

# **SPEC SFS 2.0 / SFS97**

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# SFS 1.1/LADDIS

- 1993 release date
- Measured NFS v2 / UDP only
- Operation mix old and outdated
- File set size 5MB per operation
- File size fixed at ~ 136KB

# SFS 2.0

- Released on December 19th, 1997
- [www.spec.org/osg/sfs97](http://www.spec.org/osg/sfs97)
- As of March 6th, 9 published results
- SPEC has policy to accept SFS 1.1 results thru June 1998 for publication

# **New SFS 2.0 features**

- NFS v3 and NFS v2 work loads
- TCP or UDP may be used
- Updated work loads
- CDROM distribution with binaries
- Updated user interface
- Scripts to auto generate output formats

# SFS 2.0 work loads

- 2 work loads for benchmark
- SPECsfs97.v2 and SPECsfs97.v3
- Operation mix updated from SFS 1.1
- Operation mix based on data gathered from ~ 1000 servers
- Mix used represents cluster of 60% of data gathered

<b>Operation</b>	<b>SFS 1.1 NFSv2</b>	<b>SPECsfs97 NFSv2</b>	<b>SPECsfs97 NFSv3</b>
LOOKUP	34%	36%	27%
READ	22%	14%	18%
WRITE	15%	7%	9%
GETATTR	13%	26%	11%
READLINK	8%	7%	7%
REaddir	3%	6%	2%
CREATE	2%	1%	1%
REMOVE	1%	1%	1%
FSSTAT	1%	1%	1%
SETATTR			1%
REaddirPLUS			9%
ACCESS			7%
COMMIT			5%

# SFS 2.0 file set size

- SFS1.1
  - 5 MB of file data per operation - 20% accessed
  - fixed file size of ~136KB
  - files are selected 'at random'
- SFS 2.0
  - 10 MB of file data per operation - 10% accessed
  - varies file size
  - file selection is 'best fit'

# File size distribution for SFS 2.0

Percentage	Filesize
33%	1KB
21%	2KB
13%	4KB
10%	8KB
8%	16KB
5%	32KB
4%	64KB
3%	128KB
2%	256KB
1%	1MB



# SFS97 Results

- Metric is  
XXX Ops/Sec (Overall Response Time = Y.YY msec)
- Ops/Sec is maximum reported
- Overall Response Time calculated

$$ORT = \frac{\left( \sum_1^{maxthruput} (((Resp(n) + Resp(n-1))/2) \times (Thruput(n) - Thruput(n-1))) \right)}{Thruput(max)}$$

Assumes Thruput(0) == 0, Resp(0) == Resp(1)

# SFS 2.0 Results Formatting Scripts

- Combination of shell and perl scripts
- Input of static server config and output of benchmark results
- ASCII, HTML and Postscript generated
- Any public disclosure requires that SPEC's rules be followed

# Buy SFS 2.0!!!

- [www.spec.org/osg/sfs97](http://www.spec.org/osg/sfs97) for more info
- [info@specbench.org](mailto:info@specbench.org)
- SPEC office @ (703)331-0180