SPEC SFS2014

Application-Level Storage Benchmarking

- Load is now generated at the application level
  - Measures the storage performance of whole environment
    - We call this the "Storage Solution"
  - Users now have flexibility to configure the benchmark to match their environment
    - Put the bottleneck where you want to show value
- Increased flexibility addresses the market
  - Complexity of storage solutions
  - Diversity of architectures and protocols
  - Fairness to all implementations
- Any other approach is no longer appropriate for industry-standard benchmarking of storage solutions

A New Load Generator

- Prior to SFS 2014, benchmark generated its own NFS/SMB traffic, bypassing the load generator operating system
- SFS 2014 uses native OS calls to generate application-level load, so data and metadata ops are processed by the OS
- Easier to configure, install, and run than previous versions
- Supports custom workloads for research purposes

Features

- Multi-client support is fundamental
- Supports many operating systems and VMs
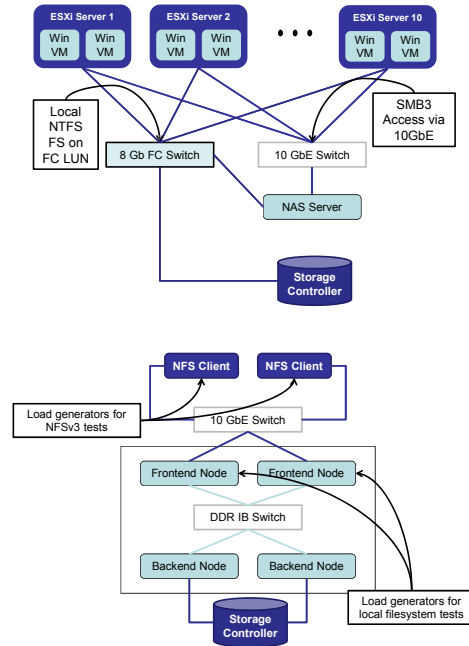- Protocol/file system agnostic
- Definable workloads

Multiple Workloads
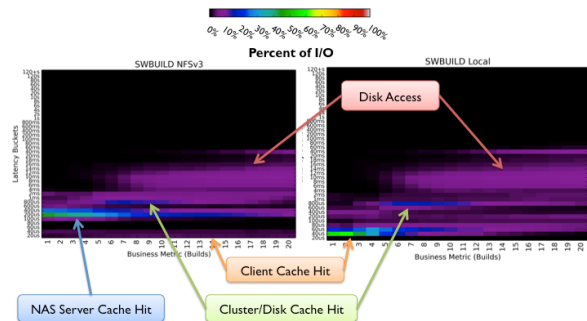
- DATABASE
- SWBUILD
- VDA
- VDI

Benchmark Components

- Load generator: netmist
  - Highly customizable, powerful, workload generator
  - SPEC SFS 2014 license includes full version
- Wrappers: SfsManager
  - Provides ease of configuration
  - Coordinates running multiple load points (scaling)
  - Implements business metric logic
  - Including validation of success criteria (quality of service)

Test Any Environment

Latency Heat Map Data at Every Iteration

Publication Example