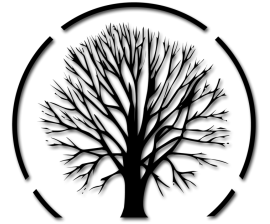


Apache DS 2.0

What's new ?



Apache Directory



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Agenda

- Introduction
- What's already in the box
- New features
- ADS and other OSS LDAP servers
- Tooling
- Summary
- Q&A



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Introduction



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What is ADS ?

- An LDAP server
- Written in Java
- Compliant
- Extensible
- Embeddable
- With tooling



What is ADS ?

- 5th biggest ASF project (SLOC)
- Vivid community
- 160 downloads a day for the server
- 320 downloads a day for Studio



What's already in the box ?



Standards

- RFC 225x and 451x
- X.500
- Controls
- Extended operation



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Compliant LDAP server

THE *Open* GROUP
Making standards work®



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ApacheDS' specials

- Full X500 ACIs
- Triggers and Stored-procedure
- Modular architecture allowing server extension
- Embeddable
- Kerberos, DNS, DHCP, DNS, ...



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New features

ChangeLog

- A logging facility storing versions of your modifications
- Changes can be reverted
- Works a bit like SVN
- Mainly used for tests atm



Journal

- Logs all the modifications done in a file
- LDIF format
- Used for Replication and DRS



Entry API

- We don't use JNDI within the server anymore
- A new Entry API has been designed
- Client and Server API
- Uses varargs and Generics

```
EntryAttribute attrOC = new DefaultClientAttribute( "objectClass", "top", "person" );  
EntryAttribute attrCN = new DefaultClientAttribute( "cn", "test1", "test2" );  
EntryAttribute attrPWD = new DefaultClientAttribute( "userPassword", BYTES1, BYTES2 );  
  
Entry entry = new DefaultClientEntry( "dc=example,dc=org", attrOC, attrCN, attrPWD );
```



Cursors

- Total rewrite of the search engine
- Cursors can be read forward ...
- ... and backward.
- Make it easier to implement paged search operation !





MINA 2.0

- Switched from MINA 1.1 to 2.0
- Better scalability
- Better performance



Better test environment

- Annotations are now used
 - Ldif injection
 - Factory definition
 - Revert strategy

```
@RunWith ( CiRunner.class )  
@CleanupLevel ( Level.CLASS )  
@Factory ( SearchWithIndicesITest.MyFactory.class )  
@ApplyLdifFiles( { "test.ldif" } )  
public class SearchWithIndicesITest  
...
```



Installers

- We now have native installers for a lot of platforms
 - Windows (Vista/XP)
 - Debian (32/64)
 - RedHat (32/64)
 - Solaris (SPARC/i386)
 - Mac OS X
 - No architecture (ZIP, tar.gz)

Performances

- Lot of improvements done
- Around 4500 random search requests per second on a laptop (OpenLDAP does 9000)
- Around 13 000 random search requests per second on a 4 ways CPU, with 5 millions entries



Replication

- Based on RFC 4533
- Syncrepl in OpenLDAP
- Multi-master replication system
- Will replicate with OpenLDAP
- Hopefully available very soon...



Under construction...





DRS

- Disaster recovery system
- Based on the Journal



Under construction...

Config in DIT

- Easier configuration
- Easier integration
- Easier evolution
- Configuration stored as LDIF
- Can be handled by Studio



Under construction...



ADS and other OSS LDAP servers



OpenLDAP

- The reference when it comes to OSS LDAP server
- Written in C
- A bit complex to install ...
- We are collaborating with OpenLDAP



OpenDS

- Written in JAVA
- Quite recent
- Future ?
- Collaboration ?
- Sun ?



FDS

- Netscape source base
- Stable
- Does the job
- Does not evolve a lot ...
- Brittle C code base



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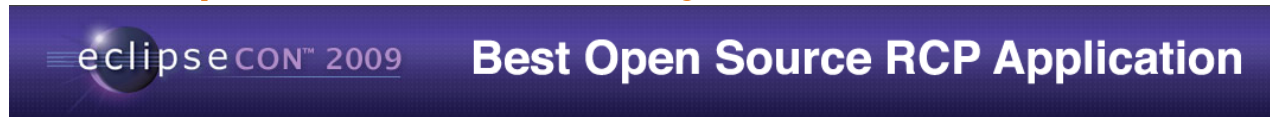


Tooling

Apache Directory Studio



- Award winning, De-facto Standard
 - Eclipse Community Award 2009
- Works with any LDAP server
 - OpenLDAP ... even Active Directory
- Works especially well with ApacheDS
 - It even runs inside, if you like

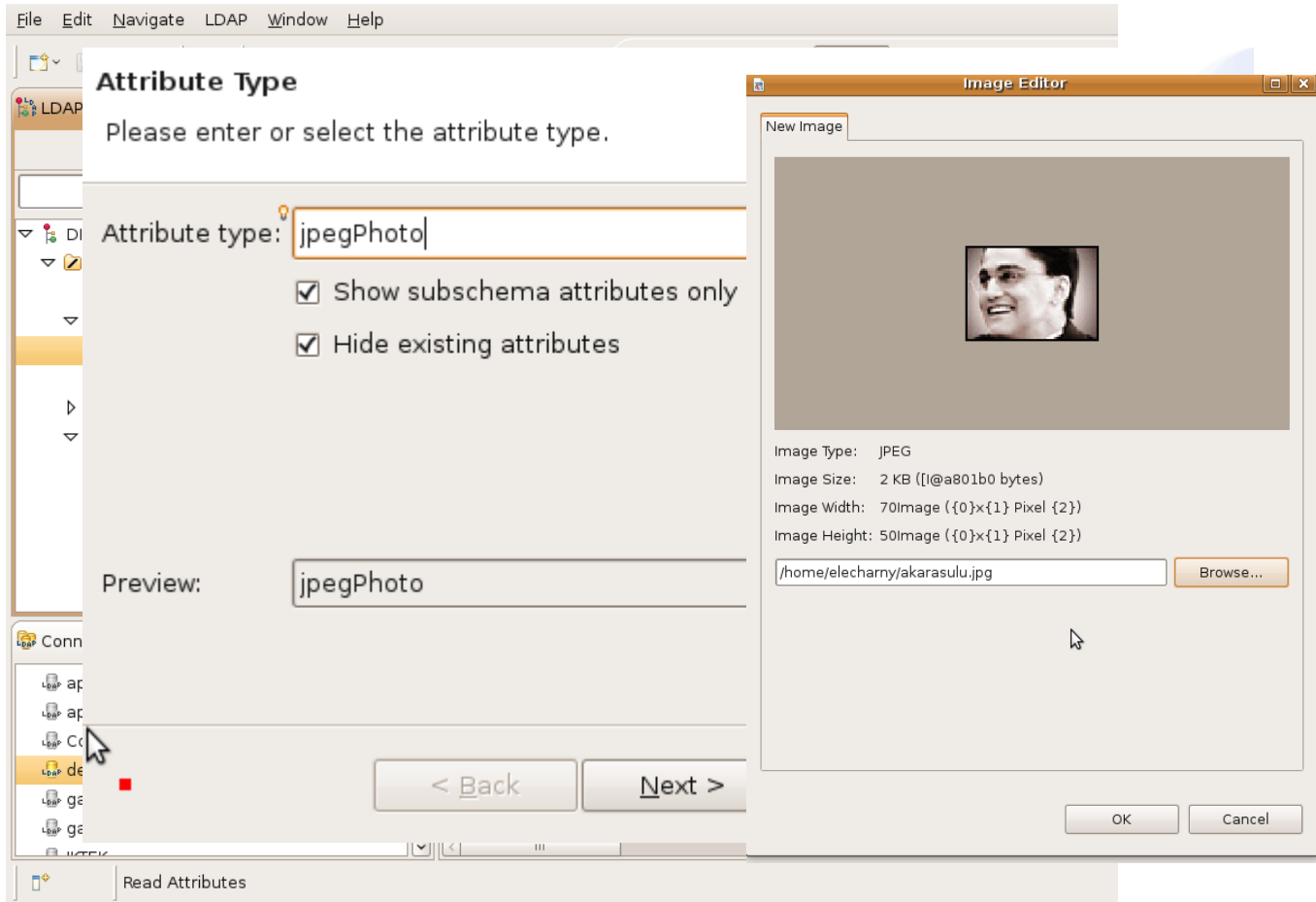


Studio Features

- LDAP Browser/Editor
- Embedded ApacheDS
- ApacheDS Configuration Editor
- Schema Editor (for ApacheDS and OpenLDAP)

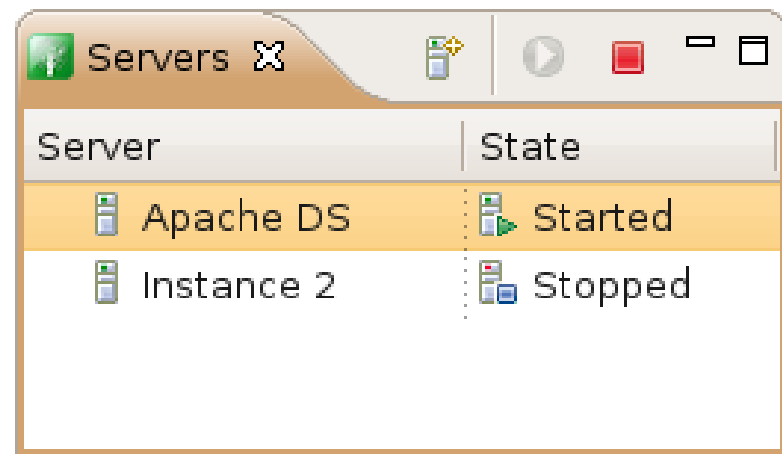


LDAP Browser/Editor



Embedded ApacheDS

- Leverage the fact that ApacheDS is embeddable
- Create/Setup/Run an LDAP server in less than 10 seconds, several instances



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DEMO...



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ApacheDS configuration

The screenshot displays the Apache Directory Studio (ADS) interface. The main window is titled "Entry Editor" and shows the configuration for a server entry named "server.xml". The "Authentication" tab is selected, showing the following settings:

- Supported Authentication Mechanisms:** A list of mechanisms with checkboxes, all of which are checked: SIMPLE, CRAM-MD5 (SASL), DIGEST-MD5 (SASL), GSSAPI (SASL), NTLM (SASL), and GSS-SPNEGO (SASL). Buttons for "Edit...", "Select All", and "Deselect All" are visible.
- SASL Settings:** Fields for "SASL Host" (ldap.example.com), "SASL Principal" (ldap/ldap.example.com@EXAMPLE.COM), and "Search Base DN" (ou=users,ou=system).
- SASL Quality Of Protection:** A section for configuring SASL quality of protection settings.

The interface also shows a "LDAP Browse" pane on the left with a tree view of the directory structure, including "Root DSE (5)", "dc=demo", "dc=examp", "cn=akal", "cn=jfarc", "ou=schem", "ou=system", "uid=adr", "ou=con", "ou=grou", "prefNod", and "ou=use". The "Server" pane at the bottom left shows a list of servers: "apache", "demo", and "Kernel". The "Console" pane at the bottom right shows the following log output:

```
#!SEARCH RESULT DONE (19) OK
#!CONNECTION ldap://localhost:10389
#!DATE 2009-03-27T00:27:10.211
# numEntries : 1
```


Schema editor

The screenshot displays the Apache Directory Schema Editor window. The left sidebar shows a tree view of the schema hierarchy, with 'inetorgperson' expanded to show 'Attribute Types (9)', including 'departmentNumber'. The main panel is titled '*departmentNumber' and contains the following sections:

- General information**:
 - Aliases: departmentNumber (with an 'Edit Aliases' button)
 - OID: 2.16.840.1.113730.3.1.2
 - Description: RFC2798: identifies a department within an organization
 - Schema: inetorgperson
 - Superior type: (None)
 - Usage: User Applications
 - Syntax: Directory String - (1.3.6.1.4.1.1466.115.121.1.15)
 - Syntax length: (empty field)
 - Options: Obsolete, Single-Value, Collective, No-User-Modification
- Matching Rules**:
 - Equality: caseIgnoreMatch - (2.5.13.2)
 - Ordering: (None)
 - Substring: caseIgnoreSubstringsMatch - (2.5.13.4)

At the bottom of the window, there are tabs for 'Overview', 'Source Code', and 'Used By', and a status bar with 'Problems', 'Search', and 'Servers' icons.

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Summary



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Summary

- Should be ready by june-september
- We will work on performance improvement
- Production ready
- Easy to install, easy to use.



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Q&A