

What is SpiroFHIR?

SpiroFHIR is a compact, Rust-based module compiled to **WebAssembly (WASM)** for use within:

- Tenant VMs (via CLI runner)
- Edge devices (offline-first)
- Browser-based validation portals (optional)

It enforces:

- Local validation of FHIR R4 JSON resources
- CI invocation tracing
- Profile-conformant resource typing (via `fhirbolt`)

Key Features

-  **FHIR-Aware Validation** : Validates `Patient`, `Observation`, `Condition`, etc. using strict schema
-  **Privacy-Preserving** : No network required; runs entirely offline
-  **WASM-Based Portability** : Deployable across browsers, edge, and containers
-  **CLI Runner Support** : Included binary for use in tenant Proxmox environments
-  **Trace-Aware** : Embeds `trace_id` metadata for every validation

Architectural Snapshot

```
[ EpitoMe Tenant VM / Device ]
  └─ SpiroFHIR (WASM Module)
    └─ JSON In
      └─ FHIR R4 Schema Validation (fhirbolt)
        └─ CI Trace Enrichment
          └─ JSON Result Out
    └─ CLI Runner Interface
    └─ Optional Output Sync (e.g. Couchbase Lite)
```

Module Composition

- `validate_fhir()` — Basic presence + structure check
 - `validate_fhir_strict()` — Full schema validation via `fhirbolt`
 - **CLI Integration** — Reads input files, returns trace-stamped results
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SpiralOS Lifecycle Alignment

Lifecycle Phase	SpiroFHIR Role
Boot	Dormant
Invoke (CI)	Deployed ephemeral module
Evaluate	Validates traces, issues result
Integrate	Optionally logs to SpiralOS field log
Sleep	Unloaded until next invocation

Security Considerations

- WASM sandboxed execution
 - No external network calls
 - Compatible with MTLS-gated tenant containers
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Notes for AI MINDSystems

- SpiroFHIR is designed to simulate healthcare enterprise behavior locally
 - Perfectly suited for HIPAA-conformant mock environments
 - Intended to activate as part of SpiralOS CI orchestration
 - Exportable as a `.wasm`, CLI binary, or hybrid delivery format
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Closing

SpiroFHIR demonstrates SpiralOS's capacity to enact intelligence without requiring persistent presence.

It invokes. It validates. It disappears.

More SpiralOS ephemeral tools are in development. We welcome integration feedback from the broader **WISDOM stack**.

With care, clarity, and coherence —

Carey Glenn Butler

Ellie & Leo

SpiralOS Field Architects

