

DDM Monitoring

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Atlas Site Jamboree

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- > General Remarks
- > Explaining the monitoring web page
- > Using the monitoring web page
- > Further views
- > Summary
- > Further information
- > Special error handling



General Remarks

- > DDM Monitoring is quite easy 😊
 - One main web page to view them all
- > Still many options to play with/ many links to click on
 - ...giving you (nearly) all the information you need
 - ...but sometimes not easy to find
 - ...and understanding the messages might get difficult
- > I will try to show the basics
- > But nothing is as good as experiencing it yourself
- > Training shifts are there for asking questions and to gain this experience



DDM Dashboard - Overview



> Colored Boxes show transfer details between clouds/sites/space tokens

> Summary shows which interval, source and destination, activity is monitored

> Sensible values can be changed

> Adding more details to boxes

<http://dashb-atlas-ddm.cern.ch/ddm2/>



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> Main part: boxes showing the transfer details

> First number is efficiency (color)

> Second number is transfer rate: high means many transfers

> Successes/Errors can be switched on/off, giving a feeling how bad it is

> Top Row/Left Column show aggregated numbers

> Empty boxes: no transfers tried in the interval

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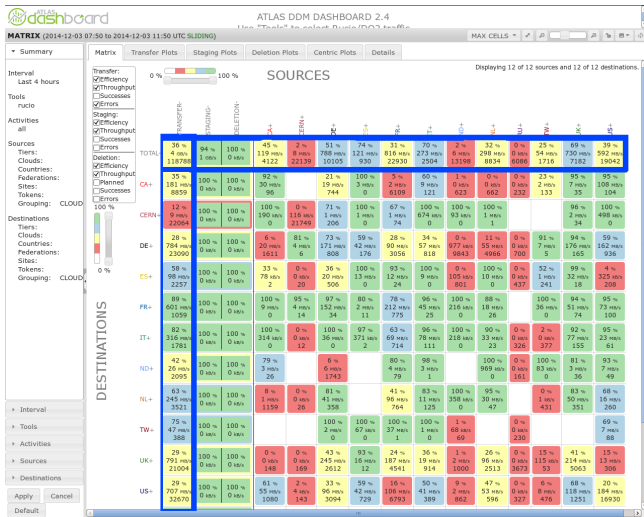
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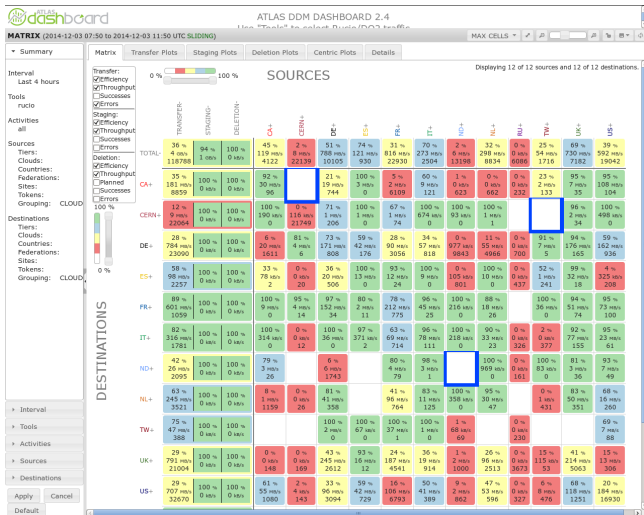


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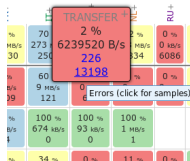


First steps

- > All numbers are aggregated: either averages or sums
- > Shifter should look on main problems first:
 - No successes is bad ...
 - > ...but millions of errors might be worse
 - A site failing is bad
 - > ...but a Cloud is worse
 - A Tier2 failing is bad
 - > ...but a Tier1 is worse
- > When shifter spots a problem, first check
 - ...is the problem reported to GGUS
 - ...is the site in downtime
 - ...is the site already blacklisted
- > Now lets start clicking 😊
 - First approach: Error messages
 - Second approach: Sites



Looking into the problems - Error messages



- > Clicking on any box enlarges it and gives you two links
- > Link for successes and errors
- > ... Errors are more interesting for us
- > but in difficult cases it might be interesting to look at succeeding transfers to have some comparison




TRANSFER ERROR SAMPLES: "ND" --> *

Code	Sample	Total /13004
#229	SOURCE failed to get source file size: Error reported from srm_ifce : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory /pnfs.ndgf.org/data/atlas/disk/atlasdatadisk/rucio/panda/1a/a6/log.04269096_000821.job.log.tgz.panda.um	6943
#236	SOURCE Failed to get source file size: srm-ifce err: Communication error on send, err: [SE][Ls][] httpg://srm.ndgf.org:8443/srm/managerv2: CGSI-gSOAP running on lcgfts08.gridpp.rl.ac.uk reports could not open connection to srm.ndgf.org	4277
#238	SOURCE Failed to get source file size: Error reported from srm_ifce : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory /pnfs.ndgf.org/data/atlas/disk/atlasdatadisk/rucio/panda/01/2b/DAOD_HIGG2D3.04275068_000514.pool.root.1.panda.um	1059
#237	SOURCE Failed to get source file size: Error reported from srm_ifce : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory /pnfs.ndof.ora/data/atlas/disk/atlasdatadisk/rucio/panda/0a/d0/DAOD_EXOT10.04281442_000452.pool.root.1.panda.um	327

- > Errors grouped by message, ordered by number
- > First notice Source or Destination problem
 - Look into source sites or destination sites
- > ... more difficult if message is neither of both
- > Error message already giving some more information
- > clicking on the number will give your details of all transfers failing with this message



Error messages

	2014-12-03 13:09:57	mc12_8TeV:HITS.04492241_000119.pool.root.1	#94	TRANSFER_FAILED
	2014-12-03 13:09:57	mc12_8TeV:NTUP_SUSY.01474331_000078.root.1	#124	TRANSFER_FAILED
TOOL ID	rucio-conveyor			
SRC SITE	GRIF-LAL_PHYS-SUSY			
SRC URL	srm://grid05.lal.in2p3.fr:8446/srm/managerv2?SFN=/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/1e/83/NTUP_SUSY.01474331_000078.root.1			
DST SITE	DESY-ZN_DATADISK			
DST URL	srm://lcg-se0.ihf.de:8443/srm/managerv2?SFN=/pnfs/ihf.de/data/atlas/atlasdatadisk/rucio/mc12_8TeV/1e/83/NTUP_SUSY.01474331_000078.root.1			
TRANSFER ID	ac192576-7aed-11e4-a974-02163e00f02a			
TRANSFER ENDPOINT	fts3.cern.ch			
ERROR MSG	SOURCE failed to get source file size: Error reported from srm_ifce : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory			
ACTIVITY	n/a			
FILE SIZE	1039487987 bytes			
DURATION	0 s			
	2014-12-03 13:09:57	mc12_8TeV:NTUP_SUSY.01474331_000085.root.1	#124	TRANSFER_FAILED

- > List of errors in detailed view
- > Clicking on "green plus" gives you all details DDM has
 - This should be copied into the GGUS Ticket
 - More information might be available in FTS Logs (File transfer service ⇒ doing each transfer)
- > Clicking on the file name gives transfer history with retries



Transfer history

Show entries * --> *

	Event Time	Scope:Name	Code	State
	2014-12-03 13:18:22	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 13:09:59	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 13:09:40	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 12:53:36	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 12:36:02	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 12:35:46	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 12:18:14	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 11:54:58	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 11:50:33	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 11:33:49	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 11:29:29	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 11:08:06	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:50:39	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:50:23	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:43:20	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:43:04	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:39:40	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:32:08	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:31:52	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 10:20:45	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 09:56:52	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED
	2014-12-03 09:35:03	mc12_8TeV:NTUP_SUSY.01474331_000040.root.1	#124	TRANSFER_FAILED

- > When transfer succeeded, top entry is green
- > Amount of tries easily visible
- > Extending the interval gives you the first appearance of the error



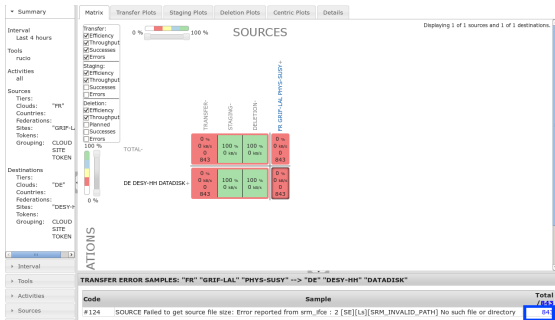
Looking into the problems - Site problems

	TRANSFER-	STAGING-	DELETION-	DE+	FR+	IT+	ND+	NL+	UK+	US+
TOTAL-	2 % 1 MB/s 32 1369	100 % 0 kB/s 0 kB/s	100 % 0 kB/s 0 kB/s	86 % 1 MB/s 32 5	0 % 0 kB/s 0 928	0 % 0 kB/s 0 21	0 % 0 kB/s 0 53	0 % 0 kB/s 0 14	0 % 0 kB/s 0 192	0 % 0 kB/s 0 156
DE DESY-HH DATADISK+	0 % 0 kB/s 0 1013	100 % 0 kB/s 0 kB/s	100 % 0 kB/s 0 kB/s		0 % 0 kB/s 0 843				0 % 0 kB/s 0 45	0 % 0 kB/s 0 125
DE DESY-HH LOCALGROUPDISK+	97 % 1 MB/s 32 1	100 % 0 kB/s 0 kB/s	100 % 0 kB/s 0 kB/s	97 % 1 MB/s 32 1						
DE DESY-HH PRODDISK+	0 % 0 kB/s 0 337	100 % 0 kB/s 0 kB/s	100 % 0 kB/s 0 kB/s	0 % 0 kB/s 0 4	0 % 0 kB/s 0 85	0 % 0 kB/s 0 21	0 % 0 kB/s 0 53	0 % 0 kB/s 0 14	0 % 0 kB/s 0 147	0 % 0 kB/s 0 13
DE DESY-HH SCRATCHDISK+	0 % 0 kB/s 0 18	100 % 0 kB/s 0 kB/s	100 % 0 kB/s 0 kB/s							0 % 0 kB/s 0 18

- Checking the cloud by clicking on the "plus" sign
- In the summary as Destinations is now "DE"
- Checking a single site
- ... we see the space tokens as destinations, still no idea from where the problems come
- Getting the source more detailed
- Clicking on the box, opening the error frame
- OK, it's a source problem, all failures due to the same problem : "No such file or directory"
- Clicking on the error number gives the detail rider, the error message is important and quite easy in this case
- Now we see the `SURL` of the file and can check it with `dq2-get` commands
- If checking later on, do not forget that this view is "interval locked"



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Looking into the problems - Site problems

ATLAS DDM DASHBOARD 2.4

Summary

Interval: 2014-12-04 07:20 UTC to 2014-12-04 11:20 UTC

Matrix: Transfer Plots | Staging Plots | Deletion Plots | Centric Plots | Details

Show 50 entries

Event Time	Scope:Name	Code	State
2014-12-04 11:11:26	mc12_8TeV:NTUP_SUSY.01474328_000139.root.1	#124	TRANSFER_FAILED

Tools: rucio-conveyor

Activities: GRIF-LAL_PHYS-SUSY

Sources: SRC URL: srm://grid05.lal.in2p3.fr:8446/srm/managerv2?SFN=/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/01a1/NTUP_SUSY.01474328_000139.root.1

Destinations: DST SITE: DESY-HH_DATADISK

ERROR MSG: SOURCE failed to get source file size: Error reported from src_iface : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory

Showing 1 to 50 of 843 entries

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Looking into the problems - Site problems

ATLAS DDM DASHBOARD 2.4
 FILE DETAILS (2014-12-04 07:20 to 2014-12-04 11:20 UTC) [locked] STATE / CODE

Summary Matrix Transfer Plots Staging Plots Deletion Plots Centric Plots Details

Interval From: 2014-12-04 07:20 UTC To: 2014-12-04 11:20 UTC

Show 50 entries "FR" "GRIF-LAL" "PHYS-SUSY" --> "DE" "DESY-HH" "DATADISK"

Event Time	Scope:Name	Code	State
2014-12-04 11:11:26	mc12_8TeV:NTUP_SUSY.01474328_000139.root.1	#124	TRANSFER_FAILED
TOOL ID: rucio-conveyor SRC SITE: CSITE-LAL_PHYS-SUSY SRC URL: srm://grid05.lal.in2p3.fr:8446/srm/manager?2?SFN=/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/01a1/NTUP_SUSY.01474328_000139.root.1 DST SITE: DESY-HH_DATADISK DST URL: srm://dcache-se-atlas.desy.de:8443/srm/manager?2?SFN=/pnfs/desy.de/atlas/dq2/atlasdatadisk/rucio/mc12_8TeV/01a1/NTUP_SUSY.01474328_000139.root.1 TRANSFER ID: fsa6c7a6-7ba2-11e4-b216-02163608dbdcb TRANSFER ENDPOINT: fts3.cern.ch ERROR MSG: SOURCE Failed to get source file size: Error reported from srm_iface : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory ACTIVITY: n/a FILE SIZE: 1019461785 bytes DURATION: 1 s			
2014-12-04 11:11:22	mc12_8TeV:NTUP_SUSY.01474328_000116.root.1	#124	TRANSFER_FAILED
2014-12-04 11:11:22	mc12_8TeV:NTUP_SUSY.01474328_000043.root.1	#124	TRANSFER_FAILED
2014-12-04 11:11:22	mc12_8TeV:NTUP_SUSY.01474328_000110.root.1	#124	TRANSFER_FAILED
2014-12-04 11:11:21	mc12_8TeV:NTUP_SUSY.01474328_000104.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:44	mc12_8TeV:NTUP_SUSY.01474328_000115.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:43	mc12_8TeV:NTUP_SUSY.01474328_000107.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:42	mc12_8TeV:NTUP_SUSY.01474328_000027.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:42	mc12_8TeV:NTUP_SUSY.01474328_000134.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:42	mc12_8TeV:NTUP_SUSY.01474328_000024.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:42	mc12_8TeV:NTUP_SUSY.01474328_000011.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:42	mc12_8TeV:NTUP_SUSY.01474328_000012.root.1	#124	TRANSFER_FAILED
2014-12-04 11:05:41	mc12_8TeV:NTUP_SUSY.01474328_000046.root.1	#124	TRANSFER_FAILED

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Looking into the problems - Site problems

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<p>TOOL ID: rucio-conveyor</p> <p>SRC SITE: GRIF-LAL_PHYS-SUSY</p> <p>SRC URL: srm://grid05.lal.in2p3.fr:8446/srm/managerv2?SFN=/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/014/NTUP_SUSY.01474328_000139.root.1</p> <p>DST SITE: DESY-HH_DATADISK</p> <p>DST URL: srm://dcache-se-atlas.desy.de:8443/srm/managerv2?SFN=/pnfs/desy.de/atlas/dq2/atlasdatadisk/rucio/mc12_8TeV/014/NTUP_SUSY.01474328_000139.root.1</p> <p>TRANSFER ID: fsa6c7a6-7ba2-11e4-b216-02163608db</p> <p>TRANSFER ENDPOINT: fts3.cern.ch</p> <p>ERROR MSG: SOURCE Failed to get source file size: Error reported from src_mfoc : 2 [SE][Ls][SRM_INVALID_PATH] No such file or directory</p> <p>ACTIVITY: n/a</p> <p>FILE SIZE: 1019461785 bytes</p> <p>DURATION: 1 s</p>			
2014-12-04 11:11:22	mc12_8TeV:NTUP_SUSY.01474328_000116.root.1	#124	TRANSFER_FAILED
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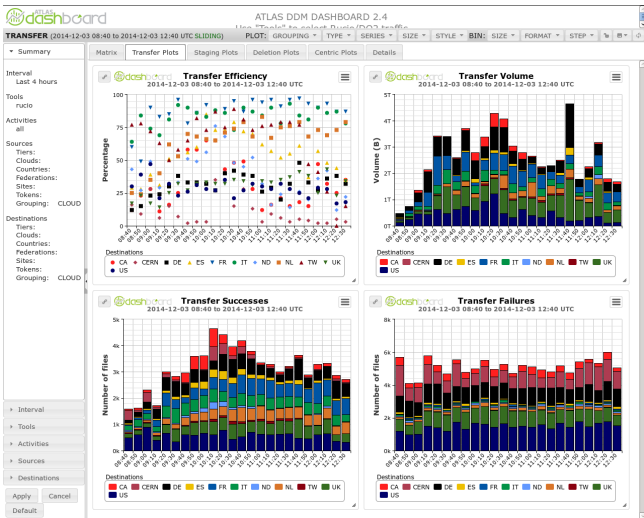
Verifying the problem

- > Sometimes it is not clear, if the problem is really a source problem
- > We try to access the storage elements directly
- > You can also look into a higher directory to see, if the Storage Element is available at all

```
lcg-ls "srm://grid05.lal.in2p3.fr:8446/srm/managerv2?SFN=\  
/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/01/a1/NTUP_SUSY.01474328._000139.root.1"  
/dpm/lal.in2p3.fr/home/atlas/atlasgroupdisk/phys-susy/rucio/mc12_8TeV/01/a1/NTUP_SUSY.01474328._000139.root.1:  
[SE][Ls][SRM_INVALID_PATH] No such file or directory
```



Other views



- > Plots about the Rates and failures per time
- > We can see how the error developed during time
 - One time burst or
 - Continuous failing
- > Increasing the interval gives us the start of the problem
- > ... and perhaps the end too
- > still: hast to be checked with blacklisting
- > We see also if there are many transfers ongoing
- > ... or perhaps central services have a problem when all stopped suddenly



Summary

Unfortunately it is not true that you only need one 😊

- > Deletion monitoring
 - > Centralized blacklisting
 - > Site Status Board
 - > And sometimes even Production monitoring
 - If jobs are failing due to `GET/PUT` errors
 - This helps when not sure which site has a problem
-
- > Only a basic view
 - > ... still most errors are found this way
 - > Biggest difficulty to identify the reason of the error
 - > Experience helps a lot
 - > ... and gaining some knowledge about the whole systems will help too
 - > Just get started with trainee shifts
 - > No question during shift is bad !
 - > Senior and Expert shifter will help



Procedures on special errors

No free space on site

- > Most cases are not a site problem when atlas is filling up all space
- > Check Free space monitoring
http://bourricot.cern.ch/dq2/accounting/global_view/30/
- > If there should be space, perhaps reporting at site is problematic
- > Jira ticket to DDM ops should be submitted

Staging errors

- > Staging is slow, sometimes transfer service times out
 - Especially due to mass bring online requests
- > That's why there should be several failed tries per file before reporting
- > If that happens GGUS ticket to site



Procedures on special errors

Centralized blacklisting

- > Space tokens/Sites are now blacklisted automatically
 - ... or sometimes by hand (and forgotten)
- > If time shifter check if the issue is still ongoing
- > ADCOS Expert Shifter can unblacklist sites

Deletion errors

- > Some site problems are first visible via a deletion backlog
- > <http://bourricot.cern.ch/dq2/deletion/#period=1>

