MCP SERVER | NO CODE | CLOUD HOSTED

Screen Stretch Resolver MCP for AI Agents

Calculate accurate pixel mapping and FOV shifts for tactical shooters

Screen Stretch Resolver calculates pixel stretching, FOV shifts, and coordinate mapping specifically for tactical shooter players using stretched resolutions like 4:3 on modern widescreen monitors. It gives you mathematical precision over visual distortion, ensuring your crosshair placement and perceived field of view remain accurate regardless of your monitor setup.

A+ Quality Score 100/100

resolution | fov | stretched | tactical-shooter | pixel-mapping

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vinkius.com/mcp/screen-stretch-resolver

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.

Screen Stretch Resolver MCP

3 tools available
Cloud-hosted on Vinkius

If you play competitive shooters using a non-native aspect ratio, you know that screen stretching messes with the geometry. The Screen Stretch Resolver is built to handle that math. It gives your AI client the tools it needs to understand how your stretched display differs from your native resolution. You can input resolutions and get precise multipliers for pixel expansion. Need to know where an enemy appears on screen? Use this MCP to translate coordinates from your stretched view back into accurate, native pixels. Plus, you'll calculate exactly how much your field of view changes when switching aspect ratios. This allows you to maintain consistency and accuracy whether you’re practicing aim or running a match. It works by giving mathematical context where visual guesswork used to rule.

Core Capabilities

01 — Map Coordinates

Translates any specific point on your screen from the stretched resolution view back into its accurate location on the native monitor pixels.

02 — Analyze FOV Shift

Calculates precisely how much the perceived field of view changes when you switch aspect ratios or use a stretched display setting.

03 — Calculate Scaling Factors

Determines the exact magnitude of pixel expansion between two different resolutions, providing the necessary stretch multipliers for accurate mapping.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/screen-stretch-resolver** — connect your AI agent in three steps.

01 Tell your AI client the specific stretched resolution and the native monitor resolution you are using.

02 The MCP processes these inputs by calculating the required pixel expansion factors, determining all relevant scaling multipliers.

03 Your agent receives the resulting data—whether it's a coordinate map or an FOV percentage—allowing you to understand the visual distortion mathematically.

The bottom line is that this MCP takes complex geometry problems and spits out clean, actionable numbers for your game settings.

Built For

This tool is essential for competitive gamers, esports coaches, or high-level players who rely on precise visual accuracy. If you notice aiming feels 'off' when switching display modes, this MCP gives you the hard data to fix it.

Competitive Gamer

Uses the tool to verify that their stretched resolution setup maintains accurate crosshair placement and consistent field of view across different hardware.

Esports Coach

Tests various aspect ratios on behalf of players, calculating the resulting FOV shifts to recommend optimal graphical settings for competition.

Technical Streamer

Demonstrates or explains complex display setups, using coordinate mapping to show viewers exactly how a point is scaled from one resolution to another.

What Changes When You Connect

01 Stop guessing about your settings. Use `calculate_stretch_multipliers` to get the exact pixel expansion factor, eliminating guesswork from your setup.

02 Maintain perfect aim consistency. By using `map_coordinate_conversion`, you can verify where crosshairs and enemy targets land on a native screen, regardless of stretch.

03 Know exactly what you're losing. Run an analysis with `analyze_fov_shift` to quantify how much your effective field of view changes when switching from 16:9 to 4:3.

04 Optimize for consistency. The MCP provides the mathematical backing needed to ensure that changing resolutions doesn't compromise your in-game accuracy.

05 Save time debugging. Instead of toggling through multiple settings and visual tests, you get quantifiable data instantly.

Real-World Applications

Crosshair Placement Verification

A player suspects their crosshair placement looks different on a stretched monitor. They ask their agent to run `map_coordinate_conversion` for key points (like the center and edges) from 4:3 to native resolution, confirming that the visual mapping is accurate.

Aspect Ratio Comparison

A coach needs to advise a player on whether sticking with 16:9 or switching to 4:3 is better. The agent uses `analyze_fov_shift` and gets precise degrees of FOV change, allowing the coach to make an evidence-based recommendation.

Setting Up a Custom Display

A player connects two different monitors with mismatched ratios. They use `calculate_stretch_multipliers` to determine the overall pixel scale factor needed to keep all elements—from UI to enemies—aligned across both screens.

Troubleshooting Visual Drift

The player notices minor visual drift when switching between two popular resolutions. The agent runs a comparison using `calculate_stretch_multipliers` to pinpoint the exact scaling mismatch, solving the perceived inaccuracy.

The Right Fit

Use this MCP if your gameplay relies on absolute visual precision—things like crosshair placement, tracking opponents, or judging

distance. If you're constantly tweaking aspect ratios or trying to match a stretched display setup to a widescreen monitor, this is what you need. Don't use it if your main concern is just basic color calibration or simple screen resolution changes; those are handled by graphics drivers. Also, don't rely solely on `analyze_fov_shift`. It tells you about the *perception* change, but for tactical accuracy, you must also run coordinate mapping via `map_coordinate_conversion` to confirm physical placement.

Screen Stretch Resolver: Solving Pixel Mapping Issues in Competitive Shooters

When running a stretched resolution on your monitor, the game engine doesn't just shrink everything; it mathematically expands pixels. This means that while the image might look fine, key elements—like enemy hitboxes or UI markers—are physically shifted from where they should be relative to your native screen size.

With this MCP, you can feed in any combination of resolutions. The tool calculates precise multipliers and uses `map_coordinate_conversion` to show you the actual, corrected location of a point on your 16:9 monitor, giving you data instead of guesswork.

Screen Stretch Resolver: Quantifying FOV Changes in Tactical Gaming

The biggest problem with aspect ratios is the loss of visual context. Simply changing settings doesn't tell you if your perceived field of view (FOV) has shifted, which can ruin your aim and tracking ability.

By using `analyze_fov_shift`, your agent gives you a clear percentage reduction or increase in FOV. You stop reacting to 'it feels wrong' and start optimizing based on hard math.

Screen Stretch Resolver: 3 Tools for Aspect Ratio Analysis

Use these tools to calculate exact pixel multipliers, map coordinates across resolutions, and analyze how your field of view changes when you adjust aspect ratios.

#	TOOL	DESCRIPTION
01	`map_coordinate_conversion`	Translates a specific screen point from the stretched view back into its accurate location in native pixels.
02	`analyze_fov_shift`	Calculates how much your perceived field of view changes when you adjust aspect ratios or resolutions.
03	`calculate_stretch_multipliers`	Determines the exact scaling factor for pixels between two different monitor resolutions.

See It in Action

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

U I use 1280×960 (4:3) but play on a 1920×1080 monitor. What is the horizontal stretch multiplier I need to know?

Pixel Scaling Report

- **Stretched Input:** 1280×960
- **Native Monitor:** 1920×1080
- **Horizontal Multiplier:** 1.5

This means every horizontal pixel in your game is scaled by 1.5 times on the screen, effectively expanding the visual width by 50%. Always keep this factor in mind when adjusting crosshair scale.

U If my FOV was 90 degrees at 16:9, what's the effective horizontal field of view if I switch to a 4:3 setup?

Field of View Shift Analysis

Based on your transition from 16:9 to 4:3,

- Original FOV (16:9): 90°
- Calculated Effective Horizontal FOV (4:3): **~75.9°**

You'll see a noticeable drop in perceived horizontal width. You might need to adjust your tracking habits accordingly.

U I want to convert the point (640, 480) from my stretched view to native pixels.

Coordinate Mapping Result

- **Source Point:** (640, 480) [Stretched View]
- **Target Monitor:** 1920×1080 [Native Pixels]
- **Mapped Coordinates: (960, 540)**

The point you were aiming at is accurately represented here. Use these numbers for precise setup testing.

Frequently Asked Questions

01 **How does the stretch multiplier calculation work?**

The `calculate_stretch_multipliers` tool compares your monitor's native resolution to your game's active resolution to find the horizontal and vertical expansion factors.

02 **Can I use this to map crosshair positions?**

Yes, by using `map_coordinate_conversion`, you can take a coordinate from your stretched resolution and find its corresponding pixel position on your native monitor.

03 **Does this tool account for FOV changes?**

Yes, the `analyze_fov_shift` tool calculates the effective horizontal field of view and the percentage change in visibility when you switch aspect ratios.

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 `"screen-stretch-resolver": { "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

Screen Stretch Resolver 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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