# Appendix A

# Data Used in Prediction

This appendix gives the raw data used in the scatter plots of Chapter 5. To allow the table to fit on the page, I use the following abbreviations:

un = uniqueBytes in MB
seq = seqFrac
read = readFrac
sz = sizeMean in KB
proc = processNum
Measured = Measured Performance in MB/s
Predicted = Predicted Performance in MB/s
% Err = % Error

Data for SPARCstation 1+ (Figure 5.3) — Part 1

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Andrew | 4.7 | .77 | .54 | 3 | 1 | 1.5 MB/s | 1.5 MB/s | 5 % |
| Bonnie | 100 | 1.0 | 0.0 | 8 | 1 | .38 MB/s | .27 MB/s | 29 % |
| IOStone | 1.0 | .02 | .67 | 2 | 1 | 1.6 MB/s | 1.6 MB/s | 0 % |
| Sdet | 8.0 | .48 | .56 | 2 | 4 | 1.2 MB/s | 1.3 MB/s | 11 % |
| Random 0 | 53 | 0.73 | 0.21 | 25 | 1 | 0.4 MB/s | 0.4 MB/s | 4 % |
| Random 1 | 33 | 0.39 | 0.71 | 26 | 1 | 0.6 MB/s | 0.5 MB/s | 14 % |
| Random 2 | 9 | 0.58 | 0.46 | 51 | 2 | 2.3 MB/s | 2.5 MB/s | 5 % |
| Random 3 | 46 | 0.37 | 0.25 | 82 | 2 | 0.4 MB/s | 0.3 MB/s | 28 % |
| Random 4 | 10 | 0.28 | 0.01 | 46 | 1 | 2.4 MB/s | 2.5 MB/s | 5 % |
| Random 5 | 40 | 0.80 | 0.82 | 29 | 2 | 0.5 MB/s | 0.5 MB/s | 4 % |
| Random 6 | 14 | 0.22 | 0.16 | 67 | 1 | 2.4 MB/s | 2.4 MB/s | 1 % |
| Random 7 | 21 | 0.82 | 0.44 | 68 | 2 | 1.8 MB/s | 1.4 MB/s | 21 % |
| Random 8 | 54 | 0.72 | 0.06 | 83 | 1 | 0.5 MB/s | 0.4 MB/s | 10 % |
| Random 9 | 41 | 0.13 | 0.12 | 43 | 1 | 0.4 MB/s | 0.3 MB/s | 13 % |
| Random 10 | 19 | 0.29 | 0.04 | 74 | 2 | 2.1 MB/s | 2.0 MB/s | 7 % |
| Random 11 | 24 | 0.04 | 0.26 | 76 | 1 | 0.7 MB/s | 0.7 MB/s | 5 % |
| Random 12 | 34 | 0.04 | 0.53 | 39 | 1 | 0.5 MB/s | 0.4 MB/s | 10 % |
| Random 13 | 10 | 0.85 | 0.67 | 65 | 2 | 2.2 MB/s | 2.4 MB/s | 11 % |
| Random 14 | 5 | 0.51 | 0.76 | 37 | 2 | 2.6 MB/s | 2.7 MB/s | 4 % |
| Random 15 | 53 | 0.65 | 0.16 | 75 | 1 | 0.5 MB/s | 0.4 MB/s | 9 % |
| Random 16 | 35 | 0.19 | 0.99 | 35 | 1 | 0.6 MB/s | 0.6 MB/s | 9 % |
| Random 17 | 23 | 0.67 | 0.76 | 70 | 2 | 1.2 MB/s | 1.1 MB/s | 11 % |
| Random 18 | 41 | 0.73 | 0.01 | 79 | 1 | 0.5 MB/s | 0.5 MB/s | 6 % |
| Random 19 | 57 | 0.16 | 0.94 | 6 | 1 | 0.3 MB/s | 0.3 MB/s | 11 % |
| Random 20 | 35 | 0.81 | 0.76 | 50 | 1 | 0.8 MB/s | 0.7 MB/s | 6 % |
| Random 21 | 12 | 0.23 | 0.28 | 22 | 1 | 2.3 MB/s | 2.3 MB/s | 3 % |
| Random 22 | 25 | 0.27 | 0.74 | 56 | 1 | 1.0 MB/s | 0.8 MB/s | 23 % |
| Random 23 | 36 | 0.40 | 0.59 | 26 | 2 | 0.4 MB/s | 0.3 MB/s | 17 % |
| Random 24 | 26 | 0.55 | 0.16 | 70 | 2 | 0.7 MB/s | 0.5 MB/s | 18 % |
| Random 25 | 55 | 0.24 | 0.57 | 18 | 2 | 0.3 MB/s | 0.2 MB/s | 10 % |
| Random 26 | 7 | 0.16 | 0.69 | 33 | 1 | 2.4 MB/s | 2.8 MB/s | 18 % |
| Random 27 | 26 | 0.48 | 0.10 | 47 | 1 | 0.6 MB/s | 0.6 MB/s | 7 % |
| Random 28 | 11 | 0.79 | 0.04 | 16 | 1 | 2.1 MB/s | 2.3 MB/s | 8 % |
| Random 29 | 46 | 0.79 | 0.20 | 18 | 1 | 0.4 MB/s | 0.4 MB/s | 7 % |
| Random 30 | 21 | 0.71 | 0.59 | 62 | 2 | 1.7 MB/s | 1.2 MB/s | 29 % |
| Random 31 | 56 | 0.15 | 0.53 | 7 | 2 | 0.2 MB/s | 0.2 MB/s | 7 % |
| Random 32 | 22 | 0.84 | 0.85 | 36 | 1 | 2.0 MB/s | 1.7 MB/s | 16 % |
| Random 33 | 34 | 0.42 | 0.53 | 61 | 2 | 0.5 MB/s | 0.4 MB/s | 19 % |
| Random 34 | 17 | 0.34 | 0.45 | 34 | 2 | 2.2 MB/s | 2.2 MB/s | 2 % |
| Random 35 | 11 | 0.49 | 0.51 | 81 | 2 | 2.2 MB/s | 2.2 MB/s | 1 % |
| Random 36 | 52 | 0.22 | 0.37 | 22 | 2 | 0.3 MB/s | 0.2 MB/s | 20 % |
| Random 37 | 39 | 0.75 | 0.55 | 21 | 2 | 0.4 MB/s | 0.4 MB/s | 5 % |
| Random 38 | 42 | 0.42 | 0.43 | 46 | 2 | 0.4 MB/s | 0.3 MB/s | 13 % |
| Random 39 | 48 | 0.40 | 0.86 | 81 | 2 | 0.4 MB/s | 0.4 MB/s | 0 % |
| Random 40 | 39 | 0.17 | 0.85 | 33 | 1 | 0.5 MB/s | 0.5 MB/s | 11 % |
| Random 41 | 28 | 0.65 | 0.42 | 32 | 1 | 0.6 MB/s | 0.6 MB/s | 0 % |
| Random 42 | 48 | 0.12 | 0.16 | 29 | 1 | 0.3 MB/s | 0.3 MB/s | 15 % |
| Random 43 | 53 | 0.06 | 0.12 | 49 | 2 | 0.4 MB/s | 0.3 MB/s | 31 % |
| Random 44 | 9 | 0.60 | 0.26 | 26 | 2 | 2.3 MB/s | 2.4 MB/s | 5 % |

Data for SPARCstation 1+ (Figure 5.3) — Part 2

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 45 | 11 | 0.65 | 0.56 | 57 | 1 | 2.4 MB/s | 2.4 MB/s | 2 % |
| Random 46 | 38 | 0.71 | 0.88 | 20 | 2 | 0.5 MB/s | 0.5 MB/s | 1 % |
| Random 47 | 39 | 0.81 | 0.87 | 57 | 1 | 0.8 MB/s | 0.8 MB/s | 5 % |
| Random 48 | 19 | 0.42 | 0.46 | 82 | 2 | 2.1 MB/s | 2.0 MB/s | 3 % |
| Random 49 | 38 | 0.33 | 0.32 | 71 | 2 | 0.4 MB/s | 0.3 MB/s | 23 % |
| Random 50 | 41 | 0.53 | 0.52 | 19 | 2 | 0.3 MB/s | 0.3 MB/s | 0 % |
| Random 51 | 53 | 0.26 | 0.30 | 15 | 1 | 0.3 MB/s | 0.3 MB/s | 15 % |
| Random 52 | 18 | 0.06 | 0.65 | 28 | 2 | 2.2 MB/s | 2.2 MB/s | 2 % |
| Random 53 | 45 | 0.09 | 0.19 | 58 | 2 | 0.4 MB/s | 0.3 MB/s | 29 % |
| Random 54 | 13 | 0.41 | 0.20 | 55 | 2 | 2.3 MB/s | 2.3 MB/s | 3 % |
| Random 55 | 16 | 0.53 | 0.72 | 30 | 2 | 2.2 MB/s | 2.3 MB/s | 3 % |
| Random 56 | 16 | 0.47 | 0.47 | 4 | 2 | 1.0 MB/s | 1.4 MB/s | 37 % |
| Random 57 | 48 | 0.08 | 0.54 | 79 | 2 | 0.4 MB/s | 0.3 MB/s | 20 % |
| Random 58 | 13 | 0.82 | 0.77 | 78 | 2 | 2.1 MB/s | 2.3 MB/s | 10 % |
| Random 59 | 15 | 0.14 | 0.31 | 4 | 1 | 1.3 MB/s | 1.5 MB/s | 15 % |
| Random 60 | 48 | 0.69 | 0.22 | 49 | 1 | 0.5 MB/s | 0.4 MB/s | 11 % |
| Random 61 | 53 | 0.10 | 0.92 | 43 | 2 | 0.4 MB/s | 0.4 MB/s | 1 % |
| Random 62 | 12 | 0.12 | 0.63 | 61 | 1 | 2.3 MB/s | 2.4 MB/s | 4 % |
| Random 63 | 9 | 0.72 | 0.33 | 5 | 1 | 1.5 MB/s | 1.7 MB/s | 14 % |
| Random 64 | 17 | 0.19 | 0.11 | 79 | 2 | 2.1 MB/s | 2.3 MB/s | 10 % |
| Random 65 | 22 | 0.23 | 0.86 | 80 | 1 | 2.5 MB/s | 1.4 MB/s | 43 % |
| Random 66 | 8 | 0.67 | 0.89 | 63 | 2 | 2.8 MB/s | 2.8 MB/s | 2 % |
| Random 67 | 21 | 0.08 | 0.41 | 30 | 1 | 2.2 MB/s | 1.5 MB/s | 32 % |
| Random 68 | 42 | 0.69 | 0.57 | 65 | 2 | 0.4 MB/s | 0.4 MB/s | 4 % |
| Random 69 | 30 | 0.38 | 0.98 | 61 | 1 | 0.9 MB/s | 0.8 MB/s | 11 % |
| Random 70 | 39 | 0.47 | 0.13 | 27 | 1 | 0.4 MB/s | 0.4 MB/s | 3 % |
| Random 71 | 52 | 0.05 | 0.12 | 73 | 2 | 0.4 MB/s | 0.3 MB/s | 36 % |
| Random 72 | 10 | 0.76 | 0.24 | 19 | 2 | 2.2 MB/s | 2.3 MB/s | 6 % |
| Random 73 | 7 | 0.26 | 0.67 | 52 | 2 | 2.5 MB/s | 2.7 MB/s | 7 % |
| Random 74 | 18 | 0.77 | 0.14 | 26 | 2 | 1.8 MB/s | 2.1 MB/s | 16 % |
| Random 75 | 28 | 0.27 | 0.69 | 25 | 2 | 0.6 MB/s | 0.4 MB/s | 23 % |
| Random 76 | 30 | 0.19 | 0.19 | 35 | 1 | 0.5 MB/s | 0.4 MB/s | 12 % |
| Random 77 | 31 | 0.25 | 0.02 | 78 | 2 | 0.5 MB/s | 0.3 MB/s | 37 % |
| Random 78 | 49 | 0.25 | 0.39 | 13 | 2 | 0.3 MB/s | 0.2 MB/s | 15 % |
| Random 79 | 9 | 0.54 | 0.10 | 70 | 2 | 2.3 MB/s | 2.4 MB/s | 7 % |
| Random 80 | 29 | 0.45 | 0.68 | 75 | 2 | 0.6 MB/s | 0.5 MB/s | 6 % |
| Random 81 | 22 | 0.33 | 0.70 | 85 | 1 | 2.1 MB/s | 1.2 MB/s | 44 % |
| Random 82 | 36 | 0.42 | 0.31 | 63 | 1 | 0.5 MB/s | 0.4 MB/s | 9 % |
| Random 83 | 8 | 0.53 | 0.97 | 11 | 2 | 2.4 MB/s | 2.7 MB/s | 12 % |
| Random 84 | 6 | 0.86 | 0.51 | 84 | 2 | 2.5 MB/s | 2.6 MB/s | 3 % |
| Random 85 | 55 | 0.54 | 0.02 | 34 | 2 | 0.4 MB/s | 0.3 MB/s | 24 % |
| Random 86 | 24 | 0.78 | 0.85 | 45 | 2 | 1.3 MB/s | 0.9 MB/s | 34 % |
| Random 87 | 13 | 0.82 | 0.51 | 74 | 1 | 2.3 MB/s | 2.3 MB/s | 0 % |
| Random 88 | 12 | 0.57 | 0.93 | 40 | 2 | 2.6 MB/s | 2.8 MB/s | 8 % |
| Random 89 | 37 | 0.81 | 0.19 | 80 | 2 | 0.5 MB/s | 0.4 MB/s | 12 % |
| Random 90 | 58 | 0.02 | 0.95 | 18 | 1 | 0.4 MB/s | 0.4 MB/s | 16 % |
| Random 91 | 16 | 0.02 | 0.29 | 63 | 2 | 2.2 MB/s | 2.3 MB/s | 6 % |
| Random 92 | 17 | 0.48 | 0.31 | 24 | 2 | 1.9 MB/s | 2.1 MB/s | 11 % |
| Random 93 | 40 | 0.64 | 0.12 | 47 | 1 | 0.5 MB/s | 0.4 MB/s | 6 % |

Data for SPARCstation 1+ (Figure 5.3) — Part 3

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 94 | 15 | 0.54 | 0.16 | 82 | 1 | 2.4 MB/s | 2.3 MB/s | 1 % |
| Random 95 | 19 | 0.11 | 0.14 | 30 | 1 | 2.3 MB/s | 2.2 MB/s | 5 % |
| Random 96 | 20 | 0.77 | 0.05 | 75 | 2 | 1.8 MB/s | 1.7 MB/s | 9 % |
| Random 97 | 19 | 0.65 | 0.99 | 81 | 1 | 2.9 MB/s | 2.5 MB/s | 13 % |
| Random 98 | 44 | 0.06 | 0.74 | 25 | 2 | 0.3 MB/s | 0.3 MB/s | 6 % |
| Random 99 | 53 | 0.31 | 0.16 | 46 | 2 | 0.4 MB/s | 0.3 MB/s | 29 % |

**Table A.1: Raw data for SPARCstation 1+ scatter plot.** This table gives the data used to plot the current benchmark prediction points in Figures 5.3. Most points of high error have unique-Bytes between 20 and 27 MB.

Data for DECstation 5000/200 (Figure 5.5) — Part 1

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Andrew | 4.7 | .77 | .54 | 3 | 1 | 2.9 MB/s | 2.5 MB/s | 14 % |
| Bonnie | 100 | 1.0 | 0.0 | 8 | 1 | 0.5 MB/s | 0.3 MB/s | 53 % |
| IOStone | 1.0 | .02 | .67 | 2 | 1 | 3.0 MB/s | 2.6 MB/s | 12 % |
| Sdet | 8.0 | .48 | .56 | 2 | 4 | 1.6 MB/s | 1.9 MB/s | 24 % |
| Random 0 | 31 | 0.80 | 0.41 | 55 | 2 | 0.7 MB/s | 0.7 MB/s | 7 % |
| Random 1 | 21 | 0.85 | 0.57 | 56 | 1 | 1.7 MB/s | 1.5 MB/s | 6 % |
| Random 2 | 32 | 0.85 | 0.37 | 37 | 2 | 0.6 MB/s | 0.6 MB/s | 3 % |
| Random 3 | 36 | 0.08 | 0.30 | 157 | 2 | 0.6 MB/s | 0.6 MB/s | 3 % |
| Random 4 | 6 | 0.22 | 0.97 | 60 | 2 | 5.9 MB/s | 4.2 MB/s | 30 % |
| Random 5 | 45 | 0.11 | 0.46 | 91 | 1 | 0.5 MB/s | 0.5 MB/s | 11 % |
| Random 6 | 7 | 0.22 | 0.26 | 103 | 2 | 1.6 MB/s | 2.9 MB/s | 82 % |
| Random 7 | 4 | 0.61 | 0.01 | 84 | 1 | 2.9 MB/s | 4.2 MB/s | 45 % |
| Random 8 | 25 | 0.53 | 0.91 | 136 | 2 | 1.1 MB/s | 0.7 MB/s | 42 % |
| Random 9 | 21 | 0.38 | 0.65 | 40 | 1 | 1.8 MB/s | 2.0 MB/s | 12 % |
| Random 10 | 27 | 0.57 | 0.77 | 115 | 1 | 0.9 MB/s | 0.7 MB/s | 26 % |
| Random 11 | 19 | 0.25 | 0.69 | 16 | 2 | 2.1 MB/s | 2.6 MB/s | 23 % |
| Random 12 | 9 | 0.61 | 0.34 | 143 | 1 | 1.4 MB/s | 1.7 MB/s | 29 % |
| Random 13 | 15 | 0.53 | 0.17 | 73 | 2 | 0.8 MB/s | 1.1 MB/s | 29 % |
| Random 14 | 28 | 0.70 | 0.06 | 76 | 2 | 0.6 MB/s | 0.8 MB/s | 26 % |
| Random 15 | 31 | 0.03 | 0.55 | 43 | 1 | 0.5 MB/s | 0.5 MB/s | 1 % |
| Random 16 | 6 | 0.39 | 0.15 | 41 | 2 | 2.2 MB/s | 3.4 MB/s | 58 % |
| Random 17 | 14 | 0.41 | 0.59 | 158 | 1 | 1.8 MB/s | 2.0 MB/s | 13 % |
| Random 18 | 20 | 0.34 | 0.63 | 73 | 1 | 1.7 MB/s | 2.1 MB/s | 26 % |
| Random 19 | 24 | 0.41 | 0.29 | 75 | 2 | 0.8 MB/s | 0.8 MB/s | 2 % |
| Random 20 | 42 | 0.87 | 0.39 | 22 | 2 | 0.6 MB/s | 0.4 MB/s | 24 % |
| Random 21 | 5 | 0.59 | 0.34 | 66 | 2 | 3.1 MB/s | 4.1 MB/s | 35 % |
| Random 22 | 11 | 0.28 | 0.44 | 112 | 2 | 1.5 MB/s | 1.7 MB/s | 15 % |
| Random 23 | 14 | 0.81 | 0.76 | 24 | 2 | 3.0 MB/s | 3.0 MB/s | 1 % |
| Random 24 | 45 | 0.31 | 0.67 | 35 | 1 | 0.4 MB/s | 0.4 MB/s | 2 % |
| Random 25 | 19 | 0.24 | 0.93 | 132 | 2 | 4.7 MB/s | 4.2 MB/s | 10 % |
| Random 26 | 40 | 0.03 | 0.69 | 87 | 2 | 0.6 MB/s | 0.5 MB/s | 8 % |
| Random 27 | 16 | 0.43 | 0.32 | 16 | 1 | 1.3 MB/s | 1.2 MB/s | 8 % |
| Random 28 | 28 | 0.53 | 0.15 | 99 | 2 | 0.6 MB/s | 0.7 MB/s | 16 % |

Data for DECstation 5000/200 (Figure 5.5) — Part 2

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 29 | 39 | 0.14 | 0.82 | 5 | 1 | 0.3 MB/s | 0.2 MB/s | 10 % |
| Random 30 | 9 | 0.79 | 0.67 | 113 | 1 | 2.9 MB/s | 3.4 MB/s | 16 % |
| Random 31 | 34 | 0.06 | 0.62 | 66 | 2 | 0.6 MB/s | 0.5 MB/s | 13 % |
| Random 32 | 36 | 0.54 | 0.66 | 45 | 2 | 0.5 MB/s | 0.5 MB/s | 8 % |
| Random 33 | 3 | 0.82 | 0.27 | 82 | 1 | 3.9 MB/s | 4.7 MB/s | 19 % |
| Random 34 | 20 | 0.59 | 0.87 | 83 | 2 | 4.0 MB/s | 3.4 MB/s | 14 % |
| Random 35 | 9 | 0.00 | 0.38 | 38 | 1 | 1.9 MB/s | 2.0 MB/s | 3 % |
| Random 36 | 10 | 0.17 | 0.17 | 100 | 2 | 1.0 MB/s | 1.4 MB/s | 41 % |
| Random 37 | 42 | 0.78 | 0.22 | 154 | 1 | 0.6 MB/s | 0.6 MB/s | 7 % |
| Random 38 | 3 | 0.12 | 0.34 | 137 | 1 | 3.7 MB/s | 4.7 MB/s | 27 % |
| Random 39 | 24 | 0.69 | 0.82 | 158 | 2 | 1.2 MB/s | 0.8 MB/s | 34 % |
| Random 40 | 39 | 0.43 | 0.98 | 139 | 2 | 0.7 MB/s | 0.5 MB/s | 32 % |
| Random 41 | 9 | 0.06 | 0.53 | 5 | 1 | 1.8 MB/s | 2.4 MB/s | 34 % |
| Random 42 | 3 | 0.39 | 0.30 | 129 | 1 | 3.9 MB/s | 4.8 MB/s | 23 % |
| Random 43 | 42 | 0.84 | 0.65 | 158 | 2 | 0.6 MB/s | 0.6 MB/s | 7 % |
| Random 44 | 17 | 0.74 | 0.05 | 131 | 1 | 0.7 MB/s | 0.8 MB/s | 12 % |
| Random 45 | 27 | 0.80 | 0.81 | 34 | 1 | 0.7 MB/s | 0.6 MB/s | 17 % |
| Random 46 | 8 | 0.16 | 0.33 | 158 | 2 | 1.6 MB/s | 2.1 MB/s | 29 % |
| Random 47 | 35 | 0.67 | 0.83 | 158 | 2 | 0.7 MB/s | 0.6 MB/s | 19 % |
| Random 48 | 22 | 0.63 | 0.66 | 112 | 1 | 1.1 MB/s | 1.1 MB/s | 5 % |
| Random 49 | 38 | 0.70 | 0.63 | 62 | 2 | 0.6 MB/s | 0.5 MB/s | 3 % |
| Random 50 | 24 | 0.24 | 0.43 | 75 | 1 | 0.8 MB/s | 0.8 MB/s | 4 % |
| Random 51 | 12 | 0.86 | 0.19 | 29 | 2 | 1.0 MB/s | 1.2 MB/s | 23 % |
| Random 52 | 33 | 0.33 | 0.08 | 116 | 1 | 0.6 MB/s | 0.7 MB/s | 8 % |
| Random 53 | 33 | 0.25 | 0.81 | 6 | 2 | 0.3 MB/s | 0.3 MB/s | 11 % |
| Random 54 | 7 | 0.21 | 0.70 | 22 | 2 | 3.7 MB/s | 7.4 MB/s | 102 % |
| Random 55 | 36 | 0.32 | 0.52 | 119 | 2 | 0.8 MB/s | 0.5 MB/s | 36 % |
| Random 56 | 5 | 0.41 | 0.27 | 30 | 1 | 3.8 MB/s | 3.8 MB/s | 0 % |
| Random 57 | 21 | 0.67 | 0.31 | 146 | 1 | 1.0 MB/s | 1.1 MB/s | 9 % |
| Random 58 | 36 | 0.23 | 0.00 | 134 | 1 | 0.6 MB/s | 0.6 MB/s | 9 % |
| Random 59 | 11 | 0.51 | 0.32 | 134 | 2 | 1.2 MB/s | 1.3 MB/s | 7 % |
| Random 60 | 26 | 0.01 | 0.38 | 129 | 2 | 0.7 MB/s | 0.7 MB/s | 1 % |
| Random 61 | 39 | 0.15 | 0.54 | 97 | 1 | 0.6 MB/s | 0.5 MB/s | 15 % |
| Random 62 | 44 | 0.75 | 0.38 | 46 | 1 | 0.5 MB/s | 0.5 MB/s | 3 % |
| Random 63 | 32 | 0.65 | 0.98 | 39 | 2 | 0.8 MB/s | 0.5 MB/s | 36 % |
| Random 64 | 26 | 0.02 | 0.73 | 45 | 1 | 0.7 MB/s | 0.6 MB/s | 9 % |
| Random 65 | 43 | 0.34 | 0.84 | 117 | 2 | 0.5 MB/s | 0.4 MB/s | 21 % |
| Random 66 | 37 | 0.04 | 0.03 | 127 | 2 | 0.6 MB/s | 0.6 MB/s | 3 % |
| Random 67 | 41 | 0.26 | 0.38 | 60 | 1 | 0.5 MB/s | 0.5 MB/s | 4 % |
| Random 68 | 31 | 0.84 | 0.24 | 20 | 1 | 0.6 MB/s | 0.6 MB/s | 6 % |
| Random 69 | 46 | 0.08 | 0.60 | 137 | 1 | 0.5 MB/s | 0.5 MB/s | 12 % |
| Random 70 | 37 | 0.84 | 0.37 | 102 | 2 | 0.6 MB/s | 0.6 MB/s | 9 % |
| Random 71 | 29 | 0.69 | 0.85 | 92 | 1 | 0.9 MB/s | 0.7 MB/s | 24 % |
| Random 72 | 13 | 0.22 | 0.58 | 41 | 2 | 2.1 MB/s | 2.2 MB/s | 1 % |
| Random 73 | 18 | 0.49 | 0.72 | 93 | 2 | 2.4 MB/s | 2.4 MB/s | 0 % |
| Random 74 | 40 | 0.56 | 0.95 | 47 | 1 | 0.7 MB/s | 0.4 MB/s | 37 % |
| Random 75 | 24 | 0.59 | 0.20 | 32 | 1 | 0.8 MB/s | 0.7 MB/s | 14 % |
| Random 76 | 41 | 0.43 | 0.69 | 88 | 1 | 0.6 MB/s | 0.5 MB/s | 11 % |
| Random 77 | 4 | 0.26 | 0.29 | 146 | 2 | 3.9 MB/s | 4.7 MB/s | 20 % |

Data for DECstation 5000/200 (Figure 5.5) — Part 3

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 78 | 12 | 0.79 | 0.83 | 61 | 2 | 4.2 MB/s | 3.8 MB/s | 10 % |
| Random 79 | 17 | 0.30 | 0.32 | 4 | 2 | 1.1 MB/s | 1.0 MB/s | 10 % |
| Random 80 | 37 | 0.26 | 0.62 | 72 | 2 | 0.5 MB/s | 0.5 MB/s | 7 % |
| Random 81 | 10 | 0.39 | 0.62 | 74 | 1 | 2.5 MB/s | 2.7 MB/s | 8 % |
| Random 82 | 32 | 0.40 | 0.68 | 88 | 2 | 0.7 MB/s | 0.6 MB/s | 11 % |
| Random 83 | 46 | 0.01 | 0.67 | 72 | 2 | 0.4 MB/s | 0.5 MB/s | 2 % |
| Random 84 | 35 | 0.51 | 1.00 | 132 | 2 | 0.7 MB/s | 0.5 MB/s | 31 % |
| Random 85 | 37 | 0.46 | 0.17 | 123 | 2 | 0.5 MB/s | 0.6 MB/s | 10 % |
| Random 86 | 28 | 0.14 | 0.71 | 31 | 2 | 0.6 MB/s | 0.5 MB/s | 20 % |
| Random 87 | 9 | 0.23 | 0.92 | 49 | 2 | 4.6 MB/s | 6.3 MB/s | 36 % |
| Random 88 | 15 | 0.79 | 0.48 | 48 | 2 | 1.5 MB/s | 1.7 MB/s | 13 % |
| Random 89 | 45 | 0.34 | 0.38 | 12 | 1 | 0.4 MB/s | 0.3 MB/s | 19 % |
| Random 90 | 39 | 0.26 | 0.05 | 99 | 1 | 0.6 MB/s | 0.6 MB/s | 2 % |
| Random 91 | 45 | 0.62 | 0.77 | 150 | 2 | 0.5 MB/s | 0.5 MB/s | 8 % |
| Random 92 | 5 | 0.50 | 0.68 | 132 | 2 | 5.4 MB/s | 4.4 MB/s | 18 % |
| Random 93 | 16 | 0.81 | 0.36 | 16 | 1 | 1.4 MB/s | 1.3 MB/s | 2 % |
| Random 94 | 13 | 0.21 | 0.96 | 130 | 2 | 5.7 MB/s | 5.3 MB/s | 7 % |
| Random 95 | 20 | 0.21 | 0.48 | 36 | 1 | 1.4 MB/s | 1.5 MB/s | 12 % |
| Random 96 | 36 | 0.65 | 0.83 | 10 | 1 | 0.4 MB/s | 0.3 MB/s | 7 % |
| Random 97 | 21 | 0.18 | 0.07 | 116 | 2 | 0.7 MB/s | 0.7 MB/s | 1 % |
| Random 98 | 27 | 0.74 | 0.25 | 9 | 2 | 0.6 MB/s | 0.5 MB/s | 26 % |
| Random 99 | 46 | 0.73 | 0.26 | 116 | 2 | 0.5 MB/s | 0.6 MB/s | 4 % |

**Table A.2: Raw data for DECstation 5000/200 scatter plot.** This table gives the data used to plot the current benchmark prediction points in Figures 5.5. Most points of high error have unique-Bytes between 5 and 10 MB.

Data for HP 730 (Figure 5.7) — Part 1

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Andrew | 4.7 | .77 | .54 | 3 | 1 | 0.47 MB/s | 0.36 MB/s | 25 % |
| Bonnie | 100 | 1.0 | 0.0 | 8 | 1 | 0.32 MB/s | 0.22 MB/s | 34 % |
| IOStone | 1.0 | .02 | .67 | 2 | 1 | 8.6 MB/s | 8.0 MB/s | 6 % |
| Sdet | 8.0 | .48 | .56 | 2 | 4 | 0.17 MB/s | 0.18 MB/s | 9 % |
| Random 0 | 9 | 0.04 | 0.53 | 339 | 1 | 1.6 MB/s | 1.4 MB/s | 14 % |
| Random 1 | 12 | 0.50 | 0.13 | 128 | 2 | 1.2 MB/s | 1.2 MB/s | 0 % |
| Random 2 | 10 | 0.46 | 0.99 | 182 | 2 | 1.5 MB/s | 2.4 MB/s | 58 % |
| Random 3 | 1 | 0.30 | 0.30 | 225 | 1 | 23.2 MB/s | 24.5 MB/s | 6 % |
| Random 4 | 10 | 0.73 | 0.73 | 129 | 2 | 1.4 MB/s | 1.6 MB/s | 17 % |
| Random 5 | 8 | 0.77 | 0.37 | 54 | 1 | 1.1 MB/s | 1.2 MB/s | 5 % |
| Random 6 | 3 | 0.72 | 0.34 | 277 | 1 | 3.2 MB/s | 13.3 MB/s | 322 % |
| Random 7 | 8 | 0.73 | 0.18 | 262 | 2 | 1.3 MB/s | 1.8 MB/s | 43 % |
| Random 8 | 3 | 0.02 | 0.37 | 26 | 2 | 11.9 MB/s | 8.9 MB/s | 26 % |
| Random 9 | 1 | 0.10 | 0.25 | 147 | 2 | 22.6 MB/s | 24.2 MB/s | 7 % |
| Random 10 | 10 | 0.32 | 0.47 | 62 | 1 | 1.0 MB/s | 1.0 MB/s | 4 % |
| Random 11 | 12 | 0.14 | 0.74 | 98 | 1 | 1.1 MB/s | 1.1 MB/s | 1 % |
| Random 12 | 3 | 0.44 | 0.53 | 84 | 2 | 8.5 MB/s | 13.0 MB/s | 53 % |

Data for HP 730 (Figure 5.7) — Part 2

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 13 | 5 | 0.36 | 0.54 | 71 | 1 | 1.3 MB/s | 1.5 MB/s | 10 % |
| Random 14 | 5 | 0.81 | 0.48 | 331 | 1 | 1.6 MB/s | 2.4 MB/s | 48 % |
| Random 15 | 2 | 0.38 | 0.56 | 233 | 1 | 20.9 MB/s | 24.9 MB/s | 19 % |
| Random 16 | 4 | 0.32 | 0.56 | 193 | 1 | 2.1 MB/s | 2.4 MB/s | 15 % |
| Random 17 | 6 | 0.20 | 0.89 | 146 | 2 | 1.8 MB/s | 2.1 MB/s | 14 % |
| Random 18 | 4 | 0.56 | 0.80 | 41 | 1 | 1.8 MB/s | 1.7 MB/s | 3 % |
| Random 19 | 7 | 0.49 | 0.68 | 147 | 1 | 1.7 MB/s | 1.8 MB/s | 2 % |
| Random 20 | 4 | 0.61 | 0.44 | 118 | 2 | 2.2 MB/s | 2.3 MB/s | 8 % |
| Random 21 | 9 | 0.36 | 0.81 | 356 | 2 | 1.7 MB/s | 1.7 MB/s | 1 % |
| Random 22 | 6 | 0.29 | 0.50 | 198 | 2 | 1.6 MB/s | 1.7 MB/s | 4 % |
| Random 23 | 1 | 0.20 | 0.50 | 48 | 1 | 30.1 MB/s | 29.9 MB/s | 1 % |
| Random 24 | 11 | 0.65 | 0.03 | 253 | 2 | 1.2 MB/s | 1.5 MB/s | 21 % |
| Random 25 | 10 | 0.36 | 0.99 | 290 | 2 | 1.6 MB/s | 2.4 MB/s | 55 % |
| Random 26 | 6 | 0.25 | 0.45 | 344 | 1 | 1.7 MB/s | 1.7 MB/s | 0 % |
| Random 27 | 4 | 0.50 | 0.15 | 337 | 1 | 2.9 MB/s | 10.8 MB/s | 275 % |
| Random 28 | 3 | 0.74 | 0.74 | 276 | 2 | 10.4 MB/s | 19.6 MB/s | 88 % |
| Random 29 | 9 | 0.32 | 0.51 | 40 | 1 | 0.9 MB/s | 0.8 MB/s | 2 % |
| Random 30 | 2 | 0.79 | 0.19 | 132 | 2 | 22.8 MB/s | 24.3 MB/s | 7 % |
| Random 31 | 7 | 0.50 | 0.04 | 354 | 2 | 1.3 MB/s | 1.7 MB/s | 24 % |
| Random 32 | 9 | 0.66 | 0.97 | 139 | 1 | 1.9 MB/s | 2.5 MB/s | 31 % |
| Random 33 | 9 | 0.49 | 0.17 | 264 | 1 | 1.5 MB/s | 1.6 MB/s | 7 % |
| Random 34 | 10 | 0.07 | 0.80 | 97 | 1 | 1.2 MB/s | 1.2 MB/s | 1 % |
| Random 35 | 9 | 0.60 | 0.01 | 16 | 2 | 0.6 MB/s | 0.6 MB/s | 4 % |
| Random 36 | 6 | 0.64 | 0.40 | 226 | 1 | 1.8 MB/s | 2.1 MB/s | 16 % |
| Random 37 | 9 | 0.87 | 0.94 | 184 | 2 | 1.6 MB/s | 2.7 MB/s | 66 % |
| Random 38 | 5 | 0.54 | 0.39 | 259 | 2 | 2.0 MB/s | 2.1 MB/s | 9 % |
| Random 39 | 2 | 0.02 | 0.78 | 295 | 2 | 20.4 MB/s | 22.7 MB/s | 11 % |
| Random 40 | 3 | 0.37 | 0.08 | 219 | 2 | 20.0 MB/s | 19.0 MB/s | 5 % |
| Random 41 | 5 | 0.63 | 0.73 | 15 | 1 | 0.9 MB/s | 0.8 MB/s | 9 % |
| Random 42 | 3 | 0.31 | 0.90 | 177 | 2 | 6.5 MB/s | 14.5 MB/s | 124 % |
| Random 43 | 4 | 0.44 | 0.39 | 231 | 1 | 2.3 MB/s | 2.7 MB/s | 17 % |
| Random 44 | 2 | 0.47 | 0.90 | 322 | 1 | 20.1 MB/s | 23.0 MB/s | 14 % |
| Random 45 | 1 | 0.30 | 0.60 | 19 | 1 | 25.6 MB/s | 26.0 MB/s | 2 % |
| Random 46 | 3 | 0.66 | 0.55 | 346 | 1 | 18.0 MB/s | 21.0 MB/s | 16 % |
| Random 47 | 9 | 0.19 | 0.10 | 347 | 2 | 1.4 MB/s | 1.4 MB/s | 2 % |
| Random 48 | 4 | 0.62 | 0.24 | 324 | 1 | 2.1 MB/s | 2.5 MB/s | 19 % |
| Random 49 | 5 | 0.75 | 0.11 | 143 | 2 | 2.0 MB/s | 2.3 MB/s | 16 % |
| Random 50 | 11 | 0.06 | 0.43 | 356 | 1 | 1.5 MB/s | 1.3 MB/s | 16 % |
| Random 51 | 6 | 0.29 | 0.53 | 52 | 1 | 1.2 MB/s | 1.1 MB/s | 1 % |
| Random 52 | 3 | 0.41 | 0.47 | 144 | 2 | 21.8 MB/s | 24.9 MB/s | 14 % |
| Random 53 | 11 | 0.02 | 0.00 | 172 | 1 | 1.3 MB/s | 1.3 MB/s | 2 % |
| Random 54 | 9 | 0.67 | 0.97 | 104 | 1 | 2.1 MB/s | 2.4 MB/s | 16 % |
| Random 55 | 9 | 0.76 | 0.88 | 208 | 2 | 1.7 MB/s | 2.2 MB/s | 28 % |
| Random 56 | 3 | 0.12 | 0.81 | 110 | 1 | 27.9 MB/s | 15.0 MB/s | 46 % |
| Random 57 | 5 | 0.01 | 0.54 | 333 | 2 | 2.2 MB/s | 1.7 MB/s | 22 % |
| Random 58 | 4 | 0.71 | 0.90 | 147 | 1 | 3.4 MB/s | 3.5 MB/s | 2 % |
| Random 59 | 6 | 0.15 | 0.54 | 91 | 2 | 1.3 MB/s | 1.3 MB/s | 2 % |
| Random 60 | 9 | 0.40 | 0.95 | 62 | 2 | 1.1 MB/s | 1.5 MB/s | 40 % |
| Random 61 | 10 | 0.77 | 0.62 | 220 | 1 | 1.4 MB/s | 1.9 MB/s | 32 % |

Data for HP 730 (Figure 5.7) — Part 3

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 62 | 4 | 0.27 | 0.20 | 200 | 1 | 2.4 MB/s | 2.7 MB/s | 10 % |
| Random 63 | 10 | 0.04 | 0.92 | 83 | 1 | 1.3 MB/s | 1.4 MB/s | 10 % |
| Random 64 | 9 | 0.34 | 0.17 | 149 | 2 | 1.3 MB/s | 1.3 MB/s | 5 % |
| Random 65 | 9 | 0.85 | 0.95 | 270 | 1 | 1.9 MB/s | 3.0 MB/s | 58 % |
| Random 66 | 11 | 0.73 | 0.21 | 176 | 1 | 0.9 MB/s | 1.6 MB/s | 70 % |
| Random 67 | 7 | 0.39 | 0.72 | 189 | 1 | 1.7 MB/s | 1.9 MB/s | 10 % |
| Random 68 | 2 | 0.28 | 0.02 | 363 | 1 | 22.1 MB/s | 21.2 MB/s | 4 % |
| Random 69 | 8 | 0.80 | 0.82 | 216 | 2 | 1.2 MB/s | 2.2 MB/s | 80 % |
| Random 70 | 8 | 0.13 | 0.12 | 336 | 1 | 1.2 MB/s | 1.5 MB/s | 22 % |
| Random 71 | 7 | 0.05 | 0.53 | 302 | 1 | 1.8 MB/s | 1.6 MB/s | 15 % |
| Random 72 | 1 | 0.51 | 0.76 | 261 | 2 | 19.2 MB/s | 24.2 MB/s | 25 % |
| Random 73 | 7 | 0.19 | 0.99 | 262 | 1 | 2.3 MB/s | 2.8 MB/s | 18 % |
| Random 74 | 11 | 0.16 | 0.94 | 23 | 1 | 0.7 MB/s | 0.8 MB/s | 12 % |
| Random 75 | 2 | 0.23 | 0.28 | 159 | 1 | 23.8 MB/s | 24.5 MB/s | 3 % |
| Random 76 | 7 | 0.40 | 0.59 | 186 | 2 | 1.5 MB/s | 1.6 MB/s | 8 % |
| Random 77 | 11 | 0.24 | 0.57 | 119 | 2 | 1.2 MB/s | 1.1 MB/s | 7 % |
| Random 78 | 1 | 0.16 | 0.69 | 250 | 1 | 22.3 MB/s | 24.8 MB/s | 11 % |
| Random 79 | 2 | 0.78 | 0.05 | 105 | 1 | 26.7 MB/s | 26.8 MB/s | 0 % |
| Random 80 | 9 | 0.79 | 0.20 | 124 | 1 | 1.5 MB/s | 1.6 MB/s | 10 % |
| Random 81 | 11 | 0.15 | 0.53 | 30 | 2 | 0.4 MB/s | 0.6 MB/s | 49 % |
| Random 82 | 4 | 0.84 | 0.85 | 273 | 1 | 2.1 MB/s | 3.6 MB/s | 70 % |
| Random 83 | 3 | 0.35 | 0.45 | 262 | 2 | 4.8 MB/s | 13.5 MB/s | 180 % |
| Random 84 | 11 | 0.22 | 0.37 | 154 | 2 | 1.0 MB/s | 1.2 MB/s | 18 % |
| Random 85 | 8 | 0.75 | 0.55 | 145 | 2 | 1.5 MB/s | 1.7 MB/s | 14 % |
| Random 86 | 8 | 0.42 | 0.43 | 361 | 2 | 1.4 MB/s | 1.5 MB/s | 8 % |
| Random 87 | 8 | 0.17 | 0.85 | 246 | 1 | 1.7 MB/s | 1.9 MB/s | 12 % |
| Random 88 | 6 | 0.66 | 0.42 | 237 | 1 | 1.8 MB/s | 2.1 MB/s | 18 % |
| Random 89 | 10 | 0.12 | 0.16 | 212 | 1 | 1.3 MB/s | 1.4 MB/s | 14 % |
| Random 90 | 2 | 0.60 | 0.26 | 195 | 2 | 18.7 MB/s | 24.3 MB/s | 30 % |
| Random 91 | 8 | 0.71 | 0.88 | 137 | 2 | 1.5 MB/s | 2.0 MB/s | 35 % |
| Random 92 | 8 | 0.53 | 0.52 | 128 | 2 | 1.3 MB/s | 1.4 MB/s | 11 % |
| Random 93 | 11 | 0.26 | 0.30 | 93 | 1 | 1.0 MB/s | 1.1 MB/s | 11 % |
| Random 94 | 4 | 0.06 | 0.65 | 209 | 2 | 5.5 MB/s | 9.3 MB/s | 68 % |
| Random 95 | 3 | 0.53 | 0.71 | 227 | 2 | 17.6 MB/s | 13.2 MB/s | 25 % |
| Random 96 | 3 | 0.47 | 0.47 | 7 | 2 | 7.1 MB/s | 5.1 MB/s | 28 % |
| Random 97 | 3 | 0.14 | 0.31 | 7 | 1 | 15.4 MB/s | 8.5 MB/s | 45 % |
| Random 98 | 11 | 0.10 | 0.92 | 335 | 2 | 1.4 MB/s | 1.7 MB/s | 28 % |
| Random 99 | 2 | 0.72 | 0.33 | 14 | 1 | 22.9 MB/s | 22.4 MB/s | 2 % |

**Table A.3: Raw data for HP 730 scatter plot.** This table gives the data used to plot the current benchmark prediction points in Figures 5.7. Most points of high error have uniqueBytes between 3 and 4 MB.

Data for Convex C240 (Figure 5.9) — Part 1

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Andrew | 4.7 | .77 | .54 | 3 | 1 | 2.9 MB/s | 2.9 MB/s | 2 % |
| Bonnie | 100 | 1.0 | 0.0 | 8 | 1 | 2.0 MB/s | 1.4 MB/s | 31 % |
| IOStone | 1.0 | .02 | .67 | 2 | 1 | 2.4 MB/s | 2.1 MB/s | 14 % |
| Sdet | 8.0 | .48 | .56 | 2 | 4 | 5.7 MB/s | 2.3 MB/s | 60 % |
| Random 0 | 1077 | 0.80 | 0.41 | 339 | 2 | 10.7 MB/s | 12.3 MB/s | 16 % |
| Random 1 | 768 | 0.85 | 0.57 | 341 | 1 | 14.1 MB/s | 17.3 MB/s | 23 % |
| Random 2 | 1121 | 0.85 | 0.37 | 221 | 2 | 9.8 MB/s | 10.1 MB/s | 4 % |
| Random 3 | 1282 | 0.08 | 0.30 | 1001 | 2 | 8.9 MB/s | 5.7 MB/s | 36 % |
| Random 4 | 266 | 0.22 | 0.97 | 370 | 2 | 22.3 MB/s | 23.9 MB/s | 7 % |
| Random 5 | 1591 | 0.11 | 0.46 | 571 | 1 | 6.8 MB/s | 5.3 MB/s | 21 % |
| Random 6 | 313 | 0.21 | 0.26 | 654 | 2 | 7.0 MB/s | 7.0 MB/s | 1 % |
| Random 7 | 209 | 0.61 | 0.01 | 530 | 1 | 5.4 MB/s | 7.7 MB/s | 43 % |
| Random 8 | 901 | 0.52 | 0.91 | 870 | 2 | 15.8 MB/s | 18.4 MB/s | 16 % |
| Random 9 | 756 | 0.39 | 0.65 | 236 | 1 | 13.6 MB/s | 13.3 MB/s | 2 % |
| Random 10 | 972 | 0.57 | 0.77 | 729 | 1 | 10.8 MB/s | 13.3 MB/s | 23 % |
| Random 11 | 709 | 0.25 | 0.69 | 83 | 2 | 10.4 MB/s | 9.4 MB/s | 9 % |
| Random 12 | 374 | 0.61 | 0.34 | 915 | 1 | 6.9 MB/s | 7.0 MB/s | 2 % |
| Random 13 | 571 | 0.53 | 0.17 | 456 | 2 | 8.7 MB/s | 9.2 MB/s | 6 % |
| Random 14 | 983 | 0.70 | 0.06 | 473 | 2 | 10.8 MB/s | 7.5 MB/s | 30 % |
| Random 15 | 1118 | 0.03 | 0.55 | 259 | 1 | 6.6 MB/s | 6.4 MB/s | 2 % |
| Random 16 | 269 | 0.39 | 0.15 | 247 | 2 | 7.2 MB/s | 7.5 MB/s | 4 % |
| Random 17 | 539 | 0.41 | 0.59 | 1010 | 1 | 9.0 MB/s | 7.6 MB/s | 16 % |
| Random 18 | 728 | 0.34 | 0.63 | 452 | 1 | 11.9 MB/s | 13.6 MB/s | 14 % |
| Random 19 | 853 | 0.41 | 0.29 | 466 | 2 | 10.8 MB/s | 9.3 MB/s | 14 % |
| Random 20 | 1438 | 0.87 | 0.39 | 121 | 2 | 6.1 MB/s | 6.1 MB/s | 0 % |
| Random 21 | 232 | 0.59 | 0.33 | 409 | 2 | 8.3 MB/s | 9.6 MB/s | 16 % |
| Random 22 | 760 | 0.79 | 0.38 | 753 | 1 | 10.8 MB/s | 10.7 MB/s | 1 % |
| Random 23 | 445 | 0.28 | 0.44 | 713 | 2 | 9.3 MB/s | 7.5 MB/s | 19 % |
| Random 24 | 540 | 0.81 | 0.76 | 132 | 2 | 14.5 MB/s | 18.1 MB/s | 25 % |
| Random 25 | 1593 | 0.31 | 0.67 | 206 | 1 | 5.1 MB/s | 5.3 MB/s | 3 % |
| Random 26 | 706 | 0.24 | 0.93 | 839 | 2 | 13.6 MB/s | 19.0 MB/s | 39 % |
| Random 27 | 1405 | 0.03 | 0.69 | 544 | 2 | 8.0 MB/s | 6.9 MB/s | 14 % |
| Random 28 | 598 | 0.43 | 0.32 | 85 | 1 | 5.6 MB/s | 5.8 MB/s | 3 % |
| Random 29 | 1004 | 0.53 | 0.15 | 622 | 2 | 10.4 MB/s | 6.3 MB/s | 40 % |
| Random 30 | 1378 | 0.14 | 0.82 | 10 | 1 | 1.0 MB/s | 1.2 MB/s | 15 % |
| Random 31 | 352 | 0.79 | 0.67 | 717 | 1 | 7.6 MB/s | 16.4 MB/s | 116 % |
| Random 32 | 1197 | 0.06 | 0.62 | 409 | 2 | 8.4 MB/s | 7.1 MB/s | 16 % |
| Random 33 | 1257 | 0.54 | 0.66 | 270 | 2 | 8.0 MB/s | 8.7 MB/s | 9 % |
| Random 34 | 151 | 0.82 | 0.27 | 508 | 1 | 6.9 MB/s | 12.0 MB/s | 74 % |
| Random 35 | 732 | 0.59 | 0.87 | 523 | 2 | 19.3 MB/s | 25.7 MB/s | 33 % |
| Random 36 | 371 | 0.00 | 0.38 | 226 | 1 | 7.1 MB/s | 7.4 MB/s | 3 % |
| Random 37 | 386 | 0.17 | 0.17 | 631 | 2 | 7.6 MB/s | 6.9 MB/s | 9 % |
| Random 38 | 1468 | 0.78 | 0.22 | 986 | 1 | 8.5 MB/s | 9.0 MB/s | 6 % |
| Random 39 | 177 | 0.12 | 0.34 | 869 | 1 | 4.0 MB/s | 5.7 MB/s | 40 % |
| Random 40 | 850 | 0.69 | 0.82 | 1012 | 2 | 12.3 MB/s | 15.6 MB/s | 27 % |
| Random 41 | 1379 | 0.43 | 0.98 | 882 | 2 | 10.3 MB/s | 15.5 MB/s | 50 % |
| Random 42 | 362 | 0.06 | 0.53 | 13 | 1 | 2.0 MB/s | 2.1 MB/s | 8 % |
| Random 43 | 154 | 0.39 | 0.30 | 823 | 1 | 4.7 MB/s | 6.5 MB/s | 40 % |
| Random 44 | 1427 | 0.84 | 0.65 | 1008 | 2 | 12.0 MB/s | 13.0 MB/s | 9 % |

Data for Convex C240 (Figure 5.9) — Part 2

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 45 | 645 | 0.74 | 0.05 | 833 | 1 | 9.0 MB/s | 7.7 MB/s | 15 % |
| Random 46 | 976 | 0.80 | 0.81 | 198 | 1 | 14.4 MB/s | 17.8 MB/s | 23 % |
| Random 47 | 343 | 0.16 | 0.33 | 1010 | 2 | 7.5 MB/s | 5.3 MB/s | 30 % |
| Random 48 | 1219 | 0.67 | 0.83 | 1010 | 2 | 11.6 MB/s | 14.9 MB/s | 29 % |
| Random 49 | 811 | 0.63 | 0.66 | 707 | 1 | 12.3 MB/s | 14.2 MB/s | 15 % |
| Random 50 | 1319 | 0.70 | 0.63 | 385 | 2 | 9.6 MB/s | 10.0 MB/s | 4 % |
| Random 51 | 860 | 0.24 | 0.43 | 471 | 1 | 10.9 MB/s | 9.1 MB/s | 17 % |
| Random 52 | 441 | 0.86 | 0.19 | 169 | 2 | 9.0 MB/s | 9.7 MB/s | 7 % |
| Random 53 | 1172 | 0.33 | 0.08 | 735 | 1 | 7.6 MB/s | 6.7 MB/s | 12 % |
| Random 54 | 1179 | 0.25 | 0.81 | 17 | 2 | 1.8 MB/s | 1.9 MB/s | 10 % |
| Random 55 | 314 | 0.21 | 0.70 | 120 | 2 | 11.7 MB/s | 10.8 MB/s | 8 % |
| Random 56 | 1283 | 0.32 | 0.52 | 758 | 2 | 9.0 MB/s | 7.5 MB/s | 16 % |
| Random 57 | 241 | 0.41 | 0.27 | 173 | 1 | 7.2 MB/s | 6.8 MB/s | 5 % |
| Random 58 | 754 | 0.67 | 0.31 | 937 | 1 | 9.9 MB/s | 7.4 MB/s | 26 % |
| Random 59 | 1281 | 0.23 | 0.00 | 855 | 1 | 7.3 MB/s | 5.4 MB/s | 26 % |
| Random 60 | 433 | 0.51 | 0.32 | 855 | 2 | 9.0 MB/s | 6.7 MB/s | 25 % |
| Random 61 | 952 | 0.01 | 0.38 | 824 | 2 | 10.8 MB/s | 5.5 MB/s | 49 % |
| Random 62 | 1387 | 0.15 | 0.54 | 611 | 1 | 7.0 MB/s | 6.8 MB/s | 3 % |
| Random 63 | 1533 | 0.75 | 0.38 | 280 | 1 | 7.2 MB/s | 7.5 MB/s | 5 % |
| Random 64 | 1133 | 0.65 | 0.98 | 235 | 2 | 14.4 MB/s | 17.8 MB/s | 24 % |
| Random 65 | 945 | 0.02 | 0.73 | 269 | 1 | 11.9 MB/s | 12.1 MB/s | 1 % |
| Random 66 | 1502 | 0.34 | 0.84 | 741 | 2 | 10.1 MB/s | 9.7 MB/s | 4 % |
| Random 67 | 1297 | 0.04 | 0.03 | 807 | 2 | 7.5 MB/s | 4.7 MB/s | 38 % |
| Random 68 | 1436 | 0.26 | 0.38 | 371 | 1 | 5.5 MB/s | 5.6 MB/s | 2 % |
| Random 69 | 1105 | 0.84 | 0.24 | 105 | 1 | 5.3 MB/s | 6.6 MB/s | 26 % |
| Random 70 | 1603 | 0.08 | 0.60 | 872 | 1 | 7.1 MB/s | 6.0 MB/s | 16 % |
| Random 71 | 1291 | 0.84 | 0.37 | 646 | 2 | 10.0 MB/s | 11.0 MB/s | 10 % |
| Random 72 | 1048 | 0.69 | 0.85 | 577 | 1 | 9.7 MB/s | 19.3 MB/s | 100 % |
| Random 73 | 515 | 0.22 | 0.58 | 247 | 2 | 10.8 MB/s | 10.2 MB/s | 6 % |
| Random 74 | 665 | 0.49 | 0.72 | 588 | 2 | 14.2 MB/s | 17.5 MB/s | 23 % |
| Random 75 | 1410 | 0.56 | 0.95 | 288 | 1 | 11.3 MB/s | 13.7 MB/s | 21 % |
| Random 76 | 885 | 0.59 | 0.20 | 188 | 1 | 9.0 MB/s | 8.1 MB/s | 10 % |
| Random 77 | 1446 | 0.43 | 0.69 | 552 | 1 | 8.3 MB/s | 8.8 MB/s | 6 % |
| Random 78 | 189 | 0.26 | 0.29 | 938 | 2 | 4.9 MB/s | 5.2 MB/s | 6 % |
| Random 79 | 457 | 0.79 | 0.83 | 375 | 2 | 18.4 MB/s | 24.7 MB/s | 34 % |
| Random 80 | 653 | 0.30 | 0.32 | 4 | 2 | 0.9 MB/s | 1.1 MB/s | 21 % |
| Random 81 | 1292 | 0.26 | 0.62 | 452 | 2 | 8.4 MB/s | 7.6 MB/s | 9 % |
| Random 82 | 414 | 0.39 | 0.62 | 463 | 1 | 10.8 MB/s | 12.2 MB/s | 13 % |
| Random 83 | 1120 | 0.40 | 0.68 | 551 | 2 | 10.2 MB/s | 11.0 MB/s | 8 % |
| Random 84 | 1604 | 0.01 | 0.67 | 446 | 2 | 7.1 MB/s | 5.6 MB/s | 21 % |
| Random 85 | 1245 | 0.51 | 1.00 | 838 | 2 | 12.0 MB/s | 18.3 MB/s | 52 % |
| Random 86 | 1303 | 0.46 | 0.17 | 784 | 2 | 9.4 MB/s | 6.7 MB/s | 29 % |
| Random 87 | 990 | 0.14 | 0.71 | 179 | 2 | 9.8 MB/s | 9.8 MB/s | 0 % |
| Random 88 | 386 | 0.23 | 0.92 | 298 | 2 | 19.4 MB/s | 21.1 MB/s | 9 % |
| Random 89 | 554 | 0.79 | 0.48 | 291 | 2 | 12.6 MB/s | 14.1 MB/s | 12 % |
| Random 90 | 1570 | 0.34 | 0.38 | 58 | 1 | 2.0 MB/s | 2.3 MB/s | 12 % |
| Random 91 | 1366 | 0.26 | 0.05 | 627 | 1 | 6.4 MB/s | 5.4 MB/s | 15 % |
| Random 92 | 1555 | 0.62 | 0.77 | 955 | 2 | 10.8 MB/s | 10.8 MB/s | 0 % |
| Random 93 | 214 | 0.50 | 0.68 | 844 | 2 | 5.4 MB/s | 11.3 MB/s | 109 % |

Data for Convex C240 (Figure 5.9) — Part 3

| Workload | un | seq | read | sz | proc | Measured | Predicted | % Err |
|---|---|---|---|---|---|---|---|---|
| Random 94 | 594 | 0.81 | 0.36 | 81 | 1 | 8.3 MB/s | 7.9 MB/s | 5 % |
| Random 95 | 482 | 0.21 | 0.96 | 827 | 2 | 11.0 MB/s | 18.2 MB/s | 65 % |
| Random 96 | 748 | 0.21 | 0.48 | 216 | 1 | 9.7 MB/s | 8.8 MB/s | 9 % |
| Random 97 | 1272 | 0.65 | 0.83 | 43 | 1 | 5.1 MB/s | 4.2 MB/s | 16 % |
| Random 98 | 778 | 0.17 | 0.07 | 739 | 2 | 9.4 MB/s | 6.1 MB/s | 36 % |
| Random 99 | 977 | 0.74 | 0.25 | 36 | 2 | 3.7 MB/s | 3.3 MB/s | 9 % |

**Table A.4: Raw data for Convex C240 scatter plot.** This table gives the data used to plot the current benchmark prediction points in Figures 5.9. Most points of high error have sizeMean over 300 KB.

| System | Workload | Measured | Predicted | % Error |
|---|---|---|---|---|
| SPARCstation 1+ | workstation | 1.8 MB/s | 1.7 MB/s | 6 % |
| | large_utility | 2.1 MB/s | 2.0 MB/s | 2 % |
| | scientific_write | 0.46 MB/s | 0.36 MB/s | 20 % |
| | scientific_read | 0.59 MB/s | 0.54 MB/s | 9 % |
| | database | 0.10 MB/s | 0.15 MB/s | 44 % |
| DECstation 5000/200 | workstation | 3.8 MB/s | 3.2 MB/s | 15 % |
| | large_utility | 2.5 MB/s | 2.0 MB/s | 17 % |
| | scientific_write | 0.41 MB/s | 0.46 MB/s | 10 % |
| | scientific_read | 0.40 MB/s | 0.38 MB/s | 5 % |
| | database | 0.30 MB/s | 0.33 MB/s | 7 % |
| HP 730 | workstation | 11.5 MB/s | 9.8 MB/s | 15 % |
| | large_utility | 0.54 MB/s | 0.47 MB/s | 13 % |
| | scientific_write | 0.53 MB/s | 0.77 MB/s | 45 % |
| | scientific_read | 1.2 MB/s | 1.2 MB/s | 6 % |
| | database | 0.13 MB/s | 0.14 MB/s | 5 % |
| Convex C240 | workstation | 4.2 MB/s | 3.7 MB/s | 12 % |
| | large_utility | 6.5 MB/s | 4.2 MB/s | 36 % |
| | scientific_write | 6.1 MB/s | 6.4 MB/s | 4 % |
| | scientific_read | 15.5 MB/s | 17.2 MB/s | 11 % |
| | database | 0.75 MB/s | 0.73 MB/s | 2 % |

**Table A.5: Raw data for ratio prediction.** This table gives the raw data used in calculating the ratios of Figure 5.13.