

# Possible use of https and dCache

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# BNL's dCache

- BNL T1 production storage
- dCache ver 2.6.x
- Features:
  - Chimera Namespace
  - NFS
    - 3
    - 4.1 + pNFS
  - SRM
  - GRIDFTP
  - xRootd
  - Https/webdav
    - Various clients
      - Curl, wget, aria2c, BitKinex, Web Browswer, Firefox plugins downthemall, etc..
    - Davfs mount
  - Tape backup/retrieval
  - Quota system



# Quota

- dCache can enforces quota per spacetoken
- Quota is set individually.
- Quota is enforced by the system.
  - No need to develop and monitor.
- SRM client is not required to write to a space token area.
- For an examples,
  - Base path /pnfs/usatlas.bnl.gov/users/
  - Each users could get own space with own quota

# Https/webdav

- Large number of available clients
  - Web Browser
    - Explore, Firefox, Chrome, etc...
    - Can use to download files
  - Firefox plugins
    - Download managers
      - Downthemall
        - Support for metalink
  - Metalink
    - See the next.
  - Other clients
    - Curl/wget
    - Aria2c
      - Support for metalinks
      - Support for multiple sources
      - Support segmented download
    - Davfs mount (under linux)

# Metalink

- XML formatted file that describes one or more files for download
- Features:
  - Checksum
  - Size
  - Multiple sources
  - Preference of sources
- Used many places
  - eg. Downloading Linux distribution images.

# Example of metalink

```
<?xml version="1.0" encoding="UTF-8"?>
<metalink xmlns="http://www.metalinker.org/" version="3.0">
  <files>
    <file name="user.mshamim.0210163850.364876.lib._012716.lib.tgz">
      <resources>
        <url type="https" location="us"
preference="1">https://dcdoor10.usatlas.bnl.gov:443/pnfs/usatlas.bnl.gov/atlasuserdis
k/rucio/user/mshamim/dd/1b/user.mshamim.0210163850.364876.lib._012716.lib.tgz</
url>
      </resources>
    </file>
    <file name="user.mshamim.0210163850.364876.lib._012716.log.tgz">
      <resources>
        <url type="https" location="us"
preference="1">https://dcdoor10.usatlas.bnl.gov:443/pnfs/usatlas.bnl.gov/atlasuserdis
k/rucio/user/mshamim/d6/ff/user.mshamim.0210163850.364876.lib._012716.log.tgz</
url>
      </resources>
    </file>
  </files>
</metalink>
```

# Use Metalink to download your ATLASDATA with Firefox + Downthemall plugin

 **User Dataset List at BNL-OSG2\_USERDISK**

Search By DSN (Won't work with MS Explorer. Use Firefox or Safari, etc..)

datasetname	BNL-OSG2_USERDISK
<a href="#">user.mshamim.0210163850.364876.lib. 012716</a>	<a href="#">2/0/2</a>
<a href="#">user.mshamim.0210194542.559990.lib. 012718</a>	<a href="#">2/0/2</a>
<a href="#">user.mshamim.0211000630.631811.lib. 012722</a> <a href="#">DUID: 8398fabd-9598-4567-96bd-da7ffeb1fb9a</a> <a href="#">Total # of files: 2</a> <a href="#">Total size(bytes): 27450</a>	<a href="#">2/0/2</a>
<a href="#">user.mshamim.PRL_muonevt.140210204542</a>	<a href="#">2/0/2</a>
<a href="#">user.mshamim.PRL_muonevtfinal.140211010630</a>	<a href="#">4/0/4</a>
<a href="#">user.mshamim.VP1Data11ESD_test1.140210173850</a>	<a href="#">3/0/3</a>



# List of existing files in a dataset at BNL-OSG2\_U

Search By DSN (Won't work with MS Explorer. Use Firefox or Safari, etc..)

Find

DSN: [user.mshamim.0210163850.364876.lib\\_012716.metalink](#)

LFN	guid	
user.mshamim.0210163850.364876.lib._012716.lib.tgz	674d5d14-c4e4-4f88-81ce-0241d2fa3e59	srm://dcsrm.usatlas.bnl.gov/pnfs/usatlas.bnl.gov/atlasuser.mshamim.0210163850.364876.lib._012716.lib.tgz
user.mshamim.0210163850.364876.lib._012716.log.tgz	a5f157d2-a323-43f2-a657-0e6faa1a088f	srm://dcsrm.usatlas.bnl.gov/pnfs/usatlas.bnl.gov/atlasuser.mshamim.0210163850.364876.lib._012716.log.tgz

One click  
downloads  
of all files  
in the dataset

Opening user.mshamim.0210163850.364876.lib.\_012716....

You have chosen to open:

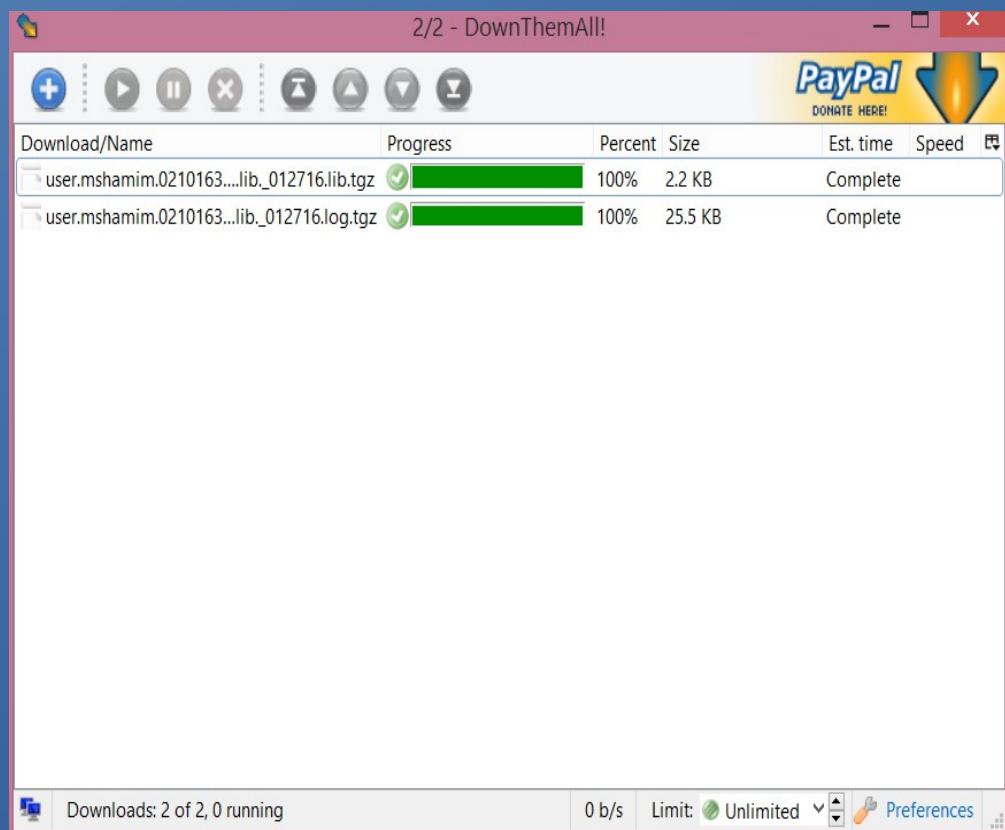
[user.mshamim.0210163850.364876.lib.\\_012716.metalink](#)  
which is: metalink File (711 bytes)  
from: <http://www.usatlas.bnl.gov>

What should Firefox do with this file?

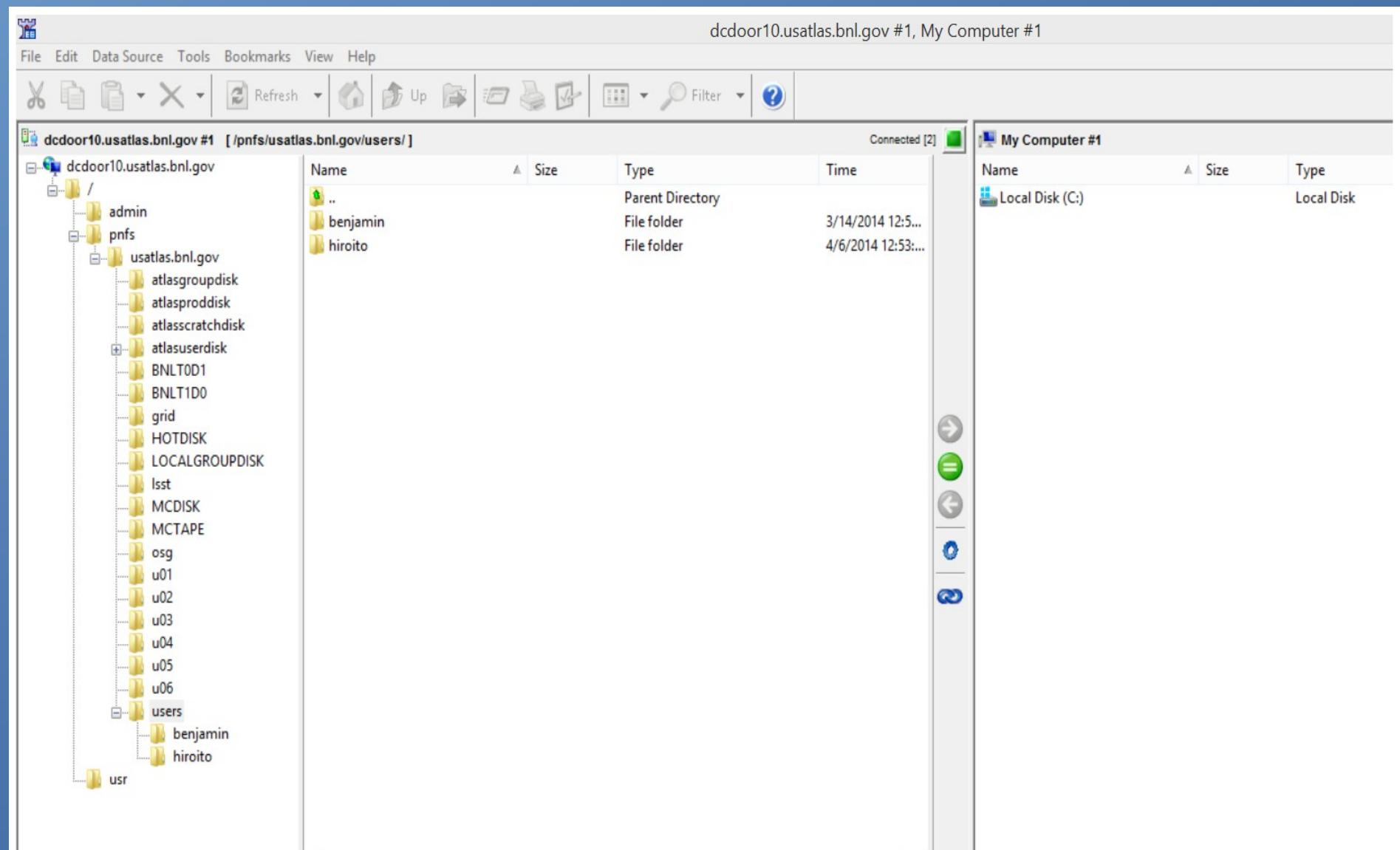
- Open with
- DownThemAll!
- dTa OneClick! C:\Users\hiro\Downloads\
- Save File
- Do this automatically for files like this from now on.

OK

Cancel



# BitKinex



# More advance things

- Automatic download via FAX/http to own scratch area
  - Local dataset subscription to own area
  - Use official Global namespace
  - Run xRootd/Mini-FAX site
- NX clients to remote site like local
- Run Proof using own files in scratch
- Etc...