

VMware® VMmark™ V1.1.1 Results

Vendor and Hardware Platform: Cisco UCS C460 M1
Virtualization Platform: VMware ESX 4.0 U2 Build 261974

VMmark V1.1.1 Score =
76.10 @ 51 Tiles

Tested By: Cisco Systems

Test Date: 8-17-2010

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Performance

	webserver		javaserver		mailserver		fileserver		database		
TILE_0	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1567.00	1.54	18145.75	1.09	1835.17	1.67	19.81	1.54	2269.20	1.52	1.46
p1	1539.53	1.51	18149.72	1.09	1809.40	1.65	19.53	1.52	2271.65	1.52	1.45
p2	1523.30	1.49	18151.95	1.09	1752.33	1.60	19.22	1.50	2276.53	1.53	1.43
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2051.30	2.01	17668.17	1.06	1815.17	1.65	17.09	1.33	2284.68	1.53	1.49
p1	2045.03	2.01	18107.25	1.09	1700.85	1.55	17.02	1.33	2287.15	1.53	1.47
p2	2038.20	2.00	18134.62	1.09	1645.55	1.50	16.79	1.31	2295.60	1.54	1.46
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2062.93	2.02	18124.30	1.09	1832.95	1.67	17.67	1.38	2292.12	1.54	1.51
p1	2054.60	2.02	18115.67	1.09	1792.15	1.63	17.55	1.37	2290.78	1.53	1.50
p2	2011.88	1.97	18126.50	1.09	1893.72	1.73	17.19	1.34	2295.22	1.54	1.50
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1918.42	1.88	17666.53	1.06	1760.72	1.61	19.98	1.56	2301.43	1.54	1.50
p1	1907.22	1.87	18133.17	1.09	1880.15	1.71	19.47	1.52	2296.30	1.54	1.52
p2	1853.55	1.82	18157.85	1.09	1803.15	1.64	19.14	1.49	2298.75	1.54	1.50
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2062.20	2.02	18117.03	1.09	1725.75	1.57	19.75	1.54	2290.12	1.53	1.52
p1	2043.95	2.01	18136.88	1.09	1880.83	1.71	19.54	1.52	2290.57	1.53	1.54
p2	2026.78	1.99	18110.20	1.09	1775.08	1.62	19.38	1.51	2293.55	1.54	1.52
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2059.95	2.02	17664.03	1.06	1831.08	1.67	19.89	1.55	2303.40	1.54	1.54
p1	2037.65	2.00	18120.62	1.09	1838.40	1.68	19.58	1.53	2296.62	1.54	1.54
p2	2031.97	1.99	18117.78	1.09	1677.25	1.53	19.37	1.51	2304.12	1.54	1.51

TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2056.78	2.02	18155.55	1.09	1659.80	1.51	19.83	1.55	2293.20	1.54	1.51
p1	2049.03	2.01	18153.60	1.09	1716.75	1.57	19.55	1.52	2292.03	1.54	1.52
p2	2042.80	2.00	18118.67	1.09	1651.28	1.51	19.33	1.51	2295.62	1.54	1.50
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2056.38	2.02	18191.80	1.09	1598.75	1.46	19.89	1.55	2296.75	1.54	1.50
p1	2042.42	2.00	18154.88	1.09	1822.25	1.66	19.47	1.52	2290.55	1.53	1.53
p2	2034.58	2.00	17695.95	1.07	1874.95	1.71	19.47	1.52	2294.53	1.54	1.53
TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1926.15	1.89	17673.97	1.06	1770.45	1.61	19.82	1.55	2292.65	1.54	1.50
p1	1905.35	1.87	18152.45	1.09	1734.65	1.58	19.67	1.53	2289.43	1.53	1.50
p2	1881.12	1.85	18170.45	1.09	1821.67	1.66	19.58	1.53	2289.85	1.53	1.51
TILE_9	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2058.95	2.02	18167.50	1.09	1682.20	1.53	19.79	1.54	2296.68	1.54	1.52
p1	2054.85	2.02	18162.53	1.09	1757.85	1.60	19.43	1.51	2291.10	1.54	1.52
p2	2039.40	2.00	18173.55	1.09	1674.30	1.53	19.14	1.49	2296.82	1.54	1.50
TILE_10	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2052.12	2.01	18147.80	1.09	1757.62	1.60	19.68	1.53	2277.32	1.53	1.53
p1	2034.38	2.00	18152.70	1.09	1827.72	1.67	19.20	1.50	2281.10	1.53	1.53
p2	2024.03	1.99	18164.30	1.09	1745.38	1.59	19.10	1.49	2288.65	1.53	1.51
TILE_11	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1903.35	1.87	18117.97	1.09	1679.97	1.53	19.83	1.55	2298.45	1.54	1.49
p1	1850.58	1.82	18111.22	1.09	1722.85	1.57	19.78	1.54	2290.38	1.53	1.49
p2	1825.10	1.79	18105.92	1.09	1862.10	1.70	19.54	1.52	2297.18	1.54	1.51
TILE_12	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2062.22	2.02	18152.45	1.09	1625.60	1.48	17.67	1.38	2291.45	1.54	1.47
p1	2046.03	2.01	18167.60	1.09	1773.55	1.62	17.41	1.36	2290.38	1.53	1.49
p2	2040.08	2.00	18160.33	1.09	1613.75	1.47	17.24	1.34	2294.07	1.54	1.46
TILE_13	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1917.08	1.88	18144.38	1.09	1705.22	1.55	19.54	1.52	2296.90	1.54	1.50
p1	1898.08	1.86	18132.40	1.09	1740.60	1.59	19.16	1.49	2290.80	1.53	1.49
p2	1872.70	1.84	18106.40	1.09	1764.67	1.61	19.01	1.48	2294.97	1.54	1.49
TILE_14	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1763.58	1.73	18134.62	1.09	1763.08	1.61	19.90	1.55	2282.57	1.53	1.48
p1	1737.58	1.71	18133.38	1.09	1837.33	1.68	19.48	1.52	2286.35	1.53	1.49
p2	1695.67	1.66	18142.28	1.09	1820.08	1.66	19.18	1.50	2292.12	1.54	1.47

TILE_15	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2067.00	2.03	18166.70	1.09	1681.67	1.53	19.73	1.54	2293.75	1.54	1.52
p1	2050.53	2.01	18140.60	1.09	1650.28	1.50	19.34	1.51	2286.85	1.53	1.50
p2	2042.42	2.00	18135.53	1.09	1586.55	1.45	19.21	1.50	2290.50	1.53	1.49
TILE_16	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2063.95	2.03	18151.80	1.09	1731.58	1.58	19.79	1.54	2221.55	1.49	1.52
p1	2054.55	2.02	18163.85	1.09	1834.55	1.67	19.56	1.52	2227.55	1.49	1.53
p2	2031.70	1.99	18144.72	1.09	1459.25	1.33	19.47	1.52	2236.88	1.50	1.46
TILE_17	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2072.50	2.03	18159.25	1.09	1699.72	1.55	19.85	1.55	2303.72	1.54	1.52
p1	2065.50	2.03	18172.90	1.09	1821.35	1.66	19.58	1.53	2298.93	1.54	1.54
p2	2030.00	1.99	18151.60	1.09	1953.20	1.78	19.47	1.52	2305.57	1.54	1.55
TILE_18	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1937.60	1.90	18181.83	1.09	1783.60	1.63	20.14	1.57	2304.05	1.54	1.52
p1	1931.10	1.90	18146.30	1.09	1777.78	1.62	19.61	1.53	2302.15	1.54	1.51
p2	1902.05	1.87	18118.92	1.09	1904.00	1.74	19.45	1.52	2301.47	1.54	1.53
TILE_19	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2061.28	2.02	18153.25	1.09	1729.95	1.58	17.73	1.38	2297.97	1.54	1.49
p1	2053.85	2.02	18134.05	1.09	1748.00	1.59	17.36	1.35	2292.60	1.54	1.49
p2	2041.92	2.00	17688.53	1.06	1818.90	1.66	17.27	1.35	2298.75	1.54	1.49
TILE_20	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2065.40	2.03	18119.42	1.09	1654.95	1.51	19.89	1.55	2314.03	1.55	1.52
p1	2056.40	2.02	18110.00	1.09	1718.22	1.57	19.60	1.53	2310.03	1.55	1.52
p2	2051.15	2.01	17667.28	1.06	1574.05	1.44	19.41	1.51	2311.32	1.55	1.48
TILE_21	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2061.90	2.02	18120.58	1.09	1542.03	1.41	19.18	1.49	2308.68	1.55	1.48
p1	2049.50	2.01	17669.70	1.06	1689.30	1.54	18.80	1.47	2308.15	1.55	1.50
p2	2038.22	2.00	18121.78	1.09	1721.55	1.57	18.68	1.46	2308.07	1.55	1.50
TILE_22	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1951.17	1.91	18156.55	1.09	1707.03	1.56	17.85	1.39	2253.10	1.51	1.47
p1	1937.38	1.90	18135.78	1.09	1683.90	1.54	17.63	1.37	2307.65	1.55	1.47
p2	1907.28	1.87	18142.00	1.09	1799.92	1.64	17.20	1.34	2311.78	1.55	1.47
TILE_23	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2066.43	2.03	18123.53	1.09	1679.80	1.53	19.76	1.54	2318.45	1.55	1.52
p1	2063.62	2.03	18113.78	1.09	1758.17	1.60	19.27	1.50	2311.82	1.55	1.52
p2	2056.50	2.02	18122.53	1.09	1820.65	1.66	19.21	1.50	2315.22	1.55	1.53

TILE_24	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2063.75	2.03	18169.62	1.09	1608.90	1.47	19.92	1.55	2316.82	1.55	1.51
p1	2056.82	2.02	18157.45	1.09	1755.78	1.60	19.61	1.53	2315.28	1.55	1.53
p2	2049.40	2.01	18169.85	1.09	1730.95	1.58	19.45	1.52	2201.95	1.48	1.51
TILE_25	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2063.22	2.02	18115.10	1.09	1715.90	1.56	19.97	1.56	2304.03	1.54	1.53
p1	2042.88	2.00	17666.80	1.06	1736.30	1.58	19.63	1.53	2296.50	1.54	1.51
p2	2041.28	2.00	18105.40	1.09	1774.30	1.62	19.63	1.53	2304.07	1.54	1.53
TILE_26	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2066.22	2.03	18125.60	1.09	1672.22	1.52	17.88	1.39	2311.95	1.55	1.49
p1	2056.75	2.02	18110.20	1.09	1816.05	1.66	17.71	1.38	2311.45	1.55	1.51
p2	2048.82	2.01	17665.50	1.06	1632.15	1.49	17.16	1.34	2313.53	1.55	1.46
TILE_27	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2062.38	2.02	18149.53	1.09	1653.25	1.51	18.10	1.41	2313.07	1.55	1.49
p1	2053.53	2.02	18122.80	1.09	1745.80	1.59	17.61	1.37	2305.38	1.54	1.49
p2	2050.35	2.01	18152.70	1.09	1803.78	1.64	17.65	1.38	2309.88	1.55	1.50
TILE_28	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1942.88	1.91	18126.30	1.09	1540.88	1.40	19.86	1.55	2300.12	1.54	1.47
p1	1927.78	1.89	17665.45	1.06	1603.17	1.46	19.42	1.51	2296.38	1.54	1.47
p2	1898.47	1.86	18123.22	1.09	1805.35	1.65	19.40	1.51	2299.97	1.54	1.51
TILE_29	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2058.12	2.02	18119.12	1.09	1578.72	1.44	17.77	1.38	2259.10	1.51	1.46
p1	2052.15	2.01	17669.03	1.06	1720.42	1.57	17.65	1.38	2307.97	1.55	1.48
p2	2036.78	2.00	18121.58	1.09	1628.75	1.49	17.15	1.34	2309.45	1.55	1.46
TILE_30	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2057.03	2.02	18113.47	1.09	1547.05	1.41	19.87	1.55	2301.38	1.54	1.49
p1	2052.30	2.01	18124.03	1.09	1603.95	1.46	19.53	1.52	2302.82	1.54	1.50
p2	2035.25	2.00	17658.45	1.06	1772.55	1.62	19.33	1.51	2309.38	1.55	1.52
TILE_31	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2061.97	2.02	17683.92	1.06	1604.10	1.46	17.81	1.39	2309.03	1.55	1.47
p1	2053.75	2.02	18133.60	1.09	1743.22	1.59	17.33	1.35	2303.57	1.54	1.49
p2	2046.12	2.01	18114.28	1.09	1611.28	1.47	17.33	1.35	2308.40	1.55	1.46
TILE_32	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1936.05	1.90	18116.78	1.09	1494.67	1.36	17.76	1.38	2312.45	1.55	1.43
p1	1926.85	1.89	18119.42	1.09	1726.25	1.57	17.64	1.37	2309.35	1.55	1.47
p2	1893.88	1.86	17660.20	1.06	1732.92	1.58	17.23	1.34	2308.53	1.55	1.45

TILE_33	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2058.35	2.02	17700.22	1.07	1431.47	1.31	15.91	1.24	2245.85	1.50	1.39
p1	2051.25	2.01	18156.47	1.09	1718.75	1.57	15.89	1.24	2248.12	1.51	1.45
p2	2043.03	2.01	18148.03	1.09	1786.78	1.63	15.56	1.21	2257.15	1.51	1.46
TILE_34	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2068.95	2.03	18120.75	1.09	1422.08	1.30	17.94	1.40	2312.57	1.55	1.44
p1	2058.55	2.02	18148.35	1.09	1642.05	1.50	17.60	1.37	2311.18	1.55	1.48
p2	2049.62	2.01	18134.50	1.09	1724.72	1.57	17.46	1.36	2312.97	1.55	1.49
TILE_35	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1949.05	1.91	18122.42	1.09	1585.83	1.45	19.84	1.55	2305.65	1.54	1.48
p1	1927.90	1.89	17665.20	1.06	1740.95	1.59	19.45	1.52	2304.32	1.54	1.50
p2	1900.97	1.87	18118.03	1.09	1861.17	1.70	19.28	1.50	2312.38	1.55	1.52
TILE_36	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2065.55	2.03	17704.47	1.07	1505.78	1.37	17.86	1.39	2301.30	1.54	1.45
p1	2057.47	2.02	18149.65	1.09	1696.85	1.55	17.64	1.38	2302.43	1.54	1.49
p2	2052.88	2.01	18117.25	1.09	1705.92	1.56	17.31	1.35	2309.25	1.55	1.48
TILE_37	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2068.90	2.03	18156.38	1.09	1375.17	1.25	17.89	1.39	2312.50	1.55	1.43
p1	2062.20	2.02	17680.83	1.06	1624.70	1.48	17.61	1.37	2304.65	1.54	1.47
p2	2051.53	2.01	18116.45	1.09	1838.67	1.68	17.14	1.34	2308.55	1.55	1.50
TILE_38	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2062.05	2.02	17722.65	1.07	1414.47	1.29	19.92	1.55	2306.15	1.55	1.46
p1	2051.65	2.01	18129.72	1.09	1582.62	1.44	19.65	1.53	2300.55	1.54	1.50
p2	2032.15	1.99	18130.22	1.09	1663.55	1.52	19.36	1.51	2305.18	1.54	1.50
TILE_39	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2064.15	2.03	18154.80	1.09	1367.33	1.25	19.90	1.55	2320.28	1.55	1.46
p1	2049.43	2.01	17667.80	1.06	1544.55	1.41	19.45	1.52	2312.68	1.55	1.48
p2	2038.78	2.00	18114.97	1.09	1820.17	1.66	19.25	1.50	2318.07	1.55	1.53
TILE_40	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1943.92	1.91	18146.47	1.09	1402.58	1.28	20.17	1.57	2309.68	1.55	1.45
p1	1929.25	1.89	17680.05	1.06	1616.70	1.47	19.68	1.53	2305.47	1.54	1.48
p2	1876.58	1.84	18128.95	1.09	1829.55	1.67	19.51	1.52	2306.03	1.55	1.51
TILE_41	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2060.00	2.02	18125.62	1.09	1378.03	1.26	19.55	1.52	2310.03	1.55	1.46
p1	2052.68	2.01	18115.78	1.09	1570.35	1.43	19.30	1.50	2306.28	1.55	1.49
p2	2045.67	2.01	17664.53	1.06	1645.17	1.50	19.47	1.52	2314.47	1.55	1.50

TILE_42	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1947.60	1.91	18142.62	1.09	1369.75	1.25	19.89	1.55	2313.35	1.55	1.44
p1	1929.55	1.89	18124.20	1.09	1557.53	1.42	19.67	1.53	2307.55	1.55	1.47
p2	1898.35	1.86	18154.45	1.09	1669.67	1.52	19.62	1.53	2306.60	1.55	1.49
TILE_43	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2063.07	2.02	18175.65	1.09	1359.45	1.24	19.92	1.55	2310.32	1.55	1.46
p1	2056.18	2.02	18166.00	1.09	1588.83	1.45	19.52	1.52	2303.15	1.54	1.50
p2	2054.28	2.02	18148.38	1.09	1667.25	1.52	19.37	1.51	2313.10	1.55	1.51
TILE_44	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2059.40	2.02	18162.25	1.09	1251.88	1.14	17.96	1.40	2304.40	1.54	1.40
p1	2051.18	2.01	17712.45	1.07	1552.78	1.42	17.77	1.39	2303.93	1.54	1.45
p2	2042.40	2.00	18152.10	1.09	1621.97	1.48	17.36	1.35	2308.62	1.55	1.47
TILE_45	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2067.72	2.03	17729.97	1.07	1259.28	1.15	19.16	1.49	2325.30	1.56	1.42
p1	2060.45	2.02	18148.17	1.09	1494.10	1.36	18.66	1.45	2316.05	1.55	1.47
p2	2045.22	2.01	18126.65	1.09	1705.03	1.55	18.60	1.45	2321.25	1.56	1.50
TILE_46	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1965.53	1.93	18176.67	1.09	1331.62	1.21	19.82	1.54	2314.65	1.55	1.44
p1	1890.88	1.86	18170.97	1.09	1544.72	1.41	19.43	1.51	2311.20	1.55	1.46
p2	1840.15	1.81	18159.88	1.09	1666.30	1.52	19.33	1.51	2310.72	1.55	1.48
TILE_47	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1944.25	1.91	18178.00	1.09	1201.65	1.10	19.84	1.55	2313.80	1.55	1.41
p1	1928.80	1.89	18147.65	1.09	1502.22	1.37	19.56	1.52	2307.50	1.55	1.46
p2	1898.58	1.86	18176.15	1.09	1594.55	1.45	19.40	1.51	2315.05	1.55	1.47
TILE_48	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2063.93	2.03	18167.42	1.09	1198.58	1.09	19.80	1.54	2315.30	1.55	1.42
p1	2051.90	2.01	18132.12	1.09	1471.42	1.34	19.61	1.53	2306.32	1.55	1.47
p2	2041.53	2.00	18118.35	1.09	1711.05	1.56	19.27	1.50	2310.85	1.55	1.51
TILE_49	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2057.80	2.02	18152.53	1.09	1181.92	1.08	17.90	1.40	2322.35	1.56	1.39
p1	2052.72	2.01	18139.55	1.09	1391.53	1.27	17.75	1.38	2316.57	1.55	1.43
p2	2039.55	2.00	18142.42	1.09	1640.47	1.50	17.34	1.35	2321.75	1.56	1.47
TILE_50	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1959.50	1.92	18152.05	1.09	1133.03	1.03	19.79	1.54	2261.45	1.52	1.38
p1	1949.12	1.91	18128.08	1.09	1450.62	1.32	19.50	1.52	2263.38	1.52	1.45
p2	1914.42	1.88	18133.10	1.09	1685.33	1.54	19.42	1.51	2267.57	1.52	1.49

p0_score:	75.22
p1_score:	76.10
p2_score:	76.19
Unreviewed_VMmark_Score:	76.10

Configuration

Server and Network	
Server Manufacturer and Model	Cisco UCS C460 M1
Processor Vendor and Model	Intel Xeon X7560
Processor Speed (GHz)	2.27 GHz
Total Sockets/Total Cores/Total Threads	4 Sockets / 32 Cores / 64 Threads
Primary Cache	32KB I + 32KB D on-chip per core
Secondary Cache	256KB I + D on chip per core
Other Cache	24MB I + D on chip per chip L3
BIOS Version	C460M1.1.1.2a.0
Memory Size (in GB, Number of DIMMs)	512GB, 64x8GB
Memory Type and Speed	Quad rank 1066MHz Registered DDR3
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	LSI Logic SAS 9240-8i (internal)
Number of Host Bus Adapters	1 dual-port
Host Bus Adapter Vendors and Models	Emulex LPE12002-M8 FC Dual-port HBA Adapter
Number of Network Controllers	1 dual-port plus 1 dual-port (embedded)
Network Controller Vendors and Models	Broadcom NetExtreme II 5709 (embedded), Intel X520-DA2
Network Switch Vendors and Models	(1) Cisco Nexus 5010, (2) Cisco Nexus 2148T, (2)Cisco UCS-6120XP
Network Speed	10Gbps (database, webserver, mailserver), 1Gbps (all else)
Other Hardware	none
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	11-26-2010
Software Availability Date (MM-DD-YYYY)	08-30-2010
Virtualization Software	

Vendor, Product, Version, and Build	VMware ESX 4.0 U2 Build 261974
Virtualization Type	Hardware
Supplemental Software	None
Virtualization Software Availability Date (MM-DD-YYYY)	6/10/2010

Storage

Array Vendors, Models, and Firmware Versions	2 x EMC CX4-480, version 04.29.000.5.003, 1 x EMC CX4-240, version 04.29.000.5.003
Fibre Channel Switch Vendors and Models	Cisco MDS 9506 with DS-X9248-48K9 1/2/4/8-Gbps 48-port FC Module
Disk Space Used	3210.41GB
Array Cache Size	8996MB (CX4-480), 2522MB (CX4-240)
Total Number of Physical Disks Used	134
Total Number of Enclosures/Pods/Shelves Used	11
Total Number of Physical Disks per Enclosures/Pods/Shelves Used	11 @ 12 disks
Total Number of Storage Groups Used	3
Number LUNs Used	114
LUN Size and Number of Disks Per LUN	10 sets of 5 LUNs at 38GB (Fileserver + Mailserver), each set spread over 8x73GB SSDs 10 sets of 5 LUNs at 15GB (database) + 1 LUN at 150GB (Misc) over 4x450GB 15K disks 1 LUN at 15GB (database) + 1 LUN at 150GB (Misc) over 4x450GB 15K disks 1 LUN at 38GB (Fileserver + Mailserver) spread over 8x73GB SSDs 1 LUN at 73GB (boot) over (2) RAID1 15K disks (internal)
RAID Type	RAID 0 for VMs, RAID 1 for ESX COS
Number of Members per RAID Set	11 RAID0 RAID sets each over 8x73GB SSDs 11 RAID0 RAID sets each over 4x450GB 15K disks 1 LUN over 2x73GB 15K disks (internal)
Disk Vendors, Models, and Speeds	STEC ZIV2A074 CLAR72, SEAGATE ST345085 CLAR450 15K, SEAGATE ST973452SS 15K

Clients

Number of Clients	51
System Model(s)	clients 0-17: Dell PowerEdge 2950 client18: Cisco UCS C200 M1 client19: Cisco UCS B200 M1 client20: Cisco UCS B200 M1 client21: Cisco UCS B200 M1 client22: Cisco UCS B200 M1

	client23: Cisco UCS B200 M1 client24: Cisco UCS B200 M1 client25-client49: Cisco UCS C200 M1 client50: Cisco UCS B200 M2
Processor Vendor(s) and Model(s)	client0-17: Intel Xeon E5430 client18: Intel Xeon E5540 client19: Intel Xeon E5540 client20: Intel Xeon X5670 client21: Intel Xeon E5520 client22: Intel Xeon X5570 client23: Intel Xeon E5540 client24: Intel Xeon E5520 client25: Intel Xeon X5570 client26: Intel Xeon E5520 client27: Intel Xeon E5540 client28-48: Intel Xeon E5520 client49: Intel Xeon E5430 client50: Intel Xeon X5680
Processor Speed(s) (GHz)	client0-17: 2.66GHz client18: 2.53GHz client19: 2.53GHz client20: 2.93GHz client21: 2.26GHz client22: 2.93GHz client23: 2.53GHz client24: 2.26GHz client25: 2.93GHz client26: 2.26GHz client27: 2.53GHz client28-48: 2.26GHz client49: 2.66GHz client50: 3.33GHz
Total Sockets/Total Cores/Total Threads	client0-17: 2 Sockets / 8 Cores / 8 Threads client18-49: 2 Sockets / 8 Cores / 16 Threads client50: 2 sockets / 12 Cores / 24 Threads
Memory per Client	client0-17: 16GB client18-49: 24GB client50: 96GB
Network Controller Vendors and Models	client0-17: Broadcom BMC5708C (1Gb/s) client18,25-49: Intel 82576 (1Gb/s) client19-24, 50: Intel 82598EB (10Gb/s)
Operating System, Version, and Service Pack	Windows Server 2003 Enterprise Edition SP2
Other Hardware	None
Other Software	None

Notes for Workload

Server BIOS Settings

- Intel Turbo Boost enabled (up to 2.67Ghz) (default enabled)

Emulex HBA BIOS settings

- Default

vSwitch Configuration

- 4 vSwitches defined, each attached to a physical NIC.
- vSwitch0 and vSwitch1 were configured with 248 ports (default 56).
- vSwitch2 and vSwitch3 were configured with 120 ports (default 56).
 - Even tiled javaservers, standby and fileservers were configured on vSwitch0/vmnic1
 - Odd tiled javaservers, standby and fileservers were configured on vSwitch1/vmnic0
 - Even tiled databases, mailservers and webservers were configured on vSwitch2/vmnic2
 - Odd tiled databases, mailservers and webservers were configured on vSwitch3/vmnic3

Storage Configuration

- 10 sets of 5 LUNs at 38GB (Fileserver + Mailserver) were created, with each set spread over 8x73GB SSDs. Each LUN held a single tile's Fileserver & Mailserver VM's.
- 10 sets of 5 LUNs at 15GB (database) + 1 LUN at 150GB (Misc) were created, with each set spread over 4x450GB 15K disks. The 15GB LUNs each held a single tile's Database VM. Each 150GB LUN held five tile's Webserver, Standby and Javasever VMs.
- 1 LUN at 38GB (Fileserver + Mailserver) was created, spread over 8x73GB SSDs. This LUN held a single tile's Fileserver & Mailserver VM's.
- 1 LUN at 15GB (database) + 1 LUN at 150GB (Misc) was created, each spread over 4x450GB 15K disks. The 15GB LUN held a single tile's Database VM. The 150GB LUN held one tile's Webserver, Standby and Javasever VMs.
- 1 LUN at 64GB was created over (2) RAID1 15K disks on the embedded RAID controller for the ESX COS

Virtualization Software Notes

- Virtual hardware upgraded from V4 to V7
- Virtual MMU was enabled for all VMs
- Ethernet adapter type set to vmxnet3 for all VMs
- Logging was disabled for all VMs
- Storage multipathing was set to "Fixed" (default MRU)
- IDE & Floppy removed for all VMs (default enabled)
- syncTime=TRUE for all VM's with the exception of Database43
- BufferCache.SoftMaxDirty=85 (default 15)
- Disk.SchedNumReqOutstanding = 256 (default 32)
- IRQ.RoutingPolicy = 0 (default 2)
- Net.MaxNetifRxQueueLen=300 (default 100)
- Net.MaxNetifTxQueueLen=1000 (default 500)
- Net.TcpipHeapMax=120 (default 64)
- Net.vmxnetThroughputWeight=255 (default 0)
- CPU.Quantum=60 (default 50)
- CPU.HaltingIdleMsecPenalty=0 (default 100)
- Mem.BalancePeriod=0 (default 15)
- Mem.SamplePeriod=0 (default 60)
- Mem.ShareScanGHz=0 (default 4)
- Numa.PageMigEnable=0 (default 1)
- Firewall is disabled for the COS (default enabled)

- /vmkernel/module/lpfc820.o/options = "lpfc_lun_queue_depth=64 lpfc_cr_count=5 lpfc_cr_delay=1" set in /etc/vmware/esx.conf (defaults 31, 1, 0)
- /vmkernel/module/ixgbe.o/options = "VMDQ=1,1 InterruptThrottleRate=3000,3000" (defaults 1,1 / 16000,16000) set in /etc/vmware/esx.conf
- Used the VMmark AutoPart utility to expand all mailserver data partitions
- Used a new VMmark harness file 'fileservr_functions.xml' to serialize "KillLockMem" calls during benchmark setup

Operating System Notes

- Microsoft Windows Server 2003 virtual machines were updated to Service Pack 2
- Microsoft Windows Server 2003 virtual machines updated with KB955839
- Fileserver and Webserver VMs were updated to SLES 10 SP2

Software Notes

None.

Client Notes

- Microsoft Windows Server 2003 client machines were updated to Service Pack 2
- TCP TOE chimney was disabled on all clients (default enabled)
- Microsoft Windows Server 2003 clients updated with KB943545 & KB955839
- Clients19-24 and 50 were Cisco UCS B200 M1 blade servers connected to the UCS 6120 fabric at 10Gb/s, which was in turn connected to the Cisco Nexus 5010.
- Clients0-18 were connected to one Nexus 2148T at 1Gb/s, which was in turn connected to the Nexus 5010.
- Clients25-48 were connected to the other Nexus 2148T at 1Gb/s, which was in turn connected to the Nexus 5010.
- The SUT was connected to the Nexus 5010 at 1Gb/s

Other Notes

- The TILEDELAY and DELAYTIME values were modified in the VMMARK.CONFIG file
 - MailServer/DELAYTIME="0" (default 5)
 - JavaServer/DELAYTIME="25" (default 540)
 - Standby/DELAYTIME="35" (default 170)
 - WebServer/DELAYTIME="50" (default 180)
 - Database/DELAYTIME="75" (default 360)
 - Fileserver/DELAYTIME="100" (default 450)
 - TILEDELAY=180 (default 600)

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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