VMmark® 3.1.1 Results

Server Vendor & Model: HPE ProLiant DL560 Gen11 **Storage Vendor & Model: HPE ProLiant DL385 Gen11** **Hypervisor: VMware ESXi 8.0 Update 1, Build 21495797** **Datacenter Management Software: VMware vCenter Server 8.0b Build 21216066**	**VMmark 3.1.1 Score = 44.51 @ 43 Tiles**

Number of Hosts: 2	**Uniform Hosts [yes/no]: yes**	**Total sockets/cores/threads in test: 8/480/960**
Tested By: Hewlett Packard Enterprise		**Test Date: 06-02-2023**

Performance Section	**Configuration Section**	**Notes Section**
Performance	Configuration	Notes for Workload

Performance

	weathervane			weathervaneE			dvdstoreA			dvdstoreB			dvdstoreC			
TILE_0	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3562.12	0.99	0.45 | 0.00	566.00	0.99	0.49 | 0.25	1060.53	1.44	539.48	737.65	1.47	618.80	536.62	1.55	694.87	1.26
p1	3549.15	0.99	0.45 | 0.00	562.55	0.98	0.37 | 0.15	1061.45	1.45	543.40	792.33	1.58	609.05	563.98	1.63	683.87	1.29
p2	3540.05	0.98	0.44 | 0.00	560.95	0.98	0.43 | 0.10	1057.80	1.44	543.01	756.77	1.51	631.28	560.30	1.62	699.86	1.28
TILE_1	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3581.24	1.00	0.37 | 0.00	571.45	1.00	0.76 | 0.49	1076.70	1.47	505.83	779.08	1.56	582.66	548.50	1.58	649.14	1.29
p1	3563.13	0.99	0.36 | 0.00	570.01	1.00	0.85 | 0.50	1065.53	1.45	526.94	800.50	1.60	591.16	572.92	1.65	660.64	1.30
p2	3546.32	0.99	0.36 | 0.00	566.57	0.99	0.65 | 0.34	1082.83	1.47	499.90	780.42	1.56	569.74	577.50	1.67	626.89	1.30
TILE_2	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.16	0.99	0.30 | 0.00	569.83	1.00	0.47 | 0.17	1030.45	1.40	606.17	724.50	1.45	715.86	512.27	1.48	799.23	1.24
p1	3558.73	0.99	0.31 | 0.00	568.51	0.99	0.52 | 0.13	1029.97	1.40	603.06	757.30	1.51	698.06	540.12	1.56	774.47	1.27
p2	3545.44	0.99	0.32 | 0.00	563.77	0.99	0.37 | 0.06	1040.03	1.42	594.27	730.90	1.46	701.92	540.60	1.56	781.75	1.26
TILE_3	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3582.93	1.00	0.34 | 0.00	565.59	0.99	0.41 | 0.14	1114.60	1.52	436.23	803.73	1.61	501.99	573.80	1.65	559.72	1.32
p1	3578.35	0.99	0.35 | 0.00	561.12	0.98	0.34 | 0.06	1084.33	1.48	494.27	810.23	1.62	562.02	578.20	1.67	623.38	1.31
p2	3563.17	0.99	0.34 | 0.00	558.97	0.98	0.39 | 0.13	1107.97	1.51	446.18	801.25	1.60	512.82	600.92	1.73	559.34	1.32
TILE_4	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3576.76	0.99	0.74 | 0.02	569.26	0.99	0.60 | 0.29	1095.17	1.49	461.74	798.12	1.59	520.07	569.62	1.64	571.93	1.31
p1	3564.66	0.99	0.48 | 0.00	564.78	0.99	0.44 | 0.26	1102.42	1.50	453.85	827.55	1.65	502.23	603.95	1.74	548.96	1.33
p2	3553.27	0.99	0.47 | 0.00	562.46	0.98	0.44 | 0.18	1108.03	1.51	446.29	806.52	1.61	509.29	601.85	1.74	541.62	1.33
TILE_5	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.80	0.99	0.34 | 0.00	563.55	0.98	0.40 | 0.09	1073.75	1.46	510.82	763.65	1.53	611.79	543.92	1.57	671.27	1.28

p1	3561.57	0.99	0.34 | 0.00	563.73	0.99	0.35 | 0.05	1076.15	1.47	509.90	793.12	1.58	596.61	570.30	1.64	653.97	1.30
p2	3547.91	0.99	0.33 | 0.00	562.71	0.98	0.44 | 0.10	1087.80	1.48	491.66	774.05	1.55	584.72	576.55	1.66	634.71	1.30
TILE_6	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3575.75	0.99	0.44 | 0.00	563.56	0.98	0.41 | 0.24	1082.53	1.47	492.33	782.25	1.56	563.00	553.42	1.60	632.56	1.29
p1	3568.86	0.99	0.43 | 0.00	559.30	0.98	0.38 | 0.09	1076.85	1.47	502.94	813.42	1.63	562.56	576.20	1.66	632.74	1.31
p2	3554.61	0.99	0.43 | 0.00	556.81	0.97	0.45 | 0.23	1095.22	1.49	480.15	786.75	1.57	543.93	580.45	1.67	609.22	1.30
TILE_7	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3566.88	0.99	0.70 | 0.01	566.59	0.99	0.38 | 0.10	1081.28	1.47	496.10	776.50	1.55	575.92	549.73	1.59	642.37	1.29
p1	3556.81	0.99	0.60 | 0.00	563.52	0.98	0.42 | 0.13	1073.80	1.46	514.62	801.65	1.60	582.26	570.33	1.64	658.20	1.30
p2	3538.78	0.98	0.62 | 0.00	562.03	0.98	0.32 | 0.12	1078.58	1.47	500.73	778.48	1.56	582.92	574.77	1.66	650.73	1.30
TILE_8	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3576.63	0.99	0.37 | 0.00	566.74	0.99	0.52 | 0.25	1055.55	1.44	560.33	752.27	1.50	650.91	525.83	1.52	748.36	1.26
p1	3564.95	0.99	0.36 | 0.00	559.95	0.98	0.44 | 0.28	1054.88	1.44	557.76	780.58	1.56	638.30	551.67	1.59	726.01	1.28
p2	3544.49	0.99	0.35 | 0.00	562.42	0.98	0.47 | 0.19	1060.47	1.44	542.48	756.27	1.51	639.42	556.50	1.60	716.07	1.28
TILE_9	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.61	0.99	0.44 | 0.00	559.92	0.98	0.38 | 0.17	1079.75	1.47	506.82	777.23	1.55	580.25	550.85	1.59	644.00	1.29
p1	3560.47	0.99	0.46 | 0.00	556.51	0.97	0.35 | 0.09	1077.88	1.47	509.95	807.52	1.61	577.74	575.08	1.66	643.68	1.30
p2	3553.29	0.99	0.44 | 0.00	556.15	0.97	0.38 | 0.08	1092.30	1.49	478.57	759.77	1.52	560.16	585.58	1.69	609.23	1.30
TILE_10	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3582.66	1.00	0.51 | 0.00	567.16	0.99	0.57 | 0.26	1086.10	1.48	502.23	755.58	1.51	570.02	526.45	1.52	640.33	1.27
p1	3571.67	0.99	0.45 | 0.00	562.69	0.98	0.49 | 0.12	1085.35	1.48	494.43	835.15	1.67	559.97	605.15	1.74	620.02	1.33
p2	3559.62	0.99	0.43 | 0.00	560.21	0.98	0.39 | 0.10	1100.10	1.50	462.20	761.02	1.52	545.51	561.80	1.62	596.14	1.29
TILE_11	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3580.05	1.00	0.30 | 0.00	567.13	0.99	0.43 | 0.21	1123.08	1.53	412.30	792.15	1.58	469.40	586.12	1.69	521.36	1.32
p1	3566.63	0.99	0.28 | 0.00	568.19	0.99	0.45 | 0.27	1123.58	1.53	418.38	883.35	1.76	457.52	640.80	1.85	507.24	1.37
p2	3553.56	0.99	0.29 | 0.00	561.30	0.98	0.37 | 0.05	1136.15	1.55	397.69	801.42	1.60	450.88	590.98	1.70	499.42	1.33
TILE_12	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3578.95	0.99	0.39 | 0.00	566.72	0.99	0.60 | 0.24	1077.47	1.47	511.82	767.75	1.53	612.67	543.15	1.57	673.08	1.28
p1	3562.00	0.99	0.35 | 0.00	562.19	0.98	0.42 | 0.13	1080.92	1.47	507.97	796.77	1.59	591.78	600.30	1.73	644.09	1.32
p2	3548.05	0.99	0.35 | 0.00	558.78	0.98	0.43 | 0.11	1098.80	1.50	469.36	789.88	1.58	549.78	560.88	1.62	609.52	1.30
TILE_13	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3575.85	0.99	0.39 | 0.00	561.35	0.98	0.40 | 0.12	1135.83	1.55	408.23	817.60	1.63	470.38	586.95	1.69	519.85	1.33
p1	3557.15	0.99	0.40 | 0.00	557.05	0.97	0.42 | 0.19	1122.53	1.53	417.72	850.38	1.70	463.46	639.80	1.84	508.31	1.36
p2	3531.95	0.98	0.37 | 0.00	554.36	0.97	0.38 | 0.09	1136.20	1.55	402.22	822.40	1.64	459.40	589.35	1.70	506.15	1.33
TILE_14	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.98	0.99	0.44 | 0.00	569.94	1.00	0.80 | 0.48	1052.12	1.43	563.87	743.12	1.48	669.44	519.05	1.50	765.29	1.26

p1	3551.26	0.99	0.43 | 0.00	565.27	0.99	0.43 | 0.18	1061.58	1.45	551.32	777.95	1.55	649.97	576.17	1.66	726.07	1.29
p2	3544.96	0.99	0.41 | 0.00	561.80	0.98	0.37 | 0.07	1067.33	1.45	519.28	761.67	1.52	621.16	534.52	1.54	703.30	1.27
TILE_15	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3567.54	0.99	1.41 | 0.13	563.51	0.98	0.39 | 0.12	1038.78	1.41	594.53	734.85	1.47	709.61	505.62	1.46	821.04	1.24
p1	3559.34	0.99	1.26 | 0.06	559.49	0.98	0.43 | 0.10	1028.00	1.40	611.80	757.12	1.51	711.51	553.52	1.60	815.09	1.27
p2	3541.18	0.98	1.44 | 0.15	559.27	0.98	0.33 | 0.06	1044.45	1.42	585.92	737.23	1.47	700.24	508.05	1.46	816.56	1.24
TILE_16	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3578.44	0.99	0.40 | 0.00	567.54	0.99	0.57 | 0.22	1029.65	1.40	616.37	719.98	1.44	752.26	495.75	1.43	869.40	1.23
p1	3567.76	0.99	0.37 | 0.00	563.74	0.99	0.46 | 0.27	1028.40	1.40	610.17	755.65	1.51	713.99	555.23	1.60	810.12	1.27
p2	3550.43	0.99	0.35 | 0.00	562.66	0.98	0.38 | 0.11	1043.97	1.42	590.04	734.08	1.47	705.27	508.80	1.47	809.89	1.24
TILE_17	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.55	0.99	2.03 | 0.22	570.11	1.00	0.57 | 0.24	1069.75	1.46	536.34	753.83	1.51	639.23	525.98	1.52	732.96	1.27
p1	3555.17	0.99	1.79 | 0.12	567.44	0.99	0.36 | 0.07	1059.08	1.44	548.25	778.80	1.56	642.96	579.15	1.67	715.68	1.30
p2	3537.99	0.98	1.96 | 0.27	560.82	0.98	0.34 | 0.11	1076.08	1.47	514.76	766.95	1.53	614.63	538.42	1.55	690.90	1.27
TILE_18	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3567.72	0.99	0.53 | 0.00	570.90	1.00	0.87 | 0.52	1036.58	1.41	600.60	733.60	1.47	708.27	506.85	1.46	823.41	1.25
p1	3548.17	0.99	0.49 | 0.00	562.49	0.98	0.55 | 0.31	1037.33	1.41	593.66	767.65	1.53	677.64	560.80	1.62	781.47	1.28
p2	3533.36	0.98	0.46 | 0.00	561.10	0.98	0.40 | 0.18	1052.38	1.43	571.43	748.25	1.49	661.24	517.95	1.49	771.89	1.25
TILE_19	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3565.44	0.99	0.30 | 0.00	570.28	1.00	0.59 | 0.26	1092.05	1.49	483.25	782.62	1.56	562.84	554.80	1.60	630.95	1.30
p1	3547.41	0.99	0.32 | 0.00	565.59	0.99	0.44 | 0.18	1080.83	1.47	493.72	811.70	1.62	558.54	606.38	1.75	623.55	1.32
p2	3534.92	0.98	0.29 | 0.00	557.62	0.97	0.27 | 0.06	1096.85	1.49	469.07	792.05	1.58	546.01	554.60	1.60	618.53	1.29
TILE_20	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3565.20	0.99	0.69 | 0.02	571.24	1.00	0.85 | 0.49	1097.95	1.50	466.10	791.52	1.58	533.47	560.55	1.62	603.14	1.30
p1	3545.97	0.99	0.48 | 0.00	563.73	0.99	0.41 | 0.18	1108.70	1.51	450.85	823.17	1.64	527.29	619.50	1.79	579.74	1.34
p2	3536.50	0.98	0.44 | 0.00	559.32	0.98	0.47 | 0.19	1107.35	1.51	442.96	803.75	1.61	513.62	543.77	1.57	571.90	1.30
TILE_21	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.41	0.99	0.39 | 0.00	569.89	1.00	0.55 | 0.21	1056.17	1.44	558.48	750.27	1.50	651.95	520.17	1.50	751.14	1.26
p1	3548.06	0.99	0.41 | 0.00	564.88	0.99	0.42 | 0.15	1057.45	1.44	546.30	778.70	1.56	652.63	572.80	1.65	735.67	1.29
p2	3536.31	0.98	0.37 | 0.00	560.17	0.98	0.34 | 0.10	1064.67	1.45	538.50	758.92	1.52	632.00	503.70	1.45	732.02	1.25
TILE_22	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3566.38	0.99	0.67 | 0.02	571.11	1.00	0.69 | 0.28	1097.60	1.49	459.44	807.60	1.61	497.69	567.00	1.63	579.28	1.31
p1	3544.78	0.99	0.45 | 0.00	565.23	0.99	0.43 | 0.15	1094.33	1.49	474.40	822.27	1.64	531.30	612.60	1.77	604.64	1.33
p2	3537.02	0.98	0.43 | 0.00	558.47	0.98	0.44 | 0.20	1075.88	1.47	509.14	776.70	1.55	581.56	514.62	1.48	685.15	1.26
TILE_23	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.08	0.99	0.36 | 0.00	570.48	1.00	0.66 | 0.24	990.85	1.35	706.19	696.12	1.39	828.62	495.82	1.43	970.83	1.22

p1	3546.53	0.99	0.36 | 0.00	564.51	0.99	0.50 | 0.18	996.35	1.36	696.28	715.45	1.43	848.07	496.05	1.43	972.78	1.22
p2	3535.53	0.98	0.34 | 0.00	559.71	0.98	0.35 | 0.08	1001.40	1.36	685.66	678.38	1.36	821.29	478.98	1.38	957.39	1.20
TILE_24	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3559.74	0.99	1.34 | 0.31	571.02	1.00	0.63 | 0.23	1085.60	1.48	483.94	786.58	1.57	549.45	580.62	1.67	621.88	1.31
p1	3546.10	0.99	0.70 | 0.01	563.40	0.98	0.39 | 0.10	1099.10	1.50	462.60	795.38	1.59	531.87	590.20	1.70	584.74	1.31
p2	3531.16	0.98	0.63 | 0.00	561.07	0.98	0.38 | 0.09	1106.67	1.51	449.43	800.48	1.60	519.47	565.25	1.63	579.79	1.30
TILE_25	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3564.70	0.99	0.40 | 0.00	569.24	0.99	0.62 | 0.21	1069.50	1.46	529.80	794.80	1.59	609.73	551.88	1.59	721.12	1.29
p1	3542.89	0.98	0.41 | 0.00	566.13	0.99	0.46 | 0.20	1076.62	1.47	512.90	774.20	1.55	585.89	560.80	1.62	683.04	1.29
p2	3528.82	0.98	0.37 | 0.00	557.71	0.97	0.27 | 0.09	1088.12	1.48	494.86	781.80	1.56	572.74	542.70	1.56	673.54	1.28
TILE_26	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3573.65	0.99	0.44 | 0.00	570.35	1.00	0.78 | 0.39	1050.97	1.43	564.50	777.75	1.55	654.14	547.58	1.58	750.96	1.28
p1	3543.78	0.98	0.42 | 0.00	564.13	0.99	0.44 | 0.16	1059.40	1.44	557.39	756.77	1.51	646.52	547.92	1.58	737.50	1.27
p2	3536.41	0.98	0.41 | 0.00	559.24	0.98	0.43 | 0.21	1062.33	1.45	543.37	758.60	1.52	631.54	529.15	1.53	736.17	1.26
TILE_27	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3567.36	0.99	0.29 | 0.00	570.11	1.00	0.72 | 0.35	1106.03	1.51	454.30	830.33	1.66	516.09	592.52	1.71	579.83	1.33
p1	3550.43	0.99	0.27 | 0.00	563.88	0.99	0.59 | 0.26	1109.50	1.51	446.00	800.92	1.60	512.86	598.85	1.73	560.49	1.32
p2	3539.64	0.98	0.27 | 0.00	559.63	0.98	0.36 | 0.10	1114.62	1.52	429.39	809.30	1.62	491.93	576.10	1.66	555.59	1.31
TILE_28	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.59	0.99	0.42 | 0.00	570.97	1.00	0.67 | 0.29	1087.53	1.48	486.27	806.83	1.61	566.67	573.67	1.65	650.46	1.31
p1	3551.68	0.99	0.39 | 0.00	564.72	0.99	0.35 | 0.16	1087.55	1.48	491.41	779.60	1.56	577.07	574.05	1.66	644.81	1.30
p2	3537.74	0.98	0.39 | 0.00	561.56	0.98	0.45 | 0.10	1098.33	1.50	464.94	791.45	1.58	537.28	558.85	1.61	610.95	1.30
TILE_29	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.72	0.99	0.32 | 0.00	570.27	1.00	0.61 | 0.37	1027.97	1.40	619.20	749.70	1.50	735.05	524.85	1.51	846.22	1.26
p1	3543.64	0.98	0.32 | 0.00	565.22	0.99	0.47 | 0.23	1029.12	1.40	615.59	725.85	1.45	743.77	525.42	1.52	839.15	1.25
p2	3536.88	0.98	0.30 | 0.00	559.22	0.98	0.30 | 0.02	1035.65	1.41	603.98	729.27	1.46	725.86	502.70	1.45	842.61	1.23
TILE_30	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3571.71	0.99	0.29 | 0.00	571.99	1.00	0.58 | 0.18	1052.65	1.43	561.25	774.92	1.55	657.81	543.33	1.57	764.01	1.28
p1	3550.40	0.99	0.31 | 0.00	565.51	0.99	0.35 | 0.08	1063.17	1.45	540.35	755.77	1.51	641.16	554.52	1.60	720.75	1.28
p2	3535.72	0.98	0.32 | 0.00	561.18	0.98	0.38 | 0.14	1071.42	1.46	536.55	759.25	1.52	640.14	527.75	1.52	735.69	1.27
TILE_31	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.93	0.99	0.63 | 0.01	571.38	1.00	0.68 | 0.28	988.98	1.35	719.34	714.60	1.43	849.89	492.52	1.42	999.39	1.22
p1	3540.33	0.98	0.58 | 0.00	564.19	0.99	0.44 | 0.13	997.25	1.36	701.02	692.73	1.38	851.53	496.90	1.43	984.98	1.21
p2	3530.83	0.98	0.57 | 0.00	561.57	0.98	0.33 | 0.09	1008.27	1.37	681.10	703.48	1.41	817.87	480.73	1.39	963.98	1.21
TILE_32	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.59	0.99	0.42 | 0.00	570.88	1.00	0.64 | 0.39	1009.45	1.37	650.77	749.70	1.50	736.38	519.40	1.50	858.89	1.25

p1	3543.76	0.98	0.39 | 0.00	565.12	0.99	0.44 | 0.22	1029.67	1.40	613.14	725.75	1.45	732.06	526.27	1.52	835.78	1.25
p2	3536.74	0.98	0.39 | 0.00	561.93	0.98	0.43 | 0.19	1036.75	1.41	595.63	741.17	1.48	687.14	514.05	1.48	789.21	1.25
TILE_33	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.22	0.99	0.48 | 0.00	570.63	1.00	0.72 | 0.23	1062.33	1.45	542.33	793.02	1.58	617.39	557.40	1.61	709.42	1.30
p1	3547.88	0.99	0.46 | 0.00	564.47	0.99	0.40 | 0.06	1074.55	1.46	515.99	765.08	1.53	614.46	562.83	1.62	695.46	1.29
p2	3537.65	0.98	0.44 | 0.00	561.10	0.98	0.45 | 0.19	1074.38	1.46	514.02	773.65	1.55	588.07	542.33	1.56	676.73	1.28
TILE_34	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.94	0.99	0.38 | 0.00	571.75	1.00	0.73 | 0.32	1073.30	1.46	511.88	803.42	1.61	576.75	573.35	1.65	648.81	1.31
p1	3544.21	0.99	0.36 | 0.00	565.27	0.99	0.61 | 0.31	1093.28	1.49	484.31	775.15	1.55	574.26	574.50	1.66	643.05	1.30
p2	3537.34	0.98	0.33 | 0.00	558.53	0.98	0.36 | 0.09	1088.45	1.48	479.86	789.42	1.58	551.21	555.17	1.60	618.81	1.29
TILE_35	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3571.27	0.99	0.26 | 0.00	571.00	1.00	0.82 | 0.50	1101.45	1.50	454.80	824.73	1.65	522.61	600.73	1.73	559.02	1.34
p1	3548.07	0.99	0.28 | 0.00	565.79	0.99	0.62 | 0.31	1114.20	1.52	435.90	803.08	1.60	507.37	600.95	1.73	548.78	1.33
p2	3538.19	0.98	0.26 | 0.00	558.82	0.98	0.42 | 0.13	1118.10	1.52	427.20	810.33	1.62	490.75	580.58	1.67	539.30	1.32
TILE_36	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3567.80	0.99	0.42 | 0.00	572.94	1.00	0.56 | 0.18	1019.95	1.39	641.54	777.35	1.55	739.03	547.58	1.58	864.10	1.28
p1	3547.12	0.99	0.41 | 0.00	565.22	0.99	0.36 | 0.15	1043.60	1.42	585.22	708.25	1.42	711.14	508.60	1.47	814.41	1.23
p2	3537.52	0.98	0.40 | 0.00	560.51	0.98	0.42 | 0.14	1042.33	1.42	591.89	765.33	1.53	694.20	533.40	1.54	804.44	1.26
TILE_37	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.01	0.99	1.63 | 0.17	571.39	1.00	0.60 | 0.18	1099.08	1.50	461.44	857.12	1.71	513.36	618.60	1.78	584.51	1.35
p1	3532.70	0.98	1.33 | 0.06	566.55	0.99	0.41 | 0.11	1110.70	1.51	440.33	781.42	1.56	502.54	568.98	1.64	568.16	1.30
p2	3527.69	0.98	1.61 | 0.20	557.77	0.97	0.31 | 0.02	1116.78	1.52	437.28	841.65	1.68	487.46	601.98	1.74	545.33	1.34
TILE_38	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3566.86	0.99	0.62 | 0.00	571.98	1.00	0.70 | 0.29	1033.78	1.41	591.74	761.52	1.52	689.31	569.75	1.64	754.99	1.28
p1	3548.76	0.99	0.48 | 0.00	566.89	0.99	0.59 | 0.28	1059.50	1.44	546.00	755.62	1.51	641.51	531.23	1.53	716.66	1.27
p2	3537.24	0.98	0.47 | 0.00	560.41	0.98	0.40 | 0.14	1050.85	1.43	562.41	775.20	1.55	655.34	555.25	1.60	733.89	1.28
TILE_39	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3574.20	0.99	0.30 | 0.00	572.14	1.00	0.73 | 0.35	1095.03	1.49	479.68	815.48	1.63	551.61	607.48	1.75	622.74	1.33
p1	3553.54	0.99	0.29 | 0.00	565.30	0.99	0.48 | 0.23	1104.25	1.50	463.55	792.33	1.58	540.28	556.85	1.61	622.02	1.30
p2	3540.17	0.98	0.29 | 0.00	559.40	0.98	0.33 | 0.18	1104.97	1.50	459.35	824.58	1.65	526.08	587.75	1.69	600.41	1.32
TILE_40	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.39	0.99	0.38 | 0.00	570.51	1.00	0.74 | 0.31	1026.12	1.40	624.72	750.92	1.50	735.51	553.42	1.60	838.74	1.27
p1	3543.72	0.98	0.36 | 0.00	566.32	0.99	0.61 | 0.31	1039.95	1.42	588.27	737.08	1.47	699.98	509.80	1.47	804.47	1.24
p2	3535.75	0.98	0.35 | 0.00	560.96	0.98	0.39 | 0.18	1048.72	1.43	576.82	768.77	1.54	678.94	541.08	1.56	774.57	1.27
TILE_41	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3573.86	0.99	0.48 | 0.00	571.58	1.00	0.61 | 0.18	1080.30	1.47	502.01	804.38	1.61	576.49	600.52	1.73	641.94	1.32

p1	3550.09	0.99	0.46 | 0.00	564.72	0.99	0.36 | 0.06	1091.92	1.49	481.11	784.80	1.57	554.22	554.60	1.60	632.77	1.29
p2	3535.89	0.98	0.47 | 0.00	560.85	0.98	0.41 | 0.06	1081.30	1.47	484.69	814.58	1.63	554.53	582.20	1.68	620.26	1.31
TILE_42	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3566.53	0.99	0.33 | 0.00	570.92	1.00	0.54 | 0.15	1061.05	1.44	540.65	788.38	1.58	619.25	582.52	1.68	706.53	1.30
p1	3548.90	0.99	0.32 | 0.00	562.80	0.98	0.34 | 0.10	1071.28	1.46	522.39	767.08	1.53	609.31	533.98	1.54	711.48	1.27
p2	3541.95	0.98	0.31 | 0.00	561.04	0.98	0.41 | 0.10	1072.53	1.46	516.40	796.25	1.59	589.32	562.65	1.62	678.67	1.29
p0_score:	55.31															
p1_score:	55.62															
p2_score:	55.15															

Infrastructure_Operations_Scores:	vMotion	SVMotion	XVMotion	Deploy
Completed_Ops_PerHour	29.00	27.00	22.00	12.50
Avg_Seconds_To_Complete	4.74	78.60	97.46	247.16
Failures	0.00	0.00	0.00	0.00
Ratio	1.12	1.50	1.22	1.56
Number_Of_Threads	1	1	1	1

Summary	Run_Is_Compliant	Turbo_Setting:0
	Number_Of_Compliance_Issues(0)*	Median_Phase(p0)
Unreviewed_VMmark3_Applications_Score	55.31	
Unreviewed_VMmark3_Infrastructure_Score	1.34	
Unreviewed_VMmark3_Score	44.51	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 8.0 Update 1, Build 21495797 / 04-18-2023
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 8.0b Build 21216066 / 02-14-2023
Supplemental Software	None
Servers	

Number of Servers in System Under Test (all subsequent fields in this section are per server)	2
Server Manufacturer and Model	HPE ProLiant DL560 Gen11
Processor Vendor and Model	Intel Xeon Platinum 8490H
Processor Speed (GHz) / Turbo Boost Speed (GHz)	1.9 / 3.5
Total Sockets/Total Cores/Total Threads	4 Sockets / 240 Cores / 480 Threads
Primary CPU Cache	32 KB I + 48 KB D on chip per core
Secondary CPU Cache	2 MB I+D on chip per core
Other CPU Cache	112.5MB I+D on chip per chip
BIOS Version	U59 v1.36 (05/26/2023)
Memory Size (in GB, Number of DIMMs)	4096, 64
Memory Type and Speed	64 GB 2Rx4 DDR5-4800 MT/s RDIMM
Disk Subsystem Type	FC SAN
Number of Disk Controllers	0
Disk Controller Vendors and Models	N/A
Total Number of Physical Disks for Hypervisor	1
Disk Vendors, Models, Capacities, and Speeds	HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD
Number of Host Bus Adapters	2
Host Bus Adapter Vendors and Models	HPE SN1610Q 32Gb 2p FC HBA
Number of Network Controllers	2
Network Controller Vendors and Models	Mellanox MCX623106AS 100GbE 2p QSFP56 Adapter
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	06-07-2023
BIOS Availability Date (MM-DD-YYYY)	06-07-2023
Software Availability Date (MM-DD-YYYY)	04-18-2023
Network	
Network Switch Vendors and Models	HPE SN2700M 100GbE 32QSFP28

Network Speed	DSwitch-VM-Network: 100 Gbps DSwitch-Management-Network: 100 Gbps for SUT, 1 Gbps for all Clients DSwitch-vMotion-SUT: 100 Gbps for SUT DSwitch-vMotion-Clients:1 Gbps for all Clients
Primary Storage	
Storage Category	SCSI Target
Storage Vendors, Models, and Firmware Versions	2 x HPE ProLiant DL385 Gen11
Storage Configuration Summary	FC SAN Switch: • 1 x HPE SN6600B 32 Gb 48 port FC Switch Storage Servers: • 2 x HPE ProLiant DL385 Gen11 ◦ OS storage ▪ HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device ◦ Workload Storage ▪ 16 x HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD ▪ 2 x HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD
Datacenter Management Server	
System Model	HPE ProLiant DL380 Gen10
Processor Vendor and Model	Intel Xeon Gold 6238
Processor Speed (GHz)	2.10
Total Sockets/Total Cores/Total Threads	2 Sockets / 44 Cores / 88 Threads
Memory Size (in GB, Number of DIMMs)	192, 12
Network Controller(s) Vendors and Models	HPE Ethernet 1Gb 4-port 331i Adapter
Operating System, Version, Bitness, and Service Pack	VMware ESXi 8.0b Build 21203435
Virtual Center VM Number of vCPUs	16
Virtual Center VM Virtual Memory (in GB)	39 GB
Virtual Center VM Operating System, Version, Bitness, and Service Pack	VMware vCenter Server 8.0b Build 21216066
Other Hardware	None
Other Software	None

Clients	
Total Number of Virtual Clients / Virtual Client Hosts	44 / 2

System Model(s)	HPE ProLiant DL385 Gen11
Processor Vendor(s) and Model(s)	AMD EPYC 9654
Processor Speed(s) (GHz)	2.4
Total Sockets/Total Cores/Total Threads	4 Sockets / 384 Cores / 768 Threads
Memory per Virtual Client Host	768 GB
Network Controller(s) Vendors and Models	• 1 x Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE • 1 x Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
Virtual Client Networking Notes	Details in Networking Notes
Virtual Client Storage Notes	Details in Client Notes
Other Hardware	None
Other Software	VMware ESXi 8.0 Update 1, Build 21495797

Security Mitigations

Vulnerability	CVE	Exploit Name	Public Vulnerability Name	Mitigated		
				Server Firmware	ESXi	Guest OS
Spectre	2017-5753	Variant 1	Bounds Check Bypass	N/A	Yes	Yes
Spectre	2017-5715	Variant 2	Branch Target Injection	Yes	Yes	Yes
Meltdown	2017-5754	Variant 3	Rogue Data Cache Load	N/A	Yes	Yes
Spectre-NG	2018-3640	Variant 3a	Rogue System Register Read	Yes	N/A	N/A
Spectre-NG	2018-3639	Variant 4	Speculative Store Bypass	N/A	Yes	Yes
Foreshadow	2018-3615	Variant 5	L1 Terminal Fault - SGX	N/A	N/A	N/A
Foreshadow-NG	2018-3620	Variant 5	L1 Terminal Fault - OS	N/A	N/A	Yes
Foreshadow-NG	2018-3646	Variant 5	L1 Terminal Fault - VMM	N/A	Yes	N/A

Notes for Workload

Template deployed with disk type: Thick Provison Eager Zeroed

Virtualization Software Notes

- Cluster DRS Automation Level set to Fully Automated
- vSphere DRS Migration Threshold level set to 2
- vSphere DRS Advanced Option AggressiveCPUActive set to 1
- Logical CPU layout changed for all multi-CPU VMs to 1 socket with multiple cores (default single core per socket)
- Logging was disabled for all VMs except for template (default enabled)
- All DS3DB, ElasticDB, and ElasticLB VMs had CPU shares set to High (default Normal)

- All Standby VMs had CPU shares set to Low (default Normal)
- All memory reserved (LockedToMax) for all DS3DB VMs
- sched.mem.lpage.enable1GPage set to TRUE for all DS3DB VMs (default FALSE)
- DS3DB0 was configured to not use the third virtual disk before building additional tiles.
- CD and floppy devices were removed from all VMs except for template (default installed)
- PrimeClient's second virtual disk configured to be 1.2 TB (default: 200 GB)

Advanced Settings:

- Cpu.CoschedCrossCall = 0 (default 1)
- Cpu.CreditAgePeriod = 1000 (default 3000)
- Cpu.HTWholeCoreThreshold = 0 (default 800)
- DataMover.HardwareAcceleratedInit = 0 (default 1)
- DataMover.HardwareAcceleratedMove = 0 (default 1)
- Disk.IdleCredit = 64 (default 32)
- Disk.ReqCallThreshold = 1 (default 8)
- Mem.CtlMaxPercent = 0 (default 65)
- Mem.ShareScanGHz = 0 (default 4)
- Numa.LTermFairnessInterval = 0 (default 5)
- Numa.LargeInterleave = 0 (default 1)
- Numa.LocalityWeightActionAffinity = 0 (default 130)
- Numa.MigImbalanceThreshold = 57 (default 10)
- Numa.MigPreventLTermThresh = 20 (default 0)
- Numa.MigThreshold = 0 (default 2)
- Numa.MonMigEnable = 0 (default 1)
- Numa.PageMigEnable = 0 (default 1)
- Numa.PreferHT = 1 (default 0)
- Numa.RebalancePeriod = 60000 (default 2000)
- Numa.SwapLoadEnable = 0 (default 1)
- Numa.SwapLocalityEnable =0 (default 1)
- Power.CpuPolicy = 'High Performance' (default Balanced)
- VMkernel.Boot.hyperthreadingMitigation = true (default false)
- UserVars.HostClientCEIPOptIn = 2 (default 0)

Server Notes

Server BIOS settings

- HPE Workload Profile set to "Virtualization - Max Performance" (default: General Power Efficient Compute)
- Thermal Configuration set to Maximum Cooling (default: Optimal Cooling)
- Adjacent Sector Prefetch set to disabled(default: Enabled)
- DCU Stream Prefetcher set to disabled(default: Enabled)
- LLC deadline allocation set to disabled(default: Enabled)
- Memory Patrol Scrubbing set to disabled(default: Enabled)
- EPP set to Aggressive(default: Disabled)

In 2DPC memory configuration BIOS automatically configures RDIMMs to 4400 MT/s.

Networking Notes

Distributed vSwitch configuration:

- All SUT and client hosts were part of the same distributed vSwitch.
- The MTU of the distributed vSwitch was set to 9000 (default 1500). Except where noted differently below, the same change was made to all vmnics and vmks.
- 'DSwitch-Management-Network' port group
  - Uplinks:
    - vmnic2 on all SUT and Client hosts
  - Usage:
    - vmk0(MTU 1500) on all SUT and client hosts - used for management
    - One virtual NIC port of PrimeClient VM
- 'DSwitch-vMotion-SUT' port group
  - Uplinks:
    - vmnic3 on all SUT hosts
  - Usage:
    - vmk1 on all SUT hosts - used for vMotion
- 'DSwitch-vMotion-Clients' port group
  - Uplinks:
    - vmnic2 on all Client hosts
  - Usage:
    - vmk1(MTU 1500) on all client hosts - used for vMotion
- DSwitch-VM-Network' port group
  - Uplinks:
    - vmnic0, vmnic1 on all SUT and Client hosts
  - Usage:
    - All VMs - including one virtual NIC port of PrimeClient VM

HPE SN2700M switch was configured for RoCE lossless and LLDP.

Storage Notes

OS Storage

- On each SUT host, VMware ESXi 8.0 Update 1 was installed on HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD .
- On each client host, VMware ESXi 8.0 Update 1 was installed on HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD.

Primary and Secondary Storage: FC Channel Target via SCSI Target Server (LIO)

- Hardware details:
  - 2 * HPE ProLiant DL385 Gen11servers configured identically as Fibre Channel Targets
    - 2 x AMD EPYC 9654(2.40 GHz)
    - 768 GB (24 x 32 GB 2Rx8 DDR5-4800 MT/s RDIMM)
    - 2 x HPE SN1610Q 32Gb 2-port FC HBA used as FC target controller
    - 1 x HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device
    - 8 x HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD
    - 1 x HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD

- Software Details:
  - Operating System: SUSE Linux Enterprise Server 15 SP4 - 5.14.21-150400.22-default x86_64
  - Fibre Channel Target SW: LIO (part of SUSE Linux Enterprise Server 15 SP4)

- First SCSI Target Server LUN details :
  - Unless otherwise specified, an entire disk device was configured as a single LUN.
  - 1 x HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device
    - 1 LUN(447 GB)
    - Storage system OS (not exported as FC target LUN)
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 0,16,32
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 2,18,34
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 4,20,36
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 6,22,38
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 8,24,40
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 10,26,42
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 12,28
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 14,30
  - 1 x 3.2 TB NVMe
    - 1 LUN(800GB): template VM
    - 1 LUN(1TB): SVmotion Target LUN
    - 1 LUN(1TB): Deploy Target LUN

- Second SCSI Target Server LUN details :
  - Unless otherwise specified, an entire disk device was configured as a single LUN.
  - 1 x HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device
    - 1 LUN(447 GB)
    - Storage system OS (not exported as FC target LUN)
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 1,17,33
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 3,19,35
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tiles 5,21,37
  - 1 x 6.4 TB NVMe
    - 1 LUN(5.82TB): All VMs for tile 7,23,39

- 1 x 6.4 TB NVMe
  - 1 LUN(5.82TB): All VMs for tiles 9,25,41
- 1 x 6.4 TB NVMe
  - 1 LUN(5.82TB): All VMs for tile 11,27
- 1 x 6.4 TB NVMe
  - 1 LUN(5.82TB): All VMs for tiles 13,29
- 1 x 6.4 TB NVMe
  - 1 LUN(5.82TB): All VMs for tiles 15,31
- 1 x 3.2 TB NVMe
  - 1 LUN(2.91TB): XVmotion Target LUN

Datacenter Management Server Notes

VMware vCenter Server Appliance 8.0b, Build 21216066 was hosted on a HPE ProLiant DL380 Gen10 system that was not part of the client or SUT clusters.

Operating System Notes

OS installation on both SUT and client hosts was done using the VMware ESXi 8.0 Update1, Build 21495797 ISO as released by VMware for OS installation. After the OS was installed, VIB packages were downloaded from the URLs listed below and were installed.

- http://vibsdepot.hpe.com/hpe/apr.18.2023/esxi-800-devicedrivers/
- http://vibsdepot.hpe.com/hpe/apr.18.2023/esxi-800-bundles/

Software Notes

None

Client Notes

Advanced ESXi settings:

- Power.CpuPolicy = High Performance (default Balanced)
- UserVars.HostClientCEIPOptIn = 2 (default 0)

Server BIOS settings:

- HPE Workload Profile set to "Virtualization - Max Performance" (default: General Power Efficient Compute)
- Thermal Configuration set to Maximum Cooling (default: Optimal Cooling)
- Memory Patrol Scrubbing set to disabled(default: Enabled)
- Memory PStates set to Disabled (default: Auto)
- Maximum Memory Bus Frequency set to "4800 MHz" (default: Auto)
- Package Power Limit Control Mode set to Manual (default: Auto)
- Package Power Limit Value set to 400 (default: 0)
- C-State Mode set to Disabled (default: C6)

The client VMs were distributed across the client hosts as follows:

- Client host 1: Client0,Client1,Client3,Client5,Client7,Client9,Client11,Client13,Client15,Client17,Client19,Client21,Client23,Client25,Client27,Client29,Client31,Client33,Client35,Client37,Client39,Client41
- Client host 2: Client2,Client4,Client6,Client8,Client10,Client12,Client14,Client16,Client18,Client20,Client22,Client24,Client26,Client28,Client30,Client32,Client34,Client36,Client38,Client40,Client42,PrimeClient

Client Storage:

On each Client host:

- 1 * HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD was used for client VM's including PrimeClient

Other Notes

VMmark3.properties file modifications:

- TileDelay = 5 (default 60)
- VCscratchDir = /root/VMmark3/results/scratch (default /root/VMmark3/samples)
- ErrorImmediate = true(default false)
