Uniform Distributed Storage View for the UNICORE Rich Client

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Plugin to the graphical client URC has been implemented in the establishment of the master's thesis.

Requirements for the plugin

• Creation of Uniform Distributed Storage View
• Implementation of currently available functionality
• Providing information needed to identify the preferred storages
• Monitoring status of the Internet connection between storages
Standard View

- The ability to sort by name or by last modification date
- The ability to filter other people's files
- What to do if files have identical paths in their storages?
Uniform View

- Storages are invisible
- If many folders have the same path, only one is displayed, and their contents are merged
- If many files have the same path then suffix is added with name of storage
- If you have to random storage, then are used user preferences
Storages Priority

- The priority of the storage, values between 0 - 100
- 0 value means that the storage is not used
- Storages randomized from a uniform distribution
Selecting files to run job
Measurement the speed of transfer

When the network connection is not loaded, it is possible to start thread in the background, which will measure the speed of transfer between the grid nodes.
Measurement the speed of transfer - algorithm

1. Creating a byte array of given size
2. Transmission of the file from localhost to Storage1 and backward
3. Transmission from Storage1 to other Grid nodes and backward
   (for transmission Storage – Storage there isn’t any good timing)
4. Removing test file from Storage1
5. Repeat points 2-4 for all Storages
Preferences of the speed measurement

- Memory size for the obtained measurements
- Size of the transferred file
- Frequency of starting measuring thread
- Coloring preferences for results
Presented plugin vs. dSMS

**URC plugin**
- Requires one-time installation
- Allows you to set preferences, how to choose storage
- The additional possibility of measuring the transfer rate

**dSMS**
- Client-side installation is not required
- Round robin algorithm used
- None of transfer measure functionality
How the plugin can be extended?

• Move frequently used files for faster / preferred Storages

• Proposing a file transfer using many intermediate nodes where it can reduce the time of the transfer
Thank you for your attention.