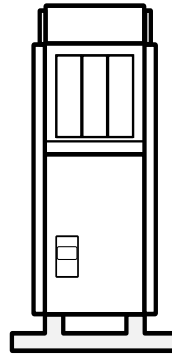
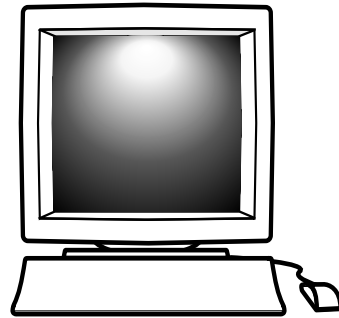
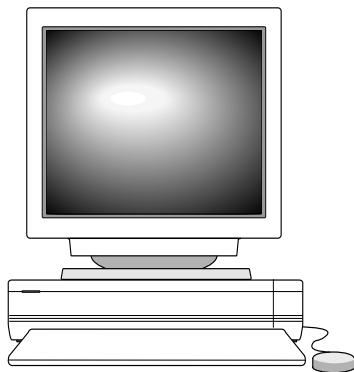


# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**DEC 3000 Model 500 AXP Workstation**



**DEC 3000 Model 400 AXP Workstation**

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



## Description

X11perf is a public domain benchmark that measures window management performance as well as traditional 2D graphics performance. X11perf includes tests for the time it takes to create and map windows, to map a pre-existing set of windows onto the screen, and to rearrange windows. Additionally, X11perf measures graphics performance frequently used by X applications. Such operations include CopyPlane (used by the DEC PostScript® previewer), scrolling (used in text windows), and various stipples and tiles (used for CAD and half-toning, respectively).

X11perf should be used to analyze particular strengths and weaknesses of servers. It is most useful when used by a server developer who wants to analyze and improve a server. While X11perf can be used as a benchmark, it was intended to be a performance testing tool. No single number or small set of numbers can sufficiently characterize how an X implementation will perform on all applications. However, if you know your application, you may be able to use the numbers X11perf reports to predict your application's performance on a given X implementation.

*Note: Both the DEC 3000 Model 400 AXP™ and DEC 3000 Model 500 AXP workstations ran DEC OpenVMS™ FT4 operating system and X11perf V1.3 Digital has an ongoing program of performance engineering across all products. As system tuning and software optimizations continue, Digital expects the performance of its workstations to increase. As more benchmark results become available, Digital will publish reports containing the new and updated benchmark data.*

## Results

X11perf results for the DEC 3000 Model 400 AXP and DEC 3000 Model 500 AXP workstations appear on the following pages.

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 1 DEC 3000 Model 400 X11perf results**

| <b>Result</b> | <b>Operation</b>                          |
|---------------|---|
| 1250000.0     | Dot                                       |
| 1060000.0     | 1x1 rectangle                             |
| 333000.0      | 10x10 rectangle                           |
| 7450.0        | 100x100 rectangle                         |
| 324.0         | 500x500 rectangle                         |
| 922000.0      | 1x1 stippled rectangle                    |
| 353000.0      | 10x10 stippled rectangle                  |
| 7520.0        | 100x100 stippled rectangle                |
| 324.0         | 500x500 stippled rectangle                |
| 897000.0      | 1x1 opaque stippled rectangle             |
| 250000.0      | 10x10 opaque stippled rectangle           |
| 6240.0        | 100x100 opaque stippled rectangle         |
| 314.0         | 500x500 opaque stippled rectangle         |
| 897000.0      | 1x1 4x4 tiled rectangle                   |
| 249000.0      | 10x10 4x4 tiled rectangle                 |
| 6790.0        | 100x100 4x4 tiled rectangle               |
| 319.0         | 500x500 4x4 tiled rectangle               |
| 196000.0      | 1x1 161x145 stippled rectangle            |
| 15400.0       | 10x10 161x145 stippled rectangle          |
| 174.0         | 100x100 161x145 stippled rectangle        |
| 6.9           | 500x500 161x145 stippled rectangle        |
| 194000.0      | 1x1 161x145 opaque stippled rectangle     |
| 15300.0       | 10x10 161x145 opaque stippled rectangle   |
| 174.0         | 100x100 161x145 opaque stippled rectangle |
| 6.9           | 500x500 161x145 opaque stippled rectangle |
| 136000.0      | 1x1 161x145 tiled rectangle               |
| 12600.0       | 10x10 161x145 tiled rectangle             |
| 265.0         | 100x100 161x145 tiled rectangle           |
| 11.5          | 500x500 161x145 tiled rectangle           |
| 151000.0      | 1x1 216x208 tiled rectangle               |
| 13600.0       | 10x10 216x208 tiled rectangle             |
| 286.0         | 100x100 216x208 tiled rectangle           |
| 12.3          | 500x500 216x208 tiled rectangle           |
| 747000.0      | 1-pixel line segment                      |
| 428000.0      | 10-pixel line segment                     |
| 71700.0       | 100-pixel line segment                    |
| 15200.0       | 500-pixel line segment                    |
| 68300.0       | 100-pixel line segment (1 kid)            |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 1 DEC 3000 Model 400 X11perf Results (continued)**

| <b>Result</b> | <b>Operation</b>                    |
|---------------|-------------------------------------|
| 71000.0       | 100-pixel line segment (2 kids)     |
| 67800.0       | 100-pixel line segment (3 kids)     |
| 430000.0      | 10-pixel dashed segment             |
| 71500.0       | 100-pixel dashed segment            |
| 71500.0       | 100-pixel double-dashed segment     |
| 654000.0      | 10-pixel horizontal line segment    |
| 464000.0      | 100-pixel horizontal line segment   |
| 143000.0      | 500-pixel horizontal line segment   |
| 405000.0      | 10-pixel vertical line segment      |
| 66300.0       | 100-pixel vertical line segment     |
| 14100.0       | 500-pixel vertical line segment     |
| 80600.0       | 10x1 wide horizontal line segment   |
| 25800.0       | 100x10 wide horizontal line segment |
| 2540.0        | 500x50 wide horizontal line segment |
| 74800.0       | 10x1 wide vertical line segment     |
| 19700.0       | 100x10 wide vertical line segment   |
| 2170.0        | 500x50 wide vertical line segment   |
| 1000000.0     | 1-pixel line                        |
| 564000.0      | 10-pixel line                       |
| 74300.0       | 100-pixel line                      |
| 15400.0       | 500-pixel line                      |
| 536000.0      | 10-pixel dashed line                |
| 74000.0       | 100-pixel dashed line               |
| 73900.0       | 100-pixel double-dashed line        |
| 29400.0       | 10x1 wide line                      |
| 10600.0       | 100x10 wide line                    |
| 2080.0        | 500x50 wide line                    |
| 3640.0        | 100x10 wide dashed line             |
| 4010.0        | 100x10 wide double-dashed line      |
| 98200.0       | 10x10 rectangle outline             |
| 29100.0       | 100x100 rectangle outline           |
| 5540.0        | 500x500 rectangle outline           |
| 161000.0      | 10x10 wide rectangle outline        |
| 13000.0       | 100x100 wide rectangle outline      |
| 731.0         | 500x500 wide rectangle outline      |
| 321000.0      | 1-pixel circle                      |
| 205000.0      | 10-pixel circle                     |
| 9440.0        | 100-pixel circle                    |
| 2030.0        | 500-pixel circle                    |
| 1980.0        | 100-pixel dashed circle             |
| 1370.0        | 100-pixel double-dashed circle      |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 1 DEC 3000 Model 400 X11perf Results (continued)**

| Result   | Operation                            |
|----------|--------------------------------------|
| 226000.0 | 10-pixel wide circle                 |
| 3230.0   | 100-pixel wide circle                |
| 529.0    | 500-pixel wide circle                |
| 6.0      | 100-pixel wide dashed circle         |
| 107.0    | 100-pixel wide double-dashed circle  |
| 41000.0  | 10-pixel partial circle              |
| 10900.0  | 100-pixel partial circle             |
| 1940.0   | 10-pixel wide partial circle         |
| 912.0    | 100-pixel wide partial circle        |
| 962000.0 | 1-pixel solid circle                 |
| 240000.0 | 10-pixel solid circle                |
| 8170.0   | 100-pixel solid circle               |
| 401.0    | 500-pixel solid circle               |
| 26000.0  | 10-pixel fill chord partial circle   |
| 8400.0   | 100-pixel fill chord partial circle  |
| 24700.0  | 10-pixel fill slice partial circle   |
| 8650.0   | 100-pixel fill slice partial circle  |
| 59300.0  | 10-pixel ellipse                     |
| 10200.0  | 100-pixel ellipse                    |
| 2220.0   | 500-pixel ellipse                    |
| 2430.0   | 100-pixel dashed ellipse             |
| 1640.0   | 100-pixel double-dashed ellipse      |
| 26100.0  | 10-pixel wide ellipse                |
| 4330.0   | 100-pixel wide ellipse               |
| 716.0    | 500-pixel wide ellipse               |
| 4.9      | 100-pixel wide dashed ellipse        |
| 5.5      | 100-pixel wide double-dashed ellipse |
| 38800.0  | 10-pixel partial ellipse             |
| 12700.0  | 100-pixel partial ellipse            |
| 1890.0   | 10-pixel wide partial ellipse        |
| 401.0    | 100-pixel wide partial ellipse       |
| 117000.0 | 10-pixel filled ellipse              |
| 14000.0  | 100-pixel filled ellipse             |
| 785.0    | 500-pixel filled ellipse             |
| 26800.0  | 10-pixel fill chord partial ellipse  |
| 12600.0  | 100-pixel fill chord partial ellipse |
| 25400.0  | 10-pixel fill slice partial ellipse  |
| 12100.0  | 100-pixel fill slice partial ellipse |
| 41900.0  | Fill 1x1 equivalent triangle         |
| 31300.0  | Fill 10x10 equivalent triangle       |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 1 DEC 3000 Model 400 X11perf Results (continued)**

| <b>Result</b> | <b>Operation</b>                               |
|---------------|--|
| 5820.0        | Fill 100x100 equivalent triangle               |
| 35000.0       | Fill 10x10 trapezoid                           |
| 5680.0        | Fill 100x100 trapezoid                         |
| 15700.0       | Fill 10x10 stippled trapezoid                  |
| 3800.0        | Fill 100x100 stippled trapezoid                |
| 16500.0       | Fill 10x10 opaque stippled trapezoid           |
| 3470.0        | Fill 100x100 opaque stippled trapezoid         |
| 16900.0       | Fill 10x10 tiled trapezoid                     |
| 3660.0        | Fill 100x100 tiled trapezoid                   |
| 12700.0       | Fill 10x10 161x145 stippled trapezoid          |
| 2020.0        | Fill 100x100 161x145 stippled trapezoid        |
| 13200.0       | Fill 10x10 161x145 opaque stippled trapezoid   |
| 2160.0        | Fill 100x100 161x145 opaque stippled trapezoid |
| 12200.0       | Fill 10x10 161x145 tiled trapezoid             |
| 1490.0        | Fill 100x100 161x145 tiled trapezoid           |
| 12100.0       | Fill 10x10 216x208 tiled trapezoid             |
| 1620.0        | Fill 100x100 216x208 tiled trapezoid           |
| 9980.0        | Fill 10x10 equivalent complex polygon          |
| 1860.0        | Fill 100x100 equivalent complex polygons       |
| 343000.0      | Char in 80-char line (TR 10)                   |
| 187000.0      | Char in 30-char line (TR 24)                   |
| 275000.0      | Char in 80-char image line (TR 10)             |
| 106000.0      | Char in 30-char image line (TR 24)             |
| 12900.0       | Scroll 10x10 pixels                            |
| 2120.0        | Scroll 100x100 pixels                          |
| 113.0         | Scroll 500x500 pixels                          |
| 12800.0       | Copy 10x10 from window to window               |
| 2120.0        | Copy 100x100 from window to window             |
| 112.0         | Copy 500x500 from window to window             |
| 13400.0       | Copy 10x10 from pixmap to window               |
| 2110.0        | Copy 100x100 from pixmap to window             |
| 115.0         | Copy 500x500 from pixmap to window             |
| 12400.0       | Copy 10x10 from window to pixmap               |
| 2090.0        | Copy 100x100 from window to pixmap             |
| 112.0         | Copy 500x500 from window to pixmap             |
| 14500.0       | Copy 10x10 from pixmap to pixmap               |
| 2150.0        | Copy 100x100 from pixmap to pixmap             |
| 112.0         | Copy 500x500 from pixmap to pixmap             |
| 18600.0       | Copy 10x10 1-bit deep plane                    |
| 4590.0        | Copy 100x100 1-bit deep plane                  |
| 306.0         | Copy 500x500 1-bit deep plane                  |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 1 DEC 3000 Model 400 X11perf Results (continued)

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| Result   | Operation                            |
|----------|--------------------------------------|
| 8830.0   | PutImage 10x10 square                |
| 538.0    | PutImage 100x100 square              |
| 22.1     | PutImage 500x500 square              |
| 970.0    | GetImage 10x10 square                |
| 228.0    | GetImage 100x100 square              |
| 11.7     | GetImage 500x500 square              |
| 103000.0 | X protocol NoOperation               |
| 1080.0   | GetAtomName                          |
| 1090.0   | GetProperty                          |
| 22900.0  | Change graphics context              |
| 6230.0   | Create and map subwindows (4 kids)   |
| 7670.0   | Create and map subwindows (16 kids)  |
| 7520.0   | Create and map subwindows (25 kids)  |
| 7480.0   | Create and map subwindows (50 kids)  |
| 7400.0   | Create and map subwindows (75 kids)  |
| 7260.0   | Create and map subwindows (100 kids) |
| 6330.0   | Create and map subwindows (200 kids) |
| 10900.0  | Create unmapped window (4 kids)      |
| 11100.0  | Create unmapped window (16 kids)     |
| 10600.0  | Create unmapped window (25 kids)     |
| 10600.0  | Create unmapped window (50 kids)     |
| 10900.0  | Create unmapped window (75 kids)     |
| 11000.0  | Create unmapped window (100 kids)    |
| 11000.0  | Create unmapped window (200 kids)    |
| 12500.0  | Map window via parent (4 kids)       |
| 23000.0  | Map window via parent (16 kids)      |
| 25700.0  | Map window via parent (25 kids)      |
| 26900.0  | Map window via parent (50 kids)      |
| 27500.0  | Map window via parent (75 kids)      |
| 28300.0  | Map window via parent (100 kids)     |
| 29100.0  | Map window via parent (200 kids)     |
| 28500.0  | Unmap window via parent (4 kids)     |
| 71300.0  | Unmap window via parent (16 kids)    |
| 86900.0  | Unmap window via parent (25 kids)    |
| 107000.0 | Unmap window via parent (50 kids)    |
| 119000.0 | Unmap window via parent (75 kids)    |
| 126000.0 | Unmap window via parent (100 kids)   |
| 133000.0 | Unmap window via parent (200 kids)   |
| 12200.0  | Destroy window via parent (4 kids)   |
| 19300.0  | Destroy window via parent (16 kids)  |

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# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 1 DEC 3000 Model 400 X11perf Results (continued)**

| <b>Result</b> | <b>Operation</b>                        |
|---------------|---|
| 20600.0       | Destroy window via parent (25 kids)     |
| 21900.0       | Destroy window via parent (50 kids)     |
| 22300.0       | Destroy window via parent (75 kids)     |
| 22400.0       | Destroy window via parent (100 kids)    |
| 22500.0       | Destroy window via parent (200 kids)    |
| 4470.0        | Hide/expose window via popup (4 kids)   |
| 8980.0        | Hide/expose window via popup (16 kids)  |
| 10100.0       | Hide/expose window via popup (25 kids)  |
| 11000.0       | Hide/expose window via popup (50 kids)  |
| 11400.0       | Hide/expose window via popup (75 kids)  |
| 11800.0       | Hide/expose window via popup (100 kids) |
| 12300.0       | Hide/expose window via popup (200 kids) |
| 2680.0        | Move window (4 kids)                    |
| 1980.0        | Move window (16 kids)                   |
| 1670.0        | Move window (25 kids)                   |
| 1260.0        | Move window (50 kids)                   |
| 1000.0        | Move window (75 kids)                   |
| 848.0         | Move window (100 kids)                  |
| 525.0         | Move window (200 kids)                  |
| 23000.0       | Moved unmapped window (4 kids)          |
| 22700.0       | Moved unmapped window (16 kids)         |
| 22700.0       | Moved unmapped window (25 kids)         |
| 22600.0       | Moved unmapped window (50 kids)         |
| 22600.0       | Moved unmapped window (75 kids)         |
| 22600.0       | Moved unmapped window (100 kids)        |
| 22500.0       | Moved unmapped window (200 kids)        |
| 9520.0        | Move window via parent (4 kids)         |
| 21400.0       | Move window via parent (16 kids)        |
| 25200.0       | Move window via parent (25 kids)        |
| 30000.0       | Move window via parent (50 kids)        |
| 32100.0       | Move window via parent (75 kids)        |
| 33200.0       | Move window via parent (100 kids)       |
| 35000.0       | Move window via parent (200 kids)       |
| 2790.0        | Resize window (4 kids)                  |
| 2210.0        | Resize window (16 kids)                 |
| 1910.0        | Resize window (25 kids)                 |
| 1480.0        | Resize window (50 kids)                 |
| 1190.0        | Resize window (75 kids)                 |
| 1010.0        | Resize window (100 kids)                |
| 642.0         | Resize window (200 kids)                |
| 21100.0       | Resize unmapped window (4 kids)         |



# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 1 DEC 3000 Model 400 X11perf Results (continued)

| Result  | Operation                            |
|---------|--------------------------------------|
| 20800.0 | Resize unmapped window (16 kids)     |
| 20800.0 | Resize unmapped window (25 kids)     |
| 20700.0 | Resize unmapped window (50 kids)     |
| 20800.0 | Resize unmapped window (75 kids)     |
| 20700.0 | Resize unmapped window (100 kids)    |
| 20600.0 | Resize unmapped window (200 kids)    |
| 1460.0  | Circulate window (4 kids)            |
| 986.0   | Circulate window (16 kids)           |
| 916.0   | Circulate window (25 kids)           |
| 832.0   | Circulate window (50 kids)           |
| 783.0   | Circulate window (75 kids)           |
| 734.0   | Circulate window (100 kids)          |
| 599.0   | Circulate window (200 kids)          |
| 67900.0 | Circulate Unmapped window (4 kids)   |
| 36800.0 | Circulate Unmapped window (16 kids)  |
| 30100.0 | Circulate Unmapped window (25 kids)  |
| 23300.0 | Circulate Unmapped window (50 kids)  |
| 18600.0 | Circulate Unmapped window (75 kids)  |
| 15300.0 | Circulate Unmapped window (100 kids) |
| 8900.0  | Circulate Unmapped window (200 kids) |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 2 DEC 3000 Model 500 X11perf Results**

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| <b>Result</b> | <b>Operation</b>                          |
|---------------|---|
| 1430000.0     | Dot                                       |
| 1190000.0     | 1x1 rectangle                             |
| 381000.0      | 10x10 rectangle                           |
| 8460.0        | 100x100 rectangle                         |
| 368.0         | 500x500 rectangle                         |
| 1040000.0     | 1x1 stippled rectangle                    |
| 403000.0      | 10x10 stippled rectangle                  |
| 8540.0        | 100x100 stippled rectangle                |
| 367.0         | 500x500 stippled rectangle                |
| 1040000.0     | 1x1 opaque stippled rectangle             |
| 285000.0      | 10x10 opaque stippled rectangle           |
| 7070.0        | 100x100 opaque stippled rectangle         |
| 356.0         | 500x500 opaque stippled rectangle         |
| 1010000.0     | 1x1 4x4 tiled rectangle                   |
| 284000.0      | 10x10 4x4 tiled rectangle                 |
| 7700.0        | 100x100 4x4 tiled rectangle               |
| 362.0         | 500x500 4x4 tiled rectangle               |
| 220000.0      | 1x1 161x145 stippled rectangle            |
| 17400.0       | 10x10 161x145 stippled rectangle          |
| 197.0         | 100x100 161x145 stippled rectangle        |
| 7.8           | 500x500 161x145 stippled rectangle        |
| 220000.0      | 1x1 161x145 opaque stippled rectangle     |
| 17400.0       | 10x10 161x145 opaque stippled rectangle   |
| 197.0         | 100x100 161x145 opaque stippled rectangle |
| 7.8           | 500x500 161x145 opaque stippled rectangle |
| 153000.0      | 1x1 161x145 tiled rectangle               |
| 14200.0       | 10x10 161x145 tiled rectangle             |
| 301.0         | 100x100 161x145 tiled rectangle           |
| 13.1          | 500x500 161x145 tiled rectangle           |
| 170000.0      | 1x1 216x208 tiled rectangle               |
| 15400.0       | 10x10 216x208 tiled rectangle             |
| 324.0         | 100x100 216x208 tiled rectangle           |
| 13.9          | 500x500 216x208 tiled rectangle           |
| 863000.0      | 1-pixel line segment                      |
| 490000.0      | 10-pixel line segment                     |
| 81500.0       | 100-pixel line segment                    |
| 17300.0       | 500-pixel line segment                    |
| 77600.0       | 100-pixel line segment (1 kid)            |
| 80600.0       | 100-pixel line segment (2 kids)           |
| 76900.0       | 100-pixel line segment (3 kids)           |
| 492000.0      | 10-pixel dashed segment                   |

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# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 2 DEC 3000 Model 500 X11perf Results (continued)

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| Result    | Operation                           |
|-----------|-------------------------------------|
| 81200.0   | 100-pixel dashed segment            |
| 81200.0   | 100-pixel double-dashed segment     |
| 756000.0  | 10-pixel horizontal line segment    |
| 532000.0  | 100-pixel horizontal line segment   |
| 163000.0  | 500-pixel horizontal line segment   |
| 464000.0  | 10-pixel vertical line segment      |
| 75300.0   | 100-pixel vertical line segment     |
| 15900.0   | 500-pixel vertical line segment     |
| 96200.0   | 10x1 wide horizontal line segment   |
| 29700.0   | 100x10 wide horizontal line segment |
| 2890.0    | 500x50 wide horizontal line segment |
| 89100.0   | 10x1 wide vertical line segment     |
| 22600.0   | 100x10 wide vertical line segment   |
| 2470.0    | 500x50 wide vertical line segment   |
| 1150000.0 | 1-pixel line                        |
| 636000.0  | 10-pixel line                       |
| 84400.0   | 100-pixel line                      |
| 17400.0   | 500-pixel line                      |
| 612000.0  | 10-pixel dashed line                |
| 84000.0   | 100-pixel dashed line               |
| 84000.0   | 100-pixel double-dashed line        |
| 33800.0   | 10x1 wide line                      |
| 12100.0   | 100x10 wide line                    |
| 2370.0    | 500x50 wide line                    |
| 4140.0    | 100x10 wide dashed line             |
| 4570.0    | 100x10 wide double-dashed line      |
| 111000.0  | 10x10 rectangle outline             |
| 33100.0   | 100x100 rectangle outline           |
| 6300.0    | 500x500 rectangle outline           |
| 179000.0  | 10x10 wide rectangle outline        |
| 14800.0   | 100x100 wide rectangle outline      |
| 827.0     | 500x500 wide rectangle outline      |
| 367000.0  | 1-pixel circle                      |
| 234000.0  | 10-pixel circle                     |
| 10700.0   | 100-pixel circle                    |
| 2300.0    | 500-pixel circle                    |
| 2260.0    | 100-pixel dashed circle             |
| 1560.0    | 100-pixel double-dashed circle      |
| 259000.0  | 10-pixel wide circle                |
| 3650.0    | 100-pixel wide circle               |

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# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



**Table 2 DEC 3000 Model 500 X11perf Results (continued)**

| <b>Result</b> | <b>Operation</b>                     |
|---------------|--------------------------------------|
| 601.0         | 500-pixel wide circle                |
| 6.8           | 100-pixel wide dashed circle         |
| 123.0         | 100-pixel wide double-dashed circle  |
| 46500.0       | 10-pixel partial circle              |
| 12400.0       | 100-pixel partial circle             |
| 2220.0        | 10-pixel wide partial circle         |
| 1050.0        | 100-pixel wide partial circle        |
| 1130000.0     | 1-pixel solid circle                 |
| 274000.0      | 10-pixel solid circle                |
| 9270.0        | 100-pixel solid circle               |
| 455.0         | 500-pixel solid circle               |
| 29400.0       | 10-pixel fill chord partial circle   |
| 9530.0        | 100-pixel fill chord partial circle  |
| 28000.0       | 10-pixel fill slice partial circle   |
| 9820.0        | 100-pixel fill slice partial circle  |
| 67000.0       | 10-pixel ellipse                     |
| 11600.0       | 100-pixel ellipse                    |
| 2510.0        | 500-pixel ellipse                    |
| 2780.0        | 100-pixel dashed ellipse             |
| 1890.0        | 100-pixel double-dashed ellipse      |
| 29900.0       | 10-pixel wide ellipse                |
| 4910.0        | 100-pixel wide ellipse               |
| 811.0         | 500-pixel wide ellipse               |
| 5.6           | 100-pixel wide dashed ellipse        |
| 6.3           | 100-pixel wide double-dashed ellipse |
| 44000.0       | 10-pixel partial ellipse             |
| 14300.0       | 100-pixel partial ellipse            |
| 2160.0        | 10-pixel wide partial ellipse        |
| 461.0         | 100-pixel wide partial ellipse       |
| 132000.0      | 10-pixel filled ellipse              |
| 15800.0       | 100-pixel filled ellipse             |
| 892.0         | 500-pixel filled ellipse             |
| 29500.0       | 10-pixel fill chord partial ellipse  |
| 14000.0       | 100-pixel fill chord partial ellipse |
| 28100.0       | 10-pixel fill slice partial ellipse  |
| 13500.0       | 100-pixel fill slice partial ellipse |
| 50300.0       | Fill 1x1 equivalent triangle         |
| 37300.0       | Fill 10x10 equivalent triangle       |
| 6670.0        | Fill 100x100 equivalent triangle     |
| 42100.0       | Fill 10x10 trapezoid                 |
| 6510.0        | Fill 100x100 trapezoid               |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 2 DEC 3000 Model 500 X11perf Results (continued)

| Result   | Operation                                      |
|----------|--|
| 18500.0  | Fill 10x10 stippled trapezoid                  |
| 4350.0   | Fill 100x100 stippled trapezoid                |
| 18800.0  | Fill 10x10 opaque stippled trapezoid           |
| 3930.0   | Fill 100x100 opaque stippled trapezoid         |
| 19100.0  | Fill 10x10 tiled trapezoid                     |
| 4130.0   | Fill 100x100 tiled trapezoid                   |
| 16300.0  | Fill 10x10 161x145 stippled trapezoid          |
| 2690.0   | Fill 100x100 161x145 stippled trapezoid        |
| 15000.0  | Fill 10x10 161x145 opaque stippled trapezoid   |
| 2440.0   | Fill 100x100 161x145 opaque stippled trapezoid |
| 13700.0  | Fill 10x10 161x145 tiled trapezoid             |
| 1690.0   | Fill 100x100 161x145 tiled trapezoid           |
| 13600.0  | Fill 10x10 216x208 tiled trapezoid             |
| 1830.0   | Fill 100x100 216x208 tiled trapezoid           |
| 11400.0  | Fill 10x10 equivalent complex polygon          |
| 2110.0   | Fill 100x100 equivalent complex polygons       |
| 386000.0 | Char in 80-char line (TR 10)                   |
| 214000.0 | Char in 30-char line (TR 24)                   |
| 309000.0 | Char in 80-char image line (TR 10)             |
| 120000.0 | Char in 30-char image line (TR 24)             |
| 17700.0  | Scroll 10x10 pixels                            |
| 2480.0   | Scroll 100x100 pixels                          |
| 128.0    | Scroll 500x500 pixels                          |
| 17500.0  | Copy 10x10 from window to window               |
| 2470.0   | Copy 100x100 from window to window             |
| 127.0    | Copy 500x500 from window to window             |
| 18400.0  | Copy 10x10 from pixmap to window               |
| 2470.0   | Copy 100x100 from pixmap to window             |
| 130.0    | Copy 500x500 from pixmap to window             |
| 16700.0  | Copy 10x10 from window to pixmap               |
| 2440.0   | Copy 100x100 from window to pixmap             |
| 128.0    | Copy 500x500 from window to pixmap             |
| 20000.0  | Copy 10x10 from pixmap to pixmap               |
| 2510.0   | Copy 100x100 from pixmap to pixmap             |
| 128.0    | Copy 500x500 from pixmap to pixmap             |
| 21100.0  | Copy 10x10 1-bit deep plane                    |
| 5210.0   | Copy 100x100 1-bit deep plane                  |
| 347.0    | Copy 500x500 1-bit deep plane                  |
| 11000.0  | PutImage 10x10 square                          |
| 624.0    | PutImage 100x100 square                        |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 2 DEC 3000 Model 500 X11perf Results (continued)

| Result   | Operation                            |
|----------|--------------------------------------|
| 26.8     | PutImage 500x500 square              |
| 1120.0   | GetImage 10x10 square                |
| 258.0    | GetImage 100x100 square              |
| 13.1     | GetImage 500x500 square              |
| 119000.0 | X protocol NoOperation               |
| 1280.0   | GetAtomName                          |
| 1280.0   | GetProperty                          |
| 25500.0  | Change graphics context              |
| 6920.0   | Create and map subwindows (4 kids)   |
| 8680.0   | Create and map subwindows (16 kids)  |
| 8590.0   | Create and map subwindows (25 kids)  |
| 8480.0   | Create and map subwindows (50 kids)  |
| 8420.0   | Create and map subwindows (75 kids)  |
| 8240.0   | Create and map subwindows (100 kids) |
| 7180.0   | Create and map subwindows (200 kids) |
| 12400.0  | Create unmapped window (4 kids)      |
| 12700.0  | Create unmapped window (16 kids)     |
| 12100.0  | Create unmapped window (25 kids)     |
| 12100.0  | Create unmapped window (50 kids)     |
| 12500.0  | Create unmapped window (75 kids)     |
| 12600.0  | Create unmapped window (100 kids)    |
| 12600.0  | Create unmapped window (200 kids)    |
| 13300.0  | Map window via parent (4 kids)       |
| 25100.0  | Map window via parent (16 kids)      |
| 27700.0  | Map window via parent (25 kids)      |
| 28900.0  | Map window via parent (50 kids)      |
| 29800.0  | Map window via parent (75 kids)      |
| 30800.0  | Map window via parent (100 kids)     |
| 31800.0  | Map window via parent (200 kids)     |
| 33400.0  | Unmap window via parent (4 kids)     |
| 82300.0  | Unmap window via parent (16 kids)    |
| 101000.0 | Unmap window via parent (25 kids)    |
| 127000.0 | Unmap window via parent (50 kids)    |
| 136000.0 | Unmap window via parent (75 kids)    |
| 138000.0 | Unmap window via parent (100 kids)   |
| 153000.0 | Unmap window via parent (200 kids)   |
| 13900.0  | Destroy window via parent (4 kids)   |
| 22200.0  | Destroy window via parent (16 kids)  |
| 23700.0  | Destroy window via parent (25 kids)  |
| 25200.0  | Destroy window via parent (50 kids)  |
| 25400.0  | Destroy window via parent (75 kids)  |

# Alpha AXP Workstation Family Performance Brief - OpenVMS X11perf Benchmark



Table 2 DEC 3000 Model 500 X11perf Results (continued)

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| Result  | Operation                               |
|---------|---|
| 25700.0 | Destroy window via parent (100 kids)    |
| 26000.0 | Destroy window via parent (200 kids)    |
| 4720.0  | Hide/expose window via popup (4 kids)   |
| 9750.0  | Hide/expose window via popup (16 kids)  |
| 11200.0 | Hide/expose window via popup (25 kids)  |
| 12200.0 | Hide/expose window via popup (50 kids)  |
| 12800.0 | Hide/expose window via popup (75 kids)  |
| 13100.0 | Hide/expose window via popup (100 kids) |
| 13600.0 | Hide/expose window via popup (200 kids) |
| 2930.0  | Move window (4 kids)                    |
| 2190.0  | Move window (16 kids)                   |
| 1830.0  | Move window (25 kids)                   |
| 1420.0  | Move window (50 kids)                   |
| 1150.0  | Move window (75 kids)                   |
| 961.0   | Move window (100 kids)                  |
| 587.0   | Move window (200 kids)                  |
| 25100.0 | Moved unmapped window (4 kids)          |
| 24600.0 | Moved unmapped window (16 kids)         |
| 24500.0 | Moved unmapped window (25 kids)         |
| 24400.0 | Moved unmapped window (50 kids)         |
| 24400.0 | Moved unmapped window (75 kids)         |
| 24300.0 | Moved unmapped window (100 kids)        |
| 24400.0 | Moved unmapped window (200 kids)        |
| 10500.0 | Move window via parent (4 kids)         |
| 24200.0 | Move window via parent (16 kids)        |
| 28500.0 | Move window via parent (25 kids)        |
| 33900.0 | Move window via parent (50 kids)        |
| 36600.0 | Move window via parent (75 kids)        |
| 37700.0 | Move window via parent (100 kids)       |
| 39800.0 | Move window via parent (200 kids)       |
| 3040.0  | Resize window (4 kids)                  |
| 2440.0  | Resize window (16 kids)                 |
| 2130.0  | Resize window (25 kids)                 |
| 1640.0  | Resize window (50 kids)                 |
| 1340.0  | Resize window (75 kids)                 |
| 1150.0  | Resize window (100 kids)                |
| 713.0   | Resize window (200 kids)                |
| 24000.0 | Resize unmapped window (4 kids)         |
| 23700.0 | Resize unmapped window (16 kids)        |
| 23700.0 | Resize unmapped window (25 kids)        |

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# Alpha AXP Workstation Family Performance Brief - OpenVMS



**Table 2 DEC 3000 Model 500 X11perf Results (continued)**

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| <b>Result</b> | <b>Operation</b>                     |
|---------------|--------------------------------------|
| 23700.0       | Resize unmapped window (50 kids)     |
| 23600.0       | Resize unmapped window (75 kids)     |
| 23500.0       | Resize unmapped window (100 kids)    |
| 23600.0       | Resize unmapped window (200 kids)    |
| 1630.0        | Circulate window (4 kids)            |
| 1100.0        | Circulate window (16 kids)           |
| 1020.0        | Circulate window (25 kids)           |
| 937.0         | Circulate window (50 kids)           |
| 878.0         | Circulate window (75 kids)           |
| 828.0         | Circulate window (100 kids)          |
| 682.0         | Circulate window (200 kids)          |
| 77600.0       | Circulate Unmapped window (4 kids)   |
| 38300.0       | Circulate Unmapped window (16 kids)  |
| 34200.0       | Circulate Unmapped window (25 kids)  |
| 25300.0       | Circulate Unmapped window (50 kids)  |
| 20400.0       | Circulate Unmapped window (75 kids)  |
| 17300.0       | Circulate Unmapped window (100 kids) |
| 10100.0       | Circulate Unmapped window (200 kids) |

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