

VMware® VMmark™ V1.1 Results

Vendor and Hardware Platform: Inspur NF5280
Virtualization Platform: VMware ESX Server 4.0 build 148592

VMmark V1.1 Score =
23.45 @ 17 Tiles

Tested By: Inspur Inc.

Test Date: 03/09/2009 (MM/DD/YYYY)

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Performance

| | webservers | | javaserver | | mailserver | | fileserver | | database | | |
|---------------|------------|-------|------------|-------|------------|-------|------------|-------|----------|-------|------|
| | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| TILE_0 | | | | | | | | | | | |
| p0 | 1735.33 | 1.70 | 18134.72 | 1.09 | 1581.78 | 1.44 | 15.72 | 1.23 | 2313.28 | 1.55 | 1.38 |
| p1 | 1733.55 | 1.70 | 18128.78 | 1.09 | 1416.35 | 1.29 | 15.61 | 1.22 | 2300.82 | 1.54 | 1.35 |
| p2 | 1708.03 | 1.68 | 18123.35 | 1.09 | 1370.15 | 1.25 | 15.75 | 1.23 | 2291.38 | 1.54 | 1.34 |
| TILE_1 | | | | | | | | | | | |
| p0 | 1742.28 | 1.71 | 18123.08 | 1.09 | 1499.53 | 1.37 | 15.95 | 1.24 | 2318.20 | 1.55 | 1.38 |
| p1 | 1731.60 | 1.70 | 18130.92 | 1.09 | 1500.22 | 1.37 | 16.17 | 1.26 | 2306.43 | 1.55 | 1.38 |
| p2 | 1717.92 | 1.69 | 18169.67 | 1.09 | 1378.65 | 1.26 | 14.97 | 1.17 | 2298.40 | 1.54 | 1.33 |
| TILE_2 | | | | | | | | | | | |
| p0 | 1730.90 | 1.70 | 18142.03 | 1.09 | 1681.45 | 1.53 | 16.20 | 1.26 | 2329.82 | 1.56 | 1.41 |
| p1 | 1731.72 | 1.70 | 17708.47 | 1.07 | 1663.28 | 1.52 | 16.22 | 1.26 | 2318.10 | 1.55 | 1.40 |
| p2 | 1709.20 | 1.68 | 18144.80 | 1.09 | 1708.03 | 1.56 | 16.51 | 1.29 | 2309.62 | 1.55 | 1.42 |
| TILE_3 | | | | | | | | | | | |
| p0 | 1728.65 | 1.70 | 18126.53 | 1.09 | 1532.83 | 1.40 | 15.44 | 1.20 | 2319.00 | 1.55 | 1.37 |
| p1 | 1732.17 | 1.70 | 18122.47 | 1.09 | 1415.53 | 1.29 | 15.64 | 1.22 | 2306.85 | 1.55 | 1.35 |
| p2 | 1703.05 | 1.67 | 18123.38 | 1.09 | 1401.42 | 1.28 | 14.38 | 1.12 | 2302.30 | 1.54 | 1.32 |
| TILE_4 | | | | | | | | | | | |
| p0 | 1724.72 | 1.69 | 18165.10 | 1.09 | 1726.12 | 1.57 | 15.95 | 1.24 | 2338.43 | 1.57 | 1.42 |
| p1 | 1720.78 | 1.69 | 18171.65 | 1.09 | 1645.10 | 1.50 | 16.26 | 1.27 | 2332.72 | 1.56 | 1.41 |
| p2 | 1695.78 | 1.66 | 18153.35 | 1.09 | 1703.12 | 1.55 | 16.06 | 1.25 | 2327.82 | 1.56 | 1.41 |
| TILE_5 | | | | | | | | | | | |
| p0 | 1721.12 | 1.69 | 18161.22 | 1.09 | 1526.35 | 1.39 | 16.16 | 1.26 | 2318.15 | 1.55 | 1.38 |
| p1 | 1717.60 | 1.69 | 18139.55 | 1.09 | 1495.60 | 1.36 | 16.59 | 1.29 | 2308.50 | 1.55 | 1.38 |
| p2 | 1711.47 | 1.68 | 18128.92 | 1.09 | 1412.38 | 1.29 | 16.51 | 1.29 | 2294.85 | 1.54 | 1.36 |

| | | | | | | | | | | | |
|----------------|---------|-------|----------|-------|---------|-------|--------|-------|---------|-------|------|
| TILE_6 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1720.20 | 1.69 | 17705.42 | 1.07 | 1661.12 | 1.51 | 16.96 | 1.32 | 2303.62 | 1.54 | 1.41 |
| p1 | 1731.75 | 1.70 | 18175.20 | 1.09 | 1669.67 | 1.52 | 17.11 | 1.33 | 2307.32 | 1.55 | 1.42 |
| p2 | 1739.42 | 1.71 | 18162.47 | 1.09 | 1591.10 | 1.45 | 17.00 | 1.32 | 2295.25 | 1.54 | 1.41 |
| TILE_7 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1789.20 | 1.76 | 17701.05 | 1.07 | 1689.15 | 1.54 | 17.09 | 1.33 | 2371.28 | 1.59 | 1.44 |
| p1 | 1811.05 | 1.78 | 18144.88 | 1.09 | 1602.22 | 1.46 | 17.22 | 1.34 | 2377.35 | 1.59 | 1.43 |
| p2 | 1814.75 | 1.78 | 18141.35 | 1.09 | 1590.85 | 1.45 | 17.32 | 1.35 | 2374.78 | 1.59 | 1.43 |
| TILE_8 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1804.55 | 1.77 | 18132.55 | 1.09 | 1745.35 | 1.59 | 16.30 | 1.27 | 2307.95 | 1.55 | 1.43 |
| p1 | 1819.95 | 1.79 | 18136.95 | 1.09 | 1682.33 | 1.53 | 16.51 | 1.29 | 2292.18 | 1.54 | 1.43 |
| p2 | 1820.65 | 1.79 | 18131.65 | 1.09 | 1638.90 | 1.49 | 16.40 | 1.28 | 2265.90 | 1.52 | 1.41 |
| TILE_9 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1724.75 | 1.69 | 18136.80 | 1.09 | 1582.70 | 1.44 | 14.90 | 1.16 | 2287.78 | 1.53 | 1.37 |
| p1 | 1720.70 | 1.69 | 18135.38 | 1.09 | 1688.80 | 1.54 | 14.92 | 1.16 | 2269.35 | 1.52 | 1.38 |
| p2 | 1702.25 | 1.67 | 18132.62 | 1.09 | 1689.47 | 1.54 | 14.01 | 1.09 | 2241.38 | 1.50 | 1.36 |
| TILE_10 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1727.65 | 1.70 | 18126.88 | 1.09 | 1681.62 | 1.53 | 15.77 | 1.23 | 2242.10 | 1.50 | 1.39 |
| p1 | 1723.12 | 1.69 | 17698.08 | 1.07 | 1655.75 | 1.51 | 15.61 | 1.22 | 2220.62 | 1.49 | 1.38 |
| p2 | 1704.25 | 1.67 | 18155.72 | 1.09 | 1681.12 | 1.53 | 15.48 | 1.21 | 2188.65 | 1.47 | 1.38 |
| TILE_11 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1720.38 | 1.69 | 17903.03 | 1.08 | 1547.85 | 1.41 | 15.50 | 1.21 | 2200.95 | 1.47 | 1.36 |
| p1 | 1723.12 | 1.69 | 18101.53 | 1.09 | 1601.33 | 1.46 | 15.25 | 1.19 | 2175.68 | 1.46 | 1.36 |
| p2 | 1703.42 | 1.67 | 18087.47 | 1.09 | 1630.58 | 1.49 | 15.17 | 1.18 | 2160.65 | 1.45 | 1.36 |
| TILE_12 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1747.80 | 1.72 | 18087.50 | 1.09 | 1431.97 | 1.31 | 15.04 | 1.17 | 2226.22 | 1.49 | 1.34 |
| p1 | 1734.78 | 1.70 | 18151.10 | 1.09 | 1702.90 | 1.55 | 15.11 | 1.18 | 2209.80 | 1.48 | 1.38 |
| p2 | 1716.65 | 1.68 | 18131.00 | 1.09 | 1658.00 | 1.51 | 14.99 | 1.17 | 2184.82 | 1.46 | 1.37 |
| TILE_13 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1741.95 | 1.71 | 18111.88 | 1.09 | 1546.80 | 1.41 | 15.81 | 1.23 | 2187.55 | 1.47 | 1.37 |
| p1 | 1747.22 | 1.71 | 17678.05 | 1.06 | 1677.62 | 1.53 | 16.03 | 1.25 | 2172.22 | 1.46 | 1.38 |
| p2 | 1725.75 | 1.69 | 18152.88 | 1.09 | 1758.33 | 1.60 | 15.98 | 1.25 | 2145.53 | 1.44 | 1.40 |
| TILE_14 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1776.85 | 1.74 | 18122.95 | 1.09 | 1369.47 | 1.25 | 15.72 | 1.22 | 2268.05 | 1.52 | 1.35 |
| p1 | 1796.72 | 1.76 | 17692.45 | 1.06 | 1573.17 | 1.43 | 15.97 | 1.24 | 2244.22 | 1.50 | 1.38 |
| p2 | 1810.22 | 1.78 | 18148.30 | 1.09 | 1708.85 | 1.56 | 15.79 | 1.23 | 2228.57 | 1.49 | 1.41 |
| TILE_15 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1790.30 | 1.76 | 18125.30 | 1.09 | 1318.60 | 1.20 | 15.92 | 1.24 | 2201.40 | 1.48 | 1.33 |

| | | | | | | | | | | | |
|---------------------------------|---------|-------|----------|-------|---------|-------|--------|-------|---------|-------|------|
| p1 | 1785.70 | 1.75 | 18120.30 | 1.09 | 1553.12 | 1.42 | 15.88 | 1.24 | 2160.10 | 1.45 | 1.37 |
| p2 | 1760.65 | 1.73 | 17673.25 | 1.06 | 1635.97 | 1.49 | 14.94 | 1.16 | 2131.97 | 1.43 | 1.35 |
| TILE_16 | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | Actual | Ratio | GM |
| p0 | 1740.30 | 1.71 | 17528.00 | 1.06 | 1295.95 | 1.18 | 16.63 | 1.30 | 2288.05 | 1.53 | 1.33 |
| p1 | 1736.20 | 1.70 | 18010.75 | 1.08 | 1509.00 | 1.38 | 16.91 | 1.32 | 2289.30 | 1.53 | 1.39 |
| p2 | 1720.50 | 1.69 | 18004.78 | 1.08 | 1515.53 | 1.38 | 17.04 | 1.33 | 2286.20 | 1.53 | 1.39 |
| | | | | | | | | | | | |
| p0_score: | 23.45 | | | | | | | | | | |
| p1_score: | 23.57 | | | | | | | | | | |
| p2_score: | 23.44 | | | | | | | | | | |
| | | | | | | | | | | | |
| Unreviewed_VMmark_Score: | 23.45 | | | | | | | | | | |
| | | | | | | | | | | | |

Configuration

| Server and Network | |
|---------------------------------------|--|
| Server Manufacturer and Model | Inspur NF5280 |
| Processor Vendor and Model | Intel Xeon X5570 |
| Processor Speed (GHz) | 2.93 |
| Number of Sockets/Cores per Socket | 2 Sockets / 4 Cores per Socket (8 Cores Total) |
| Primary Cache | 32KB(I)+32KB(D) on chip, per core |
| Secondary Cache | 256KB per core |
| Other Cache | 8MB L3 |
| Memory | 96GB (12x8GB) DDR3 1066MHz DIMMs |
| Disk Subsystem Type | SAS HDD for OS, FC SAN for VMs |
| Number of Disk Controllers | 3 |
| Number of Host Bus Adapters | 2 |
| Host Bus Adapter Vendors and Models | QLogic QLE2462 (dual-port) |
| Number of Network Controllers | 4 |
| Network Controller Vendors and Models | 1 x Intel 82574L Gigabit Ethernet (dual-port) 1 x Intel 82575EB Gigabit Ethernet (dual-port) 2 x Intel 82571EB Gigabit Ethernet (dual-port, one port not used) |
| Network Switch Vendors and Models | Cisco Linksys SR2024 |
| Network Speed | Gigabit Ethernet |
| Other Hardware | None |
| Other Software | None |

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|---|---|
| Hardware Availability Date | 03/30/2009 (MM/DD/YYYY) |
| Software Availability Date | 06/30/2009 (MM/DD/YYYY) |
| Virtualization Software | |
| Vendor, Product, Version, and Build | VMware ESX 4.0 Server build 148592 |
| Virtualization Type | Hardware Virtualization |
| Supplemental Software | None |
| Virtualization Software Availability Date | 06/30/2009 (MM/DD/YYYY) |
| Storage | |
| Array Vendor, Model, and Firmware Version | EMC CX3-40f, version 03.24.040.5.011 |
| Fibre Channel Switch Vendors and Models | None |
| Disk Space Used | 1122GB for VMs |
| Array Cache Size | 4GB |
| Number and Size of LUNs | 22 Set #1: LUN 2 – LUN 8 (100GB each) Set #2: LUN 9, 10, 20, 21 (300GB each) LUN 18, 19 (200GB each) Set #3: LUN 11 – LUN 17 (100GB each) Set #4: LUN0 (1336GB) Set #5: LUN1 (1336GB) |
| RAID Type | RAID0 |
| Number of Members per RAID Set | Set #1: 10 Set #2: 10 Set #3: 15 Set #4: 10 Set #5: 10 |
| Disk Vendor, Model, and Speed | Hitachi 146GB 15K RPM, FC HDD |
| Clients | |
| Number of Clients | 16 |
| System Model(s) | Client #1 - #15: Inspur NF190D2 Client #16, #17: EDATA ISP1340 |
| Processor Vendor(s) and Model(s) | Intel Xeon |
| Processor Speed(s) (GHz) | Client #1 - #15: 2.0 Client #16, #17: 3.0 |
| Number of Sockets/Cores per Socket | Client #1 - #15: 2 Sockets / 4 Cores per Socket (8 Cores Total) Client #16, #17: 2 Sockets / 2 Cores per Socket (4 Cores Total) |
| Memory | Client #1 - #15: 4GB Client #16, #17: 2GB |
| Network Controller Vendor and Model | Client #1 - #15: Intel 82566DM-2 Gigabit Network Client #16, #17: Intel PRO/1000 EB Network Connection |

| | |
|---|---|
| Operating System, Version, and Service Pack | Microsoft Windows Server 2003 Enterprise Edition with SP2 |
| Other Hardware | None |
| Other Software | None |

Notes for Workload

Server and Network Notes

- 1 Server:
 - n Processor Speed: Intel Turbo Boost Technology up to 3.2GHz
 - n Processor: 2 Threads per Core (16 Threads Total) with Intel Hyper-Threading Capability
- 1 Storage settings:
 - n Storage Processor cache High/Low watermark: 40/20 (default 80/60)
 - n Path policy of each LUN storage set to “fixed” (default “most recently used”)
 - n LUN 9, 10 for 14 database VMs split equally
 - n LUN 18 & 21 for 4 mailserver VMs respectively, LUN 19 & 20 for 3 mailserver VMs respectively
 - n LUN 0 for all VMs of tile#7 and mail VM, standby VM and web VM of tile#16
 - n LUN 1 for all VMs of tile#6 and database VM, file VM and java VM of tile#16
 - n Other LUNs for other VMs (each LUN contains one tile)
- 1 Network settings:
 - n vSwitch0 bound to vmnic2 – Service Console, 14 Database VMs
 - n vSwitch1 bound to vmnic3 – 4 Java VMs, 4 Standby VMs, 4 Web VMs
 - n vSwitch2 bound to vmnic4 – 17 Mail VMs, 3 Database VMs, 3 File VMs, 1 Java VM, 1 Standby VM, 1 Web VM
 - n vSwitch3 bound to vmnic5 – 14 File VMs
 - n vSwitch4 bound to vmnic0 – 4 Java VMs, 4 Standby VMs, 4 Web VMs
 - n vSwitch5 bound to vmnic1 – 4 Java VMs, 4 Standby VMs, 4 Web VMs
 - n vSwitch6 bound to vmnic6 – 4 Java VMs, 4 Standby VMs, 4 Web VMs

Virtualization Software Notes

- 1 Net.TcpipUseIoat set to 1 (default 0)
- 1 Ethernet Adapter Type set to Enhanced vmxnet for all VMs

1 Disable ESX logging for all VMs, except for mailserver16

1 IDE and floppy devices removed (default enabled)

Operating System Notes

Some Microsoft Windows Server 2003 systems are Chinese version

Software Notes

None

Client Notes

None

Other Notes

This is a full disclosure report for a VMmark benchmark result. All published VMmark results must be from fully-compliant tests for which a full disclosure report is publicly available.

For information about VMmark and the rules regarding its usage visit www.vmware.com/products/vmmark.

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