainage Material Planner 4 Tools

These tools handle the geometry and volume math for large scale planting projects. They turn container dimensions into specific material orders and cost estimates.

#	TOOL	DESCRIPTION
01	`calculate_drainage_volume`	This tool determines the total volume of drainage media required for your entire project.
02	`calculate_liner_surface_area`	This tool finds the total surface area of liner material needed to line all your containers.
03	`estimate_material_costs`	This tool provides a high level cost estimate for drainage media based on the number of bags you need.
04	`generate_project_summary`	This tool pulls all your calculated material and surface area data into one consolidated report.

See It in Action

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

U How much drainage media do I need for 50 pots with a 10cm diameter and 5cm drainage depth, assuming a 10% waste rate?

You will need 1 bag of drainage media for this project.

U Calculate the liner area for 100 pots that are 20cm in diameter and 30cm tall.

The total liner area required is 2.19 square meters.

U What is the cost for 5 bags of media if each bag costs $15.00?

The total cost including tax is $81.00.

Frequently Asked Questions

01 **What can this MCP calculate?**

It calculates drainage media volume, required liner surface area, and estimated material costs.

02 **How do I get a report of my materials?**

You can ask your AI client to use the generate_project_summary tool to aggregate all your data into one report.

03 **Does this MCP work with my existing AI tools?**

Yes, it works with any MCP-compatible client like Claude, Cursor, or Windsurf.

04 **Can I estimate costs for specific media prices?**

Yes, the estimate_material_costs tool provides cost estimates based on the number of bags required.

05 **Do I need to host this myself?**

No, Vinkius hosts and manages the MCP so it is ready to use immediately after you connect.

06 **How do I calculate the total media needed?**

Use the `calculate_drainage_volume` tool by providing the pot diameter, drainage layer depth, total pot count, and your preferred waste rate.

07 **Can I get a full procurement report?**

Yes, once you have the outputs from the volume, area, and cost tools, use `generate_project_summary` to create a consolidated report.

08 **Does this account for waste during installation?**

Yes, the `calculate_drainage_volume` tool includes a waste rate parameter to account for settling and spills.

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 `"container-drainage-material-planner": { "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

Container Drainage Material Planner 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`

LICENSE & USAGE

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