Engineering Workstations Compared

		Lenovo S30 workstation (one 3.6GHz Intel Xeon E5-1620 quad-core CPU [3.8GHz turbo], NVIDIA Quadro 4000, 8GB RAM)	HP Z1 workstation (one 3.5GHz Intel Xeon E3-1280 quad-core CPU [3.9GHz turbo], NVIDIA Quadro 4000M, 16GB RAM)	Lenovo E30 workstation (one 3.2GHz Intel Xeon E3-1230 quad-core CPU [3.6GHz turbo], NVIDIA Quadro 600, 4GB RAM)		HP Z210 workstation (one 3.36GHz Intel Xeon E3-1245 quad-core CPU [3.7GHz turbo], NVIDIA Quadro 2000, 8GB RAM)		BOXX 3DBOXX 3970 EXTREME workstation (one 3.4GHz Intel Core i7-2600K quad-core CPU over-clocked to 4.5GHz, NVIDIA Quadro 4000, 8GB RAM)	HP Z820 workstation (two 3.1GHz Intel Xeon eight-core CPU [3.8GHz turbo], NVIDIA Quadro 5000, 32GB RAM)	BOXX 3DBOXX 8550XTREME workstation (two 3.33GHz Intel Xeon X5680 six-core CPUs over-clocked to 4.2GHz, NVIDIA Quadro 5000, 24GB RAM)	
Price as tested		$2,614	$5,625	$1,099		$2,269		$4,048	$9,984	$11,396	
Date tested		8/18/12	6/29/12	4/21/12		2/12/12		10/12/11	7/16/12	3/20/11	
Operating System			Windows 7 64-bit	Windows XP	Windows 7 64-bit	Windows XP	Windows 7 64-bit	Windows 7 64-bit	Windows 7 64-bit	Windows XP	Windows 7 64-bit
SPECviewperf	higher										
3dsmax-04		80.63[1]	82.83[1]	79.01[1]	77.43[1]	80.67	79.46	99.03[1]	82.08[1]	95.97	95.44[1]
catia-02		101.18[1]	98.89[1]	77.80[1]	77.68[1]	94.20	91.47	124.75[1]	111.43[1]	120.44	121.10[1]
ensight-03		95.71[1]	90.20[1]	48.20[1]	49.27[1]	75.78	73.57	109.56[1]	124.41[1]	132.41	130.13[1]
maya-02		371.89[1]	330.32[1]	156.64[1]	157.63[1]	291.17	270.83	399.43[1]	461.72[1]	529.89	476.95[1]
proe-04		93.53[1]	97.22[1]	60.66[1]	60.79[1]	88.48	84.83	120.33[1]	114.54[1]	113.84	113.24
SW-01		179.06[1]	196.11[1]	94.38[1]	94.68[1]	168.06	161.45	231.44[1]	236.80[1]	221.31	214.06
tcvis-01		78.98[1]	62.98[1]	34.25[1]	34.22[1]	56.41	54.43	79.05[1]	94.77[1]	98.58	94.17
ugnx-01		61.83[1]	44.98[1]	29.01[1]	29.16[1]	43.41	42.49	65.91[1]	86.93[1]	89.32	86.90
SPECapc SolidWorks	lower										
Score	seconds	106.46[1,2]	110.61[1,2]	127.48[1]	n/a	110.91	n/a	n/a	126.73[1,2]	106.56[1]	n/a
Graphics	seconds	38.68[1,2]	38.31[1,2]	48.40[1]	n/a	35.71	n/a	n/a	42.43[1,2]	35.33[1]	n/a
CPU	seconds	26.88[1,2]	30.52[1,2]	27.90[1]	n/a	25.89	n/a	26.44[1]	37.53[1,2]	25.99[1]	n/a
I/O	seconds	40.90[1,2]	41.32[1,2]	55.17[1]	n/a	50.74	n/a	47.01[1]	46.77[1,2]	46.51[1]	n/a
SPECapc SolidWorks	higher										
Score	ratio	4.80[1,2]	4.46[1,2]	6.25[1]	n/a	7.92	n/a	n/a	3.84[1,2]	8.23[1]	n/a
Graphics	ratio	5.33[1,2]	5.06[1,2]	3.89[1]	n/a	5.78	n/a	n/a	4.58[1,2]	6.08[1]	n/a
CPU	ratio	4.56[1,2]	4.01[1,2]	11.57[1]	n/a	12.46	n/a	12.20[1]	3.26[1,2]	12.61[1]	n/a
I/O	ratio	3.46[1,2]	3.42[1,2]	5.74[1]	n/a	6.24	n/a	6.73[1]	3.03[1,2]	6.81[1]	n/a
Autodesk Render Test	lower										
Time	seconds	63.80[1]	87.92[1]	85.66[1]	71.75[1]	71.66[1]	62.33[1]	45.6[1]	41.0[1]	34.0[1]	19.0[1]

Numbers in blue indicate best recorded results. Numbers in red indicate worst recorded results. 1=Hyper-threading enabled.
2= SPECapcSW2007 benchmark. Results are shown separately for single- and dual-socket workstations.