

## VMware®VMmark®V2.1 Results

Vendor and Hardware Platform: Fujitsu PRIMERGY RX900 S2  
 Virtualization Platform: VMware ESX 4.1 U1 Build 348481  
 VMware vCenter Server: VMware vCenter Server 4.1.0 build 258902

**VMmark V2.1 Score =  
29.03 @ 30 Tiles**

|  |  |  |
|--|--|--|
| Number of Hosts: 2                                 | Uniform Hosts [yes/no]: yes                            | Total sockets/core/threads in test: 16 Sockets / 160 Cores / 320 Threads |
| Tested By: Fujitsu                                 |  | Test Date: 08-06-2011  |
| Performance Section<br><a href="#">Performance</a> | Configuration Section<br><a href="#">Configuration</a> | Notes Section<br><a href="#">Notes for Workload</a>                      |

### Performance

|        | mailserver |       |        | olio    |       |        | dvdstoreA |       |        | dvdstoreB |       |        | dvdstoreC |       |        |      |
|--------|------------|-------|--------|---------|-------|--------|-----------|-------|--------|-----------|-------|--------|-----------|-------|--------|------|
| TILE_0 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 329.12     | 1.00  | 189.75 | 4589.85 | 0.99  | 268.79 | 2929.38   | 1.33  | 120.93 | 2138.50   | 1.41  | 125.54 | 1532.60   | 1.45  | 130.39 | 1.22 |
| p1     | 329.82     | 1.00  | 205.25 | 4550.95 | 0.98  | 301.38 | 2846.55   | 1.29  | 126.41 | 2236.57   | 1.47  | 129.76 | 1635.55   | 1.55  | 134.98 | 1.24 |
| p2     | 325.07     | 0.98  | 215.00 | 4551.93 | 0.98  | 324.82 | 2835.22   | 1.29  | 127.65 | 1911.33   | 1.26  | 121.95 | 1404.47   | 1.33  | 116.71 | 1.16 |
| TILE_1 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 331.73     | 1.00  | 180.22 | 4610.85 | 0.99  | 245.32 | 2966.53   | 1.35  | 117.64 | 2246.15   | 1.48  | 121.96 | 1650.12   | 1.56  | 123.59 | 1.25 |
| p1     | 324.52     | 0.98  | 195.25 | 4564.45 | 0.98  | 280.85 | 2893.93   | 1.32  | 123.25 | 2187.18   | 1.44  | 127.68 | 1674.30   | 1.58  | 129.92 | 1.24 |
| p2     | 325.20     | 0.98  | 207.25 | 4590.65 | 0.99  | 265.30 | 2872.03   | 1.31  | 124.79 | 2029.92   | 1.34  | 120.88 | 1453.35   | 1.37  | 115.07 | 1.18 |
| TILE_2 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 327.90     | 0.99  | 178.00 | 4595.85 | 0.99  | 245.08 | 2983.30   | 1.36  | 116.87 | 2298.43   | 1.51  | 123.80 | 1692.67   | 1.60  | 127.17 | 1.26 |
| p1     | 331.88     | 1.00  | 196.50 | 4610.90 | 0.99  | 259.69 | 2906.28   | 1.32  | 122.51 | 2076.70   | 1.37  | 131.76 | 1567.78   | 1.48  | 134.90 | 1.22 |
| p2     | 329.43     | 1.00  | 204.00 | 4561.35 | 0.98  | 274.71 | 2831.53   | 1.29  | 128.28 | 2038.88   | 1.34  | 131.75 | 1453.00   | 1.37  | 130.01 | 1.18 |
| TILE_3 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 330.60     | 1.00  | 205.50 | 4614.68 | 0.99  | 241.98 | 3034.75   | 1.38  | 113.43 | 2261.95   | 1.49  | 120.66 | 1706.47   | 1.61  | 125.67 | 1.27 |
| p1     | 328.38     | 0.99  | 219.25 | 4579.62 | 0.99  | 277.92 | 2958.03   | 1.35  | 118.63 | 2129.25   | 1.40  | 126.95 | 1515.75   | 1.43  | 132.53 | 1.22 |
| p2     | 322.55     | 0.98  | 227.75 | 4581.23 | 0.99  | 271.38 | 2879.10   | 1.31  | 124.59 | 2155.75   | 1.42  | 131.02 | 1563.65   | 1.48  | 129.78 | 1.22 |
| TILE_4 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 321.95     | 0.97  | 219.12 | 4597.98 | 0.99  | 238.22 | 3021.82   | 1.37  | 114.32 | 2134.88   | 1.41  | 125.79 | 1647.38   | 1.56  | 124.60 | 1.24 |
| p1     | 325.20     | 0.98  | 220.32 | 4587.27 | 0.99  | 272.40 | 2895.85   | 1.32  | 123.22 | 2040.83   | 1.34  | 135.49 | 1507.85   | 1.43  | 133.83 | 1.20 |
| p2     | 323.85     | 0.98  | 229.00 | 4573.23 | 0.99  | 273.08 | 2830.70   | 1.29  | 127.88 | 2077.78   | 1.37  | 138.45 | 1622.15   | 1.53  | 136.88 | 1.21 |
| TILE_5 | Actual     | Ratio | QoS    | Actual  | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | Actual    | Ratio | QoS    | GM   |
| p0     | 322.35     | 0.98  | 204.25 | 4604.43 | 0.99  | 248.84 | 2965.70   | 1.35  | 117.61 | 2236.18   | 1.47  | 122.89 | 1662.25   | 1.57  | 122.16 | 1.25 |
| p1     | 324.88     | 0.98  | 215.00 | 4583.75 | 0.99  | 303.98 | 2858.85   | 1.30  | 125.41 | 2157.85   | 1.42  | 130.44 | 1616.40   | 1.53  | 128.46 | 1.22 |

|                |        |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |
|----------------|--------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|------|
| <b>p2</b>      | 329.35 | 1.00  | 225.75 | 4568.90 | 0.98  | 312.41 | 2791.78 | 1.27  | 130.88 | 2035.97 | 1.34  | 136.16 | 1560.95 | 1.48  | 135.72 | 1.20 |
| <b>TILE_6</b>  | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 328.43 | 0.99  | 204.00 | 4575.60 | 0.99  | 262.48 | 3039.57 | 1.38  | 114.10 | 1645.90 | 1.08  | 109.41 | 1156.55 | 1.09  | 100.62 | 1.10 |
| <b>p1</b>      | 326.07 | 0.99  | 223.75 | 4578.12 | 0.99  | 285.55 | 2662.45 | 1.21  | 143.52 | 1555.53 | 1.02  | 138.39 | 1059.33 | 1.00  | 128.19 | 1.04 |
| <b>p2</b>      | 327.35 | 0.99  | 228.50 | 4571.85 | 0.99  | 281.27 | 2462.38 | 1.12  | 163.11 | 1312.38 | 0.86  | 155.41 | 917.85  | 0.87  | 142.46 | 0.96 |
| <b>TILE_7</b>  | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 324.38 | 0.98  | 182.70 | 4620.48 | 1.00  | 234.50 | 2993.47 | 1.36  | 116.44 | 2307.88 | 1.52  | 122.65 | 1685.67 | 1.59  | 128.08 | 1.26 |
| <b>p1</b>      | 324.02 | 0.98  | 194.00 | 4588.30 | 0.99  | 259.55 | 2940.53 | 1.34  | 120.23 | 2105.35 | 1.39  | 128.94 | 1573.62 | 1.49  | 133.92 | 1.22 |
| <b>p2</b>      | 331.02 | 1.00  | 201.00 | 4619.82 | 1.00  | 255.47 | 2907.85 | 1.32  | 122.25 | 2095.28 | 1.38  | 129.91 | 1497.40 | 1.42  | 135.33 | 1.21 |
| <b>TILE_8</b>  | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 326.32 | 0.99  | 202.50 | 4606.32 | 0.99  | 249.58 | 2868.07 | 1.30  | 125.13 | 2056.90 | 1.35  | 126.82 | 1691.70 | 1.60  | 128.31 | 1.23 |
| <b>p1</b>      | 331.43 | 1.00  | 212.53 | 4541.32 | 0.98  | 288.69 | 2841.57 | 1.29  | 126.68 | 2233.10 | 1.47  | 123.82 | 1590.17 | 1.50  | 123.62 | 1.23 |
| <b>p2</b>      | 329.90 | 1.00  | 223.50 | 4576.02 | 0.99  | 290.37 | 2781.05 | 1.26  | 130.88 | 2125.65 | 1.40  | 126.88 | 1640.85 | 1.55  | 125.99 | 1.22 |
| <b>TILE_9</b>  | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 328.07 | 0.99  | 221.12 | 4621.82 | 1.00  | 222.98 | 2564.12 | 1.17  | 152.22 | 1842.08 | 1.21  | 160.11 | 1371.03 | 1.30  | 166.98 | 1.13 |
| <b>p1</b>      | 320.60 | 0.97  | 224.00 | 4601.98 | 0.99  | 256.49 | 2470.47 | 1.12  | 161.85 | 1786.47 | 1.18  | 169.17 | 1238.00 | 1.17  | 182.67 | 1.08 |
| <b>p2</b>      | 327.93 | 0.99  | 232.25 | 4586.60 | 0.99  | 278.27 | 2315.50 | 1.05  | 178.76 | 1711.72 | 1.13  | 188.14 | 1275.70 | 1.21  | 198.04 | 1.07 |
| <b>TILE_10</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 326.50 | 0.99  | 190.75 | 4600.62 | 0.99  | 248.47 | 2915.38 | 1.33  | 121.65 | 2145.88 | 1.41  | 125.22 | 1534.83 | 1.45  | 129.56 | 1.22 |
| <b>p1</b>      | 325.10 | 0.98  | 203.45 | 4603.07 | 0.99  | 273.67 | 2806.22 | 1.28  | 129.35 | 2156.10 | 1.42  | 130.45 | 1590.40 | 1.50  | 131.70 | 1.22 |
| <b>p2</b>      | 329.18 | 1.00  | 219.75 | 4554.68 | 0.98  | 293.63 | 2741.28 | 1.25  | 135.27 | 2053.32 | 1.35  | 141.84 | 1493.55 | 1.41  | 146.07 | 1.18 |
| <b>TILE_11</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 321.82 | 0.97  | 205.25 | 4634.45 | 1.00  | 234.31 | 2966.78 | 1.35  | 118.05 | 2151.22 | 1.42  | 124.29 | 1547.72 | 1.46  | 128.52 | 1.22 |
| <b>p1</b>      | 325.10 | 0.98  | 217.00 | 4584.12 | 0.99  | 266.41 | 2898.07 | 1.32  | 122.84 | 2180.15 | 1.44  | 128.33 | 1658.53 | 1.57  | 131.59 | 1.24 |
| <b>p2</b>      | 326.82 | 0.99  | 228.05 | 4577.38 | 0.99  | 295.20 | 2900.90 | 1.32  | 122.56 | 2108.25 | 1.39  | 128.47 | 1516.85 | 1.43  | 132.30 | 1.21 |
| <b>TILE_12</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 327.30 | 0.99  | 217.50 | 4625.62 | 1.00  | 243.01 | 2967.57 | 1.35  | 119.13 | 2219.68 | 1.46  | 124.58 | 1613.10 | 1.52  | 128.48 | 1.24 |
| <b>p1</b>      | 324.35 | 0.98  | 231.00 | 4598.10 | 0.99  | 247.25 | 2829.57 | 1.29  | 128.64 | 2080.65 | 1.37  | 131.76 | 1556.55 | 1.47  | 136.70 | 1.20 |
| <b>p2</b>      | 322.90 | 0.98  | 235.75 | 4586.48 | 0.99  | 274.00 | 2759.68 | 1.25  | 133.09 | 2079.85 | 1.37  | 131.92 | 1478.05 | 1.40  | 138.02 | 1.18 |
| <b>TILE_13</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 324.70 | 0.98  | 210.97 | 4600.32 | 0.99  | 252.24 | 2904.75 | 1.32  | 122.22 | 2241.12 | 1.48  | 122.60 | 1704.20 | 1.61  | 125.95 | 1.25 |
| <b>p1</b>      | 330.15 | 1.00  | 223.00 | 4600.90 | 0.99  | 261.27 | 2850.70 | 1.30  | 126.23 | 2132.57 | 1.40  | 125.77 | 1535.20 | 1.45  | 129.58 | 1.21 |
| <b>p2</b>      | 329.05 | 1.00  | 238.50 | 4578.10 | 0.99  | 273.07 | 2812.53 | 1.28  | 128.73 | 2172.45 | 1.43  | 128.97 | 1585.85 | 1.50  | 131.99 | 1.22 |
| <b>TILE_14</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 328.35 | 0.99  | 204.00 | 4620.80 | 1.00  | 229.32 | 2916.72 | 1.33  | 121.51 | 2135.40 | 1.41  | 125.81 | 1613.95 | 1.53  | 128.58 | 1.23 |
| <b>p1</b>      | 325.60 | 0.99  | 211.25 | 4589.40 | 0.99  | 251.40 | 2838.40 | 1.29  | 127.45 | 2085.07 | 1.37  | 131.19 | 1488.78 | 1.41  | 136.37 | 1.19 |

|                |        |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |
|----------------|--------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|------|
| <b>p2</b>      | 325.65 | 0.99  | 222.75 | 4595.02 | 0.99  | 261.76 | 2760.70 | 1.26  | 133.50 | 2169.88 | 1.43  | 137.17 | 1577.03 | 1.49  | 142.92 | 1.21 |
| <b>TILE_15</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 327.57 | 0.99  | 187.60 | 4612.80 | 0.99  | 235.85 | 2972.75 | 1.35  | 117.54 | 2178.18 | 1.43  | 121.64 | 1566.92 | 1.48  | 125.23 | 1.23 |
| <b>p1</b>      | 326.07 | 0.99  | 201.25 | 4594.35 | 0.99  | 257.36 | 2861.60 | 1.30  | 125.38 | 2183.93 | 1.44  | 128.33 | 1594.83 | 1.51  | 131.56 | 1.22 |
| <b>p2</b>      | 325.57 | 0.99  | 214.00 | 4582.73 | 0.99  | 276.41 | 2830.57 | 1.29  | 127.90 | 2155.62 | 1.42  | 131.44 | 1624.33 | 1.54  | 136.26 | 1.22 |
| <b>TILE_16</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 332.32 | 1.01  | 226.75 | 4635.15 | 1.00  | 238.81 | 2992.18 | 1.36  | 116.60 | 2149.38 | 1.42  | 124.83 | 1528.08 | 1.44  | 130.75 | 1.23 |
| <b>p1</b>      | 323.45 | 0.98  | 237.55 | 4594.75 | 0.99  | 249.20 | 2827.30 | 1.29  | 128.11 | 2221.47 | 1.46  | 131.60 | 1620.17 | 1.53  | 137.00 | 1.23 |
| <b>p2</b>      | 323.30 | 0.98  | 248.40 | 4577.70 | 0.99  | 275.83 | 2725.50 | 1.24  | 136.72 | 2001.65 | 1.32  | 140.13 | 1496.33 | 1.41  | 145.31 | 1.17 |
| <b>TILE_17</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 312.77 | 0.95  | 166.55 | 4443.25 | 0.96  | 227.92 | 2999.82 | 1.36  | 115.13 | 2173.40 | 1.43  | 123.12 | 1557.17 | 1.47  | 127.75 | 1.21 |
| <b>p1</b>      | 329.12 | 1.00  | 188.25 | 4613.98 | 0.99  | 246.57 | 2944.18 | 1.34  | 118.00 | 2143.20 | 1.41  | 125.98 | 1611.47 | 1.52  | 129.89 | 1.23 |
| <b>p2</b>      | 330.25 | 1.00  | 202.45 | 4583.40 | 0.99  | 264.75 | 2826.22 | 1.29  | 127.48 | 2110.78 | 1.39  | 130.05 | 1502.20 | 1.42  | 135.02 | 1.20 |
| <b>TILE_18</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 321.75 | 0.97  | 224.50 | 4600.45 | 0.99  | 231.24 | 2945.68 | 1.34  | 119.48 | 2206.72 | 1.45  | 125.81 | 1709.50 | 1.62  | 125.26 | 1.25 |
| <b>p1</b>      | 327.20 | 0.99  | 234.00 | 4603.60 | 0.99  | 256.19 | 2887.20 | 1.31  | 124.10 | 2130.22 | 1.40  | 133.31 | 1497.00 | 1.41  | 134.67 | 1.21 |
| <b>p2</b>      | 323.52 | 0.98  | 244.25 | 4593.05 | 0.99  | 274.65 | 2803.62 | 1.27  | 130.03 | 2013.35 | 1.33  | 138.89 | 1531.47 | 1.45  | 140.16 | 1.19 |
| <b>TILE_19</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 329.50 | 1.00  | 204.00 | 4638.00 | 1.00  | 230.88 | 2941.68 | 1.34  | 119.77 | 2149.65 | 1.42  | 124.57 | 1642.47 | 1.55  | 124.91 | 1.24 |
| <b>p1</b>      | 324.20 | 0.98  | 205.50 | 4584.85 | 0.99  | 255.46 | 2827.78 | 1.29  | 128.72 | 2131.18 | 1.40  | 134.39 | 1490.00 | 1.41  | 137.17 | 1.20 |
| <b>p2</b>      | 323.57 | 0.98  | 214.00 | 4569.52 | 0.98  | 269.61 | 2747.05 | 1.25  | 135.06 | 2079.62 | 1.37  | 139.75 | 1577.38 | 1.49  | 143.42 | 1.20 |
| <b>TILE_20</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 325.93 | 0.99  | 219.28 | 4592.55 | 0.99  | 254.26 | 2975.50 | 1.35  | 117.60 | 2183.85 | 1.44  | 121.23 | 1567.83 | 1.48  | 125.59 | 1.23 |
| <b>p1</b>      | 323.88 | 0.98  | 226.40 | 4595.70 | 0.99  | 258.15 | 2800.45 | 1.27  | 130.16 | 2160.57 | 1.42  | 130.31 | 1573.55 | 1.49  | 134.54 | 1.21 |
| <b>p2</b>      | 332.48 | 1.01  | 235.75 | 4563.82 | 0.98  | 284.39 | 2758.10 | 1.25  | 133.85 | 2121.47 | 1.40  | 134.31 | 1612.90 | 1.52  | 138.48 | 1.21 |
| <b>TILE_21</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 325.65 | 0.99  | 194.00 | 4607.40 | 0.99  | 239.60 | 2751.93 | 1.25  | 134.95 | 1965.58 | 1.29  | 144.76 | 1398.22 | 1.32  | 151.34 | 1.16 |
| <b>p1</b>      | 326.05 | 0.99  | 199.00 | 4613.95 | 0.99  | 254.64 | 2678.53 | 1.22  | 141.46 | 2017.15 | 1.33  | 153.90 | 1497.05 | 1.41  | 156.03 | 1.18 |
| <b>p2</b>      | 325.30 | 0.99  | 207.75 | 4586.68 | 0.99  | 273.73 | 2678.22 | 1.22  | 141.43 | 1888.33 | 1.24  | 154.22 | 1412.35 | 1.33  | 159.30 | 1.14 |
| <b>TILE_22</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 325.85 | 0.99  | 207.25 | 4629.90 | 1.00  | 215.28 | 2753.50 | 1.25  | 135.13 | 2073.93 | 1.37  | 140.73 | 1463.28 | 1.38  | 151.18 | 1.18 |
| <b>p1</b>      | 327.45 | 0.99  | 213.75 | 4600.00 | 0.99  | 250.00 | 2617.88 | 1.19  | 146.76 | 1991.12 | 1.31  | 149.51 | 1476.42 | 1.40  | 159.38 | 1.16 |
| <b>p2</b>      | 326.70 | 0.99  | 223.00 | 4590.23 | 0.99  | 259.78 | 2602.03 | 1.18  | 147.50 | 1907.03 | 1.26  | 151.69 | 1323.72 | 1.25  | 163.98 | 1.13 |
| <b>TILE_23</b> | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>      | 327.80 | 0.99  | 221.35 | 4646.35 | 1.00  | 210.87 | 2793.35 | 1.27  | 131.57 | 2170.80 | 1.43  | 137.21 | 1560.10 | 1.47  | 145.97 | 1.22 |
| <b>p1</b>      | 328.70 | 1.00  | 223.75 | 4617.60 | 0.99  | 238.35 | 2720.82 | 1.24  | 137.16 | 1971.10 | 1.30  | 143.44 | 1461.58 | 1.38  | 151.05 | 1.17 |

|                  |        |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |
|------------------|--------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|---------|-------|--------|------|
| <b>p2</b>        | 324.85 | 0.98  | 230.75 | 4583.50 | 0.99  | 262.16 | 2663.03 | 1.21  | 142.20 | 1938.33 | 1.28  | 147.89 | 1355.53 | 1.28  | 157.94 | 1.14 |
| <b>TILE_24</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 321.48 | 0.97  | 214.50 | 4643.93 | 1.00  | 215.05 | 2931.53 | 1.33  | 120.21 | 2205.47 | 1.45  | 125.54 | 1686.58 | 1.59  | 128.33 | 1.25 |
| <b>p1</b>        | 325.12 | 0.98  | 220.03 | 4600.40 | 0.99  | 246.07 | 2902.60 | 1.32  | 122.64 | 2130.53 | 1.40  | 126.27 | 1526.78 | 1.44  | 130.88 | 1.21 |
| <b>p2</b>        | 324.98 | 0.98  | 227.50 | 4571.32 | 0.98  | 269.25 | 2819.80 | 1.28  | 128.66 | 2141.10 | 1.41  | 132.03 | 1558.60 | 1.47  | 136.30 | 1.21 |
| <b>TILE_25</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 328.23 | 0.99  | 236.50 | 4633.05 | 1.00  | 219.62 | 2908.88 | 1.32  | 121.92 | 2197.97 | 1.45  | 126.67 | 1525.25 | 1.44  | 131.21 | 1.22 |
| <b>p1</b>        | 327.57 | 0.99  | 235.75 | 4611.15 | 0.99  | 240.80 | 2816.40 | 1.28  | 129.10 | 2081.82 | 1.37  | 131.63 | 1564.65 | 1.48  | 135.46 | 1.21 |
| <b>p2</b>        | 326.43 | 0.99  | 244.00 | 4616.88 | 0.99  | 253.97 | 2785.05 | 1.27  | 131.13 | 2126.85 | 1.40  | 133.77 | 1625.35 | 1.54  | 136.55 | 1.22 |
| <b>TILE_26</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 333.20 | 1.01  | 224.25 | 4651.12 | 1.00  | 209.70 | 2967.00 | 1.35  | 118.04 | 2211.00 | 1.46  | 125.35 | 1611.28 | 1.52  | 128.86 | 1.25 |
| <b>p1</b>        | 330.20 | 1.00  | 224.25 | 4578.43 | 0.99  | 255.82 | 2893.38 | 1.32  | 123.10 | 2163.38 | 1.42  | 130.20 | 1578.03 | 1.49  | 133.92 | 1.22 |
| <b>p2</b>        | 327.52 | 0.99  | 233.50 | 4581.73 | 0.99  | 257.41 | 2810.50 | 1.28  | 129.53 | 2049.38 | 1.35  | 134.61 | 1547.90 | 1.46  | 137.67 | 1.20 |
| <b>TILE_27</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 327.00 | 0.99  | 218.75 | 4655.30 | 1.00  | 218.05 | 2972.50 | 1.35  | 117.78 | 2238.47 | 1.47  | 122.91 | 1624.78 | 1.54  | 127.12 | 1.25 |
| <b>p1</b>        | 327.57 | 0.99  | 224.00 | 4613.35 | 0.99  | 236.77 | 2887.85 | 1.31  | 123.49 | 2191.45 | 1.44  | 126.86 | 1670.95 | 1.58  | 130.23 | 1.24 |
| <b>p2</b>        | 327.43 | 0.99  | 226.25 | 4587.48 | 0.99  | 258.57 | 2878.72 | 1.31  | 124.15 | 2115.45 | 1.39  | 127.99 | 1521.15 | 1.44  | 131.76 | 1.21 |
| <b>TILE_28</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 324.80 | 0.98  | 204.00 | 4646.00 | 1.00  | 204.21 | 2974.78 | 1.35  | 117.39 | 2217.88 | 1.46  | 124.70 | 1688.08 | 1.60  | 128.05 | 1.25 |
| <b>p1</b>        | 326.18 | 0.99  | 209.25 | 4589.85 | 0.99  | 247.86 | 2894.53 | 1.32  | 123.54 | 2069.15 | 1.36  | 133.16 | 1547.95 | 1.46  | 137.84 | 1.21 |
| <b>p2</b>        | 326.32 | 0.99  | 219.22 | 4590.85 | 0.99  | 260.83 | 2871.47 | 1.31  | 125.32 | 2053.45 | 1.35  | 134.30 | 1462.58 | 1.38  | 140.42 | 1.19 |
| <b>TILE_29</b>   | Actual | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | Actual  | Ratio | QoS    | GM   |
| <b>p0</b>        | 326.35 | 0.99  | 234.75 | 4619.60 | 1.00  | 227.44 | 3023.93 | 1.38  | 114.89 | 2253.12 | 1.48  | 120.99 | 1711.03 | 1.62  | 124.75 | 1.27 |
| <b>p1</b>        | 325.38 | 0.99  | 241.25 | 4593.00 | 0.99  | 250.50 | 2952.45 | 1.34  | 118.86 | 2121.78 | 1.40  | 127.19 | 1526.55 | 1.44  | 130.78 | 1.21 |
| <b>p2</b>        | 322.62 | 0.98  | 246.75 | 4585.38 | 0.99  | 276.35 | 2877.88 | 1.31  | 124.45 | 2166.35 | 1.43  | 129.60 | 1579.22 | 1.49  | 133.10 | 1.22 |
| <b>p0_score:</b> | 36.80  |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |
| <b>p1_score:</b> | 36.07  |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |
| <b>p2_score:</b> | 35.47  |       |        |         |       |        |         |       |        |         |       |        |         |       |        |      |

|  |  |  |  |  |  |  |  |  |  |         |  |  |          |  |  |        |
|--|--|--|--|--|--|--|--|--|--|---------|--|--|----------|--|--|--------|
| <b>Infrastructure_Operations_Scores:</b> |  |  |  |  |  |  |  |  |  | vmotion |  |  | svmotion |  |  | deploy |
| <b>Completed_Ops_PerHour</b>             |  |  |  |  |  |  |  |  |  | 14.00   |  |  | 6.00     |  |  | 4.50   |
| <b>Avg_Seconds_To_Complete</b>           |  |  |  |  |  |  |  |  |  | 66.94   |  |  | 49.82    |  |  | 344.04 |
| <b>Failures</b>                          |  |  |  |  |  |  |  |  |  | 0.00    |  |  | 0.00     |  |  | 0.00   |
| <b>Ratio</b>                             |  |  |  |  |  |  |  |  |  | 0.88    |  |  | 0.67     |  |  | 1.12   |
| <b>Number_Of_Threads</b>                 |  |  |  |  |  |  |  |  |  | 1       |  |  | 1        |  |  | 1      |

|                |  |  |  |  |  |                  |  |  |                                 |  |  |  |  |  |                  |  |
|----------------|--|--|--|--|--|------------------|--|--|---------------------------------|--|--|--|--|--|------------------|--|
| <b>Summary</b> |  |  |  |  |  | Run_Is_Compliant |  |  | Number_Of_Compliance_Issues(0)* |  |  |  |  |  | Median_Phase(p1) |  |
|----------------|--|--|--|--|--|------------------|--|--|---------------------------------|--|--|--|--|--|------------------|--|

|  |       |
|--|-------|
| <b>Unreviewed_VMmark2_Applications_Score</b>   | 36.07 |
| <b>Unreviewed_VMmark2_Infrastructure_Score</b> | 0.87  |
| <b>Unreviewed_VMmark2_Score</b>                | 29.03 |

## Configuration

| <b>Virtualization Software</b>  |   |
|---|---|
| Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)                     | VMware ESX 4.1 Build 348481 / 02-10-2011            |
| Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY) | VMware vCenter Server 4.1 Build 258902 / 07-13-2010 |
| Supplemental Software   | none  |
| <b>Servers</b>  |   |
| Quantity  | 2   |
| Server Manufacturer and Model   | Fujitsu PRIMERGY RX900 S2                           |
| Processor Vendor and Model  | Ten-core Intel Xeon E7-8870                         |
| Processor Speed (GHz)   | 2.40  |
| Total Sockets/Total Cores/Total Threads   | 8 Sockets / 80 Cores / 160 Threads                  |
| Primary Cache   | 32KB I + 32KB D on chip per core                    |
| Secondary Cache   | 256KB I+D on chip per core                          |
| Other Cache   | 30MB I+D on chip per chip L3                        |
| BIOS Version  | Rev R1.01.02  |
| Memory Size (in GB, Number of DIMMs)  | 1024GB, 64  |
| Memory Type and Speed   | Quad rank 1066 MHz Registered ECC DDR3              |
| Disk Subsystem Type   | FC SAN  |
| Number of Disk Controllers  | 1 (unused)  |
| Disk Controller Vendors and Models  | Intel ICH10   |
| Number of Host Bus Adapters   | 2   |
| Host Bus Adapter Vendors and Models   | Dual-channel Emulex LPe12002 (one port each used)   |
| Number of Network Controllers   | 5   |

|   |   |  |
|---|---|--|
| Network Controller Vendors and Models                 | Integrated Intel 82576NS Dual Port 1GbE Adapter(3x), Integrated Intel 82599 Dual Port 10GbE Adapter(1x, not used), Fujitsu D2745 Quad Port 1GbE Adapter(1x) |  |
| Other Hardware  | none  |  |
| Other Software  | INT-intel-lad-ddk-igb-3.0.18  |  |
| Hardware Availability Date (MM-DD-YYYY)               | 08-02-2011  |  |
| Software Availability Date (MM-DD-YYYY)               | 02-10-2011  |  |
| <b>Network</b>  |   |  |
| Network Switch Vendors and Models                     | 4xFujitsu PRIMERGY BX600 GbE Switch Blade 30/12, CISCO 4900M  |  |
| Network Speed   | 1Gbps   |  |
| <b>Storage</b>  |   |  |
| Array Vendors, Models, and Firmware Versions          | 16xFujitsu ETERNUS DX80, Firmware version V10L20-0000   |  |
| Fibre Channel Switch Vendors and Models               | Brocade 5100  |  |
| Disk Space Used                                       | 9182GB  |  |
| Array Cache Size                                      | 2GB   |  |
| Total Number of Physical Disks Used                   | 340   |  |
| Total Number of Enclosures/Pods/Shelves Used          | 31  |  |
| Number of Physical Disks Used per Enclosure/Pod/Shelf | 1x4 Disks, 6x8 Disks, 16x12 Disk, 8x10 Disk + 2SSDs   |  |
| Total Number of Storage Groups Used                   | 16  |  |
| Number of LUNs Used                                   | 113   |  |
| LUN Size and Number of Disks Per LUN                  | Details in section Storage Notes  |  |
| RAID Type   | 0   |  |
| Number of Members per RAID Set                        | Details in section Storage Notes  |  |
| Disk Vendors, Models, and Speeds                      | 4xSeagate, ST3450856SS, 15krpm; 320xSeagate, ST3300656SS, 15krpm; 16xSTEC Zeus SSD, Z16IZF2D-100UCT-FUJ   |  |
| <b>Datacenter Management Server</b>                   |   |  |
| System Model  | Fujitsu PRIMERGY BX620S4  |  |
| Processor Vendor and Model                            | Intel Xeon X5470  |  |
| Processor Speed (GHz)                                 | 3.33  |  |

|  |   |
|--|---|
| Total Sockets/Total Cores/Total Threads        | 2 Sockets / 4 Cores / 8 Threads   |
| Memory   | 4GB   |
| Network Controller(s)<br>Vendors and Models    | 3xDual Port Broadcom NetXtreme, 5 Ports disabled  |
| Operating System, Version,<br>and Service Pack | Microsoft(R) Windows(R) Server 2003 R2 Enterprise x64 Edition, Service Pack 2                               |
| Other Hardware                                 | none  |
| Other Software                                 | none  |
| <b>Clients</b>                                 |   |
| Number of Clients                              | 31 (one Client used as a dedicated Benchmark Controller)  |
| System Model(s)                                | Fujitsu PRIMERGY BX620S4  |
| Processor Vendor(s)<br>and Model(s)            | Intel Xeon 5130 (excepted Benchmark Controller with Intel Xeon X5470)                                       |
| Processor Speed(s) (GHz)                       | 2   |
| Total Sockets/Total<br>Cores/Total Threads     | 2 Sockets / 4 Cores / 4 Threads   |
| Memory per Client                              | 4GB   |
| Network Controller(s)<br>Vendors and Models    | 3xDual Port Broadcom NetXtreme, 5 Ports disabled (excepted Benchmark Controller with only 4 disabled ports) |
| Operating System, Version,<br>and Service Pack | Microsoft(R) Windows(R) Server 2003 R2 Enterprise Edition (32-bit), Service Pack 2                          |
| Other Hardware                                 | none  |
| Other Software                                 | none  |

## Notes for Workload

### Virtualization Software Notes

- Hardware version 7 used for all VMs (default 7)
- Logging disabled for all VMs (default enabled)
- VMXNET3 enabled for all VMs (default VMXNET2)
- SCSI adapter type PVSCSI used for all Standby VMs (default LSI Logic parallel)
- SCSI adapter type PVSCSI used for all Mailserver VMs (default LSI Logic SAS)
- Floppy and CDROM removed for all VMs (default enabled)
- Firewall disabled for the Console OS (default enabled)
- Changes in esx.conf:
  - /adv/Cpu/CoschedCrossCall = 0 (default 1 )
  - /adv/Cpu/HaltingIdleMsecPenalty = 0 (default 100 )
  - /adv/Irq/RoutingPolicy = 0 (default 2 )
  - /adv/Mem/BalancePeriod = 0 (default 15 )
  - /adv/Mem/SamplePeriod = 0 (default 60)
  - /adv/Mem/ShareScanGHZ = 0 (default 4)
  - /adv/Misc/TimerMaxHardPeriod = 4000 (default 100000 )
  - /adv/Misc/TimerMinHardPeriod = 2000 (default 100 )

/adv/Net/MaxNetifRxQueueLen = 500 (default 100 )  
/adv/Net/MaxNetifTxQueueLen = 1000 (default 500 )  
/adv/Net/NetTxWorldlet = 0 (default 2)  
/adv/Numa/LTermFairnessInterval = 0 (default 5)  
/adv/Numa/MonMigEnable = 0 (default 1 )  
/adv/Numa/PageMigEnable = 0 (default 1 )  
/adv/Numa/SwapLoadEnable = 0 (default 1 )  
/adv/Numa/SwapLocalityEnable = 0 (default 1 )  
/vmkernel/module/lpfc820.o/options = "lpfc\_lun\_queue\_depth=64 lpfc\_cr\_count=40 lpfc\_cr\_delay=1" (defaults 31,1,0)

## Server Notes

- Server BIOS settings:
  - Turbo Boost Technology: Enabled (Intel Turbo Boost up to 2.53GHz, default enabled)
  - Integrated Intel 82599 Dual Port 10GbE Adapter: Disabled (default enabled)
- Emulex HBA BIOS settings:
  - defaults

## Networking Notes

- One dedicated VLAN for the systems under test, vCenter Server and Benchmark Controller (SUT-VLAN)
- One dedicated VLAN for the VMs and Clients (Load-VLAN)
- vSwitch Configuration:
  - vSwitch0 on vmnic0 (1Gb) for Service Console
  - vSwitch1 on vmnic3 (1Gb) for VMotion
  - vSwitch2 on vmnic6 (1Gb) for OlioWeb and OlioDB 0,1,6,7,12,13,18,19,24,25 VMs
  - vSwitch3 on vmnic7 (1Gb) for OlioWeb and OlioDB 2,3,8,9,14,15,20,21,26,27 VMs
  - vSwitch4 on vmnic8 (1Gb) for OlioWeb and OlioDB 4,5,10,11,16,17,22,23,28,29 VMs
  - vSwitch5 unused
  - vSwitch6 on vmnic4 (1Gb) for all DS2Web and DS2DB VMs
  - vSwitch7 on vmnic5 (1Gb) for all Mail and Standby VMs and Deploy

## Storage Notes

- ETERNUS DX80[0] (1 shelf, total 4 disks)
  - RAID set 0: (4 disks)
    - LUN 0: Boot/Console OS for SUT1 (11GB)
    - LUN 1: Boot/Console OS for SUT2 (11GB)
- ETERNUS DX80[1] (2 shelves, total 24 disks)
  - RAID set 0: (6 disks)
    - LUN 1: All even numbered Standby VMs (110GB)
    - LUN 2: All odd numbered Standby VMs (110GB)
  - RAID set 1: (6 disks)
    - LUN 3: Source Deploy Template (50GB)
  - RAID set 2: (6 disks)
    - LUN 4: Target Storage VMotion (50GB)
  - RAID set 3: (6 disks)
    - LUN 5: Target Deploy Template (50GB)



- ETERNUS DX80[2] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 0 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 0 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 6 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 6 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 12 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 12 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 18 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 18 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 24 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 24 OlioDB (20GB)
- ETERNUS DX80[3] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 2 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 2 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 8 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 8 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 14 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 14 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 20 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 20 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 26 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 26 OlioDB (20GB)
- ETERNUS DX80[4] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 4 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 4 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 10 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 10 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 16 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 16 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 22 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 22 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 28 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 28 OlioDB (20GB)

- ETERNUS DX80[5] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 1 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 1 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 7 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 7 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 13 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 13 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 19 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 19 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 25 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 25 OlioDB (20GB)
- ETERNUS DX80[6] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 3 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 3 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 9 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 9 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 15 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 15 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 21 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 21 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 27 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 27 OlioDB (20GB)
- ETERNUS DX80[7] (2 shelves, total 20 disks)
  - RAID set 0: (4 disks)
    - LUN 1: For Tile 5 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 2: For Tile 5 OlioDB (20GB)
  - RAID set 1: (4 disks)
    - LUN 3: For Tile 11 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 4: For Tile 11 OlioDB (20GB)
  - RAID set 2: (4 disks)
    - LUN 5: For Tile 17 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 6: For Tile 17 OlioDB (20GB)
  - RAID set 3: (4 disks)
    - LUN 7: For Tile 23 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 8: For Tile 23 OlioDB (20GB)
  - RAID set 4: (4 disks)
    - LUN 9: For Tile 29 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
    - LUN 10: For Tile 29 OlioDB (20GB)

- ETERNUS DX80[8] (2 shelves, total 22 disks and 2 SSDs)
  - RAID set 0: (11 disks)
    - LUN 1: For Tile 0, 8 OlioWeb (180GB)
  - RAID set 1: (11 disks)
    - LUN 2: For Tile 16, 24 OlioWeb (180GB)
  - RAID set 2: (2 SSDs)
    - LUN 3: For Tile 0 second VHD from DS2DB (37GB)
    - LUN 4: For Tile 8 second VHD from DS2DB (37GB)
    - LUN 5: For Tile 16 second VHD from DS2DB (37GB)
    - LUN 6: For Tile 24 second VHD from DS2DB (37GB)
- ETERNUS DX80[9] (2 shelves, total 22 disks and 2 SSDs)
  - RAID set 0: (11 disks)
    - LUN 1: For Tile 2, 10 OlioWeb (180GB)
  - RAID set 1: (11 disks)
    - LUN 2: For Tile 18, 26 OlioWeb (180GB)
  - RAID set 2: (2 SSDs)
    - LUN 3: For Tile 2 second VHD from DS2DB (37GB)
    - LUN 4: For Tile 10 second VHD from DS2DB (37GB)
    - LUN 5: For Tile 18 second VHD from DS2DB (37GB)
    - LUN 6: For Tile 26 second VHD from DS2DB (37GB)
- ETERNUS DX80[10] (2 shelves, total 22 disks and 2 SSDs)
  - RAID set 0: (11 disks)
    - LUN 1: For Tile 4, 12 OlioWeb (180GB)
  - RAID set 1: (11 disks)
    - LUN 2: For Tile 20, 28 OlioWeb (180GB)
  - RAID set 2: (2 SSDs)
    - LUN 3: For Tile 4 second VHD from DS2DB (37GB)
    - LUN 4: For Tile 12 second VHD from DS2DB (37GB)
    - LUN 5: For Tile 20 second VHD from DS2DB (37GB)
    - LUN 6: For Tile 28 second VHD from DS2DB (37GB)
- ETERNUS DX80[11] (2 shelves, total 22 disks and 2 SSDs)
  - RAID set 0: (11 disks)
    - LUN 1: For Tile 6, 14 OlioWeb (180GB)
  - RAID set 1: (11 disks)
    - LUN 2: For Tile 22 OlioWeb (180GB)
  - RAID set 2: (2 SSDs)
    - LUN 3: For Tile 6 second VHD from DS2DB (37GB)
    - LUN 4: For Tile 14 second VHD from DS2DB (37GB)
    - LUN 5: For Tile 22 second VHD from DS2DB (37GB)
- ETERNUS DX80[12] (2 shelves, total 22 disks and 2 SSDs)
  - RAID set 0: (11 disks)
    - LUN 1: For Tile 1, 9 OlioWeb (180GB)
  - RAID set 1: (11 disks)
    - LUN 2: For Tile 17, 25 OlioWeb (180GB)
  - RAID set 2: (2 SSDs)
    - LUN 3: For Tile 1 second VHD from DS2DB (37GB)

LUN 4: For Tile 9 second VHD from DS2DB (37GB)  
LUN 5: For Tile 17 second VHD from DS2DB (37GB)  
LUN 6: For Tile 25 second VHD from DS2DB (37GB)

- ETERNUS DX80[13] (2 shelves, total 22 disks and 2 SSDs)

- RAID set 0: (11 disks)

- LUN 1: For Tile 3, 11 OlioWeb (180GB)

- RAID set 1: (11 disks)

- LUN 2: For Tile 19, 27 OlioWeb (180GB)

- RAID set 2: (2 SSDs)

- LUN 3: For Tile 3 second VHD from DS2DB (37GB)

- LUN 4: For Tile 11 second VHD from DS2DB (37GB)

- LUN 5: For Tile 19 second VHD from DS2DB (37GB)

- LUN 6: For Tile 27 second VHD from DS2DB (37GB)

- ETERNUS DX80[14] (2 shelves, total 22 disks and 2 SSDs)

- RAID set 0: (11 disks)

- LUN 1: For Tile 5, 13 OlioWeb (180GB)

- RAID set 1: (11 disks)

- LUN 2: For Tile 21, 29 OlioWeb (180GB)

- RAID set 2: (2 SSDs)

- LUN 3: For Tile 5 second VHD from DS2DB (37GB)

- LUN 4: For Tile 13 second VHD from DS2DB (37GB)

- LUN 5: For Tile 21 second VHD from DS2DB (37GB)

- LUN 6: For Tile 29 second VHD from DS2DB (37GB)

- ETERNUS DX80[15] (2 shelves, total 22 disks and 2 SSDs)

- RAID set 0: (11 disks)

- LUN 1: For Tile 7, 15 OlioWeb (180GB)

- RAID set 1: (11 disks)

- LUN 2: For Tile 23 OlioWeb (180GB)

- RAID set 2: (2 SSDs)

- LUN 3: For Tile 7 second VHD from DS2DB (37GB)

- LUN 4: For Tile 15 second VHD from DS2DB (37GB)

- LUN 5: For Tile 23 second VHD from DS2DB (37GB)

## **Datacenter Management Server Notes**

### **Operating System Notes**

Mailserver VMs: Microsoft Windows 2008 Enterprise x64 Edition updated with SP2

### **Software Notes**

Mailserver VMs: Microsoft Exchange 2007 Enterprise x64 Edition updated with SP3

### **Client Notes**

Benchmark Controller was running VMware vSphere PowerCLI 4.1 build 264274

## Other Notes

One Client used as a dedicated Benchmark Controller. This system was connected to the SUT- and the Load-VLAN.

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