

# Harvey OS

Glenda and the Gopher Rejoin

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# Agenda

-  Introduction
-  Plan 9
-  Harvey
-  u-root







# Introduction







Hello, I am Daniel :-)



## Work and education

-  IT security and computer science
-  software engineer
-  infrastructure and web
-  applications and UI

## Open Source contributions

-  hardware and firmware
-  operating systems
-  software distributions
-  reverse engineering



# Plan 9



# Plan 9 from Bell Labs

Plan 9 is a distributed operating system.



developed by the Unix people

under a free license since 2002

It brought us Unicode, the 9P protocol, and innovation in user interfaces.

wmii, on which the popular i3 window manager is based, stems from Plan 9 ideas.



<https://docs.huihoo.com/plan9/Plan9.pdf>

[http://dlc.casita.net/~dlc/vp9cb/04\\_P9Server.utf8.html](http://dlc.casita.net/~dlc/vp9cb/04_P9Server.utf8.html)



# Forks and derivatives



9atom



9front



9legacy

<http://man.postnix.pw/9atom/3/intro>

<https://comp.os.plan9.narkive.com/t9PiG7a0/9atom-vs-9front>

Plan 9 README

Grid Computing with Plan 9

Why Some Dead OSes Still Matter

Systems Software Research is Irrelevant



# Forks and derivatives cont.



NIX



partitioned many-core systems



Akaros



research system at Berkeley, user-space VMs, can run Linux



Harvey OS



started from a NIX kernel and the LSUB release of Plan 9



JehanneOS



uses Harvey's build system



Inferno



Limbo programming language



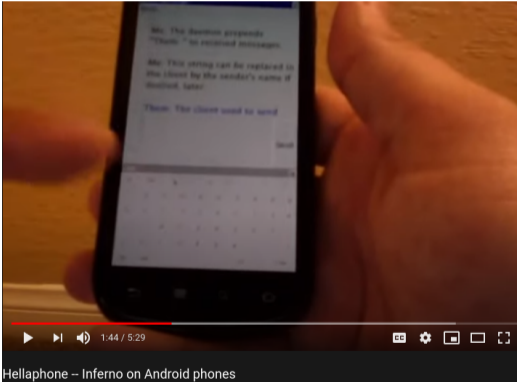


# On a phone

Hellaphone by Floren et al



Android replaced by Inferno



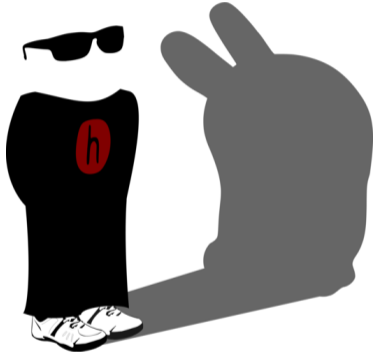
Hellaphone – Inferno on Android phones







# Harvey OS



# A distributed operating system



<https://harvey-os.org/>

-  64-bit OS
-  based on Plan 9
-  suitable for studying and research
-  Unix philosophy: simplicity, clarity, modularity and composability



# Building

<https://github.com/Harvey-OS/harvey/wiki/Building-Harvey>

```
git clone https://github.com/Harvey-OS/harvey
cd harvey
./bootstrap.sh
CC=clang ARCH=amd64 ./linux_amd64/bin/build
```



# Booting

QEMU

```
HARVEY=$(pwd) ./util/G09PTERM
```

Real Hardware :)

[https://github.com/Harvey-OS/harvey/wiki/Booting-Harvey-on-real-hardware-II-\(USB\)#preparing-the-usb-dongle-1](https://github.com/Harvey-OS/harvey/wiki/Booting-Harvey-on-real-hardware-II-(USB)#preparing-the-usb-dongle-1)

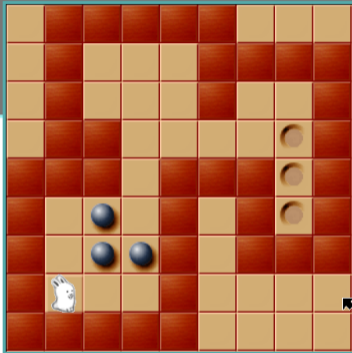


# Impression



```
/sys/src/sysconf.json
/sys/src/test
term% 3
/sys/src/spatches

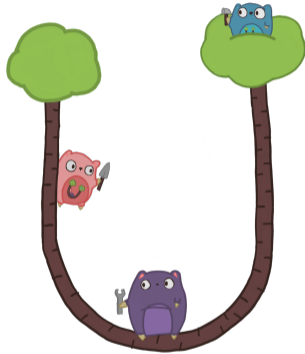
/sys/src/test
term% p /sys/src/sysconf.json
{
  "Bootmethods": [
    {
      "Arg": "",
      "Config": "configtcp",
      "Connect": "connecttcp",
      "Name": "tcp"
    },
    {
      "Arg": "",
      "Config": "configrc",
      "Connect": "connectrc",
      "Name": "rc"
    },
    {
      "Arg": "",
      "Config": "configlocal",
      "Connect": "connectlocal",
      "Name": "local"
    }
  ]
}
SyscallBase": 1024,
```







u-root



# A universal root filesystem



<https://u-root.org/>

-  many small tools
-  all open, meant for studying and understanding
-  easily portable
-  written in Golang





# Getting u-root into Harvey

```
commit 88cd7c2dde2810e50e918c009691b5afd33204dc
Author: Ronald G. Minnich <rminnich@gmail.com>
Date:   Wed Sep 2 08:36:21 2020 -0700
```

Build in u-root support

This change builds in u-root support. u-root is no longer optional.

Images will now be larger, but you will get a lot of benefit.

The build now includes ALL of amd64/bin -- ed, sam, rio, acme, -- all of it.

patch (excerpt)



Now what?



Have a closer look!



<https://harvey-os.org/>

