wiki.alpinelinux.org /wiki/Ppc64le

ppc64le - Alpine Linux

5-6 minutes

This page is used to describe the ppc64le port.

Testing (for developers)

The hosting sponsor for the **ppc64le** port operates a miniCloud service, which provides ppc64le images to Alpine for testing.

View their website for more info.

Hardware

You can buy POWER8 or POWER9 hardware from IBM or from other vendors. For example, the **Raptor Computing System Blackbird** workstation is reasonably priced, competitive when compared to similar x86 servers, and is fully supported by the ppc64le port.

The following are the **IBM** machine models that would support Alpine Linux:

- IBM Power System S821LC [1][*Dead Link*]
- IBM Power System S822LC for Big Data [2][*Dead Link*]
- IBM Power System S822LC for Commercial Computing [3][*Dead Link*]
- IBM Power System S822LC for High Performance Computing [IBM Power System S822LC for High Performance Computing]
- IBM Power System S812L and S822L [4][*Dead Link*]
- IBM Power System S824L [5][*Dead Link*]
- IBM Power System S812 [6][*Dead Link*]
- IBM Power System S822 [7][*Dead Link*]
- IBM Power System S814 [8][*Dead Link*]
- IBM Power System S824 [9][*Dead Link*]
- IBM Power Enterprise Systems for the cloud [10][*Dead Link*]
- IBM Power System E850C [11][*Dead Link*]
- IBM Power System E850 [12][*Dead Link*]
- IBM Power System E870 [13][*Dead Link*]
- IBM Power System E880 [14][*Dead Link*]

Raptor Computing System also has machines:

- Talos II [15]
- Blackbird [16]

Tyan also has machines:

- Tyan TN76-BP016
- Tyan GT75-BP012
- Tyan TN71-BP012

Open Power machines:

- Rackspace Barreleye [17]
- Google Zaius [18]

Installation

The Alpine 3.20.3 ppc64le ISO is available here.

The user login is **root** with no password.

Booting Alpine from CD-ROM using qemu

To start qemu using the Alpine ISO as CD-ROM, you can use a command similar to:

$ doas qemu-system-ppc64 -device spapr-vlan,netdev=net0,mac=4C:45:42:45:79:F7 -netdev bridge,br=br0,id=net0 -m 8G -smp 16,sockets=16,cores=1,threads=1 -nodefaults -nographic -serial stdio -cdrom alpine-standard-3.20.3-ppc64le.iso

If running on a ppc64le host, you can append `-enable-kvm` to the above command.

Installing Alpine to hard-disk using qemu

Create a disk to install Alpine on it:

$ qemu-img create alpine_disk.img 16G

Start qemu attaching the created disk and using Alpine ISO as CD-ROM. Here is an example of the qemu command:

$ doas qemu-system-ppc64 -hda alpine_disk.img -device spapr-vlan,netdev=net0,mac=4C:45:42:45:79:F7 -netdev bridge,br=br0,id=net0 -enable-kvm -m 8G -smp 16,sockets=16,cores=1,threads=1 -nodefaults -nographic -serial stdio -cdrom alpine-standard-3.20.3-ppc64le.iso

Run the `setup-alpine` script:

setup-alpine

After running the `setup-alpine` script, select the disk (in this example, **sda**) when the following configuration appears:

```
Available disks are:
sda   (17.2 GB QEMU     QEMU HARDDISK)
Which disk(s) would you like to use? (or '?' for help or 'none') [none] : sda
```

When asked how you would like to use the disk, select **sys**, and select **yes** when asked whether to erase the disk.

The installation will format the disk properly. After this finishes, type `reboot`.

Booting Alpine from CD-ROM using qemu and saving modifications between reboots

When using Alpine in this mode, you need to use Alpine Local Backup (`lbu`) to save your modifications between reboots. This requires some writable medium, usually removable.

Create a disk to save Alpine modifications:

$ qemu-img create alpine_disk.img 8G

Start qemu attaching the created disk and using Alpine ISO as CD-ROM. Here is the example of the qemu command:

$ doas qemu-system-ppc64 -hda alpine_disk.img -device spapr-vlan,netdev=net0,mac=4C:45:42:45:79:F7 -netdev bridge,br=br0,id=net0 -enable-kvm -m 8G -smp 16,sockets=16,cores=1,threads=1 -nodefaults -nographic -serial stdio -cdrom alpine-standard-3.20.3-ppc64le.iso

Format the attached disk and add it to the /etc/fstab file:

$ apk add e2fsprogs $ mkfs.ext4 /dev/sda $ echo "/dev/sda /media/sda ext4 noauto,rw 0 0" >> /etc/fstab $ mkdir /media/sda $ mkdir /media/sda/cache

Set `lbu` to write to the attached disk, setting `LBU_MEDIA=sda` in the /etc/lbu/lbu.conf file.

Run the `setup-alpine` command, and select the following configurations when asked:

- Enter where to store configs: `('floppy', 'sda', 'usb' or 'none') [none]: sda`
- Enter apk cache directory `(or '?' or 'none') [/media/sda/cache]: /media/sda/cache`

The last step is to commit the changes:

$ lbu commit

After performing these configurations, you can reboot Alpine and the modifications will be saved. The next time a change happens, you just need to run the `lbu commit` command, as the configurations are already done.

It is important to know that, by default, `lbu` only cares about modifications in /etc and its subdirectories, with the exception of /etc/init.d!

See also

- Alpine local backup - For more information about how to use `lbu` and how to include a new folder to backup.

Reference

```
* ABI - https://openpowerfoundation.org/?resource_lib=64-bit-elf-v2-abi-specification-power-architecture
```