

Tower Workstations Compared	Lenovo ThinkStation PX workstation <small>(one 2.0GHz Intel Xeon Gold 5416S 16-core CPU, NVIDIA RTX A6000, 128GB RAM, 1TB SSD)</small>	HP Z4 Rack G5 workstation <small>(one 3.1GHz Intel Xeon w5-2465X 16-core CPU, NVIDIA RTX A6000, 128GB RAM, 2x 1TB SSD)</small>	Velocity Micro ProMagix HD60 2023 workstation <small>(one 5.8GHz Intel Core i9-13900K 24-core CPU, NVIDIA RTX A4500, 64GB RAM, 1TB SSD)</small>	HP Z4 G5 workstation <small>(one 4.8GHz Intel Xeon w7-2495X 24-core CPU, NVIDIA RTX A4000, 64GB RAM, 2TB SSD, 1TB SSD)"</small>	Lenovo P630 Ultra workstation <small>(one 2.4GHz Intel Core i9-12900 16-core CPU, NVIDIA RTX A2000, 32GB RAM, 1TB SSD)</small>	BOXX APEXX S3 workstation <small>(one 3.0GHz Intel Core i9-13900K 24-core CPU, NVIDIA RTX A4000, 64GB RAM, 1TB SS</small>
Price as tested	\$9,274	\$15,288	\$4,438	\$6,994	\$2,432	\$6,244
Date tested	9/13/2023	9/12/23	7/28/23	7/20/23	4/10/23	3/21/23
Operating System	Windows 11 Pro	Windows 11 Pro	Windows 11 Pro	Windows 11 Pro	Windows 11 Pro	Windows 10 Pro
CPU	Intel Xeon Gold 5416S	Intel Xeon w7-2465X	Intel Core i9-13900K	Intel Xeon w7	Intel Core i9	Intel Core i9
CPU clock speed	2.0 GHz	3.1 GHz	5.8 GHz	4.8 GHz	2.4 GHz	3.0 GHz
CPU cores	16	16	24	24	16	24
System memory (RAM)	128GB	128GB	64GB	64GB	32GB	64GB
GPU	NVIDIA RTX	NVIDIA RTX	NVIDIA RTX	RTX A4000	RTX A2000	RTX A4000
GPU discrete memory (RAM)	48GB	48GB	20GB	16GB	12GB	16GB
Graphics driver version	526.67 (7/12/23)	535.98 (5/24/23)	536.25 (6/10/23)	527.48	528.49 (2/2/23)	528.24
Primary drive size and type	1TB PCIe SSD	1TB PCIe SSD	1TB PCIe SSD	2TB PCIe SSD	1TB PCIe SSD	1TB PCIe SSD
Secondary drive size and type	none	1TB PCIe SSD	none	1TB PCIe SSD	none	none
Total drive storage	1TB	2TB	1TB	3TB	1TB	1TB
System weight (pounds)	60.50	27.25	28.00	27.00	8.99	25.75
Power supply wattage		1,350	850	1,125	300	750
SPECviewperf 2020 V3.1 (higher is better)						
3dsmax-07	205.89	207.83	165.27	147.46	80.49	145.59
catia-06	129.80	138.81	133.22	104.51	63.08	120.83
creo-03	127.06	139.69	192.56	135.28	119.12	186.69
energy-03	127.74	130.74	87.83	68.60	33.83	67.02
maya-06	468.59	506.22	508.86	407.39	269.74	461.11
medical-03	92.34	94.29	74.78	69.58	40.86	68.70
snx-04	916.61	651.50	448.21	479.49	382.26	468.71
solidworkws-05	406.15	400.45	314.03	278.60	162.17	272.39
SPEC workstation v3.1 (higher is better)						
Media and Entertainment	4.29	5.09	6.58	4.83	3.56	6.50
Product Development	5.00	5.72	5.66	5.40	3.82	5.24
Life Sciences	4.98	5.54	7.07	5.68	3.35	6.93
Financial Services	4.37	5.71	8.37	6.34	3.45	6.92
Energy	5.44	5.97	7.27	6.12	3.78	7.50
General Operations	2.46	2.85	4.32	2.56	3.16	4.66
GPU Compute	7.30	7.55	6.41	5.16	3.62	5.44
Time AutoCAD Render Test (in seconds, lower is better)						
	19.6	16.8	10.30	15.0	22.1	14.20

Numbers in blue indicate best recorded results. Numbers in red indicate worst recorded results.