

VMmark® 3.1.1 Results

Server Vendor & Model: Dell PowerEdge R7625
Storage Vendor & Model: Dell PowerMax 8000
Hypervisor: VMware ESXi 8.0 U1, Build 21495797
Datacenter Management Software: VMware vCenter Server 8.0 U1, Build 21560480

VMmark 3.1.1 Server PPKW Score =
12.8592 @ 48 Tiles

Number of Hosts: 2	Uniform Hosts [yes/no]: yes	Total sockets/cores/threads in test: 4/512/1024
Tested By: Dell Technologies		Test Date: 05-18-2023
Performance Section Performance	Configuration Section Configuration	Notes Section 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	3574.55	0.99	1.01 0.01	572.67	1.00	0.74 0.28	906.33	1.23	935.79	620.15	1.24	1135.92	432.90	1.25	1254.57	1.14
p1	3569.24	0.99	1.05 0.01	569.17	0.99	0.85 0.30	910.55	1.24	916.14	655.25	1.31	1067.78	466.00	1.34	1164.36	1.17
p2	3549.80	0.99	1.01 0.01	566.09	0.99	0.63 0.18	917.77	1.25	889.15	638.38	1.28	1045.86	469.27	1.35	1147.87	1.16
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	3569.21	0.99	1.07 0.01	562.51	0.98	0.52 0.13	898.35	1.22	962.26	613.55	1.23	1148.97	428.70	1.24	1272.78	1.13
p1	3557.63	0.99	0.99 0.01	559.77	0.98	0.56 0.11	894.67	1.22	966.36	637.95	1.27	1137.25	453.10	1.31	1245.65	1.14
p2	3543.43	0.98	0.97 0.01	558.63	0.98	0.58 0.14	908.48	1.24	922.21	620.95	1.24	1113.75	456.30	1.32	1219.17	1.14
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	3573.34	0.99	1.03 0.01	566.79	0.99	0.48 0.07	900.05	1.23	956.96	612.15	1.22	1166.34	423.30	1.22	1305.41	1.12
p1	3559.33	0.99	1.00 0.00	564.16	0.99	0.50 0.10	889.62	1.21	989.75	631.02	1.26	1173.93	444.05	1.28	1304.27	1.14
p2	3545.78	0.99	1.00 0.00	560.39	0.98	0.53 0.07	897.58	1.22	966.29	611.10	1.22	1167.81	447.15	1.29	1286.74	1.13
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	3564.14	0.99	1.13 0.01	573.04	1.00	0.88 0.32	906.80	1.23	921.77	620.45	1.24	1121.11	436.43	1.26	1222.17	1.14
p1	3556.39	0.99	1.04 0.00	564.62	0.99	0.75 0.20	896.20	1.22	950.85	647.20	1.29	1102.49	456.02	1.31	1208.84	1.15
p2	3540.17	0.98	1.07 0.01	559.83	0.98	0.44 0.05	910.42	1.24	913.68	628.17	1.26	1091.80	457.25	1.32	1208.38	1.15
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	3566.11	0.99	1.03 0.01	563.71	0.99	0.69 0.28	903.48	1.23	944.78	618.67	1.24	1156.77	427.27	1.23	1294.48	1.13
p1	3554.82	0.99	1.03 0.00	559.77	0.98	0.58 0.11	893.73	1.22	963.16	637.75	1.27	1124.89	453.23	1.31	1245.57	1.14
p2	3541.77	0.98	1.04 0.01	555.50	0.97	0.46 0.04	901.20	1.23	949.93	615.92	1.23	1141.88	434.07	1.25	1236.77	1.13
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	3569.44	0.99	1.35 0.02	566.30	0.99	0.79 0.28	909.45	1.24	920.41	622.67	1.24	1109.89	440.65	1.27	1209.33	1.14

p1	3556.23	0.99	1.28 0.02	564.46	0.99	0.55 0.12	901.27	1.23	937.86	647.23	1.29	1089.23	461.27	1.33	1198.22	1.16
p2	3542.21	0.98	1.40 0.05	563.67	0.99	0.45 0.08	913.08	1.24	905.19	625.88	1.25	1094.54	465.68	1.34	1175.02	1.15
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	3573.21	0.99	1.05 0.01	565.34	0.99	0.59 0.10	896.62	1.22	972.03	610.60	1.22	1179.94	403.50	1.16	1317.11	1.11
p1	3558.94	0.99	0.99 0.01	563.95	0.99	0.65 0.14	884.25	1.20	1011.15	627.92	1.25	1198.18	458.68	1.32	1339.78	1.14
p2	3546.40	0.99	1.05 0.01	560.65	0.98	0.54 0.14	900.83	1.23	955.29	613.23	1.23	1151.86	428.10	1.23	1270.10	1.12
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	3574.10	0.99	1.07 0.03	566.84	0.99	0.69 0.10	899.55	1.23	945.33	622.08	1.24	1119.14	409.98	1.18	1261.64	1.12
p1	3560.77	0.99	1.03 0.00	561.42	0.98	0.55 0.10	893.33	1.22	968.70	637.92	1.27	1136.41	469.73	1.35	1252.73	1.15
p2	3535.97	0.98	1.09 0.11	559.73	0.98	0.58 0.09	903.73	1.23	937.60	623.90	1.25	1117.23	431.45	1.24	1256.92	1.13
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	3565.54	0.99	1.11 0.02	566.29	0.99	0.81 0.31	898.60	1.22	959.85	613.42	1.23	1156.37	409.25	1.18	1281.32	1.12
p1	3553.74	0.99	1.10 0.01	562.26	0.98	0.55 0.09	886.67	1.21	995.20	632.05	1.26	1168.68	464.75	1.34	1299.74	1.15
p2	3540.27	0.98	1.05 0.01	559.94	0.98	0.64 0.18	899.55	1.23	958.15	590.80	1.18	1170.84	425.18	1.23	1290.15	1.11
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	3574.40	0.99	1.36 0.03	563.99	0.99	0.67 0.13	903.17	1.23	942.95	601.20	1.20	1117.78	416.68	1.20	1233.11	1.12
p1	3563.31	0.99	1.22 0.04	561.51	0.98	0.56 0.14	893.62	1.22	965.58	658.98	1.32	1138.63	470.77	1.36	1246.68	1.16
p2	3540.78	0.98	1.26 0.02	558.26	0.98	0.58 0.14	908.98	1.24	927.33	606.12	1.21	1100.98	434.15	1.25	1236.72	1.12
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	3569.95	0.99	1.05 0.01	571.35	1.00	0.91 0.35	908.88	1.24	935.64	624.88	1.25	1110.33	436.98	1.26	1238.67	1.14
p1	3553.64	0.99	0.99 0.01	569.38	1.00	0.82 0.26	900.30	1.23	942.10	642.05	1.28	1124.47	474.38	1.37	1237.94	1.16
p2	3533.69	0.98	1.06 0.04	563.97	0.99	0.55 0.09	908.88	1.24	933.63	603.12	1.21	1117.90	433.35	1.25	1248.02	1.13
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	3568.78	0.99	1.35 0.03	568.45	0.99	0.96 0.35	901.27	1.23	937.91	601.60	1.20	1117.86	432.20	1.25	1242.08	1.13
p1	3559.64	0.99	1.27 0.02	565.15	0.99	0.70 0.24	896.95	1.22	953.24	641.27	1.28	1129.88	473.95	1.37	1233.57	1.16
p2	3547.09	0.99	1.27 0.04	559.95	0.98	0.48 0.09	904.42	1.23	948.67	616.17	1.23	1157.66	426.18	1.23	1293.65	1.12
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	3569.80	0.99	1.02 0.01	566.41	0.99	0.65 0.12	906.85	1.23	954.49	617.17	1.23	1161.47	428.88	1.24	1283.64	1.13
p1	3555.87	0.99	1.04 0.01	565.30	0.99	0.51 0.16	897.40	1.22	968.25	634.85	1.27	1155.80	465.82	1.34	1291.06	1.15
p2	3539.80	0.98	1.06 0.03	562.95	0.98	0.46 0.13	896.10	1.22	976.62	616.83	1.23	1166.10	423.15	1.22	1308.80	1.12
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	3564.53	0.99	1.60 0.04	567.85	0.99	0.72 0.23	908.33	1.24	922.79	627.23	1.25	1103.41	436.45	1.26	1224.30	1.14
p1	3551.03	0.99	1.45 0.02	562.67	0.98	0.49 0.07	906.60	1.23	941.99	648.58	1.30	1106.62	473.70	1.37	1226.65	1.16
p2	3544.13	0.99	1.44 0.15	560.48	0.98	0.55 0.12	905.70	1.23	929.45	625.17	1.25	1117.27	430.57	1.24	1256.55	1.13
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	3575.78	0.99	1.22 0.02	571.69	1.00	0.76 0.54	891.75	1.21	989.55	610.02	1.22	1184.93	419.85	1.21	1340.33	1.12

p1	3559.59	0.99	1.22 0.02	565.06	0.99	0.54 0.17	883.48	1.20	1003.68	629.20	1.26	1174.81	463.48	1.34	1301.96	1.15
p2	3557.91	0.99	1.12 0.01	560.78	0.98	0.62 0.13	901.83	1.23	954.70	617.52	1.23	1153.61	423.07	1.22	1312.76	1.12
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	3574.97	0.99	1.10 0.01	568.05	0.99	0.90 0.25	909.92	1.24	926.72	627.12	1.25	1099.22	433.68	1.25	1235.36	1.14
p1	3561.15	0.99	1.09 0.01	562.37	0.98	0.94 0.24	894.10	1.22	984.42	642.90	1.28	1137.52	465.45	1.34	1296.99	1.15
p2	3545.64	0.99	1.21 0.04	560.71	0.98	0.75 0.14	918.42	1.25	912.90	638.42	1.28	1066.57	434.38	1.25	1230.48	1.14
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	3552.09	0.99	1.04 0.04	568.92	0.99	0.96 0.42	913.27	1.24	922.58	627.55	1.25	1112.12	435.15	1.25	1241.92	1.14
p1	3533.82	0.98	1.04 0.01	562.79	0.98	0.59 0.13	899.12	1.22	961.65	641.30	1.28	1140.86	469.93	1.36	1266.26	1.15
p2	3516.94	0.98	0.98 0.01	562.74	0.98	0.54 0.14	908.17	1.24	938.94	621.70	1.24	1135.42	429.48	1.24	1267.04	1.13
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	3573.24	0.99	1.55 0.06	568.01	0.99	0.71 0.16	907.12	1.24	944.33	622.12	1.24	1130.19	430.02	1.24	1259.55	1.13
p1	3555.78	0.99	1.35 0.03	562.49	0.98	0.53 0.09	893.33	1.22	973.24	640.20	1.28	1140.38	466.65	1.35	1267.40	1.15
p2	3543.46	0.98	1.38 0.07	561.03	0.98	0.57 0.14	903.73	1.23	942.60	617.50	1.23	1142.77	405.95	1.17	1275.83	1.11
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	3578.94	0.99	1.03 0.01	569.35	1.00	0.89 0.27	915.15	1.25	922.78	624.45	1.25	1122.12	429.88	1.24	1257.23	1.14
p1	3561.30	0.99	1.03 0.00	566.88	0.99	0.72 0.19	901.83	1.23	965.94	641.67	1.28	1134.33	467.80	1.35	1280.95	1.16
p2	3550.82	0.99	1.03 0.01	561.46	0.98	0.66 0.18	904.02	1.23	954.83	619.73	1.24	1136.69	407.50	1.18	1280.24	1.12
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	3567.93	0.99	1.49 0.03	570.66	1.00	0.89 0.37	903.45	1.23	958.63	615.00	1.23	1163.91	422.00	1.22	1311.78	1.13
p1	3559.12	0.99	1.55 0.11	566.75	0.99	0.81 0.26	895.50	1.22	960.78	641.80	1.28	1135.10	464.38	1.34	1284.32	1.15
p2	3547.17	0.99	1.44 0.03	561.73	0.98	0.49 0.10	910.52	1.24	919.86	631.20	1.26	1100.72	410.15	1.18	1257.00	1.12
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	3564.64	0.99	1.07 0.00	567.15	0.99	0.47 0.22	882.77	1.20	1012.78	610.48	1.22	1200.17	415.15	1.20	1358.41	1.12
p1	3544.23	0.99	1.04 0.01	567.69	0.99	0.52 0.12	884.00	1.20	1007.15	626.30	1.25	1206.28	438.15	1.26	1350.25	1.13
p2	3543.48	0.98	0.98 0.00	566.14	0.99	0.55 0.10	904.67	1.23	951.58	603.70	1.21	1134.91	427.20	1.23	1284.62	1.12
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	3573.93	0.99	1.16 0.01	568.07	0.99	0.65 0.19	898.48	1.22	971.88	617.00	1.23	1151.17	426.10	1.23	1308.52	1.13
p1	3553.74	0.99	1.16 0.02	563.74	0.99	0.47 0.06	906.00	1.23	931.50	643.25	1.29	1122.13	451.82	1.30	1254.60	1.15
p2	3542.53	0.98	1.05 0.00	562.03	0.98	0.52 0.08	907.85	1.24	941.55	599.75	1.20	1116.97	430.32	1.24	1271.58	1.12
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	3571.35	0.99	1.06 0.01	564.48	0.99	0.43 0.13	901.12	1.23	963.30	619.60	1.24	1135.24	429.07	1.24	1270.17	1.13
p1	3554.19	0.99	0.97 0.00	563.98	0.99	0.52 0.09	899.27	1.22	968.65	633.83	1.27	1175.66	442.57	1.28	1311.89	1.14
p2	3530.19	0.98	1.04 0.01	565.97	0.99	0.54 0.12	901.55	1.23	964.42	596.02	1.19	1152.66	422.65	1.22	1309.97	1.12
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	3569.62	0.99	1.13 0.02	564.59	0.99	0.65 0.22	894.88	1.22	978.45	618.02	1.23	1145.02	444.68	1.28	1298.38	1.14

p1	3551.63	0.99	1.09 0.01	563.61	0.99	0.52 0.13	906.33	1.23	935.90	622.42	1.24	1121.13	448.02	1.29	1270.40	1.14
p2	3550.59	0.99	1.07 0.01	561.60	0.98	0.48 0.10	891.77	1.21	980.44	612.77	1.22	1171.42	418.65	1.21	1336.97	1.12
TILE_24	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.66	0.99	1.47 0.02	561.69	0.98	0.60 0.20	896.55	1.22	966.60	639.55	1.28	1150.84	446.45	1.29	1292.36	1.14
p1	3543.26	0.98	1.45 0.03	558.67	0.98	0.64 0.23	894.95	1.22	968.20	617.00	1.23	1163.07	443.57	1.28	1311.57	1.13
p2	3524.07	0.98	1.39 0.03	559.26	0.98	0.48 0.09	904.62	1.23	947.86	624.25	1.25	1126.04	428.38	1.24	1273.25	1.13
TILE_25	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3567.67	0.99	1.32 0.02	570.28	1.00	0.90 0.28	889.90	1.21	992.59	635.35	1.27	1180.41	439.02	1.27	1350.30	1.14
p1	3553.10	0.99	1.17 0.01	568.82	0.99	0.96 0.32	891.83	1.21	991.42	609.38	1.22	1183.91	439.05	1.27	1342.64	1.13
p2	3535.80	0.98	1.33 0.03	563.02	0.98	0.63 0.13	908.77	1.24	941.01	622.45	1.24	1121.10	427.43	1.23	1259.52	1.13
TILE_26	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.67	0.99	1.28 0.03	571.72	1.00	0.99 0.40	895.83	1.22	977.40	631.52	1.26	1170.66	441.38	1.27	1317.25	1.14
p1	3553.58	0.99	1.29 0.04	567.20	0.99	0.71 0.30	913.12	1.24	919.04	627.25	1.25	1110.42	449.27	1.30	1257.27	1.15
p2	3540.95	0.98	1.29 0.04	564.52	0.99	0.42 0.06	914.12	1.24	921.54	625.35	1.25	1104.14	433.55	1.25	1247.09	1.14
TILE_27	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.48	0.99	1.32 0.03	566.38	0.99	0.56 0.15	897.35	1.22	953.90	642.65	1.28	1124.89	451.88	1.30	1249.72	1.15
p1	3558.59	0.99	1.17 0.03	565.36	0.99	0.63 0.22	912.98	1.24	927.70	627.10	1.25	1100.05	452.45	1.30	1240.07	1.15
p2	3546.22	0.99	1.18 0.02	557.80	0.97	0.47 0.11	911.98	1.24	917.67	628.62	1.26	1094.82	434.15	1.25	1244.19	1.13
TILE_28	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.64	0.99	1.54 0.03	568.92	0.99	0.92 0.25	899.10	1.22	964.54	637.00	1.27	1151.17	449.52	1.30	1275.36	1.15
p1	3548.16	0.99	1.36 0.02	567.14	0.99	0.97 0.29	905.85	1.23	941.56	617.58	1.23	1147.64	446.23	1.29	1276.96	1.14
p2	3529.13	0.98	1.44 0.02	558.88	0.98	0.58 0.19	907.40	1.24	942.84	622.58	1.24	1131.09	427.52	1.23	1285.99	1.13
TILE_29	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.75	0.99	1.55 0.07	568.21	0.99	0.86 0.22	892.08	1.21	975.40	633.92	1.27	1170.33	445.20	1.28	1291.06	1.14
p1	3547.93	0.99	1.47 0.02	563.31	0.98	0.60 0.18	906.62	1.23	932.93	623.02	1.24	1118.54	451.82	1.30	1247.91	1.14
p2	3534.64	0.98	1.44 0.04	561.95	0.98	0.54 0.12	908.70	1.24	935.81	621.33	1.24	1124.13	432.90	1.25	1246.49	1.13
TILE_30	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3573.12	0.99	1.53 0.03	565.42	0.99	0.68 0.17	901.77	1.23	957.13	644.35	1.29	1129.58	449.45	1.30	1288.43	1.15
p1	3562.20	0.99	1.55 0.02	562.69	0.98	0.46 0.11	912.45	1.24	921.36	628.98	1.26	1099.12	453.65	1.31	1242.66	1.15
p2	3547.42	0.99	1.43 0.04	558.97	0.98	0.63 0.28	913.02	1.24	928.04	626.50	1.25	1111.70	432.00	1.25	1256.08	1.13
TILE_31	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.40	0.99	1.43 0.03	568.69	0.99	0.87 0.31	890.50	1.21	990.10	636.42	1.27	1162.45	438.12	1.26	1324.69	1.14
p1	3564.08	0.99	1.36 0.03	568.24	0.99	0.85 0.35	895.40	1.22	969.83	614.83	1.23	1167.27	440.40	1.27	1324.54	1.13
p2	3554.98	0.99	1.31 0.02	565.22	0.99	0.68 0.21	910.20	1.24	928.32	624.75	1.25	1114.03	431.32	1.24	1259.06	1.13
TILE_32	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.56	0.99	1.31 0.01	570.70	1.00	0.86 0.19	887.58	1.21	1000.22	635.27	1.27	1172.48	440.98	1.27	1322.75	1.14

p1	3556.09	0.99	1.31 0.01	567.28	0.99	0.97 0.38	891.88	1.21	977.28	608.25	1.22	1196.23	418.60	1.21	1340.24	1.12
p2	3549.70	0.99	1.33 0.08	563.55	0.98	0.51 0.12	902.48	1.23	960.27	621.88	1.24	1124.97	449.77	1.30	1263.49	1.14
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	3583.57	1.00	1.39 0.04	562.17	0.98	0.61 0.23	895.90	1.22	961.13	646.77	1.29	1116.69	452.73	1.31	1256.86	1.15
p1	3571.09	0.99	1.20 0.01	558.60	0.98	0.58 0.10	902.38	1.23	946.30	617.17	1.23	1141.25	430.90	1.24	1257.05	1.13
p2	3551.02	0.99	1.31 0.05	556.49	0.97	0.57 0.16	896.40	1.22	967.65	624.50	1.25	1128.06	445.93	1.29	1305.86	1.13
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	3566.29	0.99	1.56 0.04	565.13	0.99	0.58 0.11	900.90	1.23	974.86	639.30	1.28	1134.55	446.70	1.29	1286.44	1.15
p1	3549.12	0.99	1.54 0.04	562.48	0.98	0.54 0.19	908.62	1.24	936.57	620.67	1.24	1134.12	427.88	1.23	1289.34	1.13
p2	3547.36	0.99	1.54 0.07	560.58	0.98	0.59 0.15	910.42	1.24	918.47	633.27	1.27	1082.48	461.35	1.33	1192.99	1.15
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	3569.43	0.99	1.20 0.01	569.38	1.00	0.84 0.18	885.00	1.21	1007.08	637.52	1.27	1168.38	459.85	1.33	1324.15	1.15
p1	3560.80	0.99	1.21 0.01	564.77	0.99	0.47 0.08	901.10	1.23	961.45	596.40	1.19	1150.56	424.50	1.22	1311.13	1.12
p2	3538.53	0.98	1.28 0.04	560.32	0.98	0.55 0.11	890.12	1.21	981.14	635.38	1.27	1163.19	445.60	1.28	1289.27	1.14
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	3572.79	0.99	1.46 0.04	569.49	1.00	0.85 0.26	877.88	1.20	1031.26	649.65	1.30	1195.31	454.70	1.31	1366.15	1.15
p1	3557.64	0.99	1.45 0.02	567.96	0.99	0.93 0.38	895.67	1.22	965.94	591.73	1.18	1174.29	423.32	1.22	1317.49	1.12
p2	3539.95	0.98	1.36 0.03	563.93	0.99	0.51 0.10	891.02	1.21	982.10	637.85	1.27	1157.70	444.62	1.28	1306.80	1.14
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	3572.21	0.99	1.42 0.05	574.34	1.00	0.86 0.24	887.65	1.21	995.69	632.98	1.26	1166.55	460.27	1.33	1312.97	1.15
p1	3558.27	0.99	1.29 0.02	569.44	1.00	0.93 0.27	903.48	1.23	947.04	628.17	1.26	1117.08	428.27	1.23	1268.55	1.13
p2	3537.89	0.98	1.34 0.02	567.17	0.99	0.88 0.20	896.00	1.22	969.44	646.40	1.29	1121.08	445.95	1.29	1290.78	1.15
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	3567.24	0.99	1.43 0.02	566.54	0.99	0.51 0.12	890.48	1.21	1008.04	628.88	1.26	1188.23	460.68	1.33	1328.62	1.15
p1	3555.31	0.99	1.42 0.03	560.82	0.98	0.59 0.22	906.67	1.23	944.29	622.25	1.24	1130.99	425.62	1.23	1288.61	1.13
p2	3535.55	0.98	1.46 0.03	557.84	0.97	0.51 0.08	899.70	1.23	958.64	643.20	1.29	1128.74	451.85	1.30	1265.11	1.14
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	3567.47	0.99	1.52 0.10	569.50	1.00	0.67 0.20	891.30	1.21	976.27	641.25	1.28	1138.73	467.62	1.35	1267.11	1.16
p1	3553.52	0.99	1.35 0.02	563.92	0.99	0.54 0.13	912.80	1.24	917.91	628.95	1.26	1100.47	434.93	1.25	1229.61	1.14
p2	3538.34	0.98	1.42 0.03	561.93	0.98	0.48 0.16	901.90	1.23	952.44	644.70	1.29	1109.10	453.12	1.31	1241.19	1.15
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	3567.13	0.99	1.64 0.05	567.59	0.99	0.69 0.15	900.67	1.23	949.87	645.38	1.29	1115.73	468.32	1.35	1270.67	1.16
p1	3552.88	0.99	1.46 0.03	563.06	0.98	0.59 0.17	923.52	1.26	887.90	643.05	1.28	1051.11	439.85	1.27	1214.45	1.15
p2	3524.12	0.98	1.57 0.05	564.17	0.99	0.66 0.20	906.25	1.23	944.83	649.65	1.30	1098.40	452.30	1.30	1251.27	1.15
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	3573.10	0.99	1.25 0.02	568.30	0.99	0.53 0.10	886.23	1.21	1001.75	631.27	1.26	1183.13	461.00	1.33	1322.71	1.15

p1	3553.98	0.99	1.30 0.02	570.17	1.00	0.48 0.10	904.35	1.23	957.51	615.92	1.23	1163.38	422.05	1.22	1318.88	1.13
p2	3545.54	0.99	1.26 0.02	565.85	0.99	0.59 0.21	898.42	1.22	966.38	640.35	1.28	1147.09	445.85	1.29	1286.44	1.14
TILE_42	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3581.11	1.00	1.47 0.02	563.13	0.98	0.47 0.08	902.38	1.23	940.27	648.83	1.30	1106.03	474.95	1.37	1240.53	1.16
p1	3552.12	0.99	1.45 0.02	562.31	0.98	0.48 0.08	910.02	1.24	923.46	629.55	1.26	1107.17	429.25	1.24	1264.20	1.13
p2	3539.43	0.98	1.44 0.04	554.51	0.97	0.53 0.12	894.45	1.22	974.45	640.88	1.28	1137.67	447.73	1.29	1286.64	1.14
TILE_43	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.56	0.99	1.34 0.03	571.20	1.00	0.83 0.24	889.92	1.21	983.34	637.20	1.27	1147.46	468.88	1.35	1270.92	1.16
p1	3554.44	0.99	1.29 0.02	567.73	0.99	0.46 0.12	916.65	1.25	914.55	633.98	1.27	1080.76	415.82	1.20	1211.66	1.13
p2	3538.39	0.98	1.34 0.02	564.85	0.99	0.54 0.14	903.05	1.23	938.87	648.75	1.30	1091.56	472.75	1.36	1241.38	1.16
TILE_44	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3571.10	0.99	1.27 0.03	565.76	0.99	0.51 0.14	911.25	1.24	919.09	652.12	1.30	1087.23	473.98	1.37	1236.28	1.17
p1	3557.21	0.99	1.33 0.03	561.40	0.98	0.58 0.12	915.88	1.25	911.42	629.30	1.26	1100.42	433.50	1.25	1253.41	1.14
p2	3547.52	0.99	1.27 0.02	555.77	0.97	0.55 0.14	904.85	1.23	943.52	652.67	1.30	1091.63	461.25	1.33	1216.96	1.15
TILE_45	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.99	0.99	1.17 0.01	568.50	0.99	0.61 0.20	907.25	1.24	925.12	650.35	1.30	1094.45	473.30	1.36	1233.49	1.17
p1	3558.77	0.99	1.30 0.05	563.63	0.99	0.54 0.17	911.52	1.24	914.50	629.90	1.26	1087.07	416.68	1.20	1215.30	1.13
p2	3547.90	0.99	1.33 0.02	563.06	0.98	0.49 0.09	905.17	1.23	937.22	654.55	1.31	1073.40	475.98	1.37	1216.58	1.17
TILE_46	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3579.43	0.99	1.43 0.02	566.81	0.99	0.63 0.13	911.08	1.24	925.32	647.42	1.29	1110.76	475.95	1.37	1232.31	1.17
p1	3569.84	0.99	1.42 0.04	562.17	0.98	0.47 0.14	917.27	1.25	913.27	615.42	1.23	1066.98	421.18	1.21	1192.46	1.13
p2	3551.84	0.99	1.56 0.04	561.12	0.98	0.56 0.08	893.67	1.22	953.25	674.58	1.35	1085.18	477.10	1.38	1209.54	1.17
TILE_47	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(nRTI MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.12	0.99	1.44 0.04	564.35	0.99	0.74 0.21	902.88	1.23	933.96	646.77	1.29	1109.85	454.05	1.31	1233.66	1.15
p1	3553.02	0.99	1.34 0.03	556.73	0.97	0.46 0.17	911.33	1.24	919.88	614.12	1.23	1077.36	433.10	1.25	1237.34	1.13
p2	3538.17	0.98	1.31 0.01	558.10	0.98	0.53 0.09	907.48	1.24	919.54	655.60	1.31	1071.89	483.68	1.39	1173.33	1.17
p0_score:	54.73															
p1_score:	54.80															
p2_score:	54.52															

Infrastructure_Operations_Scores:	vMotion	SVMotion	XVMotion	Deploy
Completed_Ops_PerHour	28.00	27.00	22.00	10.00
Avg_Seconds_To_Complete	8.21	79.14	96.81	326.05
Failures	0.00	0.00	0.00	0.00
Ratio	1.08	1.50	1.22	1.25
Number_Of_Threads	1	1	1	1

PTD_Summary:							
Number_of_PTD_Daemons	2						
Number_of_PTD_Phases	3						
PTD_Phase_Timing	2400secs						
PtdTiming:		ptd0	ptd1				
p0	0		0				
p1	0		0				
p2	0		0				
PTD_Results:							
p0	Target	Avg_Watts	Avg_Volts	Avg_Amps	Avg_PF	Samples	UnCert%
ptd0	SERVER	1719.56	203.20	8.48	1.00	2399.00	0.00
ptd1	SERVER	1705.08	204.83	8.34	1.00	2399.00	0.00
p1	Target	Avg_Watts	Avg_Volts	Avg_Amps	Avg_PF	Samples	UnCert%
ptd0	SERVER	1718.12	203.21	8.47	1.00	2400.00	0.00
ptd1	SERVER	1703.02	204.85	8.33	1.00	2400.00	0.00
p2	Target	Avg_Watts	Avg_Volts	Avg_Amps	Avg_PF	Samples	UnCert%
ptd0	SERVER	1716.34	203.22	8.46	1.00	2400.00	0.00
ptd1	SERVER	1702.05	204.84	8.32	1.00	2400.00	0.00
Summary			Run_Is_Compliant			Turbo_Setting:0	
			Number_Of_Compliance_Issues(0)*			Median_Phase(p0)	
Unreviewed_VMmark3_Avg_Watts			3424.64				
Unreviewed_VMmark3_Applications_Score			54.73				
Unreviewed_VMmark3_Infrastructure_Score			1.25				
Unreviewed_VMmark3_Score			44.04				
Unreviewed_VMmark3_PPKW			12.8592				

Configuration

PTD Configuration	
Number of Power Meters	2
Power Meter Vendors and Models	2x Yokogawa WT210
Power Meter PTD Target(s) (SERVER/EXT_STOR)	SERVER,SERVER
Power Meter Connection Type(s) (Eth/GPIB/Serial/USB)	Serial
Power Meter Calibration Date(s) (MM-DD-YYYY)	01-19-2023/91KA21977/33427-2376
Power Meter Calibration Info (Calibrated By/Duration)	Tescom / one year/91KA21977/33427-2376
Power Meter(s) Volt/Amp Range	210 / 10

Power Source Voltage/Frequency/Phase	208V / 60Hz / 3-phase
PTD Client Configuration	
Number of Power Meter Clients	1
System Model(s)	PrimeClient, details in client configuration section
Processor Vendor(s) and Model(s)	PrimeClient, details in client configuration section
Processor Speed(s) (GHz)	PrimeClient, details in client configuration section
Total Sockets/Total Cores/Total Threads	PrimeClient, details in client configuration section
Memory Per Power Meter Client	PrimeClient, details in client configuration section
Network Controller(s) Vendors and Models	PrimeClient, details in client configuration section
Operating System, Version, and Service Pack	PrimeClient, details in client configuration section
Other Hardware	1x Proflic USB-Serial Controller D and 1x Future Devices FT232R USB UART
Other Software	None

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 8.0 U1, Build 21495797 / 04-18-2023
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 8.0 U1, Build 21560480 / 04-18-2023
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	Dell PowerEdge R7625
Processor Vendor and Model	AMD EPYC 9754
Processor Speed (GHz) / Turbo Boost Speed (GHz)	2.25 / 3.1 GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 256 Cores / 512 Threads
Primary CPU Cache	32 KB (I) + 32 KB (D) on chip per core
Secondary CPU Cache	1 MB (I+D) on chip per core
Other CPU Cache	256 MB (I+D) on chip per chip, 16 MB shared /8 cores

BIOS Version	1.3.11
Memory Size (in GB, Number of DIMMs)	6144,24
Memory Type and Speed	256 GB Octal Rank x4 DDR5 4800MT/s RDIMM
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	Dell PERC H755 Front (Embedded)
Total Number of Physical Disks for Hypervisor	2
Disk Vendors, Models, Capacities, and Speeds	800GB, 12Gbps, KIOXIA SSDs
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	Emulex LPe36002 Dual-port
Number of Network Controllers	1
Network Controller Vendors and Models	1x Broadcom BCM57508 100 GbE Dual-port
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	05-22-2023
BIOS Availability Date (MM-DD-YYYY)	05-22-2023
Software Availability Date (MM-DD-YYYY)	04-18-2023
Network	
Network Switch Vendors and Models	1x Dell PowerSwitch Z9100-ON 100GbE Switch
Network Speed	1 x 100Gbps for vMotion Traffic 1 x 100Gbps for VM traffic
Primary Storage	
Storage Category	FC SAN
Storage Vendors, Models, and Firmware Versions	Dell PowerMax 8000

Storage Configuration Summary	<ul style="list-style-type: none"> • Number of Directors:2 • Dell PowerMax OS 5978.479.479 • Single Default Storage Resource Pool (SRP) with 2x Disk Groups (factory pre-configured) <ul style="list-style-type: none"> ◦ Disk Group 1 : 9x 750 GB Intel SSDs configured in RAID 5 (7+1) with one spare drive (Usable Capacity 4880.9 GiB) ◦ Disk Group 2 : 25x 7.68 TB Samsung NVMe drives in RAID 5 (7+1) with one spare drive (Usable Capacity (150217.6 GiB)
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Datacenter Management Server

System Model	Dell PowerEdge R7625
Processor Vendor and Model	AMD EPYC 9654
Processor Speed (GHz)	2.4
Total Sockets/Total Cores/Total Threads	2 Sockets/ 192 Cores/ 384 Threads
Memory Size (in GB, Number of DIMMs)	3072, 24
Network Controller(s) Vendors and Models	1 x Broadcom BCM57508 100 GbE Dual-port
Operating System, Version, Bitness, and Service Pack	VMware ESXi 8.0 U1, Build 21495797
Virtual Center VM Number of vCPUs	8
Virtual Center VM Virtual Memory (in GB)	30
Virtual Center VM Operating System, Version, Bitness, and Service Pack	VMware vCenter Server 8.0 U1, Build 21560480
Other Hardware	None
Other Software	None

Clients

Total Number of Virtual Clients / Virtual Client Hosts	49 / 2
System Model(s)	2x Dell PowerEdge R7625
Processor Vendor(s) and Model(s)	Client-Host1: AMD EPYC 9654 Client-Host2: AMD EPYC 9654
Processor Speed(s) (GHz)	Client-Host1: 2.4 GHz Client-Host2: 2.4 GHz
Total Sockets/Total Cores/Total Threads	Client-Host1: 2 Sockets / 192 Cores / 384 Threads Client-Host2: 2 Sockets / 192 Cores / 384 Threads
Memory per Virtual Client Host	Client-Host1: 3072 GB Client-Host2: 3072 GB
Network Controller(s) Vendors and Models	Client-Host1:1x Broadcom BCM57508 100 GbE Dual-port Client-Host2:1x Broadcom BCM57508 100 GbE Dual-port

Virtual Client Networking Notes	vSwitch0 on vmnic3 for VMs and Management (100Gbps) vSwitch1 on vmnic2 for vMotion (100Gbps)
Virtual Client Storage Notes	All Virtual Clients storage on PowerMax 8000 FC SAN storage and used the same FC storage LUNs as SUT hosts
Other Hardware	None
Other Software	All client hosts used VMware ESXi 8.0 U1, Build 21495797 for operating system

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	Not Vulnerable	Not Vulnerable
Spectre	2017-5715	Variant 2	Branch Target Injection	Not Vulnerable	Not Vulnerable	Not Vulnerable
Meltdown	2017-5754	Variant 3	Rogue Data Cache Load	N/A	Not Vulnerable	Not Vulnerable
Spectre-NG	2018-3640	Variant 3a	Rogue System Register Read	Not Vulnerable	N/A	N/A
Spectre-NG	2018-3639	Variant 4	Speculative Store Bypass	N/A	Not Vulnerable	Not Vulnerable
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	Not Vulnerable
Foreshadow-NG	2018-3646	Variant 5	L1 Terminal Fault - VMM	N/A	Not Vulnerable	N/A

Notes for Workload

Template deployed with disk type: Thick Eager

Virtualization Software Notes

- vSphere DRS Migration Threshold level set to 1
- Logical CPU configuration changed for all multi-CPU VMs except for PrimeClient to 1 socket with multiple cores (default: Single core per socket)
- Logging disabled for all VMs except for the template VM and PrimeClient (default: Enabled)
- CPU shares set to high for all DS3DB, ElasticDB, ElasticLB and DS3WebA VMs (default: Normal)
- Memory shares set to high for all DS3DB VMs (default: Normal)
- CDROM removed from all VMs except for PrimeClient, and template VMs (default: Present)
- All memory reserved for DS3DB and Client VMs (default: Non-reserved)
- sched.mem.pin set to TRUE for all DS3DB and Client VMs (default: FALSE)
- sched.mem.lpage.enable1GPage set to TRUE for all DS3DB VMs (default: FALSE)
- CPU shares set to Low for all Standby VMs (default: Normal)
- Third virtual disk removed from DS3DB0 before cloning DS3DB VMs for other tiles

Advanced Settings

- /adv/Cpu/CreditAgePeriod = 1000 (default 3000)
- /adv/Cpu/HTWholeCoreThreshold = 0 (default 800)
- /adv/Disk/IdleCredit = 64 (default 32)

- /adv/Disk/ReqCallThreshold = 1 (default 8)
- /adv/Mem/CtlMaxPercent = 0 (default 65)
- /adv/Mem/ShareScanGHz = 0 (default 4)
- /adv/Numa/LocalityWeightActionAffinity=0 (default:130)
- /adv/Numa/LTermFairnessInterval = 0 (default 5)
- /adv/Numa/PageMigEnable = 0 (default 1)
- /adv/Numa/RebalancePeriod = 60000 (default 2000)
- /adv/Numa/SwapLoadEnable = 0 (default 1)
- /adv/Numa/SwapLocalityEnable = 0 (default 1)
- /adv/Power/CpuPolicy = High Performance (default: balanced)
- /adv/UserVars/HostClientCEIPOptIn = 2(default:0)
- /adv/UserVars/SuppressShellWarning = 1(default:0)

Server Notes

Server BIOS Settings

- L2 Stream HW Prefetcher = Disabled (default: Enabled)
- L2 Up Down Prefetcher = Disabled (default: Enabled)
- System Profile = Performance (default: Performance Per Watt)

Networking Notes

- vSwitch0 on vmnic2 for Management and VMs (100Gbps)
 - vSwitch0 and vmnic2 MTU set to 9000 (default:1500)
 - vmk0 under portgroup "Management Network" has MTU set to 9000 (default: 1500)
 - "VM Network" portgroup for Standby VMs, DS3WebA VMs, Deploy VMs and AuctionDB44
- vSwitch1 on vmnic3 for vMotion (100Gbps)
 - vSwitch1 and vmnic3 MTU set to 9000 (default:1500)
 - vmk1 under portgroup "vMotion" has MTU set to 9000 (default: 1500)
 - "ds3" portgroup for DS3DB, DS3WebB, and DS3WebC VMs
 - "auction" portgroup for Weathervane Auction VMs
 - "elastic" portgroup for Weathervane Elastic VMs

Storage Notes

Host OS installed on 2x900GB(RAID1)WD SSDs

Dell PowerMax 8000

- Number of Directors:2
- Dell PowerMax OS 5978.479.479
- Single Default Storage Resource Pool (SRP) with 2x Disk Groups (factory pre-configured)
 - Disk Group 1 : 9x 750 GB Intel SSDs configured in RAID 5 (7+1) with one spare drive (Usable Capacity 4880.9 GiB)
 - Disk Group 2 : 25x 7.68 TB Samsung NVMe drives in RAID 5 (7+1) with one spare drive (Usable Capacity (150217.6 GiB)
- Usable capacity of SRP is accessed by hosts using thinly provisioned front end devices called TDEVs

- Following User Defined Storage Groups were created using the TDEVs
 - 2x 16TB LUNs were configured to be used as source and destination LUNs for infrastructure operations
 - 1x 16TB LUN configured for all DS3WebA, Standby, and Deploy Template VMs [EMC Fibre Channel Disk (naa.60000970000197601300533030303444)]
 - 49x 1TB LUNs were used to hold all the DS3DB, ElasticDB and AuctionDB VMs for each Tile
 - 1x 26TB LUN for AuctionNoSQL VMs [EMC Fibre Channel Disk (naa.60000970000197601300533030303536)]
 - 1x 33TB LUN for ElasticLB VMs [EMC Fibre Channel Disk (naa.60000970000197601300533030303636)]
 - 1x 64TB LUN for hosting all other VMs [EMC Fibre Channel Disk (naa.60000970000197601300533030303444)]
 - Round Robin IOPS limit set to 1 for all the FC LUNs (default:1000)

Emulex LPe36002 HBAs of SUTs were running at 32Gbps

Datacenter Management Server Notes

None

Operating System Notes

SUT hosts used Dell customized ESXi 8.0 U1 ISO (VMware-VMvisor-Installer-8.0.1.update01-21495797.x86_64-Dell_Customized-A00.iso) for OS installation

Software Notes

None

Client Notes

Client BIOS Settings

- L2 Stream HW Prefetcher = Disabled (default: Enabled)
- L2 Up Down Prefetcher = Disabled (default: Enabled)

Location of Client VMs

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

- Client-Host1: Client0,Client2,Client3,Client4,Client5,Client7,Client9,Client10,Client11,Client14,Client16,Client17,Client19,Client20,Client21,Client22,Client23,Client25,Client26,Client29,Client32,Client34, Client46,PrimeClient
- Client-Host2: Client1,Client6, Client8,Client12, Client13, Client15, Client18, Client24, Client27, Client28, Client30, Client31,Client33,Client35,Client36, Client37,Client38,Client39,Client40,Client41,Client42,Client43,Client44,Client45,Client47,VMware vCenter Server

Client host advanced settings:

- /adv/Cpu/CreditAgePeriod = 1000 (default 3000)
- /adv/Cpu/HTWholeCoreThreshold = 0 (default 800)
- /adv/Disk/IdleCredit = 64 (default 32)
- /adv/Disk/ReqCallThreshold = 1 (default 8)
- /adv/Mem/CtlMaxPercent = 0 (default 65)
- /adv/Mem/ShareScanGHz = 0 (default 4)
- /adv/Numa/LocalityWeightActionAffinity=0 (default:130)

- /adv/Numa/LTermFairnessInterval = 0 (default 5)
- /adv/Numa/PageMigEnable = 0 (default 1)
- /adv/Numa/RebalancePeriod = 60000 (default 2000)
- /adv/Numa/SwapLoadEnable = 0 (default 1)
- /adv/Numa/SwapLocalityEnable = 0 (default 1)
- /adv/DataMover/HardwareAcceleratedInit = 0 (default 1) on Client-Host1
- /adv/DataMover/HardwareAcceleratedMove = 0 (default 1) on Client-Host1
- /adv/VMFS3/HardwareAcceleratedLocking = 0 (default 1) on Client-Host1
- /vmkernel/hyperthreadingMitigation = true (default false) on Client-Host1
- /adv/Power/CpuPolicy = High Performance (default: balanced)
- /adv/UserVars/HostClientCEIPOptIn = 2(default:0)
- /adv/UserVars/SuppressShellWarning = 1(default:0)

Client host vSwitch settings:

- vSwitch0 on vmnic3 for VMs and Management (100Gbps)
 - vSwitch0 and vmnic3 MTU set to 9000 (default:1500)
 - vmk0 under portgroup "Management Network" has MTU set to 9000 (default: 1500)
- vSwitch1 on vmnic2 for vMotion (100Gbps)
 - vSwitch1 and vmnic2 MTU set to 9000 (default:1500)
 - vmk1 under portgroup "vMotion" has MTU set to 9000 (default: 1500)

Other Notes

Changes to VMmark3.properties file:

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

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