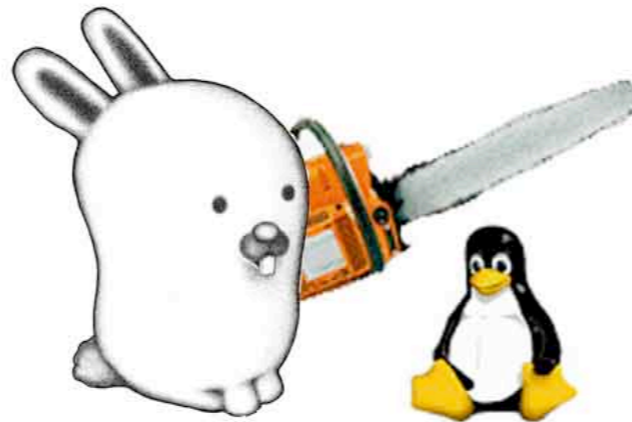# Glendix

A Plan9/Linux Distribution

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What?

- Providing a Plan 9 development environment on Linux

- Providing the ability to run Plan 9 applications on Linux as a side effect

Why?

- Spread the message of Plan 9 style programming to Linux developers

- Experience the benefits of Plan 9 applications along with the convenience of being able to execute Linux applications

- Because we can: Linux isn't inherently tied to any particular user-space :-)

How?

- Stage 1

  - Binary format loader for *a.out (module)*

  - Implementation of the Plan 9 system calls *(patch)*

How?

- Stage 11

  - Implement synthetic filesystems that applications depend on *(v9fs or kernel patch depending on specifics)*

How?

- The idea is to *trick* applications into thinking that they are, in fact, running on a Plan 9 kernel

Binary Loader

- Fairly straightforward

  - Except for the padding and *tos* issues

  - Solved by assigning different magic numbers to padded and non-padded executables and using Linux's interpreter execution capabilities to modify executable

System Calls

- Fall into three categories

  - Trivial: Minor modifications to existing Linux calls (*open, read, write*)

  - Easy to Implement: Not present, but can be written relatively easily (*fd2path*)

  - Tricky: Needs data-structure level changes and low-level kernel code (*rfork, bind*)

Filesystems

- *Inet* and *Idev/draw* are the two major ones we are focussing on

- *Inet* is relatively easy, maps to internal networking calls

- *Idev/draw* is harder because of the need to support graphics cards

  - Debate over whether to use kernel framebuffer or DirectFB

When?

- Stage I: 60% complete

- Stage II in planning phase

  - 24 of 51 system calls implemented

  - Major milestone: 8c/8l

9vx & Glendix

- 9vx is x86-only. While Glendix is also x86-only for now, easily extendable

- Different purposes: In Glendix, executables are not run in a "sandbox" - rather as any regular user-space application

- Glendix aims for a more low-level, comprehensive integration of Plan 9 & Linux

Q & A

Thank You!

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