

# VMware® VMmark™ V1.1 Results

**Vendor and Hardware Platform: Unisys ES7000 Model 7405R**  
**Virtualization Platform: ESX 4.0 Build 148592**

**VMmark V1.1 Score =**  
**30.86 @ 20 Tiles**

**Tested By: Unisys Corp. Mission Viejo, CA**

**Test Date: 04/13/2009**

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## Performance

	webserver		javaserver		mailserver		fileserver		database		
<b>TILE_0</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2108.43	2.07	18014.03	1.08	1965.65	1.79	20.40	1.59	2297.45	1.54	1.58
<b>p1</b>	2111.25	2.07	18054.75	1.09	1866.55	1.70	20.58	1.60	2238.38	1.50	1.56
<b>p2</b>	2109.97	2.07	17944.50	1.08	900.95	0.82	20.96	1.63	2315.38	1.55	1.36
<b>TILE_1</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2021.03	1.98	18025.55	1.08	1791.15	1.63	20.54	1.60	2253.20	1.51	1.53
<b>p1</b>	2013.70	1.98	18032.70	1.09	1773.70	1.62	20.43	1.59	2253.80	1.51	1.53
<b>p2</b>	2035.53	2.00	18054.62	1.09	1856.92	1.69	20.57	1.60	2247.72	1.51	1.55
<b>TILE_2</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2109.15	2.07	17944.28	1.08	1820.30	1.66	20.39	1.59	2263.35	1.52	1.55
<b>p1</b>	2106.78	2.07	17968.08	1.08	1885.62	1.72	20.20	1.57	2265.05	1.52	1.56
<b>p2</b>	2108.45	2.07	17585.80	1.06	1990.85	1.82	19.85	1.55	2259.93	1.51	1.56
<b>TILE_3</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2015.33	1.98	18044.05	1.09	1843.25	1.68	20.54	1.60	2237.35	1.50	1.54
<b>p1</b>	2003.53	1.97	17997.83	1.08	1874.38	1.71	20.57	1.60	2242.15	1.50	1.54
<b>p2</b>	2020.83	1.98	18051.92	1.09	1832.15	1.67	20.47	1.60	2253.53	1.51	1.54
<b>TILE_4</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2110.45	2.07	18093.83	1.09	1693.05	1.54	20.76	1.62	2247.47	1.51	1.53
<b>p1</b>	2112.47	2.07	18098.33	1.09	1828.20	1.67	20.74	1.62	2242.53	1.50	1.56
<b>p2</b>	2113.90	2.07	18070.95	1.09	1932.92	1.76	20.77	1.62	2237.85	1.50	1.57
<b>TILE_5</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2101.43	2.06	17942.67	1.08	1862.03	1.70	20.87	1.63	2256.35	1.51	1.56
<b>p1</b>	2104.25	2.07	17899.58	1.08	1810.80	1.65	20.77	1.62	2269.60	1.52	1.55
<b>p2</b>	2107.12	2.07	17504.40	1.05	1839.28	1.68	20.98	1.63	2267.75	1.52	1.55

<b>TILE_6</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2096.50	2.06	17506.10	1.05	1789.45	1.63	20.81	1.62	2297.97	1.54	1.55
<b>p1</b>	2095.00	2.06	18079.97	1.09	1790.50	1.63	20.63	1.61	2304.82	1.54	1.55
<b>p2</b>	2103.35	2.06	18062.22	1.09	1811.35	1.65	21.06	1.64	2297.78	1.54	1.56
<b>TILE_7</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2106.18	2.07	18091.40	1.09	1714.88	1.56	20.94	1.63	2280.05	1.53	1.54
<b>p1</b>	2108.12	2.07	18079.55	1.09	1866.03	1.70	20.82	1.62	2285.62	1.53	1.57
<b>p2</b>	2107.07	2.07	18029.78	1.09	1893.60	1.73	21.12	1.65	2284.97	1.53	1.58
<b>TILE_8</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2101.53	2.06	17612.00	1.06	1709.12	1.56	20.83	1.62	2261.30	1.52	1.53
<b>p1</b>	2096.03	2.06	18092.00	1.09	1843.40	1.68	20.61	1.61	2251.25	1.51	1.56
<b>p2</b>	2101.00	2.06	18080.53	1.09	1806.33	1.65	20.63	1.61	2268.93	1.52	1.55
<b>TILE_9</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2029.05	1.99	18026.97	1.09	1670.92	1.52	20.97	1.63	2351.90	1.58	1.53
<b>p1</b>	2017.10	1.98	17986.88	1.08	1778.75	1.62	20.49	1.60	2351.12	1.58	1.54
<b>p2</b>	2038.22	2.00	18054.42	1.09	1838.75	1.68	20.08	1.56	2345.62	1.57	1.55
<b>TILE_10</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2102.15	2.06	18074.28	1.09	1737.55	1.58	20.68	1.61	2277.30	1.53	1.54
<b>p1</b>	2099.30	2.06	17587.97	1.06	1696.80	1.55	20.70	1.61	2277.25	1.53	1.53
<b>p2</b>	2053.12	2.01	18079.60	1.09	1787.85	1.63	21.10	1.64	2294.72	1.54	1.55
<b>TILE_11</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2110.07	2.07	18077.95	1.09	1729.75	1.58	21.35	1.66	2336.28	1.57	1.56
<b>p1</b>	2105.55	2.07	18105.15	1.09	1721.42	1.57	20.97	1.63	2333.88	1.56	1.55
<b>p2</b>	2103.78	2.06	18132.40	1.09	1862.58	1.70	20.91	1.63	2333.62	1.56	1.58
<b>TILE_12</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2097.18	2.06	17979.97	1.08	1718.88	1.57	20.08	1.56	2250.85	1.51	1.52
<b>p1</b>	2098.10	2.06	18048.12	1.09	1699.33	1.55	20.27	1.58	2252.68	1.51	1.53
<b>p2</b>	2099.57	2.06	18064.33	1.09	1820.53	1.66	20.25	1.58	2243.18	1.50	1.55
<b>TILE_13</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2103.70	2.06	18049.88	1.09	1618.25	1.48	20.27	1.58	2185.22	1.46	1.50
<b>p1</b>	2107.00	2.07	18054.25	1.09	1776.88	1.62	20.10	1.57	2183.90	1.46	1.53
<b>p2</b>	2108.47	2.07	18061.17	1.09	1692.88	1.54	20.40	1.59	2173.20	1.46	1.52
<b>TILE_14</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2095.45	2.06	18126.65	1.09	1559.40	1.42	20.32	1.58	2222.43	1.49	1.50
<b>p1</b>	2089.40	2.05	18148.03	1.09	1803.62	1.64	20.31	1.58	2231.22	1.50	1.54
<b>p2</b>	2103.28	2.06	17679.28	1.06	1857.28	1.69	20.53	1.60	2245.75	1.50	1.55

<b>TILE_15</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2101.10	2.06	17646.28	1.06	1515.15	1.38	20.96	1.63	2352.80	1.58	1.51
<b>p1</b>	2111.45	2.07	18097.55	1.09	1636.67	1.49	21.11	1.65	2351.80	1.58	1.54
<b>p2</b>	2117.95	2.08	18108.30	1.09	1699.88	1.55	20.83	1.62	2355.28	1.58	1.55
<b>TILE_16</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2105.72	2.07	18114.20	1.09	1512.97	1.38	20.58	1.60	2384.38	1.60	1.51
<b>p1</b>	2098.90	2.06	18103.67	1.09	1658.05	1.51	20.59	1.60	2381.00	1.60	1.54
<b>p2</b>	2101.00	2.06	18103.58	1.09	1808.05	1.65	20.93	1.63	2373.80	1.59	1.57
<b>TILE_17</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2103.70	2.06	18058.58	1.09	1431.85	1.31	20.85	1.63	2362.45	1.58	1.50
<b>p1</b>	2104.38	2.07	17590.90	1.06	1612.88	1.47	20.81	1.62	2358.75	1.58	1.52
<b>p2</b>	2103.05	2.06	18057.35	1.09	1766.83	1.61	21.13	1.65	2372.88	1.59	1.57
<b>TILE_18</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2111.75	2.07	18071.53	1.09	1259.35	1.15	20.65	1.61	2343.80	1.57	1.46
<b>p1</b>	2113.10	2.07	18068.72	1.09	1640.78	1.50	20.61	1.61	2342.60	1.57	1.53
<b>p2</b>	2115.47	2.08	18058.50	1.09	1667.08	1.52	20.65	1.61	2341.10	1.57	1.54
<b>TILE_19</b>	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
<b>p0</b>	2183.55	2.14	18127.47	1.09	1177.12	1.07	21.08	1.64	2348.30	1.57	1.45
<b>p1</b>	2181.62	2.14	17636.72	1.06	1499.75	1.37	21.06	1.64	2344.30	1.57	1.52
<b>p2</b>	2185.00	2.14	18108.00	1.09	1636.97	1.49	21.31	1.66	2342.85	1.57	1.56
<b>p0_score:</b>	30.51										
<b>p1_score:</b>	30.86										
<b>p2_score:</b>	30.91										
<b>Unreviewed_VMmark_Score:</b>	30.86										

## Configuration

<b>Server and Network</b>	
Server Manufacturer and Model	Unisys ES7000 Model 7405R
Processor Vendor and Model	Quad-core AMD Opteron 8384
Processor Speed (GHz)	2.7
Number of Sockets/Cores per Socket	8 Sockets / 4 Cores per Socket (32 Cores Total)
Primary Cache	64KB I+D on chip per core
Secondary Cache	512KB I+D on chip per core
Other Cache	6MB I+D on chip per core
Memory	128GB (32x4GB) PC2-5300 DDR2-667Mhz Registered ECC DIMMs

Disk Subsystem Type	SAS(OS) FC SAN(VMs)
Number of Disk Controllers	5
Number of Host Bus Adapters	3
Host Bus Adapter Vendors and Models	Emulex LPe11002 4Gb FC
Number of Network Controllers	4
Network Controller Vendors and Models	Intel PRO 1000PT 1GbE
Network Switch Vendors and Models	NETGEAR 16 port GigabitSwith/GS516T
Network Speed	1000-Base T
Other Hardware	None
Other Software	None
Hardware Availability Date	Feb-2009
Software Availability Date	Nov-2008

**Virtualization Software**

Vendor, Product, Version, and Build	ESX 4.0 Build 148592
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Software Availability Date	June 30, 2009

**Storage**

Array Vendor, Model, and Firmware Version	Unisys USS2200/JBD2000 Firmware A06
Fibre Channel Switch Vendors and Models	None
Disk Space Used	4780GB
Array Cache Size	None
Number and Size of LUNs	20 LUNs with 239GB each LUN
RAID Type	RAID 0
Number of Members per RAID Set	14
Disk Vendor, Model, and Speed	Segate Cheetah ST318453FC 15KRPM

**Clients**

Number of Clients	20
System Model(s)	Unisys ES3020L
Processor Vendor(s) and Model(s)	Intel Xeon
Processor Speed(s) (GHz)	2.0

Number of Sockets/Cores per Socket	2 Sockets / 1 Cores per Socket (2 Cores Total)
Memory	3GB
Network Controller Vendor and Model	Broadcom NetXtreme Gigabit Ethernet
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 SP1
Other Hardware	None
Other Software	None

## Notes for Workload

### Server and Network Notes

CPU Prefetching disabled (default enabled)

### Disk Storage Notes

Five Unisys USS disk controllers were attached to 5 ports of three dual-port of HBAs.

### Virtualization Software Notes

. Four vSwitches (0-3).vSwitch(1,2,3) were configured with 56 ports each. vSwitch0 was configured with 24 ports

. vSwitch0 was attached to vmnic0, used by the Service Console

. vSwitch1,vSwitch2,vSwitch3 were attached to vmnic1,vmnic2,vmnic3 respectively

. All the VMs of Tile0 to Tile4 and Tile17 were attached to vSwitch1

. All the VMs of Tile5 to Tile9, Tile16 and Tile19 were attached to vSwitch2

. All the VMs of Tile 10 to Tile15 and Tile18 were attached to vSwitch3

. Each Tile was store on one LUN except MailServer 10,12,13,14,16,17 on LUN 21,17,18,15,13,14 respectively

. Hardware version is 7 for all VMs

. Network adapter type was set to enhanced vmxnet for all VMs

. Removed IDE and floppy devices from all VMs except Mailserver14

. Enabled Virtualized MMU for all VMs

. Enabled VMXNET3 for all VMs

. Disabled ESX logging on all VMs

. Disabled Firewall and Iptables

. Disk.SchedNumReqOutstanding=128 (default 32)

. EtherswitchHashSize=4 (default 1)

## Operating System Notes

. Microsoft Windows Server 2003 R2 Enterprise Edition Service Pack 2 on Windows-based virtual machines

. SuSE Linux Enterprise Server 10 SP2 on Linux-based virtual machines

. KB 933360 was applied to Windows-based virtual machines

## Software Notes

### Client Notes

. KB 933360 was applied

### Other Notes

The disk storage system was generally available since May 2003; it has been available within the last five years; but no longer available now.

### VMMARK.CONFIG

.TILEDELAY=750 (default 600)

.MailServer/DELAYTIME=360 (default 5)

.Standby/DELAYTIME=150 (default 170)

.WebServer/DELAYTIME=450 (default 180)

.Database/DELAYTIME=180 (default 360)

.FileServer/DELAYTIME=5 (default 450)

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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.

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