

IDEALX Management Console

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- > IMC for sysadmins
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- > Samba Console & the smbldap-tools
- > Roadmap & community

Motivations

“ Open Source Infrastructure software rocks ! “, but...

“ How do I manage it all ? What if I don't already have a linux workstation ? Where is my MMC console ? “

Webmin provides part of the answer : web based, lots of modules
But is beginning to show its age : focused on configuration not on _management_, based mostly Perl-4

IMC (IDEALX Management Console)

- web based, ergonomic widgets
- webmin-compatible
- object-oriented, componentized,
- in Perl (the language of choice for sysadmins)

IDEALX Management Console

> IMC for sysadmins

Overview

**Samba
Console**

**Nagios
Console**

**Webmin
Console
(LDAP roles)**

**New projects :
amavis, pf,
bacula, etc.**

IMC Generic Components

IMC Framework

Available consoles

Samba Console : smooth migration for NT sysadmins

Nagios Console (initial, and “reloaded” version)

Secure MX Console (console for our
Postfix/SpamAssassin/ClamAV, pending release)

Bacula Console (monitor network backups made with
Bacula)

IDX-PKI Console : monitor the technical parts of IDX-PKI

Webmin Console : just reuse your existing modules, with
integrated LDAP auth. and access control

X509 auth also (mail gmacinenti@idealx.com to get its
devel version)

<your own console here...>

Nagios Console

Nagios IDEALX Management Console - IDX-... 27-avr-2004

IDX-Monitoring

Status Overview Network Overview Events Overview Services Overview System Overview Security Overview Performance Overview Custom Overview

SYSTEM OVERVIEW

Current Status Error Last check : Sun Apr 18 02:38:34 2004

Basic Trends

Host : test2 Event Log Show last 10 events | Show next 10 events | Show oldest 10 events

Time	Description
21:42:37 24-avr-2004	hub 2-0:1.0: USB hub found
21:42:37 24-avr-2004	hub 2-0:1.0: 2 ports detected
21:42:37 24-avr-2004	PCI: Found IRQ 11 for device 0000:00:1d.2
21:42:37 24-avr-2004	PCI: Sharing IRQ 11 with 0000:00:1f.1
21:42:37 24-avr-2004	PCI: Sharing IRQ 11 with 0000:02:02.0

SERVICES OVERVIEW

Service	State	Description
httpd		httpd is running Apache is a World Wide Web server. It is used to serve HTML files and CGI.
atd		Runs commands scheduled by the at command at the time \

Server : localhost

Login user admin pass ***** Login

Common tasks

- Enable checks
- Acknowledge problem
- Enable notifications
- Delay next notification
- Schedule downtime
- Disable notifications for all services
- Enable notifications for all services
- Schedule an immediate check of all services
- Disable checks of all services
- Enable checks of all services
- Disable event handler
- Disable flap detection
- Get help

Webmin module, Samba Console wizard

The image displays two side-by-side screenshots of the IDEALX Management Console interface, both running in Mozilla Firefox on a Redhat Linux 9.0 system.

Left Screenshot: Postfix Configuration

This screenshot shows the "Postfix Configuration" module. The main title bar reads "IMC : IDEALX Management Console - Mozilla Firefox". The address bar shows "http://localhost:8080/webmin/postfix/". The left sidebar menu includes "Monitoring", "Secure MX", "Configuration", "Account Management", "Control services", and "Supervise". The main content area is titled "Postfix Configuration" and "Postfix version 1.1.12". It features a grid of 12 icons representing various configuration options: General Options, Address Rewriting and Masquerading, Mail Aliases, Virtual Domains, Transport Mapping, Relocated Mapping, General resource control, SMTP server options, SMTP client option, Debugging features, LDAP lookups, and Mail Queue (44 messages). A "Start Postfix" button is present at the bottom, with a note: "Click this button to start the Postfix mail server. Until this is done mail will not be sent from this system, and clients will not be able to use this system as a mail server." A "Return to index" link is also at the bottom.

Right Screenshot: Samba Server Setup

This screenshot shows the "Samba Server Setup" module. The main title bar reads "IMC : IDEALX Management Console - Mozilla". The address bar shows "http://localhost:8080/configure/samba/wizard". The left sidebar menu includes "Getting started", "Test plugin", "Configure System", "Legacy Webmin Modules", "Get help", and "About". The main content area is titled "Samba Server Setup" and "Choose a role for your server". It offers three options: "Domain Controller", "Additional Domain Controller", and "Member Server". The "Domain Controller" section describes it as implementing Domain Security using a central directory of user and machine accounts. The "Additional Domain Controller" section describes it as storing a replica of the central directory. The "Member Server" section states that it participates in Domain Security. A "Server : localhost" icon is shown in the top right. A "Common Tasks" sidebar on the right lists "Manage user accounts", "Configure services", "Monitor services", "Manage security policy", and "Get help". The footer of the browser window shows "root logged into Webmin 1.121 on dhcpc1 (Redhat Linux 9.0)".

Page Footer:

IDEALX
Le partenaire Open Source des Grands Comptes et Administrations

Other generic consoles

IDEALX Management Console

Manage Services

Monitor Services

- CA Server
- RA Server
- EE Server
- Escrow Server
- Public LDAP Server

View Logs

- CA HTTP Service
- RA HTTP Service
- EE HTTP Service
- Escrow HTTP Service
- Certificates LDAP Service
- Escrow LDAP Service
- Publication LDAP Service

Memory Usage

This chart displays memory usage over a 24-hour period. The Y-axis represents memory in Gigabytes (GB), ranging from 0.5 G to 1.5 G. The X-axis shows time points at 18:00, 00:00, and 06:00. Two series are plotted: Physical Memory Usage (yellow) and Swap Memory Usage (orange). Swap memory usage is significantly higher than physical memory usage, peaking around 1.2 GB at 18:00.

Hard Disk Occupation

This chart tracks the usage of three hard disk partitions over a 24-hour period. The Y-axis shows usage levels from 10 to 30. The X-axis marks 18:00, 00:00, and 06:00. Three lines represent the usage of the root partition (/) in purple, /var in red, and /opt in blue. The root partition shows a sharp increase in usage starting around 18:00, reaching approximately 28 units by 00:00.

Hard Disk Read/Write Actions

This chart measures disk activity in units per second over a 24-hour period. The Y-axis ranges from 10 to 40. The X-axis marks 18:00, 00:00, and 06:00. Two series are shown: Disk Write (black) and Disk Read (grey). Both series show a significant spike in activity around 18:00, with Disk Write reaching nearly 40 units and Disk Read reaching about 35 units.

IDEALX Management Console

> IMC for developers

Let's build a better new 'wheel'

Need a framework for building web mgmt interfaces “à la MMC”

=> need a base API and a proven extension framework, like Eclipse

Must enable highly ergonomic GUI, without much efforts
=> need templating & HTML widgets

Webmin provides lots of modules

=> must be able to re-use Webmin modules

Java is interesting but limit productivity and code re-use (webmin modules) + Perl is the favorite language for sysadmins

=> need a J2EE-like framework for Perl

Perl/CPAN dependencies are a nightmare for packagers
=> need something like .jar packages for libraries

Components overview

Generic CPAN Stack

- Log4P
- PAR
- TT2
- etc.

New modules (not IMC specific)

- PXP
- Struts4P
- WebFaces

IMC Console

“Application A”

IMC Console

“Application B”

Reusable Components

- UserManager2,
- ServiceManager2,
- LogViewer, Monitor, etc.

Webmin Modules

“Legacy”

Controllers and Renderers

- IMC::Struts4P::Controller
- IMC::WebFaces::ViewRenderer

CGI/Webmin Wrapper

IMC Core facilities

- Standalone Web Server (HTTPS)
- Pipeline slots

Perl 5 VM (with Unix semantics)

Core and reusable components

Standalone Web Server (HTTPS only, Net::Server + libwww)

Generic pipeline slots, for

- Session handling (cookie + Apache::Session)
- Authentication : static XML file or LDAP connector

User and Role API : access control, role based, role mapped to LDAP group membership

Available modules

- Webmin wrapper : re-use existing modules transparently
- UserManager2 : account management, provisioning
- ServiceManager2 : start/stop services, inspect applications logs, local or remote (ssh), display RRD monitoring graphs

IDEALX Management Console

> Generic modules

PXP : Perl eXtensions & Plugins

Extension Point : generic interface for a facade or a registry (Exemple : IMC::MainMenu)

Extension : piece of code/class/module of simply text or XML fragment that is registered into an extension point to “extend” the functionnalility of the system

Plugin : group of extension points and extensions, with possible startup() and shutdown() methods to initialize plugin specifics structures : caches, configuration files, struts controllers (see Struts4P), etc.

Notes :

- These are ordinary Perl objects, NO BASE CLASS DEPENDENCY is required.
- Extension instantiation is delegated to the extension point implementation : it needs not be a class, can as simple as a text string

**Generic
CPAN Stack**
*(not Web or IMC
specific)*

- Log4P
- PAR
- PXP
- etc.

PXP : example

Excerpt from a plugin.xml :

```
<plugin
    id="IMC::Core"
    class="IMC::Core::InitPlugin"
    version="0.1"
    name="Core Plugin"
    provider-name='IDEALX'>

<extension-point
    id='IMC::MainPipeline'
    version="0.1"
    name='Main Pipeline Extension-Point' />

    [...]

<extension
    id='IMC::SessionLoader'
    name='Session Loader Extension'
    point="IMC::MainPipeline"/>
```

PXP is actually located in ~imc2/lib/IMC/..., but should move to a top-level package as it does not rely on any other IMC packages and provides fairly generic services.

Struts4P

- Port of Struts (<http://jakarta.apache.org/struts>) to Perl
- Implements MVC (“Model 2”)
- Reads “standard” struts-config.xml (not all tags supported yet)
- Struts4P::RequestProcessor implements a generic controller
- Advanced Perl syntax reduces need multiple “Action classes” : ie one can group several actions inside a common MyAppAction and dispatch at the method level (the java version leads to a “one class per action” approach)
- All parts of the framework can be replaced or overloaded (RequestProcessor, ViewRenderer, Role-based access control, etc.)
- Default IMC::Struts4P::ViewRenderer works with Template Toolkit for rendering views, with pre-defined logic for .cgi/pl and .xsl processors

Struts4P : example config file

```
<struts-config>
  <form-beans>
    <form-bean
      name="testForm"
      type="IMC::Struts4P::TestForm"/>
  </form-beans>

  <action-mappings>
    <action path="/" forward="/pages/test.html"/>
    <action path="/test" forward="/pages/test.html"/>
    <action path="/testSubmit"
      type="IMC::Struts4P::TestAction"
      parameter="testMethod"
      name="testForm"
      scope="request"
      validate="true"
      input="/pages/input.html">
      <forward name="success" path="/pages/success.html"/>
      <forward name="failure" path="/pages/failure.html"/>
    </action>
  [...]
```

WebFaces

A GUI framework for web applications

- A WebFaces::View groups together a set of widgets and a default layout (template) for arranging them
- A widget renders a view of the model and “reacts” to state changes of other widgets
- The framework can be layered over traditionnal CGI responses (wraps a dumb html page inside a template)
- It works with Struts4P too ;-)
- Available widgets type
 - Perl Widget : HTML rendering in plain Perl, before integration inside the template
 - Template Widget : HTML is produced by a template
 - Template Plugin : rendering is called from the template

IDEALX Management Console - IDX-Monitoring - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://sissi:8080/monitoring/systems/

Slashdot Google pagesjaunes.fr, demand... Intranet Segur - Bienven... Wiki

SimpleMenuWidget

Sub Template

TreeWidget

LoginWidget

TaskWidget

06-May-2004

Server : localhost
not logged in
user
pass
Login

Common tasks

- Configure services
- Monitor services
- Manage security policy
- Get help

SYSTEM OVERVIEW

Current Status: Error
Last check : 21-12-37
74 available

Basic Trends

Host : test2

Event Log

Show last 10 events | Show next 10 events | Show oldest 10 events

Time	Description
2004-05-06 12:00:00	System started

SERVICES OVERVIEW

Service	State	Description
httpd	httpd is running	Apache is a World Wide Web server. It is used to serve HTML files and CGI.
atd		Runs commands scheduled by the at command at the time \.
dhcpcd	description	

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Done

IDEALX Management Console

> Samba Console & smbldap-tools

Samba Console

Initial goal was to replace usrmgr.exe

Version 1.1 features

- Account management (users & groups, computers)
- Resource provisioning (homes, profiles, custom actions)
- Support for admin roles (Domain Admins & Account Operators), even without the new privilege stuff (LDAP access control)
- Service management (Samba controller and OpenLDAP servers)
- Log browsing and some CPU/IO/mem graphical monitors

Requires a recent imc 1.2

Samba Console

 IDEALX Management Console

Logged in as Administrator | Logout

Domain Configuration

- Account Policy

Domain Management

- Manage Services
- Monitor Services
- Samba Server log
- NetBIOS log
- LDAP Server log
- System log

Account Management

- Manage user accounts
- Manage group accounts
- Manage computer accounts

Home > Domain Management > Manage Services 06-Jan-2005 Server : localhost

LDAP Log

Search  View all

First Page | Previous < ... 2 3 4 5 6 7 ... > Next | Last page Entries 21 - 40 of 32642

Date	Time	Origin	Detail
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=1 SEARCH RESULT tag=101 err=0 nentries=1 text=
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=2 SRCH base="cn=monitor" scope=0 deref=2 filter="(cn=monitor)"
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=2 SRCH attr=description
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=2 SEARCH RESULT tag=101 err=0 nentries=1 text=
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=3 SRCH base="cn=Bytes,cn=Statistics,cn=Monitor" scope=0 deref=2 filter="(objectClass=*)"
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=3 SRCH attr=monitorCounter
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=3 SEARCH RESULT tag=101 err=0 nentries=1 text=
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=4 SRCH base="cn=PDU,cn=Statistics,cn=Monitor" scope=0 deref=2 filter="(objectClass=*)"
Oct 12	13:59:01	linux	slapd[6372]: conn=26 op=4 SRCH attr=monitorCounter

New features

In the current branch : provisioning spool interface (async creation of /home on remote systems)

- re-uses the existing pipeline from the AccountFactory
- each task is calling
- adds a task to spool a provisioning event
- uses a simple Idiff for the moment
- will move to SPML sometimes in the future
- try it: it's already in patch-35

This can be the basis of next major version of the smbldap-tools.

Pipeline details

```
use UserManager2::ProvisioningRequestor;
$self->{'registry'}->{'SambaAccount'} =
    new UserManager2::GenericLDAPAccountFactory(objectClass => [ 'account', 'posixAccount', 'sambaSamAccount' ],
                                                base_dn => $self->{base_dn},
                                                users_prefix => $self->{users_prefix},
                                                groups_prefix => $self->{groups_prefix},
                                                default_user_gid_number => $args->{'default_user_gid_number'},
                                                newOps => [\&UserManager2::GenericLDAPAccountFactory::sampleCheckPasswordComplexity,
                                                \&UserManager2::GenericLDAPAccountFactory::setProperties,
                                                \&UserManager2::GenericLDAPAccountFactory::setDefaultDN,
                                                \&UserManager2::GenericLDAPAccountFactory::setPosixUID,
                                                \&UserManager2::GenericLDAPAccountFactory::setDefaultPosixGroupID,
                                                # \&UserManager2::GenericLDAPAccountFactory::setPrivatePosixGroupID,
                                                \&UserManager2::SambaTasks::setSambaSID,
                                                \&UserManager2::SambaTasks::setSambaPrimaryGroupSID,
                                                \&UserManager2::GenericLDAPAccountFactory::setPassword,
                                                \&UserManager2::SambaTasks::setSambaPassword,
                                                \&UserManager2::GenericLDAPAccountFactory::setObjectClass,
                                                \&UserManager2::GenericLDAPAccountFactory::checkSchema,
                                                \&UserManager2::ProvisioningRequestor::spoolJob,
                                                # \&UserManager2::GenericLDAPAccountFactory::createHomeDirectory,
                                                ],
                                                delOps => [\&UserManager2::GenericLDAPAccountFactory::removeFromGroups],
                                              );
```

Other features

Resource servers management

- Add/remove shares, manage ACLs
- Monitor status of SMB services of a remote server (NT or Linux), or reboot !
- Printing support : no idea yet
- First version : q&d 'net' wrapper
- Now working on libnet (samba4), and trying to bring back code from samba 3 and IDLs to have the missing RPCs
- Courtesy of Gregory (gleocadie@idealx.com)

Installation wizard

- handles 2 basic configurations : PDC and member server
- generates smb.conf
- calls smbldap-populate for directory provisioning
- should have seen the ./setup/provision.pl script before ! ;-)

New resource management screen

Domain Configuration Home 03-May-2005

Account Policy Domain

Computer Properties

Computer

Home 03-May-2005

Share Name: sambaxp
Server Path: /tmp
Description: SambaXP Demo

[Cancel](#) [Submit Query](#)

accounts
Manage group accounts

Domain Resource Management
Manage Systems

Computer Shares

[New share...](#) [Remove](#)

Name	Type	Description
print\$	Disk	Printer Drivers
tmp		
samba\$	REVISION:1 OWNER:IDEALX-NET\root GROUP:IDEALX-NET\root ACL:IDEALX-NET\root:ALLOWED/0/FULL	
IPC\$		
ADMIN\$		
samba\$	ACL:IDEALX-NET\root:ALLOWED/0/FULL	
root	ACL:\Everyone:ALLOWED/0/FULL	

Computer Printers

Name
printer 1: \\pdc-srv\sambaxp_printer, shared as: sambaxp_printer

[Done](#)

New wizard feature (upcoming)

The screenshot shows a software interface titled "Choose your configuration". At the top left is the IDEALX logo. To its right, the text "Choose your configuration" is displayed in a large, italicized font. Below this, the title "PDC Step 1" is centered above a form area.

Left Panel:

- A large text box contains the instruction: "Move the cursor over the fields to get help !".
- Below this, there are three small, partially visible text boxes labeled "Sam", "Sam", and "Sam" followed by "a W".

Right Panel:

- Section Title:** "In this section, you may give to the wizard the name of your society's domain".
- Form Fields:**
 - Principal Domain's name:
 - TLD (Domaine's suffix):
 - Subdomain (optionnal):
- Navigation Buttons:** "previous" and "Next" located at the bottom right of the panel.

IDEALX Management Console

> Roadmap and community

Roadmap

IMC (as presented at Fosdem 2005)

- X509 auth. (*done*), perl tainting (*anyone ?*)
- mod_perl connector (*hack works*)
- more IoC/code injection improvements (layered configuration : components wiring, configuration defaults, site specific parameters, all management by the same mechanism) (*working on it*)

Samba Console

- Multiple domain support
- libnet Perl wrapper (even for account creations)

Nagios 2.x integration (Nagios Console)

Bacula console (*will be ready for may 12*)

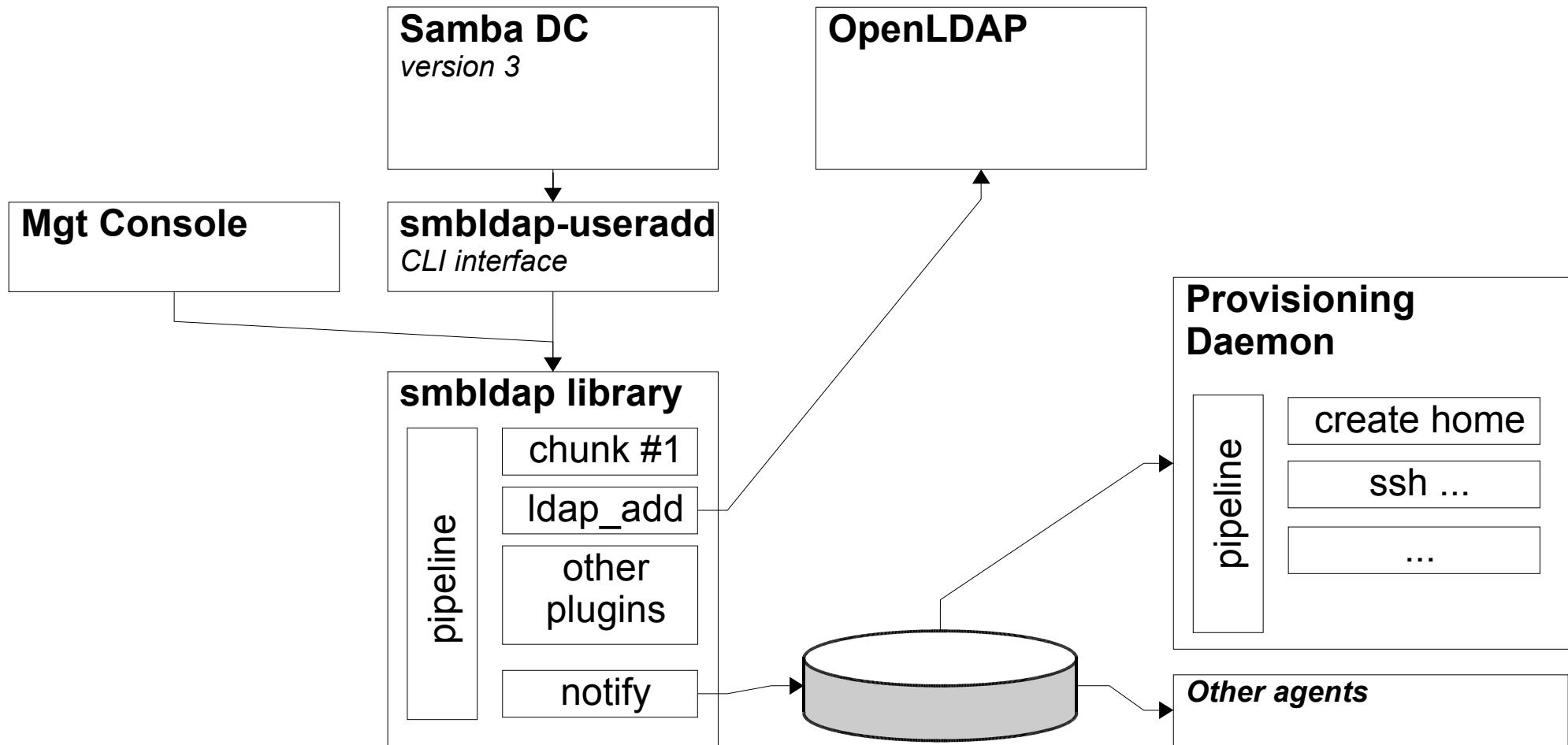
smbldap-tools

What we want to add

- plugin support (add radius attributes, notify other systems, etc.)
- basic set of tasks (from smbldap_tools.pm)
- async support
- CLI will stay for Unix admins & users

What else would you like in the next version ?

Target architecture proposal



Community

Samba Fan ?

Like Webmin ?

Love Perl ?

Then go to <http://imc.sourceforge.net/home.html>

Mailing-list : lst-imc@lists.idealx.org

GNU Arch/TLA development archive

Documentation : err.. not much yet...