

MINOS - Support #18789

PNFS transfer speed

01/24/2018 07:56 PM - Arthur Kreymer

Status:	New	Start date:	01/24/2018
Priority:	Immediate	Due date:	01/26/2018
Assignee:	Arthur Kreymer	% Done:	20%
Category:		Estimated time:	2.00 hours
Target version:			
Description			
Investigate and address slow PNFS transfer speeds reported recently.			

History

#1 - 01/24/2018 08:23 PM - Arthur Kreymer

Date: Mon, 22 Jan 2018 10:13:05 -0600

From: Simon De Rijck <simonderijck@gmail.com>

```
ifdh cp
/pnfs/minos/scratch/users/simon217/SterileTwoDetectorFit/FitFiles/Combined/fluc-1-1-normal-lower-index-16-freeDm232-0-freeTh23-0-statsOnly-0-parity-0-statsFluct-0-poisson-0-systsFluct-1-covFluct-0-CovMtx_FHC_LEME_LoE_enuni_comb_s11111111_beam.root
/pnfs/minos/persistent/users/simon217/SterileTwoDetectorFit/FitFiles/Combined/fluc-1-1-normal-lower-index-16-freeDm232-0-freeTh23-0-statsOnly-0-parity-0-statsFluct-0-poisson-0-systsFluct-1-covFluct-0-CovMtx_FHC_LEME_LoE_enuni_comb_s11111111_beam.root
```

#2 - 01/24/2018 08:28 PM - Arthur Kreymer

- % Done changed from 10 to 20

The problem for these files is in the file overheads.

There are 3618 small files in
/pnfs/minos/scratch/users/simon217/SterileTwoDetectorFit/FitFiles/Combined
Sizes range from 40 KB to 200 KB.
dCache is pretty inefficient at handling such small files.

A typical copy takes 4 seconds. That's 4 hours to copy the directory.

```
PIN=/pnfs/minos/scratch/users/simon217/SterileTwoDetectorFit/FitFiles/Combined/
POU=/pnfs/minos/persistent/users/kreymer/TEST/RATE
```

```
FILE=`ls ${PIN} | head -1`
```

```
FIN=${PIN}/${FILE}
FOU=${POU}/${FILE}
```

```
time ifdh cp ${FIN} ${FOU}
```

```
real    0m4.269s
user    0m0.376s
sys     0m0.165s
```

In this case, a direct file system dd is much faster

```
dd if=${FIN} of=${FOU} bs=10M
0+1 records in
0+1 records out
154794 bytes (155 kB) copied, 0.533082 s, 290 kB/s
```