

Network Monitoring via Sonar Tests

Status and Plans

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- **Site Status Board (SSB):**

<http://dashb-atlas-ssb.cern.ch/dashboard/request.py/siteviewhome>

- **Sonar twiki:**

<https://twiki.cern.ch/twiki/bin/viewauth/AtlasComputing/DDMSonarTests>

- **Brief description of DDM Sonar:**

<http://iopscience.iop.org/1742-6596/396/3/032019>

- **Network monitoring directly from File Transfer Service (FTS):**

<http://egg.bu.edu/atlas/studies%7Btype:>

egg.Hatch%7D/fts-wan-study-2-for-adc/plot_latest/



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Site Name	SrcSite	SrcCloud	SrcTier	DestSite	DestCloud	DestTier	Prto	DDM Sonar						Fax rate
								AvgBRS (MB/s)	EvS	AvgBRM (MB/s)	EvM	AvgBRC (MB/s)	EvL	
AGLT2_m_AGLT2	ITA	ITA	ITA	ITA	ITA	ITA	ITA	0.04±0.06	10	4.48±0.43	10	0.00±0.00	0	0
AGLT2_m_AUSTRALIA-ATLAS	AGLT2	US	T2D	Australia-ATLAS	CA	T2	2	0.51±0.07	10	4.23±0.60	10	16.59±17.27	10	0
AGLT2_m_BELUNG-LCG2	AGLT2	US	T2D	BELUNG-LCG2	PR	T2D	5	2.32±0.84	10	20.20±4.34	10	69.29±17.76	10	0
AGLT2_m_BNL-OSG2	AGLT2	US	T2D	BNL-ATLAS	US	T1	8	0.03±0.63	10	15.17±3.67	10	36.84±17.52	10	0
AGLT2_m_CA-MCGILL-CLUMEG-T2	AGLT2	US	T2D	CA-MCGILL-CLUMEG-T2	CA	T2D	5	0.71±0.74	10	16.33±3.11	10	70.16±23.80	10	0
AGLT2_m_CA-SCINET-T2	AGLT2	US	T2D	CA-SCINET-T2	CA	T2D	5	0.46±0.39	10	11.33±4.28	10	36.77±7.84	10	0
AGLT2_m_CA-VICTORIA-WESTGRID-T2	AGLT2	US	T2D	CA-VICTORIA-WESTGRID-T2	CA	T2D	5	0.79±0.14	10	6.74±0.48	5	16.22±0.55	5	0
AGLT2_m_CERN-PROD	AGLT2	US	T2D	CERN-PROD	CERN	T0	7	0.27±0.36	10	3.81±1.04	10	15.48±17.07	10	0
AGLT2_m_CSCS-LCG2	AGLT2	US	T2D	CSCS-LCG2	DE	T2D	5	0.79±0.10	10	5.13±1.51	5	8.24±0.89	10	0
AGLT2_m_CYPRONET-LCG2	AGLT2	US	T2D	CYPRONET-LCG2	DE	T2	5	1.05±0.35	5	0.00±0.00	0	20.75±10.51	5	0
AGLT2_m_DESY-HH	AGLT2	US	T2D	DESY-HH	DE	T2D	5	0.93±0.28	10	1.65±0.31	10	0.00±0.00	0	0
AGLT2_m_DESY-ZN	AGLT2	US	T2D	DESY-ZN	DE	T2D	5	0.16±0.11	10	3.36±0.78	5	32.14±3.44	5	0
AGLT2_m_EELA-UTFSM	AGLT2	US	T2D	EELA-UTFSM	ES	T2	2	0.75±0.16	5	0.52±0.73	5	0.67±1.90	10	0
AGLT2_m_FMPH-UNIBA	AGLT2	US	T2D	unknown	unknown	unknown	2	1.42±0.34	5	6.43±0.93	5	33.08±14.32	5	0
AGLT2_m_FZK-LCG2	AGLT2	US	T2D	FZK-LCG2	DE	T1	7	0.41±0.18	5	6.16±1.50	10	14.81±12.46	10	0
AGLT2_m_GEOGRID	AGLT2	US	T2D	GeoGrid	DE	T2D	5	0.75±0.12	5	4.08±0.53	5	21.08±8.26	5	0
AGLT2_m_GRP-IPFU	AGLT2	US	T2D	GRP-IPFU	FR	T2D	5	0.43±0.38	10	2.46±0.12	5	4.21±0.55	10	0
AGLT2_m_GRP-LAL	AGLT2	US	T2D	GRP-LAL	FR	T2D	5	0.84±0.10	5	0.57±0.06	5			0
AGLT2_m_GRP-LPHE	AGLT2	US	T2D	GRP-LPHE	FR	T2D	5							0
AGLT2_m_HEPHY-LIBK	AGLT2	US	T2D	HEPHY-LIBK	DE	T2	5							0
AGLT2_m_HU-ATLAS-TIER0	ITA	ITA	ITA	ITA	ITA	ITA	ITA							0

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<http://dashb-atlas-ssb.cern.ch/dashboard/request.py/siteview#currentView=Network+measurements&highlight=false>

Sonar data stored and published on SSB are used for:

- to monitor directly actual point-to-point connectivity
- T2D monitoring and concept of T2D candidates
- triggering out sites with very bad connectivity

Complications:

- Sonar tests are not being performed for all T2/T3 sites (risk of overloading some links)
- for large files:
 - overhead is not fixed
 - not worth to send often
- for small files:
 - $A \rightarrow B$ differs from $A \leftarrow B$
 - rates are less stable

Solutions:

- using one type of files with fixed size
- FTS3 provides overhead info and real transfer rates **new!**

From latest discussion:

T2D was a useful concept when we had cloud boundaries. We are "breaking the cloud boundaries" now, since almost all of T2s are T2D.

- Why did we need T2D up to now:
 - direct transfers between T2Ds
 - high analysis availability (A), i.e they can get more data
 - funding, motivation for T2 to be better
- Motivation for classifying T2s in the future:
 - funding
 - warn T2s with critical connectivity
 - prepare a network mesh for Rucio to allow direct transfers

Plans for near future

- fix file size for sonar tests and proceed the tests for all sites
- notify periodically a (short) list of "bad" sites (to help them in improving/fixing their issues if possible)
- detailed comparison of sonar tests with FTS3 studies (Saul)
- review the T2D concept itself: is it really needed?

Thanks for attention and patience. Results coming soon!

back-up

T2Ds-technical details

- Current building criteria:
 - sonar tests (large files (>1GB), medium files (100MB-1GB))
 - time period (5 weeks)
 - checking connectivity to 11 T1 sites ('BNL-ATLAS', 'FZK-LCG2', 'IN2P3-CC', 'INFN-T1', 'NDGF-T1', 'NIKHEF-ELPROD', 'RAL-LCG2', 'SARA-MATRIX', 'TRIUMF-LCG2', 'Taiwan-LCG2', 'pic')
- Criteria are optimized to get most stable list of T2Ds.
(ONGOING, for more details follow ADC weekly)