



Rucio quota management

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for the Rucio Team

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Quota in Rucio, a quick reminder

- Quota is accounted by rules set on datasets or containers for a RSE.
- The rule is responsible for making the transfers of the data to the RSE and prevents the deletion of the data, until the rule is removed.
- Thus the accounting is logical and not physical, as multiple users can have a rule for the same dataset.
- Rules can be created by:
 - The Rucio command line clients.
 - The Rucio python clients.
 - The Rucio http-REST interface.
 - or conveniently via [R2D2](#) in the Rucio WebUI.

Quota in Rucio, a quick reminder

- For each RSE an account can have:
 - 0 bytes quota → No rules can be created by the account on this RSE.
 - ∞ bytes quota → As many rules as possible (Until the RSE is full) can be created.
 - N bytes quota → Rules until the accumulated amount of N bytes can be created.
- If a rule is defined for an open dataset which is still being filled, quota is respected. Once the quota is exceeded the rule switches to STUCK state.

Quota in Rucio, a quick reminder

- DDM ops sets the quotas to an initial setting when a new account is created:
 - SCRATCHDISKS
 - All ATLAS users have 50% of the total storage of the SCRATCHDISK
 - LOCALGROUPDISKS
 - All users which are part of the countries VOMS group have 95% of the total storage of the LOCALGROUPDISK
 - USERDISKS
 - All ATLAS users have 50% of the total storage of the USERDISK
 - DATADISKS, DATATAPE
 - Only quota for special accounts
 - Special RSEs
 - Special quota settings

Issues/ideas to discuss

1. Quota management
2. Manual approval of rules (notifications)
3. Manual approval of rules (R2D2 dataset patterns)
4. Auto-Approval of rules
5. ?

1. Quota management

- The [RucioUI](#) allows convenient (bulk) settings for the quotas of an RSE.
- We want to encourage site-admins to setup this values to whatever they feel is best.

RSE

AUSTRALIA-ATLAS_LOCALGROUPDISK Select

Bulk Edit Reset All i

Search:

| Account | Quota | Used | Available | Files |
|-----------|--|-----------|-----------|--------|
| csuster | 63.07 TB (95%) | 1.02 TB | 62.05 TB | 4207 |
| dadmadmin | 888.18 PB (1369863%) | 50.7 kB | 888.18 PB | 3 |
| emcdonal | 63.07 TB (95%) | 16.09 GB | 63.06 TB | 2169 |
| end | 63.07 TB (95%) | 819.39 GB | 62.27 TB | 351179 |
| finelli | 63.07 TB (95%) | 16.91 TB | 46.17 TB | 13730 |
| fnuti | Reset 19.92 TB (29%) Delta: -43.16 TB | 151.86 GB | 62.93 TB | 12624 |
| lspiller | 63.07 TB (95%) | 4.56 TB | 58.51 TB | 1121 |
| mmilesi | 63.07 TB (95%) | 2.1 TB | 60.98 TB | 264283 |
| panda | 888.18 PB (1369863%) | 0 B | 888.18 PB | 0 |
| prados | 63.07 TB (95%) | 8.59 TB | 54.49 TB | 8391 |
| scrosby | 63.07 TB (95%) | 154.32 GB | 62.92 TB | 691 |
| tkubota | 63.07 TB (95%) | 0 B | 63.07 TB | 0 |

Account Quota Used Available Files

Showing 1 to 12 of 12 entries

Save Changes

2. Manual approval of rules (notification)

- If a user does not have quota on an RSE he can ask for manual approval of the replication rule.
 - `rucio add-rule ... --ask-approval`
 - or via R2D2
- The approvers who get the notification eMail are:
 - For localgroupdisks: The country-admins of the country.
 - The country-admins are all users who have a production role in the country group.
- For some countries this is a large amount of users.
 - e.g. /atlas/usatlas has 32 users with a production role.
- This creates a lot of unwanted notification eMails.

- **Proposal:**
 - It is possible (by ddmops?) to set a list of approvers for each RSE.
 - If a rule is requested (on manual approval) for this RSE, only the approvers are notified.
 - If the approvers list is empty, the country-admins are notified.
 - This should allow a fine-grained setting for approvers per RSE.
 - Timeline: February/March 2016.

3. Manual approval of rules (R2D2 patterns)

- When an R2D2 request is made for a pattern of datasets, a rule is created for each of these datasets.
- If manual-approval mode is used, this creates a notification for each single rule and each single rule needs to be approved manually.
- **Proposal:**
 - If a pattern request like this is made and manual approval is asked, the datasets are put into an “R2D2 request” container.
 - The rule is then requested for this container.
 - Thus only 1 rule and therefore only 1 notification is sent.
 - Timeline: February 2016.

4. Auto approval of rules

- We have been asked to offer an auto-approval of rules smaller than N Gigabytes (like in DatRI)
- For now we are not planning to do this for several reasons:
 - (Almost) all of the use cases should be covered within the quota system.
 - Quotas can be easily modified (See previous slide) to accommodate power-users and the policies of individual sites.
 - If a user does not have quota, he can still ask for manual approval of a rule.
 - These should be exceptional cases. If a user asks for approval multiple times on an RSE he should get quota on the RSE.
 - Rules work retroactively (a rule on a dataset which is open will be applied on files which are added later on as well).
 - It is more complicated to protect an auto-approval mechanism against abuse in this case.
 - e.g. rule gets auto-approved when <N Gb. Dataset gets filled later on and floods the Storage.

5.?

- Discussion :-)
- Input also welcome on:
 - [Rucio JIRA](#)
 - rucio-dev@cern.ch