

Tower Workstations Compared	HP Z4 G5 workstation (one 4.8GHz Intel Xeon w7-2495X 24-core CPU, NVIDIA RTX A4000, 64GB RAM, 2TB SSD, 1TB SSD)"	Lenovo P630 Ultra workstation (one 2.4GHz Intel Core i9-12900 16-core CPU, NVIDIA RTX A2000, 32GB RAM, 1TB SSD)	BOXX APEXX S3 workstation (one 3.0GHz Intel Core i9-13900K 24-core CPU, NVIDIA RTX A4000, 64GB RAM, 1TB SS	HP Z2 G9 Mini workstation (one 3.6GHz Intel Core i7-12700K 12-core CPU, NVIDIA RTX A2000 12GB GPU, 64GB RAM, 1TB SSD)	HP Z2 Tower G9 workstation (one 3.6 GHz Intel Core i7-12700K 12-core CPU, NVIDIA RTX A4000, 64 GB RAM, 1TB SSD)	Velocity Micro ProMagix HD60 workstation (one 3.2 GHz Intel Core i9-12900K 16-core CPU, NVIDIA RTX A4000, 32 GB RAM, 2TB SSD)
Price as tested	\$6,994.00	\$2,432.00	\$6,244.00	\$2,261.00	\$2,463.00	\$5,428.00
Date tested	7/20/23	4/10/23	3/1/23	12/13/22	10/17/22	6/21/2022
Operating System	Windows 11 Pro	Windows 11 Pro	Windows 10 Pro	Windows 11 Pro	Windows 11 Pro	Windows 11 Home
CPU	Intel Xeon w7	Intel Core i9	Intel Core i9	Intel Core i7	Intel Core i7	Intel Core i9
CPU clock speed	4.8	2.4	3.0	3.6	3.6	3.2
CPU cores	24	16	24	12	12	16
System memory (RAM)	64	32	64	64	64	32
GPU	RTX A4000	RTX A2000	RTX A4000	RTX A2000	RTX A4000	RTX A4000
GPU discrete memory (RAM)	16GB	12GB	16GB	12GB	16GB	16GB
Graphics driver version	527.48	528.49	528.24	527.27	512.78	516.25
Primary drive size and type	2TB PCIe SSD	1TB PCIe SSD	1TB PCIe SSD	1TB PCIe SSD	1TB PCIe SSD	2TB PCIe SSD
Secondary drive size and type	1TB PCIe SSD	none	none	none	none	none
Total drive storage	3TB	1TB	1TB	1TB	1TB	2TB
System weight (pounds)	27.00	8.99	25.75	8.76	15.00	26.25
Power supply wattage	1125	300	750	280	700	850
SPECviewperf 2020 V3.1 (higher is better)						
3dsmax-07	147.46	80.49	145.59	79.43	147.12	148.98
catia-06	104.51	63.08	120.83	65.39	116.69	119.17
creo-03	135.28	119.12	186.69	124.85	177.96	182.06
energy-03	68.60	33.83	67.02	34.37	68.43	69.75
maya-06	407.39	269.74	461.11	289.23	459.82	449.61
medical-03	69.58	40.86	68.70	41.14	68.55	70.86
snx-04	479.49	382.26	468.71	232.90	476.83	455.95
solidworkws-05	278.60	162.17	272.39	144.04	271.81	279.59
SPEC workstation v3.1 (higher is better)						
Media and Entertainment	4.83	3.56	6.50	n/a	n/a	4.78
Product Development	5.40	3.82	5.24	3.96	4.29	5.10
Life Sciences	5.68	3.35	6.93	3.52	4.07	5.20
Financial Services	6.34	3.45	6.92	3.43	3.79	4.83
Energy	6.12	3.78	7.50	3.76	4.44	3.29
General Operations	2.56	3.16	4.66	2.80	3.01	3.44
GPU Compute	5.16	3.62	5.44	3.50	5.66	n/a
Time AutoCAD Render Test (in seconds, lower is better)						
	15.0	22.1	14.20	16.5	15.9	19.4
Numbers in blue indicate best recorded results. Numbers in red indicate worst recorded results.						