MCP SERVER | NO CODE | CLOUD HOSTED

Gym Capacity Planner MCP

Build better fitness layouts with data-driven capacity planning.

Gym Capacity Planner MCP gives your AI client the math needed to design efficient fitness facilities. It calculates safe floor limits, determines how many machines you actually need for your target membership, and projects daily user volume based on your floor space and equipment mix.

A+ Quality Score 100/100

gym | capacity | equipment | facility | fitness-planning

MAINTAINED BY VINKIUS CLOUD FOR AI AGENTS · SEPTEMBER 2026
vinkius.com/en/ai-agent-connect/gym-capacity-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.

Gym Capacity Planner MCP

4 tools available
Cloud-hosted on Vinkius

Designing a gym floor is more than just pushing machines against walls. You need to know if your layout actually supports your membership goals without overcrowding the floor or leaving expensive equipment unused. This MCP handles the heavy lifting of facility math. You can use it to figure out how many people can safely work out at once or how many cardio machines you need to buy to hit a specific capacity target. It also helps you check if your planned equipment layout actually fits within your physical walls. Instead of guessing, you can give your AI client your square footage and equipment ratios to get immediate, actionable numbers for your business plan or floor redesign.

Core Capabilities

01 — Floor Limit Calculation

Your agent uses this to find the safe number of simultaneous users based on square footage.

02 — Equipment Procurement Math

Your AI client uses this to determine exact machine counts for a target membership size.

03 — Daily Volume Projection

Your agent uses this to estimate total daily foot traffic based on hours and turnover.

04 — Layout Validation

Your AI client uses this to confirm that equipment setups fit within physical floor limits.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/gym-capacity-planner** — connect your AI agent in three steps.

01 Connect your preferred MCP-compatible client to Vinkius.

02 Provide your gym's square footage and equipment ratios to your AI agent.

03 Ask the agent to run specific calculations like capacity or equipment needs.

04 Receive immediate, data-driven results for your facility planning.

Connect your AI client to Vinkius to access these specialized fitness planning tools instantly.

Built For

This MCP is built for professionals managing or designing fitness environments. You hand off your floor dimensions and equipment ratios to your AI to get instant capacity data.

Gym Owners

Use it to plan equipment purchases and membership growth targets.

Facility Managers

Use it to ensure floor layouts stay within safe occupancy limits.

Fitness Consultants

Use it to provide data-backed layout recommendations to clients.

What Changes When You Connect

01 Calculates safe occupancy limits based on real square footage.

02 Determines exact equipment counts to prevent overspending.

03 Projects daily user totals to help with staffing and scheduling.

04 Validates equipment layouts against physical floor constraints.

Real-World Applications

New Gym Openings

Calculate how much equipment to order for a brand new facility based on its total square footage.

Facility Redesigns

Check if a new equipment layout will fit in your existing space without violating safety limits.

Membership Growth Planning

Determine if your current floor capacity can handle a projected increase in daily users.

Equipment Mix Optimization

Find the right balance of cardio and strength machines to support your target user density.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_equipment_requirements	This tool estimates the specific number of machines you need to support a set capacity. It helps you avoid overbuying or under-equipping your facility.
02	estimate_daily_throughput	Use this to project the total number of unique users your gym can handle in a single day. It factors in your operating hours and turnover rates.
03	get_floor_capacity	This tool calculates the maximum number of people who can safely occupy your gym floor at one time. It uses your square footage and equipment distribution to find the limit.
04	validate_space_compliance	This tool checks if your planned equipment setup actually fits within your physical floor constraints. It ensures your layout is realistic before you move any heavy gear.

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 maximum capacity for a 5000 sq ft gym with 40% cardio and 60% strength?

The maximum simultaneous capacity for a 5000 sq ft gym with that equipment mix is 125 users.

U How many cardio machines do I need for 50 users if cardio is 30% of the mix and density is 5 users per machine?

You will need 3 cardio machines to support that capacity.

U If my gym can hold 50 people at once and is open for 12 hours, what is the daily capacity with a turnover of 2?

The total daily capacity is 1,200 users.

Frequently Asked Questions

01 **How does this MCP calculate gym capacity?**

It uses your total square footage and the distribution of your equipment to determine the maximum number of people who can safely use the floor at once.

02 **Can I use this to plan how many machines to buy?**

Yes. You can use the equipment requirements tool to find the ideal number of machines needed to support a specific target capacity.

03 **Will this help with daily foot traffic estimates?**

Yes. The throughput tool calculates the total number of unique users your facility can handle throughout its entire operating day.

04 **What AI clients can I use with this MCP?**

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

05 **Does this tool check if my equipment fits in my room?**

Yes. The space compliance tool checks if your planned equipment setup fits within your physical floor constraints.

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 `"gym-capacity-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

Gym Capacity 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

Generated	September 2026
MCP Server	Gym Capacity Planner MCP
Server ID	`01a0b1d7-5516-71cb-b8c6-227b2d88b6aa`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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