MCP SERVER | NO CODE | CLOUD HOSTED

Completion Installation Sequence MCP

Technical planning for oil and gas well completions.

Completion Installation Sequence MCP gives your AI client the technical logic needed to manage well completion workflows. It handles the math and sequencing for installation timelines, fluid displacement, equipment velocity, and safety validation, turning your agent into a specialized engineering planning partner.

A+ Quality Score 100/100

well-completion | drilling | oilfield | workflow-planning | fluid-dynamics

MAINTAINED BY VINKIUS CLOUD FOR AI AGENTS · SEPTEMBER 2026
vinkius.com/en/ai-agent-connect/completion-installation-sequence

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.

Completion Installation Sequence MCP

4 tools available
Cloud-hosted on Vinkius

You can use this MCP to move from raw well specs to a structured installation plan. Instead of manually calculating volumes or checking safety checklists, you let your AI client handle the heavy lifting. It builds chronological timelines for your installation steps and calculates exactly how much fluid you need to move equipment or fill the wellbore. When you are running equipment, the MCP determines the safest velocities to maintain stability. It also acts as a final check, running your proposed plan against mandatory safety and testing requirements to ensure you are ready for execution. It is built to handle the specific physics and procedural constraints of oilfield operations.

Core Capabilities

01 — Timeline Generation

Your agent creates a step by step chronological list of all installation tasks.

02 — Fluid Volume Math

The AI calculates the exact amount of fluid needed for displacement or wellbore filling.

03 — Velocity Optimization

Your client determines the safest speeds for moving equipment in and out of the well.

04 — Safety Validation

The MCP checks your proposed plan against required safety and testing protocols.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/completion-installation-sequence** — connect your AI agent in three steps.

01 Connect your preferred MCP-compatible client to Vinkius.

02 Provide your well specifications or completion design to your AI agent.

03 Ask the agent to perform specific calculations or generate a timeline.

04 Review the validated plan or technical data provided by the MCP.

Connect your AI client to Vinkius to access these engineering tools immediately.

Built For

This MCP is designed for technical professionals managing wellbore operations and completion designs.

Completion Engineers

They use the MCP to build and validate technical installation sequences.

Drilling Engineers

They use the tool to calculate fluid needs and equipment speeds.

Operations Managers

They use the output to verify that plans meet safety compliance standards.

What Changes When You Connect

01 Automates the calculation of fluid displacement requirements.

02 Reduces manual errors in installation timing and sequencing.

03 Provides safety-based velocity limits for equipment handling.

04 Validates plans against mandatory testing requirements.

Real-World Applications

Wellbore Filling

Calculate the exact volume of fluid needed to fill the wellbore during specific phases.

Equipment Deployment

Determine the optimal running speeds to maintain wellbore stability while lowering equipment.

Workflow Scheduling

Build a complete, chronological timeline of all installation steps and durations.

Pre-Execution Audits

Run a final check to ensure a plan meets all safety and testing mandates.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_displacement_needs	This tool calculates the fluid volume required to move equipment or fill the wellbore during specific phases.
02	optimize_running_speeds	Use this to find the safest and most efficient velocity for raising or lowering equipment.
03	plan_sequence_timeline	This tool generates a complete chronological list of installation steps along with their estimated durations.
04	validate_installation_readiness	This tool checks your plan against mandatory safety and testing requirements before you start execution.

See It in Action

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

U Generate a timeline for a completion design with these specs.

The installation sequence is complete: 1. Run tubing to 5000ft, 2. Set packer at 5100ft, 3. Pressure test seal.

U What is the required fluid volume for this equipment at 3000ft?

The required displacement volume at 3000ft is 450 barrels of drilling mud.

U What is the recommended running speed for this string?

The recommended lowering speed is 15 ft/min to maintain wellbore stability.

Frequently Asked Questions

01 **What can this MCP do for oil and gas engineers?**

It provides tools to plan installation timelines, calculate fluid displacement, optimize equipment speeds, and validate safety compliance.

02 **How does the MCP handle fluid requirements?**

It uses the calculate_displacement_needs tool to determine how much fluid is required to move equipment or fill the wellbore.

03 **Can I use this with Claude or Cursor?**

Yes, you can connect this MCP to any MCP-compatible client like Claude, Cursor, or Windsurf through the Vinkius platform.

04 **Does it help with safety compliance?**

Yes, the validate_installation_readiness tool checks your plan against mandatory safety and testing requirements.

05 **How are running speeds determined?**

The optimize_running_speeds tool calculates the safest and most efficient velocity for lowering or raising equipment.

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 `"completion-installation-sequence": { "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

Completion Installation Sequence 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	Completion Installation Sequence MCP
Server ID	`01a086d1-1712-7273-9b29-8348a51b4307`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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