The State of Samba

(I can't dance when you step on my feet...)

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Outline

http://samba.org/~jerry/slides/samba_roadmap_lwbos05_slides.pdf

- Development
- History
- Samba 3.0
- Samba 3.x ?
- Samba 4.0
- Related Samba Development Projects

If your company is interested in using Samba or CIFS development.....

Samba Development

- One year as release manager == 1 year of a dog's life
  - A release is like a breakup – you always think of things you would do differently but at least you have closure
- Samba Team
  - Membership == write access to the code repository
  - http://www.samba.org/samba/team.html
  - Number of active developers varies
- Most technical discussion takes place on
  - samba-technical@samba.org
  - #samba-technical on irc.freenode.net
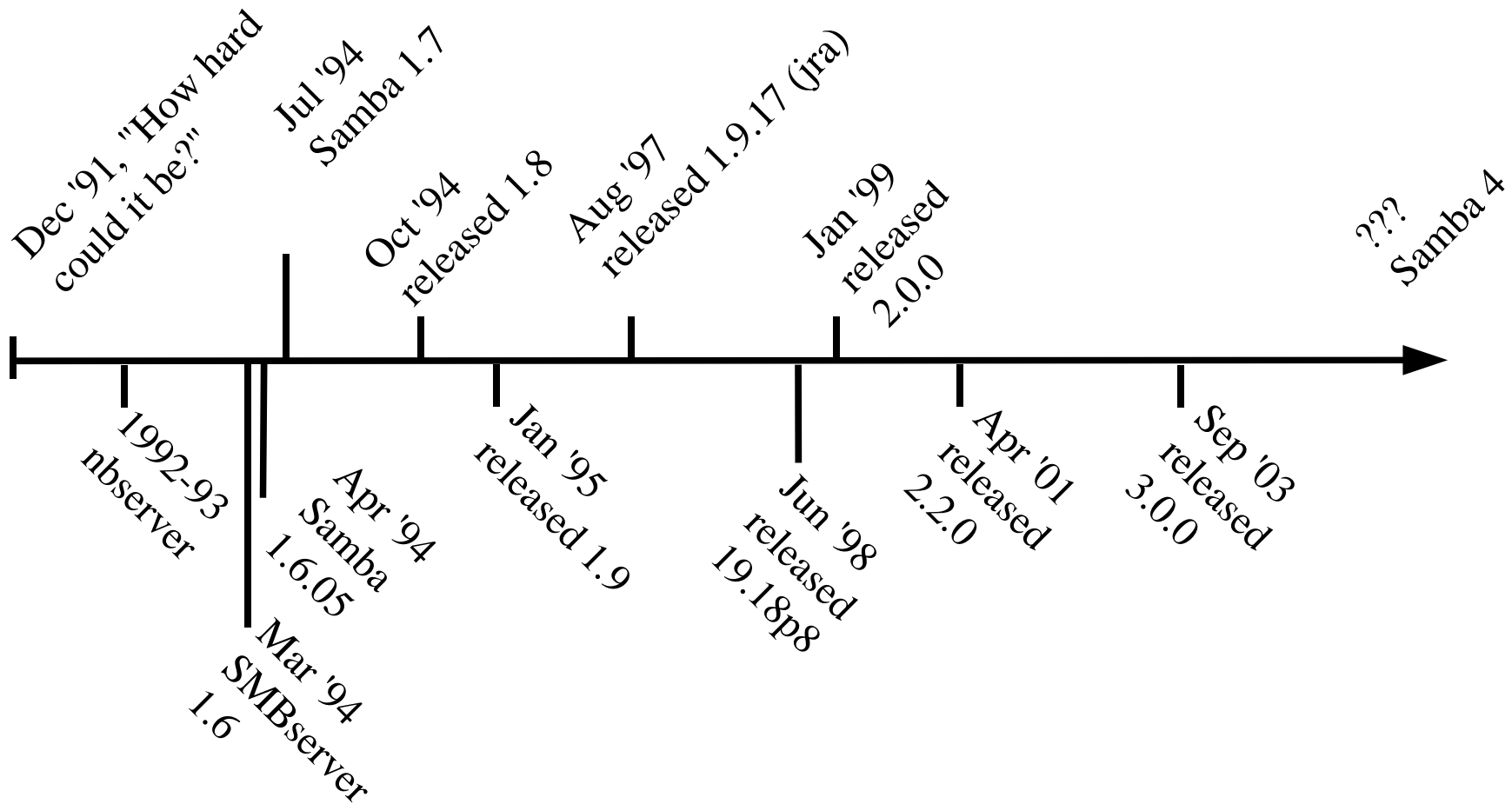 - individual/conference telephone calls

Development Challenges

- Efforts split between supporting production releases and engineering the next evolution of Samba servers
- When should a developer's favorite trick become a supported feature?
  - ❏ hard to anticipate all possible scenarios
- Backwards compatibility
  - ❏ our bane as well as Microsoft's
  - ❏ little used features frequently suffer from bit rot
- Testing environments
  - ❏ Complimentary VMware licenses from vmware.com
  - ❏ MSDN subscriptions paid for by Team or corporate funding

Samba Version Numbers

- Recently officially adopted an odd/even versioning scheme similar to the Linux kernel
  - major.minor.revision
  - odd minor number == development release (e.g. 3.1)
  - even minor number == stable, production release (e.g 3.2)
- Security release versioning
  - No more 'letter' revision releases such as 3.0.2a
  - security release = previous stable release + security fixes
    - 3.0.5 == 3.0.4 + fixes for CAN-2004-0600 & CAN-2004-0686
- Drop *alpha* and *beta* tags
  - left with *pre* and *rc*

Samba Timeline

Dec '91, "How hard could it be?"

Jul '94 Samba 1.7

Oct '94 released 1.8

Aug '97 released 1.9.17 (jra)

Jan '99 released 2.0.0

??? Samba 4

1992-93 nbserver

Apr '94 Samba 1.6.05

Jan '95 released 1.9

Jun '98 released 19.18p8

Apr '01 released 2.2.0

Sep '03 released 3.0.0

Mar '94 SMBserver 1.6

How far we've come

```
$ cd nbserver-1.5.14          ## Samba 3.0.11
$ wc -l *.[ch]                $ wc -l configure.in */*.[ch]
    895 client.c               403981 total
     81 includes.h
     27 local.h               ## SAMBA_4_0
    641 nameserv.c            $ make distclean
   2454 server.c             $ wc -l *.{c,h,m4,pm,idl,pl}  ...
    299 smb.h                   247327 total
    244 sockspy.c
   1300 util.c                ## SAMBA_4_0 after build
      1 version.h            $ wc -l *.{c,h,m4,pm,idl,pl}  ...
   5942 total                  446867 total
```

The Move to Subversion

- Information on access to Samba branches using anonymous svn
  - ❏ http://samba.org/samba/subversion.html
  - ❏ http://websvn.samba.org/
- svn://svnanon.samba.org/
  - ❏ SAMBA_3_0[_RELEASE]
  - ❏ SAMBA_4_0
  - ❏ trunk (Samba 3.1)
- Information on subversion
  - ❏ http://subversion.tigris.org/

Samba 3.0 Major Server Features

- Use of Kerberos 5 and LDAP when joined to an Active Directory Domain
- UNICODE support
- Better MS-RPC printing support
- Support for migrating users and groups from a WinNT4 domain
- Support for WinNT4 trust relationships as a PDC
- Layered Virtual File System layer
- Flexible authentication and account storage options
- Improved Winbind
- Support for 32-bit NT Status return codes

Samba 3.0.x

- New features recently added to the 3.0 branch
  - ❏ 3.0.3
    - ✔ Storing DOS attributes in Extended Attributes (EA)
    - ✔ EA support for OS/2 and Mac OS X
    - ✔ Password Lockout support on a Samba DC
    - ✔ Support for nested groups (Windows local groups)
  - ❏ 3.0.6
    - ✔ Password history support
  - ❏ 3.0.11
    - ✔ user rights
    - ✔ improved winbind performance
- Samba 3.0.x where x >= 11
  - ❏ More bug fixes, integration of your patches, etc....

Samba 3.1

- The trunk svn branch is a workplace for experimental features before they are backported to the SAMBA_3_0 tree
  - ❏ Periodic Samba 3.1 releases for testing
- No planned stable release of this code
- Stable branch will continue to be Samba 3.0 for now
- Things we have our eyes on....
  - ❏ Full Windows NT ACL compatibility
  - ❏ SAM replication with Windows NT 4.0 BDCs
  - ❏ Utilize LDAP Directories services for configuration
  - ❏ Redesign of user and group account management

Samba 4.0

- Started as research project to address the aging architectural deficiencies in Samba 3
  - protocol completeness (not just what is seen from clients)
  - extreme testability (deep, automated testing suite)
  - non-posix storage backends (full NT acls)
  - fully asynchronous internal architecture
  - flexible process models
  - efforts are underway to implement an Active Directory domain controller

- References on Samba 4
  - http://news.samba.org/articles/samba4_vl.pdf
  - http://news.samba.org/articles/abartlet_thesis.pdf
  - http://www.samba.org/samba/ftp/slides/

Status of Samba 4.0

- Samba 4 is not yet
  - ❏ code complete
  - ❏ backwards compatible with Samba 3 functionality
  - ❏ a print server
  - ❏ a full rpc server
  - ❏ a Kerberos 5 server (proposed dependency on Heimdal)
- Samba 4 is
  - ❏ a file server (at the "Susan Stage" as of Oct 29, 2004)
    - ✔ If divorce is an option if you loose data, don't install Samba 4
  - ❏ auto-generating about 50% of its code from IDL
  - ❏ able to make WinXP believe it is an AD DC
  - ❏ an LDAP server
  - ❏ An NBT (i.e. nmbd) server

Perl IDL Compiler (pidl)

- Samba 4 uses an interface definition language for describing MS-RPC and other protocols
- These IDL files have been made available under a liberal license for other projects to be able to use
  - ❏ motivated to promote better interoperability with projects such as Wine
  - ❏ Samba will continue to be licensed under the GPL
- Auto-generating routines to [un]marshall structures on and off the wire is much less error prone than the hand written code in Samba 3

Active Directory

- **Thesis by Andrew Bartlett is a good description of the problem**
- **Components**
  - ❑ Modified Heimdal Kerberos Build
  - ❑ Built-in LDAP server
  - ❑ Use external DNS package (e.g. Bind)
  - ❑ Samba provides core CIFS and MS-RPC functionality as usual

ldb

- New multi-index database
- Currently sits as a layer on top of tdb
- LDAP-like API
    - ❏ uses LDIF for importing & exporting records
    - ❏ uses Distinguished Names for referencing entries
- Might support other data storage mechanisms in the future
    - ❏ e.g. LDAP directory server

CIFS for UNIX

- IBM has funded development of the cifsvfs file system for the Linux 2.6 kernel
- Mac OS X has native smbfs support
- Possibility of real non-Microsoft CIFS clients
    - ❏ HP's unix extensions for CIFS
    - ❏ 'unix extensions' smb.conf
    - ❏ We now have both a strong, modern client and a strong server
    - ❏ CIFS between UNIX hosts as an alternative to NFSv4
- Longhorn ?
    - ❏ [OT] Microsoft wants to do away with CIFS

Other Team Activities

- lorikeet
  - repository for interoperability patches to other Open Source/Free Software projects
- Volunteer possibilities (aka ways to get a free t-shirt)
  - https://bugzilla.samba.org/
  - Coordination of testing for preview and RC snapshots
  - Package Maintainence
  - Build Farm machines
  - New features?

The End

(or is it?)

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