The Storage Performance Analyzer: Measuring, Monitoring, and Modeling of I/O Performance in Virtualized Environments
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Motivation
- Exponential growth of digital data and I/O resource demands
- Modern storage systems increasingly complex and dynamic
- Performance impact magnified in virtualized environments
- Multi-layered, multi-tiered execution infrastructures
- Workload consolidation increases resource demands
- Complex performance interference effects among VMs

Tool Architecture

Storage Performance Analyzer (SPA)
- Systematic analysis of I/O performance in virtualized environments
- Peer-reviewed tool allowing analysis with high degree of automation
- Measuring, Monitoring, and Modeling of I/O Performance
- Measuring performance with integrated I/O benchmarks
- Monitoring of system environment during load tests
- Modeling and analysis with statistical regression-based techniques

Case Studies and Application Scenarios
- Evaluating performance-relevant factors and workload analysis [1,7]
- Creating statistical regression-based models [2,4,6]
- Optimizing regression models [2,4]
- Creating queueing theory-based models [3,5]
- Predicting I/O performance and interference [2–6]

Download
- SPA Project Website http://storagereperformanceanalyzer.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

References

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