DBIS: Directory-Based Information Services

A replacement for NIS and RFC2307

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Background

- RFC 2307, late 1990s (experimental)
- RFC 2307bis, 2002-2009 (draft)
- RFC 4876, 2007

- nss_ldap (PADL, Sun Microsystems)
- NSS doesn't support all maps
- NSS libraries open their own LDAP connections
- 2005/2006 lightweight library, daemon process
  - Solaris 10
  - nss-pam-ldapd
Background

- 2010, merge two large NIS domains into AD
  - Clashing UIDs and GIDs
  - Duplicate configuration (NSS and automounter)
  - 10,000+ netgroup entries

- 2013, NIS-to-LDAP migration
  - Case sensitivity
  - Custom attributes and object classes
Approach

- Split RFC 2307 & RFC 2307bis into separate documents
- Needed a new name: DBIS
- Mission:
  - Solve case sensitivity problem
  - Add enterprise-class features
  - Mix schemas & clients
  - Not allowed to redefine attributes / classes
  - Thin NSS library / daemon process
  - nss_dbis / nss_ldap can work together

- New IETF internet drafts, 2013
- Reference implementation completed 2015
Features

- Configuration maps
- Case-sensitive attributes, e.g. en (exactName)
- Replacement object classes, e.g. posixUserAccount
- Transformation rules
  - Prefix, suffix, increment, decrement
- Overlays
- Netgroup constraints, i.e. tailored “views”
- Netservices
  - Roles, permissions and services

“When I am in this netgroup? Therefore I have this role”
becomes “Do I have this role?”
(DBIS client handles netgroup check)
Miscellaneous

- dbisMapGecos (passwd maps)
- Automount improvements
- netgroupUser, netgroupHost
- ipv4Address, ipv6Address
- LDAP alias objects
- disableObject
- dbisMapName (custom maps)
- Comprehensive schema comparison:
Reference Implementation

- DBIS 1.5.0, September 2015
  - Tested on OpenSUSE, RHEL and Solaris
  - dbis-cachemgr
  - nss_dbis
  - dbis
  - Python API
  - Perl API
  - C API
  - Pyloom
Future Plans

- Integration: Autofs, Sudo, Puppet
- Multi-column custom data
- Packaging
- LDAP persistent searches
- Migration tools
- Java API
- Load-balancing algorithms
- LDAP authentication schemes
- LDAP server profiles
- Defacto standard for reference data
Further Information

- IETF Internet Drafts:
  - DBIS Mapping Objects: draft-bannister-dbis-mapping
  - DBIS Netgroups and Netservices: draft-bannister-dbis-netgroup
  - DBIS Users and Groups: draft-bannister-dbis-passwd
  - DBIS Hosts, Networks and Services: draft-bannister-dbis-hosts
  - DBIS Devices: draft-bannister-dbis-devices
  - DBIS Automounter: draft-bannister-dbis-automounter
  - DBIS Custom Maps: draft-bannister-dbis-custom

- Download DBIS from SourceForge, try it today! http://dbis.sf.net

- Blog articles: http://technicalprose.blogspot.co.uk/2013/08/introducing-dbis.html

- Connect to me on LinkedIn: https://uk.linkedin.com/in/mbannister

- Discuss DBIS on (old) IETF mailing list: ldapext@ietf.org