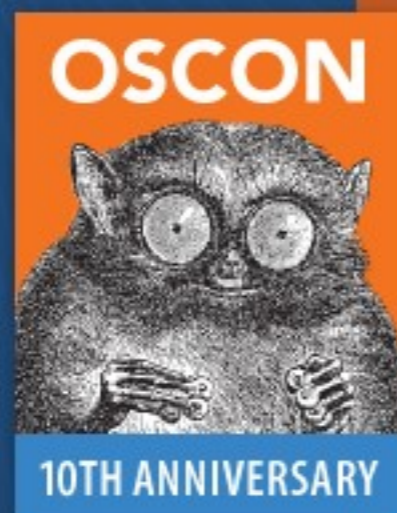


O'REILLY
OSCON
Open Source Convention

Active Directory Integration Features in Ubuntu Hardy Heron

open **YOUR** mind



Gerald Carter
<jerry@samba.org>

Likewise Software/SAMBA Team

Silence is Golden (or Broken)

```
SQL> INSERT $crickets
```

Likewise Open

- ▶ Simple, one-step method of joining a Linux/Unix/OS X host to an Active Directory domain
- ▶ Graphical and command line interfaces
- ▶ Performs system configuration to expose Windows users and group to Unix applications necessary for authentication by most applications
- ▶ Enables OpenSSH to support Kerberos authentication using GSSAPI



The screenshot shows a window titled "Likewise AD Settings" with a close button in the top right corner. The main heading is "Active Directory Membership" with a computer icon. Below this, there are two sections: "Name and Domain" and "Organizational Unit".

Name and Domain
Please select the Active Directory domain to join.
Each computer joined to a domain must have a unique computer name. You may specify a new name for this computer before joining.

Computer name:
Domain:

Organizational Unit
Please select the OU to which this computer should be joined. Nested OUs should be separated by a forward-slash.

Default container (Computers)
 Specific OU path:

▶ **Advanced**

Likewise logo, (with a red X icon), and (with a key icon).

Why I Do What I Do

- ▶ Undergrad course work at Auburn University in Comp Sci ('89 - '94)
 - ▶ Programming on SunOS 4 boxes and writing papers on Win 3.1
 - ▶ Discovered Linux as a way to make a an Intel 486 PC look like the Sun machines (i.e. Open View Window Manager). w00t!
- ▶ Grad school ('95 - ????) consisted of programming more Unix boxes, running networks of Unix servers with **lots** of Windows PCs, and building Wintel student labs (first based on PC-NFS; later on Samba File/Print servers and NISgina). Rinse and Repeat.
- ▶ Samba 1.9.18alpha3 introduced Windows NT 4.0 domain logons
 - ▶ Ran the Samba CVS code for several years and suffered much wailing and gnashing of teeth

My Life at Likewise

- ▶ My philosophy in life is find people smarter than me and hang out with them (very true in Samba and also true at Likewise)
- ▶ Joined Likewise in December 2005 after spending several years at HP working on the Samba print path
- ▶ Initially worked on remote systems management using distributed protocols (e.g. SOAP, MS-RPC, etc...)
- ▶ What people really wanted was the authentication piece
- ▶ To borrow a phrase from the *git* SCM man pages, applications that end users see and interact with are "porcelain"
- ▶ If your end goal is to write a web application, why should you have to understand Kerberos tickets ?
- ▶ Authentication is necessary "plumbing" for most applications to work.

My Life as a Plumber



Authentication Made Easy

- ▶ Samba introduces Active Directory integration in Sept '03
- ▶ Five years later, people still struggle with solutions to this. Why?
- ▶ Open Source done correctly commoditizes from the bottom up and forces software companies to run faster and move higher up the stack to offer value
- ▶ Caveat: Sometimes there is a perceived ego threat to open source developers when software becomes easier to use
- ▶ Likewise Open
 - ▶ In December 2007, Likewise Software GPL'd the system management tools needed to join Linux/Unix/OS X hosts to an AD domain
 - ▶ Included in Ubuntu 8.04 (Hardy Heron)

```
bash# read < $DEMO > $DISPLAY
```

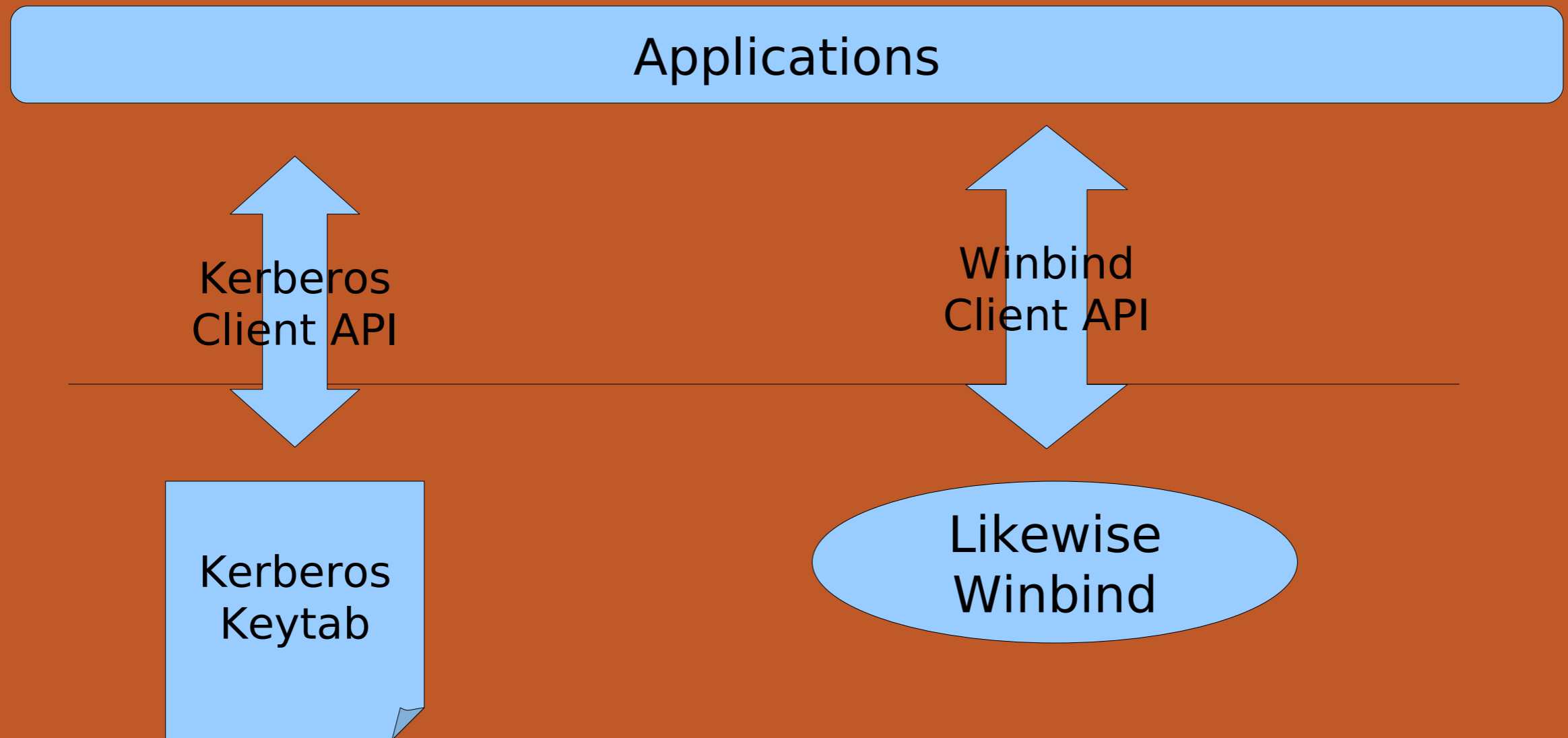
Under the Sink

- ▶ Integrates using PAM and NSS
- ▶ Manages user's Kerberos ticket cache
- ▶ Uids and gids are generated by hashing the account SID
 - ▶ Zero change needed to Active Directory
 - ▶ Always the same across host machines
 - ▶ Slight chance of collision (median number of trusted domains before a collision is around 40)
- ▶ Supports
 - ▶ Name aliasing (map "CAMPUS\gcarter" to "jerry")
 - ▶ Offline/Disconnected logons

FAQ: Why not just use Samba?

- ▶ Likewise Open focuses on ease of use and reproducible, successful domain joins to AD
- ▶ Likewise Winbind is basically my Samba branch for Likewise work
 - ▶ Code bases are intentionally very similar
- ▶ Examples of features Likewise has added to Winbind
 - ▶ Cross Forest, transitive trust and one-way support
 - ▶ Secure DDNS updates during join
 - ▶ Global Catalog search support
 - ▶ Robustness fixes for disconnected and offline logons
 - ▶ Portability fixes

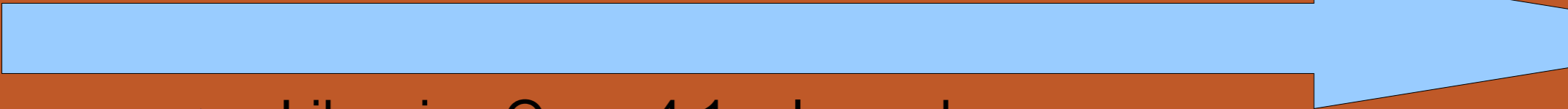
Connecting to the Pipes



Case Study – ISV group

- ▶ Active Directory has been chosen as the primary authentication source
- ▶ Linux desktops are the standard issue developer environment
- ▶ Subversion is established SCM
- ▶ Solution:
 - ▶ Join the subversion server to AD
 - ▶ Create an group in AD for all developers requiring access to svn and give this group ownership of the repository
 - ▶ Join developer desktops to AD
 - ▶ Developers login using AD credentials
 - ▶ Now "svn co svn+ssh://..." *just works* (TM) using Kerberos tickets

Moving Forward

- ▶ Likewise Open Community Site (downloads, mailing lists, etc...)
 - ▶ <http://www.likewisefoftware.com/community/>
- ▶ Likewise Open 4.0 introduced
Dec 2007 (included in Ubuntu 8.04)

- ▶ Likewise Open 4.1 released
April 2008 (to be included in Ubuntu 8.10)
 - ▶ Likewise Open 5.0 to be released soon (Aug 2008)