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The Missing Middle

The shared infrastructure MCP needs before it hits a million servers.

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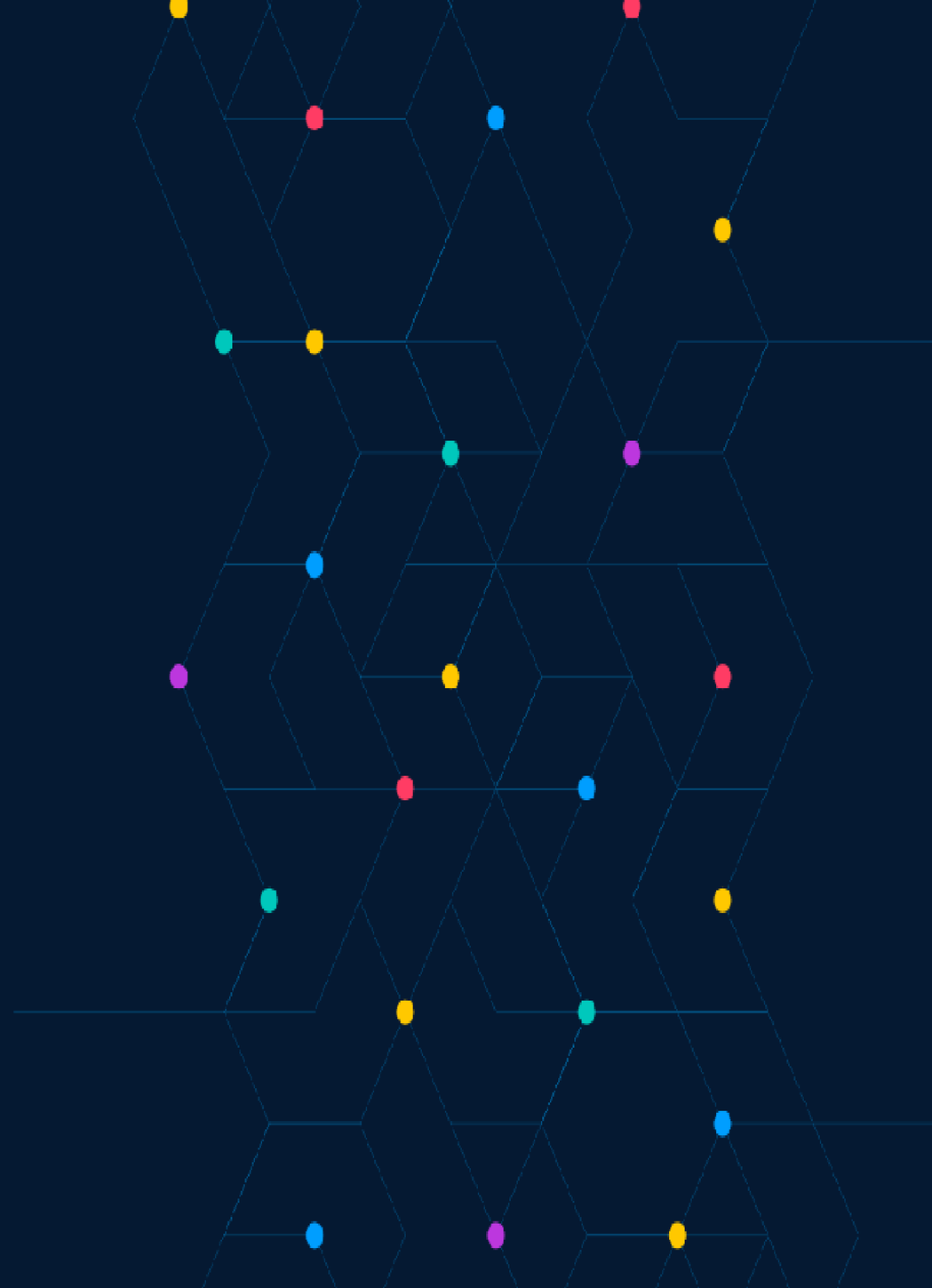
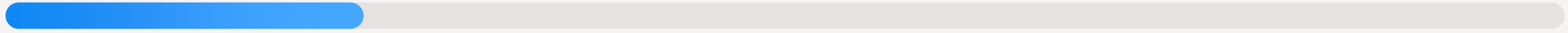


THE CLOCK

MCP became load-bearing in thirteen weeks.

13 weeks

MCP → infrastructure currency



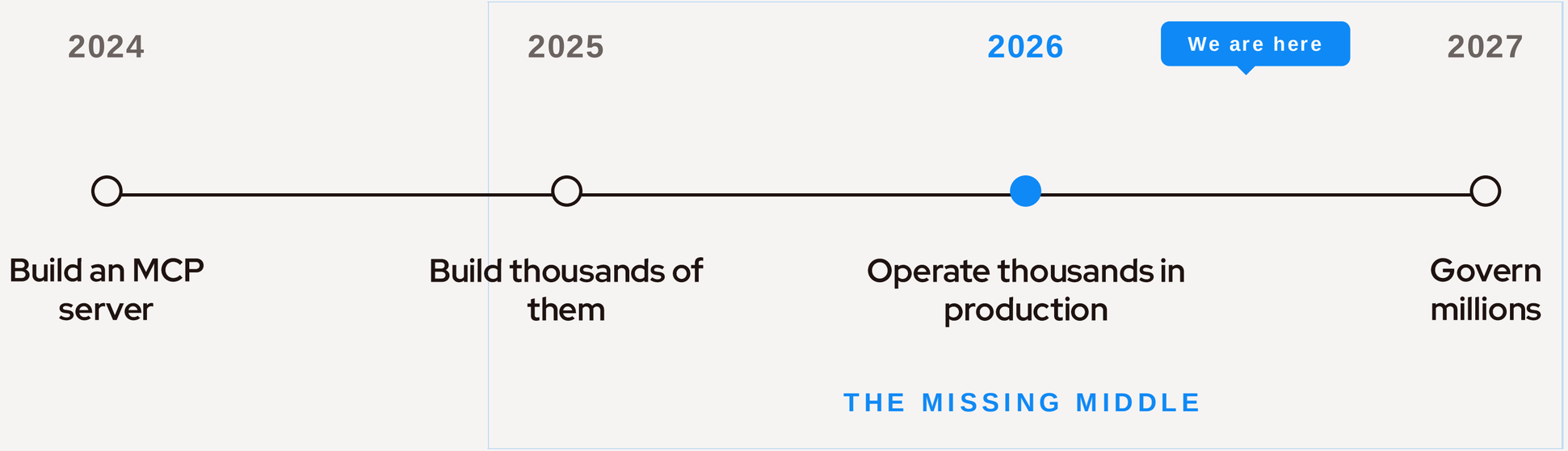
13 months

CNCF → the same gravity

When a protocol goes load-bearing that fast, the shared plumbing underneath it **doesn't get years to mature. It gets months.**

INFRASTRUCTURE MATURITY

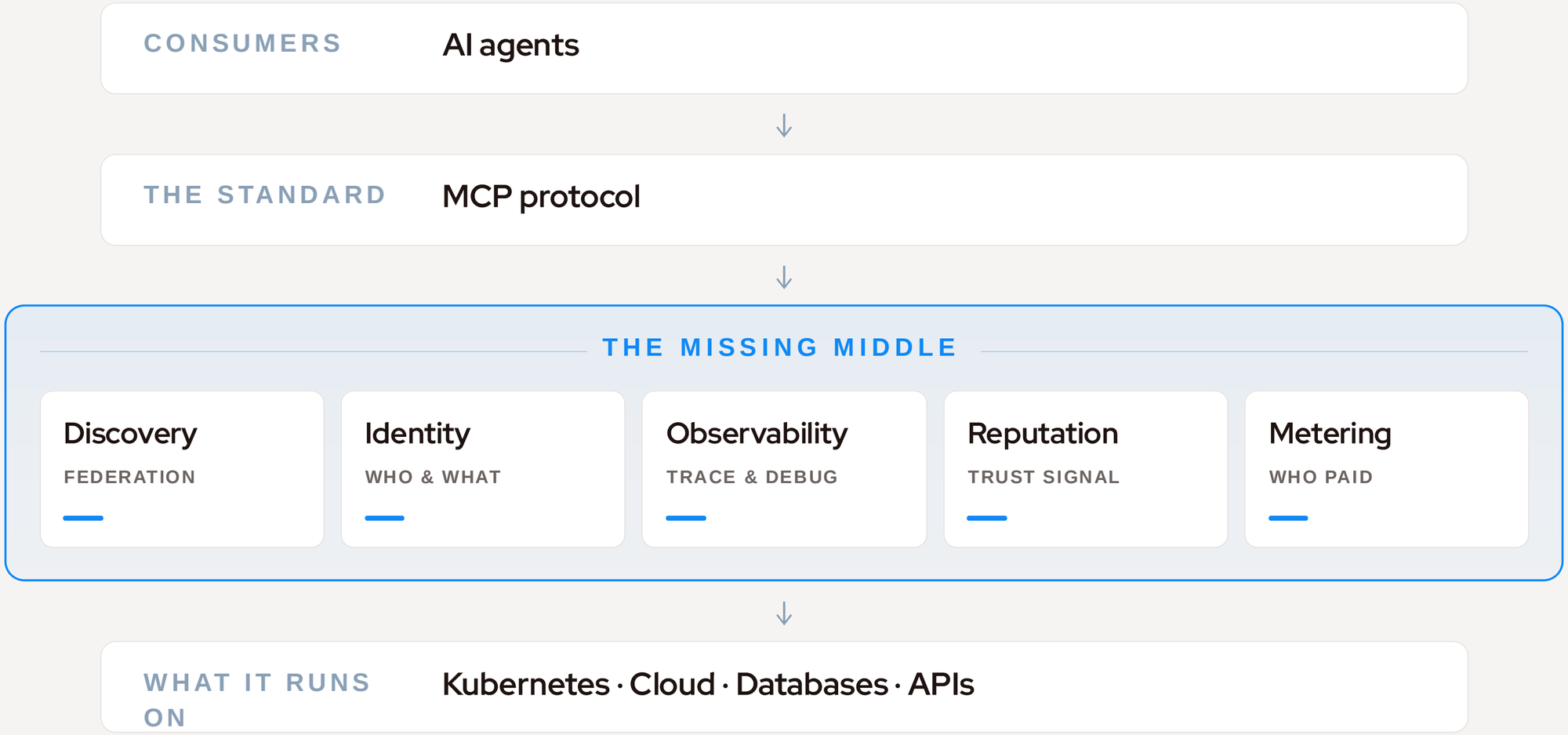
From building one server to governing millions.



We solved stage one. **The missing middle is everything between operating and governing.**

THE MAP

Five layers sit between the protocol and your infrastructure.



WE HAVE DONE THIS BEFORE

Kubernetes didn't win on containers.

Containers already existed. It won by **standardizing the layers around them**, and MCP is entering that exact phase, at the same foundation.

CNCF · THE CLOUD	MCP · THE AGENTIC STACK
Service discovery	Discovery federation
Workload identity	Workload identity
Observability	Observability
Policy & security	Reputation & trust
Cost & metering	Metering

Let's think on Scaling MCP to Millions

LAYER 1 · DISCOVERY

Your agent needs GitHub access.

It queries the registry. **Seventeen servers answer to the name github-mcp.**

Discovery	Identity	Observability	Reputation	Metering
FEDERATION	WHO & WHAT	TRACE & DEBUG	TRUST SIGNAL	WHO PAYS

github-mcp	official public registry	PUBLIC
github-mcp	a vendor catalog	VENDOR
github-mcp	your private enterprise registry	YOURS
github-mcp	last commit 6 months ago	ABANDONED
github-mcp	unknown publisher	MALICIOUS

+ 12 more, all answering to the same name

LAYER 2 · IDENTITY

This isn't user OAuth. The question is: who is this server, who signed it, and what is it allowed to do?

Discovery	Identity	Observability	Reputation	Metering
FEDERATION	WHO & WHAT	TRACE & DEBUG	TRUST SIGNAL	WHO PAYS

before · one shared bot account

```
14:02:11 svc-ai-bot GET /docs/42 200
14:02:11 svc-ai-bot POST /vector/search 200
14:02:12 svc-ai-bot GET /docs/87 200
14:02:12 svc-ai-bot GET /docs/91 200
14:02:13 svc-ai-bot DELETE /docs/91 204 ⚠
14:02:13 svc-ai-bot GET /docs/42 200
14:02:14 svc-ai-bot POST /vector/search 200
```

Who deleted doc 91? Nobody can tell you.

after · token exchange

```
14:02:11 alice via agent-7 via search GET /docs/42 200
14:02:11 alice via agent-7 POST /vector/search 200
14:02:12 alice via agent-7 via search GET /docs/87 200
14:02:12 alice via agent-7 via search GET /docs/91 200
14:02:13 alice via agent-7 via search DELETE /docs/91 204
14:02:13 bob via agent-7 via search GET /docs/42 200
14:02:14 bob via agent-7 POST /vector/search 200
```

Alice deleted it. Through agent-7. Via the search service. Page her.

LAYER 3 · OBSERVABILITY

One agent action crosses three servers and lands as three incompatible traces.

Discovery	Identity	Observability	Reputation	Metering
FEDERATION	WHO & WHAT	TRACE & DEBUG	TRUST SIGNAL	WHO PAYS

WHAT'S A SEMANTIC CONVENTION?

Everyone agrees what each telemetry field means, so every observability tool reads the same trace.

```
http.method = POST
http.status_code = 200
http.route = /users
```

THE GAP TODAY

MCP's equivalents exist, but sit at **Development maturity.** The vocabulary for spans and attributes isn't stable yet.

IF IT STAYS OPEN

Debugging hell. No common language means **no portable tooling.**

LAYER 4 · REPUTATION

Seventeen servers are named github-mcp. Which one should an agent trust?

Discovery	Identity	Observability	Reputation	Metering
FEDERATION	WHO & WHAT	TRACE & DEBUG	TRUST SIGNAL	WHO PAYS

npm	Docker	Maven	Linux	MCP
package reputation	image provenance	signing	trusted repositories	a server name.

AI agents are about to consume infrastructure the way developers consume packages. Trust and reputation become first-class infrastructure.

LAYER 5 · METERING

The unglamorous one: We can’t govern what we can’t measure.

Discovery	Identity	Observability	Reputation	Metering
FEDERATION	WHO & WHAT	TRACE & DEBUG	TRUST SIGNAL	WHO PAYS

PROMPT	FANS OUT TO	USER SEES	PLATFORM SEES	ATTRIBUTION
One prompt	25 MCP calls 4 LLM calls 3 SaaS API calls 2 database queries	“Generate report”	$3.72	None.

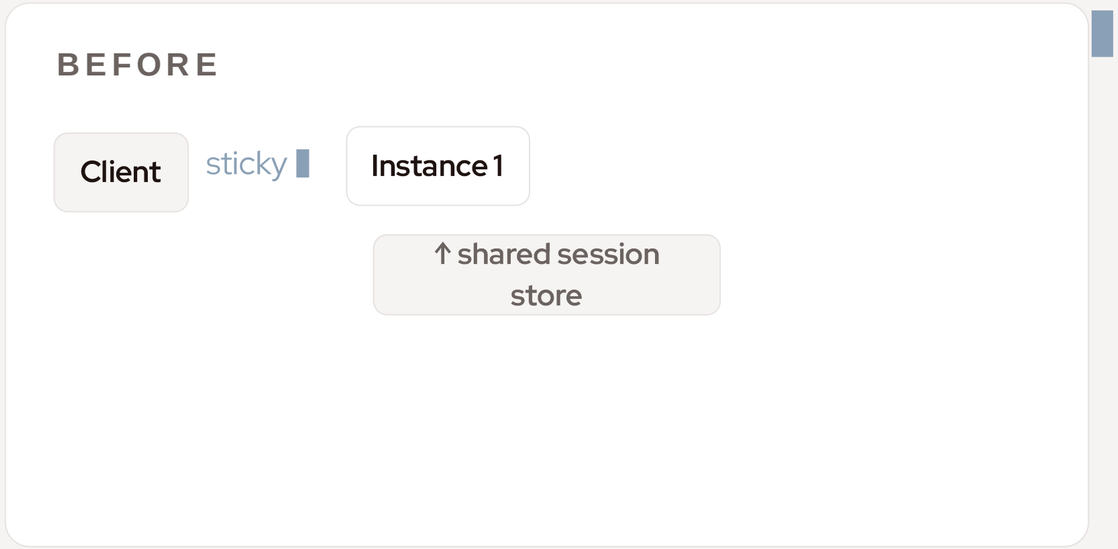
```
{
"tool": "github_search",
"duration_ms": 230,
"cost": 0.001,
"tokens": 500,
"resource_units": 1
}
```

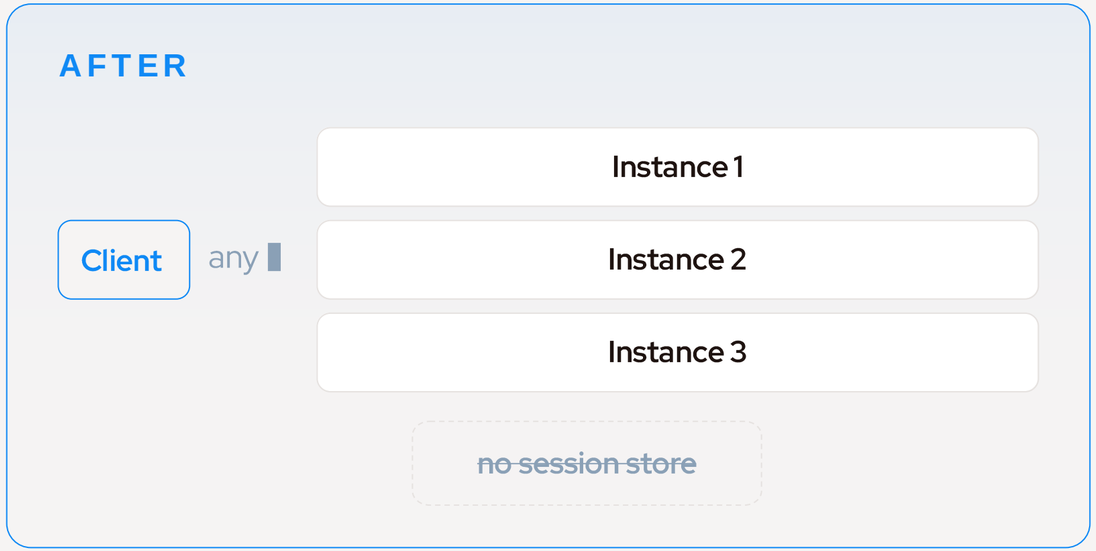
There's no standard MCP event for this.

Every implementation invents its own format.

The stateless MCP

The protocol stopped trying to own everything. **Sessions are gone, and any request can land on any server instance.** MCP now behaves like an ordinary stateless web API.





Stateless pays down the protocol's own scaling debt. It does not build the middle.

2026-07-28 RC · sessions removed (SEP-2567) · initialize handshake removed (SEP-2575)

Four layers got a starting point.

FIND · DISCOVERY

A new server/discover call lets a client ask one server "what can you do?" up front, instead of a handshake.

Ask one server for its menu in a single request.

server/discover

> *One server, not registry federation.*

VERIFY · IDENTITY

Six changes make logging in safer when one client talks to many servers, checking who issued the response, registering the right app type, and binding credentials to their issuer.

Logging IN to servers got safer.

RFC 9207 / SEP-2468 · SEP-837 · SEP-2352 · SEP-2207

> *This is the user logging in, not the server proving who it is.*

WATCH · OBSERVABILITY

Trace context is now standardized, and every request carries the same correlation keys: W3C traceparent, tracestate, and baggage.

One agent action can be followed across servers as a single trace.

SEP-414

> *The shared OTel vocabulary from Layer 3 is still maturing.*

ACCOUNT · METERING

Requests now carry Mcp-Method and Mcp-Name headers, so a gateway can route, meter, and rate-limit per operation without opening the body. Responses carry cache hints.

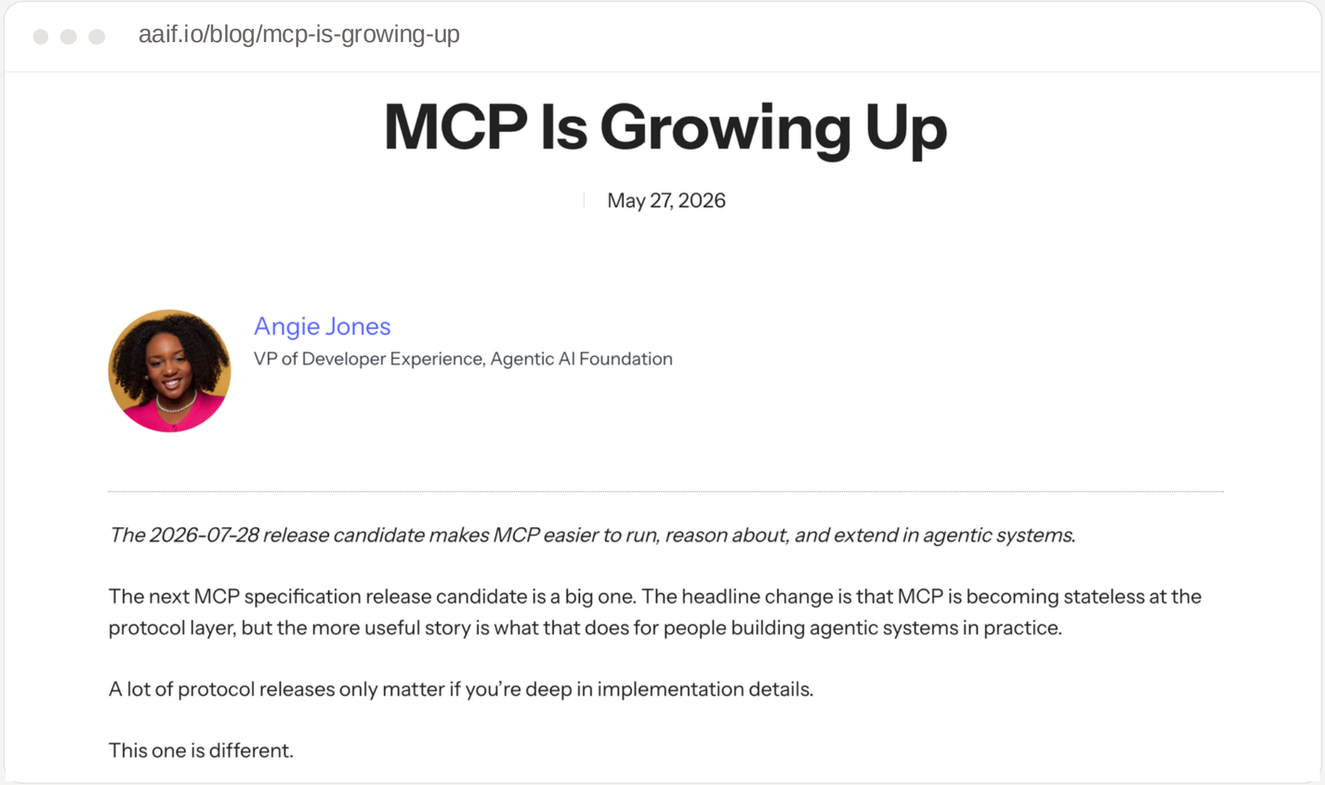
Gateways can finally count and cache calls.

SEP-2243 · SEP-2549 (ttlMs, cacheScope)

> *The Measuring layer is maturing*

FURTHER READING

MCP is growing up: The July RC



Scan to read

aaif.io/blog/mcp-is-growing-up

Angie Jones · VP of Developer Experience, Agentic AI Foundation

There's a lot more to do.

And we're just getting started.

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