
Silicon Graphics Appendix

Graphics Overview

Vectors/Sec
Triangles/Sec
Polygons/Sec
Entry (8 bit color)
375K
36K
10K
Entry R4000 Indigo
375K
36K
10K
Entry 4D/35
92K
16K
6K
Entry 4D/30
92K
16K
6K
Entry Indigo
230K
20K
68K
XS (8 bit color,
260K
76K

29K
opt. Z-buf)
XS (24 bit color,
260K
76K
29K
opt. Z-buf)
TG (24 bit color,
220K
40K
29K
24 bit Z-buf)
Elan (24 bit color,
1M
270K
110K
24 bit Z-buf)
VGX 4D (196 bit,
1M
1.1M
180K
48 bit color,
24 bit Z-bus)
VGX Crimson
12M
1.1M
200K
VGXT (48 bit color,
1M
1.1M
180K
50 Mpix TF, 24 bit
Z-buf)
VGXT Crimson

1M 1.1M 200K

Systems Overview

4D/480 4D/440 4D/420
CPU 8x40 MHz 43x40 MHz 2x40 MHz Performance: MIPS 286 143 72 MFLOPS 70 42 23 SPECmark89 166 106 54 Server Price \$164,900

\$94,900
\$64,900
Graphics Price: VGX
\$194,900
\$124,900
\$ 94,900
VGXT
\$224,900
\$154,900
\$184,900

Systems Overview (continued)

	4D/380 4D/310	4D/340	4D/320	
CPU	8x33 MHz 1x33 MHz	4x33 MHz	2x33 MHz	
Performance:				
MIPS	234	117	59	30
MFLOPS	60	36	20	5.1
SPECmark89	128	84	47	25
Server Price	\$124,900 \$24,900	\$74,900	\$54,900	
Graphics Price:				
VGX	\$154,900 \$49,900	\$104,900	\$84,900	
VGXT	\$184,900 \$79,900	\$134,900	\$114,900	

	Crimson Indigo	R4 Indigo	4D/35	4D/30
CPU	50 MHz 33 MHz	50 MHz	36 MHz	30 MHz
Performance:				
MIPS	85 30	85	33	27
MFLOPS	16 4.2	16	6	4.7
SPECmark89	70 26	70	31	25
Server Price	\$27,900 \$6,400	\$11,395	\$10,900	N/A
Graphics Price:				
Entry	\$29,900 \$7,995	\$12,485	\$18,000	\$15,000
XS	\$36,900 \$11,495	\$16,495	N/A	N/A
XS24	\$38,900 \$15,000	\$19,995	N/A	N/A
TG	N/A N/A	N/A	\$28,000	\$25,000
Elan	\$42,900 \$27,000	\$32,000	\$33,000	\$30,000
VGX	\$69,900 N/A	N/A	N/A	N/A
VGXT	\$99,900 N/A	N/A	N/A	N/A

CPU:

Configurations listed for prices are for 8 MB memory for 4D/310 and higher. 16 MB configuration is used for the Crimson line, for the 4D/35 line except the server configuration of the 4D/35S; and the Indigo lines (R3000 and R4000).

System disk not included for any configurations.

Crimson performance numbers assume R4000 compilers available June 1992.

4D/320 and higher performance MFLOPS figures are 1000x1000 DP Linpack.

4D/35 and below performance MFLOPS figures are 100.100 DP Linpack.

MIPS are VAX Dhrystone MIPS.

Graphics:

VEC = 10 pixel connected (i.e.; polyline), 24 bit color, 3D, arbitrarily rotated Vectors per second. VGX vectors are anti-aliased.

Pol = 10x10=100 pixel 24 bit, unlighted, gouraud-shaded, Z-buffered, arbitrarily oriented triangles per second.

Tri = 10x10=50 pixel mesh, 24 bit color, unlighted, flat-shaded, Z-buffered, arbitrarily-oriented triangles per second.

Iris Indigo Entry-level graphics support software Z-buffering.

Entry-level Color Desktop System Comparisons

HP 715/33
SGI Indigo 3000
SPECint92
24
22
SPECfp92
45
24
SPECmark89
46
26
MIPS
41
30
MFLOPS
8.6
4.2
(Linpack DP)
Processor
PA-RISC
R3000A
Clock rate
33 MHz
33 MHz
Cache size
54 KB/64 KB
32 KB/32 KB
(ins/data)

X11 Perf

7633

5163

2D/3D

610

450/230

vec/sec (K)

Memory

8/192 MB

16/96 MB

capacity

Internal disk

2 GB

1.36 GB

capacity

Total disk

69.7 GB

7.6 GB

capacity

Internal bus

EISA

GIO

of slots

1 (opt)

2

RAM pricing

\$100/MB

\$156/MB @

\$175/MB

08 MB

(16 Mbit)
\$109/MB @

32 MB

Disk pricing
\$4.19/MB @
\$5.79/MB @

525 MB

432 MB

\$4.00/MB @
\$3.66/MB @

1 GB/SE

1.2 GB

Warranty

12 os

3 mos

List price for
\$6,690

\$8,000
Equivalent

17c/16/

16c/16/
configs.

dskls

dskls
Graphics

Intr

Virtual-24

SPECint92/\$1,000

3.6

2.8

SPECfp92/\$1,000

6.5

3.0

SPECmark89/\$1,000

6.8

3.3

Higher is better!

Mid-range Desktop System Comparisons

HP
SGI
715/50
Indigo
725/50
4000
SPECint92
36
57
SPECfp92
72
70
SPECmark89
69
70
MIPS
62
85
MFLOPS
13
16
(Linpack DP)
Processor
PA-RISC
R4000SC
Clock rate
50 MHz
50 MHz

Cache size
64 KB/64 KB
8 KB/8 KB
(ins/data)
X11 Perf
11,190
6384
2D/3D
920
600/480
vec/sec (K)
Memory
256 MB
16/384 MB
capacity
Internal disk
2 GB
1.4 GB
capacity
Total disk
69.7/239.8 GB
7.6 GB
capacity
Internal bus
EISA
GIO-32
of slots
1/4
2
RAM pricing
\$125/MB

\$94/MB
\$175/MB
(16 Mbit)
Disk pricing
\$4.19/MB @
\$5.79/MB @
525 MB
`432 MB
\$4.00/MB @
\$3.66/MB @
1 GB/SE
1.2 GB
Warranty
12 mos
3 mos
List price for
\$15,590/\$20,490
\$22,495
Equivalent Configs
19C/32/525
19C/32/432
Graphics
CRX
XS
SPECint92/\$1,000
2.3/1.8
2.5

SPECfp92/\$1,000

4.6/3.5

2.7

SPECmark89/\$1,000

4.4/3.4

3.1

Higher is better!

High-performance Desktop System Comparisons

HP
HP
SGI
730
735
Indigo/4000
SPECint92
51
80
57
SPECfp92
85
150
61
SPECmark89
86
147
70
MIPS
57.9
124
85
MFLOPS
23.7
40
16
(Linpack DP)

Processor
PA-RISC
PA-RISC
R4000SC
Clock rate
66 MHz
99 MHz
50 MHz
Cache size
128 KB/256 KB
256 KB/256 KB
8 KB/8 KB (ins/data)
X11 Perf
10,904
19,920
6384
2D/3D
1180
1160
600/480
vec/sec (K)
Memory
128 MB
400 MB
384 MB
capacity
Internal disk
840 MB
2 GB
1.4 GB

capacity
Total disk
64 GB
126.4 GB
7.6 GB
capacity
Internal bus
EISA
EISA
GIO-32 (propr)
of slots
1
1
2
RAM pricing
\$125 MB
\$125 MB
\$94/MB
\$175/MB
(16 Mbit)
Disk pricing
\$4.19/MB @
\$4.19/MB A
\$5.79/MB A
525 MB
5125 MB
432 MB

\$4.00/MB @

\$3.66/MB @

1 GB/SE

1 2 GB

\$4.70/MB @

1 GB/FW

Warranty

12 mos

12 mos

3 mos

List price for

\$31,400

\$37,390

\$22,495

Equivalent

(19"/32 MB/

(19"/32 MB/

(19"/32 MB/
configs

424 MB)

525 MB)

424 MB)

Graphics

CRX

CRX

XS

SPECint92/

1.6

2.0

2.5

\$1,000

SPECfp92/

2.7

3.7

2.7

\$1,000

SPECmark89/

2.7

3.5

3.1

\$1,000

Higher is better!

High-performance Expandable System Comparisons

HP
HP
SGI
750
755
Crimson
SPECint92
51
79
57
SPECfp92
85
150
61
SPECmark89
86
147
70
MIPS
76.7
124
85
MFLOPS
23.7
38
16.3
(Linpack DP)

Processor
PA-RISC
PA-RISC
R4000
Clock rate
66 MHz
99 MHz
50 MHz
Cache size
256 KB/256 KB
256 KB/256 KB
8 KB/8 KB
X11 Perf
10,904
19,120
6384
2D/3D
1,180
1,160
250/250
vec/sec (K)
Memory
64/384 MB
64/768 MB
16/256 MB
capacity
Internal disk
2.6 GB
4 GB
3.6 GB

capacity
Total disk
236 GB
297.5 GB
48 GB
capacity
Internal bus
EISA
EISA
VME
of slots
4
4
4
RAM pricing
\$125/MB
\$125/MB
\$500/MB @
16 MB
\$375/MB @
64 MB
Disk pricing
\$3.85/MB @
\$3.45/MB @
\$9.21/MB @

1.3 GB
2 GB/SE
380 MB
\$4.15/MB @
\$5.70/MB @
2 GB/FW
1.2 GB
\$5.19/MB @
1.6 GB
Warranty
12 mos
12 mos
3 mos
List price for
\$55,650
\$58,990
\$59,400
Equivalent
(19"/64 MB/
(19"/64 MB/
(19"/64 MB/
configs
1 GB)
2 GB)

1.6 GB)
Graphics
CRX
CRX
XS
SPECint92/
0.9
1.2
1.0
\$1,000
SPECfp92/
1.5
2.3
1.0
\$1,000
SPECmark89/
1.5
2.2
1.2
\$1,000
Higher is better!