

# Operation and Plan: Hiroshima and Tsukuba

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ALICE Tier1-Tier2 workshop  
April 19, 2016

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筑波大学  
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# Japan sites in ALICE

- Hiroshima Tier 2, operational since 2009
- Tsukuba Tier 2 (under configuration, 2016)





# ALICE Tier-2 at Hiroshima

- The ALICE T2 site “**JP-HIROSHIMA-WLCG**” with grid middleware EMI-3 on SL6.5... **as stable as possible.**
- GRID service; APEL, sBDII, CREAM-CE, XROOTD, DPM-SE, VOBOX... **as compact as possible.**
- WN resources; **1356 Xeon-cores in total**  
Xeon5355(4c@2.6GHz) x 2cpu x 16 boxes  
Xeon5365(4c@3.0GHz) x 2cpu x 20 blades  
Xeon5570(4c@2.9GHz) x 2cpu x 26 blades  
Xeon5670(6c@2.9GHz) x 2cpu x 3 blades  
Xeon5660(6c@2.8GHz) x 2cpu x 42 blades  
E5-2470v2(10c@2.4GHz) x 2cpu x 16 blades
- Storage; **1,056TB disks** on 9 servers, but **no MS**
- Around **3/4 resource** deployed to ALICE GRID, and the rest for a local cluster
- Network B/W: **1Gbps** on 40Gbps-SINET4 in Japan
- WLCG support by ASGC in Taiwan
- Responsible by Prof. Toru Sugitate
- Operated by TS and K.Tarunaga (M2) under remote technical support by *SOUM* corp., Tokyo.





# Daily Score as of 21 Nov. 2015

Select site: Hiroshima

MonALISA information Version: 13.11.04 (JDK 1.7.0\_45)  
Running on: grid01.hepl.hiroshima-u.  
Administrator: Toru Sugitate, Hiroshir

Services status ClusterMonitor: **OK**  
AliEn: v2-19.276  
PackMan: n/a  
CE: **OK**  
CE info: *At the moment we are busy*  
Max running jobs: 1500  
Max queued jobs: 50

Current jobs status  
Assigned: 0  
Running: **1380**  
Saving: 23

Storages status

Name
ALICE::Hiroshima::SE

VoBox health  
CPUs: 24x 2793MHz  
Mem usage: 23.71% of 23.45 GB  
Processes: 432  
Sockets: 944 TCP / 27 UDP  
Uptime: 81 days, 13:11

AliEn LDAP var	
TMP	/home
LOG	/home
CACHE	/home

## Current job status

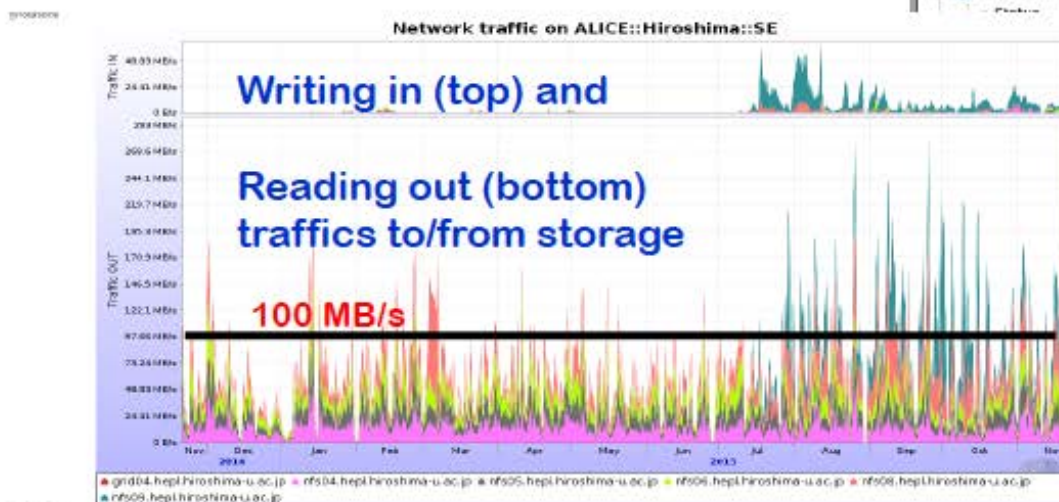
What is this about?

Job status					
VOBox		Jobs			
Service	Address	Running	Started	Saving	Zombie
		Total (R+S+Z)			
112. RRC_KI_T1	rhoie.t1.grid.kiae.ru	4190	39	28	6
5. Bari	vobox-alice.ba.infn.it	3453	28	40	6
109. RAL_ARC	logvo07.gridpp.rl.ac.uk	3131	25	32	0
29. CERN-TRITON	137.138.47.207,2001:1458:201:b50e:0:0:100:39	2839	20	109	0
20. CERN-AURORA	137.138.47.205,2001:1458:201:b50e:0:0:100:38	2711	13	97	0
32. CERN-ZENITH	188.184.2.30,2001:1458:201:22:0:0:100:18	2650	21	82	0
15. CCIN2P3	ccwlogalice02.in2p3.fr	2409	109	171	2
94. NIPNE	hgate.nipne.ro	2344	45	34	49
47. FZK	alice-kit.gridka.de	2165	11	8	0
55. GSI	bxcealice02.gsi.de	1981	0	7	0
64. Hiroshima	grid01.hepl.hiroshima-u.ac.jp	1380	21	23	0
14. Catania-VI	alict-vobox-01.ct.infn.it	1363	12	12	0
114. SARA	vobox-alice.grid.sara.nl	1312	0	0	0
79. KISTI_GSDC	vobox11.sdform.kr	1269	19	14	0
69. IPNL	lyogrid08.in2p3.fr	1211	16	10	0
98. ORNL	vobox.ornl.gov	1200	18	15	0
113. SaoPaulo	sampavo.if.usp.br	1054	21	20	10
106. Prague	0:0:183,2001:718:1e01:1724:221:5eff:fe27:9230	1048	16	29	11
138. UNAM_T1	buul.gnd.unam.mx	945	12	8	0
86. Legnaro	vobox-alice.lnl.infn.it	920	7	4	7
95. NIKHEF	erf.nikhef.nl	817	2	3	0
126. Torino	alibox2.to.infn.it	803	6	15	0
52. GR1F_IRFU	node09.datagrid.cea.fr	796	7	6	0
34. Clermont	clrvoboxalice1.in2p3.fr	770	3	5	0
82. Kolkata-CREAM	grid01.tier2-kol.res.in	769	15	17	0
136. UIB	alien.bccs.uib.no	702	5	13	2
96. NIPNE	vobox.nipne.ro	638	4	3	0

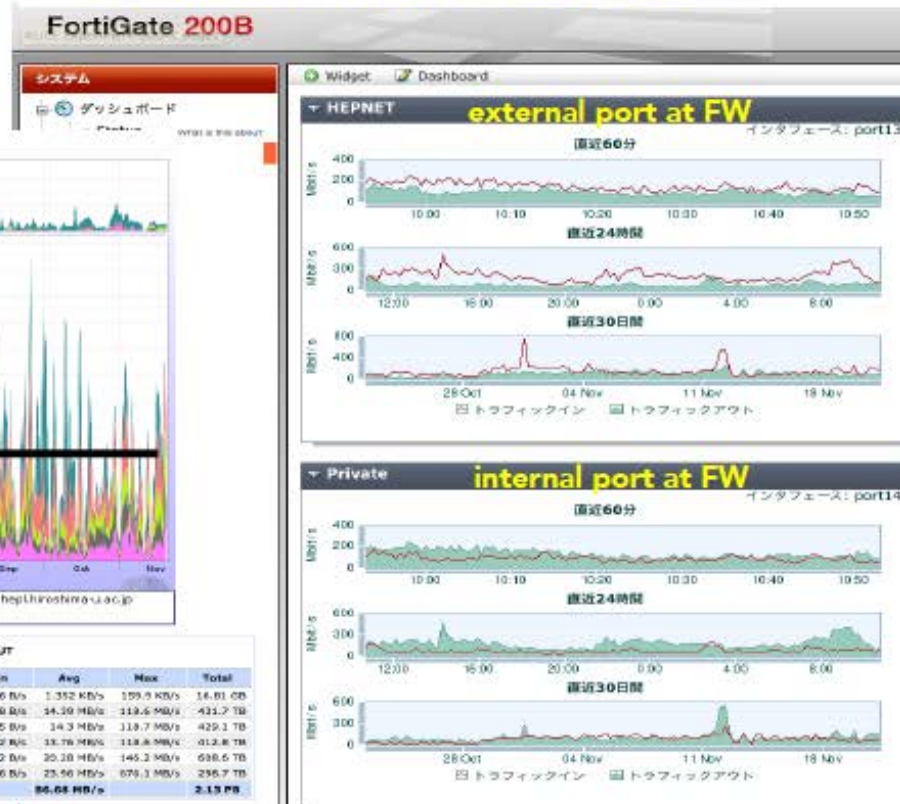
# ALICE jobs as of Nov. 2015



- ◆ Stably accepting around 1400 jobs and proceed around 7,000 jobs a day.
- ◆ Writing 150TB on SE disks and read out 2PB in the last 12 months.
- ◆ The jobs produces 0.2-0.6, sometimes 1Gbps traffic on WAN at peaks.

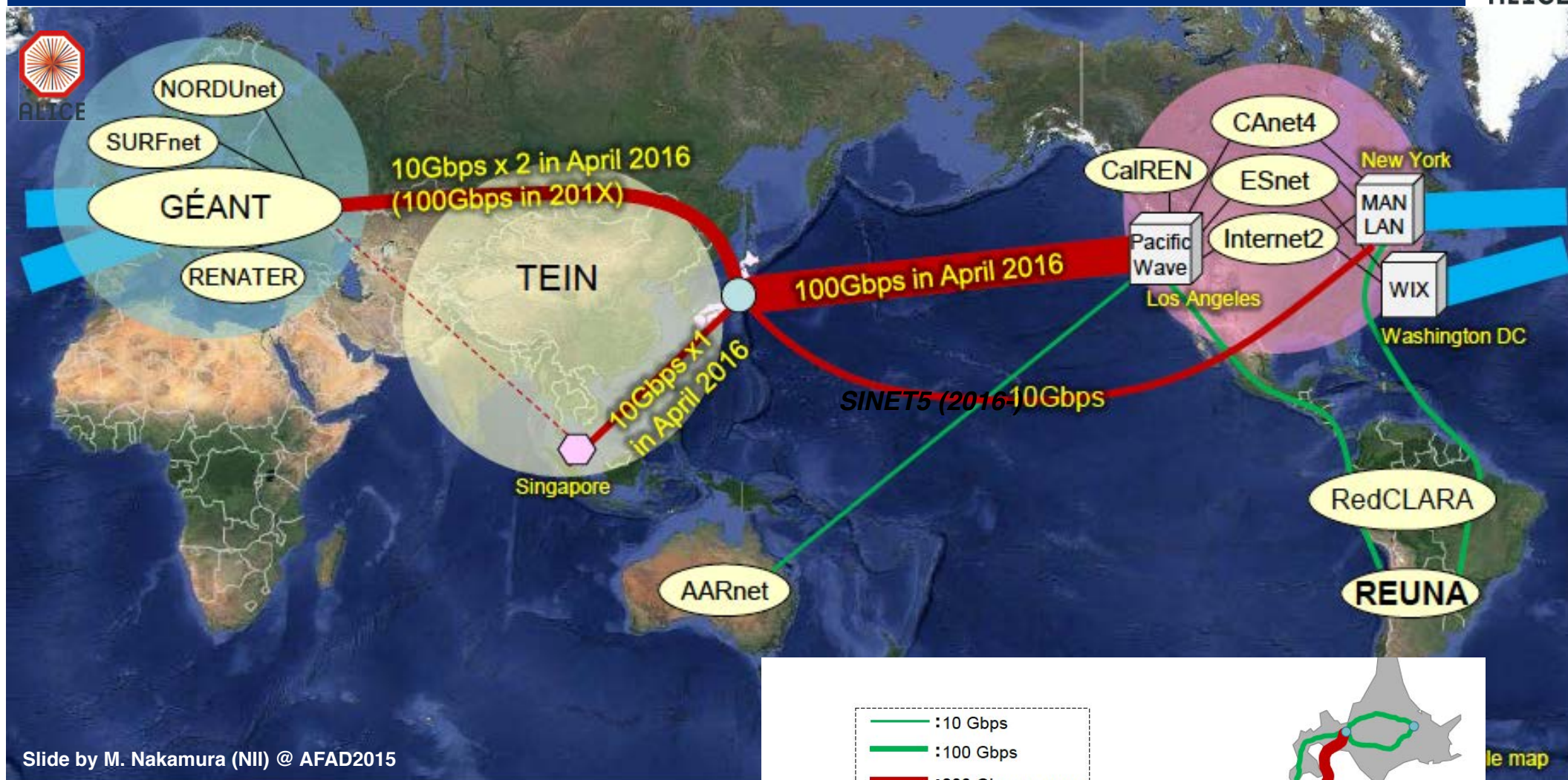


Traffic IN						Traffic OUT					
Series	Last value	Min	Avg	Max	Total	Series	Last value	Min	Avg	Max	Total
1. gr004.hepl.hiroshima-u.ac.jp	3.185 KB/s	0.515 B/s	2.938 KB/s	55.79 KB/s	16.53 GB	1. gr004.hepl.hiroshima-u.ac.jp	1.800 KB/s	18.86 B/s	1.352 KB/s	159.5 KB/s	14.01 GB
2. rfs04.hepl.hiroshima-u.ac.jp	255.5 KB/s	0.127 KB/s	262.4 KB/s	95.49 MB/s	7.690 TB	2. rfs04.hepl.hiroshima-u.ac.jp	26.12 MB/s	46.10 B/s	34.39 MB/s	118.6 MB/s	431.7 TB
3. rfs05.hepl.hiroshima-u.ac.jp	310.9 KB/s	0.135 KB/s	215.5 KB/s	57.59 MB/s	8.317 TB	3. rfs05.hepl.hiroshima-u.ac.jp	29.05 MB/s	25.95 B/s	14.3 MB/s	119.7 MB/s	429.1 TB
4. rfs06.hepl.hiroshima-u.ac.jp	650.4 KB/s	0.194 KB/s	280.9 KB/s	48.6 MB/s	7.860 TB	4. rfs06.hepl.hiroshima-u.ac.jp	30.9 MB/s	28.42 B/s	18.76 MB/s	118.4 MB/s	412.8 TB
5. rfs08.hepl.hiroshima-u.ac.jp	472.3 KB/s	62.92 B/s	592.7 KB/s	37.47 MB/s	17.37 TB	5. rfs08.hepl.hiroshima-u.ac.jp	44.20 MB/s	14.12 B/s	20.20 MB/s	145.3 MB/s	688.6 TB
6. rfs09.hepl.hiroshima-u.ac.jp	6.987 MB/s	0.222 KB/s	6.743 MB/s	153.6 MB/s	109 TB	6. rfs09.hepl.hiroshima-u.ac.jp	5.102 MB/s	39.86 B/s	23.56 MB/s	679.3 MB/s	236.7 TB
<b>Total</b>	<b>7.754 MB/s</b>		<b>19.04 MB/s</b>		<b>147.0 TB</b>	<b>Total</b>	<b>135.8 MB/s</b>		<b>86.68 MB/s</b>		<b>2.15 PB</b>





# SINET5 (2016-)



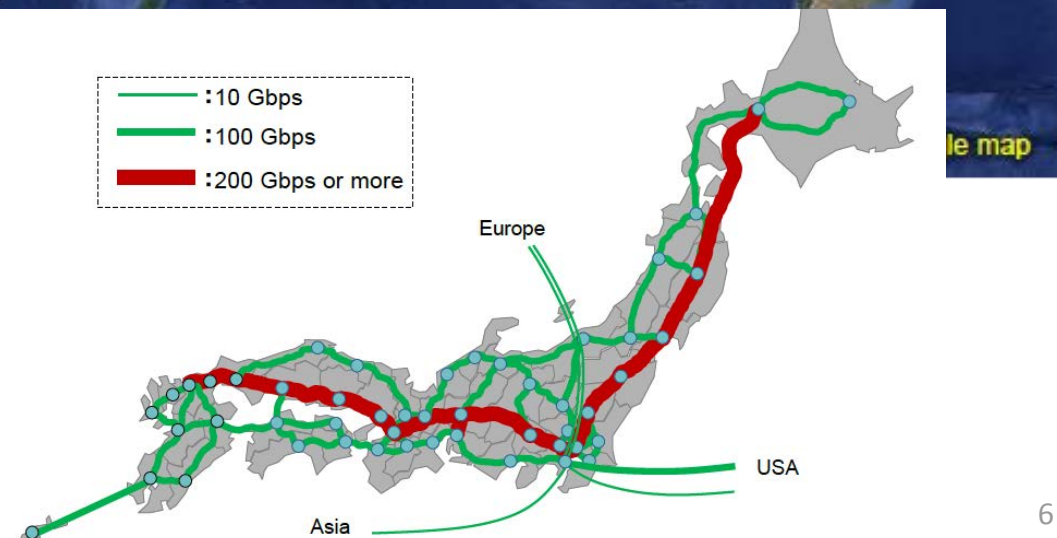
## SINET 5 (April 2016-), by NII

Domestic: 200Gbps backbone,

International: 100 Gbps direct link JPN  $\rightleftharpoons$  US & EU

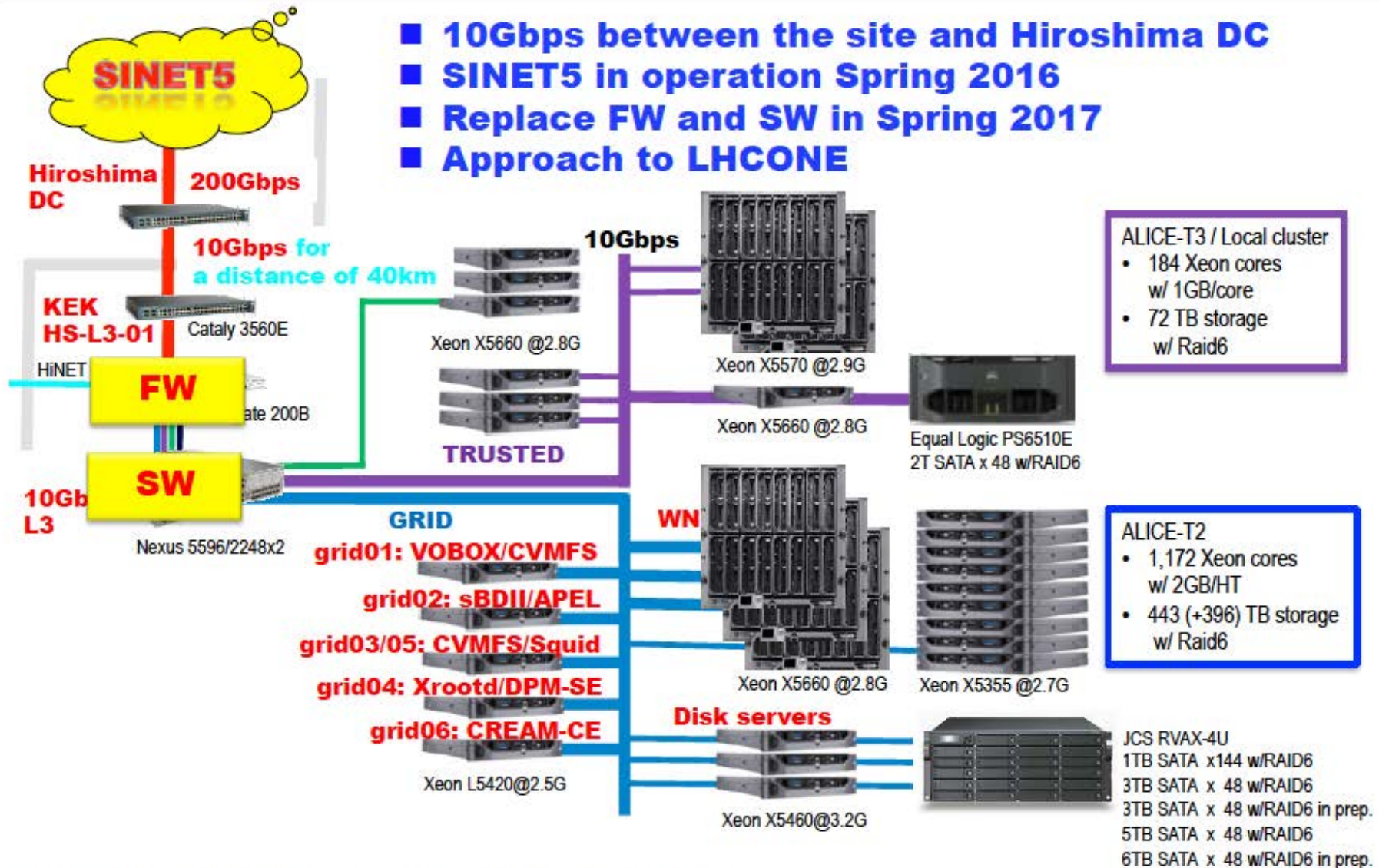


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# Integration with SINET5





16 WN's (provided by Hiroshima U)  
as a prototype of T2 in Tsukuba  
(marked by yellow labels)

## Members:

- T. Chujo (responsible), S. Kato (technical staff)

## Status:

- Infrastructures, MW (EMI 3.1), installed minimum services.
- Setting up T2 for the test job submission by ALICE.
  - Many thanks to Maarten L., Latchezar B. Toru S. !!
- 16 WN's (X5355; 4 cores x 2 cpu, @2.6GHz) in a rack.
- Connected to SINET-4/(5) (via HepNet-J).

## Plan:

- Finalize the service configuration and test.
- Make it operational as a official ALICE T2.
- In 2016 summer, purchase & install ~100 TB disk.  
Add new WN's.





- **Hiroshima Tier-2:**
  - Accepts 1500 jobs stably and process around 7,000 jobs a day:
    - Produces 0.2-0.6, sometimes 1 Gbps traffic on WAN at peaks.
  - Hiroshima T2 declares a 10 Gbps connection to SINET5.
  - University campus LAN upgrade to multi-10 Gbps and 10 Gbps to Hiroshima DC (2015)
  - Direct connection to Korea via JGN-X/APAN
- **Tsukuba Tier-2:**
  - Setup is almost done, will come in spring 2016, become T2 in 2016.
  - Connection to SINET5.
  - Add ~100 TB disk and several new WNs, in 2016.
- **Network:**
  - Transition period from SINET4 to SINET5 in Japan.
  - Direct connections to US @ 100 and multi-10 G bps in 2016.