

# Terascale Simulation Facility

## WORLD-CLASS CENTER FOR MULTIPLE GENERATIONS OF SUPERCOMPUTERS

### FOUR-STORY OFFICE TOWER

121,600 square feet for  
285 offices

Visualization theater

150-seat auditorium

Conference rooms



### MACHINE FLOOR

48,000 square feet unobstructed computer room floor

30 megawatts machine power capacity

7,200 tons of air conditioning capacity



### MECHANICAL COOLING SYSTEM

Cooling towers total capacity: 12,600 gallons  
per minute

Chiller plant total capacity: 7,200 tons

Air handlers total capacity: 2,720,000 cubic feet  
per minute

Newly installed 3,600-gallon-per-minute, closed-loop,  
liquid-cooling system for Sequoia; can cool up to  
9.6 megawatts

### FOR MORE INFORMATION

See the ASC at Livermore Web site:

<https://asc.llnl.gov/>

## Livermore Computing Systems Summary

System	Top100 Rank	Program	Manufacturer/Model	Inter-connect	OS	Avg Power Demand (KW)	Nodes	Cores	Memory (GB)	Peak TFLOP/s
<b>Unclassified Network (OCF)</b>										
Sierra		M&IC	Dell	Linux IB QDR	Linux	TBD	1,944	23,328	46,656	261.3
uBG/L		ASC+M&IC	IBM BG/L	Linux IBM	Linux	1,073	40,960	81,920	21,504	229.4
Cab (TLCC2)	46	Appro	Appro	Linux IB QDR	Linux	564	1,296	20,736	41,472	431.3
Hera (TLCC)		ASC+M&IC	Appro	Linux IB DDR	Linux	492	864	13,824	27,648	127.2
Hyperion		ASC	Dell	Linux IB QDR	Linux	248	1,152	9,216	11,520	90.3
Ansel		M&IC	Dell	Linux IB QDR	Linux	TBD	324	3,888	7,776	43.5
RZzeus		ASC	Appro	Linux IB DDR	Linux	143	288	2,304	6,912	22.1
Aztec		M&IC	Dell	Linux N/A	Linux	TBD	96	1,152	4,608	12.9
Prism		M&IC	GraphStream	Linux IB SDR	Linux	55	128	256	2,048	1.2
Edge		M&IC	Appro	Linux IB QDR	Linux	165	216	2,592	20,736	29.0
Sequoia	1	ASC	IBM BG/Q	Linux 5D Torus	Linux	TBD	98,304	1,572,864	1,572,864	20132.7
Herd		M&IC	Appro	Linux IB DDR	Linux	7	6	96	1,088	0.9
RZMerl		ASC	Appro	Linux IB QDR	Linux	TBD	162	16	5,184	53.9
Ebert		M&IC	Appro	Linux N/A	Linux	7	6	96	192	0.9
OCF Totals	Systems	14				2,754	145,746	1,732,288	1,770,208	21,437
<b>Classified Network (SCF)</b>										
Dawn	42	ASC	IBM BG/P	Linux IBM	Linux	1,260	36,864	147,456	147,456	501.4
Muir		ASC	Dell	Linux IB QDR	Linux	TBD	1,296	15,552	31,104	174.2
Juno (TLCC)		ASC	Appro	Linux IB DDR	Linux	600	1,152	18,432	36,864	162.2
Graph		ASC	Appro	Linux IB DDR	Linux	429	576	13,824	72,960	110.6
Coastal		Other	Dell	Linux IB DDR	Linux	399	1,152	9,216	27,648	88.5
Eos (TLCC)		ASC	Appro	Linux IB DDR	Linux	150	288	4,608	9,216	40.6
Zin (TLCC2)	27	ASC	Appro	Linux IB QDR	Linux	TBD	2916	46656	93,312	970
Inca		ASC	Dell	Linux N/A	Linux	TBD	96	1,152	4,928	12.9
SCF Totals	Systems	9				5,598	190,092	1,989,280	2,193,888	2,061
Combined Totals		23				8,352	335,838	3,721,568	3,964,096	23,497

System Category	TFLOP/s	% of Total
Unclassified	21,436.6	91%
Capability	581.0	3%
Capacity	20,630.5	96%
Serial	12.9	0%
Visualization	84.1	0%
<b>Classified</b>	<b>2,060.7</b>	<b>9%</b>
Capability	501.4	24%
Capacity	1,274.6	62%
Serial	2,060.7	100%
Visualization	284.8	14%