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Figure out why the cluster set the Dev Appliance to compute node by default... it's in the mysql database.

Log of commands to fix:

```
/opt/rocks/bin/mysql -u root -p
show databases;
use cluster;
SELECT * FROM memberships;
UPDATE memberships SET Compute = 'no' where Name = 'Dev Appliance';
```

Might have to reinstall the node to fix this... will do this anyway in order to set up automatic jdk-1.6 installation (necessary for Bestman)

Waiting for tech support to set up our port with the right hostname for the SE.

8/24

Autofs is not working on the NAS... might need to distribute /etc/hosts to it so that it can identify the local hostnames.

This is for the NAS...

```
163.118.206.157 uscml.fltech-grid3.fit.edu
10.255.255.253 nas-0-0.local nas-0-0
```

It looks like the current /etc/hosts only includes the frontend and the local machine information. This is very strange.

Simply added /etc/hosts to 411:

```
# 411put /etc/hosts
# rocks sync users
# rocks sync config
```

Also trying to set up external network access... using malina's guide and emailed her for her setup script so I can study it. Also using the following commands.

```
rocks list host interface dev-0-0
rocks set host interface subnet dev-0-0 eth1 public
rocks set host interface name dev-0-0 eth1 sepublic-0-0
rocks set host interface gateway dev-0-0 eth1 163.118.206.254
```

Need to wait for IT to update the static IP before I can do anything else.

After we finish setting this up... reinstall the machine and it should take effect automatically.

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Going to reinstall the storage element now as dev-0-0 using auto network config, and PXEboot, and auto java installation.

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Will need to set up XFS filesystem on dev node again
Attempting to set it up the easy way (kernel module) so we dont have to recompile.
Enable the Extras repository in /etc/yum.repos.d/CentOS-Base.repo
Then

```
yum list available kmod-xfs\*
yum install kmod-xfs.x86_64 xfsdump xfsprogs
```

Looks like its working, now to mount the large disk to /sandbox
It all works!

Created directories in /sandbox for squid, bestman, and phedex.
Doing Squid first. Following instructions in INSTALL that comes with package.
I just did /sbin/chkconfig --add frontier-squid.sh
Cant forget to open 3128 port, and even more ports for the SE and such.

Trying to edit CVS now... probably dont have write access.

Adding fstab mount from NAS to Dev node...

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Trying to fix the CMS job error "Globus error 155: the job manager could not stage out a file"

Changed TCP Port range to 40000-45000
Also could be an issue with GUMSs

To fix squid,
Changed squid.conf
acl NET_LOCAL src 163.118.206.157/255.255.255.255 10.255.255.255/255.255.255.0

Fixed CMS jobs...

9/1

I think what happened was I set grid_dir to /opt/osg-wn which evaluated the symbolic link on the CE to /opt/osg-wn-1.2 - meaning it set it to look for the wrong directory (osg-wn-1.2) on the worker nodes.

Created symbolic link from osg-wn to osg-wn-1.2 on nodes... temporary fix, I should remove the worker node client versioning on the frontend.

Now installing Bestman on SE node.

Following:
<https://twiki.grid.iu.edu/bin/view/ReleaseDocumentation/BestmanGateway>

Configuration for Bestman:

```
$VDT_LOCATION/vdt/setup/configure_bestman --server y \  
--user daemon \  
--cert /etc/grid-security/containercert.pem \  
--key /etc/grid-security/containerkey.pem \  
--http-port 8080 \  
--https-port 8443 \  
--gums-host uscms1.fltech-grid3.fit.edu \  
--gums-port 8443 \  
--enable-gateway \  
--with-allowed-paths=/mnt/nas0/OSG/BeStMan \  
--with-transfer-servers gsift://uscms1-se.fltech-grid3.fit.edu
```

Bleh need to get a certificate first...
<https://twiki.grid.iu.edu/bin/view/ReleaseDocumentation/GetGridCertificates>
Also getting http service cert

Followed the guide... just need to get the certificates installed and then run the configuration above... then it should work.

I am missing the xinetd service... gridftp won't start

Was getting Invalid path errors... did this to fix:
I checked out /etc/hosts and changed the line (on dev-0-0):
10.255.255.230 dev-0-0.local dev-0-0

```
to
10.255.255.230 uscms1-se.fltech-grid3.fit.edu dev-0-0
```

I am now a member of the CMS certificate team for FIT

The above fix did not quite work... instead did this.

```
10.255.255.230 dev-0-0.local dev-0-0
163.118.206.162 uscms1-se.fltech-grid3.fit.edu
```

Also changed the entry in /etc/hosts on the frontend... and ran:
rocks set host interface name dev-0-0 eth1 uscms1-se.fltech-grid3.fit.edu

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Looks like Bestman is working again... changed /etc/hosts on the SE to:

```
127.0.0.1 localhost.localdomain localhost
163.118.206.157 uscms1.fltech-grid3.fit.edu
10.255.255.230 uscms1-se.fltech-grid3.fit.edu dev-0-0
163.118.206.162 uscms1-se.fltech-grid3.fit.edu
```

Gratia

```
$VDT_LOCATION/vdt/setup/configure_gratia --probe gridftp-transfer --report-to http://gratia-
osg.fnal.gov:8880/gratia-reporting/ --probe-cron --site-name FLTECH
```

Registered with GOC

Phedex time:

Trying:

```
sh -x bootstrap-slc4_amd64_gcc345.CentOS.5.sh setup -path $sw
```

Just for reference, these are the commands I used 1 year ago...

```
# su phedex (have to log in via root as account has no password)
$ cd /home/phedex
$ mkdir -p state logs sw gridcert
$ chmod 700 gridcert
$ export sw=$PWD/sw
$ export version=3_0_2
$ export myarch=slc4_amd64_gcc345
$ wget -O $sw/bootstrap-${myarch}.sh http://cmsrep.cern.ch/cmssw/bootstrap-${myarch}.sh
$ sh -x $sw/bootstrap-${myarch}.sh setup -path $sw
$ source $sw/$myarch/external/apt/0.5.15lorg3.2-CMS3/etc/profile.d/init.sh
$ apt-get update
$ apt-get install cms+PHEDEX+PHEDEX_$version
```

Need to check the latest version of Phedex first.

Used:

```
source /sandbox/phedex/sw/slc4_amd64_gcc345/external/apt/0.5.15lorg3.2-CMS3/etc/profile.d/init.sh
apt-get update
apt-cache search PHEDEX|grep PHEDEX+PHEDEX
apt-get install cms+PHEDEX+PHEDEX_$version
rm -f PHEDEX; ln -s $sw/$myarch/cms/PHEDEX/PHEDEX_$version PHEDEX?
```

Just following:

<https://twiki.cern.ch/twiki/bin/view/CMS/PhedexAdminDocsInstallation#PreInstall>

I also updated the config.ini with SE information... need to configure OSG again after I get back.

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Attempting to get phedex working

```
./PHEDEX/Utilities/Master -config SITECONF/T3_US_FIT/PhEDEx/Config.Debug stop
```

Weird perl error... adding:

```
/sandbox/phedex/sw/slc4_amd64_gcc345/external/p5-log-log4perl/1.16/lib/site_perl/5.8.5
```

To

```
unshift(@INC, $pwd);
```

Still more dependency errors... weird

Adding

```
/sandbox/phedex/sw/slc4_amd64_gcc345/external
```

Instead

Nope can't do that...

Adding both manually

```
/sandbox/phedex/sw/slc4_amd64_gcc345/external/p5-log-log4perl/1.16/lib/site_perl/5.8.5
```

I'm an idiot... need to be under phedex user.

Reinstalled with 3.2.0 for no reason... I forgot to source the env.sh

Trying again.

So it works... but for some reason i'm getting usage error... trying to modify the srmcopy-wrapper that Yujun gave me.

Changing the -command to

```
-command /sandbox/phedex/srmcopy_wrapper, '-debug=true'
```

```
-copyjobfile=/sandbox/phedex/Debug_T3_US_FIT/state/download-srm/work/job.1252458976.1/copyjob
```

EOF Java Error... no friggin clue what is causing this.

Trying a manual transfer

```
srm-copy srm://cmssrm.fnal.gov:8443/srm/managerv2?
```

```
SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/LoadTest07_FNAL_A2 srm://uscms
```

```
1-se.fltech-grid3.fit.edu:8443/srm/v2/server?
```

```
SFN=/mnt/nas0/OSG/BeStMan/cms/store/PhEDEx_LoadTest07/LoadTest07_Debug_US_FNAL/US_FIT/1/LoadTest07_FN
```

```
AL_A2_knB2MMS75U0udoIJ_1 -mkdir -proxyfile /sandbox/phedex/gridcert/proxy.cert -3partycopy -
```

```
delegation true -dcau false -numretry 0 -debug
```

This gives the same error...

```
srm-copy srm://cmssrm.fnal.gov:8443/srm/managerv2?
```

```
SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/
```

```
LoadTest07_FNAL_55 srm://uscms1-se.fltech-grid3.fit.edu:8443/srm/v2/
```

```
server?SFN=/mnt/nas0/OSG/BeStMan/cms/loadtestFNAL -debug -
```

```
pushmode -
```

```
proxyfile /sandbox/phedex/gridcert/proxy.cert
```

This also does it...

Maybe UF?

```
srm-copy srm://srmb.ihepa.ufl.edu:8443/srm/v2/
```

```
server?SFN=/crn/scratch/phedex/data/loadtest/store/
```

```
PhEDEx_LoadTest07/
```

```
LoadTest07_Debug_Florida/LoadTest07_Florida_70 srm://uscms1-se.fltech-
```

```
grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/
```

```
loadtestUF -debug -pushmode -proxyfile /sandbox/phedex/gridcert/
```

proxy.cert

Wow this doesn't work either... maybe bestman broke.

Trying

srm-copy

srm://srmb.ihepa.ufl.edu:8443/srm/v2/server?SFN=//lustre/raid1/store/test/testfile

file:///tmp/copyback -debug

I am an idiot... forgot to copy my new grid cert over to the phedex user account.

Ok getting timeout error in phedex, trying

srm-copy srm://cmssrm.fnal.gov:8443/srm/managerv2?

SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/LoadTest07_FNAL_E7 srm://uscms1-se.fltech-

grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/store/loadtestFNALnew -mkdir -

proxyfile /sandbox/phedex/gridcert/proxy.cert -3partycopy -delegation true -dcau false -numretry 0 -

debug -pushmode

Attempted to fix the network hostname issue for gridftp (again).

Searched for dev-0-0.local in /etc and changed to uscms1-se.fltech-grid3.fit.edu

Reinstalling Bestman/Gridftp again

Using configuration:

\$VDT_LOCATION/vdt/setup/configure_bestman --server y \

--user daemon \

--cert /etc/grid-security/containercert.pem \

--key /etc/grid-security/containerkey.pem \

--http-port 8080 \

--https-port 8443 \

--gums-host uscms1.fltech-grid3.fit.edu \

--gums-port 8443 \

--enable-gateway \

--with-allowed-paths=/mnt/nas0/OSG/BeStMan \

--with-transfer-servers gsiftp://uscms1-se.fltech-grid3.fit.edu

\$VDT_LOCATION/vdt/setup/configure_gratia --probe gridftp-transfer --report-to http://gratia-
osg.fnal.gov:8880/gratia-reporting/ --probe-cron --site-name FLTECH

Changed the hostname in /etc/sysconfig/network

Now /bin/hostname displays the correct hostname.

Getting connection refused error now, but iptables looks fine.

Ok its fixed but... another timeout error, but different this time.

globus/bin/globus-url-copy

gsiftp://dev02.ufl.edu:2811/crn/scratch/phedex/data/loadtest/store/PhEDEx_LoadTest07/LoadTest07_Debug
_FloridaLoadTest07_Florida_70 file:///tmp/loadtestUF2

Using -syntax bestman in the Phedex configuration file... this should format phedex correctly.

Still getting timeout error with srm-copy

[phedex@uscms1-se phedex]\$ /sandbox/osg-se/bestman/bin/srm-copy

srm://cmssrm.fnal.gov:8443/srm/managerv2?

SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/LoadTest07_FNAL_E7 srm://uscms1-se.fltech-

grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/nicolotest2 -3partycopy -debug -dcau

false

Strange, non 3rd party transfers work on the SE, and all transfers work if you are submitting from outside of the node (such as on the CE), probably a host config issue.

Changed the 3rd and 4th lines in /etc/hosts!

```
163.118.206.162  uscms1-se.fltech-grid3.fit.edu  uscms1-se
10.255.255.230  dev-0-0.local                    dev-0-0
```

srm-copy now works right!

OMG PHEDEX WORKS!!!!!!!!!!!!

Nethogs:

31340	uscms01	/sandbox/osg-se/globus/sbin	eth1	34.003	1827.408 KB/sec
30141	uscms01	/sandbox/osg-se/globus/sbin	eth1	30.839	1639.969 KB/sec
31377	uscms01	/sandbox/osg-se/globus/sbin	eth1	29.268	1575.211 KB/sec
30102	uscms01	/sandbox/osg-se/globus/sbin	eth1	24.543	1329.391 KB/sec
31421	uscms01	/sandbox/osg-se/globus/sbin	eth1	26.251	1154.425 KB/sec
30445	dbfrontie(squid)		eth1	4.882	6.897 KB/sec
31681	phedex	ssh: phedex@pts/3	eth1	0.939	0.052 KB/sec

Transfers have large error rate.

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Limited to 1 job at a time.

Real descriptive error:

```
2009-09-17 19:21:06 srm-copy(29966): SRM-CLIENT: GsiFTP Time out occurred, Retrying the gsiftp
transfer now...
```

```
2009-09-17 19:21:06 srm-copy(29966): Exception=sleep interrupted
```

Did this stuff

```
echo 16777216 > /proc/sys/net/core/wmem_max
echo 16777216 > /proc/sys/net/core/rmem_max
echo "4096000 8738000 16777216" > /proc/sys/net/ipv4/tcp_rmem
echo "4096000 8738000 16777216" > /proc/sys/net/ipv4/tcp_wmem
echo "4096000 4096000 4096000" > /proc/sys/net/ipv4/tcp_mem
echo "1024000 2048000 4096000" > /proc/sys/net/ipv4/tcp_rmem
echo "1024000 2048000 4096000" > /proc/sys/net/ipv4/tcp_wmem
echo 4096000 > /proc/sys/net/core/wmem_max
echo 4096000 > /proc/sys/net/core/rmem_max
```

Tried doing 1 data stream today... seems to have worked (or at least no error)

```
./PHEDEX/Utilities/Master -config SITECONF/T3_US_FIT/PhEDEx/Config.Debug stop
```

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Updating VDT Today.

Updated and RSV probes are working fine again.

Still getting Gridftp timeout error...

Used command:

```
nohup time /sandbox/osg-se/bestman/bin/srm-copy srm://srm.ihepa.ufl.edu:8443/srm/v2/server?
SFN=//lustre/raid1/store/test/testfile srm://uscms1-se.fltech-grid3.fit.edu:8443/srm/v2/server?
SFN=/mnt/nas0/OSG/BeStMan/cms/store/PhEDEx_LoadTest07/LoadTest07_Debug_US_FNAL/US_FIT/1/LoadTest07_FN
AL_0D_cdwqJZI32Fn4s3PJ_1_test1 -proxyfile /sandbox/phedex/gridcert/proxy.cert -mkdir -debug -
retry_num=2 -dcau false -3party copy -delegation true -parallelism 1 -pushmode &
```

FNAL no longer has the loadtest file I need

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Now going to try srm-copy with smaller file.

```
nohup time /sandbox/osg-se/bestman/bin/srm-copy srm://srmb.ihepa.ufl.edu:8443/srm/v2/server?
SFN=//lustre/raid1/store/test/testfile srm://uscms1-se.fltech-grid3.fit.edu:8443/srm/v2/server?
SFN=/mnt/nas0/OSG/BeStMan/cms/store/UFTestfile -proxyfile /sandbox/phedex/gridcert/proxy.cert -mkdir
-debug -retry_num=2 -dcau false -3partycopy -delegation true -parallelism 1 -pushmode &
```

This command works!!! What the hell? I only have a problem with large file transfers.

Testing stuff:

```
globus-url-copy -vb -dbg
gsiftp://dev03.ihepa.ufl.edu:28110//lustre/raid1/data/loadtest/store/PhEDEx_LoadTest07/LoadTest07_De
bug_Florida/LoadTest07_Florida_DA gsiftp://uscms1-se.fltech-grid3.fit.edu:2811//tmp/testUFgridftpbig
```

```
/sandbox/osg-se/bestman/bin/srm-copy srm://srmb.ihepa.ufl.edu:8443/srm/v2/server?
SFN=/lustre/raid1/data/loadtest/store/PhEDEx_LoadTest07/LoadTest07_Debug_Florida/LoadTest07_Florida_D
A srm://uscms1-se.fltech-grid3.fit.edu:8443/srm/v2/server?
SFN=/mnt/nas0/OSG/BeStMan/cms/store/UFTestTCPtweak -proxyfile /sandbox/phedex/gridcert/proxy.cert -
mkdir -debug -retry_num=2 -dcau false -3partycopy -delegation true -parallelism 1 -pushmode
```

Trying lcg-cp

```
lcg-cp -D srmv2 file:///tmp/testUFgridftpbig srm://uscms1-se.fltech-
grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/store/lcgcpctest
```

The srm-copy worked first time... and extremely fast too. But the second command is taking a long time... I wonder if we are being throttled back.

9/24

Doing...

Edit /etc/sysctl.conf

```
with
# increase TCP max buffer size
net.core.rmem_max = 4194304
net.core.wmem_max = 4194304
# increase Linux autotuning TCP buffer limits
net.ipv4.tcp_rmem = 4096 87380 4194304
net.ipv4.tcp_wmem = 4096 65536 4194304
```

```
Then
sysctl -p
It might actually be working now!
Three transfers have succeeded in a row so far...
```

```
./PHEDEX/Utilities/Master -config SITECONF/T3_US_FIT/PhEDEx/Config.Debug stop
```

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```
/sandbox/osg-se/bestman/bin/srm-copy srm://cmssrm.fnal.gov:8443/srm/managerv2?
SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/LoadTest07_FNAL_AB srm://uscms1-se.fltech-
grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/store/UFTestTCPtweak -proxyfile
/sandbox/phedex/gridcert/proxy.cert -mkdir -debug -retry_num=2 -dcau false -3partycopy -delegation
true -parallelism 1 -pushmode
```

Fails :(

Upgraded Bestman jar files that Alex gave me.

```
/sandbox/osg-se/bestman/bin/srm-copy srm://cmssrm.fnal.gov:8443/srm/managerv2?  
SFN=/11/store/PhEDEx_LoadTest07/LoadTest07_Prod_FNAL/LoadTest07_FNAL_AB srm://uscms1-se.fltech-  
grid3.fit.edu:8443/srm/v2/server?SFN=/mnt/nas0/OSG/BeStMan/cms/store/UFTTestTCPtweak -proxyfile  
/sandbox/phedex/gridcert/proxy.cert -mkdir -debug -retry_num=2 -dcau false -3partycopy -delegation  
true -parallelism 1 -pushmode -connectiontimeout 3600
```

Trying this to see if it will force over the timeout

9/27

Apparently this worked with -connectiontimeout 7200
However my SRMVerify code was incorrect... fixed -f6 to -f5

Apparently checksum code is also wrong but will solve that later.

Phedex works

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Look into priorities for CRAB jobs

Odd... a couple of srm-copy jobs hung, causing the whole process to stop.

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Set up 5 simultaneous jobs on PhEDEx

9/30

Setting up prod instance

Need to patch our damn kernel... will get OSG-SEC to help me.

10/1

Apparently Samir's datasets are not starting because the files are in european sites that we don't have links to.

```
./PHEDEX/Utilities/Master -config SITECONF/T3_US_FIT/PhEDEx/Config.Prod stop
```

10/2

Solution: Download the files via UFlorida, temporary solution.
Need to commission more links for our site.

Also need to patch the kernel!

10/5

Rebooting the CE and SE... will figure out what needs to be started by hand:

SE: Only PhEDEx needs to be manually started
CE: Looks like nothing needs starting manually, sweet!

10/8

Writing documentation.

NFS Stale File Handles - big problem

Yeah, had to repair the XFS filesystem on the NAS

Used: xfs_repair -v /dev/sdb1 -L
-L flag very dangerous, but necessary here. Fixed the filesystem.

Had to do xfs_repair /dev/sdb1 in the repair shell again, as well as fsck /dev/sda1
Investigating what could have caused this.

10/9

Had to fsck /dev/sda1 on the NAS this morning, as well as xfs_repair again on /dev/sdb1 - now it works.

Upgrading firmware on the RAID controllers.

To upgrade drivers, followed this guide.
<http://www.3ware.com/kb/article.aspx?id=12690>

Should be done for the frontend, just needs a reboot.

Firmware upgrade done on the NAS but its having issues installing the driver on the latest kernel (for some reason the source code is missing... no big deal). I want to roll back to the 2.6.18 kernel anyway, as the 2.6.25 might have caused the instability here.

NOTE: I have set installed the new patched 2.6.18 kernel on the NAS with the intention of rolling back to it (from 2.6.25). I hope that it will increase the stability. Need to make sure to
yum install kmod-xfs.x86_64 xfsdump xfsprogs

RAID controller failed, getting a new one.

CE and SE firmware updated just fine...
Downloaded the tw_cli from 3ware and used:

```
./tw_cli /c0 update fw=/root/3wareSoftware/9.5.2-Firmware/prom0006.img
```

Removed the versioning for the OSG worker node client (osg-wn)

10/22

Replaced RAID controller on NAS and updated kernels on the compute nodes.

Setting up auto backup of g4hep and configuration files
(on SE)

```
0 0 * * *      rsync -azu /mnt/nas0/home/g4hep/ /sandbox/backups/userdata/g4hep --delete
0 0 * * *      rsync -azu /mnt/nas0/system-config /sandbox/backups/configfiles --delete
```

RAID controllers:

CE: 9650SE-4LPML
SE: 9650SE-8LPML
NAS0: 9650SE-16ML

Getting terrible WAN performance now...

10/24

WAN performance could be on UF's end.

Performing rebuild of array and verify... almost done

Upgrading 3ware drivers

Used driver source from 3ware downloads, extract 2.6.18 drivers.

```
# make
```

```
# cp 3w-9xxx.ko /lib/modules/2.6.18-164.el5/kernel/drivers/scsi/
```

and reboot... very easy.

Check currently running driver with:

```
# cat /sys/class/scsi_host/host0/stats
```

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Getting bad NFS performance now... installing g++ and nethogs on the NAS to analyze.

Going to increase the number of NFS instances as per this document:
http://nfs.sourceforge.net/nfs-howto/ar01s05.html#nfsd_daemon_instances

```
vi /etc/rc.d/init.d/nfs
```

Change RPCNFSDCOUNT
 To: 8 per CPU (32 total)

Also did TCP tweaks, now active on CE, SE, and NAS:

```
Edit /etc/sysctl.conf
with
# increase TCP max buffer size
net.core.rmem_max = 4194304
net.core.wmem_max = 4194304
# increase Linux autotuning TCP buffer limits
net.ipv4.tcp_rmem = 4096 87380 4194304
net.ipv4.tcp_wmem = 4096 65536 4194304
```

Then
 sysctl -p
 May have increased NAS performance quite a bit!

10/27

Increasing number of NFS processes to 64... due to NFS being at full load a lot (still). See how the server handles it...
 Looks like that took care of the problem... NFS is staying between 0 and 40% load now, with no instances of 100% utilization.

10/29

Reinstalling osg worker node client at /opt/osg-wn, using:
 pacman -get <http://software.grid.iu.edu/osg-1.2:wn-client>
 source setup.sh
 vdt-post-install

And then changed the symlink:
 /opt/osg-wn/globus/share/certificates
 and /opt/osg-wn/globus/TRUSTED_CA
 to point to
 /opt/osg/globus/share/certificates-1.10

Never mind... temporary fix
 Installed it on the NAS at /nas0/OSG/GRID and symlinked /mnt/nas0 to /nas0 on the compute nodes. This should work for now. OSG_GRID is now /nas0/OSG/GRID

11/3

Switching to /bestman allowed path

```
$VDT_LOCATION/vdt/setup/configure_bestman --server y \
--user daemon \
--cert /etc/grid-security/containercert.pem \
--key /etc/grid-security/containerkey.pem \
--http-port 8080 \
--https-port 8443 \
--gums-host uscms1.fltech-grid3.fit.edu \
--gums-port 8443 \
--enable-gateway \
--with-allowed-paths "/bestman;/mnt/nas0/OSG/BeStMan;/tmp" \
--with-transfer-servers gsiftp://uscms1-se.fltech-grid3.fit.edu
```

Implementing:

```
ln -s /mnt/nas0/OSG/BeStMan /bestman
```

Changed the mount settings for /mnt/nas0 in /etc/fstab, and also /etc/auto.master for automounting.
<http://blogs.techrepublic.com.com/opensource/?p=64>

Still need to change mount settings for compute nodes.

11/5

Changed the link system to link /mnt/nas0/OSG/BeStMan to /bestman/BeStMan and changed storage.xml and bestman config.

Also did some nfswatch tests... Most of the traffic is read operations from the NAS. Did a dd test and watched. The packets had finished transferring but the command did not finish until several seconds later... indicating there is some overhead causing the process to hang before completion. Could be an issue with NFS... or with our network configuration.

Install to a different directory with # make install DESTDIR=<dir>

SRM issue:

Fixed by adding /mnt/nas0/OSG/BeStMan to the allowed path.

Also set this up on worker nodes

```
./PHEDEX/Utilities/Master -config SITECONF/T3_US_FIT/PhEDEx/Config.Prod stop
```

We're green!

Still need to change auto mount settings for compute nodes. And update other stuff for automatic install.

11/9

Topics for meeting:

- * Green on SAM tests
- * Cluster slow - network issues and write cache
- * Alternative network filesystems

11/12

Fixed compute node mounting options

Write cache and network tweaks made network very resilient. We may reach a size that NFS no longer serves our purpose.

12/10

Added the following to nas0 crontab

```
55 0,6,12,18 * * * /nas0/OSG/GRID/fetch-crl/share/doc/fetch-crl-2.6.6/fetch-crl.cron
36 * * * * /nas0/OSG/GRID/vdt/sbin/vdt-update-certs-wrapper --vdt-install /nas0/OSG/GRID/ --called-from-cron
```