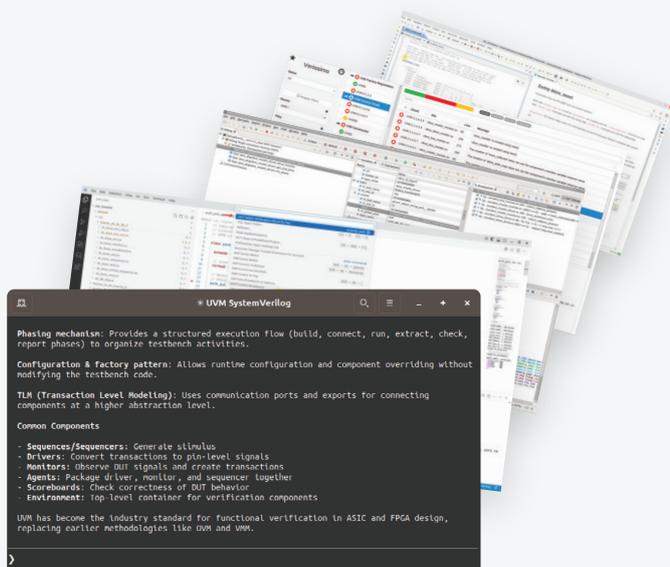# DVT MCP Server

- For SystemVerilog, Verilog, VHDL, and e

Compiler-backed tools server for AI-assisted design and verification.

BENEFITS

→ Boosts accurate code generation.

→ Improves AI agent grounding.

→ Enhances large-project handling.

→ Speeds up AI agents.

→ Lowers token usage.

→ Enables agent fleets.

→ Enhances the user experience.

OVERVIEW

DVT MCP Server is a tools server that supports Verilog, SystemVerilog, VHDL, and the e Language, enabling AI agents to understand, modify, and debug real-world design and verification projects efficiently and accurately.

Design and verification languages pose unique challenges for AI agents. While these agents excel at programming with general-purpose languages, they often struggle with domain-specific languages due to limited training data.

Providing agents with real, compiler-backed information is essential for producing valid results in design and verification projects, as it grounds their reasoning in accurate language semantics and facilitates early error detection.

DVT MCP Server provides access to essential tools for real-world design and verification projects. By closing the feedback loop on code generation through on-the-fly compilation and precise error reporting, it enables iterative generation, validation, and correction of code.

By leveraging the elaborated design and verification full compilation hierarchy within the AMIQ EDA products, it

helps agents navigate complex projects, understand architectural intent, and accurately locate and reason about code constructs across the codebase.

Avoiding grep-based searches and reducing context overload, the server helps agents focus on relevant information. Precise, context-aware information delivered by tools can speed up debugging while improving correctness and accuracy.

By delivering continuous and precise feedback throughout the workflow, DVT MCP Server ensures higher quality interactions between users and AI agents while reducing user frustration. Grounded in the actual project state, it minimizes trial-and-error cycles, prevents avoidable rework, and builds confidence in AI-assisted design and verification workflows.

DVT MCP Server is flexible and integrates seamlessly into existing workflows. It can run directly within DVT IDE to provide live project context to interactive AI assistants, or operate in batch mode to support fleets of agents, enabling scalable, parallel execution for large codebases and automated workflows.

∖ FEATURES

■ **Incremental compilation for AI-generated code.**

Continuously compiles AI-generated changes in real time, providing immediate, compiler-accurate feedback. This enables fast validation and iterative correction, ensuring that generated code remains syntactically and semantically correct.

■ **Architectural exploration API/tools.**

Provides access to elaborated design, verification hierarchies, and compiled files. AI agents can navigate complex codebases with contextual awareness, accurately understanding relationships, structures, and system-level intent.

■ **Semantic exploration API/tools.**

Delivers precise, compiler-backed insights into symbol definitions and usages across the entire project. This enables AI agents to reason about code semantics, trace dependencies, and apply accurate modifications without relying on superfluous grep-based search results.

■ **Support for IDE AI agents.**

Integrates seamlessly with popular AI-powered IDE assistants (for example Cursor™, GitHub Copilot™, Cline, Claude™ Code, and OpenAI Codex), delivering live project context directly within the development environment.

■ **Support for batch mode AI agents and AI-based automation.**

Enables scalable execution of AI agents in batch mode (for example Claude Code, OpenAI Codex CLI, Gemini CLI, and OpenCode), supporting large codebases and automated workflows. Ideal for regression fixes, refactoring tasks, and continuous integration pipelines.

■ **Cross-language capabilities for mixed-language projects.**

Supports projects combining SystemVerilog, Verilog, VHDL, and the e Language, providing unified analysis across language boundaries. AI agents can understand cross-language references, hierarchies, and dependencies, ensuring consistent reasoning and accurate modifications in heterogeneous environments.

■ **Fully compliant with the Model Context Protocol (MCP) standard.**

Ensures interoperability and future-ready integration with MCP clients, offering reliable context across AI-driven workflows.

INTEGRATED SOLUTION

DVT MCP Server is closely integrated with the other design and verification products available from AMIQ EDA, including **DVT IDE** and **Verissimo.**

AMIQ

TECHNICAL SUPPORT

The technical support team is available to promptly answer your questions, provide you with training, and work with you to determine your needs.

Your requirements and feedback are important. Whether you are looking for technical support or new features to improve your design and verification flow, AMIQ's technical support team strives to answer your requests in a timely manner.

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MCP-0226-A4