



# **ARCHER Collaborative Workspace**

## **System Administrator's Guide**

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- Maintenance

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## Overview

The ARCHER Collaborative Workspace is a customised version of Plone, an open source web product built in Python. Plone is hosted by the web server Zope.

It is packaged as a “buildout” and a set of deployment scripts, which download all necessary components to install Zope, Plone, Varnish, and the included SRBContent plugin. The scripts download, build and install all the components. The final configuration must be done by hand.

Archer Collaborative Workspace requires Archer Data Services Infrastructure Layer and Service Layer. Install them first.

## Components

The following components are involved:

Component	Purpose	Installed how?
Apache HTTP Server	Web server, configured as the server directly accessible to the internet or intranet.	Use server installed in ADS Service Layer, or install manually at end.
Zope	The application server that hosts Plone.	Will be installed by scripts.
Plone	Content management server (CMS) visible to users.	You create it manually after scripts.
Varnish	A packaged HTTP accelerator that vastly improves performance of Zope.	Will be installed by scripts.
ZEO	Zope Enterprise Objects, a specialised database for Zope.	Will be installed by scripts.
SRBContent	An ARCHER-developed Plone “product” that allows users to browse an SRB through Plone.	Will be installed by scripts. You will configure it manually.
SRB	Storage Resource Broker, grid based data storage.	Must already be installed, through Archer Data Services.
MCAText	Webservice layer to SRB, used by SRBContent.	Must already be installed, through ADS Service Layer.
MyProxy	Authentication component used by SRBContent.	Must already be installed, through ADS Infrastructure Layer.
SMTP	External server used by Plone to send mail.	Use an existing, external server.

The included Plone installs a number of add-on “products”. These products have been found to be useful by several research groups deploying the ARCHER Collaborative Workspace.

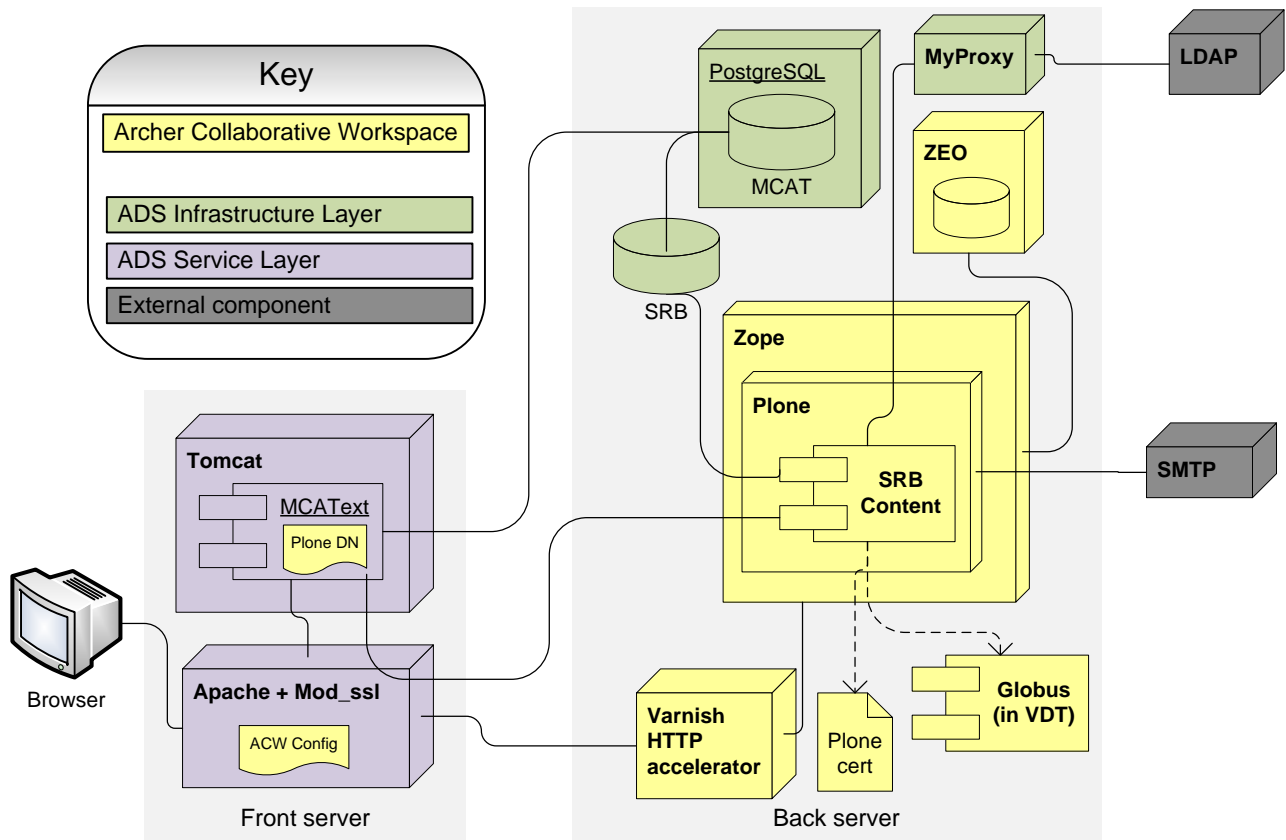
Product name	Purpose
	<i>Accessing SRB</i>

<b>Product name</b>	<b>Purpose</b>
<b>SRBContent</b>	<p>ARCHER product which allows users to browse an SRB from within Plone. Files and folders are presented as Plone "content" meaning users can link to them and treat them as Plone objects.</p> <p>For performance, the directory structure is cached, and synchronised with SRB through MCAText, which is part of Archer Data Services Service Layer. The content of files is not cached, but served directly from SRB via Apache when required.</p> <p>SRBContent Configuration is covered in section "Setting up SRB Access".</p>
<b>GridProxy</b>	ARCHER product which allows GSI authentication to external services. Required for SRBContent plugin.
<i>Content management</i>	
Working Copy Support	<p>Allows multiple versions of Plone content to be created and managed. <a href="http://plone.org/products/plone/features/3.0/new/working-copy-support">http://plone.org/products/plone/features/3.0/new/working-copy-support</a></p> <p><a href="http://plone.org/documentation/manual/plone-3-user-manual/managing-content/working-copy-3-0">http://plone.org/documentation/manual/plone-3-user-manual/managing-content/working-copy-3-0</a></p>
ATFlashMovie 1.0.1	Allows upload of all types of video including Flash and QuickTime.
SmartColorWidget 1.0.2	Support component for ATFlashMovie.
AROfficeTransforms	<p>Allows full text search of PDFs, Microsoft Office documents, and OpenOffice documents. <a href="http://plone.org/products/arofficetransforms">http://plone.org/products/arofficetransforms</a></p>
<i>Managing staff hierarchies</i>	
FacultyStaffDirectory 2.0	<p>Allows for the creation of directories of staff members. <a href="http://plone.org/products/faculty-staff-directory">http://plone.org/products/faculty-staff-directory</a></p>
Relations 0.8	<p>Allows FacultyStaffDirectory objects to relate to one another (staff can be a member of a department, for example). <a href="http://plone.org/products/relations">http://plone.org/products/relations</a></p>
membrane 1.0	<p>Allows Plone user objects to interact with the staff member objects in FacultyStaffDirectory. <a href="http://plone.org/products/membrane">http://plone.org/products/membrane</a></p>
<i>Blogging</i>	
Quills 1.6.0-dev11	<p>Provides blogging feature. <a href="http://plone.org/products/quills">http://plone.org/products/quills</a></p>
QuillsRemoteBlogging	<p>Allows 3rd party tools to externally update Quills blogs. <a href="http://pypi.python.org/pypi/Products.QuillsRemoteBlogging/">http://pypi.python.org/pypi/Products.QuillsRemoteBlogging/</a></p>
MetaWeblogPASPlugin svn/trunk-1	<p>Support product for Quills . <a href="http://pypi.python.org/pypi/Products.MetaWeblogPASPlugin/">http://pypi.python.org/pypi/Products.MetaWeblogPASPlugin/</a></p>
Fatsyndication 0.1	<p>Supports syndication of Plone content via RSS. <a href="http://pypi.python.org/pypi/Products.fatsyndication/1.0.0b2">http://pypi.python.org/pypi/Products.fatsyndication/1.0.0b2</a></p>
<i>Miscellaneous</i>	
CacheSetup 1.1.1	<p>Caching support to speed up the display of plone content <a href="http://pypi.python.org/pypi/Products.CacheSetup">http://pypi.python.org/pypi/Products.CacheSetup</a></p>
ConfigJCU 1.0.1	Only useful for JCU.
Marshall 1.0.0	Support component for other products.
SmartColorWidget 1.0.2	<p>Support component for ATFlashMovie. <a href="http://plone.org/products/smartcolorwidget/">http://plone.org/products/smartcolorwidget/</a></p>
OpenID Authentication Support	Allows authentication via OpenID.

## Configuration

The tested ARCHER configuration is to install on two servers as follows:

- Front server: Apache
- Back server: Varnish (HTTP accelerator), Zope (and Plone), ZEO (database for Zope).



## Pre-requisites

The front server is assumed to be:

Operating system	Centos/Red Hat Enterprise Linux/Scientific Linux 5.2, or later.
Outbound network	Access to internet during installation.
Inbound network	Port 80 and/or 443 for general access.

The back server is assumed to be:

Operating system	Centos/Red Hat Enterprise Linux/Scientific Linux 5.2, or later.
Outbound network	Access to internet during installation. Access to Archer Data Services Service Layer. This provides: <ul style="list-style-type: none"> <li>• MCAText</li> </ul>
Inbound network	Access from front server on port 8080 and 8081.
Installed software	Archer Data Services Infrastructure layer installed on this machine. This provides: <ul style="list-style-type: none"> <li>• SRB</li> <li>• MyProxy, if using MyProxy authentication.</li> <li>• Globus environment installed via VDT.</li> </ul>

You will need root access on both machines.

It is theoretically possible to install ACW on other environments, including operating systems such as Windows. However, this kind of deployment was not tested by the ARCHER project, and is **not covered** in this document.

## Security

Plone can be configured for authenticated access within the Plone database or by links to a local LDAP database.

### **Security warning:**

At present, the full names of directories and file names are displayed to any authenticated user, regardless of their access rights. In certain contexts, this may security shortcoming may be unacceptable.

# Installing Archer Collaborative Workspace

## Obtaining ACW

First, obtain the ACW package, and unzip it somewhere temporary. You can do this as a non-root user.

The ACW package is available for download at <http://www.archer.edu.au/downloads>.

```
mkdir archer-acw

cd archer-acw

wget http://dev.archer.edu.au/downloads/archer-collaborative-workspace-1.0.tar.gz

tar -zxf http://dev.archer.edu.au/downloads/archer-collaborative-workspace-1.0
cd http://dev.archer.edu.au/downloads/archer-collaborative-workspace-1.0
```

The ACW package includes the deployment scripts that are used to install it.

## Configuring the Plone port

By default:

- Zope, and hence Plone, listens on port 8082.
- Varnish connects to Plone, and serves an accelerated version on port 8081.

### Note:

If you wish to change any of these ports, you must do so prior to installation.

### Choosing a non-standard port

Edit `buildout.cfg` as follows:

- To change the port Varnish listens on (and hence, used to access Plone), modify:
  - o `bind = 0.0.0.0:8081` in the `[varnish-instance]` section
- To change the port Zope listens on, modify:
  - o `http-address = 8082` in `[instance]`
  - o `backends = 127.0.0.1:8082` in `[varnish-instance]`

## Running the deployment script

Plone is installed with the same deployment scripts used to install Archer Data Services Infrastructure Layer. This means to configure the installation, you set a number of environment variables, then run a script.

See the “Archer Data Services Infrastructure Layer System Administrator’s Guide” guide for information on running these scripts.

The following variables are used by the deployment scripts to install ACW.

Variable	Purpose	Default
PLONE_HOME	Location Plone will be installed in.	<code>/opt/plone</code>
PLONE_ADMIN	Not used. <sup>1</sup>	<code>admin</code>

<sup>1</sup> This should determine the name of the initial administrator account. At the time of writing, this was not implemented.

PLONE_PASSWORD	Password for initial administrator account.	password
PLONE_BUILDOUT	Name of buildout file. Don't change this.	buildout
PLONE_PORT	Not used.	8080
PLONE_USER	User account that will be created, then used to run Plone.	plone
GLOBUS_LOCATION	Location of existing Globus installation. Generally ".../vdt/globus".	/opt/vdt/globus
GLOBUS_FLAVOR	gcc32dbg for 32 bit O/S, gcc64dbg for 64 bit.	gcc64dbg

Set your required environment variables, then run `setup`. Make sure the `buildout.cfg` is in the same directory.

A typical installation would look something like

```
export DIST_HOST=<distribution host>2
export PLONE_BUILDOUT=$PWD/buildout.cfg
export PLONE_HOME=/usr/local/archer/plone
export GLOBUS_LOCATION=/opt/nfs/archer/vdt/globus
NO_PLONE=0 ./setup -o -v
```

Verify the parameters that will be used, then run it again without the `-o` option.

```
NO_PLONE=0 PLONE_BUILDOUT=$PWD/buildout.cfg ./setup
```

## Starting Zope

Plone is now installed. Now start Zope, to continue the configuration, as follows.

Step	Command
Load the virtual environment for the <code>plone</code> user.	<code>su - plone</code> <code>source bin/activate</code> <code>cd instance</code>
Start varnish	<code>bin/varnish-instance</code>
Start ZEO.	<code>bin/zeoserver start</code>
Create a super user.	<code>bin/instance adduser admin &lt;password&gt;</code>
Start Zope.	<code>bin/instance fg</code>

**Note:** Users that are created manually, such as this admin user, are different to users that connect via MyProxy/LDAP. In particular, they can't authenticate to SRB, so they can't retrieve items from SRB via the SRBContent plugin.

## Creating your Plone site

Zope is now running, but no Plone site has been created.

1. Go to the Zope Management Interface at `http://<yourhost>:8081/manage`
2. Log in with the admin username and password you specified earlier.
3. Select **Plone Site** in the drop down box at the top right.
4. Click **Add**.
5. Enter a name for the site (eg, "Mysite") and description, click "Add Plone Site".  
If you are only hosting one Plone site, you may wish to just call it "plone".

<sup>2</sup> See Archer Data Services Infrastructure Layer System Administrator's Guide for information on the "distribution host".



Your Plone site now exists. Go to its location, for example at

`http://<yourhost>:8081/MySite .`

6. Login using the superuser name and password you created in the previous section.
7. Click “site setup”, then “Add-on Products”
8. Click on all the desired options. In particular:
  - a. SRBContent is required to allow navigation of the SRB.
  - b. GridProxy is required to allow MyProxy authentication.

Other products are optional, but give additional functionality. See the table in the overview section of this document.

## Configuring Apache

It is highly recommended that you serve Plone through an Apache front end.

On the “front” server, install Apache if necessary:

```
yum install httpd mod_ssl
```

Configure it to serve the Plone site as follows.

Create a new file called `/etc/httpd/conf.d/plone.conf` with the following two lines. Adjust the highlighted address as follows.<sup>3</sup>

```
RewriteEngine On
RewriteRule ^/plone(.*)$ http://back-
server:8081/VirtualHostBase/http/{SERVER_NAME}:80/MySite/VirtualHostRoot/_vh_plone$1
[L,P]
```

Substitute the name of the site you chose in the “Creating your Plone site” step, instead of “MySite” above.

Add these three lines to the end of `ssl.conf`:

```
RewriteEngine On
RewriteRule ^/plone(.*)$ http://back-
server:8081/VirtualHostBase/https/{SERVER_NAME}:443/MySite/VirtualHostRoot/_vh_plone$1
[L,P]
RewriteRule ^/zope(.*)$ http://back-
server:8081/VirtualHostBase/https/{SERVER_NAME}:443/MySite/VirtualHostRoot/_vh_zope$1
[L,P]
```

Finally start the server:

```
service httpd start
```

You should now be able to access your Plone site as  
`https://<frontserver>.uni.edu.au/plone`

You can access the Zope Management Interface as  
`https://<frontserver>.uni.edu.au/zope/manage`

---

<sup>3</sup> See <https://weblion.psu.edu/trac/weblion/wiki/VirtualHostMonster> for more information on Plone URLs.

Users that have direct access to the "back" server can access them directly as:

`https://<backserver>.uni.edu.au:8081/manage`

`https://<backserver>.uni.edu.au:8081/MySite`

## Setting up SRB access

The ARCHER Plone buildout includes SRBContent, an ARCHER plugin to allow users to navigate an SRB through Plone. You should now configure this.

### Configuring MCAText

SRBContent talks to SRB through the MCAText webservice layer, which was installed as part of Archer Data Services. If you installed MCAText with security on (that is, it is accessed only through https), you must now generate a certificate and key pair, and instruct MCAText to allow connections from Plone.

This certificate should have `plone@<fully qualified server name>` as the common name, and an appropriate distinguished name.

1. If using the Archer-installed certificate authority, run a command like:

```
cert_tool -s -c plone@server.uni.edu.au -e admin@server.uni.edu.au
```

2. On the MCAText machine, add a line to MCAText's whitelist, corresponding to the distinguished name in the certificate. The default directory for this file is `/usr/local/archer/icat_mcatext/mcatext-whitelist`. This file should now look something like this:

```
/C=ads/O=archer/OU=edu/OU=au/CN=icat@ads.archer.edu.au  
/C=ads/O=archer/OU=edu/OU=au/CN=plone@ads.archer.edu.au
```

### Defining an SRB server in Plone

1. Log in to your Plone site as administrator
2. Click "Site Setup"
3. In "Add-on Product Configuration", click "SRB Servers"
4. Fill in the fields:

Field	Value to enter
Server	The SRB host name.
Port	The SRB port, usually 5544.
DN String	The distinguished name (DN) that you added to the MCAText whitelist. This should be in <code>"/C=foo/O=bar"</code> format.
Base URL	The address of the MCAText service. For example: <code>https://frontserver.its.monash.edu.au/mcatext/ws/</code>
Authz web service	Always "SrbAuthz".
Sync web service	Always "SrbSync".
Registration web service	Always "SrbRegister".
Certificate (If using authentication)	Copy and paste the contents of the <code>hostcert.pem</code> and <code>hostkey.pem</code> . Include only the "BEGIN CERTIFICATE" to "END CERTIFICATE" lines, then the "BEGIN RSA PRIVATE KEY" to "END RSA PRIVATE KEY" lines. Do not include the header lines.

5. Click "Save".

The results should look approximately as follows:

Current server

**Server** ■

**Port** ■

**DN String**

**Base URL** ■

**Authz web service** ■

**Sync web service** ■

**Registration web service** ■

**Certificate**

```

VR0RBCMwIYEFYWRtaW5AbWVyYWYydDdpdHMubW9uYXNoLmVkd3S5hdTAqBgNVHRIE
IzAhgR9yb290QG11cmFhenQyLm10cy5tb25hc2guZWRR1LmF1MA0GCSqGSIb3DQEB
BQUAA4GBAGdgre8Ystub+1PH824apvU9NF6JUzgg0eF6iaZbhQuOkSAbW0T33ep0
ivIL1FC49+HUmE9RqypI1JDX761/8+3ifGHFa8CLj8XVAABWiFxiF1eGoqW5jyAF
ts1fxnT93YdFLEkSTjQWgTmtexE5OwAHjYoDwKvPiD6SwEgjt4zu
-----END CERTIFICATE-----
-----BEGIN RSA PRIVATE KEY-----
MIICXgIBAAKBgQC2qfnW7P2vm6Z9kRdVeI8hi9yBqHW5urlVZghTkqfKwzabbs7T
3NSHL6pDADX0LxdQw52QmrvvwlF8LLkZ2Y2xRL18TrzJgTnVU66oX8e+a1xmuAWY
LYIxYEt0LOLknb0MsHnUYMin2vGbmUtU4YEY1ENPumXNUkDdq5P80VkhWIDAQAB
AoGBAJraeJKLMPmZw8g5o4VzAixXTGWi8cR1mH7cU/y9nH/ZhMa6Zp7XXfkKwJWy
bQeIjQ8L+zd0XI0EeDpo7bcL2wFM9cfpfyWhH2e6FTcFyx2NyH2Ob43xJbAW5xWQ
tUDneGVa7bGnI1pc/vR3vgEDE/kwnDrbknLkXGCadcxgttMBAkEA49iGKiTw349Y
meQtArz6bolcHm4mMtoq0daOeDgLi3HMzOmsif/I8E6YHVv/K+1LuEjjFV2HreXc
8hsz7IENgQJBAM08NYs3RJf51FA7q00Rcdq6Ipjnjs7fwH+A+NHJ+YKEXTvkjD8a
-----

```

## Creating an SRB Folder

You can now create “SRB Folders” in your Plone site.

To add an SRB folder:

1. Choose “SRBFolder” from the “Add new...” drop-down box.
2. Enter a “Title” for the folder to be shown as, and the “path” it corresponds to in SRB.
3. Click “Save” to create it.

You can now browse an SRB collection in Plone, as shown:

The screenshot displays the Plone web interface. At the top left is the Plone logo. A navigation bar contains links for Home, Users, News, Events, SRB, and Testing. Below this, a breadcrumb trail reads "You are here: Home → SRB → project1".

The main content area is divided into two columns. The left column contains a "Search" box with a "Search Site" input field and a "Search" button, along with a link to "Advanced Search...". Below the search box is a "Navigation" section listing folders 15, 16, 17, and 19.

The right column shows the details for the "project1" collection. It has tabs for "Contents", "View", and "Sharing", and a "State: Published" dropdown menu. Below these are links for "Send this" and "Print this". The collection name "project1" is displayed in a large font, followed by a link to "Up one level". Two sub-items are listed:

- [experiment1](#) — by [admin](#) — last modified Sep 05, 2008 09:09 AM
- [experiment3](#) — by [admin](#) — last modified Sep 04, 2008 12:38 PM

## Configuring LDAP/MyProxy authentication

This section explains how to set up Plone to use your LDAP and MyProxy servers for authentication.

### Enabling access to the MyProxy server



If the MyProxy server was installed through the ADS Infrastructure Layer “dual server” configuration, and if Plone is not installed on the SRB machine, then you must:

1. Install VDT on the ACW machine.
2. Copy CA certificates from the MyProxy machine to the ACW machine.
3. Manually generate host keys for the ACW machine.

These steps are described in the **ADS Infrastructure Layer System Administrator’s Guide**.

First, define the MyProxy object:

1. Log into the Zope Management Interface at <https://<frontserver>.uni.edu.au/zope/manage>
2. Select the Plone site you created.  
If the frame on the right shows you the actual Plone site, rather than a ZMI folder view of it, click “Logout” inside Plone.
3. Add the “GridProxy” item to the Plone site, if you didn’t do so earlier. Use the drop down box at the right.
4. Select the “acl\_users” item within your Plone site.  
**Note:** make sure you don’t inadvertently select the top-level “acl\_users” item instead.
5. Add the “MyProxyCLIManager” item. Use “MyProxy” as both the “name” and “Id”.
6. Click on this new “MyProxy” object.



7. Select “Roles (getRolesForPrincipal)” and click “Update”.
8. Select the “Properties” tab.
9. Fill in the settings of your MyProxy server.
  - a. Optional Prefix: Leave blank.
  - b. MyProxy Server: Name of MyProxy host.
  - c. MyProxy Port: Usually 7512.
  - d. MyProxy Executable: full path to “myproxy-logon” on this machine.  
Generally `<vdt-install-dir>/globus/bin/myproxy-logon`
10. Click “Save Changes”

Now, define the authorisation given to users that log in through MyProxy.

11. In the same “acl\_users” item, add an “SRBRoleSource” item. The Id and title are insignificant.
12. Click on this newly created item, check the “Roles” box, then click Update.

13. In the same "acl\_users" item, add a "Plone LDAP plugin" item. Most settings depend on your LDAP server. Other settings are as follows:

Field	Recommended setting
Title/ID:	Arbitrary, typical practice is "<LDAP server name> LDAP"
Login Name Attribute:	uid (uid)
User ID Attributed:	uid (uid)
RDN Attribute:	uid (uid)
User object classes:	top, person
User password encryption:	crypt
Default user roles:	Anonymous, Member

**Note:** To return to this page later, select the LDAP item (under "acl\_users"), then click the "Contents" tab, then click the "acl\_users" item.

14. In the bread-crum trail, navigate up one level (to something like /plone/acl\_users/xxxLDAP).

15. Select every box except Reset Credentials.

Activate Contents View Properties Security Undo Own

Plone LDAP plugin at /archerplone/acl\_users/MerseyLDAP

Choose the functionality this Plone LDAP plugin will perform.

- Authentication (*authenticateCredentials*)
- Reset Credentials (*resetCredentials*)
- Group\_Enumeration (*enumerateGroups*)
- Group\_Introspection (*getGroupById*)
- Group\_Management (*removePrincipalFromGroup*)
- Groups (*getGroupsForPrincipal*)
- Properties (*getPropertiesForUser*)
- Role\_Enumeration (*enumerateRoles*)
- Roles (*getRolesForPrincipal*)
- User\_Adder (*doAddUser*)
- User\_Enumeration (*enumerateUsers*)
- User\_Management (*doChangeUser*)

Update

16. Click "Update".
17. Select the "Properties" tab.
18. Uncheck "Users need permission to authenticate?" and click "Save".

You should now be able to log in to the site using LDAP usernames and passwords.

## Other configuration

### Configuring mail server

In order for your Plone site to be able to send mail, you must define the SMTP server.

1. Go to "Site Setup"
2. Go to "Mail"
3. Fill in the settings for your SMTP server.

### Configuring CacheSetup

You can improve the performance of Plone by enabling CacheFu and tweaking its options.

1. Go to "Site Setup"
2. Go to "Cache Configuration Tool"
3. Check the "Enable CacheFu" box.
4. Tweak other settings as appropriate.

**Note:** If you have not installed CacheFu, install it under "Site Setup | Add-on Products | CacheSetup 1.1.1".



## Maintaining Plone

To make fundamental changes to Plone such as the port it listens on, you must modify the original `buildout.cfg` and re-run the buildout step.

### Starting and stopping

```
su - plone

source bin/activate
cd instance
```

To start everything:

```
bin/varnish-instance
bin/zeoserver start
bin/instance start
```

To stop everything:

```
bin/instance stop
bin/zeoserver stop
```

To stop varnish, if required:

```
pkill varnishd
bin/varnish-instance stop
```

### Logging

There are log files in `~plone/instance/var/log`

See the <http://plone.org/documentation/faq/plone-logs/?searchterm=log> for more information.

## Building the SRBContent plugin

### Overview

Occasionally you may wish to build the SRBContent Plone product from scratch. For example:

- If you make any changes to the plugin's code.
- If you wish to install SRBContent on an existing installation of Plone.

To build and run the SRBContent Plone product requires the following installed:

- SOAPSsupport
- MCATExt - Extended MCAT Services (part of ARCHER Data Services Service Layer).
- ZSI
- SOAPpy
- pyXML
- GridProxy (JCU product for Plone)
- Globus SDK
- JCU's Python bindings for SRB

The definitive documentation for building and installing the SRBContent plugin is the ACW installation script itself. Refer to the code of the "plone.sh" script within the Deployment scripts. Note that you must build the SRB Python bindings, currently available at [https://www.hpc.jcu.edu.au/projects/hpc/svn/ag/SRB3\\_4\\_1client/trunk/SRB3\\_4\\_1](https://www.hpc.jcu.edu.au/projects/hpc/svn/ag/SRB3_4_1client/trunk/SRB3_4_1).

## Adding SRBContent to an existing Plone installation

This is theoretically possible but has not been tested.

1. Download the following Python eggs<sup>4</sup> from <http://www.archer.edu.au/downloads>
  - a. SRBContent
  - b. GridProxy
  - c. SrpPy
2. Download the other required components listed above.
3. Add these eggs into your existing buildout. See <http://plone.org/documentation/tutorial/buildout/tutorial-all-pages> for more information.

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<sup>4</sup> <http://peak.telecommunity.com/DevCenter/PythonEggs>