



Storage Performance Analyzer (SPA) – Measuring, Monitoring, and Modeling of I/O Performance in Virtualized Environments

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Storage Performance Analyzer SPA I



- Two part framework
 - i) Benchmark harness with included I/O benchmarks
 - ii) Tailored analysis library to analyze the results
- Tailored and pre-packaged for performance evaluation storage systems in distributed and virtualized environments
- Accepted in SPEC RG repository of peer-reviewed tools http://research.spec.org/tools/

Storage Performance Analyzer SPA II



- Design aspects and Practical benefits
 - Synchronized execution on multiple targets
 - Automation of experiment runs with parameter variation
 - Persisting results and avoid piles of log files
 - Easy and powerful statistical evaluation

Architecture



Benchmark harness

- Coordinates the execution of attached benchmarks and monitors
- Written in high-level programming language (Java)
 → Easy to debug
- Easy data persistence
 - Lightweight SQLite Database
- Tailored analysis library
 - Processes and evaluates the collected data and measurements
 - Integrated into statistics tool R (http://www.r-project.org/)
 →Full control over the analysis



SPA in Action – Case Studies



- Run the benchmark and analyze the results
- I. System Analysis and Evaluation
- II. Statistical Analysis and Statistical Modeling
- III. System Analysis and Explicit Modeling



Conclusion



Storage Performance Analyzer (SPA)

- Systematic analysis of I/O performance in virtualized environments
- Measuring, Monitoring, and Modeling of I/O Performance
- Peer-reviewed tool allowing analysis with high degree of automation

Download

- SPA Project Website
 http://storageperformanceanalyzer.github.io/SPA/
 - Sources and prepared drops for common platforms
 - Documentation and examples
- SPEC RG Tool Repository http://research.spec.org/tools/
 - Peer-reviewed tools





http://www.descartes-research.net/tools/