

# GrouperShell GSH loader linux service

You can run the loader as a linux service so that it auto-starts when the machine boots up

Note, [here are systemd scripts](#)

Create a directory for the loader script, pid, and logs (feel free to change dir names etc). Note, in our case, the appserv dir is sync'd across the cluster, the /opt/grouperLoader dir is not, so that is used for the pid and logs

```
mkdir -p /opt/appserv/grouperLoader
mkdir -p /opt/grouperLoader
chown appadmin.users /opt/grouperLoader
```

Create the bootstrap script: /opt/appserv/grouperLoader/grouperLoader.sh

Note, test the script as below, and make sure all the commands are in the right place, e.g. /bin/kill, /bin/ps, etc

```
#!/bin/bash

export JAVA_HOME=/opt/appserv/java6
export PATH=$JAVA_HOME/bin:$PATH

pidLocation=/opt/grouperLoader/grouperLoader.pid
gshBinDirectory=/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin
loaderLog=/opt/grouperLoader/grouperLoader.log

cd $gshBinDirectory
theDate=`date`
/usr/bin/nohup $gshBinDirectory/gsh -loader >> $loaderLog 2>&1 &
pid=$!
echo $pid > $pidLocation
echo >> $loaderLog
echo "#####" >> $loaderLog
echo "## $theDate: started Grouper loader... ($pid)" >> $loaderLog
echo "#####" >> $loaderLog
echo >> $loaderLog
```

Create the service script: /opt/appserv/grouperLoader/grouperLoaderService.sh

```
#!/bin/bash
#
# Startup script for the Tomcat Server
#
# chkconfig: - 86 14
# description: Grouper loader service
# processname:
# pidfile:
# config:
# Tomcat
# description: Starts the grouper loader

##### CUSTOMIZE THIS FOR YOUR ENV #####
# the user this script should run as

shouldRunAs=appadmin

pidLocation=/opt/appserv/local/grouperLoader/grouperLoader.pid

#note, this should not contain the gsh command, just the parent directory
gshBinDirectory=/opt/appserv/tomcat/apps/grouperWs/loader/bin

#only run on daemon box of cluster. note, customize this for your env
# source /home/appadmin/bin/requireDaemon.sh

loaderLog=/opt/appserv/local/grouperLoader/grouperLoader.log

grouperLoaderBootstrapScript=/opt/appserv/common/grouperLoader/grouperLoader.sh
# grouperLoaderBootstrapScript is a way to su as the real user to run the loader
```

```

# it has these contents
#
# #!/bin/bash
#
# export JAVA_HOME=/opt/appserv/java6
# export PATH=$JAVA_HOME/bin:$PATH
#
# pidLocation=/opt/grouperLoader/grouperLoader.pid
# gshBinDirectory=/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin
# loaderLog=/opt/grouperLoader/grouperLoader.log
#
# cd $gshBinDirectory
# theDate=`date`
# /usr/bin/nohup $gshBinDirectory/gsh -loader >> $loaderLog 2>&1 &
# pid=$!
# echo $pid > $pidLocation
# echo >> $loaderLog
# echo "#####" >> $loaderLog
# echo "## $theDate: started Grouper loader... ($pid)" >> $loaderLog
# echo "#####" >> $loaderLog
# echo >> $loaderLog

#####

# function to kill a pid, wait for exit...
killPid(){
  pidToKill=$1
  /bin/kill $pidToKill

  #loop until the program is dead
  waitingForExit=true
  iterator=1

  while [ "$waitingForExit" == "true" ]; do

    # xargs will trim the string
    processIdToKill=`/bin/ps -fp $pidToKill | grep gsh | grep loader | grep -v /bin/ps | cut -c10-15 | xargs`
    if [ -n "$processIdToKill" ]; then
      echo Waiting for exit...
    else
      # lets just make sure: (sometimes process isnt found with -fp...)
      /bin/kill -KILL $pidToKill > /dev/null 2>&1

      waitingForExit=false
    fi

    if [ "$iterator" -gt "10" ]; then
      waitingForExit=false
    fi

    let "iterator += 1"
    if [ "$waitingForExit" == "true" ]; then
      sleep 1
    fi
  done

  processIdToKill=`/bin/ps -fp $pidToKill | grep gsh | grep loader | grep -v /bin/ps | cut -c10-15 | xargs`
  if [ -n "$processIdToKill" ]; then
    /bin/kill -KILL $pidToKill
    sleep 1

    processIdToKill=`/bin/ps -fp $pidToKill | grep gsh | grep loader | grep -v /bin/ps | cut -c10-15 | xargs`
    if [ -n "$processIdToKill" ]; then
      echo "Cannot kill process: $processIdToKill"
      exit 1
    fi
  fi

```

```

fi
}

# get the process id of the gsh process, put into the variable theGshProcessId
# if pass "true" as arg, then exit if there are multiple running
gshProcessId(){

    if [ "$1" == "true" ]; then
        numberOfProcesses=`/bin/ps -ef | grep $gshBinDirectory | grep gsh | grep loader | grep -v /bin/ps | grep
edu.internet2.middleware.grouper.app.gsh.GrouperShellWrapper | wc -l`
        if [ "$numberOfProcesses" -gt "1" ]; then
            echo "Grouper loader is running multiple times!!!"
            exit 1
        fi
    fi
fi

    theGshProcessId=`/bin/ps -ef | grep $gshBinDirectory | grep gsh | grep loader | grep -v /bin/ps | grep edu.
internet2.middleware.grouper.app.gsh.GrouperShellWrapper | head -1 | cut -c10-15 | xargs`
}

# get the parent process id of the gsh process, put into the variable theGshParentProcessId
gshParentProcessId(){
    theGshParentProcessId=`/bin/ps -ef | grep /bin/sh | grep $gshBinDirectory | grep gsh | grep loader | grep -v
/bin/ps | head -1 | cut -c10-15 | xargs`
}

runningUser=`/usr/bin/whoami`

# we only want appadmin or root to be able to do this
if [ "$runningUser" != "$shouldRunAs" ]; then

    if [ "$runningUser" != "root" ]; then

        echo "ERROR: only user $shouldRunAs or root can run administer the grouperLoader service: '$runningUser'"
        echo
        exit 1

    fi

fi

case "$1" in
start)

    gshProcessId "true"
    gshParentProcessId

    # if this is true, then it is running...
    if [ -n "$theGshProcessId" ]; then

        # lets see if the process id matches
        if [ -f "$pidLocation" ]; then
            pidInFile=`cat $pidLocation`

            if [ -n "$theGshParentProcessId" ]; then
                if [ "$theGshParentProcessId" -eq "$pidInFile" ]; then
                    echo "Grouper loader is running already, parent process id: $theGshParentProcessId, process id:
$theGshProcessId"
                    exit 1
                fi
            fi

            fi

            echo "Grouper loader is already running, but pid doesnt match file. Parent process id:
$theGshParentProcessId, process id: $theGshProcessId, parent process id in file: $pidInFile"
            exit 1

```

```

fi

echo "Starting Grouper loader service..."

# caches build up, remove them
rm -rf /opt/appserv/tomcat/apps/grouperWs/logs/grouper/grouperLoaderCache/ehcache_auto_created_*

# if not appadmin, then we must be root
if [ ! "$runningUser" == "$shouldRunAs" ]; then
    su $shouldRunAs -c $grouperLoaderBootstrapScript
else
    # if not root then we must be appadmin
    $grouperLoaderBootstrapScript
fi
echo "Grouper loader is running..."
;;
stop)

waitingForExitStop=true
iteratorStop=1
wasRunning=false
while [ "$waitingForExitStop" == "true" ]; do

    gshProcessId
    if [ -n "$theGshProcessId" ]; then
        wasRunning=true
        echo "Grouper loader is running with processId: $theGshProcessId, waiting for exit..."
        theDate=`date`
        if [ -f $loaderLog ]; then
            echo >> $loaderLog
            echo "#####" >> $loaderLog
            echo "## $theDate: stopping Grouper loader... ($theGshProcessId)" >> $loaderLog
            echo "#####" >> $loaderLog
            echo >> $loaderLog
        fi

        killPid $theGshProcessId
    else
        waitingForExitStop=false
    fi

    if [ "$iteratorStop" -gt "10" ]; then

        echo "Cannot stop Grouper loader!"
        exit 1
    fi

    let "iteratorStop += 1"
    if [ "$waitingForExitStop" == "true" ]; then
        sleep 1
    fi
done

waitingForExitStop=true
iteratorStop=1

while [ "$waitingForExitStop" == "true" ]; do

    gshParentProcessId
    if [ -n "$theGshParentProcessId" ]; then
        echo "Grouper loader parent is running with processId: $theGshProcessId, waiting for exit..."
        killPid $theGshParentProcessId
    else
        waitingForExitStop=false
    fi

    if [ "$iteratorStop" -gt "10" ]; then

        echo "Cannot stop Grouper loader parent!"
        exit 1
    fi
done

```

```

fi

let "iteratorStop += 1"
if [ "$waitingForExitStop" == "true" ]; then
    sleep 1
fi
done
if [ -f $pidLocation ]; then
    rm $pidLocation
fi
if [ "true" == "$wasRunning" ]; then
    echo "Grouper loader is stopped"
else
    echo "Grouper loader was not running"
fi

# caches build up, remove them
rm -rf /opt/appserv/tomcat/apps/grouperWs/logs/grouper/grouperLoaderCache/ehcache_auto_created_*

;;
status)

gshProcessId "true"
gshParentProcessId

# if this is true, then it is running...
if [ -n "$theGshProcessId" ]; then

    # lets see if the process id matches
    if [ -f "$pidLocation" ]; then
        pidInFile=`cat $pidLocation`

        if [ -n "$theGshParentProcessId" ]; then
            if [ "$theGshParentProcessId" == "$pidInFile" ]; then
                echo "Grouper loader is running, parent process id: $theGshParentProcessId, process id:
$theGshProcessId"
                exit 0
            fi
        fi

        if [ -n "$theGshParentProcessId" ]; then
            echo "Grouper loader is running, but pid doesnt match file. Parent process id: $theGshParentProcessId,
process id: $theGshProcessId, parent process id in file: $pidInFile"
            exit 0
        fi

        # lets see if the process id matches
        if [ -f "$pidLocation" ]; then
            pidInFile=`cat $pidLocation`

            if [ -n "$theGshParentProcessId" ]; then
                echo "Grouper loader is not running, but there is a process id: $pidInFile in the pid file:
$pidLocation"
                exit 1
            fi
        fi
        echo "Grouper loader is not running"
        exit 0
    fi

;;
restart)
    echo -n "Restarting Grouper loader: "
    $0 stop
    sleep 5
    $0 start
    echo "done."
    ;;
*)
    echo "Usage: $0 {start|stop|restart|status}"
    exit 1

```

Set permissions and register the service:

```
[appadmin@theprince grouperLoader]$ chmod +x /opt/appserv/grouperLoader/grouperLoader.sh
[appadmin@theprince grouperLoader]$ chmod +x /opt/appserv/grouperLoader/grouperLoaderService.sh

[root@theprince init.d]# ln -s /opt/appserv/grouperLoader/grouperLoaderService.sh /etc/init.d/grouperLoader
[root@theprince init.d]# chkconfig --add grouperLoader
[root@theprince init.d]# chkconfig --levels 345 grouperLoader on
```

You can test this by turning on the service, turning it on again, getting the status, etc

```
[appadmin@mamapalma grouperLoader]$ ps -ef | grep gsh
appadmin 14300  518  0 16:30 pts/0    00:00:00 grep gsh
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader stop
Grouper loader was not running
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader status
Grouper loader is not running
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader start
Starting Grouper loader service...
Grouper loader is running...
[appadmin@mamapalma grouperLoader]$ ps -ef | grep gsh
appadmin 14420  1  0 16:30 pts/0    00:00:00 /bin/sh /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin
/gsh -loader
appadmin 14421 14420 99 16:30 pts/0    00:00:09 java -Xms64m -Xmx750m -Dgrouper.home=/opt/appserv/tomcat_3b
/webapps/grouperWs/WEB-INF/bin/.. -classpath /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. /classes:
/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. /lib/*: edu.internet2.middleware.grouper.app.gsh.
GrouperShellWrapper -loader
appadmin 14450  518  0 16:30 pts/0    00:00:00 grep gsh
[appadmin@mamapalma grouperLoader]$ cat /opt/grouperLoader/grouperLoader.pid
14420
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader status
Grouper loader is running, parent process id: 14420, process id: 14421
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader start
Grouper loader is running already, parent process id: 14420, process id: 14421
[appadmin@mamapalma grouperLoader]$ echo "123" > /opt/grouperLoader/grouperLoader.pid
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader status
Grouper loader is running, but pid doesnt match file. Parent process id: 14420, process id: 14421, parent
process id in file: 123
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader start
Grouper loader is already running, but pid doesnt match file. Parent process id: 14420, process id: 14421,
parent process id in file: 123
[appadmin@mamapalma grouperLoader]$ ps -ef | grep gsh
appadmin 14420  1  0 16:30 pts/0    00:00:00 /bin/sh /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin
/gsh -loader
appadmin 14421 14420 9 16:30 pts/0    00:00:11 java -Xms64m -Xmx750m -Dgrouper.home=/opt/appserv/tomcat_3b
/webapps/grouperWs/WEB-INF/bin/.. -classpath /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. /classes:
/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. /lib/*: edu.internet2.middleware.grouper.app.gsh.
GrouperShellWrapper -loader
appadmin 14638  518  0 16:32 pts/0    00:00:00 grep gsh
[appadmin@mamapalma grouperLoader]$ /sbin/service grouperLoader stop
Grouper loader is running with processId: 14421, waiting for exit...
Waiting for exit...
Grouper loader is stopped
[appadmin@mamapalma grouperLoader]$ ps -ef | grep gsh
appadmin 14725  518  0 16:33 pts/0    00:00:00 grep gsh
[appadmin@mamapalma grouperLoader]$ locate gsh
/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/gsh
[appadmin@mamapalma grouperLoader]$ cd /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/
[appadmin@mamapalma bin]$ ./gsh -loader & >/dev/null 2>&1
[appadmin@mamapalma bin]$ /sbin/service grouperLoader status
Grouper loader is running, but pid doesnt match file. Parent process id: , process id: 14731, parent process
id in file:
[appadmin@mamapalma bin]$ ps -ef | grep gsh
appadmin 14731 14730 35 16:34 pts/0    00:00:10 /opt/appserv/java6/bin/java -Xms64m -Xmx750m -Dgrouper.home=/opt
/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. -classpath /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF
/bin/.. /classes:/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/.. /lib/*: edu.internet2.middleware.grouper.
app.gsh.GrouperShellWrapper -loader
appadmin 14812  518  0 16:34 pts/0    00:00:00 grep gsh
```

```
[appadmin@mamapalma bin]$ /sbin/service grouperLoader stop
Grouper loader is running with processId: 14731, waiting for exit...
Waiting for exit...
Grouper loader is stopped
[1]+  Done                  ./gsh -loader
[appadmin@mamapalma bin]$ ps -ef | grep gsh
appadmin 14891  518  0 16:34 pts/0    00:00:00 grep gsh
[appadmin@mamapalma bin]$ /sbin/service grouperLoader start
Starting Grouper loader service...
Grouper loader is running...
[appadmin@mamapalma bin]$ ./gsh -loader & >/dev/null 2>&1
[appadmin@mamapalma bin]$ ps -ef | grep gsh
appadmin 14956      1  0 16:35 pts/0    00:00:00 /bin/sh /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin
/gsh -loader
appadmin 14957 14956 68 16:35 pts/0    00:00:10 java -Xms64m -Xmx750m -Dgrouper.home=/opt/appserv/tomcat_3b
/webapps/grouperWs/WEB-INF/bin/./ -classpath /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/./classes:
/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/./lib/*: edu.internet2.middleware.grouper.app.gsh.
GrouperShellWrapper -loader
appadmin 14987 14986 96 16:35 pts/0    00:00:10 /opt/appserv/java6/bin/java -Xms64m -Xmx750m -Dgrouper.home=/opt
/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/./ -classpath /opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF
/bin/./classes:/opt/appserv/tomcat_3b/webapps/grouperWs/WEB-INF/bin/./lib/*: edu.internet2.middleware.grouper.
app.gsh.GrouperShellWrapper -loader
appadmin 15040  518  0 16:35 pts/0    00:00:00 grep gsh
[appadmin@mamapalma bin]$ /sbin/service grouperLoader status
Grouper loader is running multiple times!!!
[appadmin@mamapalma bin]$ /sbin/service grouperLoader start
Grouper loader is running multiple times!!!
[appadmin@mamapalma bin]$ /sbin/service grouperLoader stop
Grouper loader is running with processId: 14957, waiting for exit...
Waiting for exit...
Grouper loader is running with processId: 14987, waiting for exit...
Grouper loader is stopped
[1]+  Done                  ./gsh -loader
[appadmin@mamapalma bin]$ ps -ef | grep gsh
appadmin 15191  518  0 16:36 pts/0    00:00:00 grep gsh
[appadmin@mamapalma bin]$
```