

WebSphere打印线程信息和堆Dump文件

利用wsadmin生成javacore, heapdump文件

 **使用背景**

一般应用于服务器繁忙或是无响应时，我们需要看一下线程的状态和详细信息。

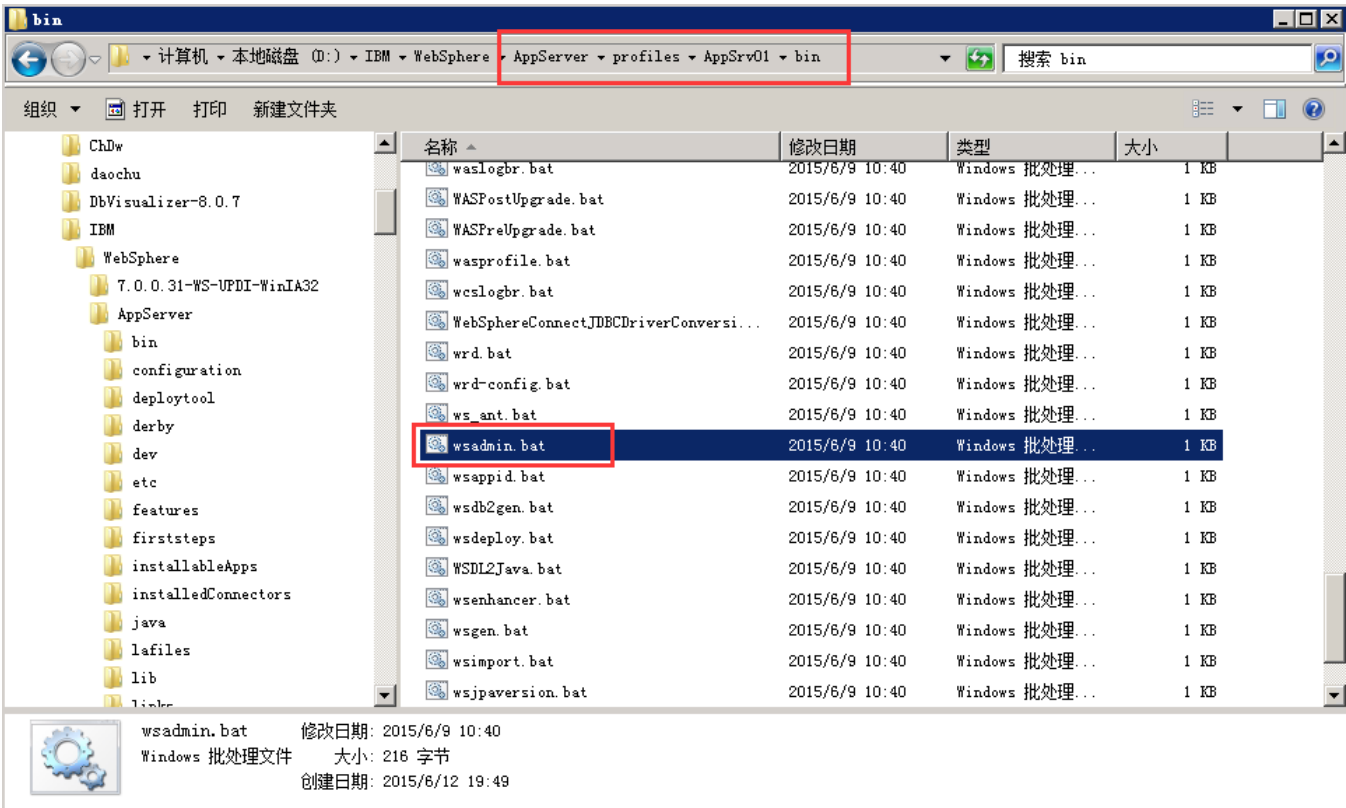
 **注意事项**

先不要重启服务器，在服务器无响应的时候执行下面获取步骤。

windows:

一、生成javacore文件

1、启动wsadmin.bat ， 路径为： /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin/



输入命令行： `cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin`
`./wsadmin.bat`

```
管理员: C:\Windows\system32\cmd.exe - wsadmin.bat
Microsoft Windows [版本 6.1.7601]
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C:\Users\Administrator>d:

D:\>cd D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin

D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin>wsadmin.bat
WASX7209I: Connected to process "server1" on node HUANGPINGNode01 using SOAP connector; The type of proces
WASX7029I: For help, enter: "$Help help"
wsadmin>
```

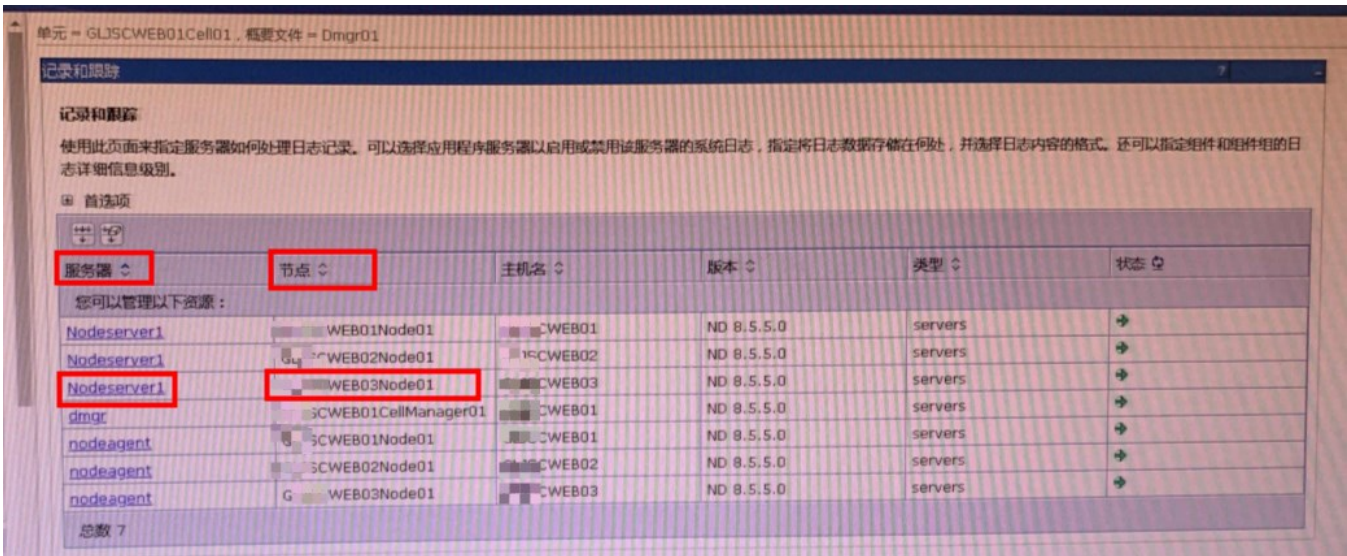
2、输入命令 wsadmin>set jvm [\$AdminControl completeObjectName type=JVM,process=<server1>,*]

说明：上面中的<server1>要换成现场was服务的真实名称

如果websphere是集群部署环境，通过process查找时，会有多个java进程匹配，此时可以增加条件判断条件过滤出需要打印线程的进程。

wsadmin>set jvm [\$AdminControl completeObjectName type=JVM,process=<服务器>,platform=proxy,node=<节点>,*]

如下图，可以匹配服务器和节点名称来获取需要打印线程的进程。



如下图，执行set命令，返回多个进程信息，说明匹配不成功。新增判断条件，最终返回一条我们指定的java进程信息，此时就可以打印堆或线程了

```
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,platform=proxy,node=GLJSCWEB03Node01,*]
WASX7026W: 字符串 "type=JVM,platform=proxy,node=GLJSCWEB03Node01,*" 与 2 个不同的 MBean 相对应: 已返回第一个 MBean.
websphere:name=JVM,process=nodeagent,platform=proxy,node=GLJSCWEB03Node01,j2eeType=JVM,J2EEServer=nodeagent,version=8.5.5.0,type=JVM,mbeanIdentifier=JVM,cell=GLJSCWEB01Cell01,spec=1.0
wsadmin>proc jvm [$AdminControl completeObjectName type=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,*]
websphere:name=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,j2eeType=JVM,J2EEServer=Nodeserver1,version=8.5.5.0,type=JVM,mbeanIdentifier=JVM,cell=GLJSCWEB01Cell01,spec=1.0
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,*]
websphere:name=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,j2eeType=JVM,J2EEServer=Nodeserver1,version=8.5.5.0,type=JVM,mbeanIdentifier=JVM,cell=GLJSCWEB01Cell01,spec=1.0
wsadmin>$AdminControl invoke $jvm dumpThreads
wsadmin>set objectName [$AdminControl queryNames websphere:type=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,*]
websphere:name=JVM,process=Nodeserver1,platform=proxy,node=GLJSCWEB03Node01,j2eeType=JVM,J2EEServer=Nodeserver1,version=8.5.5.0,type=JVM,mbeanIdentifier=JVM,cell=GLJSCWEB01Cell01,spec=1.0
wsadmin>$AdminControl invoke $objectName generateHeapDump
/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/.heapdump.20231124.153123.109383.6042.phd
wsadmin>
```

返回两个进程信息是不正常的

返回一个进程信息是正常的

比如在服务器上对应的服务名是server1，命令行输入是：set jvm [\$AdminControl completeObjectName type=JVM,process=server1,*]

```
CA. 管理员: C:\Windows\system32\cmd.exe - wsadmin.bat
Microsoft Windows [版本 6.1.7601]
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C:\Users\Administrator>d:

D:\>cd D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin

D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin>wsadmin.bat
WASX7209I: Connected to process "server1" on node HUANGPINGNode01 using SOAP connector; The type of process is J2EE.
WASX7209I: For help, enter: "SHelp help"
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=server1,*]
websphere:name=JVM,process=server1,platform=proxy,node=HUANGPINGNode01,j2eeType=JVM,J2EEServer=server1,version=8.5.5.0,type=JVM,mbeanIdentifier=JVM,cell=GLJSCWEB01Cell01,spec=1.0
wsadmin>
```

3、输入命令 wsadmin>\$AdminControl invoke \$jvm dumpThreads

```
管理员: C:\Windows\system32\cmd.exe - wsadmin.bat
Microsoft Windows [版本 6.1.7601]
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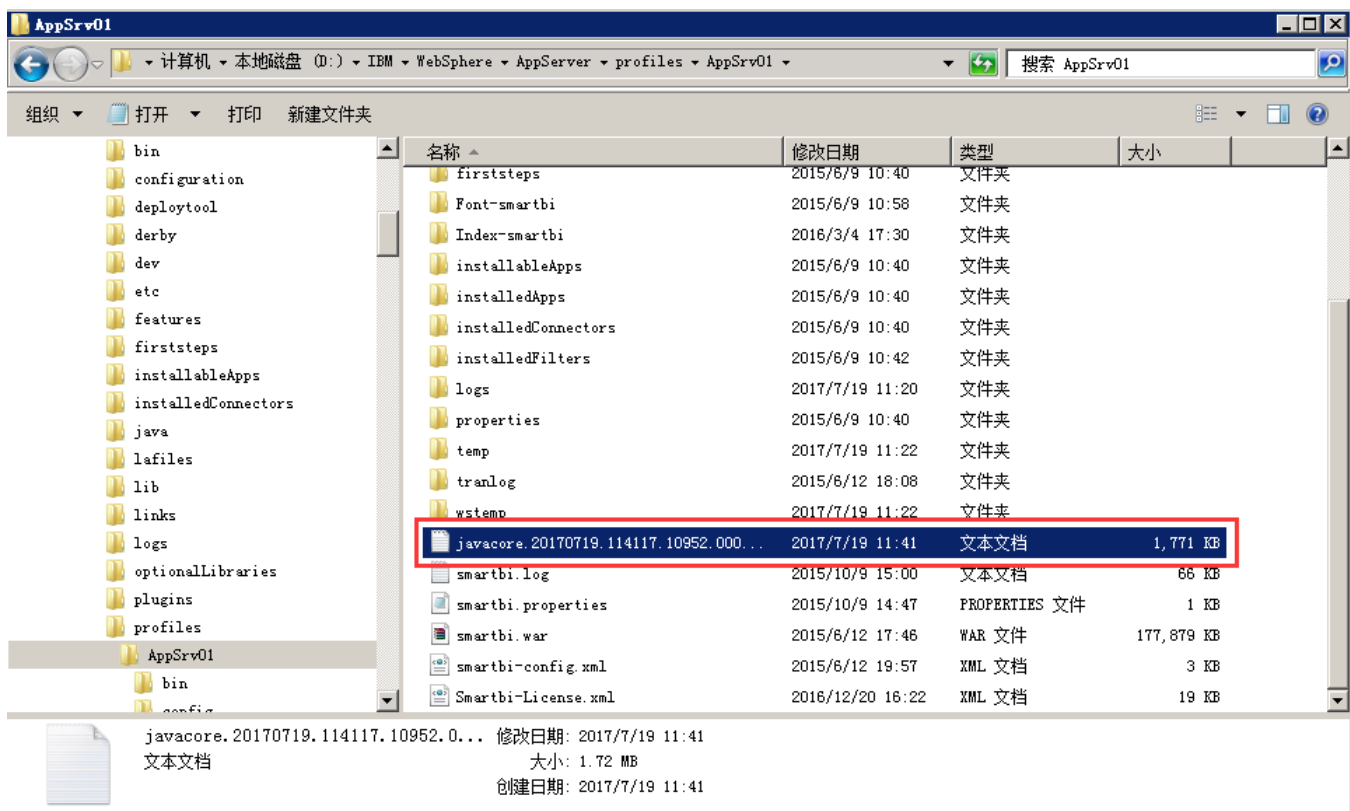
C:\Users\Administrator>d:

D:\>cd D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin

D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin>wsadmin.bat
WASX7209I: Connected to process "server1" on node HUANGPINGNode01 using SOAP connector; The type of process is J2EE.
WASX7029I: For help, enter: "$Help help"
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=server1,*]
WebSphere:name=JVM,process=server1,platform=proxy,node=HUANGPINGNode01,j2eeType=JVM,J2EEServer=server1,vers=1.6
wsadmin>$AdminControl invoke $jvm dumpThreads

wsadmin>
```

4、安装目录D:\IBM\WebSphere\AppServer\profiles\AppSrv01下生成javacore文件(例: javacore.20090804.111947.2632.txt)



5、获取到javacore文件发回分析。

6、如何解析这个Javacore文件？

用javacore文件分析器对javacore文件进行分析

```
cd /d javacore文件分析器放置路径>java -Xmx1000m -jar jca31.jar
```

二、生成heapdump文件

注：具体步骤和生成Javacore文件类似，只是在命令行有差异：

1、启动wsadmin.bat，路径为：D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin

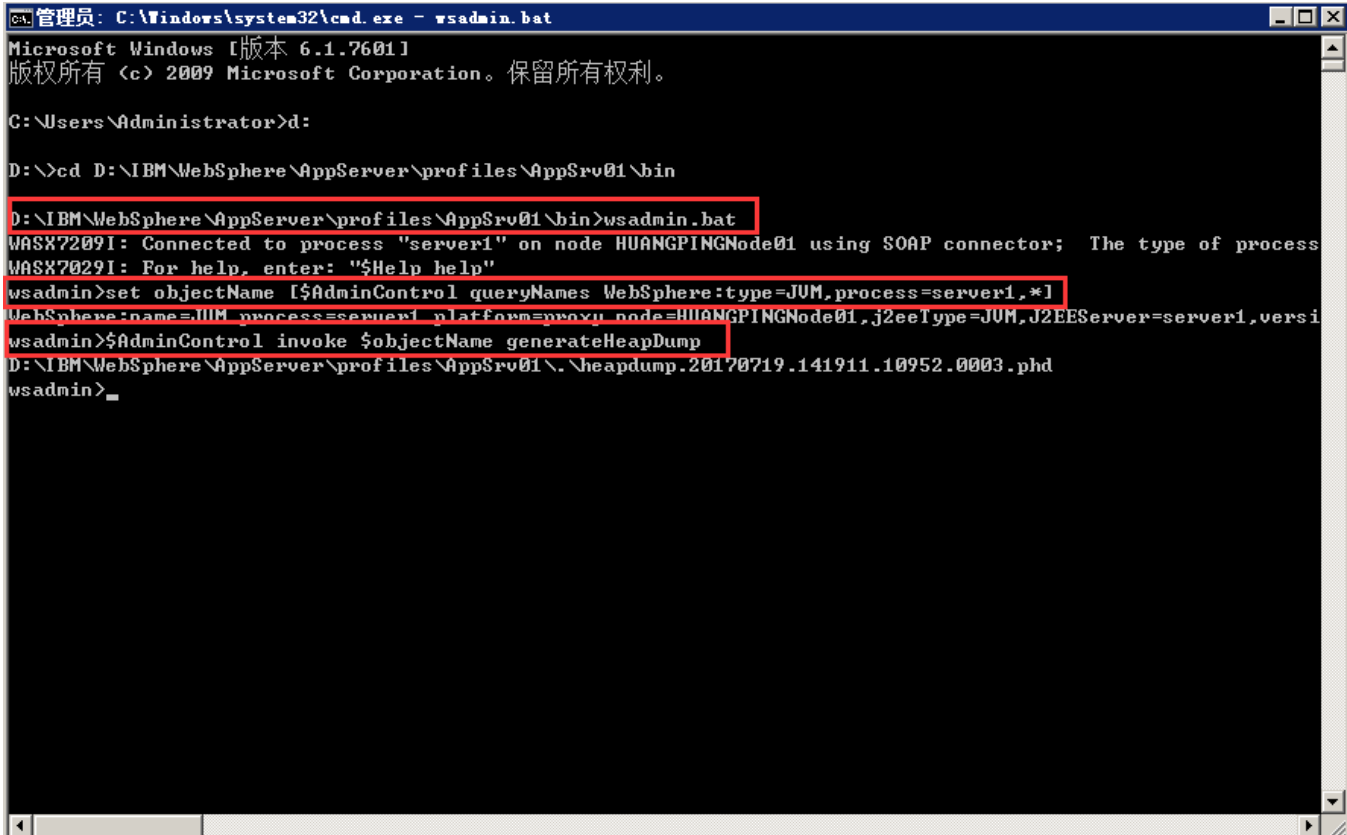
输入命令行：
cd D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin
./wsadmin.bat

2、输入命令 wsadmin>set objectName [\$AdminControl queryNames WebSphere:type=JVM,process=<server1>,*]

说明：上面中的<server1>要换成现场was服务的真实名称

比如在服务器上对应的服务名是server1，命令行输入是：set objectName [\$AdminControl queryNames WebSphere:type=JVM,process=server1,*]

3、输入命令 wsadmin> \$AdminControl invoke \$objectName generateHeapDump



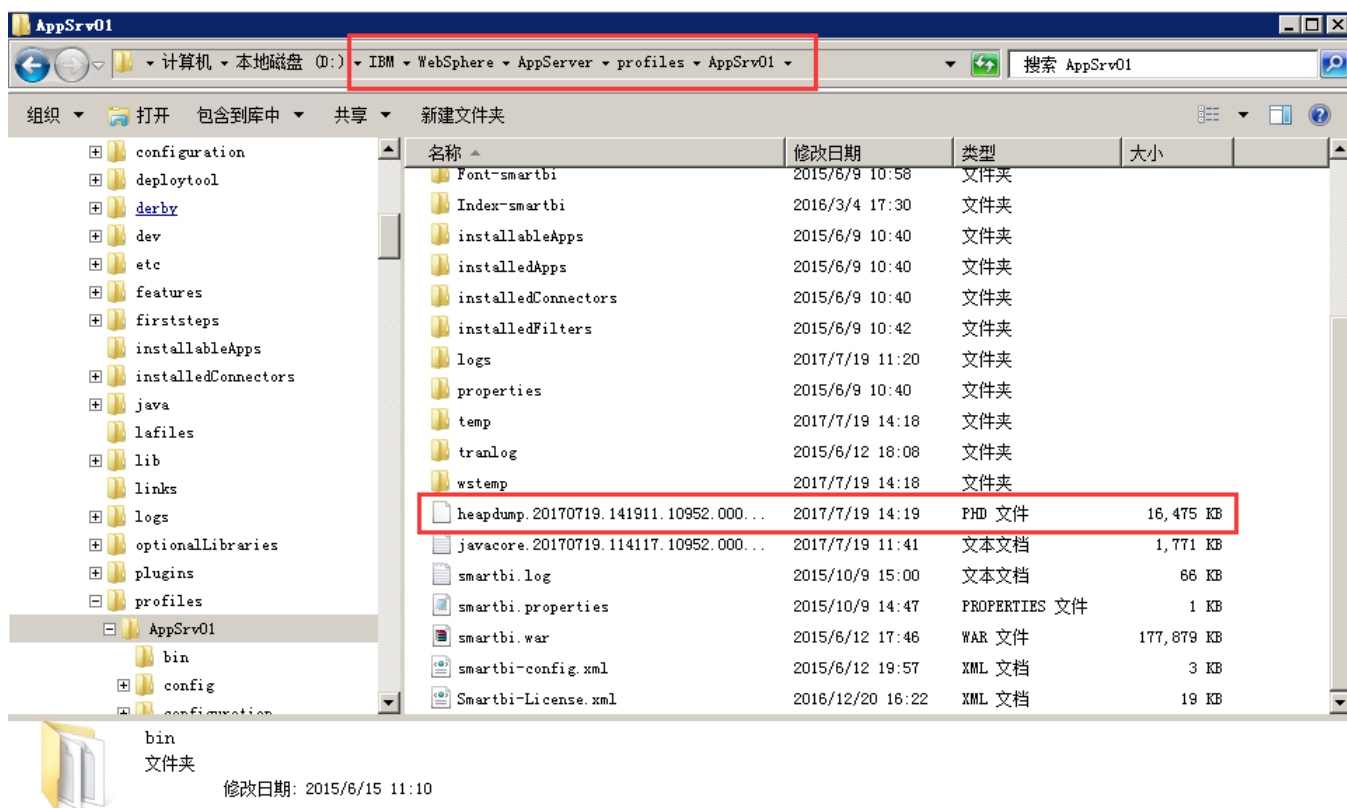
```
管理员: C:\Windows\system32\cmd.exe - wsadmin.bat
Microsoft Windows [版本 6.1.7601]
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C:\Users\Administrator>d:

D:\>cd D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin

D:\IBM\WebSphere\AppServer\profiles\AppSrv01\bin>wsadmin.bat
WASK7209I: Connected to process "server1" on node HUANGPINGNode01 using SOAP connector; The type of process
WASK7029I: For help, enter: "$Help help"
wsadmin>set objectName [$AdminControl queryNames WebSphere:type=JVM,process=server1,*]
WebSphere:name=JVM,process=server1,platform=provy,node=HUANGPINGNode01,j2eeType=JVM,J2EEServer=server1,versi
wsadmin>$AdminControl invoke $objectName generateHeapDump
D:\IBM\WebSphere\AppServer\profiles\AppSrv01\.\heapdump.20170719.141911.10952.0003.phd
wsadmin>
```

4、安装目录D:\IBM\WebSphere\AppServer\profiles\AppSrv01下生成HeapDump文件(例：heapdump.20170719.141911.10952.0003.phd)



5、将获取都到的heapdump文件发回分析即可。

6、如何分析heapdump文件？

用heapdump文件分析器对heapdump文件进行分析

cd /d heapdump文件分析器放置路径>java -Xmx1000m -jar ha33.jar

三、GC日志

在Websphere 中，如果想让GC服务器自动GC，可以做如下设置：

在Websphere的控制台，server-->server1-->Java and Process Management --->Process definition-->Java Virtual Machine,

在这个页面把 “Verbose garbage collection ” 勾上，

然后，在 “Generic JVM arguments” 那里添加如下参数：-verbose:gc -XX:+PrintGCDetails -Xverbosegclog:gc.log,

GC日志就会自动生成在你的server1 目录下了，可以通过一些工具来分析Websphere服务器的GC情况了。

Linux

一、生成javacore文件

1、启动wsadmin.sh，路径为： /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin/wsadmin.sh

/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin				
名字	扩展	大小	已改变	权限
	wsenhancer.sh	95 B	2017/5/17 16:04:...	rwxr-xr-x
	WSDL2Java.sh	94 B	2017/5/17 16:04:...	rwxr-xr-x
	wsdeploy.sh	93 B	2017/5/17 16:04:...	rwxr-xr-x
	wsdbgen.sh	92 B	2017/5/17 16:04:...	rwxr-xr-x
	wsdb2gen.sh	93 B	2017/5/17 16:04:...	rwxr-xr-x
	WSBatchPackager.sh	100 B	2017/5/17 16:04:...	rwxr-xr-x
	wsappid.sh	92 B	2017/5/17 16:04:...	rwxr-xr-x
	wsadmin.sh	92 B	2017/5/17 16:04:...	rwxr-xr-x
	ws_ant.sh	91 B	2017/5/17 16:04:...	rwxr-xr-x
	wrd-config.sh	95 B	2017/5/17 16:04:...	rwxr-xr-x
	wrd.sh	88 B	2017/5/17 16:04:...	rwxr-xr-x
	WebSphereConnectJDBCdriverConversion.sh	121 B	2017/5/17 16:04:...	rwxr-xr-x
	wct.sh	106 B	2017/5/17 16:04:...	rwxr-xr-x
	wasservice.sh	95 B	2017/5/17 16:04:...	rwxr-xr-x
	wasprofile.sh	95 B	2017/5/17 16:04:...	rwxr-xr-x
	WASPreUpgrade.sh	98 B	2017/5/17 16:04:...	rwxr-xr-x
	WASPostUpgradeBLAHelper.sh	108 B	2017/5/17 16:04:...	rwxr-xr-x

```
输入命令行:  cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
                . /wsadmin.sh
```

注：输入命令行 . /wsadmin.sh 后，需要输入WebSphere控制台的用户名和密码。


```
root@localhost:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
login as: root
root@192.168.2.164's password:
Last login: Tue Jul 18 17:57:59 2017 from 192.168.2.138
[root@localhost ~]# cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
[root@localhost bin]# ./wsadmin.sh
区域/单元名: <default>
Username: admin
Password:
WASX7209I: 已使用 SOAP 连接器连接到节点 localhostNode01 上的进程“server1”; 进程的
类型为: UnManagedProcess
```

2、输入命令 wsadmin>set jvm [\$AdminControl completeObjectName type=JVM,process=<server1>,*]

说明：上面中的<server1>要换成现场was服务的真实名称

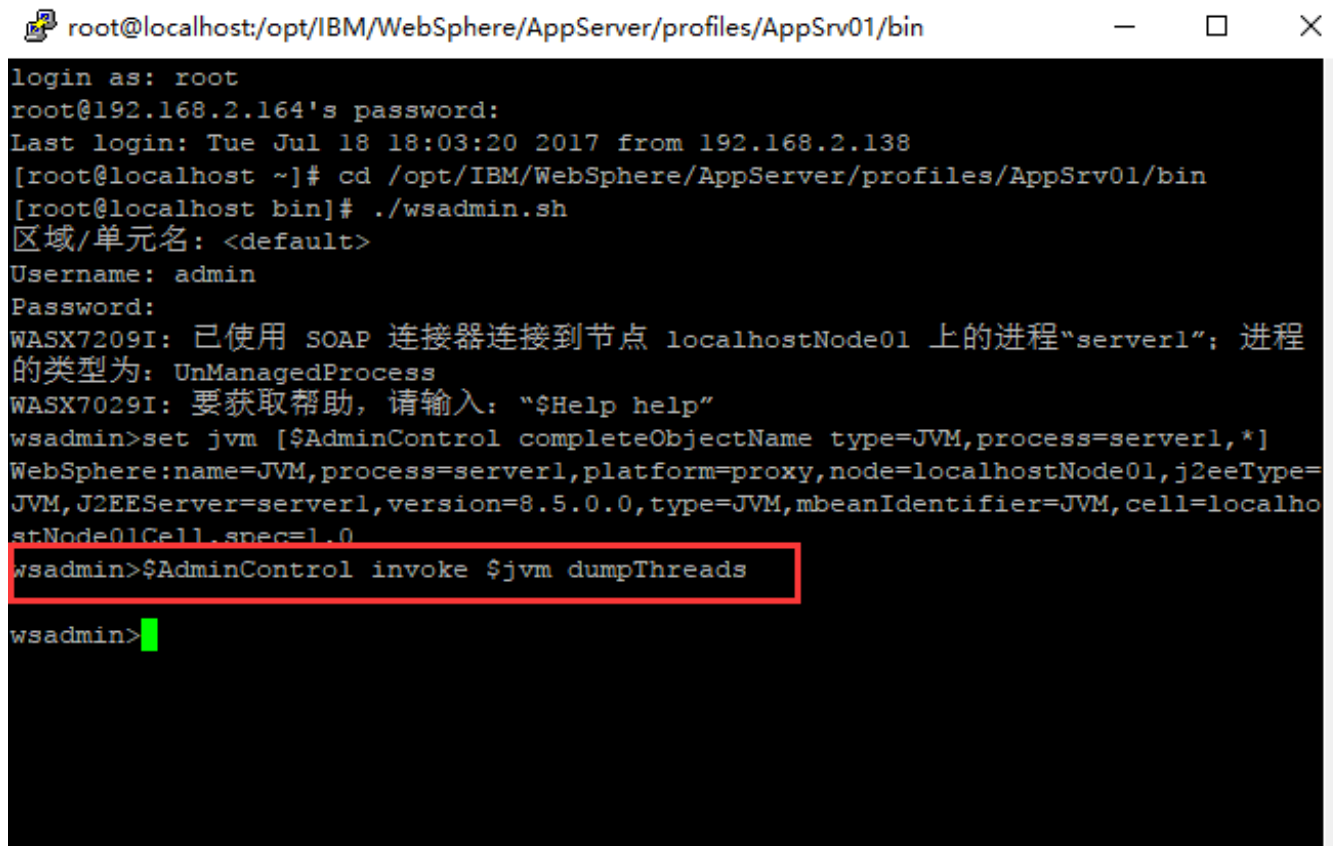

```
root@localhost:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
login as: root
root@192.168.2.164's password:
Last login: Tue Jul 18 18:03:20 2017 from 192.168.2.138
[root@localhost ~]# cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
[root@localhost bin]# ./wsadmin.sh
区域/单元名: <default>
Username: admin
Password:
WASX7209I: 已使用 SOAP 连接器连接到节点 localhostNode01 上的进程“server1”; 进程
的类型为: UnManagedProcess
WASX7029I: 要获取帮助, 请输入: “$Help help”
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=server1,*]
websphere:name=JVM,process=server1,platform=proxy,node=localhostNode01,j2eeType=
JVM,J2EEServer=server1,version=8.5.0.0,type=JVM,mbeanIdentifier=JVM,cell=localho
stNode01Cell,spec=1.0
wsadmin>
```

服务名

比如在服务器上对应的服务名是server1，命令行输入是：set jvm [\$AdminControl completeObjectName type=JVM,process=server1,*]

```
root@localhost:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
login as: root
root@192.168.2.164's password:
Last login: Tue Jul 18 18:03:20 2017 from 192.168.2.138
[root@localhost ~]# cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
[root@localhost bin]# ./wsadmin.sh
区域/单元名: <default>
Username: admin
Password:
WASX7209I: 已使用 SOAP 连接器连接到节点 localhostNode01 上的进程“server1”; 进程
的类型为: UnManagedProcess
WASX7029I: 要获取帮助, 请输入: “$Help help”
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=server1,*]
websphere:name=JVM,process=server1,platform=proxy,node=localhostNode01,j2eeType=
JVM,J2EEServer=server1,version=8.5.0.0,type=JVM,mbeanIdentifier=JVM,cell=localho
stNode01Cell,spec=1.0
wsadmin>
```

3、输入命令 wsadmin>\$AdminControl invoke \$jvm dumpThreads



A terminal window titled 'root@localhost:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin'. The terminal shows the following sequence of commands and output:

```
login as: root
root@192.168.2.164's password:
Last login: Tue Jul 18 18:03:20 2017 from 192.168.2.138
[root@localhost ~]# cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
[root@localhost bin]# ./wsadmin.sh
区域/单元名: <default>
Username: admin
Password:
WASX7209I: 已使用 SOAP 连接器连接到节点 localhostNode01 上的进程“server1”; 进程的
类型为: UnManagedProcess
WASX7029I: 要获取帮助, 请输入: “$Help help”
wsadmin>set jvm [$AdminControl completeObjectName type=JVM,process=server1,*]
WebSphere:name=JVM,process=server1,platform=proxy,node=localhostNode01,j2eeType=
JVM,J2EEServer=server1,version=8.5.0.0,type=JVM,mbeanIdentifier=JVM,cell=localho
stNode01Cell.spec=1.0
wsadmin>$AdminControl invoke $jvm dumpThreads
wsadmin>
```

The command `wsadmin>$AdminControl invoke $jvm dumpThreads` is highlighted with a red rectangle.

4、获取生成的javacore文件路径为: /opt/IBM/WebSphere/AppServer/profiles/AppSrv01下生成javacore文件(例:javacore.20090804.111947.2632.txt)

/opt/IBM/WebSphere/AppServer/profiles/AppSrv01				
名字	扩展	大小	已改变	权限
servers			2017/5/17 16:04:...	rwxr-xr-x
repoBackup			2017/7/18 15:11:...	rwxr-xr-x
properties			2017/5/17 16:04:...	rwxr-xr-x
mlogs-smartbi			2017/5/17 18:25:...	rwxr-xr-x
logs			2017/5/17 17:37:...	rwxr-xr-x
installedFilters			2017/5/17 16:06:...	rwxr-xr-x
installedConnectors			2017/5/17 16:03:...	rwxr-xr-x
installedApps			2017/5/17 16:04:...	rwxr-xr-x
installableApps			2017/5/17 16:03:...	rwxr-xr-x
Index-smartbi			2017/7/18 18:00:...	rwxr-xr-x
Font-smartbi			2017/5/17 18:24:...	rwxr-xr-x
firststeps			2017/5/17 16:04:...	rwxr-xr-x
exts-smartbi			2017/7/18 18:00:...	rwxr-xr-x
expandedBundles			2017/5/17 16:06:...	rwxr-xr-x
etc			2017/5/17 16:04:...	rwxr-xr-x
consolepreferences			2017/5/17 16:08:...	rwxr-xr-x
configuration			2017/5/17 16:06:...	rwxr-xr-x
config			2017/5/17 16:06:...	rwxr-xr-x
bin			2017/5/17 18:24:...	rwxr-xr-x
smartbi-config.xml		1,994 B	2017/5/17 18:22:...	rw-r--r--
smartbi.properties		240 B	2017/5/17 18:25:...	rw-r--r--
javacore.20170718.181350.13083.0083.txt		3,164 KiB	2017/7/18 18:13:...	rw-r--r--

5、将javacore文件发回分析即可。

6、如何分析Javacore文件？

用javacore文件分析器对javacore文件进行分析

cd /d javacore文件分析器放置路径>java -Xmx1000m -jar jca31.jar

注：若通过以上方法无法生成javacore文件，可通过以下两行命令生成：

```
[root@smartbiserver20 ~]# ps -ef|grep websphere
```

找到需要打印线程的WebSphere线程号：

```
root@localhost:~  
login as: root  
root@192.168.2.164's password:  
Last login: Tue Jul 18 18:32:43 2017 from 192.168.2.138  
p[root@localhost ~]# ps -ef|grep websphere  
root      13083      1 14 17:59 pts/0    00:05:29 /opt/IBM/WebSphere/AppServer/j  
ava/bin/java -Declipse.security -Dwas.status.socket=38172 -Dosgi.install.area=/o  
pt/IBM/WebSphere/AppServer -Dosgi.configuration.area=/opt/IBM/WebSphere/AppServe  
r/profiles/AppSrv01/servers/server1/configuration -Dosgi.framework.extensions=com  
.ibm.cds,com.ibm.ws.eclipse.adaptors -Xshareclasses:name=webspherev85_1.6_64_%g  
,nonFatal -Xbootclasspath/p:/opt/IBM/WebSphere/AppServer/java/jre/lib/ibmorb.jar  
-classpath /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/properties:/opt/IBM/W  
ebSphere/AppServer/properties:/opt/IBM/WebSphere/AppServer/lib/startup.jar:/opt/  
IBM/WebSphere/AppServer/lib/bootstrap.jar:/opt/IBM/WebSphere/AppServer/lib/jsf-n  
ls.jar:/opt/IBM/WebSphere/AppServer/lib/lmproxy.jar:/opt/IBM/WebSphere/AppServer  
/lib/urlprotocols.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/batchboot.jar:  
/opt/IBM/WebSphere/AppServer/deploytool/itp/batch2.jar:/opt/IBM/WebSphere/AppSer  
ver/java/lib/tools.jar -Dibm.websphere.internalClassAccessMode=allow -Xms1024m -  
Xmx2048m -Xcompressedrefs -Xscmaxaot4M -Xscmx60M -Dws.ext.dirs=/opt/IBM/WebSpher  
e/AppServer/java/lib:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/classes:/opt  
/IBM/WebSphere/AppServer/classes:/opt/IBM/WebSphere/AppServer/lib:/opt/IBM/WebSp  
here/AppServer/installedChannels:/opt/IBM/WebSphere/AppServer/lib/ext:/opt/IBM/W  
ebSphere/AppServer/web/help:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/  
com.ibm.etools.ejbdeploy/runtime -Dderby.system.home=/opt/IBM/WebSphere/AppServe  
r/derby -Dcom.ibm.itp.location=/opt/IBM/WebSphere/AppServer/bin -Djava.util.logg
```

[root@smartbiserver20 ~]# kill -3 13083

```
root@localhost:~  
r/derby -Dcom.ibm.itp.location=/opt/IBM/WebSphere/AppServer/bin -Djava.util.logg  
ing.configureByServer=true -Duser.install.root=/opt/IBM/WebSphere/AppServer/prof  
iles/AppSrv01 -Djava.ext.dirs=/opt/IBM/WebSphere/AppServer/tivoli/tam:/opt/IBM/W  
ebSphere/AppServer/java/jre/lib/ext -Djavax.management.builder.initial=com.ibm.w  
s.management.PlatformMBeanServerBuilder -Dpython.cachedir=/opt/IBM/WebSphere/App  
Server/profiles/AppSrv01/temp/cachedir -Dwas.install.root=/opt/IBM/WebSphere/App  
Server -Djava.util.logging.manager=com.ibm.ws.bootstrap.WsLogManager -Dserver.ro  
ot=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01 -Dcom.ibm.security.jgss.debug=  
off -Dcom.ibm.security.krb5.Krb5Debug=off -Dfile.encoding=GBK -Duser.region=CN -  
Duser.language=zh -Djava.awt.headless=true -Djava.library.path=/opt/IBM/WebSpher  
e/AppServer/lib/native/linux/x86_64:/opt/IBM/WebSphere/AppServer/java/jre/lib/a  
md64/default:/opt/IBM/WebSphere/AppServer/java/jre/lib/amd64:/opt/IBM/WebSphere/  
AppServer/bin:/usr/lib: -Djava.endorsed.dirs=/opt/IBM/WebSphere/AppServer/endors  
ed_apis:/opt/IBM/WebSphere/AppServer/java/jre/lib/endorsed:/opt/IBM/WebSphere/Ap  
pServer/endorsed_apis:/opt/IBM/WebSphere/AppServer/java/jre/lib/endorsed -Djava.  
security.auth.login.config=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/proper  
ties/wsjaas.conf -Djava.security.policy=/opt/IBM/WebSphere/AppServer/profiles/Ap  
pSrv01/properties/server.policy com.ibm.wsspi.bootstrap.WSPreLauncher -nosplash  
-application com.ibm.ws.bootstrap.WSLauncher com.ibm.ws.runtime.WsServer /opt/IB  
M/WebSphere/AppServer/profiles/AppSrv01/config localhostNode01Cell localhostNode  
01 server1  
root      14640  14558  0 18:36 pts/1    00:00:00 grep --color=auto websphere  
[root@localhost ~]# kill -3 13083  
[root@localhost ~]#
```

获取文件路径: /opt/IBM/WebSphere/AppServer/profiles/AppSrv01

/opt/IBM/WebSphere/AppServer/profiles/AppSrv01				
名字	扩展	大小	已改变	权限
properties			2017/5/17 16:04:...	rwxr-xr-x
mlogs-smartbi			2017/5/17 18:25:...	rwxr-xr-x
logs			2017/5/17 17:37:...	rwxr-xr-x
installedFilters			2017/5/17 16:06:...	rwxr-xr-x
installedConnectors			2017/5/17 16:03:...	rwxr-xr-x
installedApps			2017/5/17 16:04:...	rwxr-xr-x
installableApps			2017/5/17 16:03:...	rwxr-xr-x
Index-smartbi			2017/7/18 18:00:...	rwxr-xr-x
Font-smartbi			2017/5/17 18:24:...	rwxr-xr-x
firststeps			2017/5/17 16:04:...	rwxr-xr-x
exts-smartbi			2017/7/18 18:00:...	rwxr-xr-x
expandedBundles			2017/5/17 16:06:...	rwxr-xr-x
etc			2017/5/17 16:04:...	rwxr-xr-x
consolepreferences			2017/5/17 16:08:...	rwxr-xr-x
configuration			2017/5/17 16:06:...	rwxr-xr-x
config			2017/5/17 16:06:...	rwxr-xr-x
bin			2017/5/17 18:24:...	rwxr-xr-x
smartbi-config.xml		1,994 B	2017/5/17 18:22:...	rw-r--r--
smartbi.properties		240 B	2017/5/17 18:25:...	rw-r--r--
javacore.20170718.183841.13083.0235.txt		3,222 KiB	2017/7/18 18:38:...	rw-r--r--
javacore.20170718.182813.13083.0171.txt		3,222 KiB	2017/7/18 18:28:...	rw-r--r--
javacore.20170718.182719.13083.0165.txt		3,222 KiB	2017/7/18 18:27:...	rw-r--r--

二、生成heapdump文件

方法一：

注：具体步骤和Javacore文件生成差不多，只是差别在于命令：

1、 启动wsadmin.sh，路径为： /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin/wsadmin.sh

输入命令行： cd /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin

./wsadmin.sh

注：输入命令行 ./wsadmin.sh 后，需要输入WebSphere控制台的用户名和密码

2、输入命令 wsadmin>set objectName [\$AdminControl queryNames WebSphere:type=JVM,process=<server1>,*]

说明：上面中的<server1>要换成现场was服务的真实名称

比如在服务器上对应的服务名是sever1，命令行输入是： set objectName [\$AdminControl queryNames WebSphere:type=JVM,process=server1,*]

3、 输入命令 wsadmin>\$AdminControl invoke \$objectName generateHeapDump

注：如果复制命令不行，请手动输入命令行。


```
root@localhost:/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin
[root@localhost bin]# ps -ef|grep java
root 16263 16242 0 09:46 pts/0 00:00:04 [java] <defunct>
root 16398 1 23 09:47 pts/0 00:03:34 /opt/IBM/WebSphere/AppServer/java/bin/java -Declipse.security -Dwas.status.socket=34504 -Dosgi.install.area=/opt/IBM/W
ebSphere/AppServer -Dosgi.configuration.area=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/servers/server1/configuration -Dosgi.framework.extensions=com.ibm.cds,com.ibm
m.ws.eclipse.adaptors -Xshareclasses:name=webspherev85.1.6.64_*,nonFatal -Xbootclasspath/p:/opt/IBM/WebSphere/AppServer/java/jre/lib/ibmorb.jar -classpath /opt/IBM/Web
Sphere/AppServer/profiles/AppSrv01/properties:/opt/IBM/WebSphere/AppServer/properties:/opt/IBM/WebSphere/AppServer/lib/startup.jar:/opt/IBM/WebSphere/AppServer/lib/boot
strap.jar:/opt/IBM/WebSphere/AppServer/lib/jsf-nls.jar:/opt/IBM/WebSphere/AppServer/lib/lmpoxy.jar:/opt/IBM/WebSphere/AppServer/lib/urlprotocols.jar:/opt/IBM/WebSphere
/AppServer/deploytool/itp/batchboot.jar:/opt/IBM/WebSphere/AppServer/deploytool/itp/batch2.jar:/opt/IBM/WebSphere/AppServer/java/lib/tools.jar -Dibm.websphere.internalC
lassAccessMode=allow -Xms1024m -Xmx2048m -Xcompressedrefs -Xscmaxaot4M -Xscmx60M -Dws.ext.dirs=/opt/IBM/WebSphere/AppServer/java/lib:/opt/IBM/WebSphere/AppServer/profil
es/AppSrv01/classes:/opt/IBM/WebSphere/AppServer/classes:/opt/IBM/WebSphere/AppServer/lib:/opt/IBM/WebSphere/AppServer/installedChannels:/opt/IBM/WebSphere/AppServer/li
b/ext:/opt/IBM/WebSphere/AppServer/web/help:/opt/IBM/WebSphere/AppServer/deploytool/itp/plugins/com.ibm.etools.ejbdeploy/runtime -Dderby.system.home=/opt/IBM/WebSphere/
AppServer/derby -Dcom.ibm.itp.location=/opt/IBM/WebSphere/AppServer/bin -Djava.util.logging.configureByServer=true -Duser.install.root=/opt/IBM/WebSphere/AppServer/prof
iles/AppSrv01 -Djava.ext.dirs=/opt/IBM/WebSphere/AppServer/tivoli/tam:/opt/IBM/WebSphere/AppServer/java/jre/lib/ext -Djavax.management.builder.initial=com.ibm.ws.manage
ment.PlatformMBeanServerBuilder -Dpython.cachedir=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/temp/cachedir -Dwas.install.root=/opt/IBM/WebSphere/AppServer -Djava.ut
il.logging.manager=com.ibm.ws.bootstrap.WSLogManager -Dserver.root=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01 -Dcom.ibm.security.jgss.debug=off -Dcom.ibm.security.k
rb5.Krb5Debug=off -Dfile.encoding=GBK -Duser.region=CN -Duser.language=zh -Djava.awt.headless=true -Djava.library.path=/opt/IBM/WebSphere/AppServer/lib/native/linux/x86
_64:/opt/IBM/WebSphere/AppServer/java/jre/lib/amd64/default:/opt/IBM/WebSphere/AppServer/java/jre/lib/amd64:/opt/IBM/WebSphere/AppServer/bin:/usr/lib -Djava.endorsed.
dirs=/opt/IBM/WebSphere/AppServer/endorsed_apis:/opt/IBM/WebSphere/AppServer/java/jre/lib/endorsed:/opt/IBM/WebSphere/AppServer/endorsed_apis:/opt/IBM/WebSphere/AppServ
er/java/jre/lib/endorsed -Djava.security.auth.login.config=/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/properties/wsjaas.conf -Djava.security.policy=/opt/IBM/WebSph
re/AppServer/profiles/AppSrv01/properties/server.policy com.ibm.wsspi.bootstrap.WSPreLauncher -nosplash -application com.ibm.ws.bootstrap.WSlauncher com.ibm.ws.runtime.
WServer /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/config localhostNode01Cell localhostNode01 server1
root 17025 16539 0 10:02 pts/1 00:00:00 grep --color=auto java
[root@localhost bin]# ./w
wasprofile.sh wrd-config.sh ws_ant.sh wsdbgen.sh wgen.sh wsmapping.sh wve_encodePassword.sh
wasservice.sh wrd.sh wsappid.sh wsdeploy.sh wsimport.sh wsreversemapping.sh
wct.sh wsadmin.sh wsdb2gen.sh wsenhancer.sh wsjpaversion.sh wsschema.sh
[root@localhost bin]# ./wsadmin.sh
区域/单元名: <default>
Username: admin
Password:
WASX7209I: 已使用 SOAP 连接器连接到节点 localhostNode01 上的进程“server1”; 进程的类型为: UnManagedProcess
WASX7029I: 要获取帮助, 请输入: "$Help help"
wsadmin>set objectName [$AdminControl queryNames WebSphere:type=JVM,process=server1,*]
WebSphere:name=JVM,process=server1,platform=proxy,node=localhostNode01,j2eeType=JVM,J2EEServer=server1,version=8.5.0.0,type=JVM,mbeanIdentifier=JVM,cell=localhostNode01
Cell,spe
wsadmin>AdminControl invoke $objectName generateHeapDump
/opt/IBM/WebSphere/AppServer/profiles/AppSrv01/.heapdump.20170719.100404.16398.0097.phd
wsadmin>
```

4、安装目录 /opt/IBM/WebSphere/AppServer/profiles/AppSrv01 下生成HeapDump文件(例:heapdump.20170719.100404.16398.0097.phd)

/opt/IBM/WebSphere/AppServer/profiles/AppSrv01				
名字	扩展	大小	已改变	权限
mlogs-smartbi			2017/5/17 18:25:...	rw-r--r--
logs			2017/5/17 17:37:...	rw-r--r--
installedFilters			2017/5/17 16:06:...	rw-r--r--
installedConnectors			2017/5/17 16:03:...	rw-r--r--
installedApps			2017/5/17 16:04:...	rw-r--r--
installableApps			2017/5/17 16:03:...	rw-r--r--
Index-smartbi			2017/7/19 9:47:57	rw-r--r--
Font-smartbi			2017/5/17 18:24:...	rw-r--r--
firststeps			2017/5/17 16:04:...	rw-r--r--
exts-smartbi			2017/7/19 9:48:01	rw-r--r--
expandedBundles			2017/5/17 16:06:...	rw-r--r--
etc			2017/5/17 16:04:...	rw-r--r--
consolepreferences			2017/5/17 16:08:...	rw-r--r--
configuration			2017/5/17 16:06:...	rw-r--r--
config			2017/5/17 16:06:...	rw-r--r--
bin			2017/5/17 18:24:...	rw-r--r--
smartbi-config.xml		1,994 B	2017/5/17 18:22:...	rw-r--r--
smartbi.properties		240 B	2017/5/17 18:25:...	rw-r--r--
javacore.20170718.183841.13083.0235.txt		3,222 KiB	2017/7/18 18:38:...	rw-r--r--
javacore.20170718.182813.13083.0171.txt		3,222 KiB	2017/7/18 18:28:...	rw-r--r--
javacore.20170718.182719.13083.0165.txt		3,222 KiB	2017/7/18 18:27:...	rw-r--r--
heapdump.20170719.100404.16398.0097.phd		30,643 ...	2017/7/19 10:04:...	rw-r--r--

- 5、将heapdump文件发回分析即可。
- 6、如何对heapdump文件进行分析？

```
用heapdump文件分析器对heapdump文件进行分析

cd /d heapdump文件分析器放置路径>java -Xmx1000m -jar ha33.jar
```

方法二：

说明：WebSphere出现无响应的时cpu使用率为0，并会自动重启，导致无法通过“方法一”获取heapdump信息。**可提前在WebSphere控制台上增加以下参数并重启服务器**，这样下次进行生成Javacore文件时，会自动同时生成heapdump信息：

步骤：在WebSphere控制台， Servers（服务器） > WebSphere Application Server > server_name（如：server1） > Java和进程管理 > Process Definition（进程定义）> Environment Entries（环境条目） > New（新建）
增加以下信息

名称	值
IBM_HEAPDUMP	true
IBM_HEAP_DUMP	true
IBM_HEAPDUMPDIR	your_directory
IBM_HEAPDUMP_OUTOFMEMORY	true
IBM_JAVADUMP_OUTOFMEMORY	true

注：其中第三条参数是为了指定生成heapdump文件的路径，可不填写，这样就会默认生成在和javacore文件相同的路径下。
当进行生成Javacore后，就会同时生成heapdump文件。

三、GC日志

在Websphere 中，如果想让GC服务器自动GC，可以做如下设置：

在Websphere的控制台，server-->server1-->Java and Process Management --->Process definition-->Java Virtual Machine,

在这个页面把 “Verbose garbage collection ” 勾上，

然后，在 “Generic JVM arguments” 那里添加如下参数：-verbose:gc -XX:+PrintGCDetails -Xverbosegclog:gc.log，

GC日志就会自动生成在你的server1 目录下了，可以通过一些工具来分析Websphere服务器的GC情况了。