

WebSphere Application Server

Auto Check Heap-dump, Disk-space and Generate Email to ADMIN

Abstract:

WebSphere Application Server -- day by day troubleshooting the application, checking the partition space, looking for heap-dump and java-core files, it takes too much time to keep an eye on 50 to 100 or above Linux/Unix machines in clustered environment for Production, QA and development. Many organization either banking sector or non banking are using IBM or non IBM products running on number of servers, wants to reduce cost and increase reliability. The purpose of this paper is to reduce manual work by saving time and cost by automation.

Introduction:

The paper is about to trim down the manual work of WebSphere Application Server administrator. Most of the time, applications generate heap-dump or java-core depends on JVM allocation size, and gradually applications stop working due to partition become 100%. IBM heap-dump is created when an OutOfMemoryError exception is thrown by the application, and it is important for the admin to know this problem, so that he can analyze the heap- dumps and java-cores and solve the memory leakage problem.

In horizontal clustered environment it is very difficult to check each and every partition on all physical servers, and each server may have different mount points for web server, email server and storage area like WebSphere Application Server, lotus domino, TSM and create a complex environment. To check manually each mount point and if needed to remove unnecessary files it takes too much time and most probably we can say it is wastage of time and an admin unable to do crucial tasks during specific time line.

Automation Reduce Time and Accelerate Work:

It is one immense advantage to us to automate most of manual work by using script. The script not only saves the time but also alerts to the whole group of creditworthy. Error less web base application is very important for WebSphere Application Server Administrator.

In large heterogeneous/homogeneous environment, it become critical issue for WAS admin to take care of desk space and check heap-dumps on each server. To automate your task it is very easy using by Linux/Unix script with the help of cron daemon to resolve desk space and WAS heap-dump problems.

The script completes the following two scenarios.

1. If heap-dump or java-core generates, the script will moves it to the storage area and triggers an automatic email to admin regarding, list of heap-dumps and java-cores with permissions, owners, size and time when it was generated.
2. If any partition on the system reached to or above 95%, the script will trigger an email to admin.

Automated Script to send heap-dump email to admin: This script is design to generate an email to WAS admin whenever heap-dump or java-core gets generated and also it moves the heap-dump and java-core to your required storage area.

1. Create a bash file with .sh extension
2. Copy the following code in the file and change the **ADMIN**, **DumpDir** and **DumpMove** variable as per your requirement.
3. Assign executable permission on file using chmod command
4. Add this file in Linux cron job using crontab command

```
ADMIN=burhan@royalcyber.com
#The directory where dumps create by WAS
DumpDir=/opt/was50/appserver1/workdir
#The directory where to move the heapdump/javacore
DumpMove=/opt/was50/appserver1/workdir/DUMPS

#Count List of java-core and heap-dump

DUMPLIST=`ls $DumpDir /heapdump* 2>/dev/null |wc -l`
CORELIST=`ls $DumpDir/javacore* 2>/dev/null |wc -l`

if [ $DUMPLIST -gt 0 -o $CORELIST -gt 0 ]
then

    #create a folder if it doesn't exist
    if [ ! -d "$DumpMove" ]; then

        mkdir $DumpMove

    fi

    DLIST=`ls -l $DumpDir/heapdump* 2>/dev/null`
    mv $DumpDir/heapdump* $DumpMove/ 2>/dev/null

    JLIST=`ls -l $DumpDir/javacore* 2>/dev/null`
    mv $DumpDir/javacore* $DumpMove/ 2>/dev/null

    DJLIST="the following heapdumps/javacore move to $DumpMove
    folder" echo -ne "$DJLIST\n$DLIST\n$JLIST\n" |mail -s "ALERT: Server
    $(hostname) -- generate heapdumps/javacore --" $ADMIN

fi
```

Now you can add the following script at the end of already created script file or you can create another script file by pursuing the above procedure.

Automated Script to check partition space and email to admin: This script is design to generate an email to WAS admin when any partition space reaches up to or above 95%.

```
# Alert when partition reach 95%
ALERT=95

# Get the memory output and gawk the output processed by awk command
df -H | grep -vE '^Filesystem|tmpfs|cdrom' | awk '{ if (NF >= 3) print $(NF)
" " $(NF-1) }' | while read output;
do

#Get the number partition being used and remove %
UseP=$(echo $output | awk '{ print $2}' | cut -d'%' -f1 )

#get the name of the partition
PName=$(echo $output | awk '{ print $1 }' )

if [ $UseP -ge $ALERT ]
then
    echo "\"$PartationN\" partation is \"$UseP%\" used on $(hostname)
Server as on $(date)" |mail -s "ALERT: Server $(hostname) -- Almost
out of disk space usage = $UseP% --" $ADMIN
fi
done
```

It depends on your organization structure and their complexity, for multifarious and large environment it is one click solution. The more servers you have the more beneficial for you.

Conclusion:

This paper is concluded by using auto script that you can get better performance, time saving and reduce manual works.

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Somers, NY 10589
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