

"Requirement" for each site for each VO

At the level of DC24, in Gb/s:

Site	Ingress CMS	Egress CMS	Ingress ATLAS	Egress ATLAS	Ingress LHCb	Egress LHCb	Ingress total	Egress total	Ingress total Gb/s	Egress total Gb/s	Total bandwidth Janet	Total bandwidth LHCONE	Total bandwidth LHOPN
T1 disk	1.64	3.55	7	9.5	3.96	2.4	12.6	15.45		100.8	123.6	400 Gb/s	200 Gb/s
T1 tape	2.51	2.51	7.45	2.7	3.96	2.4	13.92	7.61		111.36	60.88	400 Gb/s	200 Gb/s
RLLP	0.76	0.22	0.55	0.51			1.31	0.73		10.48	5.86	100 Gb/s	
Manchester			3.65	3.53			3.65	3.53		30.8	28.2	40 Gb/s	
Lancaster			3.5	3.23			3.5	3.23		28	25.8	100 Gb/s	
QMUL			3.38	3.03			3.38	3.03		27	24.2	100 Gb/s	
Glasgow			1.69	1.53			1.69	1.53		13.5	12.2	2x10 Gb/s	
IC	3.04	0.9					3.04	0.9		24.32	7.2		100 Gb/s
Brunel	0.48	0.09					0.48	0.09		3.84	0.72		
Bristol	0.41	0.06					0.41	0.06		3.28	0.48		20 Gb/s

Total ingress to T2 sites  
17.6525

ATLAS tape: Added T0 export but ATLAS uses tape heavily in ingress and egress with data carousel and we don't have calculations for those yet.

Site	Category	Primary VO	Storage	Notes
Glasgow	CORE	ATLAS	10PB	
Imperial	CORE	CMS	23PB	dcache
Lancaster	CORE	ATLAS	19PB	xrootd+cephfs
Manchester	CORE	ATLAS/LHCb	DUNE 12PB	xrootd+cephfs
QMUL	CORE	ATLAS	13PB	slom+lustre (RO xrootd+cephfs)
Bristol	CMS			xrootd+cephfs
Brunel	CMS			xrootd+cephfs
Durham				xrootd+cephfs
Birmingham		ALICE		EOS
Oxford	Storageless	ATLAS		XCache
RHUL	Storageless			XCache
Liverpool	Storageless	LHCb		dcache
Sheffield	Storageless			-
Sussex	Storageless			-

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		Monday	Tuesday	Wednesday	Thursday	Friday
	12/02/2024	13/02/2024	14/02/2024	15/02/2024	16/02/2024	17/02/2024	18/02/2024		19/02/2024	20/02/2024	21/02/2024	22/02/2024	23/02/2024
ATLAS	T0 → T1	T0 → T1	T0 → T1 + T1	T0 → T1 → T1	T0 → T1 → T1	T0 → T1 → T1	T0 → T1 → T1	ATLAS	T0 → T1 → T1 → T2 → T2 → T0	T0 → T1 → T1 → T2 → T2 → T0	T0 → T1 → T1 → T2 → T2 → T0	T0 → T1 → T1 → T2 → T2 → T0	T0 → T1 → T1 → T2 → T2 → T0

SOURCE	DEST	Rate requested (Mb/s)	Rate in GB/s for info	Comment					
Monday 9th December									
ATLAS									
				0					
				0					
				0					
				0					
				0					
CMS									
T1_UK_RAL_Disk	T2_UK_London_IC	24341		3.042625					
T1_UK_RAL_Disk	T2_UK_London_Brunel	3842		0.48025					
T1_UK_RAL_Disk	T2_UK_SGrid_Bristol	2367		0.295875					
T1_UK_RAL_Disk	T2_UK_SGrid_RALPP	6067		0.758375	Note this is a relatively local transfer - if it works from RAL then switch source to IC				
Tuesday 10th December									
ATLAS									
CMS									
T2_CH_CERN	T2_UK_London_IC	24341							
T2_CH_CERN	T2_UK_London_Brunel	3842							
T2_CH_CERN	T2_UK_SGrid_Bristol	2367							
T2_CH_CERN	T2_UK_SGrid_RALPP	6067							
Wednesday 11th December									
ATLAS									
CMS - Reading from T2s									
T2_UK_London_IC	T1_UK_RAL_Disk	7210							
T2_UK_London_Brunel	T1_UK_RAL_Disk	744							
T2_UK_SGrid_Bristol	T1_UK_RAL_Disk	458							
T2_UK_SGrid_RALPP	T2_UK_London_IC	1774							

DC24 rates							
ingress	QMUL	RALPP	LANCS	MAN	GLA	RAL	Total
QMUL		1.13	5.63	2.25	2.25	11.27	27.04
RALPP	0.92		0.92	0.37	0.37	1.83	4.4
LANCS	5.83	1.17		2.33	2.33	11.67	28
MAN	6.42	1.28	6.42		2.57	12.83	30.8
GLA	2.82	0.56	2.82	1.13		5.63	13.52
RAL	11.67	2.33	11.67	4.67	4.67		56
Total	27.65	6.66	27.45	10.75	12.19	43.23	159.76
egress	QMUL	RALPP	LANCS	MAN	GLA	RAL	Total
QMUL		1.01	5.05	2.02	2.02	10.10	24.24
RALPP	0.85		0.85	0.34	0.34	1.70	4.08
LANCS	5.38	1.08		2.15	2.15	10.77	25.84
MAN	5.88	1.18	5.88		2.35	11.77	28.24
GLA	2.55	0.51	2.55	1.02		5.10	12.24
RAL	15.83	3.17	15.83	6.33	6.33		76
Total	30.50	6.94	30.17	11.87	13.20	39.43	170.64
Bandwidth	Absolute	Percentage					
QMUL	100	0.21					
RALPP	20	0.04					
LANCS	100	0.21					
MAN	40	0.08					
GLA	20	0.04					
RAL	200	0.42					
	480						
Lancs and QMUL at 100 Gb/s							
ingress	QMUL	RALPP	LANCS	MAN	GLA	RAL	Total
QMUL		4.17	20.83	8.33	8.33	41.67	100
RALPP	0.92		0.92	0.37	0.37	1.83	4.4
LANCS	20.83	4.17		8.33	8.33	41.67	100
MAN	6.42	1.28	6.42		2.57	12.83	30.8
GLA	2.82	0.56	2.82	1.13		5.63	13.52
RAL	11.67	2.33	11.67	4.67	4.67		56
Total	42.65	12.70	42.65	22.83	24.27	103.63	304.72
egress	QMUL	RALPP	LANCS	MAN	GLA	RAL	Total
QMUL		4.17	20.83	8.33	8.33	41.67	100
RALPP	0.85		0.85	0.34	0.34	1.70	4.08
LANCS	20.83	4.17		8.33	8.33	41.67	100
MAN	5.88	1.18	5.88		2.35	11.77	28.24
GLA	2.55	0.51	2.55	1.02		5.10	12.24
RAL	15.83	3.17	15.83	6.33	6.33		76
Total	45.95	13.19	45.95	24.36	25.69	101.90	320.56
Bandwidth	Absolute	Percentage					
QMUL	100	0.21					
RALPP	20	0.04					
LANCS	100	0.21					
MAN	40	0.08					
GLA	20	0.04					
RAL	200	0.42					
	480						