

MCP SERVER

NO CODE

CLOUD HOSTED

Holiday Weekend Bridge Optimizer MCP for AI Agents

Maximizing Vacation Time Off Around Public Holidays

The Holiday Weekend Bridge Optimizer finds the best dates for taking time off work by identifying 'bridge' days. It calculates which PTO day or two, taken around public holidays, will give you the most consecutive vacation time without needing complex calendar math.

A+ Quality Score 100/100

pto

vacation

holiday

optimization

calendar



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.

Holiday Weekend Bridge Optimizer MCP

4 tools available

Cloud-hosted on Vinkius

Planning vacation around public holidays is a nightmare of spreadsheets and sticky notes. You want to connect that holiday Monday with your weekend to get an extra three days off, but figuring out which dates are available while respecting your remaining PTO balance is tough.

This MCP solves that headache. It analyzes upcoming public holidays for you. Then, it identifies potential 'bridge' opportunities—the crucial Mondays or Fridays that let you maximize your time away. Instead of manually calculating every combination, the tool ranks these candidates based on efficiency and optimizes a full plan using your specific available PTO budget. You can connect this MCP through Vinkius to get access to its power directly from any AI client.

It's not just suggesting dates; it's telling you exactly which days to request so you hit peak vacation time with minimal effort.

Core Capabilities

01 — Finding Potential PTO Bridges

The MCP scans a year and flags all potential bridge days, showing you where connecting holidays to weekends is possible.

02 — Ranking Time Off Options

It sorts the potential bridge days to show which ones offer the best return on your PTO investment.

03 — Optimizing Plans with Budget Limits

You provide your remaining PTO days, and the MCP finds a full schedule that maximizes vacation time without going over budget.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/mcp/holiday-weekend-bridge-optimizer — connect your AI agent in three steps.

- 01** First, you tell the MCP which year you are planning for. It then runs through all public holidays to find every possible bridge day candidate.
- 02** Next, it ranks those candidates based on how much time they save relative to your PTO budget, letting you see the most efficient options first.
- 03** Finally, you run the optimizer, feeding in your total available PTO days to generate a single, actionable plan showing exactly which dates to request.

The bottom line is that it takes months of complex calendar planning and boils it down to a few suggested dates and one optimal itinerary.

Built For

This MCP helps anyone who deals with complex scheduling, especially employees or HR professionals managing vacation time. If you spend more than five minutes trying to figure out if taking off a Monday will actually extend your week, this is for you.

Team Lead / Manager

You use it to proactively plan group vacations and ensure team members get maximum time off while staying within company PTO policy.

HR Coordinator

You run reports using this tool to model long-term employee retention incentives based on maximized time away.

What Changes When You Connect

-
- 01 Stop guessing which dates work. The `find_bridge_candidates` tool shows you every single potential day to connect a holiday, so you never miss an opportunity.

 - 02 Don't waste PTO days on low-impact trips. Use the `rank_bridge_candidates` tool to instantly see which date gives you the biggest bang for your buck in vacation time.

 - 03 Eliminate complex calendar math. The core function uses your total available PTO budget to guide the `optimize_holiday_plan`, ensuring every day counts.

 - 04 Get a clear, final answer with `calculate_optimization_result`. Instead of pages of notes, you get one clean summary showing your maximum possible vacation length.

 - 05 It works instantly. You feed it the year and your PTO balance, and it delivers an actionable plan in seconds.
-

Real-World Applications

Planning a Spring Break Trip

A user wants to take time off between two major holidays but only has 4 days of PTO left. They ask their agent, and the MCP uses `optimize_holiday_plan` to generate an optimal itinerary that stretches their vacation into 10 consecutive days using just those four remaining days.

Choosing Between Multiple PTO Options

A user has three potential bridges to take off (Memorial Day, Labor Day, etc.). They run the `rank_bridge_candidates` tool and quickly see that one specific date offers 20% more efficiency than the others.

Identifying Year-Round Opportunities

A manager needs to know all possible long weekends for a team's calendar year. They prompt the agent, which runs `find_bridge_candidates` and provides a list of every potential bridge day across multiple years.

Finalizing a Complex Schedule

The user has decided on several dates but needs confirmation they haven't exceeded their total PTO. They run `calculate_optimization_result` to get absolute confirmation that the entire plan is viable with their remaining budget.

Patterns to Avoid

Manually checking every holiday.

X AVOID

Spending hours clicking through a calendar, cross-referencing public holiday schedules against PTO policies to find potential long weekends.

✓ INSTEAD

Let the MCP handle it. Start by running `find_bridge_candidates` for the target year. Then feed that list into `optimize_holiday_plan` along with your available PTO days.

Ignoring PTO budget limits.

X AVOID

Selecting a series of perfect-looking bridge dates only to realize later you don't have enough paid time off days to cover the gaps.

✓ INSTEAD

Always use `optimize_holiday_plan`. This tool builds the plan around your actual remaining PTO, making sure it stays within budget.

Accepting the first good date found.

X AVOID

Choosing a bridge day because it looks convenient, only to find out later that another candidate date would have been significantly more efficient for your overall vacation goals.

✓ INSTEAD

Before committing, run `rank_bridge_candidates`. This function objectively scores all options so you pick the mathematically best one.

The Right Fit

Use this MCP if calendar math is your biggest pain point. If you need to know the most efficient way to spend a limited pool of PTO days around fixed dates like holidays, this tool nails it. It handles the complex combinatorial problem for you.

Don't use this if you just need a simple list of all public holidays (a basic calendar tool works better). Also, don't use it if your time off planning involves highly variable factors outside of standard PTO, like needing approval from three different department heads. This MCP focuses purely on optimizing date efficiency based on known holiday patterns and budget.

If you are struggling with the combination of 'when is the best time to go' AND 'do I have enough paid days,' then this tool is your answer.

Holiday Weekend Bridge Optimizer: Finding PTO Bridges for Calendar Planning

Right now, figuring out an optimal long weekend feels like a puzzle only HR staff are supposed to solve. You start by marking public holidays on your calendar, then you have to manually look at the days before and after each one. Then you cross-reference that with your PTO balance, trying to find the perfect combination of dates—the 'bridge'—that gives you maximum time off without overspending your paid leave.

With this MCP, you simply tell it your year and your available budget. The tool instantly calculates all potential bridges and then uses `optimize_holiday_plan` to deliver a single, actionable schedule. You stop guessing dates; you start planning trips.

Holiday Weekend Bridge Optimizer: Maximizing PTO Usage for Time Off

The manual process involves juggling multiple spreadsheets. One sheet tracks holidays, another tracks your leave balance, and a third is where you try to solve the equation of maximum days off with minimum paid time used. It's tedious, error-prone work.

This MCP changes that entirely. By using its ranking functions, it handles all the math in the background. You get back one definitive answer: the optimal plan for your next vacation.

Holiday Weekend Bridge Optimizer: 4 Tools for PTO Optimization

Use these tools to find all potential bridge days, rank them by efficiency, and generate a final optimal vacation plan based on your available PTO.

#	TOOL	DESCRIPTION
01	<code>find_bridge_candidates</code>	Finds all potential dates in a specified year that could serve as a PTO bridge day.
02	<code>calculate_optimization_result</code>	Generates the final summary report detailing your optimized vacation schedule and total days off.
03	<code>rank_bridge_candidates</code>	Sorts all potential bridge days, showing which ones are most efficient for maximizing time off.
04	<code>optimize_holiday_plan</code>	Creates a complete vacation itinerary using your available PTO to maximize long weekends around holidays.

See It in Action

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

U For 2025, what are my best bridge opportunities if I only have 3 PTO days left?



Optimal Plan Summary (2025)

Based on your 3 remaining PTO days and major holidays,

- **Highest Efficiency:** May 26th to May 31st (Long Weekend)
* Days Off: 7 total (4 paid, 3 public holiday)
- **Secondary Option:** July 4th - August 2nd
* Days Off: 8 total (5 paid, 3 public holiday)

Recommendation: Focus on the May dates; they offer a better balance of PTO usage versus time gained.

U Can you list all possible bridge days for next year?



Here are the top candidates for long weekends in 2026:

- **May:** Monday, May 18th (Connects to Memorial Day)
- **July:** Friday, July 3rd (Connects to Fourth of July Holiday)
- **Sep:** Friday, September 25th (Connects to Labor Day)

You can use these candidates in the optimizer to see how many days off they'd give you with your specific PTO budget.

U If I want at least 7 consecutive days off, what should I take?



Best Fit Plan Found:

- **Dates:** Monday, May 25th through Sunday, May 31st.
- **Total Days Off:** 7 days.
- **PTO Used:** You only need to use 4 of your PTO days for this period. This is the most efficient option.

Frequently Asked Questions

01 How does Holiday Weekend Bridge Optimizer find the best time off?

It works by analyzing all public holidays in a given year and mathematically determining which PTO days, when added to those fixed holiday dates, create the longest possible stretch of paid vacation. It focuses on maximizing your leisure time for minimal effort.

02 What if I need to plan over multiple years?

You can feed the MCP a list of years and it will find all potential bridge candidates across that entire range, giving you a full picture of long weekend opportunities on your calendar.

03 Does Holiday Weekend Bridge Optimizer factor in my PTO balance?

Yes. This is its most critical function. You input your remaining PTO days, and the MCP will only suggest plans that are financially viable for you, ensuring you don't overspend.

04 Is this better than a simple calendar tool?

Absolutely. A standard calendar just shows dates; this MCP calculates efficiency. It tells you *which* date to pick because it knows how much PTO that date costs versus the time gained.

05 Can I use Holiday Weekend Bridge Optimizer for different types of leave?







Currently, it is designed around standard Paid Time Off (PTO) and public holidays. If you have specialized leave categories, you'll need to adjust your PTO budget input accordingly.

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>"holiday-weekend-bridge-optimizer": { "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

Holiday Weekend Bridge Optimizer 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](https://cloud.vinkius.com) →

vinkius.com · support@vinkius.com

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