# HOWTO: Install Debian (Wheezy) on POWER Systems Server

Contributed by Michael Felt

As promised in my blog yesterday, I am writing this as a QD (quick and dirty, but more quick than dirty) writeup of what to do - and one thing NOT to do.

Updated with links for debian-7.2

A quick explanation of my hardware: Power5 (model P505, 1 CPU, 20G internal RAM, 2 internal disks (70G) and an NAS that presents iSCSI disks to the VIOS (IVM)). So, fairly basic stuff.

FYI: In the past Linux (2006) would only install when it was presented a whole disk. As I only had two disks this was too expensive in terms of resources (I was installing AIX on 4B logical partitions exported via vSCSI as hdisk0). And I waited for Debian to support basically anything I would throw at the partition as a disk - and this week all the pieces seem to fit!
EXTRA: Also tested on a friends Power7 (P710) using a logical partion exported as hdisk0!

Step 1: Get the iso image from debian.

```
mamfelt@x121:[/home/michael] wget http://cdimage.debian.org/debian-cd/current/powerpc/iso-dvd/debian-7.2.0-powerpc-DVD-1.iso /data/prj/debian
mamfelt@x121:[/home/michael] wget http://cdimage.debian.org/debian-cd/7.1.0/powerpc/iso-cd/debian-7.2.0-powerpc-netinst.iso /data/prj/debian
```

Step 2: Create - if not already present - a Virtual Repository on the VIOS

```
# as padmin, with /data/prj/debian already mounted (wget is not on VIOS image)
padmin@vios mkrep -sp rootvg -size 12G
```

Step 3: copy the downloaded .iso files into the repository so that they can be loaded onto a virtual optical drive

```
padmin@vios mkvopt -name debian_DVD1_710 -file /data/prj/debian-7.1.0-powerpc-DVD-1.iso -ro
padmin@vios mkvopt -name debian_netinst_710 -file /data/prj/debian-7.1.0-powerpc-netinst.iso -ro
padmin@vios lsrep
Size(mb) Free(mb) Parent Pool         Parent Size      Parent Free
12239     7928 rootvg                 69888            32896


Name                                          File Size Optical         Access
debian_DVD1_710                                    3815 None            ro
debian_netinst_710                                  258 None            ro
```

Step 4: create a new parition without a disk

```
# done using IVM/HMC, no CLI commands to show here
```

Step 5: assign disk, create optical drive, and load optical drive

```
padmin@vios mkvdev -vdev hdiskX -vadapter vhostZ -dev lpZ_hd0
```

```
padmin@vios mkvdev -fbo -vadapter vhostZ
padmin@vios lsmap -vadapter vhost6
SVSA            Physloc                                      Client Partition ID
--------------- -------------------------------------------- ------------------
vhost6          U9115.505.062C0CA-V1-C23                     0x00000000


VTD                   vtopt2
Status                Available
LUN                   0x8100000000000000
Backing device
Physloc
Mirrored              N/A


VTD                   vtscsi3
Status                Available
LUN                   0x8200000000000000
Backing device        hdisk8
Physloc
Mirrored              false


padmin@vios loadopt -disk debian_netinst_710 -vtd vtopt2
padmin@vios lsrep
Size(mb) Free(mb) Parent Pool         Parent Size      Parent Free
12239     7928 rootvg                     69888            32896


Name                                      File Size Optical         Access
debian_DVD1_710                                3815 None            ro
debian_netinst_710                              258 vtopt2          ro
```

Step 6: open console to new partition and activate partition

```
# using IVM, assuming parition id #6
padmin@vios mkvt -id 6
# using HMC - go through menu to partition
michael@hmc vtmenu
# use HMC/IVM to activate partition
```

Step 7: using console interface boot from DVD, at boot prompt enter "expert"

# I expect you to be able to go through SMS menus to select boot device. I will have a film for this later.

Step 8: proceed with installation, using default answers until you are shown

VERY IMPORTANT - READ CAREFULLY !

```
+---------------------¦ [?] Install the base system +---------------------+
¦                                                                         ¦
¦ The primary function of an initrd is to allow the kernel to mount the   ¦
¦ root file system. It therefore needs to contain all drivers and         ¦
¦ supporting programs required to do that.                                ¦
¦                                                                         ¦
¦ A generic initrd is much larger than a targeted one and may even be     ¦
¦ so large that some boot loaders are unable to load it but has the       ¦
¦ advantage that it can be used to boot the target system on almost any   ¦
¦ hardware. With the smaller targeted initrd there is a very small        ¦
¦ chance that not all needed drivers are included.                        ¦
¦                                                                         ¦
¦ Drivers to include in the initrd:                                       ¦
```

```
¦                                                  ¦
¦     generic: include all available drivers       ¦
¦     targeted: only include drivers needed for this system ¦
¦                                                  ¦
¦   <Go Back>                                      ¦
¦                                                  ¦
+------------------------------------------------------------+
```

Be sure and choose "targeted" or you system will not boot. The initrd.img created for generic is too large for yaboot to load.

Step 9: proceed with defaults until system just before system reboots.

On VIOS unload the DVD

```
$ unloadopt -release -vtd vtopt2
```

Step 10: (re)Boot partition

In SMS menu you will probably need to establish the hdisk as bootable. As the system boots

press 5

```
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
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IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
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IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
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IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM


1 = SMS Menu                    5 = Default Boot List
8 = Open Firmware Prompt        6 = Stored Boot List
```

If you have unloaded the DVD (Step 9) the system will boot from the hdisk after a short bit you will see:

```
Debian GNU/Linux 7 x034 hvc0
x034 login:
```