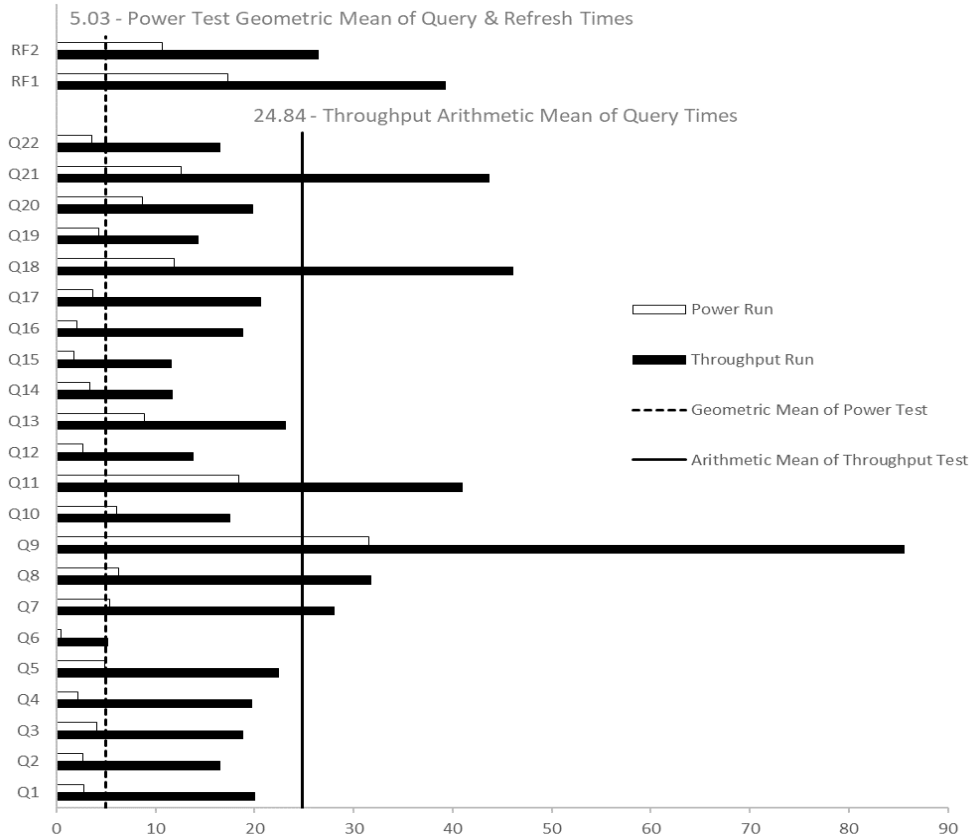
	Alibaba Cloud Hologres		TPC-H Rev.3.0.1 TPC Pricing Rev.2.8.0	
			Report Date: 31-Oct-22	
Total System Cost	Composite Query per Hour Metric		Price/Performance	
44,358,597 CNY	27,865,885.7 QphH@30000GB		1,591.87 CNY Price/kQphH@30000GB	
Database Size	Database Manager	Operating System	Other Software	Availability Date
30,000 GB	Hologres V1.3	Alibaba Group Enterprise Linux Server 7.2 (Paladin)	Pangu File System V2.0	10/31/2022




Database Load Time: 00:58:14
 Load Includes Backup: N
 Total Data Storage/Database Size: 53.70
 Memory to Database Size Percentage: 293.3%

Storage Redundancy Levels:
 Base Tables: Level Two
 Auxiliary Data Structures: Level Two
 DBMS Temporary Space: Level Two
 OS and DBMS Software: Level Two

System Configuration

	HoloFrontend	MetaStore	HoloMaster	HoloWorker	System Total	Pangu FS
#Container	1	1	1	456	459	N/A
vCPUs	24	18	14	24	11,000	N/A
Memory	192 GB	144 GB	112 GB	192 GB	88,000 GB	N/A
Storage	3,673 GB	3,673 GB	3,673 GB	3,673 GB	1,685,907 GB	44,000 GB

Total
 Storage: 1,611,101.45 GiB

	Alibaba Cloud Hologres			TPC-H Rev.3.0.1 TPC Pricing Rev.2.8.0		
				Report Date: 31-Oct-22		
Description	Part Number	Source	Unit Price (CNY)	Qty	Extended Price (CNY)	3 yr Maint. Price (CNY)
License Computer and Software Service						
Hologres Computing Resources 11,000 vCPUs, 88,000GB memory, 3 years prepay						
1 holo-frontend, each with 24 vCPUs, 192 GB RAM,						
1 meta-store, each with 18 vCPUs, 144 GB RAM	China (Shanghai)	1	43,560,000	1	43,560,000	Included
1 holo-master, each with 14 vCPUs, 112 GB RAM						
456 holo-workers, each with 24 vCPUs, 192 GB RAM						
Data Storage Resources (44,000 GB Storage Capacity, 3 years prepay)	China (Shanghai)	1	792,000	1	792,000	Included
License Computer and Software Service Sub-Total					44,352,000	0.00
Other Components						
Lenovo E41-55 laptop		2	2199.00	3	6597.00	
Other Components Sub-Total					6597.00	
1 = Alibaba Cloud 2 = Tmall.com		3-year Cost of Ownership:			44,358,597.00	
All prices are based on 3-year pre-paid subscriptions.		QphH@30000GB:			27,865,885.7	
		¥/kQphH@30000GB			1,591.87	
Audited by: Doug Johnson, InfoSizing						
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing section of the TPC benchmark specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org . Thank you.						

Measurement Results

Database Scale Factor	30,000
Total Data Storage / Database Size	53.70
Percentage Memory / Database Size	293.3%
Start of Database Load Time	2022-10-20 18:56:58
End of Database Load Time	2022-10-20 19:55:12
Database Load Time	00:58:14
Query Streams for Throughput Test (S)	10
TPC-H Power	21,468,670.0
TPC-H Throughput	36,169,338.3
TPC-H Composite	27,865,885.7
Total System Price Over 3 Years	44,358,597 (CNY)
TPC-H Price/Performance Metric (¥/kQphH@30000GB)	1,591.87 (CNY)

Measurement Interval

Measurement Interval in Throughput Test (Ts)	656.91
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Duration of stream execution:

Power Run	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
		2022-10-20 19:56:23	00:02:29	2022-10-20 19:56:05	2022-10-20 19:58:52
	1020195512	2022-10-20 19:58:52		2022-10-20 19:56:22	2022-10-20 19:59:02

Throughput Stream	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
		2022-10-20 19:59:01	00:09:16	2022-10-20 19:59:01	2022-10-20 20:00:04
1	1020195513	2022-10-20 20:08:17		2022-10-20 20:00:04	2022-10-20 20:00:55
2	1020195514	2022-10-20 19:59:01	00:08:58	2022-10-20 20:00:55	2022-10-20 20:02:03
		2022-10-20 20:07:59		2022-10-20 20:02:03	2022-10-20 20:02:52
3	1020195515	2022-10-20 19:59:01	00:09:08	2022-10-20 20:02:52	2022-10-20 20:03:48
		2022-10-20 20:08:09		2022-10-20 20:03:48	2022-10-20 20:04:51
4	1020195516	2022-10-20 19:59:01	00:09:23	2022-10-20 20:04:51	2022-10-20 20:05:44
		2022-10-20 20:08:24		2022-10-20 20:05:44	2022-10-20 20:06:15
5	1020195517	2022-10-20 19:59:01	00:09:12	2022-10-20 20:06:15	2022-10-20 20:07:13
		2022-10-20 20:08:13		2022-10-20 20:07:13	2022-10-20 20:07:52
6	1020195518	2022-10-20 19:59:01	00:09:03	2022-10-20 20:07:52	2022-10-20 20:08:21
		2022-10-20 20:08:04		2022-10-20 20:08:21	2022-10-20 20:08:28
7	1020195519	2022-10-20 19:59:01	00:09:12	2022-10-20 20:08:28	2022-10-20 20:08:45
		2022-10-20 20:08:13		2022-10-20 20:08:45	2022-10-20 20:08:51
8	1020195520	2022-10-20 19:59:01	00:08:44	2022-10-20 20:08:51	2022-10-20 20:09:09
		2022-10-20 20:07:45		2022-10-20 20:09:09	2022-10-20 20:09:16
9	1020195521	2022-10-20 19:59:01	00:09:08	2022-10-20 20:09:16	2022-10-20 20:09:31
		2022-10-20 20:08:09		2022-10-20 20:09:31	2022-10-20 20:09:37
10	1020195522	2022-10-20 19:59:01	00:09:13	2022-10-20 20:09:37	2022-10-20 20:09:53
		2022-10-20 20:08:14		2022-10-20 20:09:53	2022-10-20 20:09:59



Alibaba Cloud Hologres

TPC-H Rev.3.0.1
TPC Pricing Rev.2.8.0

Report Date:
31-Oct-22

TPC-H Timing Intervals (in seconds)

Duration of query execution:

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0	2.73	2.65	4.06	2.20	4.88	0.48	5.36	6.26	31.52	6.08	18.44	2.64
1	10.72	10.84	16.00	3.16	24.12	9.96	23.02	32.76	88.72	13.99	59.55	11.68
2	19.18	24.28	19.76	10.38	29.82	0.60	40.39	32.32	86.81	7.92	42.96	9.51
3	18.24	9.00	25.77	17.39	22.24	5.66	21.34	22.48	98.24	33.05	33.00	11.24
4	22.62	13.96	9.08	14.61	14.87	11.84	23.93	36.99	82.61	15.77	36.15	41.17
5	13.93	41.86	16.76	10.24	23.86	3.78	19.93	27.80	109.95	15.50	32.95	5.17
6	23.75	9.57	27.19	10.70	30.35	4.83	24.47	35.48	73.79	10.21	39.43	21.21
7	20.52	14.81	17.47	45.97	21.84	6.38	30.53	34.21	82.66	33.26	46.66	4.22
8	30.21	9.26	15.35	18.24	18.45	3.76	33.62	25.64	69.99	13.58	37.22	15.05
9	14.32	10.80	24.93	32.80	31.08	4.26	26.14	22.60	76.25	14.27	43.86	9.29
10	26.68	20.31	15.44	33.57	7.87	0.73	37.00	47.27	86.80	17.34	37.74	9.77
Minimum	2.73	2.65	4.06	2.20	4.88	0.48	5.36	6.26	31.52	6.08	18.44	2.64
Average	18.45	15.21	17.44	18.11	20.85	4.75	25.98	29.44	80.67	16.45	38.91	12.81
Maximum	30.21	41.86	27.19	45.97	31.08	11.84	40.39	47.27	109.95	33.26	59.55	41.17

Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
0	8.87	3.34	1.77	2.04	3.69	11.93	4.27	8.69	12.62	3.57	17.32	10.68
1	22.66	10.47	15.66	31.67	22.86	46.82	7.47	27.65	44.10	21.19	61.50	50.70
2	22.63	18.76	7.77	9.17	15.77	49.80	13.05	16.37	41.36	18.20	68.83	48.82
3	32.44	8.90	7.19	13.71	19.43	56.36	23.49	22.88	31.13	13.10	55.68	63.24
4	32.79	7.14	15.96	21.02	22.55	37.28	8.26	11.61	59.96	21.66	52.42	31.04
5	28.59	14.68	9.84	11.68	18.26	43.76	20.57	20.45	44.99	16.26	58.75	38.76
6	18.94	5.11	7.89	10.48	29.59	40.43	14.39	28.02	58.03	17.39	29.29	6.77
7	12.48	13.21	18.66	14.88	18.22	28.37	21.72	21.61	28.14	14.96	16.52	6.33
8	21.63	11.08	6.50	43.42	18.68	51.07	9.76	17.41	39.26	13.71	18.09	6.74
9	21.79	20.20	18.66	19.32	22.96	47.05	12.05	14.38	46.75	13.33	15.12	6.01
10	16.97	7.75	7.82	12.73	18.22	59.49	12.50	17.39	42.78	15.65	16.25	5.94
Minimum	8.87	3.34	1.77	2.04	3.69	11.93	4.27	8.69	12.62	3.57	15.12	5.94
Average	21.80	10.97	10.70	17.28	19.11	42.94	13.41	18.77	40.83	15.37	37.25	25.00
Maximum	32.79	20.20	18.66	43.42	29.59	59.49	23.49	28.02	59.96	21.66	68.83	63.24