

# VC Execution Manager

## Coverage-driven execution management for SoC verification flows

## Overview

VC Execution Manager (“ExecMan”) drives and automates coverage-driven SoC functional verification flows, and is a key element of the Synopsys SoC Verification Automation solution. ExecMan is a versatile, modular system for managing compilation, regression, and tracking of the design verification process. It is pre-configured to work with VCS flows, and is natively integrated with Verdi’s Planning and Coverage features.

## Introduction

VC Execution Manager dispatches regression jobs, tracks and collects regression results, annotates these results back to the verification plan, and provides full reporting capabilities. Key values:

- Supports all functional verification engines
- Optimizes regressions for TAT and costs
- Collects and tracks regression data with a full relational database
- Automatically re-runs select simulation failures
- Provides fault tolerance for large regression runs, including for disk access interruptions and failed hosts
- Flexibly supports local execution, as well as widely-used grid managers

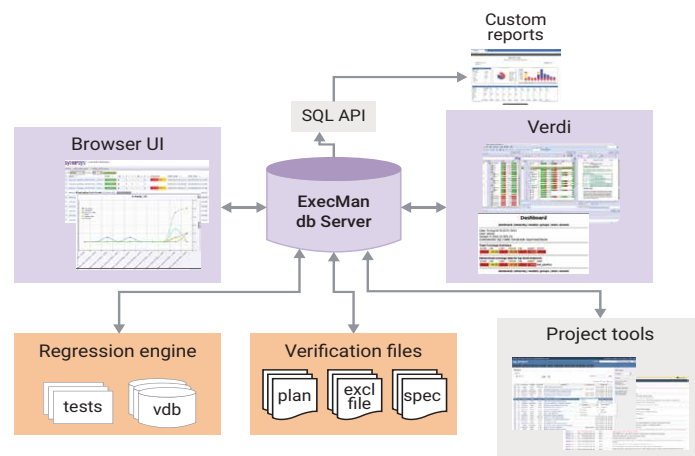


Figure 1. VC Execution Manager

## VC Execution Manager Key Features

- Interactive launch and control
- Automatic coverage merging
- Verification plan annotation

- Automatic debug re-run
- Failure binning
- Full regression database server support, and serverless capability for smaller designs
- Test correlation
- Graded test lists

VC Execution Manager consumes data produced by individual tools and technologies during the functional verification flow (e.g. VCS, VC Formal, etc.), and tracks the resulting changes over time in its relational database. Results can be annotated onto the verification plan via native integration with Verdi Planner. ExecMan also provides a fault-tolerant execution layer—the Test Control Engine—to manage job dispatch and data collection tasks.

## Verdi Planning and Coverage Integration

ExecMan is natively integrated with Verdi to provide regression results annotation, coverage viewing, and job progress monitoring. This enables verification engineers and teams to easily manage verification execution in the same familiar environment used for planning, coverage and debug tasks.

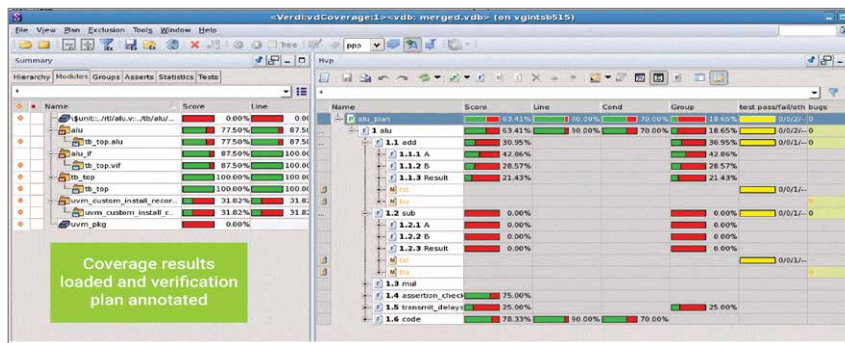


Figure 2. Verdi planning and coverage integration

## VC Execution Manager Database Server Features

ExecMan tracks and stores regression run results in a relational database, which is architected to easily plug into existing regression systems. The ExecMan database is managed and tracked for the length of the project, and supports full administrative and reporting capabilities.

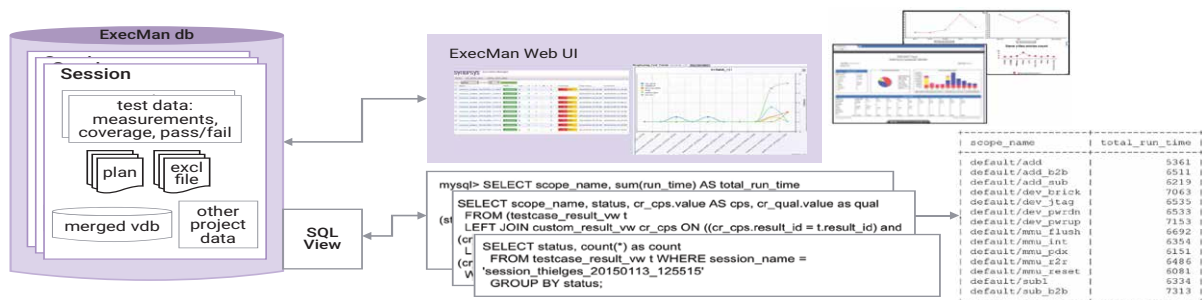


Figure 3. ExecMan database

VC Execution Manager is available as Server and Client products. VC Execution Manager Server enables all functionality including ExecMan database setup and management. VC Execution Manager Client does not provide ExecMan database management capabilities, and works in conjunction with VC Execution Manager Server-administered databases, or can also work standalone in 'serverless' mode for smaller verification environments.

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