

## 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 =  
32.46 @ 31 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: 3-14-2016

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### 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	328.30	0.99	64.00	4761.73	1.03	87.90	3399.57	1.55	95.61	2429.75	1.60	108.05	1740.50	1.65	114.51	1.33
p1	326.65	0.99	69.00	4723.48	1.02	108.28	3102.70	1.41	115.80	2106.60	1.39	132.23	1457.42	1.38	143.55	1.22
p2	326.05	0.99	74.00	4632.98	1.00	218.15	3025.05	1.38	121.80	2201.38	1.45	137.35	1521.60	1.44	153.65	1.23
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.55	0.99	50.25	4765.27	1.03	70.35	3575.03	1.63	87.35	2372.97	1.56	106.34	1714.75	1.62	108.21	1.33
p1	326.65	0.99	62.75	4743.40	1.02	82.41	3475.30	1.58	91.90	2422.12	1.60	108.30	1782.15	1.68	109.93	1.34
p2	327.18	0.99	64.00	4746.15	1.02	104.67	3332.90	1.52	100.18	2395.57	1.58	111.31	1799.62	1.70	116.44	1.33
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.95	0.99	63.98	4735.18	1.02	88.43	3369.32	1.53	98.65	2277.68	1.50	115.02	1636.58	1.55	119.36	1.29
p1	326.32	0.99	63.95	4720.10	1.02	121.89	3137.07	1.43	112.62	2178.40	1.43	130.52	1568.80	1.48	136.12	1.25
p2	323.40	0.98	72.97	4656.73	1.00	196.52	3078.30	1.40	117.36	2102.82	1.38	138.79	1575.17	1.49	144.92	1.23
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.38	0.99	64.00	4772.48	1.03	74.11	3975.55	1.81	67.36	2988.85	1.97	71.14	1994.03	1.88	81.20	1.47
p1	324.70	0.98	64.00	4750.27	1.02	85.38	3679.53	1.67	80.76	2686.97	1.77	89.35	1993.17	1.88	96.81	1.41
p2	328.32	0.99	64.00	4718.00	1.02	128.55	3320.65	1.51	100.38	2297.65	1.51	112.49	1715.50	1.62	117.20	1.30
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.00	0.98	64.00	4744.25	1.02	89.55	3360.55	1.53	98.28	2334.32	1.54	110.70	1666.58	1.58	117.06	1.30
p1	323.00	0.98	64.25	4722.32	1.02	134.69	3256.07	1.48	103.90	2359.68	1.55	114.77	1791.80	1.69	119.58	1.31
p2	329.90	1.00	74.00	4654.20	1.00	208.50	3039.93	1.38	121.08	2134.93	1.41	138.32	1517.65	1.43	147.23	1.23
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.18	0.99	48.25	4754.45	1.02	82.40	3908.75	1.78	71.10	2962.05	1.95	74.48	2021.83	1.91	86.62	1.46

<b>p1</b>	328.18	0.99	62.35	4755.75	1.02	91.80	3630.55	1.65	85.04	2631.40	1.73	95.72	1903.12	1.80	106.11	1.39
<b>p2</b>	326.12	0.99	64.00	4720.32	1.02	103.81	3251.78	1.48	106.75	2261.68	1.49	118.86	1548.92	1.46	130.72	1.26
<b>TILE_6</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	323.25	0.98	63.65	4741.00	1.02	90.44	3320.57	1.51	100.06	2367.75	1.56	112.72	1695.17	1.60	119.20	1.30
<b>p1</b>	325.48	0.99	72.22	4745.30	1.02	101.63	3183.22	1.45	109.48	2154.03	1.42	126.08	1604.45	1.52	131.15	1.26
<b>p2</b>	325.80	0.99	84.00	4636.25	1.00	236.28	2967.12	1.35	126.08	1968.92	1.30	147.20	1419.83	1.34	158.62	1.18
<b>TILE_7</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.85	0.99	54.00	4753.68	1.02	90.53	3531.72	1.61	89.12	2563.75	1.69	104.06	1894.15	1.79	106.58	1.38
<b>p1</b>	327.68	0.99	54.00	4726.25	1.02	113.65	3528.25	1.60	89.29	2368.80	1.56	106.62	1799.25	1.70	108.47	1.34
<b>p2</b>	327.50	0.99	57.75	4730.10	1.02	101.22	3448.38	1.57	92.77	2437.32	1.61	101.79	1695.00	1.60	111.55	1.32
<b>TILE_8</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.38	0.99	64.25	4740.55	1.02	88.50	3306.20	1.50	101.31	2378.90	1.57	113.24	1781.85	1.68	119.88	1.32
<b>p1</b>	319.10	0.97	70.50	4713.32	1.02	107.74	3118.18	1.42	114.52	2156.05	1.42	127.80	1478.55	1.40	140.67	1.23
<b>p2</b>	327.62	0.99	74.50	4683.05	1.01	157.33	3071.00	1.40	117.04	2169.38	1.43	133.05	1509.08	1.43	145.96	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>	324.15	0.98	64.25	4759.30	1.03	74.00	3508.28	1.60	90.42	2498.40	1.65	102.70	1875.05	1.77	108.74	1.36
<b>p1</b>	319.68	0.97	64.00	4747.20	1.02	85.59	3524.75	1.60	89.46	2408.47	1.59	103.50	1701.88	1.61	110.33	1.32
<b>p2</b>	325.23	0.98	64.00	4700.35	1.01	121.12	3495.00	1.59	91.34	2419.00	1.59	109.08	1733.47	1.64	115.41	1.33
<b>TILE_10</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.30	0.99	72.00	4737.18	1.02	93.26	3215.45	1.46	112.19	2136.20	1.41	130.75	1490.05	1.41	148.11	1.24
<b>p1</b>	326.77	0.99	74.00	4718.82	1.02	114.58	3258.35	1.48	109.54	2118.62	1.40	129.59	1429.67	1.35	146.45	1.23
<b>p2</b>	324.05	0.98	76.25	4676.07	1.01	173.15	2965.78	1.35	131.12	2081.20	1.37	153.14	1416.65	1.34	171.58	1.20
<b>TILE_11</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	321.55	0.97	59.25	4771.70	1.03	73.05	3442.80	1.57	95.00	2377.88	1.57	113.42	1690.80	1.60	121.16	1.31
<b>p1</b>	328.25	0.99	71.00	4749.20	1.02	85.99	3173.47	1.44	111.60	2131.43	1.40	129.16	1487.08	1.41	138.95	1.24
<b>p2</b>	323.55	0.98	74.00	4713.40	1.02	122.65	3426.70	1.56	93.49	2555.80	1.68	99.12	1905.65	1.80	105.24	1.36
<b>TILE_12</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	332.65	1.01	64.00	4738.00	1.02	91.26	3342.03	1.52	100.12	2289.12	1.51	114.31	1603.65	1.52	123.04	1.29
<b>p1</b>	326.00	0.99	72.25	4736.00	1.02	106.87	3133.15	1.42	113.48	2200.12	1.45	128.62	1552.85	1.47	138.35	1.25
<b>p2</b>	320.27	0.97	74.75	4637.52	1.00	204.13	3023.65	1.37	120.60	2129.55	1.40	135.87	1566.20	1.48	146.44	1.23
<b>TILE_13</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	325.05	0.98	53.67	4757.25	1.02	80.88	3864.30	1.76	70.99	2944.22	1.94	73.35	2215.47	2.09	71.29	1.48
<b>p1</b>	321.85	0.97	54.00	4730.93	1.02	89.70	3588.75	1.63	83.97	2732.10	1.80	86.24	2019.42	1.91	87.11	1.41
<b>p2</b>	324.12	0.98	59.75	4745.20	1.02	106.79	3400.45	1.55	95.25	2370.05	1.56	106.26	1741.15	1.65	114.50	1.32
<b>TILE_14</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

<b>p0</b>	324.73	0.98	72.75	4734.12	1.02	90.66	3354.47	1.53	99.93	2305.40	1.52	113.66	1630.42	1.54	121.64	1.29
<b>p1</b>	325.90	0.99	64.50	4723.35	1.02	103.64	3053.03	1.39	120.18	2227.65	1.47	135.07	1583.53	1.50	146.65	1.25
<b>p2</b>	326.73	0.99	73.50	4670.88	1.01	188.41	3020.62	1.37	122.08	2037.97	1.34	139.61	1477.08	1.40	151.83	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>	324.23	0.98	54.00	4728.80	1.02	88.63	3899.25	1.77	71.38	2814.97	1.85	81.09	2013.12	1.90	87.14	1.44
<b>p1</b>	324.82	0.98	54.00	4718.62	1.02	108.76	3732.30	1.70	79.60	2631.65	1.73	93.55	1997.33	1.89	97.07	1.41
<b>p2</b>	326.80	0.99	58.62	4733.00	1.02	101.99	3262.03	1.48	106.50	2161.38	1.42	126.57	1527.12	1.44	133.36	1.25
<b>TILE_16</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.52	0.99	63.77	4729.27	1.02	84.39	3337.38	1.52	99.75	2386.35	1.57	112.11	1677.90	1.59	122.07	1.31
<b>p1</b>	330.77	1.00	74.75	4719.12	1.02	117.75	3178.88	1.45	110.39	2241.12	1.48	125.63	1640.83	1.55	135.94	1.27
<b>p2</b>	326.48	0.99	84.00	4676.27	1.01	144.42	2990.62	1.36	125.13	1989.38	1.31	145.16	1349.80	1.28	160.43	1.18
<b>TILE_17</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.88	0.99	77.00	4764.68	1.03	72.28	3432.35	1.56	92.91	2668.18	1.76	96.72	1917.50	1.81	104.25	1.38
<b>p1</b>	322.68	0.98	66.35	4736.95	1.02	86.57	3418.43	1.55	94.08	2446.80	1.61	101.02	1809.90	1.71	107.28	1.34
<b>p2</b>	328.75	1.00	64.00	4724.52	1.02	120.38	3524.28	1.60	89.20	2417.68	1.59	103.33	1693.85	1.60	111.61	1.33
<b>TILE_18</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	328.93	1.00	75.00	4754.35	1.02	85.53	3247.90	1.48	105.85	2372.47	1.56	120.55	1694.00	1.60	129.53	1.30
<b>p1</b>	327.70	0.99	74.00	4715.18	1.02	122.37	3017.30	1.37	124.45	1973.78	1.30	147.78	1396.22	1.32	163.61	1.19
<b>p2</b>	329.43	1.00	80.00	4713.43	1.02	145.26	3011.70	1.37	124.95	1972.10	1.30	148.61	1341.50	1.27	162.80	1.18
<b>TILE_19</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	320.10	0.97	54.00	4760.38	1.03	71.32	3986.05	1.81	67.60	2928.90	1.93	75.38	2298.18	2.17	74.41	1.50
<b>p1</b>	328.30	0.99	54.00	4740.05	1.02	84.19	3745.22	1.70	79.23	2626.30	1.73	89.88	1867.12	1.76	96.08	1.39
<b>p2</b>	321.02	0.97	54.00	4716.27	1.02	122.43	3291.65	1.50	103.88	2428.15	1.60	111.45	1679.40	1.59	124.55	1.30
<b>TILE_20</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	327.00	0.99	64.00	4765.90	1.03	81.40	3144.25	1.43	114.95	2190.18	1.44	131.68	1581.78	1.49	144.38	1.26
<b>p1</b>	327.62	0.99	70.75	4740.00	1.02	97.77	3131.12	1.42	114.70	2154.80	1.42	128.10	1452.88	1.37	143.76	1.23
<b>p2</b>	326.90	0.99	84.00	4727.48	1.02	121.38	2902.35	1.32	133.42	2019.55	1.33	151.01	1368.08	1.29	169.75	1.18
<b>TILE_21</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	326.62	0.99	47.25	4757.50	1.03	70.54	3789.30	1.72	74.40	2795.80	1.84	76.62	2018.88	1.91	86.37	1.44
<b>p1</b>	326.55	0.99	44.90	4749.52	1.02	88.09	3663.50	1.67	81.41	2641.82	1.74	87.02	1811.72	1.71	98.31	1.38
<b>p2</b>	324.05	0.98	53.48	4700.18	1.01	119.94	3226.57	1.47	108.27	2342.80	1.54	123.29	1665.00	1.57	134.15	1.29
<b>TILE_22</b>	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
<b>p0</b>	323.05	0.98	64.00	4752.85	1.02	85.47	3423.45	1.56	95.48	2427.75	1.60	108.88	1686.75	1.59	120.96	1.32
<b>p1</b>	322.98	0.98	70.25	4736.27	1.02	101.20	3286.18	1.49	104.26	2231.25	1.47	119.67	1519.58	1.44	133.53	1.26
<b>p2</b>	329.90	1.00	79.00	4671.82	1.01	159.14	2985.00	1.36	125.36	2065.60	1.36	143.29	1482.05	1.40	159.13	1.21



<b>Infrastructure_Operations_Scores:</b>	vmotion	svmotion	deploy
<b>Completed_Ops_PerHour</b>	17.50	11.00	5.50
<b>Avg_Seconds_To_Complete</b>	28.75	17.84	290.05
<b>Failures</b>	0.00	0.00	0.00
<b>Ratio</b>	1.09	1.22	1.38
<b>Number_Of_Threads</b>	1	1	1
<b>Summary</b>	Run_Is_Compliant		Turbo_Setting:0
	Number_Of_Compliance_Issues(0)*		Median_Phase(p1)
<b>Unreviewed_VMmark2_Applications_Score</b>	40.27		
<b>Unreviewed_VMmark2_Infrastructure_Score</b>	1.22		
<b>Unreviewed_VMmark2_Score</b>	32.46		

## 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 /88 Cores / 176 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
<b>Network</b>	
Network Switch Vendors and Models	HUAWEI E9000 CX911
Network Speed	10Gbps
<b>Storage</b>	
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
<b>Datacenter Management Server</b>	
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	31/1/5
System Model(s)	1xHuawei Tecal RH2288V2 (Prime Client) 1xHuawei FusionServer RH2288HV3(Virtual Client Host for client 17,18,19, 20,21,22,30) 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	30
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 10240 used for all VMs (default 9536)

All DS2DB VMs had Disk shares set to high (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 (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

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 3.3GHz , 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

vSwitch1 for DS2-VMs workloads at 10Gb/s, one sut on vmnic4 and other one on vmnic3

vSwitch2 for all VMs except DS2-VMs at 10Gb/s, one sut on vmnic5 and other one on vmnic4

vSwitch3 for VMotion at 1Gb/s , one sut on vmnic2 and other one on vmnic5

## Storage Notes

ESXi was install on two disk configured as RAID1 in the internal server storage bay

Round robin policy was used for all disk (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 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

2XHUAWEI ES3000 V2 3.2TB 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 Olio and mailserver VMs (2000GB)

Second PCIe-SSD:

LUN 1: For Tile 8,9,12,13,25 Olio and mailserv VMs (2000GB)

Third PCIe-SSD:

LUN 1: For Tile 16,17,20,21,26 Olio and mailserv 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

2XHUAWEI ES3000 V2 3.2TB 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 480GB SSD configured as raid0

First PCIe-SSD:

LUN 1: For Tile 2,3,6,7,27 Olio and mailserv VMs (2000GB)

Second PCIe-SSD:

LUN 1: For Tile 10,11,14,15,28 Olio and mailserv VMs (2000GB)

Third PCIe-SSD:

LUN 1: For Tile 18,19,22,23,29,30 Olio and mailserv VMs (2000GB)

First 480GB SSD:

LUN 1: For standby VMs (300GB)

LUN 2: For DeployTemplate VMs (20GB)

First 480GB 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 Mailserv 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)

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