Paving the Potholes
Samba Roadmap

Gerald Carter
jerry@samba.org
http://samba.org/~jerry/slides/
Samba Team/HP

CIFS 2004

Development

- **Samba Team**
  - ▢ **http://www.samba.org/samba/team.html**
  - ▢ **Number of active developers varies**
  - ▢ **Volunteers and funded developers**
- **Technical discussion takes place on**
  - ▢ **samba-technical@samba.org**
  - ▢ **#samba-technical on irc.freenode.net**
- **Project Roadmap**
  - ▢ **http://www.samba.org/samba/devel/**
  - ▢ **EOL for Samba 2.2 is October 1, 2004**
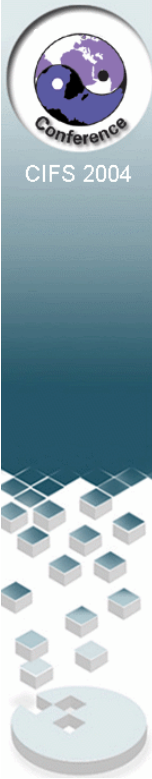
Challenges

- **local hacks?**
  - **hard to anticipate all possible scenarios**
  - **non-unix accounts**
  - **use cracklib**
- **Backwards compatibility**
  - **can't break DOS 3.0 Network Client**
  - **little used features suffer from bit rot**
- **Running on the treadmill doesn't allow for long release cycles**
  - **fluid development model**
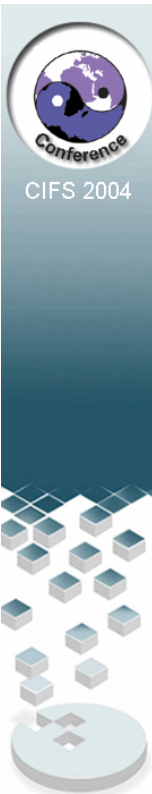
Samba Version Numbers

- **Recently officially adopted an odd/even versioning scheme similar to the Linux kernel**
  - **major.minor.revision**
  - **3.1 will be a development release series**
  - **3.2 will be the stable, production release**
- **Security release versioning**
  - **No more 'letter' revision releases**
  - **security release = previous stable release + security fixes**
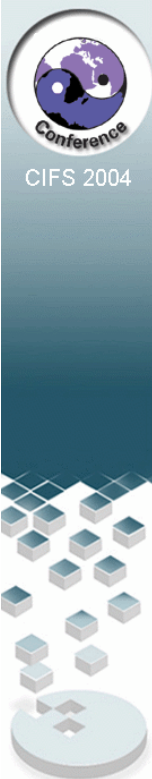- **Drop *alpha* and *beta* tags**
  - **left with *pre* and *rc***

Samba.org Gets a Face Lift

- **New Samba.org launched a few days ago**
  - **http://www.samba.org/**
  - **http://build.samba.org/**
  - **http://bugzilla.samba.org/**
- **Also launching http://news.samba.org/**
  - **Advocacy, Announcements, Users & Community, Developers, Releases**
  - **Status updates from team members**
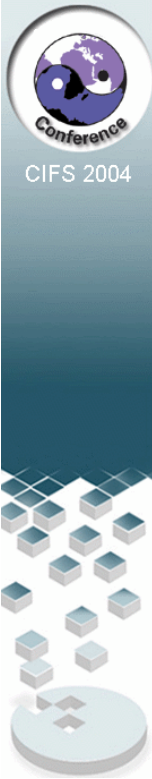- **Want to be the one-stop shop for information on Samba**

Subversion Repositories

- **svn.samba.org**
  - **SAMBA_2_2[_RELEASE]**
  - **SAMBA_3_0[_RELEASE]**
  - **SAMBA_4_0**
  - **trunk (the tree previously known as HEAD)**
- **Information on subversion**
  - **http://subversion.tigris.org/**
- **Information on access to Samba branches using anonymous svn**
  - **http://samba.org/samba/subversion.html**
- **http://websvn.samba.org/**
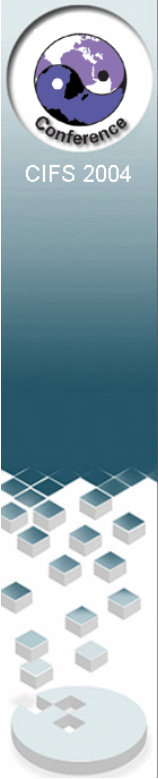
Samba 3.0.x

- **Samba 3.0.6 released by week's end**
  - ❑ **bugfixes and new features**
- **Recently added to the 3.0 branch**
  - ❑ **Storing DOS attribs in EA's**
  - ❑ **EA support for OS/2 and Mac OS X**
  - ❑ **Password Lockout and history support on a Samba DC**
  - ❑ **Support for nested groups (i.e Windows local groups)**
- **Samba 3.0.x where x >= 6**
  - ❑ **More bug fixes, etc....**
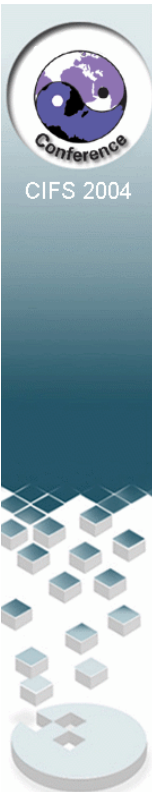
Samba 3.2

- **Interim release between 3.0 and 4.0**
  - ❑ **Possibly the first of several 3.x releases**
  - ❑ **Target release date – Q1 05**
  - ❑ **3.1.x will be development snapshot releases**
  - ❑ **3.2.0 – a few release candidates**
- **Features**
  - ❑ **Initially integrate low hanging fruit from Samba 4 tree**
    - ◆ **smb client library (smbclient, smbtorture, etc...)**
    - ◆ **schannel implementation**
   - ◆ **rpc client library based on IDL**

Possible Samba 3.2 Feature List

- **Potential Feature List**
  - **Full Windows NT ACL compatibility**
  - **Full SAM replication using NT4 protocols**
  - **NT privileges**
  - **More i18n work**
  - **Enterprise management**
  - **Merge of rpc server infrastructure from Samba 4 (?)**
  - **Redesign of user and group account management**
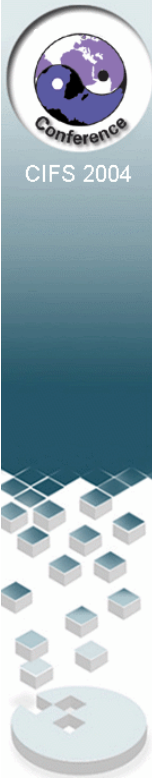 - **Continued integration of features and patches from vendors and the community**
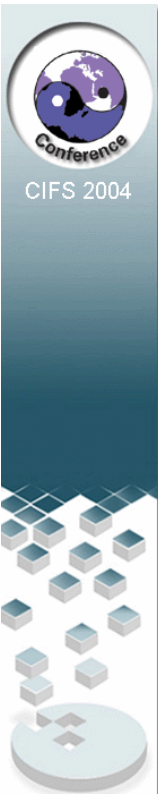
Why Samba 3.2 ?

- **Developers have paired up on either Samba 4 or Samba 3**
- **Two codebases are vastly different**
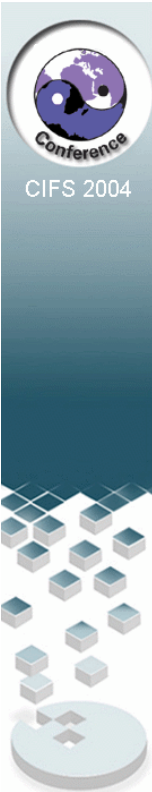- **Need a stepping stone to reunite the source tree**

Samba 3.2 - Status

- **Merge is in progress**
  - branches/tmp/SAMBA_3_2_MERGE
- **libsmbclient needs a maintainer**
  - GNOME, KDE, other ISV's
- **Polishers and Janitors**
- **Estimating 3.1 development releases as soon as the merge is finished**
 - end of Aug 04 ?

Samba 4.0

- **Research project to address the aging architectural deficiencies in Samba 3**
- **Ambitious goals**
  - 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

Samba 4 - Testing

- **Samba 3 (and earlier) included**
  - ▢ **smbtorture**
  - ▢ **rpctorture**
- **Tools were built on Samba's client API**
  - ▢ **no access to raw flags in packets**
  - ▢ **difficult to perform wide protocol testing**
- **Samba 4.0 includes a raw client library**
  - ▢ **enumerate over all possible flag values**
- **gentest**
 - ▢ **dual server, dual instance**
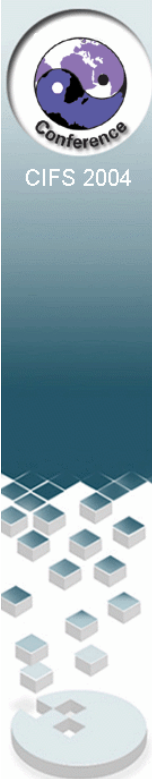
Samba 4 - VFS

- **Includes entry points for CIFS and posix file operations**
- **Much useful information obtained by using Samba 4.0 as a proxy CIFS server between a Windows client another CIFS server**
- **Allow the backend file system to support full NTFS semantics**
  - ▢ **8.3 file name tunneling**
  - ▢ **ACLs**
 - ▢ **storing user SIDs with files**
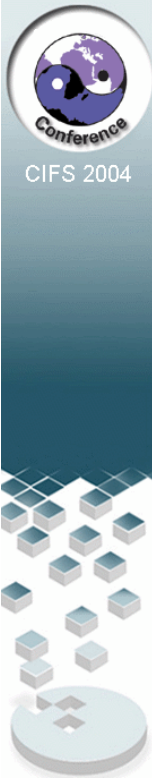
Samba 4 - MS-RPC

- **Samba 4.0 uses an IDL compiler**
  - ❑ **pidl (written in perl)**
- **Faster development time**
- **More stable RPC implementation**
- **IDL files will be available for other projects / vendors**
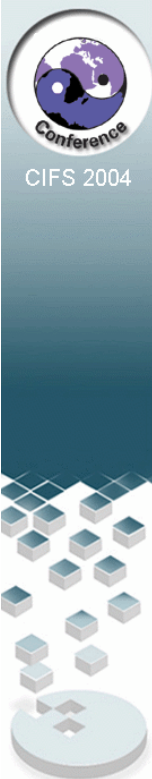
Samba 4 – Process Model

- **Samba 3.0**
  - ❑ **smbd fork on connect**
  - ❑ **nmbd uses a single threaded process**
    - ◆ **uses a child process to prevent blocking DNS lookups**
- **Samba 4.0 provides 3 process models selectable at startup**
  - ❑ **Single, non-threaded process for all requests**
  - ❑ **Fork on connect (identical to Samba 3)**
  - ❑ **One pthread per client connection**
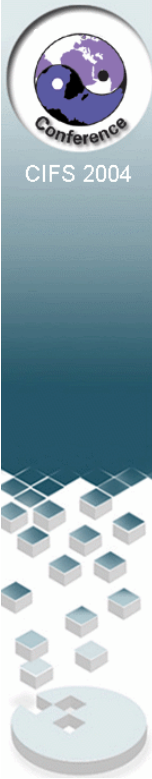
Samba 4 - ldb

- **New multi-index database**
- **Currently sits as a layer on top of tdb**
- **LDAP-like API**
  - **uses LDIF to import/export records**
  - **uses Distinguished Names for referencing entries**
- **Might support other data storage mechanisms in the future**
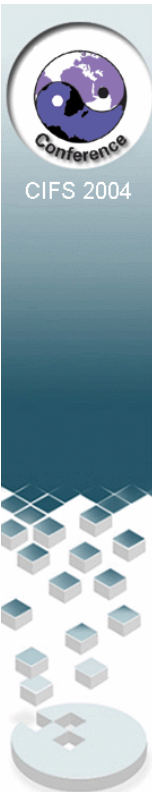
Samba 4 - Status

- **Still for developers**
- **Things that are finished**
  - **raw client library**
  - **test suite**
  - **NTVFS, CIFS, & TANK storage backends**
- **In progress**
  - **MS-RPC (client & server)**
  - **asynchronous support (client & server)**
- **TODO**
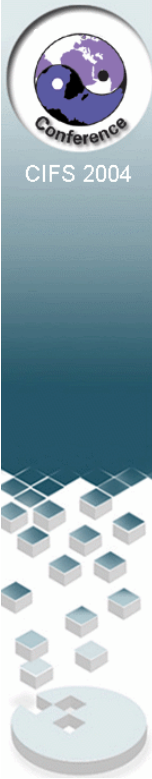 - **posix backend, oplocks, nmbd, etc...**

Samba == Active Directory ?

- **When will Samba be able to replace Active Directory?**
  - ❏ **Cross project**
    - ◆ **Kerberos 5, LDAP, DDNS, CIFS**
- **Work has begun**
  - ❏ **Long way to go**
  - ❏ **Tridge has some ldb support for the initial AD information and has an XP box joining Samba as an AD DC**
 - ❏ **MS-CLDAP, addition RPCs, Kerberos PAC, etc ....**
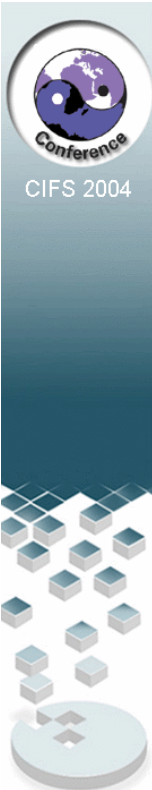
CIFS for UNIX

- **Linux 2.6 cifsvfs**
- **Mac OS X has native smbfs support**
- **Possibility of real non-Microsoft CIFS clients**
  - ❏ **HP's unix extensions for CIFS**
  - ❏ **We now have both a strong, modern client and a strong server**
  - ❏ **CIFS as a real unix-unix fs**
- **Longhorn ?**

Other Team Activities

- **lorikeet (svn)**
  - clearing house for interoperability patches
- **sangria (cvs)**
  - framework to manage Samba installations and configurations
- **Ways to get a free t-shirt**
  - https://bugzilla.samba.org/
  - Testing
  - Package Maintainence
  - Build Farm machines
  - The ability to "Innovate"
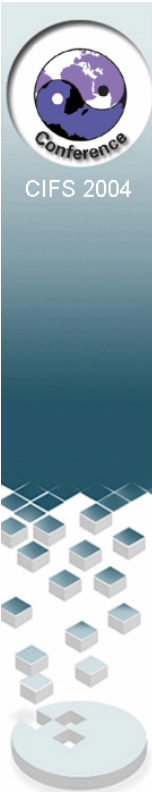
Questions ?

- **What do you want Samba to do 24 months from now?**