

R2dump debug tool

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R2dump debug tool

Troubleshooting

Problem

Customers may face a situation where a server is rebooted with no dump and nothing to explain the reason for the reboot in the error report or in the console log. Most commonly this is seen with customer using an Oracle clustering product, such as RAC or Grid, or with Veritas VCS. Customers are usually referred to these vendors to examine application logs for root cause. A product vendor may ask IBM to provide more information about the system state when the reboot command was issued. AIX development support has created a kernel extension, called r2dump. The r2dump tool loads a kernel extension that replaces the reboot system call in the AIX kernel, with code that will simply force system

dump instead of reboot. It can be used on AIX 6.1 TL06 or (later versions) and on any AIX 7.1 and 7.2 systems.

Symptom

A reboot with no dump to analyze the root cause.

Cause

In most cases, customer using an Oracle clustering product, such as RAC or Grid, or with Veritas VCS may experience a reboot with no dump.

Environment

AIX 6.1 TL06 up to 7.2

Resolving The Problem

The r2dump debug tool loads a kernel extension that replaces the reboot system call in the AIX kernel, with code that will simply force system dump instead of reboot.

This debug tool is available in epkg format following the instructions below:

To download the r2dump debug tool:

<ftp://ftp.software.ibm.com/aix/tools/dumptools/>

This include:

dbgr2dump.161110.epkg.Z
README.TXT

To apply the r2dump debug tool:

```
# emgr -X -e dbgr2dump.161110.epkg.Z (run from the directory where you saved it)
```

To see if debug tool is applied:

```
# emgr -l  
To remove:  
#emgr -r -L dbgr2dump  
-----
```

To enable the tool, run `"/opt/AIX/r2dump/r2dump -e /opt/AIX/r2dump"`

To automatically reload the extension after a system reboot, put this command in inittab:
`r2dump:2:once:/opt/AIX/r2dump/r2dump -e /opt/AIX/r2dump>/dev/console 2>&1`

If you want to reboot the system without collecting a dump, you can simply unload the kernel extension:

```
/opt/AIX/r2dump/r2dump -d /opt/AIX/r2dump
```

Or, you can add the above line to `/etc/rc.shutdown` and the kernel extension will be automatically disabled when you run a reboot or shutdown from the command line.

Conclusion

This is a useful tool to find out what is causing unexplained system reboots.

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