

# SPIRENT AVALANCHE

## STORAGE TESTING WITH NFS

With innovative advances in data center architectures, improved virtualization techniques, and promise of decreased TCO, IT departments are widely adopting Network Attached Storage (NAS) and Network File System (NFS) to meet the storage needs of mission-critical databases. There is an increased and continuous press on solution developer and provider to test the storage device capacity, data integrity and robustness of the system before any production roll out.

NFS protocol enables file services in NAS systems. Growing trends in virtualization and cloud computing has led to newer technologies like clustered NAS, scale out NAS, cloud NAS and file virtualization. With tremendous growth in storage market, NAS vendors are continuously working to improve performance via hardware acceleration and data reduction techniques. Spirent Avalanche™ is the perfect tool that provides real-world NAS testing scenarios to ensure that the performance, availability, security and scalability criteria of the solutions are met with before data center deployment.

### APPLICATIONS

- NAS and File virtualization appliances benchmarking
- WAN Accelerator Performance and Data-Deduplication efficiency testing
- Testing QoS policies and security measures in application-aware network devices
- Test NFS directly in the cloud with Avalanche Virtual

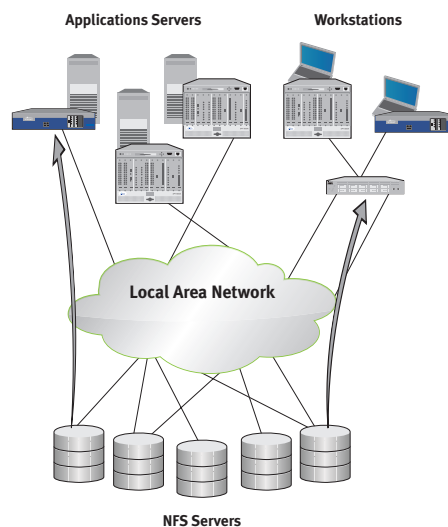
### BENEFITS

**NFS client emulation**—Emulated users in Avalanche gain access to shared folders in a NAS system through authentication, download and upload real files and collect relevant statistics. Avalanche allows complex scenarios to be generated to test clustering.

**Line-rate 10Gig performance**—Avalanche can drive up to 10Gig of NFS based NAS traffic and also succinctly identify the bottlenecks in the delivery of data over the network.

**Security**—Avalanche can verify the built in file system security and Kerberos/Unix authentication in NFS. In addition, with Avalanche Vulnerability Assessment package, hacking, snooping and DDoS attacks can be sent on the same port as protocol to validate the server hardening policy.

**Lowers TCO**—Users can now test the entire NAS by sending mixed traffic profile, CIFS and NFS from the same physical port.



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### TECHNICAL INFORMATION

- Client Emulation: Avalanche will perform the role of multiple clients accessing files on the server; the server can be a real NFS server or cluster of real servers
- NFS version 3: Complied to RFC1813
- Transport: TCP
- Authentication: Unix Auth and Kerberos
- Mount version 3 and RPC version 2 support
- Provision for randomizing content for files to help customers test their appliances' warm and cold cache
- Comprehensive test results to provide latency, rate and bandwidth statistics

#### Related RFCs

- RFC 1813–NFS Version 3 Protocol Specification (includes MOUNT Version 3 protocol)
- RFC 1831–RPC: Remote Procedure Call Protocol Specification Version 2
- RFC 2695–Authentication Mechanisms for ONC RPC
- RFC 2623–NFS Protocol's Use of RPCSEC\_GSS and Kerberos V5

### ORDERING INFORMATION

Description	Part Number
NFS Client on 3100 Appliance	CEE-SW-NFS
NFS Client for 290	CEE-SW-NFS-PT
Avalanche NFS on 9U TestCenter Chassis	BPK-1225A
Avalanche NFS on 2U TestCenter Chassis	BPK-1225A-2XMOD

### SPIRENT GLOBAL SERVICES

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