



Introduction to the OpenDS project

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Agenda

- The Evolution of LDAP Directory Services
- Introducing the OpenDS project
- Status
- Directions
- The Community
- Conclusion

LDAP 10 years ago

- Email address book
- White pages for Enterprises
- Mostly Read Access
 - > Fast
 - > Thousands read requests per seconds
- Small data sets
 - > 100.000 user entries was BIG
 - > 20 attributes was a lot
- Very infrequent changes
 - > Less than 10% writes

LDAP Success Factors

- Standard Protocol
- Flexibility of the Information Model
 - > Standard Schema
 - > Extensibility
- Performance
- High Availability built in
- Simplicity

Use of LDAP Today

- Tens of Millions of user entries
- More data per users
- More transient, writable data
 - > Authentication auditing
 - > Web session cookies
 - > Presence
- Mission critical applications
 - > Telecom Operators, Financial institutions
 - > Central security point

Sun Directory Server

- Derived from University of Michigan code
 - > Designed in the early 90's
 - > Built for Read and Search performance
 - > Little consideration for Write efficiency or disk space optimization
- Improved version after version
 - > More features
 - > Write performance
 - Number of updates
 - Shorter Response time
- Still customers are asking for more

Introducing the OpenDS project

- Released in Open Source
 - > July 2006
 - > CDDL
 - > <https://opends.dev.java.net/>
 - > <https://www.opends.org/>
- Written in Java

Java Myth vs Reality

- The Myth : Java is SLOW
- The Reality
 - > A single platform
 - > Great services
 - Security, async I/O, threads and concurrency handling, dynamic code binding, Unicode and UTF-8 support...
 - > Not interpreted. Just In Time compiled
 - > Leveraging multi-core CPUs, multi-threading
 - > Extremely observable
 - > Still impacted by Garbage Collection



OpenDS Goals

- A complete set of Directory Services
 - > Directory Back-end database
 - > Full LDAPv3 compliance and standard extensions
 - > Multi-Master replication
 - > Directory Proxy Services : load-balancing, data distribution, security services
 - > Virtual Directory Capabilities
- Horizontal and Vertical Scalability
- Sun Directory Server Enterprise Edition will be OpenDS based in the future

Three Principles

- Ease of Use
 - > Installation, Configuration, Management, Monitoring...
- Performance
 - > Code with performance in mind:
 - Careful with memory
 - Threads and reduced contention
 - Monitors and Configurable queues
- Extensibility
 - > Many interfaces defined
 - > Default implementation provided

OpenDS today

- 1.0-Milestone1 in February
 - > A complete LDAPv3 compliant server
 - With Multi-Master Replication
 - Berkeley DB JE back-end
 - > An installation, upgrade GUI
 - <http://www.opens.org/install/QuickSetup.jnlp>
 - > A status and quick management GUI
 - > A configuration CLI
 - for all OpenDS configuration properties
 - with an interactive mode

OpenDS Features

- Full LDAPv3 compliant (RFC 4510 collection)
 - > Except some parts of String-Prep (RFC 4518)
- Many Extensions
 - > Extended Op: Cancel, Change Password, Modify Increment, “Who am I?” ...
 - > Controls: Simple Page, VLV, Server Side Sorting, Proxied Authz, Assertion, No-Op, Read Entry, Matched Values, Subtree Delete...
 - > Others: All Operational Attributes, Attributes by Objectclass, entryUUID attribute, entryDN attribute...

OpenDS Features (cont.)

- Multi-Master Replication
- Security
 - > Access Controls, Privileges
 - > SASL, SSL, TLS, StartTLS
 - > Password and Account policies
- Monitoring via JMX and LDAP, Notifications, Logs
- Grouping Interface provides Static and Dynamic groups
- Schema management
- ...

OpenDS additional value

- Single Framework for Datastore, Proxy, Virtual
- Performance : on target
- Can be embedded in applications
- Documentation
 - > Wiki based, Open Source, Quality reviews
- Tests
 - > Unit, Integration, Functional, System, Validation tests
 - > Subset run as PreCommit target
 - > Continuous builds and testing with Hudson

Still A Lot Of Work

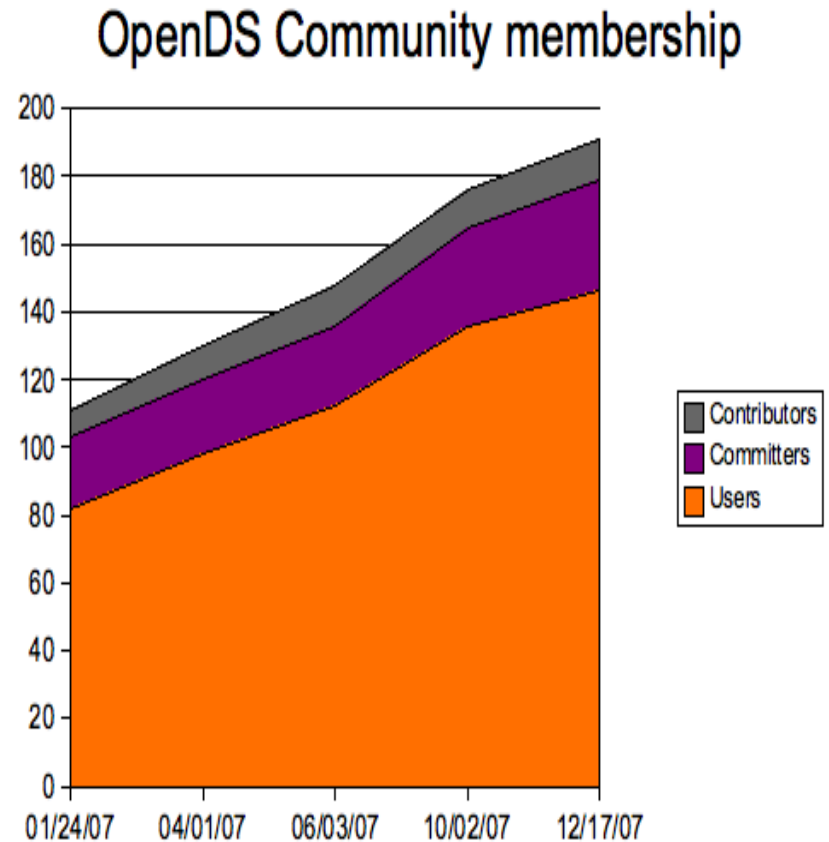
- For 1.0
 - > Performance, scalability tuning
 - > Test coverage
 - > Quality
 - > Documentation
- For mass adoption
 - > Demonstrate use as the OS Naming Service
 - Solaris, OpenSolaris, Linux
 - With end to end security (both SSL and Kerberos)
 - > Integration / support of Open Source Applications

And A Long Way To Go

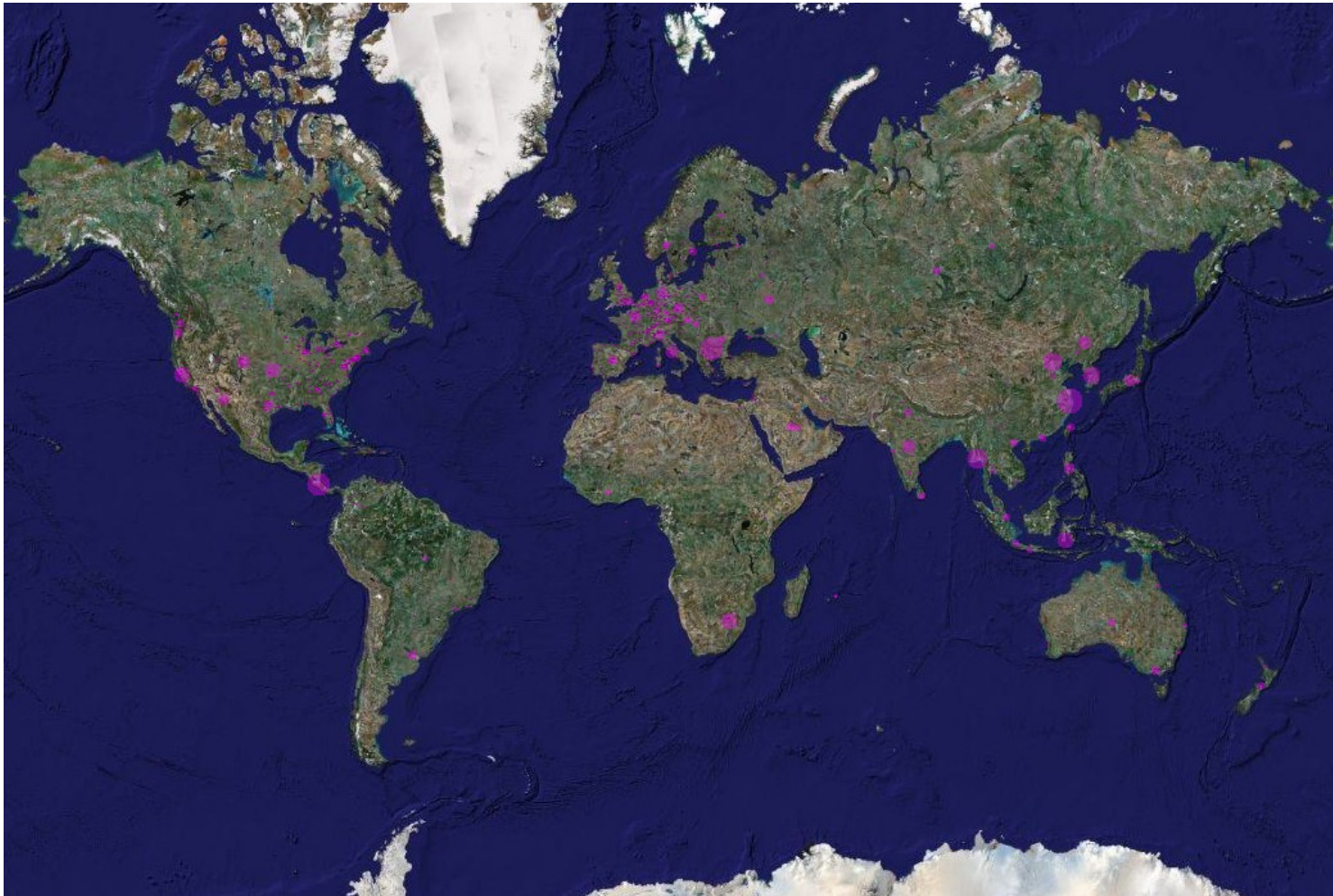
- Web Based Administration GUI
- Proxy Features
 - > Load balancing and Operation Routing
 - > Distribution of Data with a Global Catalog
 - > Virtual Directory Features
- Extensions
 - > Transactions
 - > Triggers and Stored Procedures
- Tools
 - > Migration to OpenDS

The OpenDS community

- Young
- Sun centric
- But steadily expanding
 - > Developers: 34
 - > Contributors: 12
 - > Registered Users: 203
 - > Technical Writers: 3
 - > Doc Wiki Users: 200
- ~ 580K lines of code
(from ~200K July 2006)



OpenDS Downloads



OpenDS and Other Communities

- Atom (an OpenDS SubProject)
 - > <https://atom.dev.java.net/>
 - > Atom Publishing Protocol with OpenDS backend
- OpenSSO, OpenID Extension for OpenSSO
- Glassfish
- Roller
- JBoss
- InterLDAP
- Penrose

OpenDS in a nutshell

- OpenDS intends to provide a complete Directory Service
 - > With huge performance for both reads and writes
 - > Scalable to the world population
 - > Easy to use, to extend
 - > To address the current and future needs
- Leveraging years of experiences in the Directory space

Check OpenDS

- Get the latest build and information
 - > <http://www.opens.org/>
- Register and request a Role:
 - > <https://opens.dev.java.net/>
- Help with the Documentation
 - > <https://www.opens.org/wiki>
- 3 Minutes install:
<http://www.opens.org/install/QuickSetup.jnlp>
- Embed or Test OpenDS in your applications
- OpenDS 1.0-Milestone1 in February.



Introduction to the OpenDS Project

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GlassFish Session this afternoon

- Today (Friday)
 - > 13h30 @ Leonardo Da Vinci
 - > JAX-RS & Jersey
 - Paul Sandoz, JSR 311 Spec Lead
 - RESTful Web Services
 - > Cool stuff
 - > More demos and Q&A
 - > ...

