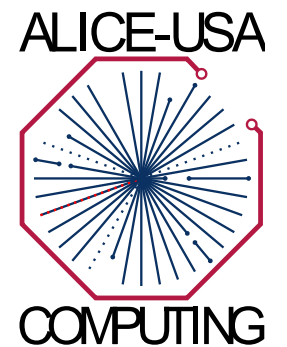# ALICE-USA Operations
Monthly Status for November 2023

December 19, 2023

Availability and Reliability Reports
ALICE_CE(Jobs Running) x ALICE_VOBOX x AliEn::SE(tests)

Tier-2 Availability and Reliability Report
ALICE
Federation Details

November 2023

Availability Algorithm: @ALICE_CE * @ALICE_VOBOX * all AliEn-SE

Color coding: N/A <30% <60% <90% >=90%

Federation & Sites	Pledge CPU	Pledge Disk	Availability	Reliability	Unknown	Aug-2023	Sep-2023	Oct-2023
US-LBNL-ALICE	**94300**	**9800**						
LBL_HPCS			78%	78%	22%	67%	100%	91%
ORNL			90%	90%	0%	99%	99%	94%

Job Summary

- Total number of jobs
  - Low overall job pressure
- LBL-HPCS
  - Downtime Nov 21-23
    - CVMFS updates
    - Came back with some problems
      - Crushing all jobs with failure to set up environment
      - Apptainer userspace not setup
      - Some workaround was placed before fix was deployed
  - Steady handling otherwise
- ORNL
  - Steady handling
- Lawrencium
  - Apptainer issue strangely only on one node
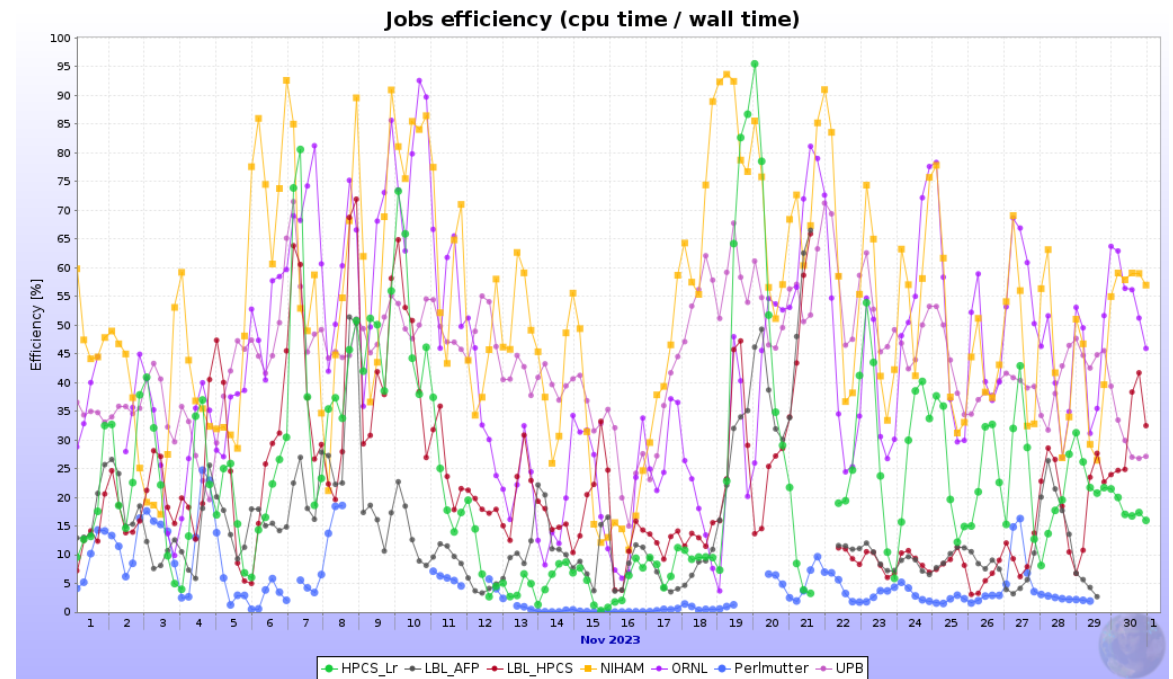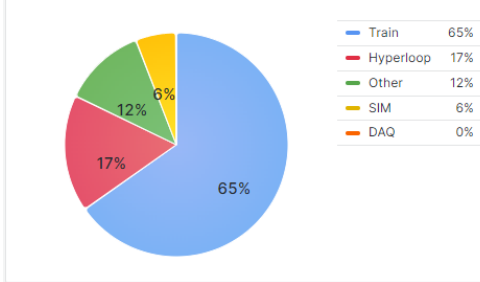 - Steady handling
- Perlmutter
  - Steady handling

Total allocated cores per site
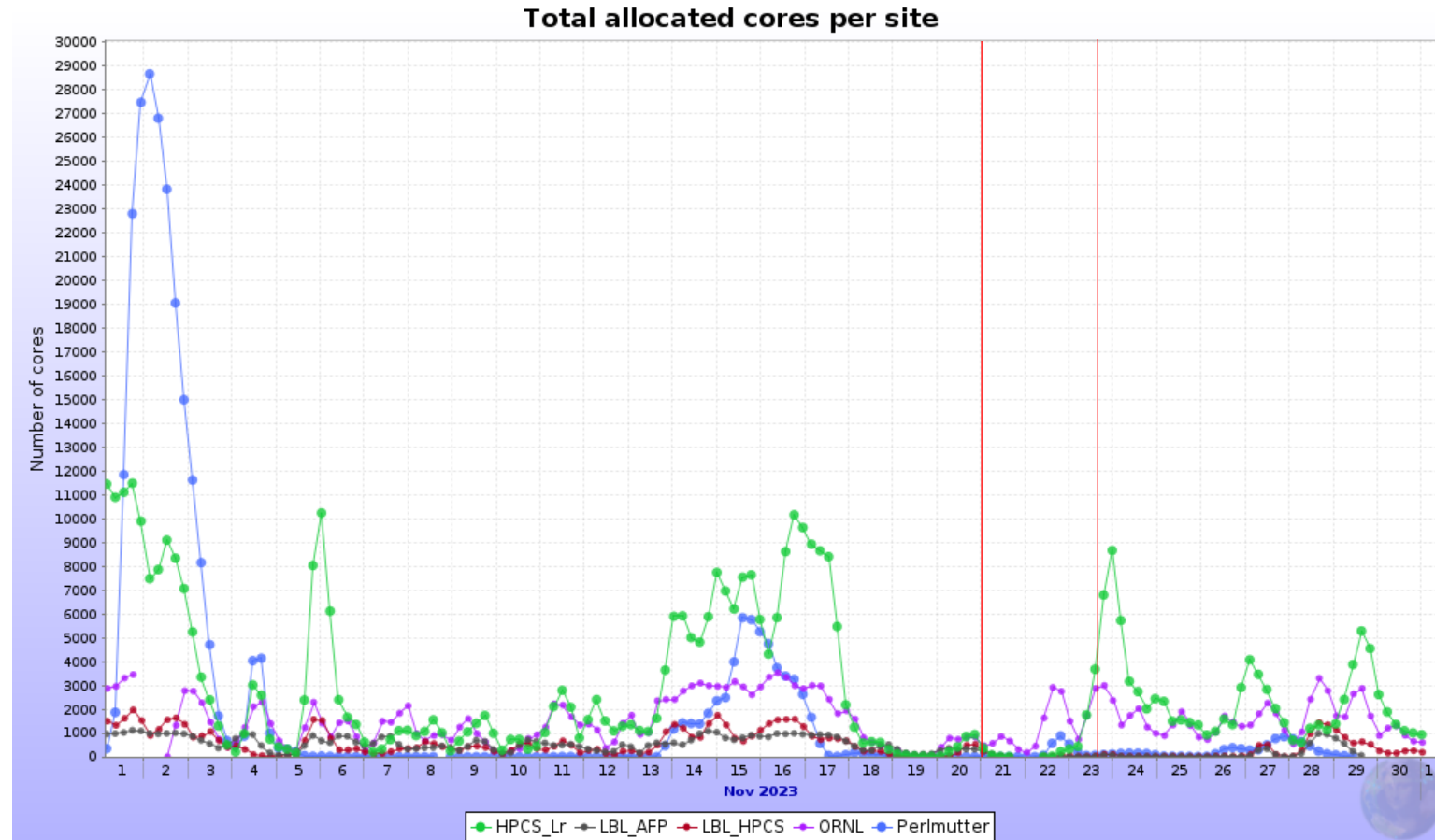
CPU Efficiency
Target Efficiency is... <u>no such thing anymore...</u>

Jobs efficiency (cpu time / wall time)

	Series	Last value	Min	Avg	Max
1.	■ HPCS_Lr	15.97	0	23.91	144.8
2.	■ LBL_AFP	2.689	0.158	15.16	108.2
3.	■ LBL_HPCS	32.47	0.067	22.04	338.8
4.	■ NIHAM	56.93	0	51.81	118.4
5.	■ ORNL	45.91	0.368	42.81	131.7
6.	■ Perlmutter	1.93	0	4.79	64.46
7.	■ UPB	27.11	0.211	43.77	84.54
	Total	**26.15**		**29.18**	

Jobs efficiency (cpu time / wall time)

Average Job Mix [LBL_HPCS]
Train 65%, Hyperloop 17%, Other 12%, SIM 6%, DAQ 0%

Average Job Mix [LBL_AFP]
Train 40%, Hyperloop 35%, Other 18%, SIM 8%, DAQ 0%
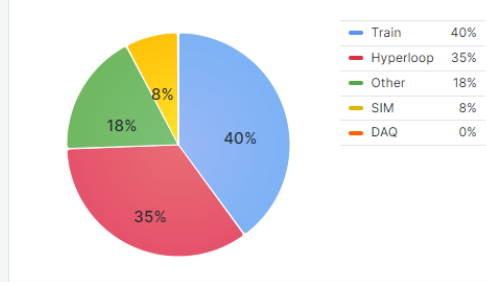
Average Job Mix [Perlmutter]
SIM 90%, Train 10%, Hyperloop 0%, Other 0%, DAQ 0%

Average Job Mix [ORNL]
Train 82%, SIM 7%, Hyperloop 7%, Other 4%, DAQ 0%
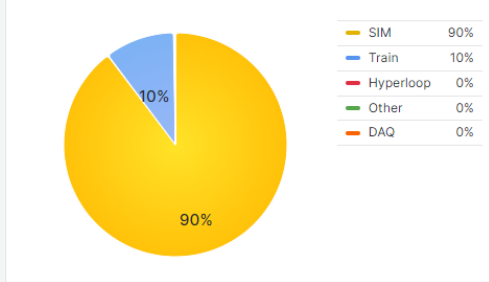
Average Job Mix [HPCS_Lr]
Train 89%, SIM 11%, Other 0%, DAQ 0%, Hyperloop 0%
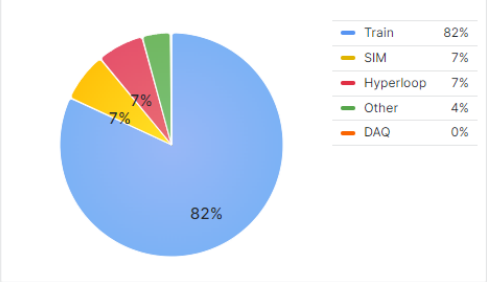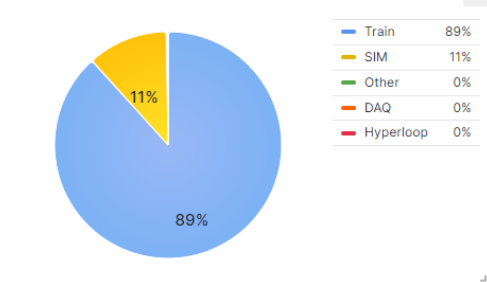
CPU Obligations	kHS06
ALICE-USA	94
LBNL HPCS T2	47
ORNL T2	47

T2 Site	Monalisa (khr)	WLCG (khr)	%diff
HPCS_Lr	1947.95	5953.47	61.67
LBNL	334.17		
ORNL	1034.12	2114.10	51.08
Total	**3,316.24**	**8,067.57**	**58.89**

Total wall time for ALICE jobs

	Wall Time
HPCS_Lr	1947952
LBL_HPCS	334167
ORNL	1034116
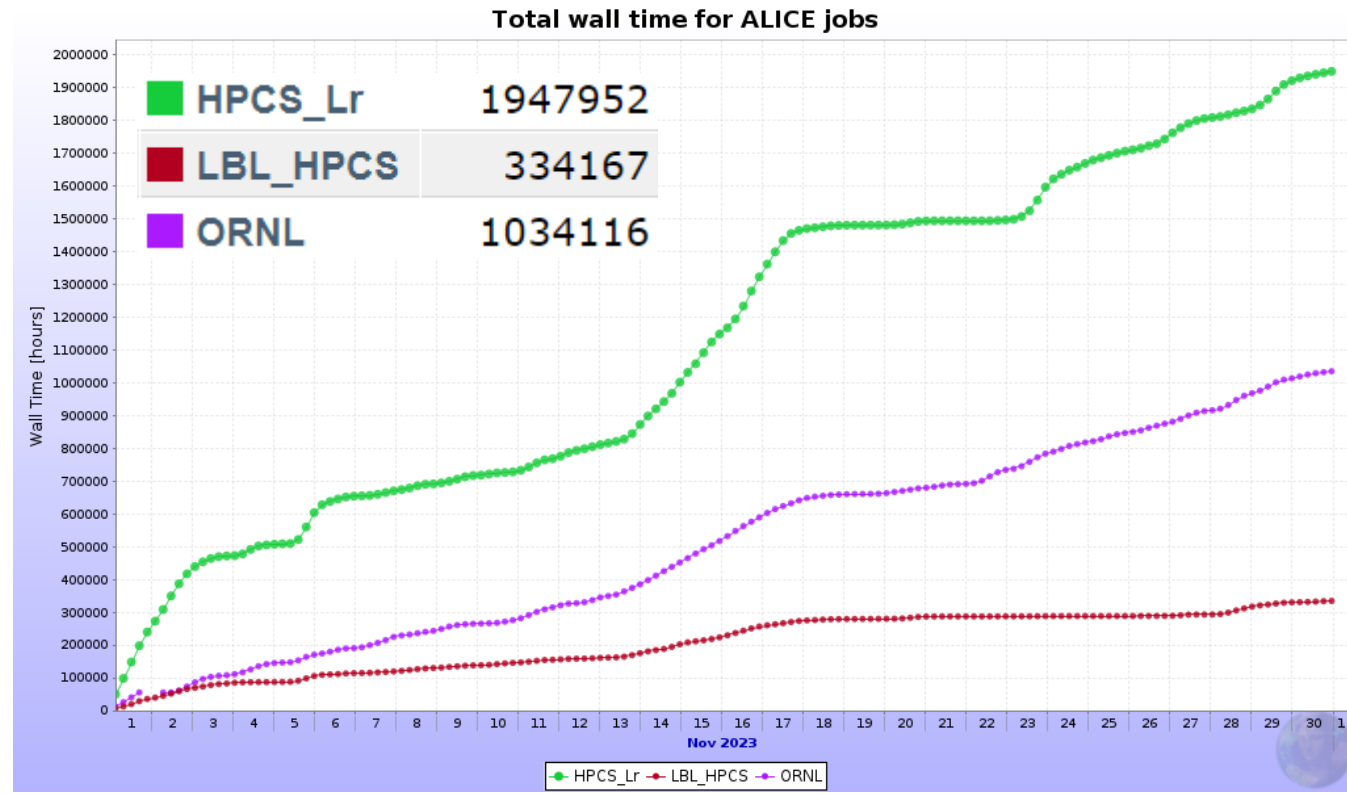
T2 Site and HPCS_Lr	CPU/Core [HS06/Core]	ALICE-USA Obligation [MHS06 x hr]	CPU Delivered [MHS06 x hr] (ML reporter)	CPU Delivered [MHS06 x hr] (WLCG reporter)	Delivered per Obligation [%] (ML reported)	Delivered per Obligation [%] (WLCG reported)
HPCS_Lr	12.0	31.16	23.38	71.44	75.0	229.3
LBNL	16.7		5.58		17.9	
ORNL	11.5	33.84	11.89	24.31	35.1	71.8
Total		**65.00**	**40.85**	**95.75**	**62.84%**	**147.31%**

Network Traffic at LBL and ORNL

AliEn SEs availability for writing

Nov 2023

Color map: 0 → 80% | 80 → 90% | 90 → 95% | 95 → 98% | 98 → 100% | 100%
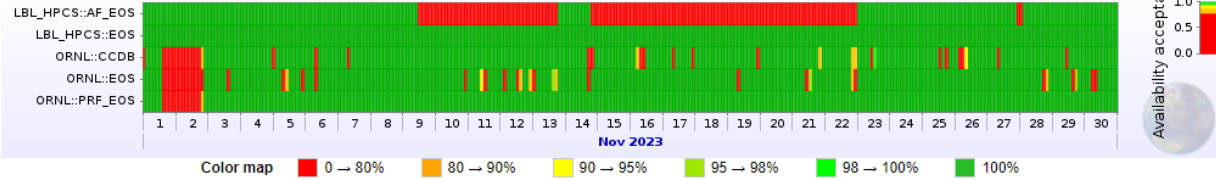
Statistics

Link name	Data		Individual results of writing tests			Overall
	Starts	Ends	Successful	Failed	Success ratio	Availability
LBL_HPCS::AF_EOS	31 Oct 2023 23:07	30 Nov 2023 23:44	428	301	58.71%	58.96%
LBL_HPCS::EOS	31 Oct 2023 23:16	30 Nov 2023 23:53	725	0	100%	100%
ORNL::CCDB	31 Oct 2023 23:08	30 Nov 2023 23:41	681	48	93.42%	93.61%
ORNL::EOS	31 Oct 2023 23:18	30 Nov 2023 23:55	677	48	93.38%	93.56%
ORNL::PRF_EOS	31 Oct 2023 23:05	30 Nov 2023 23:42	701	28	96.16%	96.12%

AliEn SEs availability for reading
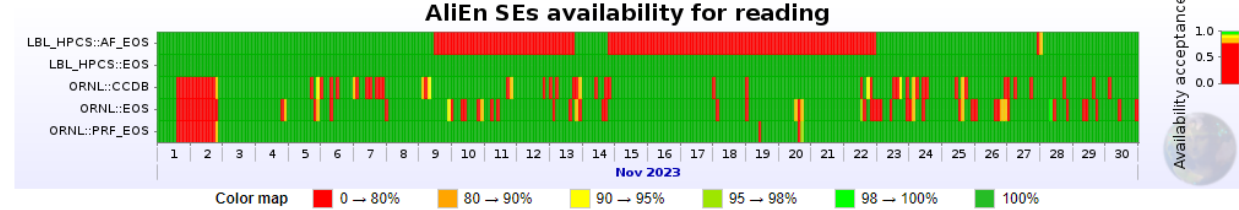
Nov 2023

Color map: 0 → 80% | 80 → 90% | 90 → 95% | 95 → 98% | 98 → 100% | 100%

Statistics

Link name	Data		Individual results of reading tests			Overall
	Starts	Ends	Successful	Failed	Success ratio	Availability
LBL_HPCS::AF_EOS	31 Oct 2023 23:07	30 Nov 2023 23:44	429	299	58.93%	59.09%
LBL_HPCS::EOS	31 Oct 2023 23:16	30 Nov 2023 23:53	725	0	100%	100%
ORNL::CCDB	31 Oct 2023 23:08	30 Nov 2023 23:41	660	69	90.53%	90.61%
ORNL::EOS	31 Oct 2023 23:18	30 Nov 2023 23:57	655	70	90.34%	90.47%
ORNL::PRF_EOS	31 Oct 2023 23:05	30 Nov 2023 23:42	699	30	95.88%	95.86%

AliEn SE			Catalogue statistics						Storage-provided information					
SE Name	AliEn name	Tier	Size	Used	Free	Usage	No. of files	Type	Size	Used	Free	Usage	Version	EOS Version
1. LBL_HPCS - AF_EOS	ALICE::LBL_HPCS::AF_EOS	2	1.101 PB	53.34 TB	1.049 PB	4.731%	25,509	FILE	1.101 PB	61.26 TB	1.041 PB	5.433%	Xrootd 5.5.10	5.1.30
2. LBL_HPCS - EOS	ALICE::LBL_HPCS::EOS	2	3.48 PB	3.176 PB	311.1 TB	91.27%	61,203,567	FILE	3.48 PB	3.127 PB	360.6 TB	89.88%	Xrootd 5.5.10	5.1.30
3. ORNL - CCDB	ALICE::ORNL::CCDB	2	100 TB	3.606 TB	96.39 TB	3.606%	8,192,640	FILE	-	-	-	-		
4. ORNL - EOS	ALICE::ORNL::EOS	2	4.943 PB	1.666 PB	3.277 PB	33.7%	36,905,290	FILE	4.943 PB	1.723 PB	3.22 PB	34.86%	Xrootd v5.5.5	5.1.27
5. ORNL - PRF_EOS	ALICE::ORNL::PRF_EOS	2	807.7 TB	243 TB	564.7 TB	30.09%	120,226	FILE	807.7 TB	248.7 TB	559 TB	30.79%		5.1.14
Total			10.41 PB	5.135 PB	5.275 PB		106,447,232		10.31 PB	5.153 PB	5.159 PB			

Using IPv6 Only
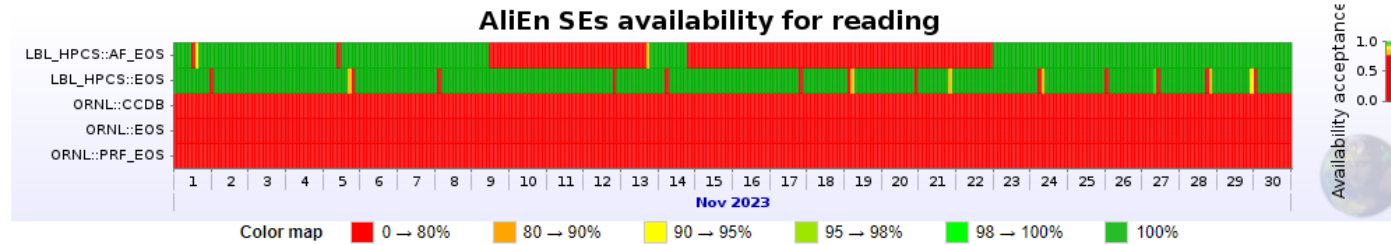
AliEn SEs availability for reading

Color map: 0 → 80% | 80 → 90% | 90 → 95% | 95 → 98% | 98 → 100% | 100%

Statistics

Link name	Data		Individual results of reading tests			Overall
	Starts	Ends	Successful	Failed	Success ratio	Availability
LBL_HPCS::AF_EOS	31 Oct 2023 23:07	30 Nov 2023 23:45	429	297	59.09%	59.09%
LBL_HPCS::EOS	31 Oct 2023 23:16	30 Nov 2023 23:53	710	15	97.93%	98%
ORNL::CCDB	31 Oct 2023 23:11	30 Nov 2023 23:44	0	729	0%	0%
ORNL::EOS	31 Oct 2023 23:21	01 Dec 2023 00:00	0	720	0%	0%
ORNL::PRF_EOS	31 Oct 2023 23:08	30 Nov 2023 23:45	0	729	0%	0%

AliEn SEs availability for writing

Color map: 0 → 80% | 80 → 90% | 90 → 95% | 95 → 98% | 98 → 100% | 100%
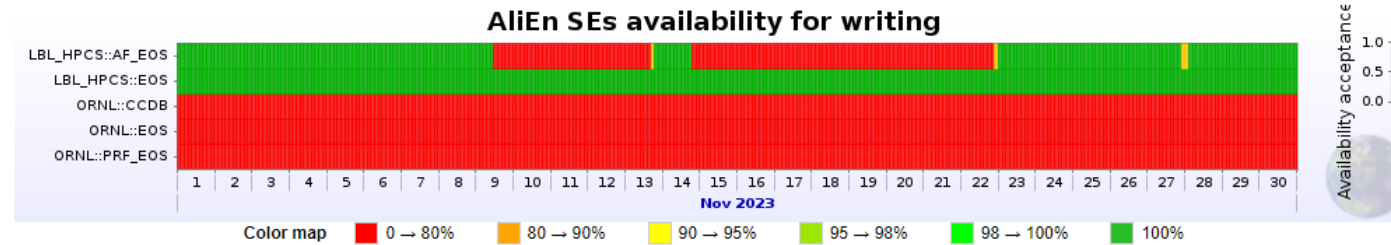
Statistics

Link name	Data		Individual results of writing tests			Overall
	Starts	Ends	Successful	Failed	Success ratio	Availability
LBL_HPCS::AF_EOS	31 Oct 2023 23:07	30 Nov 2023 23:45	430	296	59.23%	59.24%
LBL_HPCS::EOS	31 Oct 2023 23:16	30 Nov 2023 23:53	725	0	100%	100%
ORNL::CCDB	31 Oct 2023 23:11	30 Nov 2023 23:44	0	729	0%	0%
ORNL::EOS	31 Oct 2023 23:21	01 Dec 2023 00:00	0	720	0%	0%
ORNL::PRF_EOS	31 Oct 2023 23:08	30 Nov 2023 23:45	0	729	0%	0%

EOS: Success Ratio

- Fixing this needs to be prioritized
  - We are about to deploy more storage and retire old one
  - It would be good to understand the existing one

Success ratio

Color map ■ 0% → 80% ■ 80% → 90% ■ 90% → 95% ■ 95% → 100% ■ 100%
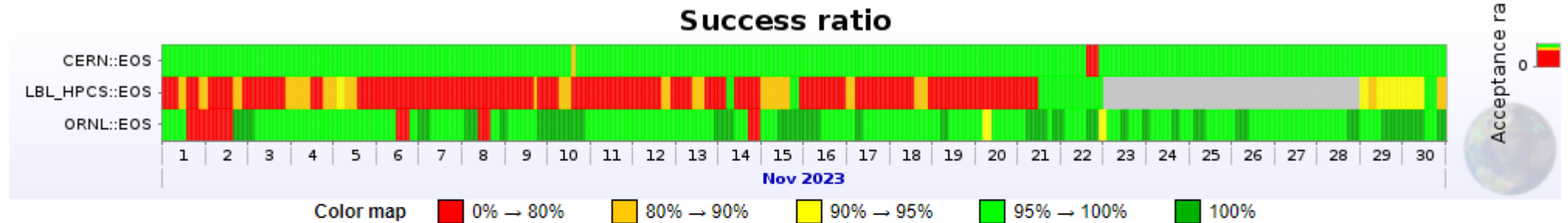
Averaged metrics for the selected interval

SE Name	Start	End	Success ratio	Corrupt ratio	Inaccessible ratio	Internal error ratio
CERN::EOS	01 Nov 2023 03:26	30 Nov 2023 21:18	98.80 %	0.04 %	1.12 %	0.03 %
LBL_HPCS::EOS	01 Nov 2023 03:19	30 Nov 2023 20:56	65.75 %	0.80 %	33.44 %	0.01 %
ORNL::EOS	01 Nov 2023 03:21	30 Nov 2023 20:51	96.44 %	0.27 %	3.29 %	0.00 %

Status from the File Crawler

Status codes extracted from the crawler

SE Name: ALICE::ORNL::EOS   **Interval:** Last 3 days

Status Type	Status Code	Status Count	Status Code Ratio	Download throughput
FILE_OK	S_FILE_CHECKSUM_MATCH	14514	98.98 %	53.03 Mb/s
	E_CATALOGUE_MD5_IS_BLANK	3	0.02 %	68.52 Mb/s
FILE_INACCESSIBLE	XROOTD_EXITED_WITH_CODE	135	0.92 %	
	XROOTD_TIMED_OUT	1	0.01 %	
FILE_CORRUPT	MD5_CHECKSUMS_DIFFER	10	0.07 %	
TOTAL		14663	100 %	

Status codes extracted from the crawler

SE Name: ALICE::LBL_HPCS::EOS   **Interval:** Last 3 days

Status Type	Status Code	Status Count	Status Code Ratio	Download throughput
FILE_OK	S_FILE_CHECKSUM_MATCH	18514	95.25 %	60.85 Mb/s
	E_CATALOGUE_MD5_IS_BLANK	21	0.11 %	68.69 Mb/s
FILE_INACCESSIBLE	XROOTD_EXITED_WITH_CODE	869	4.47 %	
FILE_CORRUPT	MD5_CHECKSUMS_DIFFER	34	0.17 %	
TOTAL		19438	100 %	

Site Status Dashboard

Last Month

Site name	VOBox and SE problems	Remarks
ORNL voboxslr.alice.ornl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address	
LBL_HPCS nat-88.eth2.vfw-50b-2275-s4-hpclhc.lbl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address CVMFS: old CVMFS version detected (2.10.0), please upgrade to 2.11.2. ALICE::LBL_HPCS::EOS: xrootd data server **ib-mgm00.aliceaf0** fails ADD test.	
LBL_AFP alice-afp.lbl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address CVMFS: old CVMFS version detected (2.11.0), please upgrade to 2.11.2.	Low long-term average job efficiency

This month

ORNL, LBL	
Site name	**VOBox and SE problems**
ORNL voboxslr.alice.ornl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address
LBL_HPCS alice-vobox.lbl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address ALICE::LBL_HPCS::AF_EOS: xrootd data server **ib-mgm00.aliceaf0** fails ADD test. ALICE::LBL_HPCS::EOS: xrootd data server **ib-mgm00.aliceaf0** fails ADD test.
LBL_AFP alice-afp.lbl.gov	Networking: low buffer size kernel parameters: tcp_wmem_max=4 MB only Networking: No IPv6 public address
3 sites	**6 issues**