

VMware® VMmark® V2.5.2 Results		
Vendor and Hardware Platform: Huawei FusionServer RH2288H V3 Virtualization Platform: VMware ESXi 6.0.0 U1b Build 3380124 VMware vCenter Server : VMware vCenter Server 6.0.0 U1b Build 3339083		VMmark V2.5.2 Score = 31.81 @ 32 Tiles
Number of Hosts: 2	Uniform Hosts [yes/no]: yes	Total sockets/cores/threads in test: 4/88/176
Tested By: Huawei Technologies Co.,Ltd.		Test Date: 3-17-2016
Performance Section Performance	Configuration Section Configuration	Notes Section Notes for Workload

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	328.98	1.00	61.42	4734.85	1.02	97.60	3221.12	1.46	105.50	2292.90	1.51	119.65	1746.53	1.65	122.76	1.30
p1	322.40	0.98	63.75	4717.50	1.02	121.21	3233.10	1.47	103.91	2256.50	1.49	115.35	1622.92	1.53	119.71	1.27
p2	327.52	0.99	64.00	4694.65	1.01	166.31	2939.03	1.34	125.85	2080.95	1.37	141.09	1458.08	1.38	153.41	1.20
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	333.32	1.01	54.00	4697.18	1.01	144.48	3254.78	1.48	109.95	2253.93	1.48	120.88	1643.35	1.55	129.70	1.28
p1	328.55	0.99	54.00	4703.62	1.01	132.12	3138.93	1.43	113.19	2119.10	1.40	130.09	1452.95	1.37	143.13	1.22
p2	328.15	0.99	60.25	4632.15	1.00	226.25	2956.53	1.34	126.14	2134.57	1.41	142.85	1487.12	1.41	158.43	1.21
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.00	0.99	54.00	4733.02	1.02	93.39	3302.60	1.50	101.20	2378.15	1.57	112.56	1702.85	1.61	119.49	1.31
p1	327.48	0.99	54.00	4732.57	1.02	116.54	3035.10	1.38	119.65	2095.38	1.38	134.23	1464.72	1.38	143.23	1.22
p2	324.77	0.98	61.75	4691.23	1.01	167.28	2774.78	1.26	141.72	1914.00	1.26	163.22	1393.67	1.32	175.91	1.16
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.25	1.00	56.70	4733.40	1.02	113.58	2953.18	1.34	129.30	2030.55	1.34	139.93	1463.17	1.38	143.67	1.20
p1	322.95	0.98	61.45	4717.27	1.02	109.54	3142.53	1.43	110.59	2254.20	1.48	123.10	1629.75	1.54	128.33	1.27
p2	329.55	1.00	60.50	4684.30	1.01	157.30	3053.85	1.39	117.85	2143.28	1.41	134.08	1630.58	1.54	137.37	1.25
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	315.57	0.96	52.65	4729.23	1.02	103.76	3338.00	1.52	99.30	2371.80	1.56	113.61	1720.92	1.63	118.32	1.30
p1	327.75	0.99	54.00	4693.73	1.01	135.53	3039.20	1.38	118.35	2193.15	1.44	129.52	1549.00	1.46	139.91	1.24
p2	325.75	0.99	62.00	4663.48	1.00	179.47	2987.35	1.36	121.22	2083.57	1.37	134.10	1548.17	1.46	140.57	1.22
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.38	0.99	54.00	4721.55	1.02	104.86	3174.05	1.44	110.70	2253.10	1.48	118.93	1619.28	1.53	122.23	1.27

p1	321.30	0.97	54.00	4722.05	1.02	114.94	3095.70	1.41	114.55	2253.55	1.48	130.28	1621.62	1.53	138.49	1.26
p2	329.15	1.00	63.25	4683.43	1.01	170.60	3007.03	1.37	122.68	1995.28	1.31	144.26	1444.90	1.37	156.23	1.20
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.70	1.00	50.90	4732.23	1.02	95.70	3284.15	1.49	101.36	2374.28	1.56	112.48	1723.83	1.63	116.64	1.31
p1	323.60	0.98	53.25	4699.40	1.01	128.35	3126.78	1.42	112.65	2170.35	1.43	131.55	1636.00	1.55	136.98	1.26
p2	330.90	1.00	59.67	4629.10	1.00	223.94	3040.88	1.38	118.40	2075.32	1.37	134.55	1450.90	1.37	144.26	1.21
TILE_7	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.77	1.00	54.00	4739.75	1.02	101.47	2886.97	1.31	135.43	2026.47	1.33	152.89	1408.58	1.33	165.65	1.19
p1	321.00	0.97	54.00	4677.65	1.01	133.45	3064.25	1.39	117.20	2196.12	1.45	130.70	1602.40	1.51	143.09	1.24
p2	328.35	0.99	60.75	4652.27	1.00	210.52	2955.85	1.34	125.38	2055.25	1.35	139.54	1387.95	1.31	156.16	1.19
TILE_8	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.95	0.99	53.05	4726.23	1.02	107.36	3173.57	1.44	109.07	2370.15	1.56	119.93	1688.85	1.60	129.97	1.29
p1	323.25	0.98	57.60	4735.10	1.02	115.53	3069.03	1.40	117.88	2046.58	1.35	138.03	1493.85	1.41	147.29	1.22
p2	325.88	0.99	64.00	4665.23	1.01	200.67	2969.62	1.35	124.12	2014.78	1.33	141.92	1387.33	1.31	154.78	1.18
TILE_9	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.88	0.99	54.00	4724.50	1.02	119.66	3240.88	1.47	110.86	2339.85	1.54	120.19	1787.20	1.69	124.78	1.31
p1	323.23	0.98	58.50	4714.48	1.02	114.39	3120.28	1.42	112.68	2189.25	1.44	123.44	1520.25	1.44	134.06	1.24
p2	327.15	0.99	64.00	4693.50	1.01	153.95	2971.25	1.35	123.42	2139.43	1.41	135.46	1499.97	1.42	147.14	1.22
TILE_10	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.12	0.98	64.00	4740.65	1.02	96.07	3293.65	1.50	103.07	2331.22	1.54	116.99	1704.78	1.61	127.28	1.30
p1	323.27	0.98	64.00	4693.73	1.01	130.84	3091.32	1.41	116.06	2106.72	1.39	132.25	1421.28	1.34	148.61	1.21
p2	327.65	0.99	64.00	4602.62	0.99	250.80	2995.47	1.36	122.94	2122.72	1.40	138.08	1440.72	1.36	156.25	1.21
TILE_11	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.48	0.99	54.00	4763.45	1.03	99.89	3209.25	1.46	119.85	2132.82	1.40	137.26	1554.08	1.47	142.80	1.25
p1	326.68	0.99	55.00	4715.20	1.02	129.14	3050.07	1.39	124.98	2052.22	1.35	148.14	1415.85	1.34	162.72	1.20
p2	327.80	0.99	64.00	4619.73	1.00	242.08	2819.43	1.28	143.05	1918.92	1.26	164.89	1300.65	1.23	184.16	1.14
TILE_12	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	322.35	0.98	64.00	4735.62	1.02	103.35	3205.72	1.46	108.30	2169.95	1.43	125.16	1655.55	1.56	126.96	1.27
p1	326.25	0.99	64.00	4742.73	1.02	104.58	3186.10	1.45	108.50	2203.55	1.45	121.87	1599.75	1.51	123.92	1.26
p2	328.73	1.00	64.00	4659.48	1.00	193.58	2831.45	1.29	134.20	2085.00	1.37	148.34	1515.58	1.43	155.53	1.20
TILE_13	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.07	0.99	53.00	4726.70	1.02	95.62	3062.20	1.39	123.49	2149.60	1.42	131.80	1442.20	1.36	146.55	1.22
p1	323.32	0.98	53.55	4712.95	1.02	109.28	2981.12	1.36	128.68	2063.50	1.36	148.62	1350.92	1.28	171.82	1.19
p2	323.30	0.98	64.00	4686.00	1.01	146.90	2783.80	1.27	145.98	1906.33	1.26	168.73	1311.55	1.24	191.67	1.14
TILE_14	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	325.35	0.99	54.00	4751.05	1.02	93.07	3281.10	1.49	102.31	2268.57	1.49	115.79	1586.45	1.50	124.33	1.28
p1	320.12	0.97	54.00	4720.30	1.02	118.84	3019.45	1.37	121.52	2147.72	1.41	135.89	1503.35	1.42	147.38	1.22
p2	329.02	1.00	61.75	4662.70	1.00	169.04	2777.53	1.26	140.94	1901.03	1.25	162.89	1378.80	1.30	174.31	1.16
TILE_15	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.20	0.98	43.40	4749.68	1.02	94.37	3263.40	1.48	107.59	2295.90	1.51	115.41	1624.85	1.54	119.87	1.28
p1	327.25	0.99	53.50	4703.48	1.01	122.22	3106.00	1.41	114.07	2297.53	1.51	126.68	1620.62	1.53	138.36	1.27
p2	324.02	0.98	54.00	4632.15	1.00	205.26	3007.47	1.37	123.81	2012.42	1.33	143.59	1423.72	1.35	158.98	1.19
TILE_16	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.23	0.99	53.90	4739.98	1.02	94.60	3341.60	1.52	98.38	2335.30	1.54	109.77	1632.22	1.54	118.40	1.29
p1	323.90	0.98	53.65	4712.82	1.02	118.44	3033.50	1.38	119.60	2210.40	1.46	130.00	1586.33	1.50	144.85	1.25
p2	327.57	0.99	61.88	4700.10	1.01	162.61	2794.90	1.27	140.11	1934.03	1.27	160.39	1328.75	1.26	176.30	1.15
TILE_17	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.12	0.99	54.00	4754.80	1.02	106.86	3326.22	1.51	104.63	2266.62	1.49	125.75	1616.95	1.53	133.31	1.28
p1	325.73	0.99	54.00	4718.00	1.02	122.02	3087.65	1.40	120.90	2078.07	1.37	144.12	1529.53	1.45	153.72	1.23
p2	326.02	0.99	63.50	4647.20	1.00	177.59	3032.75	1.38	124.12	1983.85	1.31	146.68	1349.53	1.28	162.11	1.18
TILE_18	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.68	0.99	54.00	4739.52	1.02	89.30	3325.65	1.51	99.24	2409.22	1.59	109.84	1721.28	1.63	116.66	1.32
p1	326.77	0.99	54.00	4748.65	1.02	112.64	3036.57	1.38	120.41	2118.93	1.40	131.39	1515.67	1.43	145.58	1.23
p2	325.35	0.99	62.25	4645.20	1.00	197.10	2806.32	1.28	140.09	1926.03	1.27	161.09	1329.90	1.26	176.66	1.15
TILE_19	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.50	0.99	64.25	4758.40	1.03	95.28	3137.12	1.43	119.01	2347.20	1.55	129.18	1696.83	1.60	129.76	1.29
p1	328.68	1.00	64.00	4722.68	1.02	124.36	3013.47	1.37	123.63	2053.20	1.35	141.33	1445.20	1.37	157.46	1.21
p2	326.82	0.99	64.00	4629.20	1.00	227.53	2908.60	1.32	130.50	2022.97	1.33	144.20	1345.58	1.27	162.73	1.17
TILE_20	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.50	0.99	53.92	4739.25	1.02	97.16	3180.25	1.45	111.22	2256.22	1.49	126.16	1671.12	1.58	134.97	1.28
p1	325.85	0.99	60.50	4738.10	1.02	99.37	2986.53	1.36	125.57	2010.47	1.32	143.66	1366.95	1.29	158.29	1.19
p2	325.57	0.99	64.00	4686.18	1.01	160.64	2929.93	1.33	128.75	2058.50	1.36	146.13	1424.65	1.35	159.66	1.19
TILE_21	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	321.35	0.97	57.00	4743.82	1.02	95.94	3036.75	1.38	124.43	2092.38	1.38	147.30	1533.67	1.45	157.58	1.22
p1	325.80	0.99	54.00	4710.55	1.01	129.42	3173.80	1.44	110.01	2188.47	1.44	124.46	1495.67	1.41	138.14	1.24
p2	322.48	0.98	63.75	4666.10	1.01	180.79	3028.82	1.38	120.10	2156.45	1.42	135.41	1486.08	1.40	150.58	1.22
TILE_22	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.30	1.00	55.02	4737.52	1.02	91.50	3216.68	1.46	107.38	2250.28	1.48	119.56	1650.42	1.56	128.48	1.28
p1	328.52	0.99	64.00	4737.77	1.02	115.50	3051.38	1.39	119.78	2130.82	1.40	137.90	1411.85	1.33	151.61	1.21
p2	322.85	0.98	64.00	4688.82	1.01	144.27	2943.93	1.34	126.01	2108.85	1.39	140.35	1520.70	1.44	153.98	1.21

TILE_23	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.20	0.99	63.00	4741.05	1.02	103.86	3048.65	1.39	124.86	2142.80	1.41	132.02	1485.00	1.40	150.80	1.23
p1	329.43	1.00	58.92	4727.00	1.02	101.67	2964.35	1.35	129.69	1978.88	1.30	150.04	1290.80	1.22	172.50	1.17
p2	327.57	0.99	64.00	4705.88	1.01	139.29	2775.10	1.26	145.56	1902.80	1.25	168.74	1324.60	1.25	189.65	1.15
TILE_24	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.27	1.00	57.00	4755.73	1.02	97.42	3158.15	1.44	112.13	2148.57	1.41	128.18	1502.28	1.42	137.90	1.24
p1	324.00	0.98	63.75	4739.50	1.02	105.42	3168.35	1.44	111.10	2244.43	1.48	125.93	1575.58	1.49	136.57	1.26
p2	327.05	0.99	64.00	4655.43	1.00	168.57	2861.28	1.30	134.55	1955.88	1.29	156.25	1458.70	1.38	164.08	1.18
TILE_25	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.65	1.00	75.50	4758.18	1.03	85.48	3314.15	1.51	103.33	2388.10	1.57	105.23	1729.58	1.63	108.16	1.32
p1	331.95	1.01	64.00	4726.55	1.02	112.06	3127.55	1.42	113.03	2263.28	1.49	124.42	1632.72	1.54	130.72	1.27
p2	328.32	0.99	64.00	4686.27	1.01	145.62	3027.65	1.38	120.21	2129.97	1.40	136.78	1592.95	1.51	143.54	1.24
TILE_26	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.38	0.99	70.70	4739.02	1.02	86.70	3118.47	1.42	116.68	2096.93	1.38	134.82	1413.80	1.34	150.58	1.21
p1	329.80	1.00	64.00	4723.00	1.02	125.98	3127.47	1.42	113.92	2295.18	1.51	128.05	1608.90	1.52	140.41	1.27
p2	326.00	0.99	64.50	4636.38	1.00	202.41	2891.80	1.31	134.40	1883.33	1.24	159.24	1341.83	1.27	173.51	1.15
TILE_27	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.52	0.98	54.00	4714.15	1.02	94.16	3015.68	1.37	129.22	2037.97	1.34	142.31	1363.22	1.29	164.46	1.19
p1	330.70	1.00	54.00	4726.18	1.02	107.18	3157.97	1.44	113.10	2216.95	1.46	129.39	1626.10	1.54	139.74	1.27
p2	325.23	0.98	58.25	4688.80	1.01	166.88	3100.85	1.41	118.37	2143.70	1.41	137.54	1487.30	1.41	151.38	1.23
TILE_28	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.35	0.98	334.27	4753.27	1.02	85.57	3238.15	1.47	106.51	2293.90	1.51	123.51	1647.08	1.56	128.02	1.28
p1	326.75	0.99	206.45	4733.25	1.02	110.22	3043.07	1.38	120.29	2103.03	1.38	139.51	1573.08	1.49	146.85	1.24
p2	326.27	0.99	134.22	4650.30	1.00	179.05	3022.40	1.37	121.21	2061.62	1.36	137.49	1421.80	1.34	149.73	1.20
TILE_29	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.68	1.00	54.50	4759.68	1.03	89.08	3188.18	1.45	111.31	2289.05	1.51	123.66	1561.20	1.48	139.33	1.27
p1	332.27	1.01	63.75	4722.10	1.02	121.10	3060.18	1.39	122.75	2003.60	1.32	146.13	1418.40	1.34	161.19	1.20
p2	325.00	0.98	64.00	4682.95	1.01	162.38	2984.57	1.36	128.65	2014.97	1.33	152.56	1357.72	1.28	170.57	1.18
TILE_30	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.90	0.99	71.50	4743.20	1.02	90.91	3211.88	1.46	107.10	2385.07	1.57	119.19	1699.25	1.61	128.62	1.30
p1	329.77	1.00	64.00	4711.88	1.02	116.28	3043.47	1.38	119.65	2061.75	1.36	136.59	1483.95	1.40	150.07	1.22
p2	328.62	1.00	64.00	4650.25	1.00	192.35	2947.12	1.34	125.59	2041.33	1.34	140.08	1401.47	1.32	152.48	1.19
TILE_31	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.32	0.98	492.25	4734.80	1.02	101.13	3270.65	1.49	107.00	2332.22	1.54	121.35	1737.55	1.64	130.03	1.30
p1	325.32	0.99	303.35	4702.38	1.01	138.02	3103.38	1.41	115.67	2129.60	1.40	130.61	1539.85	1.46	134.52	1.24

p2	330.18	1.00	175.25	4588.93	0.99	256.60	2875.65	1.31	133.18	2008.28	1.32	151.22	1457.92	1.38	156.99	1.19
p0_score:	40.68															
p1_score:	39.46															
p2_score:	38.07															
Infrastructure_Operations_Scores:										vmotion		svmotion		deploy		
Completed_Ops_PerHour										17.00		11.00		5.00		
Avg_Seconds_To_Complete										29.75		18.61		296.45		
Failures										0.00		0.00		0.00		
Ratio										1.06		1.22		1.25		
Number_Of_Threads										1		1		1		
Summary								Run_Is_Compliant					Turbo_Setting:0			
								Number_Of_Compliance_Issues(0)*					Median_Phase(p1)			
Unreviewed_VMmark2_Applications_Score								39.46								
Unreviewed_VMmark2_Infrastructure_Score								1.18								
Unreviewed_VMmark2_Score								31.81								

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 6.0.0 U1b Build 3380124/01-07-2016
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 6.0.0 U1b Build 3339083/ 01-07-2016
Supplemental Software	none
Servers	
Quantity	2
Server Manufacturer and Model	Huawei FusionServer RH2288H V3
Processor Vendor and Model	Intel Xeon E5-2699 V4
Processor Speed (GHz)	2.2
Total Sockets/Total Cores/Total Threads	2 Sockets /44 Cores / 88 Threads
Primary Cache	32KB I + 32KB D on chip per core
Secondary Cache	256KB I+D on chip per core

Other Cache	55MB I+D on chip per chip L3
BIOS Version	3.12
Memory Size (in GB, Number of DIMMs)	512,16
Memory Type and Speed	32GB-DIMMs 2Rx4 PC4-2400 ECC
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	1 x LSI SAS3008
Number of Host Bus Adapters	4
Host Bus Adapter Vendors and Models	Qlogic ISP2532-based with Dual port 8Gb Fibre Channel x2 Qlogic ISP2672-based with Dual port 16Gb Fibre Channel x2
Number of Network Controllers	2
Network Controller Vendors and Models	1 x Intel 1Gb 2-port I350 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter
Other Hardware	2 disks RAID1 for OS
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	03-31-2016
Software Availability Date (MM-DD-YYYY)	03-03-2016
Network	
Network Switch Vendors and Models	HUAWEI E9000 CX911
Network Speed	10Gbps
Storage	
Array Vendors, Models, and Firmware Versions	2 x RH2288V2, Firmware version V9.31 2 x RH2288HV3, Firmware version V389
Fibre Channel Switch Vendors and Models	HUAWEI E9000 CX911
Disk Space Used	29.74TB
Array Cache Size	none
Total Number of Physical Disks Used	6 x Fusion-io ioDrive2 Duo 2.4TB PCIe SSD, 6 x HUAWEI ES3000 V2 2.4TB PCIe SSD, 2 x SAMSUNG-2.5-480GB-SATA-SSD
Total Number of Enclosures/Pods/Shelves Used	4
Number of Physical Disks Used per Enclosure/Pod/Shelf	Enclosure: details in section Storage Notes
Total Number of Storage Groups Used	0
Number of LUNs Used	22
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		Details in section Storage Notes	
Datacenter Management Server			
System Model		A Virtual Server on Huawei Tecal RH2288A V2	
Processor Vendor and Model		Intel Xeon E5-2695 v2	
Processor Speed (GHz)		2.4Ghz	
Total Sockets/Total Cores/Total Threads		Hypervisor: 2 Sockets / 24 Cores / 48 Threads Virtual Center VM: 1 Sockets / 8 Cores / 8 Threads	
Memory		Hypervisor: 128GB Virtual Center VM: 12GB	
Network Controller(s) Vendors and Models		1 x Intel 10Gb 2-port 82599 Adapter	
Operating System, Version, Bitness, and Service Pack		Hypervisor: VMware ESXi 5.5.0 Build 1331820 Virtual Center VM: Microsoft Windows 2008 R2 Standard SP1 (64bit)	
Other Hardware		none	
Other Software		none	
Clients			
Total Number of Clients / Total Physical Clients / Total Virtual Client Hosts		32/1/5	
System Model(s)		1xHuawei Tecal RH2288V2 (Prime Client) 1xHuawei FusionServer RH2288HV3(Virtual Client Host for client 17,18,19, 20,21,22,30,31) 1xHuawei FusionServer RH2288HV3 (Virtual Client Host for client 23,24,25,26,27,28,29) 1xHuawei Tecal RH2288AV2(Virtual Client Host for client 1,2,3,4,5) 1xHuawei Tecal RH2288HV2(Virtual Client Host for client 6,7,8,9,10,11) 1xHuawei Tecal RH2285V3(Virtual Client Host for client 12,13,14,15,16)	
Processor Vendor(s) and Model(s)		1xPrime Client: Intel Xeon E5-2450 v2 1xVirtual Client Host: Intel Xeon E5-2699 v3 1xVirtual Client Host: Intel Xeon E5-2699 v3 1xVirtual Client Host: Intel Xeon E5-2670 v2 1xVirtual Client Host: Intel Xeon E5-2695 v2 1xVirtual Client Host: Intel Xeon E5-2670 v3	
Processor Speed(s) (GHz)		1xPrime Client: 2.5GHz 1xVirtual Client Host: 2.3GHz 1xVirtual Client Host: 2.3GHz 1xVirtual Client Host: 2.5GHz 1xVirtual Client Host: 2.4GHz 1xVirtual Client Host: 2.3GHz	
Total Sockets/Total Cores/Total Threads		1xPrime Client: 2 Socket / 16 Cores / 32 Threads 1xVirtual Client Host: 2 Socket / 36 Cores / 72Threads	

	1xVirtual Client Host: 2 Socket / 36 Cores / 72Threads 1xVirtual Client Host: 2 Socket / 20 Cores / 40Threads 1xVirtual Client Host: 2 Socket / 24 Cores / 48Threads 1xVirtual Client Host: 2 Socket / 24 Cores / 48Threads
Memory per Physical Client	1xPrime Client: 96GB 1xVirtual Client Host: 224GB 1xVirtual Client Host: 192GB 1xVirtual Client Host: 128GB 1xVirtual Client Host: 128GB 1xVirtual Client Host: 128GB
Network Controller(s) Vendors and Models	Prime Client: 1 x Intel 1Gb 2-port 82580 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter Virtual Client Host: 1 x Intel 10Gb 2-port 82599 Adapter
Operating System, Version, Bitness, and Service Pack	Clients: Microsoft Windows 2008 R2 Enterprise SP1 (64bit) Virtual Client Host: VMware ESXi 5.5.0 (Build 1331820)
Number of Virtual Clients	31
Number of vCPUs Per Virtual Client	4
Number of vMem (GB) Per Virtual Client	12GB
Virtual Client Networking Notes	All client VMs attached to port 1 of Intel 82599 card running at speed of 10Gb/s
Virtual Client Storage Notes	All clients stored on local media respective to their ESXi host. 4x300GB ST300MM0006 6G 10K rpm SFF SAS disk per Physical Client with RAID 10
Other Hardware	none
Other Software	none

Notes for Workload

Virtualization Software Notes

All multiprocessor VMs are using the CPU-scheme single socket with multiple cores (default one core per multiple virtual sockets)

Logging was disabled for all VMs (default Enabled)

SCSI adapter type PVSCSI used for all VMs (default LSI Logic SAS)

Ethernet adapter type set to VMXNET 3 for all VMs (default E1000)

Floppy removed for all VMs (default enabled)

CDROM removed for all VMs (default enabled)

Cluster DRS Automation Level set to Fully Automated level 2

Hardware version 11 used for all VMs (default 8)

VMware Tools build 10246 used for all VMs (default 9536)

All DS2DB VMs had Disk shares set to high (default Normal)

All Mailserver VMs had CPU shares set to 4800 (default Normal)

All Standby VMs had CPU shares set to 10 (default Normal)

All VMs except deploy template, sched.mem.min and sched.mem.minsize were set to the VM’s memory size (default 0)

sched.mem.pin = TRUE set for all VMs except Deploy template VM (locks all Guest memory into physical memory, default FALSE)

sched.mem.maxmemctl= 0 set for all VMs except Deploy template and standby VMs (disables Ballooning, default enabled)

Multiqueue is disabled in the vmxnet3 driver on all linux VMs

The vmxnet3 driver version is 1.2.39.0 for all linux VMs
The host firewall was disabled on both SUT hosts (default Enabled)
Syslog.global.defaultSize set to 112 (default 1024)
Vpx.Vpxa.config.log.level and Config.HostAgent.log.level set to warning (default verbose)

Advanced Setting

esxcfg-advcfg -s 1000 /Cpu/CreditAgePeriod (default 3000)
esxcfg-advcfg -s 0 /Cpu/HTWholeCoreThreshold (default 200)
esxcfg-advcfg -s 0 /DataMover/HardwareAcceleratedInit (default 1)
esxcfg-advcfg -s 0 /DataMover/HardwareAcceleratedMove (default 1)
esxcfg-advcfg -s 0 /Mem/CtlMaxpercent (default 65)
esxcfg-advcfg -s 0 /Mem/ShareScanGHz (default 4)
esxcfg-advcfg -s 500 /Net/MaxNetifRxQueueLen (default 100)
esxcfg-advcfg -s 1000 /Net/MaxNetifTxQueueLen (default 500)
esxcfg-advcfg -s 0 /Numa/LTermFairnessInterval (default 5)
esxcfg-advcfg -s 57 /Numa/MigImbalanceThreshold (default 10)
esxcfg-advcfg -s 0 /Numa/PageMigEnable (default 1)
esxcfg-advcfg -s 60000 /Numa/RebalancePeriod (default 2000)
esxcfg-advcfg -s 0 /Numa/SwapLoadEnable (default 1)
esxcfg-advcfg -s 0 /Numa/SwapLocalityEnable (default 1)
esxcfg-advcfg -s static /Power/CpuPolicy (default balanced)
esxcfg-advcfg -s 0 /VMFS3/HardwareAcceleratedLocking (default 1)
esxcfg-advcfg –s 1 /Disk/ReqCallThreshold (default 8)
Added ‘ monitor_control.disable_flexpriority = "FALSE"' line in /etc/vmware/config
The ‘Intel® "Haswell" Generation’ EVC mode was enabled on the cluster
FC-FCoE Driver that were updated (download from <https://my.vmware.com/web/vmware/details?downloadGroup=DT-ESXI60-QLOGIC-QLNATIVEFC-21101-1&productId=491>)

Server Notes

Server BIOS settings:
Turbo Boost Technology: Enabled (Intel Turbo Boost up to 3.6GHz , default enabled)
All C-States: disabled (default enable)
QPI snoop mode set to cluster on die (default early snoop)

Networking Notes

vSwitch0 for the service Console at 1Gb/s on vmnic0 for both hosts
vSwitch1 for DS2-VMs workloads at 10Gb/s on vmnic4 for esxihostm, vmnic3 for esxihostn
vSwitch2 for all VMs except DS2-VMs at 10Gb/s on vmnic5 for esxihostm, vmnic4 for esxihostn
vSwitch3 for VMotion at 1Gb/s on vmnic3 for esxihostm, vmnic5 for esxihostn

Storage Notes

ESXi was install on two disk configured as RAID1 in the internal server storage bay
Round robin policy was used for All LUNs from fiber attached storage (default most recently used)
All LUNs were configured as block devices; no system memory was used for caching
The Fusion-io LUNs had “No. of outstanding IOs with competing worlds” set to 256 (default 32)

1xRH2288H V2 configured as a Fibre Channel Target

Hardware details:
Two Intel Xeon E5-2690v2@3.0GHz processors
128GB RAM(8x16 GB dual rank PC3-14900 Registered DDR3/1866 MHz DIMMs)

Two Qlogic QLE2672 16GB FC HBA user as FC target controllers
One LSI RAID SAS 6G Controller with 1GB Cache
3xFusion-io ioDrive2 Duo 2.4TB PCIE-SSD
2x200GB SATA-SSDs (for the storage server’ os)
Software details: SanDisk ION Accelerator version 2.50 build 276

RAID configuration: No RAID level used on PCIE-SSD

- First PCIE-SSD:
- LUN 1: For Tile 0,1,24 DS2 VMs (1200GB)
 - LUN 2: For Tile 4,5,31 DS2 VMs (1200GB)
- Second PCIE-SSD:
- LUN 1: For Tile 8,9,25 DS2 VMs (1200GB)
 - LUN 2: For Tile 12,13 DS2 VMs (1200GB)
- Third PCIE-SSD:
- LUN 1: For Tile 16,17,26 DS2 VMs (1200GB)
 - LUN 2: For Tile 20,21 DS2 VMs (1200GB)

1xRH2288H V2 configured as a Fibre Channel Target

Hardware details:

Two Intel Xeon E5-2690v2@3.0GHz processors
128GB RAM(8x16 GB dual rank PC3-14900 Registered DDR3/1866 MHz DIMMs)
Two Qlogic QLE2672 16GB FC HBA user as FC target controllers
One LSI RAID SAS 6G Controller with 1GB Cache
3xFusion-io ioDrive2 Duo 2.4TB PCIE-SSD
2x200GB SATA-SSDs (for the storage server’ os)
Software details: SanDisk ION Accelerator version 2.50 build 276

RAID configuration: No RAID level used on PCIE-SSD

- First PCIE-SSD:
- LUN 1: For Tile 2,3,27 DS2 VMs (1200GB)
 - LUN 2: For Tile 6,7 DS2 VMs (1200GB)
- Second PCIE-SSD:
- LUN 1: For Tile 10,11,28 DS2 VMs (1200GB)
 - LUN 2: For Tile 14,15 DS2 VMs (1200GB)
- Third PCIE-SSD:
- LUN 1: For Tile 18,19,29 DS2 VMs (1200GB)
 - LUN 2: For Tile 22,23,30 DS2 VMs (1200GB)

1xRH2288H V3 configured as a Fibre Channel Target

Hardware details:

Two Intel Xeon E5-2699v3@3.0GHz processors
128GB RAM(8x16 GB dual rank PC4-2133 Registered DDR4/2133MHz DIMMs)
One Qlogic QLE2562 8GB FC HBA user as FC target controllers
One LSI RAID SAS 6G Controller with 1GB Cache
3XHUAWEI ES3000 V2 2.4TB PCIE-SSD
2x200GB SATA-SSDs (for the storage server’ os)

Software details:

Operating System: SUSE Linux Enterprise Server 11 SP3 – 3.0.101-0.8 (64-bit)
Fibre Channel Target SW: LIO (part of SUSE Linux Enterprise Server 11SP3)

RAID configuration: No RAID level used on PCIe-SSD

- First PCIe-SSD:
- LUN 1: For Tile 0,1,4,5,24,31 Olio and mailserver VMs (2000GB)
- Second PCIe-SSD:
- LUN 1: For Tile 8,9,12,13,25 Olio and mailserver VMs (2000GB)
- Third PCIe-SSD:
- LUN 1: For Tile 16,17,20,21,26 Olio and mailserver VMs (2000GB)

1xRH2288H V3 configured as a Fibre Channel Target

- Hardware details:
- Two Intel Xeon E5-2699v3@3.0GHz processors
 - 128GB RAM(8x16 GB dual rank PC4-2133 Registered DDR4/2133MHz DIMMs)
 - One Qlogic QLE2562 8GB FC HBA user as FC target controllers
 - One LSI RAID SAS 6G Controller with 1GB Cache
 - 3XHUAWEI ES3000 V2 2.4TB PCIE-SSD
 - 2x480GB SAMSUNG-2.5-480GB-SATA-SSD
 - 2x200GB SATA-SSDs (for the storage server’ os)

Software details:
Operating System: SUSE Linux Enterprise Server 11 SP3 – 3.0.101-0.8 (64-bit)
Fibre Channel Target SW: LIO (part of SUSE Linux Enterprise Server 11SP3)

RAID configuration: No RAID level used on PCIe-SSD
Every 400GB SSD configured as raid0

- First PCIe-SSD:
- LUN 1: For Tile 2,3,6,7,27 Olio and mailserver VMs (2000GB)
- Second PCIe-SSD:
- LUN 1: For Tile 10,11,14,15,28 Olio and mailserver VMs (2000GB)
- Third PCIe-SSD:
- LUN 1: For Tile 18,19,22,23,29,30 Olio and mailserver VMs (2000GB)
- First 400GB SSD:
- LUN 1: For standby VMs (300GB)
 - LUN 2: For DeployTemplate VMs (100GB)
- First 400GB SSD:
- LUN 1: Target LUN for Storage VMotion (200GB)
 - LUN 2: Target LUN for Storage Deploy (200GB)

Client storage notes

- 1xPrime Client: 1x500GB Seagate ST9500620NS 6G 7200 rpm SFF SATA disk with no RAID used for hosts' OS.
- 1xVirtual Client Host: 4x300GB Seagate ST300MM0006 6G 10K rpm SFF SAS disk with RAID 10 used for hosts' OS.
- 1xVirtual Client Host: 4x300GB Seagate ST300MM0006 6G 10K rpm SFF SAS disk with RAID 10 used for hosts' OS.
- 1xVirtual Client Host: 4x300GB Seagate ST300MM0006 6G 10K rpm SFF SAS disk with RAID 10 used for hosts' OS.
- 1xVirtual Client Host: 4x300GB Seagate ST300MM0006 6G 10K rpm SFF SAS disk with RAID 10 used for hosts' OS.

1xVirtual Client Host: 4x300GB Seagate ST300MM0006 6G 10K rpm SFF SAS disk with RAID 10 used for hosts' OS.

Datacenter Management Server Notes

None

Operating System Notes

All Mailserver VMs running Microsoft Windows Server 2008 R2 Enterprise SP1(64-bit)

All Standby VMs running Microsoft Windows Server 2003 R2 Enterprise SP2(32-bit)

All SLES11 VMs were updated with SP2

Software Notes

Each Mailserver VM running Microsoft Exchange Server 2007 Enterprise SP3 (64-bit)

Client Notes

Prime client was running VMware vSphere PowerCLI 5.8 Build 2057893

All virtual client hosts were installed with VMware ESXi 5.5.0 (Build 1331820)

Other Notes

TILEDELAY reduced to 29 seconds (default: 60 seconds)

This is a full disclosure report for a VMmark benchmark result. All published VMmark results must be from fully-compliant tests for which a full disclosure report is publicly available. For information about VMmark and the rules regarding its usage visit www.vmware.com/products/vmmark. VMware and VMmark are trademarks or registered trademarks of VMware, Inc. VMware® VMmark® is a product of [VMware, Inc.](http://www.vmware.com) VMmark utilizes the SPEC Power and Temperature Daemon (SPEC PTDaemon), which is available from the Standard Performance Evaluation Corporation (SPEC®). VMmark results are not SPEC metrics and cannot be compared to SPEC metrics in any way.