MCP SERVER | NO CODE | CLOUD HOSTED

Leftover Inventory Manager MCP for AI Agents

Optimize Material Offcuts and Scrap Management in Fabrication

Leftover Inventory Manager tracks every scrap piece and offcut generated during your material cutting process. It helps you implement a 'reuse first' system by letting your AI agent efficiently match needed dimensions to available waste inventory, drastically minimizing costly material waste.

A+ Quality Score 100/100

offcuts | waste-reduction | material-tracking | optimization | inventory

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vinkius.com/mcp/leftover-inventory-manager

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.

Leftover Inventory Manager MCP

3 tools available
Cloud-hosted on Vinkius

You can stop throwing away usable scraps. This MCP connects your AI agent directly into your material cutting workflow, enforcing the 'Reuse First' principle across your facility. Instead of managing piles of unsorted scrap, your system tracks every offcut piece as it's generated by processes like first-fit-decreasing cutting. You use this connection to log new waste pieces, ensuring everything is counted immediately. Then, when a job comes in needing specific dimensions, the agent finds the best available match from your inventory. This process isn't just about tracking; it's about maximizing every board foot and keeping cash in the business by making sure nothing gets wasted. You connect this entire system through Vinkius, getting one central place to manage all your operational data.

Core Capabilities

01 — Log incoming waste material

The agent accepts new pieces of scrap and adds them immediately to your digital inventory.

02 — Audit current stock levels

It provides a summarized breakdown of all stored offcuts, grouped by size tier (e.g., Small, Medium, Large).

03 — Match material to requirements

The agent analyzes a specific job need and identifies the largest and most suitable piece of waste inventory available.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/leftover-inventory-manager** — connect your AI agent in three steps.

01 Start by directing your AI client to log incoming scrap pieces immediately after they are cut, using the designated tool.

02 Next, ask the agent what material is needed for a specific job; it cross-references that requirement against your full inventory.

03 Finally, review the results. The system tells you which waste piece works best and how much usable material remains after the match.

The bottom line is that this MCP turns unpredictable scrap piles into predictable, valuable resources for your next job.

Built For

This MCP is essential for operations managers and production leads in woodworking, metal fabrication, or any industry where raw material waste translates directly to high costs. If you spend time manually checking scrap piles before starting a new cut list, this system saves your day.

Production Manager

Manages the entire workflow by ensuring that every offcut piece is logged and matched to future jobs, reducing overall material expenditure.

Shop Floor Supervisor

Uses the connection on a continuous basis to quickly audit inventory composition during shifts and guide workers on proper scrap logging procedures.

Inventory Planner

Runs regular reports via the agent to understand which size tiers of waste material accumulate most often, helping predict future purchasing needs.

What Changes When You Connect

01 Stop manually sorting scraps. Use `filter_incoming_waste` to log pieces instantly, guaranteeing that every usable offcut is immediately available for reuse.

02 Cut down on material waste by using the `match_requirement_to_offcut` tool, which finds the perfect scrap piece for a new job in seconds.

03 Know your exact stock levels anytime. The agent runs an audit via `get_inventory_composition`, giving you a clear picture of what materials are available without physical counting.

04 Boost profit margins by turning waste into revenue. By tracking every size tier, you ensure material savings that traditional methods miss.

05 Speed up quoting and planning. Instead of assuming availability, your agent confirms the best match instantly, streamlining project timelines.

Real-World Applications

Project kickoff needs immediate confirmation on available scrap

A client sends a job requiring multiple pieces of specific dimensions. The user asks their agent to run `match_requirement_to_offcut`. The system immediately confirms availability and even shows which existing waste pieces will be consumed, allowing the project manager to give an accurate quote right away.

End-of-shift cleanup requires logging all scraps

The shop floor supervisor runs into a pile of usable offcuts. Instead of having workers physically catalogue them, they use `filter_incoming_waste` to quickly log the new material batch, ensuring it's ready for tomorrow's planning.

Inventory audit before purchasing new stock

The procurement team needs to know if they really need to order more lumber. They ask their agent to run `get_inventory_composition` to see the current breakdown of scrap by size tier, proving that existing waste can cover several upcoming jobs.

Rush job requires unexpected material dimensions

A last-minute order comes in for a non-standard cut. The user prompts their agent to find the best match using `match_requirement_to_offcut`, and it pinpoints an ideal, previously forgotten offcut piece that saves the day.

Patterns to Avoid

Treating scrap as general trash

✗ AVOID

The team just throws all remaining pieces into a dumpster because they can't find time to count them, effectively losing usable material that could have fit multiple future jobs.

✓ INSTEAD

After every cutting run, use `filter_incoming_waste` to log the scraps immediately. Don't rely on memory or manual counting; let your agent track it automatically.

Over-ordering due to unknown stock

✗ AVOID

The purchasing department sees a gap in needed materials and orders more lumber because they don't know how much usable scrap is sitting in the back warehouse.

✓ INSTEAD

Before ordering anything, run `get_inventory_composition` through your agent. This audit prevents unnecessary spending by confirming what you already have on hand.

Ignoring the best fit option

✗ AVOID

A job needs a 50×30 piece. A worker grabs an available 60×20 offcut because it's closest, but that piece might be better used elsewhere.

✓ INSTEAD

Always let your agent run `match_requirement_to_offcut`. It finds the mathematically optimal piece, ensuring you use every scrap efficiently.

The Right Fit

Use this Leftover Inventory Manager MCP if material waste is a significant cost factor in your fabrication process. You need a system that logs incoming scraps, tracks them by size tier, and actively matches future job requirements to existing offcuts. It excels when you require precise, audit-ready data on every piece of scrap material.

Don't use it if your primary goal is just simple project tracking or client communication; those are better served by dedicated CRM tools. Also, don't rely on this MCP for complex structural engineering calculations—it manages dimensions and availability, not physical stress loads. If you simply need to know what materials you bought last month, a basic accounting tool will suffice; you need this when the goal is maximizing yield from waste.

Leftover Inventory Manager: Solving Material Waste in Fabrication

In fabrication shops, tracking scrap material is usually a manual nightmare. Employees have to physically sort and count usable offcuts, leading to lost inventory counts or pieces that get overlooked until they're too small for anything useful. You spend hours just managing the waste pile instead of cutting materials.

With this MCP, your agent handles the entire logging process. After a cut run, you simply direct the agent to log what was produced. The system instantly updates the inventory and tells you exactly how many pieces are available in each size tier—giving you actionable data without lifting a finger.

Leftover Inventory Manager: Optimizing Material Usage and Yield

The biggest time sink is figuring out which scrap piece works best for an incoming job. Workers often grab the 'close enough' offcut, leading to sub-optimal use of material that could have fit a much larger requirement.

Now, when you ask your agent to match requirements, it doesn't just find *a* piece; it finds the absolute optimal offcut using `match_requirement_to_offcut`. This precision ensures maximum yield from every single sheet, making your material spend count for more.

Leftover Inventory Manager: 3 Tools for Waste Reduction Tracking

Use these tools to log incoming waste, audit current stock by size tier, or find the perfect offcut piece for a new project requirement.

#	TOOL	DESCRIPTION
01	`filter_incoming_waste`	Logs new scrap pieces and adds them directly into the inventory count for tracking.
02	`get_inventory_composition`	Retrieves a summary report detailing how many offcuts you have available across different size categories.
03	`match_requirement_to_offcut`	Searches the entire inventory to find the single best-fitting waste piece for specified dimensions and requirements.

See It in Action

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

U I need a new component that is 150mm long and 75mm wide. What's the best offcut I have right now?

Analysis Complete:

The optimal match for your required dimensions (150mm x 75mm) is available in **Inventory Lot B**.

- **Source Piece Dimensions:** 200mm L x 90mm W
- **Usable Area:** 150mm x 75mm
- **Remaining Scrap:** A scrap piece of 50mm x 90mm remains from this cut.

This option uses the least valuable source material while fulfilling your exact need.

U How does my current offcut inventory look right now? I want a size breakdown.

Here is an audit of your current scrap stock, grouped by usable size tier:

- **Small Pieces (under 10cm):** 12 units available.
- **Medium Pieces (10-30cm):** 8 units available.
- **Large Pieces (over 30cm):** 5 units available, including one piece measuring 120mm x 60mm.

Overall stock health is good for mid-sized components.

U Add these new scraps to the inventory: [{'length': 180, 'width': 45}, {'length': 90, 'width': 30}]

Waste Logging Successful.

The following pieces were logged and added to your active inventory:

- Piece 1: 180mm x 45mm (Added successfully)
- Piece 2: 90mm x 30mm (Added successfully)

Your current total scrap count increased by two units. The system is now updated for planning.

Frequently Asked Questions

01 **How does the Leftover Inventory Manager help me reduce material waste in my shop?**

It prevents usable scraps from being forgotten or thrown away. By logging every offcut piece and matching them to future jobs, you ensure that your most valuable resource—your own waste—gets used first.

02 **Do I have to manually count my scrap inventory with the Leftover Inventory Manager MCP?**

No. You simply use the 'Log incoming waste' function whenever scraps are generated, and the system automatically tracks and records them for you.

03 **Can this tool find a replacement piece if my job needs non-standard dimensions?**

Yes. The Leftover Inventory Manager is designed to search your entire stock and pinpoint the most dimensionally suitable offcut available for any specific requirement.

04 **What kind of waste material can I track with this MCP?**

It handles dimensional scrap from cutting processes, tracking pieces based on length and width. It's ideal for wood, metal, or any sheet material where size matters.

05 **Is the inventory count accurate if my crew forgets to log some scraps?**

The tool provides a precise record of what *was* logged. You still need to ensure your team follows logging protocols; but it's the best system for maintaining an accurate, digital audit trail.

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 `"leftover-inventory-manager": { "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

Leftover Inventory Manager 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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