

Bedrock Linux

Install Allz the packages

OLUG/October 2019

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Introduction

If you have questions/comments please feel free to ask them anytime. You don't have to hold them until the end of the talk.

If there are other resources similar to these that you think might be useful to people please let the group know.

Hopefully this will be an interactive and productive session.

What???

What is Bedrock Linux?

Bedrock Linux is a "meta" distribution. What this means is that it is a distribution that runs on top of your original distribution. It allows you to install packages for the relevant distribution.

E.g. you can run a debian base and install, fedora, gentoo, or arch packages on it.

How???

How the heck does this work?

10,000 foot view it uses chroot, pivot_root and a couple of fuse filesystems along with base packages to create separate sections called strata.

Fuse then connects all the applications over to a common /bedrock/bin folder to run them

Let's do a quick demo for it.

Demo

This is a Debian install with bedrock linux and the following strata on it:

Alpine Linux - apk

Arch Linux - pacman

Fedora - yum

Gentoo - emerge

With a Debian 10.0 (buster) base.

Demo

Confirm with a quick (strata list)

```
% brl list
```

We'll take a quick look at the options for brl command

```
% brl --help
```

Run the gentoo version of ls

```
% brl strat gentoo ls
```

Demo (cont'd)

First off install a gentoo package. We'll choose firewalk as it was an interesting package for figuring out firewall configurations. Using TTL tricks.

```
% emerge firewalk
```

Wait a bit ...

Let's go ahead and run it

```
% firewalk
```

Demo (cont'd)

Let's install an alpine package on our box

```
% apk install clamav
```

Wait a bit...

Take a look

```
% which clamscan
```

```
% clamscan
```

Demo - (cont'd)

Ok. So that is a couple of simple ones. Let's try one a bit more complicated.

Debian comes with Firefox-ESR. We'll go ahead and replace it with the version that comes with Fedora.

Demo - (cont'd)

```
% firefox --version
```

```
% which firefox
```

```
% dnf install firefox
```

```
% firefox --version
```

Ok not what we want so choose get the correct version

```
% brl strat fedora firefox -version
```

Typing that every time is going to be a PITA

Demo - (cont'd)

One way to fix it.

Remove the debian version

```
% apt-get remove firefox
```

Now Fedora's is the default

```
% which firefox
```

```
% firefox -version
```

So how do you install it???

First get a running linux distribution. Then download and install bedrock linux onto it.

```
% wget
```

```
https://raw.githubusercontent.com/bedrocklinux/bedrocklinux-userland/0.7/releases
```

Grab the relevant package

```
% wget
```

```
https://github.com/bedrocklinux/bedrocklinux-userland/releases/download/0.7.8/bedrock-linux-0.7.8-x86\_64.sh
```

Install (cont'd)

Go ahead and run the install

```
% sh bedrock-linux-0.7.8-x86_64.sh --hijack
```

Have to love the warning message on it.

This option is not reversible. You have to type "Not Reversible!" to get it to proceed.

Then go ahead and reboot and you should have a system with two strata on it (bedrock and the base distro)

Install - (cont'd)

List all the available strata

```
% brl fetch --list
```

Install a layer. In this case consider void

```
% brl fetch void
```

We'll go ahead and install a package now

```
% xbps-install abiword
```

So how does it work?

It pulls down the base install for the relevant os and puts it into the `/bedrock/strata/${distro}` directory

Uses 2 fuse filesystem crossfs and etcfs to fake things out. Could possibly do it statically but it would have to regenerate stuff pretty much every time things changed.

Is it worth it?

Originally began to play around with this when I was trying to put together a bunch of different security/pen test tools into one distribution. Kali Linux has about 95% of the tools I want. Some of the other ones are in distributions such as Pentoo/Gentoo and others like Parrot. You can install most of the tools from source.

Gentoo used to have a tool that let you install it on top of other linux distributions, and be able to run emerge and other tools.

Bedrock lets you put together tools from other distros into one reasonably cohesive system.

Is it worth it? (cont'd)

Keep in mind that for every strata you install you'll be tying up a good chunk of disk space.

How does it compare to running multiple VMs?

- Runs only one kernel
- Able to run most graphical programs
- Tends to use less ram

Issues

- Depending on how well the dependencies are defined you might have to install additional packages to get stuff to work.
- Strata can get corrupted. You can do a rebuild which will attempt to straighten them out.
- Various security features such as SELinux can cause issues running applications from different strata
- Various chroot attacks might be able to get around Bedrock linux and the host operating systems
- Programs that have multiple parts can run in a Frankenhat situation

Issues (cont'd)

- Strata can take a lot of space. They pull down the basic images and that includes a lot of stuff they don't need
- Can be issues with locate/find since they can get confused by the fuse directories.

Drawbacks

- You've got to keep multiple strata up to date
- Still in the 0.7.x series
 - Design might change a great deal between now and then
 - Features may be added or dropped at any time
- Support varies depending on the base distribution used for the system

Summary

- Interesting project.
- Am not planning on making it main desktop system any time soon.
- Am planning on keeping a VM of it around for a while.
- Do find the ability to be able to simply install/run applications from various distros useful.
- Better than trying to use alien for everything :-)

Q & A

Any Questions?

Thanks for listening.

Links

Bedrock Linux

<https://bedrocklinux.org>