

Re: Poor write performance with LSI 320-2 on 6.1-STABLE

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- From: Albert Chin <freebsd-stable@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
- Date: Fri, 29 Sep 2006 18:55:34 -0500

On Thu, Sep 28, 2006 at 05:15:05PM -0500, Albert Chin wrote:

I have an Intel S875PWP1 motherboard with a Pentium4 CPU@xxxxxxx PCI bus is 33Mhz, 32-bit. I recently purchased an LSI 320-2/128MB on eBay (though the card really looks like a PERC4/DS) and just ran some bonnie++ tests on a RAID 1 array between two U320 drives for the first channel and on a RAID 0 array between one U320 drive for the second channel. The 320-2 has the latest LSI firmware, 1L47.

I reran some of the tests with the same 320-2 but on an Intel SE7520BD2 with 32-bit and 64-bit (100Mhz) slots:

#1. RAID 1, two U320 drives, channel 1, 32-bit, 33Mhz slot

```
Version 1.93c -----Sequential Output----- --Sequential Input-- --Random--
Concurrency 1 --Per Chr-- --Block-- --Rewrite-- --Per Chr-- --Block-- --Seeks--
Machine Size K/sec %CP K/sec %CP K/sec %CP K/sec %CP K/sec %CP /sec %CP
maetel.il.thew 300M 186 99 16707 5 16063 6 654 99 537320 93 4129 50
Latency 45215us 199ms 89764us 34740us 1215us 1808ms
Version 1.93c -----Sequential Create----- -----Random Create-----
maetel.il.thewritte --Create-- --Read--- --Delete-- --Create-- --Read--- --Delete--
files /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP
16 7441 23 +++++ + + + + + + + 5799 18 +++++ + + + + + + +
Latency 479ms 122us 2508us 606ms 13549us 101us
```

#2. RAID 1, two U320 drives, channel 1, 64-bit, 100Mhz slot

```
Version 1.93c -----Sequential Output----- --Sequential Input-- --Random--
Concurrency 1 --Per Chr-- --Block-- --Rewrite-- --Per Chr-- --Block-- --Seeks--
Machine Size K/sec %CP K/sec %CP K/sec %CP K/sec %CP K/sec %CP /sec %CP
maetel.il.thew 300M 186 99 18006 6 15964 5 634 99 571275 99 4450 57
Latency 44992us 139ms 130ms 35143us 1238us 120ms
Version 1.93c -----Sequential Create----- -----Random Create-----
maetel.il.thewritte --Create-- --Read--- --Delete-- --Create-- --Read--- --Delete--
files /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP
16 7581 24 +++++ + + + + + + + 5750 18 +++++ + + + + + + +
Latency 511ms 255us 2615us 622ms 12691us 53us
```

Odd that I don't get x2 the performance when the bus bandwidth doubles in speed.

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With the write policy set to "write-back", performance increases to:

#3. RAID 1, two U320 drives, channel 1, 32-bit, 33Mhz slot

```
Version 1.93c -----Sequential Output----- --Sequential Input-- --Random-
Concurrency 1 -Per Chr- --Block-- -Rewrite- -Per Chr- --Block-- --Seeks--
Machine Size K/sec %CP K/sec %CP K/sec %CP K/sec %CP K/sec %CP /sec %CP
maetel.il.thew 300M 182 99 36466 12 28602 11 624 97 570155 99 ++++++ +++
Latency 102ms 918ms 1739ms 35305us 1210us 198ms
Version 1.93c -----Sequential Create----- -----Random Create-----
maetel.il.thewritte -Create-- --Read---- -Delete-- -Create-- --Read---- -Delete--
files /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP
16 18283 57 ++++++ +++ ++++++ +++ 16092 50 ++++++ +++ ++++++ +++
Latency 65371us 107us 101us 119ms 258us 104us
```

#4. RAID 1, two U320 drives, channel 1, 64-bit, 100Mhz slot

```
Version 1.93c -----Sequential Output----- --Sequential Input-- --Random-
Concurrency 1 -Per Chr- --Block-- -Rewrite- -Per Chr- --Block-- --Seeks--
Machine Size K/sec %CP K/sec %CP K/sec %CP K/sec %CP K/sec %CP /sec %CP
maetel.il.thew 300M 186 99 43215 14 35049 12 560 88 569643 99 ++++++ +++
Latency 44935us 2071ms 1174ms 35558us 1213us 279ms
Version 1.93c -----Sequential Create----- -----Random Create-----
maetel.il.thewritte -Create-- --Read---- -Delete-- -Create-- --Read---- -Delete--
files /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP /sec %CP
16 19689 62 ++++++ +++ ++++++ +++ 15578 51 ++++++ +++ ++++++ +++
Latency 67923us 1227us 49362us 117ms 198us 93us
```

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