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# **Products.PluggableAuthService Documentation**

*Release 2.7.1.dev0*

**2004-2018 Zope Foundation and Contributors**

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# CONTENTS

<b>1 Purpose</b>	<b>1</b>
<b>2 Theory of Operation</b>	<b>3</b>
<b>3 Narrative documentation</b>	<b>5</b>
3.1 Plugins . . . . .	5
3.2 Request flow . . . . .	6
3.3 Caching . . . . .	7
<b>4 API documentation</b>	<b>9</b>
4.1 User objects . . . . .	9
4.2 User property sheets . . . . .	9
4.3 User Folder objects . . . . .	9
4.4 Plugins . . . . .	10
4.5 Events . . . . .	11
4.6 Requests . . . . .	12
<b>5 Changes</b>	<b>15</b>
5.1 Change Log . . . . .	15
<b>6 Indices and tables</b>	<b>29</b>
<b>Index</b>	<b>31</b>



## **PURPOSE**

The PluggableAuthService is designed to allow incorporation of *any* existing user folder (or related technology), and to make it simple to define project-specific extensions.



## THEORY OF OPERATION

The `PluggableAuthService` defines a framework for a set of plugins which it orchestrates to generate user objects from requests. These user objects implement the “traditional” `BasicUser` API, and provide additional functionality.



## NARRATIVE DOCUMENTATION

Narrative documentation explaining how to use `Products.PluggableAuthService`.

### 3.1 Plugins

#### 3.1.1 Plugin Types

`PluggableAuthService` defines the following plugin types:

- Authentication plugins identify the user based on data in the request.
  - Each `PluggableAuthService` must contain at least one authentication plugin.
  - The `PluggableAuthService` defines an ordered set of authentication plugins, and queries them in order for each request. The first plugin to recognize a user returns the user, or raises an exception (e.g., for password mismatches). If no plugin returns a user, the `PluggableAuthService` returns an “anonymous” user (which may still have “extended” information added later).
- Challenge plugins alter the response to force the user to (re)authenticate, e.g. by redirecting it to a login form, or by setting the protocol-specific headers which initiate the desired challenge.
- Decorator plugins add properties to a user, based on request data or on other data sources.
  - These sources might include application data from the ZODB or from SQL, etc.
  - They might also pull in user data from LDAP, ActiveDirectory, passwd files, etc.
- Group plugins add groups to the list of groups to which the user belongs, using request data or previously-added decorations.
- Update plugins write updates back to the data store from which they came (ZODB, SQL, LDAP, etc.)
- Validation plugins impose business-specified policies on user properties (particularly on login ID and password).

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**Note:** When using more than one plugin for authentication, only one challenge can be sent to the user - the one from the plugin at the top position of active **Challenge Plugins** configuration screen in the ZMI.

Nevertheless, you can instantiate the **Challenge Protocol Chooser Plugin**. Then you can assign, for instance, **Cookie Auth** for requests from the browser, and **HTTP Basic Auth** for requests via XML-RPC.

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### 3.1.2 Plugin Registration

PluggableAuthService plugins are configured via the ZMI, or alternatively via an XML import / export mechanism. Each plugin is identified using a TALES path expression, which will be evaluated with an implied 'nocall' modifier; plugins are intended to be callables, with known argument signatures.

## 3.2 Request flow

1. The publisher asks the PluggableAuthService to validate the user's access to a given object:

```
groups.validate( request, auth, roles )
```

2. PluggableAuthService polls its authentication plugins in order, asking each in turn for a user:

```
for id, plugin in self.listAuthenticationPlugins():
    try:
        user = plugin( request, auth )
    except Unauthorized:
        self.dispatchChallenge( request )
    else:
        user.setAuthenticationSource( id )
        break
else:
    user = self.createAnonymousUser()
```

3. PluggableAuthService allows each of its decorator plugins to annotate the user:

```
for id, plugin in self.listDecoratorPlugins():
    known, schema, data = plugin( user )
    if known:
        sheet = UserPropertySheet( id, schema, **data )
        user.addPropertySheet( id, sheet )
```

4. PluggableAuthService allows each of its group plugins to assert groups for the user:

```
for id, plugin in self.listGroupPlugins():
    groups = plugin( user )
    user.addGroups( groups )
```

5. PluggableAuthService returns the annotated / group-ified user to the publisher.

## 3.3 Caching

The PluggableAuthService contains a caching mechanism based on the built-in Zope Caching framework with a mix-in class that defines caching methods for cacheable content and so-called Cache Managers that store cacheable data.

### 3.3.1 How does the site admin use it?

Given a plugin that is cache-enabled the steps to using the cache are easy. The site administrator needs to...

- Instantiate a “RAM Cache Manager” inside the PluggableAuthService
- Using the “Cache” tab in the cache-enabled plugin’s ZMI view, associate the plugin with the RAM Cache Manager

At this point values will be cached inside the RAM Cache Manager. The effect can be viewed easily on the “Statistics” tab in the Cache Manager ZMI view, which shows which plugins have stored values, how many values are stored, an approximation of the memory consumption for the cached data, and how often the data has been retrieved from cache.

The Statistics view also provides an easy way to summarily invalidate cached values if needed. However, cache invalidation should be handled by the plugins itself if it is possible.

The PluggableAuthService itself is also cacheable this way. Caching PAS itself is the easiest way to achieve caching. In PAS, the `_findUsers` and `_verifyUser` methods, being a suitably central spot for caching, have been enhanced to use the RAM Cache Manager if so configured.

### 3.3.2 How does a plugin programmer use it?

Due to the pluggable (and thus infinitely variable) nature of the PluggableAuthService it is up to the plugin developer to decide what to cache and how to do so. Some of the built-in plugins provide a sample implementation by caching certain methods’ return values and invalidating these records where necessary. In a nutshell, these are the steps needed to enable cacheability at the plugin level:

- Add the Cacheable mix-in class to the list of classes your plugin subclasses from
- Determine which method calls should have their return values cached, and which method calls affect the return value of the method that is being cached and thus should invalidate the cache
- In the cached method, add code to try and look up the return value in the cache first, and only perform the computation if the cache does not have the desired data. At the end of computing the return value, add it to the cache
- Add cache invalidation to those methods deemed to affect the cached method’s return value.

A little illustration using code snippets:

```
from OFS.Cache import Cacheable
from Products.PluggableAuthService.plugins.BasePlugin import BasePlugin
from Products.PluggableAuthService.utils import createViewName

class MyPlugin(BasePlugin, Cacheable):

    def retrieveData(self, key):
        """ Get data for the given key """
        view_name = createViewName('retrieveData', key)
        keywords = {'key': key}
        cached_info = self.ZCacheable_get( view_name=view_name
```

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```

        , keywords=keywords
        , default=None
    )

    if cached_info is not None:
        return cached_info

    return_value = <perform return value calculation here>

    # Put the computed value into the cache
    self.ZCacheable_set( return_value
                        , view_name=view_name
                        , keywords=keywords
                        )

    return return_value

def change_data(self, key, new_value):
    """ Change the value for the given key """
    <perform changes here>

    # Also, remove from the cache
    view_name = createViewName('retrieveData', key)
    self.ZCacheable_invalidate(view_name=view_name)

```

As you can see, due to the variable nature of plugins certain items, such as the relationships between the different accessor and mutator methods in use, cannot be computed or guessed, they have to be hardcoded. That’s why inside `change_data` the `view_name` “`retrieveData`” is hardcoded as the caching key for information returned from the `retrieveData` method.

This example also shows how, due to the way the built-in Zope caching framework handles cached data, it is not possible to invalidate specific entries, such as the value for one specific `view_name/key` combination. All cached records for a specific `view_name` are invalidated at once.

It must be kept in mind that it is very hard if not impossible to reach a state where the cache is 100% synchronized with the live data in those situations where information is retrieved and manipulated in more than one plugin. Imagine a situation where one plugin’s cached answer is dependent on another plugin that handles updating the underlying data. The retrieving plugin is not notified of updates happening in the “mutator plugin” (and thus does not invalidate cached data) unless the plugin developer forces some nasty cross-plugin dependencies.

The `PluggableAuthService` has two “sample implementations” for plugin caching. Both the `DynamicGroupsPlugin` and the `ZODBUserManager` are cache-enabled.

### 3.3.3 CAVEATS

The Caching mechanism should not be used to cache persistent objects. So if for some reason your `PluggableAuthService` emits user objects that are persistent (which is not the default) you should not enable caching at the `PluggableAuthService`-level.

## API DOCUMENTATION

API documentation for `Products.PluggableAuthService`.

### 4.1 User objects

**interface** `Products.PluggableAuthService.interfaces.authservice.IBasicUser`

Specify the interface called out in `AccessControl.User.BasicUser` as the “Public User object interface”, except that ‘`_getPassword`’ is *not* part of the contract!

**interface** `Products.PluggableAuthService.interfaces.authservice.IPropertiedUser`

Extends: `Products.PluggableAuthService.interfaces.authservice.IBasicUser`

A user which has property sheets associated with it, i.e. a mapping from strings (property sheet ids) to objects implementing `IPropertySheet`

### 4.2 User property sheets

**interface** `Products.PluggableAuthService.interfaces.property sheets.IPropertySheet`

Interface for queryable property sheets.

**o Objects implementing this interface can play in read-only fashion**  
in `OFS.PropertySheets`’ framework.

### 4.3 User Folder objects

**interface** `Products.PluggableAuthService.interfaces.authservice.IUserFolder`

**Specify the interface called out in `AccessControl.User.BasicUserFolder`**  
as the “Public `UserFolder` object interface”:

**o N.B: “enumeration” methods (‘`getUserNames`’, ‘`getUsers`’) are *not***  
part of the contract! See `IEnumerableUserFolder`.

**interface** `Products.PluggableAuthService.interfaces.authservice.IPluggableAuthService`

Extends: `Products.PluggableAuthService.interfaces.authservice.IUserFolder`

The full, default contract for the pluggable authentication service.

**interface** Products.PluggableAuthService.interfaces.authservice.IMutableUserFolder

Specify the interface called out in

AccessControl.User.BasicUserFolder as the “Public UserFolder object interface”:

o **N.B: “enumeration” methods** (`getUserNames`, `getUsers`) are *not* part of the contract! See IEnumeratedUserFolder.

**interface** Products.PluggableAuthService.interfaces.authservice.IEnumerableUserFolder

Extends: *Products.PluggableAuthService.interfaces.authservice.IUserFolder*

Interface for user folders which can afford to enumerate their users.

## 4.4 Plugins

**interface** Products.PluggableAuthService.interfaces.plugins.IExtractionPlugin

Extracts login name and credentials from a request.

**interface** Products.PluggableAuthService.interfaces.plugins.ILoginPasswordExtractionPlugin

Extends: *Products.PluggableAuthService.interfaces.plugins.IExtractionPlugin*

Common-case derivative.

**interface**

Products.PluggableAuthService.interfaces.plugins.ILoginPasswordHostExtractionPlugin

Extends: *Products.PluggableAuthService.interfaces.plugins.ILoginPasswordExtractionPlugin*

Common-case derivative.

**interface** Products.PluggableAuthService.interfaces.plugins.IAuthenticationPlugin

Map credentials to a user ID.

**interface** Products.PluggableAuthService.interfaces.plugins.IChallengePlugin

Initiate a challenge to the user to provide credentials.

Challenge plugins have an attribute ‘protocol’ representing the protocol the plugin operates under, defaulting to None.

Plugins operating under the same protocol will all be given an attempt to fire. The first plugin of a protocol group that successfully fires establishes the protocol of the overall challenge.

**interface** Products.PluggableAuthService.interfaces.plugins.ICredentialsUpdatePlugin

Callback: user has changed her password.

This interface is not responsible for the actual password change, it is used after a successful password change event.

**interface** Products.PluggableAuthService.interfaces.plugins.ICredentialsResetPlugin

Callback: user has logged out.

**interface** Products.PluggableAuthService.interfaces.plugins.IUserAdderPlugin

Create a new user record in a User Manager

**interface** Products.PluggableAuthService.interfaces.plugins.IRoleAssignerPlugin

Assign a role to an identified principal

**interface** Products.PluggableAuthService.interfaces.plugins.IUserFactoryPlugin

Create a new IPropertyedUser.

**interface** `Products.PluggableAuthService.interfaces.plugins.IAnonymousUserFactoryPlugin`

Create a new anonymous `IPropertyedUser`.

**interface** `Products.PluggableAuthService.interfaces.plugins.IPropertiesPlugin`

Return a property set for a user.

**interface** `Products.PluggableAuthService.interfaces.plugins.IGroupsPlugin`

Determine the groups to which a user belongs.

**interface** `Products.PluggableAuthService.interfaces.plugins.IRolesPlugin`

Determine the (global) roles which a user has.

**interface** `Products.PluggableAuthService.interfaces.plugins.IUpdatePlugin`

Allow the user or the application to update the user's properties.

**interface** `Products.PluggableAuthService.interfaces.plugins.IValidationPlugin`

Specify allowable values for user properties.

- o E.g., constrain minimum password length, allowed characters, etc.

- o Operate on entire property sets, not individual properties.

**interface** `Products.PluggableAuthService.interfaces.plugins.IUserEnumerationPlugin`

Allow querying users by ID, and searching for users.

- o ???: can these be done by a single plugin?

**interface** `Products.PluggableAuthService.interfaces.plugins.IGroupEnumerationPlugin`

Allow querying groups by ID, and searching for groups.

- o ???: can these be done by a single plugin?

**interface** `Products.PluggableAuthService.interfaces.plugins.IRoleEnumerationPlugin`

Allow querying roles by ID, and searching for roles.

**interface** `Products.PluggableAuthService.interfaces.plugins.IRequestTypeSniffer`

Given a request, detects request type for later use by other plugins.

**interface** `Products.PluggableAuthService.interfaces.plugins.IChallengeProtocolChooser`

Choose a proper set of protocols to be used for challenging the client given a request.

**interface** `Products.PluggableAuthService.interfaces.plugins.INotCompetentPlugin`

check whether this user folder is not competent to authenticate.

Never used for a top level user folder; primarily used to prevent shadowing of authentications by higher level user folders.

## 4.5 Events

**interface** `Products.PluggableAuthService.interfaces.events.IPASEvent`

An event related to a PAS principal.

**interface** `Products.PluggableAuthService.interfaces.events.IPrincipalCreatedEvent`

Extends: `Products.PluggableAuthService.interfaces.events.IPASEvent`

A new principal has been created.

**interface** Products.PluggableAuthService.interfaces.events.IUserLoggedInEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A user logged in.

**interface** Products.PluggableAuthService.interfaces.events.IUserLoggedOutEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A user logged out.

**interface** Products.PluggableAuthService.interfaces.events.IPrincipalDeletedEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A user has been removed.

**interface** Products.PluggableAuthService.interfaces.events.ICredentialsUpdatedEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A principal has changed her password.

Sending this event will cause a PAS user folder to trigger its active credential update plugins.

**interface** Products.PluggableAuthService.interfaces.events.IPropertiesUpdatedEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A principals properties have been updated.

**interface** Products.PluggableAuthService.interfaces.events.IGroupDeletedEvent

Extends: *Products.PluggableAuthService.interfaces.events.IPASEvent*

A group has been removed.

## 4.6 Requests

**interface** Products.PluggableAuthService.interfaces.request.IRequest

Base Request Interface

??? Add methods from BaseRequest?

**interface** Products.PluggableAuthService.interfaces.request.IHTTPRequest

Extends: *Products.PluggableAuthService.interfaces.request.IRequest*

HTTP Request

**interface** Products.PluggableAuthService.interfaces.request.IBrowserRequest

Extends: *Products.PluggableAuthService.interfaces.request.IHTTPRequest*

Browser Request

**interface** Products.PluggableAuthService.interfaces.request.IWebDAVRequest

Extends: *Products.PluggableAuthService.interfaces.request.IHTTPRequest*

WebDAV Request

**interface** Products.PluggableAuthService.interfaces.request.IXMLRPCRequest

Extends: *Products.PluggableAuthService.interfaces.request.IHTTPRequest*

XML-RPC Request

**interface** Products.PluggableAuthService.interfaces.request.IFTPRequest

Extends: *Products.PluggableAuthService.interfaces.request.IRequest*

FTP Request



## CHANGES

### 5.1 Change Log

#### 5.1.1 2.7.1 (unreleased)

#### 5.1.2 2.7.0 (2022-01-04)

- Add support for Python 3.10.
- Improve the PAS override for Zope's `manage_zmi_logout` (#107)
- Fixed deprecation warning for `AccessControl.AuthEncoding`.
- Pass the login name as `updateCredentials`'s `login` parameter (not the user id) (#105). Fix docstring of `PluggableAuthService._extractUserIds`.

#### 5.1.3 2.6.4 (2021-07-28)

- Fix method signature of `PluggableAuthService._setObject` (#95)
- Fix tests when running on `Products.GenericSetup`  $\geq 2.1.2$ , thus requiring at least that version.
- ZMI: use flexbox for twolist macro, fixes removing roles in Safari browser. (#91)

#### 5.1.4 2.6.3 (2021-06-08)

- Fix CSRF token access for tigher TAL path expression security in Zope 5.2.1 (#99)
- Changed adding object gui to modal window
- Handle login issues for cookie based login when `came_from` is missing (#65)

### 5.1.5 2.6.2 (2021-03-12)

- Tighten down security on several login string transformation methods (#88)

### 5.1.6 2.6.1 (2021-02-26)

- Fix remaining open redirect sources

### 5.1.7 2.6.0 (2021-02-23)

- Fix missing access control on ZODB Role Manager `enumerateRoles`
- Fix open redirect issue in *Cookie Auth Helper* redirect handling
- Add support for Python 3.9.

### 5.1.8 2.5.1 (2020-11-13)

- Fixed error assigning groups in `manage_groups` page in ZMI. (#61, #84)
- Fix `DeprecationWarnings` occurring on Zope 5.

### 5.1.9 2.5 (2020-10-12)

- Renamed `xml` dir to `xml_templates`. This avoids an import warning on Python 2.7.
- Disable ZMI CSRF check and log it if sessioning is not available instead of breaking ZMI interactions
- Clear caches before sending group user added/removed events (#71)
- Prevent creation of users/groups/roles with empty ID in the ZODB (#70)
- update configuration for version 5 of `isort`

### 5.1.10 2.4 (2020-02-09)

- no longer rely on `ZServer` for any WebDAV-related functionality. (#64)

### 5.1.11 2.3 (2020-02-02)

- Replace all `filter(None, ...)` expressions which break under Python 3 (#63)

### 5.1.12 2.2.1 (2020-01-13)

- Fix broken ICredentialsUpdatedEvent event handler call to updateCredentials. (#59)

### 5.1.13 2.2 (2019-11-23)

- Add new events to be able to notify when a principal is added to or removed from a group. Notify these events when principals are added or removed to a group in ZODBGroupManager (#17)

### 5.1.14 2.1.1 (2019-10-23)

- Fix bug in getRolesForPrincipal for non PAS user.

### 5.1.15 2.1 (2019-08-29)

- Fix formatting in “Plugin Types” documentation.
- Fixed error assigning roles in manage\_roles page in ZMI. See issues #43 and #51.

### 5.1.16 2.0 (2019-05-10)

- Drop unused .utils.allTests method.

### 5.1.17 2.0b6 (2019-04-17)

- fixed usage of deprecated im\_self (#40)

### 5.1.18 2.0b5 (2019-04-13)

- fixed the “Configured PAS” factory (#39)
- styled “Configured PAS” add dialog for the Zope 4 ZMI (#38)
- prevent the ZMI add dialog showing in the Zope 4 ZMI (#37)
- added the indirect dependency Products.Sessions for the CSRF-support

### 5.1.19 2.0b4 (2019-04-04)

- simplified Travis CI test configuration
- added stricter linting configuration
- added project\_urls to the setup so PyPI shows more relevant links
- added project badges to the README, which will show on the GitHub front page
- Fix ZMI Templates and add ZMI icons for Zope 4 (#36)

### 5.1.20 2.0b3 (2019-03-29)

- Fixed Dynamic Groups Plugin ZMI view (#33)
- Re-enabled XML-RPC support without requiring ZServer (#34)
- Specify supported Python versions using `python_requires` in `setup.py`
- Added support for Python 3.8
- Fix CSRF defense incompatibility with some session implementations

### 5.1.21 2.0b2 (2018-10-16)

- Add support for Python 3.7.
- Do not override a previously set response body in `HTTPBasicAuthHelper.challenge()` allowing to set the response body via an exception view in Zope  $\geq 4.0b6$ .
- Add new event to be able to notify group creation.
- Refactoring to make it easier to override `updateCredentials`.

### 5.1.22 2.0b1 (2018-05-18)

- The dependency on ZServer is now optional. To use the features which require ZServer (WebDav, XML-RPC, FTP) use the `setuptools` extra `zserver` when installing the package.
- Do not fail when our base profiles are already registered. This may happen in tests if our `initialize` code is called twice.
- Add support for Python 3.
- Reformatted code for PEP-8 compliance.
- Require Zope 4.0b5 as minimum Zope version.

### 5.1.23 1.11.0 (2016-03-01)

- Add new event to be able to notify group deletion.
- Fix usage of `os.path.split()`. Could result in Errors during import on Windows.

### 5.1.24 1.10.0 (2013-02-19)

- Allow specifying a policy for transforming / normalizing login names for all plugins in a PAS:
  - Added `login_transform` string property to PAS.
  - Added `applyTransform` method to PAS, which looks for a method on PAS with the name specified in the `login_transform` property.
  - Added two possible transforms to PAS: `lower` and `upper`.
  - Changed the methods of PAS to call `applyTransform` wherever needed.
  - Added the existing `updateUser` method of `ZODBUserManager` to the `IUserEnumerationPlugin` interface.

- Added a new `updateEveryLoginName` method to `ZODBUserManager` and the `IUserEnumerationPlugin` interface.
- Added three methods to `PAS` and `IPluggableAuthService`: `updateLoginName`, `updateOwnLoginName`, `updateAllLoginNames`. These methods call `updateUser` or `updateEveryLoginName` on every `IUserEnumerationPlugin`. Since these are later additions to the plugin interface, we log a warning when a plugin does not have these methods (for example the `mutable_properties` plugin of `PlonePAS`) but will not fail. When no plugin is able to update a user, this will raise an exception: we do not want to quietly let this pass when for example a login name is already taken by another user.
- Changing the `login_transform` property in the `ZMI` will call `PAS.updateAllLoginNames`, unless `login_transform` is the same or has become an empty string.
- The new `login_transform` property is empty by default. In that case, the behavior of `PAS` is the same as previously. The various `applyTransform` calls will have a (presumably very small) performance impact.
- Launchpad #1079204: Added CSRF protection for the `ZODBUserManager`, `ZODBGroupManager`, `ZODBRoleManger`, and `DynamicGroupsPlugin` plugins.

#### 5.1.25 1.9.0 (2012-08-30)

- Launchpad #649596: add a protocol for plugins which check whether a non-top-level `PAS` instance is “competent” to authenticate a given request; if not, the instance defers to higher-level instances. Thanks to Dieter Maurer for the patch.

#### 5.1.26 1.8.0 (2012-05-08)

- Added export / import support for the `ChallengeProtocolChooser` plugin’s label - protocols mapping.

#### 5.1.27 1.7.8 (2012-05-08)

- In `authenticateCredentials` do NOT fall back to using the login as `userid` when there is no match, as that gives a high chance of seeming to log in successfully, but in reality failing. [maurits]

#### 5.1.28 1.7.7 (2012-02-27)

- Explicitly encode/decode data for `GS`

#### 5.1.29 1.7.6 (2011-10-31)

- Launchpad #795086: fixed creation of `PropertiesUpdated` event.

### 5.1.30 1.7.5 (2011-05-30)

- Launchpad #789858: don't allow conflicting login name in 'updateUser'.
- Set appropriate cache headers on CookieAuthHelper login redirects to prevent caching by proxy servers.

### 5.1.31 1.7.4 (2011-05-13)

- Added forward compatibility with DateTime 3.

### 5.1.32 1.7.3 (2011-02-10)

- In the ZODBRoleManager made it clearer that adding a removing a role does not have much effect if you do not do the same in the root of the site (at the bottom of the Security tab at manage\_access). Fixes <https://bugs.launchpad.net/zope-pas/+bug/672694>
- Return the created user in \_doAddUser, to match change in AccessControl 2.13.4.
- Fixed possible binascii.Error in extractCredentials of CookieAuthHelper. This is a corner case that might happen after a browser upgrade.

### 5.1.33 1.7.2 (2010-11-11)

- Allow for a query string in CookieAuthHelper's login\_path.
- Trap "swallowable" exceptions from IRoles plugins. Thanks to Willi Langenburger for the patch. Fixes <https://bugs.launchpad.net/zope-pas/+bug/615474>.
- Fixed possible TypeError in extractCredentials of CookieAuthHelper when the \_\_ac cookie is not ours (but e.g. from plone.session, though even then only in a corner case).
- Fixed chameleon incompatibilities

### 5.1.34 1.7.1 (2010-07-01)

- Made ZODBRoleManager.assignRoleToPrincipal raise and log a more informative error when detecting a duplicate principal. <https://bugs.launchpad.net/zope-pas/+bug/348795>
- Updated DynamicGroupsPlugin.enumerateGroups to return an empty sequence for an unknown group ID, rather than raising KeyError. <https://bugs.launchpad.net/zope-pas/+bug/585365>
- Updated all code to raise new-style exceptions.
- Removed dependency on zope.app.testing.
- Cleaned out a number of old imports, because we now require Zope >= 2.12.
- Updated setDefaultRoles to use the addPermission API if available.

### 5.1.35 1.7.0 (2010-04-08)

- Allow CookieAuthHelper's login\_path to be set to an absolute url for integration with external authentication mechanisms.
- Fixed xml templates directory path computation to allow reuse of SimpleXMLExportImport class outside Products.PluggableAuthService.

### 5.1.36 1.7.0b2 (2010-01-31)

- Modify ZODBGroupManager to update group title and description independently.

### 5.1.37 1.7.0b1 (2009-11-16)

- This release requires for Zope2 >= 2.12.
- Simplified buildout to just what is needed to run tests.
- Don't fail on users defined in multiple user sources on the ZODBGroupManager listing page.
- Fixed deprecation warnings for use of Globals under Zope 2.12.
- Fixed deprecation warnings for the md5 and sha modules under Python >= 2.6.
- Added test for multiple auth header support in the HTTPBasicAuthHelper.
- Changed HTTPBasicAuthHelper to not rely on one obscure feature of the HTTPResponse.

### 5.1.38 1.6.2 (2009-11-16)

- Launchpad #420319: Fix misconfigured startswith match type filter in Products.PluggableAuthService.plugins.DomainAuthHelper.
- Fixed test setup for tests using page templates relying on the DefaultTraversable adapter.
- Fixed broken markup in templates.

### 5.1.39 1.6.1 (2008-11-20)

- Launchpad #273680: Avoid expensive / incorrect dive into enumerateUsers when trying to validate w/o either a real ID or login.
- Launchpad #300321: Products.PluggableAuthService.plugins.ZODBGroupManager.enumerateGroups failed to find groups with unicode IDs.

### 5.1.40 1.6 (2008-08-05)

- Fixed another deprecation for manage\_afterAdd occurring when used together with Five (this time for the ZODBRoleManager class).
- Ensure the \_findUser cache is invalidated if the roles or groups for a principal change.
- Launchpad #15569586: docstring fix.
- Factored out filter logic into separate classes; added filters for startswith test and (if the IPy module is present) IP-range tests. See <https://bugs.launchpad.net/zope-pas/+bug/173580> .

- Zope 2.12 compatibility - removed `Interface.Implements` import if `zope.interface` available.
- Ensure `ZODBRoleManagerExportImport` doesn't fail if it tries to add a role that already exists (idempotence is desirable in GS importers)
- Fixed tests so they run with Zope 2.11.
- Split up large permission tests into individual tests.
- Fixed deprecation warning occurring when used together with Five. (`manage_afterAdd` got undeprecated.)
- Added buildout.

#### 5.1.41 1.5.3 (2008-02-06)

- `ZODBUserManager` plugin: allow unicode arguments to `enumerateUsers`. (<https://bugs.launchpad.net/zope-pas/+bug/189627>)
- `plugins/ZODBRoleManager`: added logging in case `searchPrincipal()` returning more than one result (which might happen in case of having duplicate id within different user sources)

#### 5.1.42 1.5.2 (2007-11-28)

- `DomainAuthHelper` plugin: fix glitch for plugins which have never configured any "default" policy: `authenticateCredentials` and `getRolesForPrincipal` would raise `ValueError`. (<http://www.zope.org/Collectors/PAS/59>)

#### 5.1.43 1.5.1 (2007-09-11)

- `PluggableAuthService._verifyUser`: changed to use `exact_match` to the enumerator, otherwise a user with login `foobar` might get returned by `_verifyUser` for a query for `login='foo'` because the enumerator happened to return `'foobar'` first in the results.
- Add a test for `manage_zmi_logout` and replace a call to `isImplementedBy` with `providedBy`. (<http://www.zope.org/Collectors/PAS/58>)

#### 5.1.44 1.5 (2006-06-17)

- Add support for property plugins returning an `IPropertySheet` to `PropertiedUser`. Added `addPropertysheet` to the `IPropertiedUser`.
- Added a method to the `IRoleAssignerPlugin` to remove roles from a principal, and an implementation for it on the `ZODBRoleManager`. (<http://www.zope.org/Collectors/PAS/57>)
- Added events infrastructure. Enabled new `IPrincipalCreatedEvent` and `ICredentialsUpdatedEvent` events.
- Added support for registering plugin types via ZCML.
- Implemented authentication caching in `_extractUserIds`.
- Ported standard user folder tests from the `AccessControl` test suite.
- Passwords with ":" characters would break authentication (<http://www.zope.org/Collectors/PAS/51>)
- Corrected documented software dependencies

- Converted to publishable security sensitive methods to only accept POST requests to prevent XSS attacks. See <http://www.zope.org/Products/Zope/Hotfix-2007-03-20/announcement> and <http://dev.plone.org/plone/ticket/6310>
- Fixed issue in the user search filter where unrecognized keyword arguments were ignored resulting in duplicate search entries. (<http://dev.plone.org/plone/ticket/6300>)
- Made sure the Extensions.upgrade script does not commit full transactions but only sets (optimistic) savepoints. Removed bogus Zope 2.7 compatibility in the process. (<http://www.zope.org/Collectors/PAS/55>)
- Made the CookieAuthHelper only use the `__ac_name` field if `__ac_password` is also present. This fixes a login problem for CMF sites where the login name was remembered between sessions with an `__ac_name` cookie.
- Made the DomainAuthHelper return the remote address, even if the remote host is not available (<http://www.zope.org/Collectors/PAS/49>).
- Fixed bug in DelegatingMultiPlugin which attempted to validate the supplied password directly against the user password - updated to use `AuthEncoding.pw_validate` to handle encoding issues
- Fixed serious security hole in DelegatingMultiPlugin which allowed Authentication if the EmergencyUser login was passed in. Added password validation utilizing `AuthEncoding.pw_validate`
- Fixed a set of tests that tested values computed from dictionaries and could break since dictionaries are not guaranteed to have any sort order.
- Fixed test breakage induced by use of Z3 pagetemplates in Zope 2.10+.
- BasePlugin: The `listInterfaces` method only considered the old-style `__implements__` machinery when determining interfaces provided by a plugin instance.
- ZODBUserManager: Already encrypted passwords were encrypted again in `addUser` and `updateUserPassword`. (<http://www.zope.org/Collectors/Zope/1926>)
- Made sure the emergency user via HTTP basic auth always wins, no matter how broken the plugin landscape.
- Cleaned up code in CookieAuthHelper which allowed the form to override login/password if a cookie had already been set.
- Removed some BBB code for Zope versions < 2.8, which is not needed since we require Zope > 2.8.5 nowadays.

#### 5.1.45 1.4 (2006-08-28)

- Extended the DomainAuthHelper to function as its own extraction plugin, to allow for the case that another extractor is registered, but does not return any credentials. (<http://www.zope.org/Collectors/PAS/46>)
- Re-worded parts of the README so they don't point to specific or non-existing files (<http://www.zope.org/Collectors/PAS/6> and <http://www.zope.org/Collectors/PAS/47>)

#### 5.1.46 1.4-beta (2006-08-07)

- Created a “Configured PAS” entry in the ZMI add list, which allows creating a PAS using base and extension GenericSetup profiles registered for IPluggableAuthService. This entry should eventually replace the “stock” PAS entry (assuming that we make GenericSetup a “hard” dependency).
- Added an “empty” GenericSetup profile, which creates a PAS containing only a plugin registry and a setup tool.
- Repaired the “simple” GenericSetup profile to be useful, rather than catastrophic, to apply: it now creates and registers a set of ZODB-based user / group / role plugins, along with a basic auth helper.

- ZODBUserManager: Extend the “notional IZODBUserManager interface” with the left-out updateUser facility and a corresponding manage\_updateUser method for ZMI use. Removed any responsibility for updating a user’s login from the updateUserPassword and manage\_updateUserPassword methods. This fixes the breakage described in the collector issue below, and makes the ZMI view for updating users work in a sane way. (<http://www.zope.org/Collectors/PAS/42>)
- CookieAuthHelper: If expireCookie was called and extractCredentials was hit in the same request, the CookieAuthHelper would throw an exception (<http://www.zope.org/Collectors/PAS/43>)
- Added a DEPENDENCIES.txt. (<http://www.zope.org/Collectors/PAS/44>)

#### 5.1.47 1.3 (2006-06-09)

- No changes from version 1.3-beta

#### 5.1.48 1.3-beta (2006-06-03)

- Modify CookieAuthHelper to prefer \_\_ac form variables to the cookie when extracting credentials. (<https://dev.plone.org/plone/ticket/5355>)

#### 5.1.49 1.2 (2006-05-14)

- Fix manage\_zmi\_logout which stopped working correctly as soon as the PluggableAuthService product code was installed by correcting the monkeypatch for it in \_\_init\_\_.py. (<http://www.zope.org/Collectors/PAS/12>)
- Add missing interface for IPropertyUser and tests (<http://www.zope.org/Collectors/PAS/16>)
- Removed STX links from README.txt which do nothing but return 404s when clicked from the README on zope.org. (<http://www.zope.org/Collectors/PAS/6>)
- Fixing up inconsistent searching in the listAvailablePrincipals method of the ZODBRoleManager and ZODBGroupManager plugins. Now both constrain searches by ID. (<http://www.zope.org/Collectors/PAS/11>)
- Convert from using zLOG to using the Python logging module. (<http://www.zope.org/Collectors/PAS/14>)

#### 5.1.50 1.2-beta (2006-02-25)

- Added support for exporting / importing a PAS and its content via the GenericSetup file export framework.
- Made ZODBRoleManager plugin check grants to the principal’s groups, as well as those made to the principal directly.
- Added two new interfaces, IChallengeProtocolChooser and IRequestTypeSniffer. Those are used to select the ‘authorization protocol’ or ‘challenger protocol’ to be used for challenging according to the incoming request type.
- Repaired warnings appearing in Zope 2.8.5 due to a couple typos in security declarations.
- Repaired DeprecationWarnings due to use of Zope2 interface verification.
- Repaired unit test breakage (unittest.TestCase instances have ‘failUnless’/‘failIf’, rather than ‘assertTrue’/‘assertFalse’).
- Fixed a couple more places where Zope 2-style \_\_implements\_\_ were being used to standardize on using classImplements.
- Fixed fallback implementations of providedBy and implementedBy to always return a tuple.

- Make sure challenge doesn't break if existing instances of the PluginRegistry don't yet have IChallengeProtocolChooser as a registered interface. (Would be nice to have some sort of migration for the PluginRegistry between PAS releases)
- Don't assume that just because zope.interface can be imported that Five is present.

#### 5.1.51 1.1b2 (2005-07-14)

- Repaired a missing 'nocall:' in the Interfaces activation form.

#### 5.1.52 1.1b1 (2005-07-06)

- PAS-level id mangling is no more. All (optional) mangling is now done on a per-plugin basis.
- Interfaces used by PAS are now usable in both Zope 2.7 and 2.8 (Five compatible)

#### 5.1.53 1.0.5 (2005-01-31)

- Simplified detection of the product directory using 'package\_home'.
- Set a default value for the 'login' attribute of a PAS, to avoid UnboundLocalError.

#### 5.1.54 1.0.4 (2005-01-27)

- Made 'Extensions' a package, to allow importing its scripts as modules.
- Declared new 'IPluggableAuthService' interface, describing additional PAS-specific API.
- Exposed PAS' 'resetCredentials' and 'updateCredentials' as public methods.
- Monkey-patch ZMI's logout to invoke PAS' 'resetCredentials', if present.
- CookieAuth plugin now encodes and decodes cookies in the same format as CookieCrumbler to provide compatibility between sites running PAS and CC.
- Add a publicly callable "logout" method on the PluggableAuthService instance that will call resetCredentials on all activated ICredentialsRest plugins, thus effecting a logout.
- Enabled the usage of the CookieAuthHelper login screen functionality without actually using the CookieAuthHelper to maintain the credentials store in its own auth cookie by ensuring that only active updateCredentials plugins are informed about a successful login so they can store the credentials.
- Added a \_getPAS method to the BasePlugin base class to be used as the canonical way of getting at the PAS instance from within plugins.
- Group and user plugins can now specify their own title for a principal entry (PAS will not compute one if they do).
- PAS and/or plugins can now take advantage of caching using the Zope ZCacheable framework with RAM Cache Managers. See doc/caching.stx for the details.
- Make 'getUserById' pass the 'login' to '\_findUser', so that the returned user object can answer 'getUserName' sanely.
- Harden 'logout' against missing HTTP\_REFERER.
- Avoid triggering "Emergency user cannot own" when adding a CookieAuthHelper plugin as that user.

- Detect and prevent recursive redirecting in the CookieAuthHelper if the login\_form cannot be reached by the Anonymous User.
- Made logging when swallowing exceptions much less noisy (they *don't* necessarily require attention).
- Clarified interface of IAuthenticationPlugin, which should return None rather than raising an exception if asked to authenticate an unknown principal; adjusted ZODBUserManager accordingly.
- Don't log an error in zodb\_user\_plugin's authenticateCredentials if we don't have a record for a particular username, just return None.
- If an IAuthenticationPlugin returns None instead of a tuple from authenticateCredentials, don't log a tuple-unpack error in PAS itself.

### 5.1.55 1.0.3 (2004-10-16)

- Implemented support for issuing challenges via IChallengePlugins.
  - three challenge styles in particular:
    - \* HTTP Basic Auth
    - \* CookieCrumbler-like redirection
    - \* Inline authentication form
- Made unit tests pass when run with cAccessControl.
- plugins/ZODBRoleManager.py: don't claim authority for 'Authenticated' or 'Anonymous' roles, which are managed by PAS.
- plugins/ZODBRoleManager.py: don't freak out if a previously assigned principal goes away.
- plugins/ZODBGroupManager.py: don't freak out if a previously assigned principal goes away.
- plugins/ZODBUserManager.py: plugin now uses AuthEncoding for its password encryption so that we can more easily support migrating existing UserFolders. Since PAS has been out for a while, though, we still will authenticate against old credentials
- Repaired arrow images in two-list ZMI views.
- searchPrincipals will work for exact matches when a plugin supports both 'enumerateUsers' and 'enumerateGroups'.
- 'Authenticated' Role is now added dynamically by the PluggableAuthService, not by any role manager
- Added WARNING-level logs with tracebacks for all swallowed plugin exceptions, so that you notice that there is something wrong with the plugins.
- All authenticateCredentials() returned a single None when they could not authenticate, although all calls expected a tuple.
- The user id in extract user now calls \_verifyUser to get the ID mangled by the enumeration plugin, instead of mangling it with the authentication ID, thereby allowing the authentication and enumeration plugins to be different plugins.

### 5.1.56 1.0.2 (2004-07-15)

- ZODBRoleManager and ZODBGroupManager needed the “two\_lists” view, and associated images, which migrated to the PluginRegistry product when they split; restored them.

### 5.1.57 1.0.1 (2004-05-18)

- CookieAuth plugin didn't successfully set cookies (first, because of a NameError, then, due to a glitch with long lines).
- Missing ZPL in most modules.

### 5.1.58 1.0 (2004-04-29)

- Initial release



## INDICES AND TABLES

- genindex
- modindex
- search



## INDEX

- I
- IAnonymousUserFactoryPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IAuthenticationPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IBasicUser (interface in *Products.PluggableAuthService.interfaces.authservice*), 9
  - IBrowserRequest (interface in *Products.PluggableAuthService.interfaces.request*), 12
  - IChallengePlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IChallengeProtocolChooser (interface in *Products.PluggableAuthService.interfaces.plugins*), 11
  - ICredentialsResetPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - ICredentialsUpdatedEvent (interface in *Products.PluggableAuthService.interfaces.events*), 12
  - ICredentialsUpdatePlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IEnumerableUserFolder (interface in *Products.PluggableAuthService.interfaces.authservice*), 10
  - IExtractionPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IFTPRequest (interface in *Products.PluggableAuthService.interfaces.request*), 12
  - IGroupDeletedEvent (interface in *Products.PluggableAuthService.interfaces.events*), 12
  - IGroupEnumerationPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 11
  - IGroupsPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 11
  - IHTTPRequest (interface in *Products.PluggableAuthService.interfaces.request*), 12
  - ILoginPasswordExtractionPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - ILoginPasswordHostExtractionPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 10
  - IMutableUserFolder (interface in *Products.PluggableAuthService.interfaces.authservice*), 9
  - INotCompetentPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 11
  - IPASEvent (interface in *Products.PluggableAuthService.interfaces.events*), 11
  - IPluggableAuthService (interface in *Products.PluggableAuthService.interfaces.authservice*), 9
  - IPrincipalCreatedEvent (interface in *Products.PluggableAuthService.interfaces.events*), 11
  - IPrincipalDeletedEvent (interface in *Products.PluggableAuthService.interfaces.events*), 12
  - IPropertiedUser (interface in *Products.PluggableAuthService.interfaces.authservice*), 9
  - IPropertiesPlugin (interface in *Products.PluggableAuthService.interfaces.plugins*), 11
  - IPropertiesUpdatedEvent (interface in *Products.PluggableAuthService.interfaces.events*), 12

`IPropertySheet` (interface in `Products.PluggableAuthService.interfaces.propertiesheets`),  
9

`IRequest` (interface in `Products.PluggableAuthService.interfaces.request`),  
12

`IRequestTypeSniffer` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IRoleAssignerPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
10

`IRoleEnumerationPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IRolesPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IUpdatePlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IUserAdderPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
10

`IUserEnumerationPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IUserFactoryPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
10

`IUserFolder` (interface in `Products.PluggableAuthService.interfaces.authservice`),  
9

`IUserLoggedInEvent` (interface in `Products.PluggableAuthService.interfaces.events`),  
11

`IUserLoggedOutEvent` (interface in `Products.PluggableAuthService.interfaces.events`),  
12

`IValidationPlugin` (interface in `Products.PluggableAuthService.interfaces.plugins`),  
11

`IWebDAVRequest` (interface in `Products.PluggableAuthService.interfaces.request`),  
12

`IXMLRPCRequest` (interface in `Products.PluggableAuthService.interfaces.request`),  
12