

## VMware® VMmark® V2.5.2 Results

Vendor and Hardware Platform: Dell PowerEdge R620  
 Virtualization Platform: VMware ESXi 5.5.0 Update 1 Build 1881737  
 VMware vCenter Server 5.5.0 Build 1750787

**VMmark V2.5.2 Score =  
31.35 @ 30 Tiles**

Number of Hosts: 6	Uniform Hosts [yes/no]: yes	Total sockets/cores/threads in test: 12/144/288
Tested By: Principled Technologies		Test Date: [08-21-2014]
Performance Section <a href="#">Performance</a>	Configuration Section <a href="#">Configuration</a>	Notes Section <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	328.25	0.99	120.42	4757.48	1.03	67.25	3316.75	1.51	99.46	2313.20	1.52	111.36	1623.47	1.53	119.22	1.29
p1	325.20	0.98	137.25	4754.68	1.02	70.97	3123.75	1.42	111.19	2332.97	1.54	122.92	1655.17	1.56	133.85	1.28
p2	328.05	0.99	149.25	4750.43	1.02	78.33	3058.55	1.39	115.48	2098.57	1.38	131.08	1530.42	1.45	141.29	1.23
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.00	0.99	126.75	4774.05	1.03	68.42	3295.45	1.50	100.15	2440.70	1.61	107.46	1730.97	1.64	115.80	1.32
p1	328.70	1.00	147.75	4772.70	1.03	76.67	3203.28	1.46	105.15	2308.72	1.52	117.84	1715.25	1.62	125.60	1.30
p2	327.75	0.99	158.25	4757.80	1.03	81.75	3141.40	1.43	109.88	2170.35	1.43	123.77	1505.40	1.42	135.02	1.24
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.98	0.99	118.75	4759.98	1.03	63.34	3411.28	1.55	94.02	2554.78	1.68	104.30	1896.92	1.79	106.16	1.37
p1	331.45	1.00	141.50	4757.95	1.03	70.90	3413.22	1.55	93.09	2393.40	1.58	104.16	1779.95	1.68	109.33	1.33
p2	326.57	0.99	155.00	4759.77	1.03	72.85	3311.97	1.51	98.51	2330.40	1.53	108.79	1655.00	1.56	114.45	1.30
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	321.12	0.97	123.28	4744.77	1.02	70.73	3307.15	1.50	100.98	2370.68	1.56	114.01	1774.85	1.68	120.81	1.31
p1	326.10	0.99	147.25	4754.65	1.02	76.22	3327.07	1.51	97.72	2334.32	1.54	108.35	1636.72	1.55	116.74	1.29
p2	324.07	0.98	161.25	4759.07	1.03	81.90	3185.80	1.45	106.10	2305.10	1.52	117.35	1648.85	1.56	124.45	1.28
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.32	0.99	138.50	4765.35	1.03	76.65	3239.12	1.47	104.34	2327.25	1.53	117.27	1655.40	1.56	125.22	1.29
p1	326.32	0.99	155.75	4743.05	1.02	84.97	3252.53	1.48	101.55	2289.65	1.51	112.29	1621.25	1.53	118.64	1.28
p2	331.60	1.00	166.93	4769.12	1.03	82.72	3184.62	1.45	106.37	2310.38	1.52	117.43	1712.42	1.62	125.41	1.30
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.12	0.99	134.75	4761.77	1.03	69.20	3266.93	1.49	102.53	2350.80	1.55	115.65	1667.12	1.58	124.04	1.30
p1	329.85	1.00	155.75	4751.23	1.02	75.69	3339.20	1.52	96.95	2450.45	1.61	105.85	1738.60	1.64	113.56	1.33

<b>p2</b>	324.57	0.98	164.00	4763.18	1.03	77.41	3233.03	1.47	103.36	2255.20	1.49	115.88	1662.70	1.57	123.23	1.28
<b>TILE_6</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	322.15	0.98	122.33	4758.30	1.03	65.12	3383.38	1.54	96.27	2368.82	1.56	107.64	1668.78	1.58	114.86	1.31
<b>p1</b>	325.10	0.98	140.20	4774.50	1.03	70.04	3483.18	1.58	89.64	2538.80	1.67	99.08	1903.70	1.80	105.26	1.37
<b>p2</b>	329.90	1.00	151.50	4763.10	1.03	75.00	3301.78	1.50	100.42	2291.57	1.51	112.66	1608.45	1.52	121.55	1.29
<b>TILE_7</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.32	0.99	132.25	4754.18	1.02	72.11	3318.12	1.51	99.76	2486.38	1.64	110.10	1773.92	1.68	119.66	1.33
<b>p1</b>	328.95	1.00	152.00	4766.45	1.03	77.35	3166.55	1.44	108.67	2192.40	1.44	122.18	1593.00	1.51	132.05	1.26
<b>p2</b>	324.48	0.98	163.25	4768.32	1.03	82.03	3115.53	1.42	111.90	2164.80	1.43	125.31	1494.75	1.41	136.48	1.24
<b>TILE_8</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.48	0.99	123.70	4752.02	1.02	68.90	3107.62	1.41	113.33	2190.78	1.44	130.47	1618.85	1.53	138.97	1.26
<b>p1</b>	328.50	0.99	143.72	4764.68	1.03	69.09	3139.20	1.43	109.67	2164.10	1.43	124.97	1494.62	1.41	136.23	1.24
<b>p2</b>	329.50	1.00	157.00	4759.23	1.03	75.98	3001.47	1.36	119.85	2127.35	1.40	135.92	1498.15	1.42	146.46	1.23
<b>TILE_9</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	322.20	0.98	137.50	4767.57	1.03	65.58	3258.68	1.48	103.00	2258.72	1.49	116.86	1665.78	1.57	124.26	1.28
<b>p1</b>	328.05	0.99	161.25	4761.35	1.03	72.68	3218.57	1.46	104.42	2236.78	1.47	118.02	1570.75	1.48	125.48	1.27
<b>p2</b>	331.40	1.00	176.25	4775.75	1.03	81.85	3146.18	1.43	108.08	2280.25	1.50	120.74	1689.72	1.60	129.10	1.29
<b>TILE_10</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	328.15	0.99	138.00	4749.88	1.02	70.51	3264.55	1.48	102.47	2274.00	1.50	115.16	1591.30	1.50	123.89	1.28
<b>p1</b>	327.60	0.99	157.75	4756.88	1.02	73.21	3185.78	1.45	107.82	2312.80	1.52	118.33	1621.35	1.53	127.93	1.28
<b>p2</b>	327.25	0.99	169.25	4761.25	1.03	78.89	3205.62	1.46	105.18	2236.40	1.47	117.49	1653.42	1.56	124.41	1.28
<b>TILE_11</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.65	0.99	133.25	4765.68	1.03	71.95	3317.45	1.51	99.41	2323.15	1.53	110.98	1624.17	1.54	119.95	1.29
<b>p1</b>	325.38	0.99	153.00	4776.70	1.03	72.50	3300.10	1.50	99.60	2390.85	1.57	110.52	1791.50	1.69	116.60	1.32
<b>p2</b>	330.95	1.00	156.75	4749.82	1.02	79.99	3268.35	1.49	101.48	2271.78	1.50	114.32	1602.03	1.51	120.96	1.28
<b>TILE_12</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	325.82	0.99	164.50	4745.05	1.02	78.34	3124.80	1.42	111.59	2258.00	1.49	124.03	1611.47	1.52	132.01	1.27
<b>p1</b>	324.55	0.98	182.50	4744.73	1.02	80.62	3109.60	1.41	111.67	2147.15	1.41	125.99	1594.03	1.51	132.70	1.25
<b>p2</b>	328.18	0.99	190.75	4750.23	1.02	87.55	3035.78	1.38	115.97	2100.47	1.38	130.96	1484.00	1.40	138.58	1.22
<b>TILE_13</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	323.40	0.98	181.07	4741.73	1.02	91.41	3208.30	1.46	106.43	2313.28	1.52	119.11	1726.67	1.63	126.14	1.29
<b>p1</b>	323.12	0.98	197.25	4736.60	1.02	94.91	3103.40	1.41	112.79	2149.70	1.42	126.68	1494.03	1.41	137.11	1.23
<b>p2</b>	325.45	0.99	207.50	4734.65	1.02	102.75	3043.85	1.38	116.30	2185.95	1.44	129.77	1547.15	1.46	138.81	1.24
<b>TILE_14</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	329.27	1.00	179.00	4733.18	1.02	87.33	3277.95	1.49	102.24	2248.78	1.48	118.38	1668.10	1.58	124.73	1.29
<b>p1</b>	330.38	1.00	191.75	4757.25	1.02	92.17	3163.60	1.44	107.94	2188.05	1.44	122.14	1546.95	1.46	129.37	1.25

<b>p2</b>	330.73	1.00	200.75	4729.80	1.02	97.50	3146.72	1.43	108.45	2351.07	1.55	120.37	1693.70	1.60	128.42	1.29
<b>TILE_15</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.57	0.99	185.00	4744.02	1.02	86.14	1975.17	0.90	102.81	2325.45	1.53	111.39	1603.97	1.52	122.53	1.16
<b>p1</b>	321.02	0.97	202.75	4738.15	1.02	90.09	1838.10	0.84	116.95	2256.05	1.49	124.61	1591.90	1.50	134.14	1.13
<b>p2</b>	330.43	1.00	217.25	4750.65	1.02	98.50	1862.72	0.85	113.33	2315.05	1.52	117.86	1708.00	1.61	126.29	1.16
<b>TILE_16</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	323.18	0.98	180.00	4725.25	1.02	91.11	3242.47	1.47	104.15	2272.30	1.50	116.18	1582.15	1.50	124.73	1.27
<b>p1</b>	329.05	1.00	193.25	4732.93	1.02	93.03	3095.50	1.41	113.92	2217.25	1.46	127.32	1631.90	1.54	137.28	1.26
<b>p2</b>	327.93	0.99	202.75	4733.35	1.02	97.31	3188.15	1.45	106.83	2300.10	1.51	118.51	1548.25	1.46	128.84	1.27
<b>TILE_17</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	329.85	1.00	182.75	4766.02	1.03	80.87	3281.88	1.49	101.57	2410.70	1.59	110.75	1695.22	1.60	120.62	1.31
<b>p1</b>	325.82	0.99	194.00	4757.27	1.02	84.43	3222.20	1.47	104.66	2254.00	1.48	117.14	1664.42	1.57	123.70	1.28
<b>p2</b>	329.95	1.00	197.00	4763.85	1.03	91.21	3261.15	1.48	101.83	2365.68	1.56	113.03	1682.60	1.59	120.60	1.30
<b>TILE_18</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.18	0.99	179.05	4743.68	1.02	83.49	3200.43	1.46	105.56	2333.53	1.54	115.81	1746.50	1.65	122.09	1.30
<b>p1</b>	327.10	0.99	193.72	4745.02	1.02	86.79	3057.12	1.39	115.30	2140.22	1.41	128.30	1496.20	1.41	137.41	1.23
<b>p2</b>	329.10	1.00	201.75	4718.82	1.02	96.08	3131.65	1.42	109.04	2266.75	1.49	121.42	1614.15	1.53	129.49	1.27
<b>TILE_19</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.55	0.99	295.55	4750.30	1.02	82.42	3188.25	1.45	108.60	2231.32	1.47	119.49	1595.67	1.51	132.62	1.27
<b>p1</b>	327.25	0.99	252.50	4731.55	1.02	84.87	3095.60	1.41	114.60	2208.20	1.45	128.34	1540.28	1.46	140.31	1.25
<b>p2</b>	324.95	0.98	241.00	4730.40	1.02	91.59	3063.10	1.39	116.70	2197.90	1.45	129.33	1518.55	1.44	142.70	1.24
<b>TILE_20</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	328.35	0.99	177.00	4747.02	1.02	94.70	3416.75	1.55	94.39	2400.60	1.58	104.40	1681.47	1.59	112.49	1.32
<b>p1</b>	325.30	0.99	188.25	4721.82	1.02	98.39	3241.45	1.47	103.79	2343.12	1.54	115.29	1671.47	1.58	122.78	1.29
<b>p2</b>	327.85	0.99	199.50	4740.73	1.02	100.71	3280.43	1.49	100.70	2371.70	1.56	112.13	1762.70	1.67	119.67	1.32
<b>TILE_21</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	331.70	1.00	203.50	4711.43	1.02	107.86	3237.45	1.47	102.96	2281.88	1.50	113.38	1592.00	1.50	123.08	1.28
<b>p1</b>	334.85	1.01	223.75	4726.15	1.02	112.25	3103.93	1.41	111.27	2341.12	1.54	120.95	1674.20	1.58	130.26	1.29
<b>p2</b>	327.35	0.99	232.05	4728.93	1.02	115.71	3087.70	1.40	112.47	2160.35	1.42	124.29	1585.92	1.50	132.62	1.25
<b>TILE_22</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	328.98	1.00	203.68	4745.95	1.02	96.20	3172.65	1.44	107.00	2951.03	1.94	72.90	2116.12	2.00	78.38	1.42
<b>p1</b>	326.12	0.99	209.35	4748.77	1.02	99.56	3065.50	1.39	113.64	2905.12	1.91	75.22	2205.22	2.08	78.44	1.41
<b>p2</b>	325.80	0.99	216.50	4727.07	1.02	104.75	3076.30	1.40	112.82	2757.88	1.82	79.00	1997.95	1.89	80.93	1.37
<b>TILE_23</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.57	0.99	193.75	4752.82	1.02	92.16	3344.20	1.52	97.01	2511.95	1.65	106.87	1829.15	1.73	112.58	1.35
<b>p1</b>	326.90	0.99	205.00	4761.35	1.03	93.91	3194.40	1.45	107.15	2208.90	1.45	121.28	1620.08	1.53	130.02	1.27

<b>p2</b>	326.12	0.99	214.00	4725.68	1.02	98.21	3249.60	1.48	102.70	2287.53	1.51	113.35	1586.53	1.50	123.64	1.27
<b>TILE_24</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	325.38	0.99	190.95	4752.45	1.02	94.71	3498.28	1.59	89.15	2460.62	1.62	98.83	1824.42	1.72	104.84	1.35
<b>p1</b>	322.40	0.98	203.75	4715.88	1.02	95.71	3272.97	1.49	102.77	2334.68	1.54	116.32	1664.20	1.57	124.30	1.29
<b>p2</b>	325.38	0.99	211.25	4751.12	1.02	106.33	3266.80	1.49	101.10	2384.88	1.57	110.83	1708.05	1.61	116.96	1.31
<b>TILE_25</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	329.80	1.00	196.05	4746.35	1.02	91.84	3294.32	1.50	100.35	2376.53	1.56	112.92	1567.55	1.48	125.88	1.29
<b>p1</b>	326.12	0.99	204.00	4742.80	1.02	89.07	3075.32	1.40	115.41	2145.72	1.41	128.56	1536.47	1.45	141.88	1.24
<b>p2</b>	323.12	0.98	203.93	4751.95	1.02	95.80	3031.43	1.38	117.57	2184.32	1.44	130.61	1591.00	1.50	142.46	1.24
<b>TILE_26</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	324.35	0.98	180.25	4763.80	1.03	86.85	3502.22	1.59	89.51	2520.53	1.66	101.22	1783.90	1.69	109.43	1.35
<b>p1</b>	323.05	0.98	194.00	4746.70	1.02	95.16	3185.75	1.45	107.16	2328.38	1.53	117.09	1642.00	1.55	127.11	1.28
<b>p2</b>	327.68	0.99	202.25	4737.77	1.02	102.40	3292.40	1.50	99.73	2305.60	1.52	111.48	1697.15	1.60	118.67	1.30
<b>TILE_27</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	328.38	0.99	199.00	4734.70	1.02	88.79	3475.15	1.58	89.76	2568.15	1.69	97.77	1834.97	1.73	103.84	1.36
<b>p1</b>	323.15	0.98	209.50	4741.20	1.02	92.79	3218.95	1.46	104.31	2347.15	1.55	115.11	1749.10	1.65	121.81	1.30
<b>p2</b>	327.75	0.99	221.75	4761.60	1.03	93.76	3278.45	1.49	100.21	2323.07	1.53	110.04	1628.22	1.54	118.14	1.29
<b>TILE_28</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.98	0.99	193.78	4739.15	1.02	91.69	3319.20	1.51	98.30	2515.95	1.66	107.04	1807.55	1.71	114.97	1.34
<b>p1</b>	327.52	0.99	202.75	4743.45	1.02	92.95	3095.05	1.41	113.94	2153.75	1.42	127.58	1551.78	1.47	139.81	1.24
<b>p2</b>	328.32	0.99	209.00	4718.38	1.02	99.48	3123.40	1.42	110.61	2200.97	1.45	121.22	1541.80	1.46	130.50	1.25
<b>TILE_29</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	325.25	0.98	199.25	4763.88	1.03	91.20	3320.00	1.51	99.53	2398.45	1.58	110.69	1797.85	1.70	116.45	1.33
<b>p1</b>	327.90	0.99	204.00	4750.32	1.02	89.67	3222.78	1.47	105.13	2251.43	1.48	117.03	1585.42	1.50	124.52	1.27
<b>p2</b>	326.73	0.99	206.75	4737.88	1.02	97.50	3099.93	1.41	112.98	2238.25	1.47	125.12	1596.47	1.51	132.72	1.26
<b>p0_score:</b>	39.16															
<b>p1_score:</b>	38.33															
<b>p2_score:</b>	38.07															

<b>Infrastructure_Operations_Scores:</b>										vmotion			svmotion			deploy		
<b>Completed_Ops_PerHour</b>										52.50			30.00			15.00		
<b>Avg_Seconds_To_Complete</b>										25.97			60.30			362.67		
<b>Failures</b>										0.00			0.00			0.00		
<b>Ratio</b>										3.28			3.33			3.75		
<b>Number_Of_Threads</b>										3			3			3		

<b>Summary</b>										Run_Is_Compliant					Turbo_Setting:0				
										Number_Of_Compliance_Issues(0)*					Median_Phase(p1)				

<b>Unreviewed_VMmark2_Applications_Score</b>	38.33
<b>Unreviewed_VMmark2_Infrastructure_Score</b>	3.45
<b>Unreviewed_VMmark2_Score</b>	31.35

## Configuration

<b>Virtualization Software</b>	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 5.5.0 Update 1 Build 1881737 / 06-10-2014
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 5.5.0 Build 1750787 / 04-19-2014
Supplemental Software	None
<b>Servers</b>	
Quantity	6
Server Manufacturer and Model	Dell PowerEdge R620
Processor Vendor and Model	Intel Xeon E5-2695 v2
Processor Speed (GHz)	2.4
Total Sockets/Total Cores/Total Threads	2 Sockets / 24 Cores / 48 Threads
Primary Cache	32 KB I + 32 KB D on chip per core
Secondary Cache	256KB I+D on chip per core
Other Cache	30MB I+D on chip per core
BIOS Version	2.2.2
Memory Size (in GB, Number of DIMMs)	384, 24 DIMMs
Memory Type and Speed	16GB DIMMs 2Rx4 DDR3-1600MHz Registered ECC
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	Dell Storage SC4020
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	QLogic QLE2670-CK 16Gbps dual-port fibre channel HBA
Number of Network Controllers	1

Network Controller Vendors and Models	Broadcom® 10Gbps dual-port NetXtreme® II BCM57810 adapter
Other Hardware	None
Other Software	The following drivers were installed as part of the Dell-customized image for ESXi 5.5: tg3 - 3.133d.v55.1, bnx2 - 2.2.3t.v55.7, bnx2x - 1.78.28.v55.2, cnic - 1.78.12.v55.6, cnic-register - 1.78.1.v55.7, bnx2fc - 1.78.16.v55.4, bnx2i - 2.78.11.v55.4, qlnativefc - 1.1.7.0 -1OEM.550.0.0.1198610, qla4xxx - 634.55.20.0-1vmw, qlcnic - 5.5.164, qlge - v3.00.00.57, igb - 4.2.16.8, ixgbe - 3.18.7iov, lpfc - 10.0.575.8-1OEM.550.0.0.1198611, elxnet - 10.0.575.7-10EM-550.0.0.1198611, be2iscsi - 4.6.261.0, mpt2sas - 16.00.01.00.1vmw
Hardware Availability Date (MM-DD-YYYY)	01-16-2014
Software Availability Date (MM-DD-YYYY)	06-10-2014
<b>Network</b>	
Network Switch Vendors and Models	Dell PowerConnect 8024F 10Gbps switch
Network Speed	10Gbps for all traffic
<b>Storage</b>	
Array Vendors, Models, and Firmware Versions	Dell Storage SC4020, Firmware version 6.5.2.8
Fibre Channel Switch Vendors and Models	Brocade 6505
Disk Space Used	8,266.5 GB
Array Cache Size	16 GB
Total Number of Physical Disks Used	24
Total Number of Enclosures/Pods/Shelves Used	1
Number of Physical Disks Used per Enclosure/Pod/Shelf	24
Total Number of Storage Groups Used	1
Number of LUNs Used	13
LUN Size and Number of Disks Per LUN	Details in section Storage Notes
RAID Type	Details in section Storage Notes
Number of Members per RAID Set	Details in section Storage Notes
Disk Vendors, Models, and Speeds	<ul style="list-style-type: none"> <li>• 12 x SanDisk LB406S, 372GB SSD</li> <li>• 12 x SanDisk LB1606R, 1.46TB SSD</li> </ul>
<b>Datacenter Management Server</b>	
System Model	Dell PowerEdge M620

Processor Vendor and Model	Intel Xeon E5-2660
Processor Speed (GHz)	2.2 GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 16 Cores / 32 Threads
Memory	32 GB
Network Controller(s) Vendors and Models	Broadcom® 10Gbps dual-port NetXtreme® II BCM57810 adapter, 2 x 10GB dual-port Intel 82599EB adapter
Operating System, Version, Bitness, and Service Pack	<ul style="list-style-type: none"> <li>• Microsoft Windows Server 2008 R2 Enterprise 64-bit (prime client)</li> <li>• VMware ESXi 5.5.0 Update 1 Build 1881737 (virtual client hosts)</li> <li>• Microsoft Windows Server 2008 R2 Enterprise 64-bit (virtual client)</li> </ul>
Other Hardware	None
Other Software	None
<b>Clients</b>	
Total Number of Clients / Total Physical Clients / Total Virtual Client Hosts	31 / 1 / 6
System Model(s)	Dell PowerEdge M620
Processor Vendor(s) and Model(s)	Intel Xeon E5-2660
Processor Speed(s) (GHz)	2.2 GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 16 Cores / 32 Threads
Memory per Physical Client	32 GB (prime client), 64 GB (virtual client hosts)
Network Controller(s) Vendors and Models	Broadcom® 10Gbps dual-port NetXtreme® II BCM57810 adapter, 2 x 10GB dual-port Intel 82599EB adapter
Operating System, Version, Bitness, and Service Pack	<ul style="list-style-type: none"> <li>• Microsoft Windows Server 2008 R2 Enterprise 64-bit (prime client)</li> <li>• VMware ESXi 5.5.0 Update 1 Build 1881737 (virtual client hosts)</li> <li>• Microsoft Windows Server 2008 R2 Enterprise 64-bit (virtual client)</li> </ul>
Number of Virtual Clients	30
Number of vCPUs Per Virtual Client	4
Number of vMem (GB) Per Virtual Client	4
Virtual Client Networking Notes	None
Virtual Client Storage Notes	All clients stored on EqualLogic PS6210X storage array in a single LUN
Other Hardware	Dell PowerEdge M1000e Blade Enclosure with 2x MXL 10/40Gbe and 4x Force 10 XML 10/40GbE switch
Other Software	None

## Notes for Workload

## Virtualization Software Notes

- Virtual hardware for all VMs was set to V10
  - Ethernet adapter type set to vmxnet3 for all VMs (default vmxnet2)
  - CD and floppy were removed from all VMs (default attached)
  - Logging was disabled for all VMs (default enabled)
  - All VMs except standby configured as single virtual socket with multiple cores (default one core per multiple virtual sockets)
  - SCSI adapter type PVSCSI used for all Standby VMs (default LSI Logic parallel)
  - SCSI adapter type PVSCSI used for all MailServer and Linux VMs (default LSI Logic SAS)
  - VMware tools were version 9344 on all VMs except standby VMs which used version 9227
  - vSphere DRS Migration Threshold set to Fully Automated Level 2
- 
- /adv/Cpu/CoschedCrossCall = 0 (default 1)
  - /adv/Cpu/HTWholeCoreThreshold = 0 (default 200)
  - /adv/DataMover/HardwareAcceleratedInit = 0 (default 1)
  - /adv/DataMover/HardwareAcceleratedMove = 0 (default 1)
  - /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/Net/MaxNetifRxQueueLen = 500 (default 100)
  - /adv/Net/MaxNetifTxQueueLen = 1000 (default 500)
  - /adv/Net/NetTxCompletionWorldlet = 0 (default 1)
  - /adv/Irq/IRQRebalancePeriod = 20000 (default 50)
  - /adv/Irq/BestVcpuRouting = 1 (default 0)
  - /adv/Numa/LTermFairnessInterval = 0 (default 5)
  - /adv/Numa/PreferHT = 1 (default 0)
  - /adv/Numa/MonMigEnable = 0 (default 1)
  - /adv/Numa/PageMigEnable = 0 (default 1)
  - /adv/Numa/RebalancePeriod = 60000 (default 2000)
  - /adv/Numa/SwapLoadEnable = 0 (default 1)
  - /adv/Numa/SwapLocalityEnable = 0 (default 1)

## Server Notes

- CPU C6 Report disabled (default enabled)
- Package C state limit set to C0 (default no limit)

## Networking Notes

vSwitch Configuration:

- vSwitch1 on vmnic4 (10Gb) for VMotion (vSwitch2 on Host 2)
- vSwitch1 (vSwitch2 on Host 2) MTU size was modified to 9000 (default 1500)
- vSwitch0 on vmnic5 (10Gb) for Service Console, all Standby, Mail, Olio, DS2, and Deploy VMs

## Storage Notes

- ESX was installed on a two-disk RAID 1 volume from the internal 300GB SAS hard drives in each system under test.
- The Dell storage array was configured into one RAID 6 storage pool with a hotspare 10K RPM disk.



- The storage pool was mapped to all servers.
- Storage pool layout:
  - 1 LUN at 3TB, as the transfer volume
  - 1 LUN at 2TB, containing the DS2 DB VMs
  - 1 LUN at 1.6TB, containing the DS Web VMs
  - 1 LUN at 3.3TB, containing the Mailserver VMs
  - 1 LUN at 700GB, containing the Olio DB VMs
  - 1 LUN at 3.6TB, containing the Olio Web VMs
  - 1 LUN at 240GB, containing the standby VMs
  - 4 LUNs at 75GB, containing the Standby source targets
  - 1 LUN at 30GB, containing the Deploy cloning target location
  - 1 LUN at 30GB, containing the Deploy template VMs

## Datacenter Management Server Notes

The Datacenter Management Server was a virtual machine configured with 4 vCPU and 12GB RAM on a separate ESXi host.

## Operating System Notes

All Mailservers ran Microsoft Windows Server 2008 R2 Enterprise 64-bit

## Software Notes

None

## Client Notes

- Microsoft Windows Server 2008 R2 Enterprise 64-bit installed on client virtual machines and updated through Windows Update
- Prime client was running Microsoft Windows Server 2008 R2 Enterprise 64-bit and VMware vSphere PowerCLI 5.5 Release 2 build 1671586
- Prime client ran as a physical client
- All other clients ran as virtual machines that were each defined with 4 virtual CPUs, 4GB of memory, 1 vmxnet3 network, and 36GB of disk space
- Virtual clients 0-4 were hosted on virtual client host 1
- Virtual clients 5-9 were hosted on virtual client host 2
- Virtual clients 10-14 were hosted on virtual client host 3
- Virtual clients 15-19 were hosted on virtual client host 4
- Virtual clients 20-24 were hosted on virtual client host 5
- Virtual clients 25-29 were hosted on virtual client host 6
- Clients ran with default ESX settings

## Other Notes

None

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