jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

SOLVED! **hp-ux 11.31 dump device using San external LUN**
18-10-2010 06:10 AM

Hello

I have successfully created secondary swap space on an external SAN LUN using the persistant devices. Now having several issues to configure an external lun for DUMP. The BL890c has 400GB of ram so /var/adm/crash is not large enough to hold a dump for analysis. Is it possible to redirect the dump " crash " to a different location ? What are the best practices?

(11 Views)

FOUNDER
Chandrahasa s
Valued Contributor

Posts: 217
Registered:
10-11-2009

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 12:44 PM

Hi,

I am facing server problem....

What are those several problems??

You can specify crash path on file

/etc/rc.config.d/savecrash

You need to specify path like

SAVECRASH_DIR=/var/adm/crash

Your memory size is 400GB so you also need to consider dump speed.
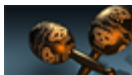HPux v3 came up with some new feature which will help to reduce dump time.

chandra

Assigning points will motivate each one in this forum

(11 Views)

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 02:07 PM

Hello Chandra

Thanks for your quick responce. I think you have given me the correct hint. It seems I will have to assign /var/adm/crash path to a different location for example /dump. What I would like to know if I can assign a link between /var/adm/crash to /dump or should I specify the new dump path /dump in /etc/rc.config.d/crashconf ?

Warm Regards,
Jose

(11 Views)

FOUNDER Duncan Edmonstone
Honored Contributor

Posts: 5,464
Registered:
06-08-2000

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 04:40 PM

Seems to be some confusion around terminology here... /var/adm/crash is _not_ the dump device... it is a filesystems where dumps are written out to on reboot *following a dump* _from_ the dump device.

The dump device is a raw partition that HPUX can write a dump to without having to worry about complex kernel functions like writing to filesystems etc... it is never a filesystem.

By default on most HPUX systems, the dump device is primary swap... you can check this using:

lvlnboot -v

HTH

Duncan

HTH

Duncan

(11 Views)

likid0
Honored Contributor

Posts: 879
Registered:
01-03-2005

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 07:27 PM

You can also check your crash devices using the crashconf command:

crashconf
Crash dump configuration has been changed since boot.

CLASS PAGES INCLUDED IN DUMP DESCRIPTION
-------- ---------- ---------------- -------------------------------------
UNUSED 1919494 no, by default unused pages
USERPG 1051893 no, by default user process pages
BCACHE 409946 no, by default buffer cache pages
KCODE 7140 no, by default kernel code pages
USTACK 8640 yes, by default user process stacks
FSDATA 0 yes, by default file system metadata
KDDATA 740852 yes, by default kernel dynamic data
KSDATA 3098 yes, by default kernel static data
SUPERPG 35735 no, by default unused kernel super pages

Total pages on system: 4176798
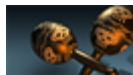Total pages included in dump: 752590

Dump compressed: ON

DEVICE OFFSET(kB) SIZE (kB) LOGICAL VOL. NAME
----------- ---------- ---------- ----------- ------------------------
31:0x006000 1547124 4194300 64:0x000002 /dev/vg00/lvol2
31:0x006000 5741428 4194300 64:0x000010 /dev/vg00/lvswap2

8388600

It's better not to use a symbolic link, you should change the dir in the /etc/rc.config.d/crashconf file

Windows?, no thanks

(11 Views)

---

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 08:10 PM

Hello Colleagues

Duncan you are correct I confused the issue between /var/adm/crash and dump space. I am going to give full details on the problem I am having which I have found a workaround.

The HP-UX 11.31 blade has a total of 400 GB of memory so I created in vg00 swap space of 50GB "vol2" and decided to do the following:-
1. Create secondary swap space of 800 GB on an external SAN LUN " HiTachi"
2. Create a dump space of 400GB on an external SAN LUN.

I think the problem is that the Storage Administrator configured disk sizes of 70GB each,that is for swap "70GBx12disks=840GB" and for Dump "70GBx6disk=420GB". We created VG's with -p 32 -s 65535
So when we create the volume groups and try to create the logical volumes with Strict and Contiguous allocation policies this process fails " Not emough free physical extents available. Failure possibly caused by Contiguous allocation policy"
When I tested using only a 70GB lun with a size of 70GB disk " that is one disk only" the process passes no problems. So due to this fact it seems that for swap and dump it must be one LUN size consisting of one disk " NO EXTENDING of VG or LV's"

Please can you verify and give me advise on this problem. Perhapps I am missing something in HP-UX 11.31 version. Also since primary swap lvol2 was created with LV version 1 should we try to use LV version 2 and above?

Warm Regards,
Jose da SIlva

(11 Views)

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likid0
Honored Contributor

Posts: 879
Registered:
01-03-2005

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 09:23 PM

Hi,

You don't need 800 gigs of swap space, at most if you didn't want to use pseudo swap, you could create a 400 gig swap device(it's allways better to have several devices on different controllers/arrays with the same priority, than one big chunk).

If you use pseudo swap(default behaviour), you would be ok with much less space

Windows?, no thanks

(11 Views)

likid0
Honored Contributor

Posts: 879
Registered:
01-03-2005

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 09:33 PM

Pseudo-Swap

Pseudo-swap space allows for the use of system memory as a third type of swap space. That is, HP-UX swap space can also consist of up to seven-eighths (87.5%) of system memory capacity.

For example, a computer with one GB of system memory and one GB of device and file system swap, can run up to 1.87 GB of processes. If any process attempts to grow or be created beyond this extended threshold, the process will fail.

When using pseudo-swap, since more processes can be created, the system load increases, causing more paging and deactivation activity.

By default, pseudo-swap space is configured to be available. If you do not wish to make use of it, you will need to re-set the tunable system parameter, swapmem_on, to 0 ("off"). (To modify a configurable parameter, see "Making Adjustments to Your System" in Chapter 1.)

Windows?, no thanks

(11 Views)

chris huys_4
Honored Contributor

Posts: 327
Registered:
28-09-2004

Re: hp-ux 11.31 dump device using San external LUN
18-10-2010 10:19 PM

Hi Jose,

Its not necessary to have a 400GB /var to "hold" a 400GB "full" crashdump.

The crashdump gets, when COMPRESS=1 is set in /etc/rc.config.d/savecrash, gzip'd when written from "physical dump device(s)" to "/var/adm/crash".

Therefor the /var filesystem, would need to have 80GB, 20% of full crashdump, of free diskspace available to save a "full" crashdump in /var/adm/crash.

Increase /var to f.e. 88GB, 80GB for dump and 8 GB for the rest of /var, and do a test with a full crashdump, i.e. change first with crashconf the parameters so that everything gets dumped, #crashconf -i all;crashconf -v, and then toc the system from the mp. MP>CM>tc.

NOTE: Default, when a system "crashes", only "selective" crashdump are dumped, which would only dump a fraction, check crashconf -v output, of the 400GB of RAM to physical dumpdevice(s), however in some cases, HP support will ask for a full crashdump and for this occasion, the system should indeed be "prepared" upfront.

For the "contiguous problem" of the question. Yes, I think, you cant have the dump logical volume, "cross" physical disk/lun boundaries, but on the other hand, you can for each of youre 6 "70GB" "dump" "luns", create a seperate "dump" "vol", i.e. dumpvol1 of 70Gb/dumpvol2 of 70G.. till dumpvol6 of 70Gb, and add all this "dumpvolx" to /etc/fstab, f.e. /dev/vg00/dump1 / dump defaults 0 0, and also to crashconf, with crashconf -s , also delete primary dumpvol, /dev/vg00/lvol2 first from the list of dumpvols defined in crashconf, crashconf -ds /dev/vg00/lvol2. If then a crashdump occurs, the dump should be written consecutively(sp?) to each specific dumpdevice that it encounters in crashconf.

NOTE: In HP-UX 11.31, it might even be that the dumpvolumes dont need to part anymore of /dev/vg00, well with vxvm this is the case, didnt test it with LVM. The dumpluns, where the dumpvolumes are created upon, however should have been made "lif'able" "upfront", through f.e.

pvcreate -B /dev/rdisk/disk114;mkboot -e -l /dev/rdisk/disk114, to have them be part of the "persistent dump device list" (crashconf -v) , which is a absolute necessity, to have the dumpconfiguration "survive" reboots.

Greetz,
Chris

(11 Views)

FOUNDER Dennis Handly
Acclaimed Contributor

Posts: 19,428
Registered:
07-03-2006

(11 Views)

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 01:04 AM

>Daniel: If you use pseudo swap (default behaviour), you would be ok with much less space

The default and only behavior for 11.31.

---

likid0
Honored Contributor

Posts: 879
Registered:
01-03-2005

(11 Views)

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 01:35 AM

Thnx Dennis, I thought that was the case with 11.31 but wasn't sure.

Windows?, no thanks

---

chris huys_4
Honored Contributor

Posts: 327
Registered:
28-09-2004

(11 Views)

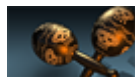**Re: hp-ux 11.31 dump device using San external LUN**
19-10-2010 01:52 AM

> Thnx Dennis, I thought that was the case
> with 11.31 but wasn't sure.
It isnt its just dennis opinion. (and im offcourse of the opposite opinion) ;)

---

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 03:36 AM

Thanks All for your inputs and guidelines.

Chris you stated the following which is very important:-
NOTE: In HP-UX 11.31, it might even be that the dumpvolumes dont need to part anymore of /dev/vg00, well with vxvm this is the case, didnt test it with LVM. The dumpluns, where the dumpvolumes are created upon, however should have been made "lif'able" "upfront", through f.e.

pvcreate -B /dev/rdisk/disk114;mkboot -e -l /dev/rdisk/disk114, to have them be part of the "persistent dump device list" (crashconf -v) , which is a absolute necessity, to have the dumpconfiguration "survive" reboots.

Some of the docs stated the following HP-UX 11.31:

1. Select an unused disk example /dev/disk/disk52
2. pvcreate /dev/rdisk/disk52
3. vgcreate -p 32 -s 65535 /dev/vgdump
4. lvcreate -C y -r n -n dump_lvol /dev/vgdump
5. Add the new dump lvols in /etc/fstab as shown below:
(ie: /dev/vgdump/dump_lvol... dump defaults 0 0)
6.crashconf â a ; (add to dump configuration)
7.crashconf â s ; crashconf â v (For persistent dump across reboots)

Is the above correct, I had a look at some of the docs and it is not mentioned to pvcreate -B and mkboot cmds.Please advise

(11 Views)

chris huys_4
Honored Contributor

Posts: 327
Registered:
28-09-2004

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 07:25 AM

Hi Jose,

It doesnt look like its possible for the moment, with LVM, to have "persistent dump devices" "outside" of /dev/vg00.

NOTE: The "persistency" of the "dump devices", to have the dumpconfiguration survive reboots, is, imo, a "necessity" for dumpdevices outside of /dev/vg00..

From the latest HP-UX 11.31 crashconf patch, which does a update of the crashconf manpage.

PHCO_38958 11.31 crashconf(1M) cumulative patch
[..]
Defect
(QX:QXCR1000847727)
crashconf (1M) man page does not contain the information
"The logical volumes which are not part of the root volume
group cannot be configured as persistent dump devices".
Resolution:
crashconf (1M) man page is updated with the below
information
"The logical volumes which are not part of the root volume
group cannot be configured as persistent dump devices".

You could open a call with HP support and do a crosscheck and if the above is all "true", ask for the "LVM" feature to be added in a future patch.

For the rest, well you could always join the dark side, i.e. switch from lvm to vxvm as bootdisks and thus also for the dumpdevices, were it does work outside "rootdg" . ;)

on vxvm.

ronin # crashconf -v
Crash dump configuration has been changed since boot.

CLASS PAGES INCLUDED IN DUMP DESCRIPTION
-------- ---------- --------------- ------------------------------------
UNUSED 1638412 no, by default unused pages
USERPG 145921 no, by default user process pages
BCACHE 19943 no, by default buffer cache pages
KCODE 11204 no, by default kernel code pages
USTACK 1004 yes, by default user process stacks
FSDATA 14 yes, by default file system metadata
KDDATA 262472 yes, by default kernel dynamic data
KSDATA 7955 yes, by default kernel static data
SUPERPG 4744 no, by default unused kernel super pages

Total pages on system: 2091669
Total pages included in dump: 271445

Dump compressed: ON

Dump Parallel: ON

DEVICE OFFSET(kB) SIZE (kB) LOGICAL VOL. NAME
----------- ----------- ----------- ----------- ------------------------
1:0x00000c 2350176 4194304 2:0x000001 /dev/vx/dsk/rootdg/swapvol
1:0x000048 515168 8388608 2:0x2892b8 /dev/vx/dsk/secdumpswapdg/secdumpswapvol
----
12582912
Persistent dump device list:
/dev/vx/dsk/secdumpswapdg/secdumpswapvol

Greetz,
Chris

(11 Views)

FOUNDER
VK2COT
Honored Contributor

Posts: 886
Registered:
18-01-2006

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 07:27 AM

Hello,

It is actually an excellent idea to separate dump space from boot volume group.

I wrote two presentations on this topics
recently.

Note that compressed dump has ONE VERY
CRITICAL REQUIREMENT:

Five CPUs per each dump unit

My presentation on swap/dump design is enclosed herewith.
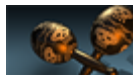
I hope you find it useful.

I also wrote about my view and method for
best practices for HP-UX server design and
build. I can send it to this forum if
there is any interest.

VK2COT

VK2COT

(11 Views)

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 03:51 PM

Hello V2COT

Thankyou for the valuable information, the slide presentations are execellent.

Can you also share with us your doc with your views and methods for best practices for the HP-UX server design and build.

In one of my previous responces I stated that the HP-UX 11v31 Admin Guide does not contain full examples on how to create the swap and dump spaces from scratch, they only refer to the lvcreate, crashconf and savecrash cmds it would be helpfull if it contained examples.

Warm Regards,
Jose

(11 Views)

FOUNDER
VK2COT
Honored Contributor

Posts: 886
Registered:
18-01-2006

Re: hp-ux 11.31 dump device using San external LUN
19-10-2010 08:35 PM

Hello,

I am glad that you find the swap design document useful.

Here is the presentation on HP-UX build
and good practices. It contains some of
the things I deal with when I design and
build HP-UX servers.

To add additional dump areas, the steps are
quite simple. An example (I am not at my desk so the commands might be missing some flags):

lvcreate -C y -r n -L 8192 -n lvdump2 /dev/vgextP01

vi /etc/fstab
/dev/vgextP01/lvdump2 ... dump defaults 0 0

crashconf -a

Cheers,

VK2COT

VK2COT

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
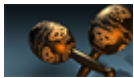20-10-2010 04:16 AM

Hello All Concerned

Thanks for the information that I received which was helpfull. A special thanks to VK2COT for the slide presentations which gave us all a better understanding on the swap and dump settings for HP-UX 11v31.

Warm Regards to ALL
Jose da Silva

jose da silva
Frequent Advisor

Posts: 70
Registered:
26-02-2009

Re: hp-ux 11.31 dump device using San external LUN
20-10-2010 04:19 AM

Thanks Once again to all involved. As per the information I have received I have configured the swap and dump spaces.

Warm Regards,
Jose