

Replicant - PathInterposer - # 7

PathInterposer

Warnings

This page is a work in progress, so it might contains mistakes, inaccuracies, etc.

Introduction

TODO

how it works

During the build:

- The host path is saved to `out/.path_interposer_origpath`
- The host path is changed to a new one
- The path interposer is used to access host binaries. It uses the saved path for that.

With Trisquel 8, and Replicant 11, here's an example of how the path looks like for applications being launched through the path interposer¹:

```
/home/replicant/replicant-11/prebuilts/jdk/jdk11/linux-x86/bin
/home/replicant/replicant-11/prebuilts/jdk/jdk11/linux-x86/bin
/home/replicant/replicant-11/out/soong/host/linux-x86/bin
/home/replicant/replicant-11/out/host/linux-x86/bin
/home/replicant/replicant-11/prebuilts/gcc/linux-x86/arm/arm-linux-androideabi-4.9/bin
/home/replicant/replicant-11/development/scripts
/home/replicant/replicant-11/prebuilts/devtools/tools
/home/replicant/replicant-11/external/selinux/prebuilts/bin
/home/replicant/replicant-11/prebuilts/misc/linux-x86/dtc
/home/replicant/replicant-11/prebuilts/misc/linux-x86/libufdt
/home/replicant/replicant-11/prebuilts/clang/host/linux-x86/llvm-binutils-stable
/home/replicant/replicant-11/prebuilts/android-emulator/linux-x86_64
/home/replicant/replicant-11/prebuilts/asuite/acloud/linux-x86
/home/replicant/replicant-11/prebuilts/asuite/aidegen/linux-x86
/home/replicant/replicant-11/prebuilts/asuite/atest/linux-x86
/home/replicant/bin
/home/replicant/.local/bin
/usr/local/sbin
/usr/local/bin
/usr/sbin
/usr/bin
/sbin
/bin
/usr/games
```

Here we can deduce that the paths set by the Android build system take precedence over the host paths.

¹ This has been deduced by prints with the following patch:

```
--- a/cmd/path_interposer/main.go
+++ b/cmd/path_interposer/main.go
@@ -116,6 +116,10 @@ func Main(stdout, stderr io.Writer, interposer string, args []string, opts ma
inO
    return 1, fmt.Errorf("Failed to set PATH env: %v", err)
}

+   fmt.Fprintln(os.Stderr, "#####")
+   fmt.Fprintln(os.Stderr, os.Getenv("PATH"))
+   fmt.Fprintln(os.Stderr, "#####")
```

```

+
    if config := opts.config(base); config.Log || config.Error {
        var procs []paths.LogProcess
        if opts.lookupParents != nil {

```

Launching host binaries without touching the prebuilts

In Replicant 10, we could use `out/.path/python3` as python3 interpreter assuming that we enabled it in `build/soong/ui/build/paths/config.go`

for instance in the Mesa (external/mesa3d) `Android.mk` we had:

```

MESA_PYTHON2 := out/.path/python2
MESA_PYTHON3 := out/.path/python3

```

This worked because 'python2' and 'python3' were only available in the host path:

```

$ for path in $(echo /home/replicant/replicant-10/prebuilts/jdk/jdk9/linux-x86/bin:/home/replicant
/replicant-10/prebuilts/jdk/jdk9/linux-x86/bin:/home/replicant/replicant-10/out/soong/host/linux-x
86/bin:/home/replicant/replicant-10/out/host/linux-x86/bin:/home/replicant/replicant-10/prebuilts/
gcc/linux-x86/arm/arm-linux-androideabi-4.9/bin:/home/replicant/replicant-10/development/scripts:/
home/replicant/replicant-10/prebuilts/devtools/tools:/home/replicant/replicant-10/external/selinux
/prebuilts/bin:/home/replicant/replicant-10/prebuilts/misc/linux-x86/dtc:/home/replicant/replicant
-10/prebuilts/misc/linux-x86/libufdt:/home/replicant/replicant-10/prebuilts/android-emulator/linux
-x86_64:/home/replicant/replicant-10/prebuilts/asuite/acloud/linux-x86:/home/replicant/replicant-1
0/prebuilts/asuite/aidegen/linux-x86:/home/replicant/replicant-10/prebuilts/asuite/atest/linux-x86
:/home/replicant/bin:/home/replicant/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:
/sbin:/bin:/usr/games | sed 's#:#\n#g') ; do ls "${path}/python3" ; done
ls: cannot access '/home/replicant/replicant-10/prebuilts/jdk/jdk9/linux-x86/bin/python3': No such
file or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/jdk/jdk9/linux-x86/bin/python3': No such
file or directory
ls: cannot access '/home/replicant/replicant-10/out/soong/host/linux-x86/bin/python3': No such fil
e or directory
ls: cannot access '/home/replicant/replicant-10/out/host/linux-x86/bin/python3': No such file or d
irectory
ls: cannot access '/home/replicant/replicant-10/prebuilts/gcc/linux-x86/arm/arm-linux-androideabi-
4.9/bin/python3': No such file or directory
ls: cannot access '/home/replicant/replicant-10/development/scripts/python3': No such file or dire
ctory
ls: cannot access '/home/replicant/replicant-10/prebuilts/devtools/tools/python3': No such file or
directory
ls: cannot access '/home/replicant/replicant-10/external/selinux/prebuilts/bin/python3': No such f
ile or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/misc/linux-x86/dtc/python3': No such fil
e or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/misc/linux-x86/libufdt/python3': No such
file or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/android-emulator/linux-x86_64/python3':
No such file or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/asuite/acloud/linux-x86/python3': No suc
h file or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/asuite/aidegen/linux-x86/python3': No su
ch file or directory
ls: cannot access '/home/replicant/replicant-10/prebuilts/asuite/atest/linux-x86/python3': No such
file or directory
ls: cannot access '/home/replicant/bin/python3': No such file or directory
ls: cannot access '/home/replicant/.local/bin/python3': No such file or directory
ls: cannot access '/usr/local/sbin/python3': No such file or directory
ls: cannot access '/usr/local/bin/python3': No such file or directory
ls: cannot access '/usr/sbin/python3': No such file or directory
/usr/bin/python3
ls: cannot access '/sbin/python3': No such file or directory
ls: cannot access '/bin/python3': No such file or directory

```

```
ls: cannot access '/usr/games/python3': No such file or directory
```

For instance prebuilts/python/linux-x86/2.7.5/bin/python wasn't in the path.