

LC Systems Update

LC User Meeting

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Agenda

- **New Systems**
- **FIS Update**
- **NAS Update**
- **ASC Platform plan**
- **Sierra/CTS1 Key Dates**
- **HPC System Summary**

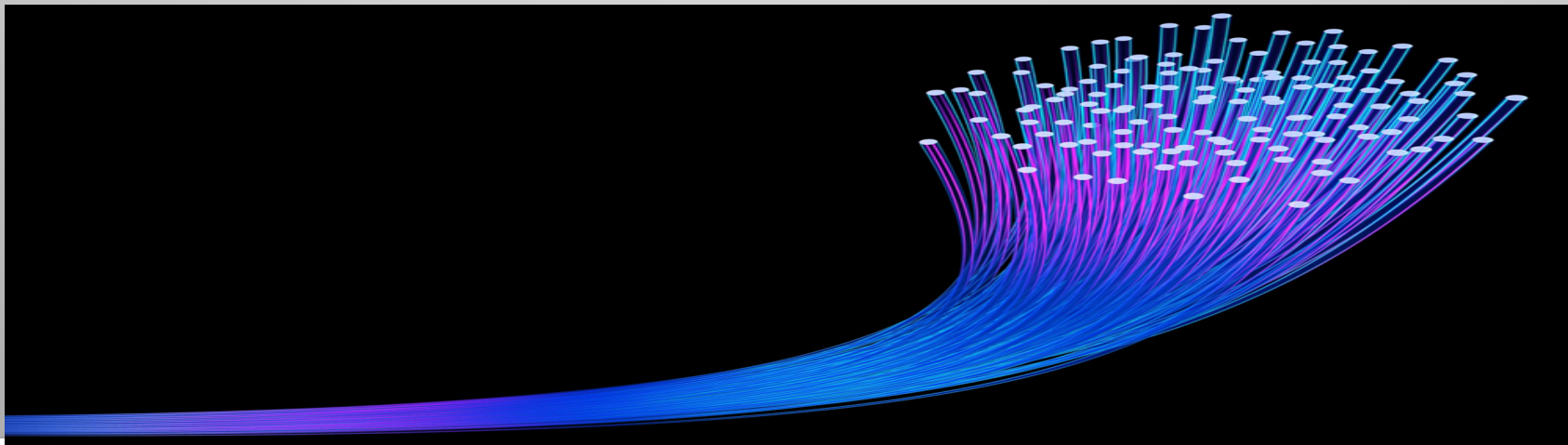
Catalyst (Data Intensive Computing)

- 2SU – 324 Total Nodes
 - 304 Compute nodes
 - 24 Cores at 2.4GHz per node
 - 128 GB RAM per node
 - 800GB (raw) SSD local file systems (/l/ssd)
- Intel Dual-Rail QDR Infiniband
- 2 PB dedicated lustre file system (/p/lscratchf)



Surface (Visualization and Data Analysis)

- 1SU – 162 Total Nodes
 - 158 Compute nodes
 - 16 Cores at 2.6GHz per node
 - 256 GB RAM per node
 - 2 Nvidia Tesla K40M GPUs
- Mellanox FDR Infiniband
- CZ Lustre file systems available (lscratch[d,e,v])
- Replaced Edge



Future System - Syrah

- 2SU – 324 Total Nodes
 - 312 Compute nodes
 - 16 Cores at 2.6GHz per node
 - 64 GB RAM per node
- Intel QDR Infiniband
- CZ Lustre file systems available (lscratch[d,e])
- Scheduled Ship Date Nov 14
- Target Availability Dec 18



Rzalastor replacement

- 1 rack – 36 Total Nodes
 - 32 Compute nodes
 - 20 Cores at 2.8GHz per node
 - 64 GB RAM per node
- Intel QDR Infiniband
 - Found issues with Intel IB and Core count
 - Replacing IB with Mellanox
- /p/lscratchrb



FIS One Way Link (OWL)

- OWL Service from Open -> SNSI network (Pinot)
- Working on final security approval now

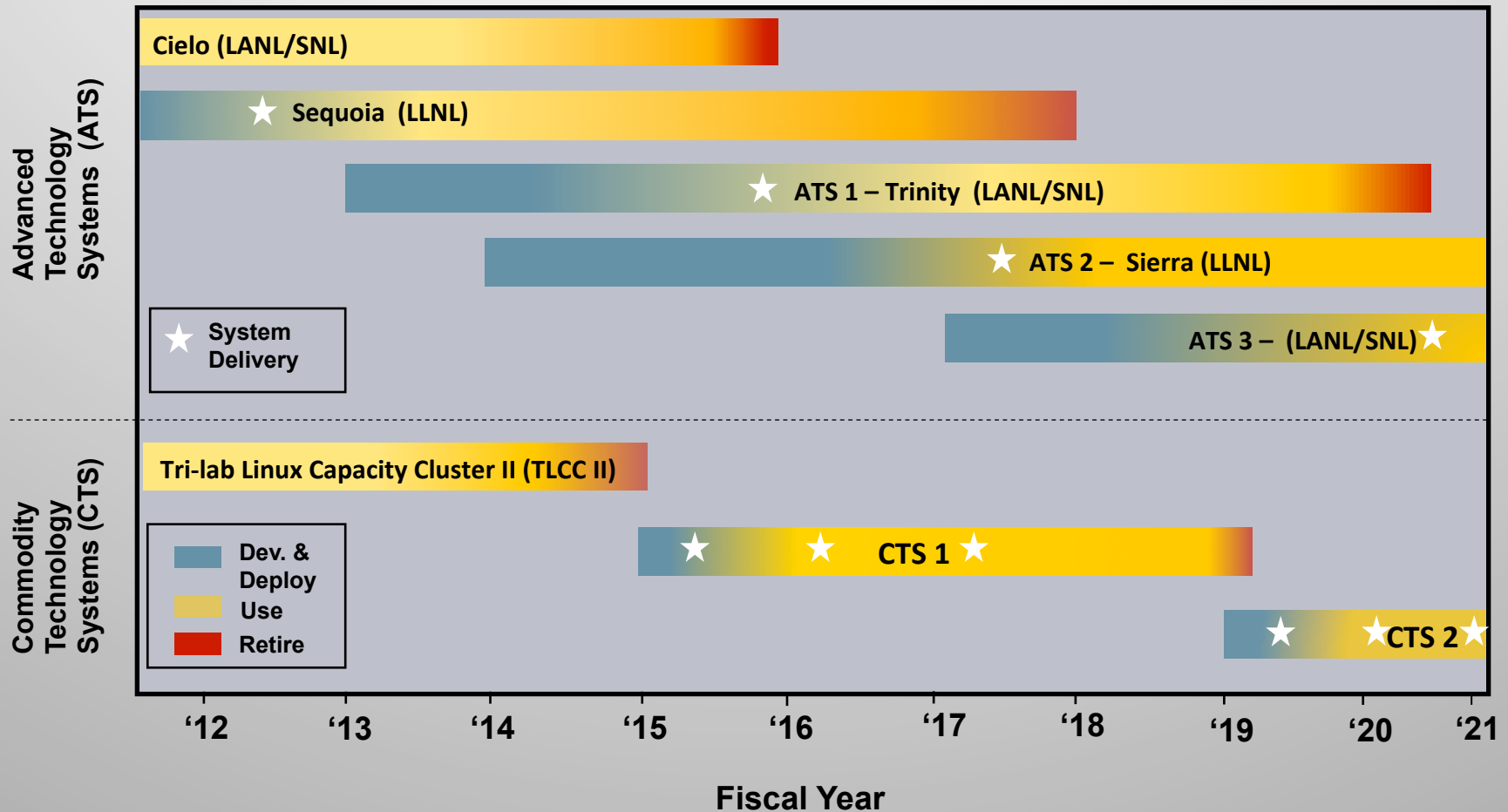


NAS Update

- In FY14 upgrades /nfs/tmp file systems (RZ/SCF) to 200TB.
- CZ /nfs/tmp2 and PrismNAS (data analysis file system) upgrade targeted for Jan 2015.
- OCF and SCF /g home directory server upgrades in CY15. Plan to increase default quota.
- Developing tools to streamline NAS requests to decrease time to completion.



ASC Platform Timeline



Sierra / CTS1 key dates

Activity/Milestone	Expected Date(s)	Comments
Early Access Sierra System	2H 2016	RZ
Test/Dev Sierra System	2H 2017	RZ
First Sierra Deliveries	By End of 2017	OCF -> SCF
CTS1 Contract Award	Jul. 2015	
CTS1 First Delivery	Oct. 2015	OCF->SCF
CTS1 System in new Building	Apr. 2016	OCF

HPC at LLNL – As of 11/13/2014

System	Top500 Rank	Program	Manufacture/ Model	OS	Inter-connect	Nodes	Cores	Memory (GB)	Peak TFLOP/s
<i>Unclassified Network (OCF)</i>									
Vulcan	9	ASC+M&IC+HPCIC	IBM BGQ	RHEL/CNK	5D Torus	24,576	393,216	393,216	5,033.2
Sierra	337	M&IC	Dell	TOSS	IB QDR	1,944	23,328	46,656	243.7
Cab (TLCC2)	115	ASC+M&IC+HPCIC	Appro	TOSS	IB QDR	1,296	20,736	41,472	426.0
Ansel		M&IC	Dell	TOSS	IB QDR	324	3,888	7,776	43.5
RZMerl (TLCC2)		ASC+ICF	Appro	TOSS	IB QDR	162	2,592	5,184	53.9
RZZeus		M&IC	Appro	TOSS	IB DDR	267	2,144	6,408	20.6
Catalyst		ASC+M&IC	Cray	TOSS	IB QDR	324	7,776	41,472	149.3
Surface		ASC+M&IC	Cray	TOSS	IB QDR	162	2,592	41,500	451.9
Aztec		M&IC	Dell	TOSS	N/A	96	1,152	4,608	12.9
Herd		M&IC	Appro	TOSS	IB DDR	9	256	1,088	1.6
OCF Totals	Systems	10							6,436.6
<i>Classified Network (SCF)</i>									
Pinot(TLCC2, SNSI)		M&IC	Appro	TOSS	IB QDR	162	2,592	10,368	53.9
Sequoia	3	ASC	IBM BGQ	RHEL/CNK	5D Torus	98,304	1,572,864	1,572,864	20132.7
Zin (TLCC2)	47	ASC	Appro	TOSS	IB QDR	2,916	46,656	93,312	961.1
Juno (TLCC)		ASC	Appro	TOSS	IB DDR	1,152	18,432	36,864	162.2
Muir		ICF	Dell	TOSS	IB QDR	1,296	15,552	31,104	168.0
Graph		ASC	Appro	TOSS	IB DDR	576	13,824	72,960	107.5
Max		ASC	Appro	TOSS	IB QDR	324	5,184	82,944	107.8
Inca		ASC	Dell	TOSS	N/A	100	1,216	5,120	13.5
SCF Totals	Systems	8							21,706.7
Combined Totals		18							28,143.3

Questions?



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