

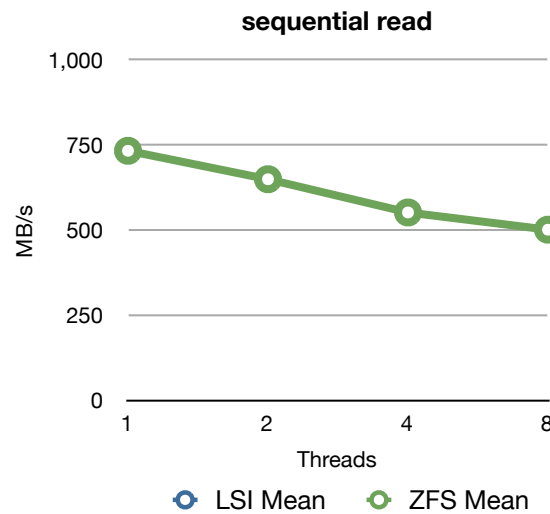
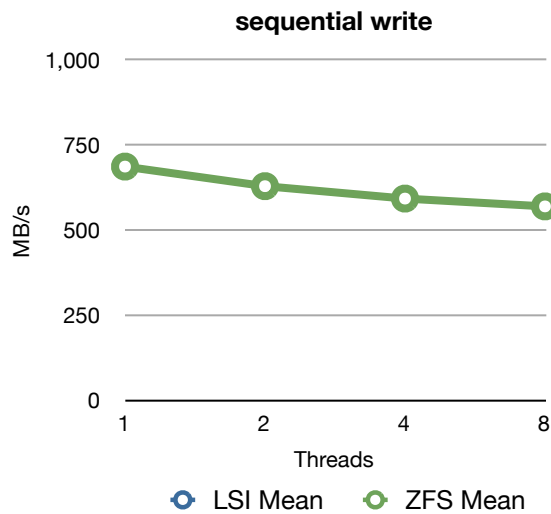
LSI MegaRAID 9260 vs LSI 3018E w/ ZFS RAIDZ  
 Second testing cycle as per jpatzezel -- 5/17/2011

Seagate Barracuda ES.2 1TB  
 1x Intel X5670 - 12GB RAM

This test run with LSI 3018E 3Gb HBA with backplanes wired separate

9 Disk RAID 5	LSI Test 1	LSI Test 2	LSI Test 3	LSI Mean	LSI Median
<b>1 Thread</b>					
Write Seq					
Rewrite Seq					
Read Seq					
Reread Seq					
<b>2 Threads</b>					
Write Seq					
Rewrite Seq					
Read Seq					
Reread Seq					
<b>4 Threads</b>					
Write Seq					
Rewrite Seq					
Read Seq					
Reread Seq					
<b>8 Threads</b>					
Write Seq					
Rewrite Seq					
Read Seq					
Reread Seq					

9 Column RAIDZ	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS Mean	ZFS Median
<b>1 Thread</b>					
Write Seq	695,948.19	679,208.56		687,578.38	687,578.38
Rewrite Seq	565,576.56	675,274.69		620,425.63	620,425.63
Read Seq	710,949.50	757,185.06		734,067.28	734,067.28
Reread Seq	721,285.25	770,290.75		745,788.00	745,788.00
<b>2 Threads</b>					
Write Seq	628,692.72	631,267.19		629,979.96	629,979.96
Rewrite Seq	623,725.44	606,440.41		615,082.93	615,082.93
Read Seq	633,480.12	667,220.56		650,350.34	650,350.34
Reread Seq	639,211.81	672,079.31		655,645.56	655,645.56
<b>4 Threads</b>					
Write Seq	598,783.58	588,220.97		593,502.28	593,502.28
Rewrite Seq	563,204.52	575,007.78		569,106.15	569,106.15
Read Seq	548,164.11	557,101.05		552,632.58	552,632.58
Reread Seq	559,132.50	557,161.67		558,147.09	558,147.09
<b>8 Threads</b>					
Write Seq	567,595.53	573,386.06		570,490.80	570,490.80
Rewrite Seq	569,775.48	565,648.01		567,711.75	567,711.75
Read Seq	483,184.84	520,794.07		501,989.46	501,989.46
Reread Seq	484,947.53	516,446.83		500,697.18	500,697.18



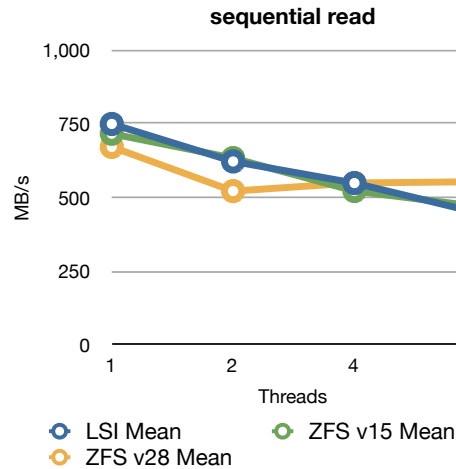
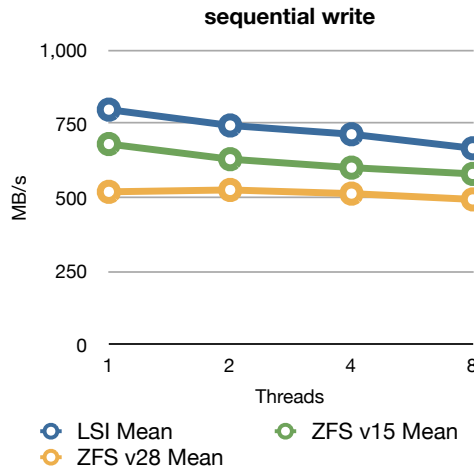
LSI MegaRAID 9260 vs LSI 9411 w/ ZFS RAIDZ  
 Second testing cycle as per jpatezel -- 5/17/2011  
 RAID 5 - 128KB stripe - Adaptive Readahead

Seagate Barracuda ES.2 1TB  
 1x Intel X5670 - 12GB RAM

RAID-Z test run with LSI 9211-4i 6Gb HBA with backplanes wired cascaded  
 NOTE: RAID 5 Test 2 Write Seq value of 458,737.75 was discarded as being too variant to be correct

9 Disk RAID 5	LSI Test 1	LSI Test 2	LSI Test 3	LSI Mean	LSI Median	LSI StdDev
<b>1 Thread</b>						
Write Seq	794,779.50		802,531.00	798,655.25	798,655.25	3,875.75
Rewrite Seq	685,690.12	767,757.06	724,933.19	726,126.79	724,933.19	33,514.32
Read Seq	743,000.69	752,370.88	754,901.56	750,091.04	752,370.88	5,118.98
Reread Seq	741,769.38	769,190.38	768,668.50	759,876.09	768,668.50	12,805.15
<b>2 Threads</b>						
Write Seq	772,295.94	743,676.84	718,986.16	744,986.31	743,676.84	21,783.31
Rewrite Seq	717,129.91	717,338.31	701,973.75	712,147.32	717,129.91	7,194.31
Read Seq	613,964.25	620,305.53	634,302.56	622,857.45	620,305.53	8,496.90
Reread Seq	619,053.16	625,253.34	650,260.62	631,522.37	625,253.34	13,489.55
<b>4 Threads</b>						
Write Seq	722,070.06	712,400.91	711,049.19	715,173.39	712,400.91	4,907.81
Rewrite Seq	671,697.27	677,196.27	699,899.30	682,930.95	677,196.27	12,206.65
Read Seq	587,099.88	474,724.03	586,517.59	549,447.17	586,517.59	52,837.77
Reread Seq	600,394.72	484,792.68	582,486.36	555,891.25	582,486.36	50,803.10
<b>8 Threads</b>						
Write Seq	685,685.01	657,795.52	659,266.29	667,582.27	659,266.29	12,814.64
Rewrite Seq	669,857.46	619,146.18	636,977.38	641,993.67	636,977.38	21,004.46
Read Seq	434,420.02	453,526.72	462,792.79	450,246.51	453,526.72	11,813.08
Reread Seq	433,971.39	455,766.77	463,858.62	451,198.93	455,766.77	12,621.69

9 Column RAIDZ	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v15 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	687,626.19	642,534.94	715,638.19	681,933.11	687,626.19	30,114.56
Rewrite Seq	551,910.81	635,788.56	685,567.50	624,422.29	635,788.56	55,153.86
Read Seq	653,110.00	735,344.25	762,159.69	716,871.31	735,344.25	46,396.09
Reread Seq	684,771.12	762,106.69	779,552.50	742,143.44	762,106.69	41,188.80
<b>2 Threads</b>						
Write Seq	643,448.81	627,394.53	620,748.69	630,530.68	627,394.53	9,528.92
Rewrite Seq	621,133.00	584,409.31	607,273.41	604,271.91	607,273.41	15,141.87
Read Seq	607,029.88	646,354.16	649,528.91	634,304.32	646,354.16	19,329.44
Reread Seq	620,895.44	667,744.31	631,193.94	639,944.56	631,193.94	20,101.98
<b>4 Threads</b>						
Write Seq	606,951.64	594,974.73	603,522.16	601,816.18	603,522.16	5,036.16
Rewrite Seq	576,271.72	571,314.81	591,814.91	579,800.48	576,271.72	8,733.18
Read Seq	525,164.58	511,300.22	531,047.24	522,504.01	525,164.58	8,278.29
Reread Seq	530,384.79	510,568.55	526,968.92	522,640.75	526,968.92	8,649.49
<b>8 Threads</b>						
Write Seq	577,305.11	581,441.45	582,889.19	580,545.25	581,441.45	2,366.13
Rewrite Seq	566,312.18	578,449.92	583,242.16	576,001.42	578,449.92	7,125.19
Read Seq	478,179.94	446,103.22	488,219.44	470,834.20	478,179.94	17,961.33
Reread Seq	478,514.32	446,329.20	488,121.17	470,988.23	478,514.32	17,872.21



RAIDZ -> HWRAID	% Delta
<b>1 Thread</b>	
Write Seq	14.61%
Rewrite Seq	14.01%
Read Seq	4.43%
Reread Seq	2.33%
<b>2 Threads</b>	
Write Seq	15.36%
Rewrite Seq	15.15%
Read Seq	-1.84%
Reread Seq	-1.33%
<b>4 Threads</b>	
Write Seq	15.85%
Rewrite Seq	15.10%
Read Seq	4.90%
Reread Seq	5.98%
<b>8 Threads</b>	
Write Seq	13.04%
Rewrite Seq	10.28%
Read Seq	-4.57%
Reread Seq	-4.39%

ZFS v15 -> v28	% Delta
<b>1 Thread</b>	
Write Seq	-23.77%
Rewrite Seq	-21.99%
Read Seq	-6.23%
Reread Seq	-22.44%
<b>2 Threads</b>	
Write Seq	-16.56%
Rewrite Seq	-20.85%
Read Seq	-17.66%
Reread Seq	-19.15%
<b>4 Threads</b>	
Write Seq	-14.64%
Rewrite Seq	-12.95%
Read Seq	5.25%
Reread Seq	5.57%
<b>8 Threads</b>	
Write Seq	-14.90%
Rewrite Seq	-10.57%
Read Seq	17.66%
Reread Seq	17.06%

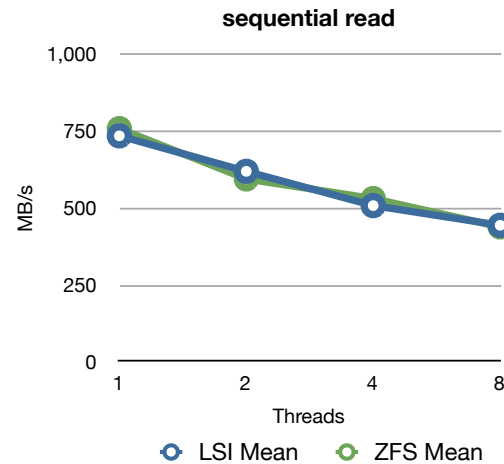
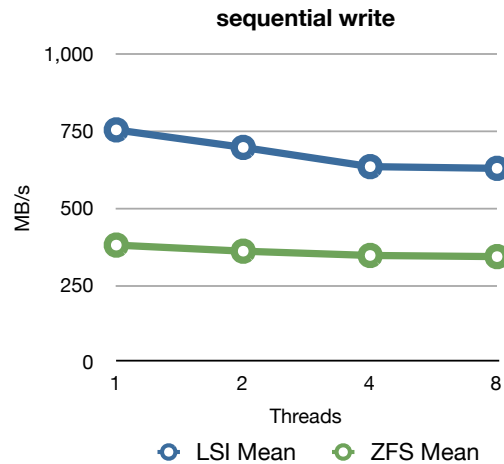
9 Column RAIDZ v28	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v28 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	565,632.00	464,927.66	528,860.56	519,806.74	528,860.56	41,607.85
Rewrite Seq	417,404.00	544,017.12	499,964.56	487,128.56	499,964.56	52,480.43
Read Seq	635,227.81	654,129.69	727,199.06	672,185.52	654,129.69	39,658.44
Reread Seq	530,185.38	600,669.38	595,988.69	575,614.48	595,988.69	32,180.01
<b>2 Threads</b>						
Write Seq	514,588.27	525,699.77	538,130.03	526,139.36	525,699.77	9,615.91
Rewrite Seq	395,745.06	491,074.56	547,983.00	478,267.54	491,074.56	62,807.18
Read Seq	407,983.25	594,322.50	564,457.88	522,254.54	564,457.88	81,716.67
Reread Seq	413,692.34	565,604.61	572,833.16	517,376.70	565,604.61	73,375.28
<b>4 Threads</b>						
Write Seq	520,809.53	505,035.44	515,258.30	513,701.09	515,258.30	6,533.21
Rewrite Seq	479,106.56	510,845.38	524,110.20	504,687.38	510,845.38	18,881.61
Read Seq	521,814.15	541,977.41	585,994.20	549,928.59	541,977.41	26,797.83
Reread Seq	524,098.56	546,269.16	584,928.41	551,765.38	546,269.16	25,135.95
<b>8 Threads</b>						
Write Seq	506,510.68	491,728.64	483,842.79	494,027.37	491,728.64	9,395.79
Rewrite Seq	499,054.27	533,460.39	512,843.57	515,119.41	512,843.57	14,138.12
Read Seq	527,435.85	571,126.45	563,340.23	553,967.51	563,340.23	19,028.10
Reread Seq	526,599.16	570,132.65	557,299.80	551,343.87	557,299.80	18,264.65

LSI MegaRAID 9260 vs LSI 9411 w/ ZFS RAIDZ Seagate Barracuda ES.2 1TB  
 Second testing cycle as per jpatzel -- 5/17/2011 1x Intel X5670 - 12GB RAM

RAID-Z2 test run with LSI 9211-4i 6Gb HBA with backplanes wired cascaded

10 Disk RAID 6	LSI Test 1	LSI Test 2	LSI Test 3	LSI Mean	LSI Median
<b>1 Thread</b>					
Write Seq	758,603.88	757,255.56	741,001.38	752,286.94	757,255.56
Rewrite Seq	491,732.75	676,186.69	742,725.06	636,881.50	676,186.69
Read Seq	713,053.81	746,778.50	738,963.62	732,931.98	738,963.62
Reread Seq	728,227.75	751,196.62	763,738.62	747,721.00	751,196.62
<b>2 Threads</b>					
Write Seq	691,469.47	690,507.66	704,374.75	695,450.63	691,469.47
Rewrite Seq	686,903.53	517,100.42	686,197.47	630,067.14	686,197.47
Read Seq	604,084.31	621,574.16	627,710.69	617,789.72	621,574.16
Reread Seq	598,110.78	631,498.47	638,129.09	622,579.45	631,498.47
<b>4 Threads</b>					
Write Seq	659,625.80	664,616.66	575,084.33	633,108.93	659,625.80
Rewrite Seq	625,004.59	662,198.64	563,213.38	616,805.54	625,004.59
Read Seq	506,844.10	484,119.95	529,167.27	506,710.44	506,844.10
Reread Seq	520,372.40	485,242.37	523,956.93	509,857.23	520,372.40
<b>8 Threads</b>					
Write Seq	615,016.08	641,802.95	625,951.61	627,590.21	625,951.61
Rewrite Seq	638,279.95	621,920.85	629,227.77	629,809.52	629,227.77
Read Seq	429,127.76	456,751.95	442,581.70	442,820.47	442,581.70
Reread Seq	428,781.72	457,056.43	445,551.00	443,796.38	445,551.00

10 Column RAIDZ2	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS Mean	ZFS Median	% Delta
<b>1 Thread</b>						
Write Seq	389,679.47	376,758.06	369,311.66	378,583.06	376,758.06	48.63%
Rewrite Seq	306,646.62	379,077.62	369,621.50	351,781.91	369,621.50	37.64%
Read Seq	723,873.75	782,092.19	763,158.00	756,374.65	763,158.00	-1.52%
Reread Seq	769,452.25	791,988.44	767,615.44	776,352.04	769,452.25	-5.66%
<b>2 Threads</b>						
Write Seq	345,812.97	375,095.31	355,594.14	358,834.14	355,594.14	49.99%
Rewrite Seq	352,192.05	335,792.94	342,114.36	343,366.45	342,114.36	48.73%
Read Seq	550,234.50	628,037.41	601,574.53	593,282.15	601,574.53	8.91%
Reread Seq	537,717.06	641,805.81	597,831.56	592,451.48	597,831.56	10.10%
<b>4 Threads</b>						
Write Seq	344,692.59	339,839.97	350,373.88	344,968.81	344,692.59	47.74%
Rewrite Seq	348,042.06	351,871.38	349,093.21	349,668.88	349,093.21	44.31%
Read Seq	493,118.55	542,714.88	552,283.03	529,372.15	542,714.88	2.71%
Reread Seq	492,486.90	542,756.49	552,048.89	529,097.43	542,756.49	5.36%
<b>8 Threads</b>						
Write Seq	344,913.57	339,220.87	339,624.82	341,253.09	339,624.82	43.92%
Rewrite Seq	339,290.14	336,703.05	338,105.50	338,032.90	338,105.50	46.84%
Read Seq	437,469.67	432,241.52	442,913.74	437,541.64	437,469.67	-1.94%
Reread Seq	438,284.63	430,140.89	444,497.06	437,640.86	438,284.63	-2.22%



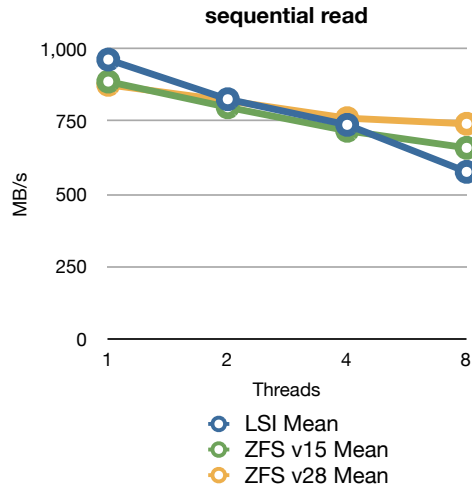
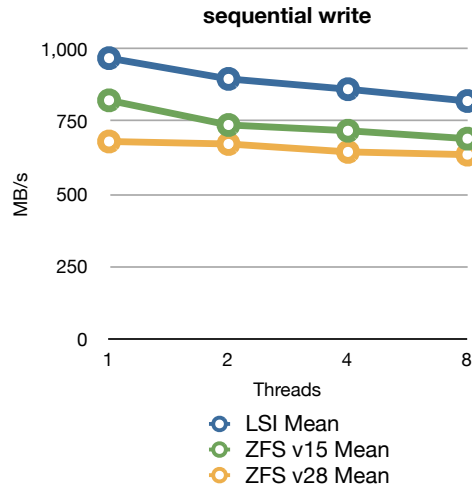
LSI MegaRAID 9260 vs LSI 9411 w/ ZFS RAIDZ  
 Second testing cycle as per jpatetzl -- 5/17/2011

Seagate Barracuda ES.2 1TB  
 1x Intel X5670 - 12GB RAM

RAID-Z test run with LSI 9211-4i 6Gb HBA with backplanes wired cascaded

27 Disk RAID 5	LSI Test 1	LSI Test 2	LSI Test 3	LSI Mean	LSI Median	LSI StdDev
<b>1 Thread</b>						
Write Seq	971,983.12	957,789.94	974,825.44	968,199.50	971,983.12	7,451.57
Rewrite Seq	567,088.12	864,919.25	930,842.81	787,616.73	864,919.25	158,242.70
Read Seq	988,950.00	948,930.06	951,870.50	963,250.19	951,870.50	18,212.12
Reread Seq	1,007,699.44	953,409.06	957,460.94	972,856.48	957,460.94	24,693.16
<b>2 Threads</b>						
Write Seq	929,612.28	861,527.78	898,854.97	896,665.01	898,854.97	27,838.48
Rewrite Seq	920,429.44	887,528.50	854,091.94	887,349.96	887,528.50	27,082.47
Read Seq	855,149.06	812,914.34	811,703.62	826,589.01	812,914.34	20,201.06
Reread Seq	854,995.00	807,001.56	821,060.66	827,685.74	821,060.66	20,145.49
<b>4 Threads</b>						
Write Seq	859,857.27	864,189.59	859,265.27	861,104.04	859,857.27	2,195.16
Rewrite Seq	848,807.00	758,447.47	845,129.27	817,461.25	845,129.27	41,756.04
Read Seq	762,673.56	728,547.91	723,763.06	738,328.18	728,547.91	17,325.26
Reread Seq	763,279.52	735,069.12	732,115.19	743,487.94	735,069.12	14,046.62
<b>8 Threads</b>						
Write Seq	826,444.86	816,682.34	817,993.98	820,373.73	817,993.98	4,326.21
Rewrite Seq	791,954.64	792,139.58	790,619.79	791,571.34	791,954.64	677.07
Read Seq	594,937.69	561,162.23	572,637.58	576,245.83	572,637.58	14,022.84
Reread Seq	594,187.55	559,557.23	570,148.38	574,631.05	570,148.38	14,488.74

27 Column RAIDZ	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v15 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	810,251.88	825,152.75	832,776.88	822,727.17	825,152.75	9,354.37
Rewrite Seq	507,204.97	820,444.81	632,044.38	653,231.39	632,044.38	128,754.20
Read Seq	863,146.06	933,606.50	865,534.81	887,429.12	865,534.81	32,666.90
Reread Seq	958,485.62	958,407.81	949,479.81	955,457.75	958,407.81	4,227.16
<b>2 Threads</b>						
Write Seq	748,124.53	749,721.81	715,711.69	737,852.68	748,124.53	15,669.62
Rewrite Seq	754,937.53	699,488.44	753,342.59	735,922.85	753,342.59	25,771.25
Read Seq	779,192.56	817,036.72	800,301.28	798,843.52	800,301.28	15,484.16
Reread Seq	786,771.97	838,286.91	807,751.28	810,936.72	807,751.28	21,151.16
<b>4 Threads</b>						
Write Seq	715,368.64	719,010.22	719,563.95	717,980.94	719,010.22	1,860.95
Rewrite Seq	704,970.31	721,176.56	705,006.80	710,384.56	705,006.80	7,631.11
Read Seq	685,413.08	766,850.77	701,068.53	717,777.46	701,068.53	35,283.76
Reread Seq	682,004.50	776,175.23	707,957.97	722,045.90	707,957.97	39,714.68
<b>8 Threads</b>						
Write Seq	689,625.74	696,568.58	685,823.37	690,672.56	689,625.74	4,448.73
Rewrite Seq	690,496.23	702,645.38	689,912.05	694,351.22	690,496.23	5,869.70
Read Seq	656,964.54	664,227.12	655,807.97	658,999.88	656,964.54	3,726.26
Reread Seq	658,571.84	665,703.09	653,763.88	659,346.27	658,571.84	4,904.83



RAIDZ -> HWRAID	% Delta
<b>1 Thread</b>	
Write Seq	15.03%
Rewrite Seq	17.06%
Read Seq	7.87%
Reread Seq	1.79%
<b>2 Threads</b>	
Write Seq	17.71%
Rewrite Seq	17.07%
Read Seq	3.36%
Reread Seq	2.02%
<b>4 Threads</b>	
Write Seq	16.62%
Rewrite Seq	13.10%
Read Seq	2.78%
Reread Seq	2.88%
<b>8 Threads</b>	
Write Seq	15.81%
Rewrite Seq	12.28%
Read Seq	-14.36%
Reread Seq	-14.74%

RAIDZ v15 -> v28	% Delta
<b>1 Thread</b>	
Write Seq	-17.24%
Rewrite Seq	-0.79%
Read Seq	-1.26%
Reread Seq	-2.97%
<b>2 Threads</b>	
Write Seq	-8.87%
Rewrite Seq	-6.27%
Read Seq	2.85%
Reread Seq	3.68%
<b>4 Threads</b>	
Write Seq	-10.16%
Rewrite Seq	-8.48%
Read Seq	6.06%
Reread Seq	7.34%
<b>8 Threads</b>	
Write Seq	-7.98%
Rewrite Seq	-9.95%
Read Seq	12.58%
Reread Seq	12.73%

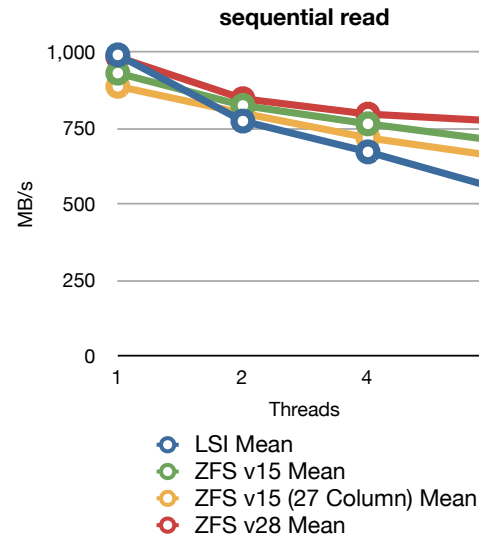
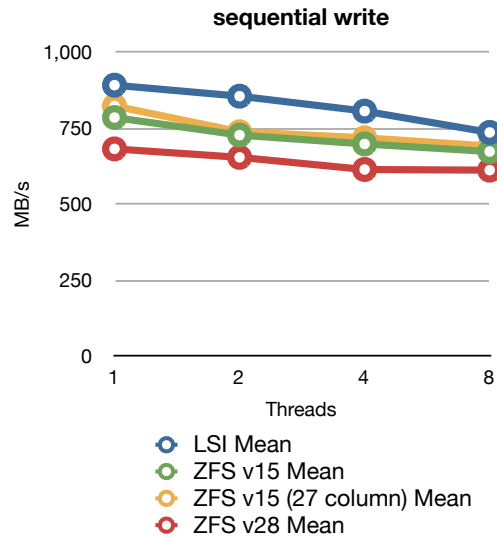
27 Column RAIDZ v28	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v28 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	682,540.75	681,414.81	678,827.38	680,927.65	681,414.81	1,554.62
Rewrite Seq	472,451.47	788,906.94	682,894.19	648,084.20	682,894.19	131,516.33
Read Seq	820,440.50	878,804.56	929,482.62	876,242.56	878,804.56	44,553.11
Reread Seq	951,719.31	882,360.31	947,066.94	927,048.85	947,066.94	31,656.60
<b>2 Threads</b>						
Write Seq	671,491.19	682,551.78	663,096.50	672,379.82	671,491.19	7,967.40
Rewrite Seq	719,585.03	687,612.12	662,160.06	689,785.74	687,612.12	23,493.97
Read Seq	794,443.75	835,259.75	835,080.72	821,594.74	835,080.72	19,198.79
Reread Seq	836,022.75	852,389.72	834,039.03	840,817.17	836,022.75	8,223.01
<b>4 Threads</b>						
Write Seq	655,001.80	639,711.00	640,384.81	645,032.54	640,384.81	7,054.70
Rewrite Seq	630,953.62	639,363.08	680,084.61	650,133.77	639,363.08	21,454.90
Read Seq	754,730.34	760,544.00	768,641.67	761,305.34	760,544.00	5,704.73
Reread Seq	756,530.02	771,815.70	796,769.22	775,038.31	771,815.70	16,584.88
<b>8 Threads</b>						
Write Seq	639,198.17	634,258.83	633,257.98	635,571.66	634,258.83	2,596.68
Rewrite Seq	623,604.96	623,628.10	628,637.63	625,290.23	623,628.10	2,366.99
Read Seq	736,325.34	740,426.33	749,033.20	741,928.29	740,426.33	5,295.55
Reread Seq	735,718.89	738,583.29	755,442.29	743,248.16	738,583.29	8,701.49

LSI MegaRAID 9260 vs LSI 9414 w/ ZFS RAIDZ Seagate Barracuda ES.2 1TB  
 Second testing cycle as per jpatelz -- 5/17/2011 1x Intel X5670 - 12GB RAM

RAID-Z test run with LSI 9211-4i 6Gb HBA with backplanes wired cascaded

9 Disk RAID 5	LSI Test 1	LSI Test 2	LSI Test 3	LSI Mean	LSI Median
<b>1 Thread</b>					
Write Seq	905,812.50	861,645.44	906,137.25	891,198.40	905,812.50
Rewrite Seq	639,502.31	864,161.81	816,284.44	773,316.19	816,284.44
Read Seq	990,488.69	986,709.88	995,598.50	990,932.36	990,488.69
Reread Seq	995,340.19	932,801.44	947,302.31	958,481.31	947,302.31
<b>2 Threads</b>					
Write Seq	845,233.28	863,345.66	856,283.44	854,954.13	856,283.44
Rewrite Seq	843,020.41	835,921.72	854,440.75	844,460.96	843,020.41
Read Seq	784,641.66	767,250.88	767,086.41	772,992.98	767,250.88
Reread Seq	789,095.81	777,611.88	777,841.19	781,516.29	777,841.19
<b>4 Threads</b>					
Write Seq	806,305.77	804,980.02	806,148.42	805,811.40	806,148.42
Rewrite Seq	797,414.03	791,759.78	803,709.62	797,627.81	797,414.03
Read Seq	715,144.62	642,025.89	657,621.08	671,597.20	657,621.08
Reread Seq	712,748.27	649,203.61	661,431.55	674,461.14	661,431.55
<b>8 Threads</b>					
Write Seq	739,161.01	695,075.45	772,645.12	735,627.19	739,161.01
Rewrite Seq	750,925.61	743,048.85	741,030.96	745,001.81	743,048.85
Read Seq	572,882.82	546,332.52	546,813.12	555,342.82	546,813.12
Reread Seq	573,115.27	542,436.98	545,927.66	553,826.64	545,927.66

3x9 Column RAIDZ	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v15 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	796,284.81	792,085.31	765,645.69	784,671.94	792,085.31	13,562.39
Rewrite Seq	551,622.25	748,239.44	752,809.06	684,223.58	748,239.44	93,781.86
Read Seq	882,087.81	957,973.25	952,556.62	930,872.56	952,556.62	34,566.83
Reread Seq	974,075.25	979,943.19	971,909.00	975,309.15	974,075.25	3,394.01
<b>2 Threads</b>						
Write Seq	720,324.59	732,073.22	727,989.31	726,795.71	727,989.31	4,870.05
Rewrite Seq	726,331.50	729,948.25	722,332.66	726,204.14	726,331.50	3,110.36
Read Seq	843,302.56	837,993.09	791,930.00	824,408.55	837,993.09	23,067.87
Reread Seq	817,154.16	833,315.06	795,678.53	815,382.58	817,154.16	15,416.03
<b>4 Threads</b>						
Write Seq	696,852.08	701,724.41	694,432.02	697,669.50	696,852.08	3,032.70
Rewrite Seq	691,953.81	688,105.12	686,671.53	688,910.15	688,105.12	2,230.35
Read Seq	766,166.17	763,272.30	762,464.95	763,967.81	763,272.30	1,589.04
Reread Seq	771,111.86	762,860.70	769,781.31	767,917.96	769,781.31	3,617.04
<b>8 Threads</b>						
Write Seq	673,465.49	667,715.90	676,759.77	672,647.05	673,465.49	3,737.22
Rewrite Seq	673,632.23	679,299.89	673,654.64	675,528.92	673,654.64	2,666.49
Read Seq	702,311.68	715,868.70	713,340.20	710,506.86	713,340.20	5,886.09
Reread Seq	704,207.17	714,558.86	712,136.99	710,301.01	712,136.99	4,420.97



27 Column RAIDZ	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS Mean
<b>1 Thread</b>				
Write Seq	810,251.88	825,152.75	832,776.88	822,727.17
Rewrite Seq	507,204.97	820,444.81	632,044.38	653,231.39
Read Seq	863,146.06	933,606.50	865,534.81	887,429.12
Reread Seq	958,485.62	958,407.81	949,479.81	955,457.75
<b>2 Threads</b>				
Write Seq	748,124.53	749,721.81	715,711.69	737,852.68
Rewrite Seq	754,937.53	699,488.44	753,342.59	735,922.85
Read Seq	779,192.56	817,036.72	800,301.28	798,843.52
Reread Seq	786,771.97	838,286.91	807,751.28	810,936.72
<b>4 Threads</b>				
Write Seq	715,368.64	719,010.22	719,563.95	717,980.94
Rewrite Seq	704,970.31	721,176.56	705,006.80	710,384.56
Read Seq	685,413.08	766,850.77	701,068.53	717,777.46
Reread Seq	682,004.50	776,175.23	707,957.97	722,045.90
<b>8 Threads</b>				
Write Seq	689,625.74	696,568.58	685,823.37	690,672.56
Rewrite Seq	690,496.23	702,645.38	689,912.05	694,351.22
Read Seq	656,964.54	664,227.12	655,807.97	658,999.88
Reread Seq	658,571.84	665,703.09	653,763.88	659,346.27

3x9 Column RAIDZ v28	ZFS Test 1	ZFS Test 2	ZFS Test 3	ZFS v28 Mean	ZFS Median	ZFS StdDev
<b>1 Thread</b>						
Write Seq	686,394.81	667,589.12	690,211.06	681,398.33	686,394.81	9,888.10
Rewrite Seq	475,556.56	672,207.44	702,933.50	616,899.17	672,207.44	100,728.42
Read Seq	968,342.75	990,358.94	992,002.06	983,567.92	990,358.94	10,786.70
Reread Seq	931,219.31	937,802.06	974,768.12	947,929.83	937,802.06	19,166.87
<b>2 Threads</b>						
Write Seq	657,738.25	640,480.50	662,718.50	653,645.75	657,738.25	9,528.68
Rewrite Seq	650,927.81	674,794.03	667,106.34	664,276.06	667,106.34	9,946.76
Read Seq	841,706.53	851,631.28	846,517.38	846,618.40	846,517.38	4,052.39
Reread Seq	843,454.84	861,053.28	843,873.16	849,460.43	843,873.16	8,199.16
<b>4 Threads</b>						
Write Seq		600,935.58	626,216.03	613,575.81	613,575.81	12,640.23
Rewrite Seq	612,226.14	614,308.27	619,513.02	615,349.14	614,308.27	3,064.55
Read Seq	787,946.81	803,914.06	796,000.72	795,953.86	796,000.72	6,518.69
Reread Seq	796,390.03	809,389.05	796,652.95	800,810.68	796,652.95	6,066.78
<b>8 Threads</b>						
Write Seq	604,473.09	619,177.98	610,628.56	611,426.54	610,628.56	6,029.71
Rewrite Seq	510,459.68	602,873.34	627,292.95	580,208.66	602,873.34	50,317.45
Read Seq	770,042.48	775,580.27	776,551.77	774,058.17	775,580.27	2,867.09
Reread Seq	769,966.05	779,790.34	778,789.04	776,181.81	778,789.04	4,414.17

27 Column RAIDZ	ZFS Median	
<b>1 Thread</b>		
Write Seq	825,152.75	-4.85%
Rewrite Seq	632,044.38	4.53%
Read Seq	865,534.81	4.67%
Reread Seq	958,407.81	2.04%
<b>2 Threads</b>		
Write Seq	748,124.53	-1.52%
Rewrite Seq	753,342.59	-1.34%
Read Seq	800,301.28	3.10%
Reread Seq	807,751.28	0.55%
<b>4 Threads</b>		
Write Seq	719,010.22	-2.91%
Rewrite Seq	705,006.80	-3.12%
Read Seq	701,068.53	6.05%
Reread Seq	707,957.97	5.97%
<b>8 Threads</b>		
Write Seq	689,625.74	-2.68%
Rewrite Seq	690,496.23	-2.79%
Read Seq	656,964.54	7.25%
Reread Seq	658,571.84	7.17%

RAIDZ v15 -> v28	% Delta
<b>1 Thread</b>	
Write Seq	-15.16%
Rewrite Seq	-10.91%
Read Seq	5.36%
Reread Seq	-2.89%
<b>2 Threads</b>	
Write Seq	-11.19%
Rewrite Seq	-9.32%
Read Seq	2.62%
Reread Seq	4.01%
<b>4 Threads</b>	
Write Seq	-13.71%
Rewrite Seq	-11.95%
Read Seq	4.02%
Reread Seq	4.11%
<b>8 Threads</b>	
Write Seq	-10.01%
Rewrite Seq	-16.43%
Read Seq	8.21%
Reread Seq	8.49%



9 Column RAIDZ	3Gb Mean	6Gb Mean			
<b>1 Thread</b>					
Write Seq	687,578.38	681,933.11	-0.82%		
Rewrite Seq	620,425.63	624,422.29	0.64%		
Read Seq	734,067.28	716,871.31	-2.34%		
Reread Seq	745,788.00	742,143.44	-0.49%		
<b>2 Threads</b>					
Write Seq	629,979.96	630,530.68	0.09%		
Rewrite Seq	615,082.93	604,271.91	-1.76%		
Read Seq	650,350.34	634,304.32	-2.47%		
Reread Seq	655,645.56	639,944.56	-2.39%		
<b>4 Threads</b>					
Write Seq	593,502.28	601,816.18	1.40%		
Rewrite Seq	569,106.15	579,800.48	1.88%		
Read Seq	552,632.58	522,504.01	-5.45%		
Reread Seq	558,147.09	522,640.75	-6.36%		
<b>8 Threads</b>					
Write Seq	570,490.80	580,545.25	1.76%		
Rewrite Seq	567,711.75	576,001.42	1.46%		
Read Seq	501,989.46	470,834.20	-6.21%		
Reread Seq	500,697.18	470,988.23	-5.93%		

