

DRAFT: Cloning VIO-Hosted Opsys Images (AIX, RHEL & SLES)

27-April-2006

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This is a DRAFT. I have been diligent in my effort, but mistakes may exist. If you have suggestions, please send me a note.

It is possible to dramatically shorten the time required to install opsys images that are hosted on VIO servers. How fast? Is 5-10 mins fast enough? How? dd'ing the opsys images (LVs) on the VIO server itself.

Absolutes:

- This procedure has not been reviewed by IBM, RedHat or SuSE.
 - This procedure clones the opsys images. TCP/IP and adapter configurations may not be handled as you expect.
 - Both the source & destination LPARs (LVs) must be shutdown.
- 1) Login to the LPAR that you intend to clone.
 - 2) It is generally considered bad form to clone existing logfiles and TCP/IP network configurations.

Preparing LPARs to be Cloned: Remove or zero-out the typical logfiles

AIX	RHEL4	SLES9
<pre># cd /var/adm/ras # >nim.script # >suma.log # >bootlog # >nimlog # >conslog # >nimsh.log # >bosinstlog # >devinst.log # >nim.installp # cd / # >smit.log # >smit.script # errclear 0 # skulker # rmtcpip # chdev -l sys0 \ -a autorestart=true \ -a cpuguard=enable</pre>	<pre># cd /var/log >anaconda.log >anaconda.syslog >rpmpkgs >dmesg >messages >warn</pre>	<pre># cd /var/log/YaST2 >y2log >y2log-1 >y2log.SuSEconfig >y2logRPM >y2loglilo >y2logmkinitrd >y2logppcpstinst >y2start.log >y2start.log-initial # cd /var/log >boot.log >boot.msg >boot.omsg >fail.log >last.log >messages >localmessages >warn >mon_history.log</pre>

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3) If you already know which VIO LVs will be your source and target; skip to Step #14, and substitute your raw device names for those I use in the example. If you are not 100.0% certain how the client-LPARs map to their VIO-hosted boot-LVs ... continue to Step #4.

4) Login to the HMC

5) Right-click on the desktop and open a rshterm

6) Get the name of the Managed System:

```
# lssyscfg -r sys -F name
```

```
Server-9111-520-SN10BF9BD
```

7) Get the name of the LPARs on this Managed System:

```
# lssyscfg -r lpar -m Server-9111-520-SN10BF9BD -F name,lpar_id
```

```
VIOprod,2
```

```
10-BF9BD,1
```

```
AIX53gold,3 <- (We'll use this Partition-ID as the source for our copying)
```

```
SLES9gold,6
```

```
RHEL4gold,5
```

```
AIX53prod1,4 <- (We'll use this Partition-ID as the destination for our copying)
```

8) We need the device names (LVs) of our source and destinations. This requires a bit of subterfuge; as documented in Steps 7-11

9) List the (remote) slot (on the VIO Server) used by AIX53gold (Partition ID 3)

```
# lshwres -r virtualio --rsubtype scsi -m Server-9111-520-SN10BF9BD --filter lpar_ids=3
```

```
lpar_name=AIX53gold,lpar_id=3,slot_num=3,state=null,adapter_type=client, \
remote_lpar_id=2,remote_lpar_name=VIOprod,remote_slot_num=3,is_required=0, \
backing_devices=none
```

10) Login to the VIO server named VIOprod as padmin

11) List the mapping of LVs to LPARs ... Hint: We're looking for V2-C3.

```
# lsmmap -all
```

SVSA	Physloc	Client Partition ID
vhost0	U9111.520.BF9BD-V2-C3	0x000000000
VTD	virtual_clientlv3	
LUN	0x8100000000000000	
Backing device	clientlv3	
Physloc		

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12) In the HMC window:

List the (remote) slot (on the VIO Server) used by AIX53prod1 (Partition ID 4)

```
# lshwres -r virtualio --subtype scsi -m Server-9111-520-SN10BF9BD --filter lpar_ids=4
```

```
lpar_name=AIX53prod1,lpar_id=4,slot_num=4,state=null,adapter_type=client, \
remote_lpar_id=2,remote_lpar_name=VIOprod,remote_slot_num=4,is_required=0, \
backing_devices=none
```

13) In the VIO server window:

List the mapping of LVs to LPARs ... Hint: We're looking for V2-C4

```
# lsmmap -all
```

```
...
SVSA                Physloc                Client Partition ID
Vhost1              U9111.520.BF9BD-V2-C4  0x000000000
VTD                 virtual_clientlv4
LUN                 0x8100000000000000
Backing device      clientlv4
Physloc
...
```

14) Become root on the VIO server using the command: # `oem_setup_env`

15) List the device name using the command: # `ls -al /dev/*clientlv3`

```
brw-rw----  1 root    system    38,  1  Jun 14 2005  /dev/clientlv3
crw-rw----  1 root    system    38,  1  Jun 14 2005  /dev/rclientlv3
```

16) List the device name using the command: # `ls -al /dev/*clientlv4`

```
brw-rw----  1 root    system    38,  2  Jun 14 2005  /dev/clientlv4
crw-rw----  1 root    system    38,  2  Jun 14 2005  /dev/rclientlv4
```

17) Clone the image – it will go much faster using raw devices and a blocksize of 8MB:

```
# dd if=/dev/rclientlv3 of=/dev/rclientlv4 bs=8M
```

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- 18) For an AIX clone; you must perform the following steps immediately after booting the clone for the first time:

Reset ODM and immediately reboot AIX:

```
# devreset -F  
# shutdown -Fr 0
```

Regenerate the /etc/ct_node_id:

```
# /usr/sbin/rsct/install/bin/recfgct
```

Cycle the RSCT daemons using the commands:

```
# /usr/sbin/rsct/bin/rmcctrl -z  
# /usr/sbin/rsct/bin/rmcctrl -A  
# /usr/sbin/rsct/bin/rmcctrl -p
```

Acknowledgments:

http://oss.gonicus.de/openpower/index.php/Cloning_partition_on_IBM_VIO_server

http://www.ibm.com/developerworks/forums/dw_thread.jsp?forum=748&thread=99512&cat=56

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