

EQUELLA[®]

Integration Interface Guide

Version 6.4

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Integration overview

The purpose of this guide is to provide system administrators with a method for a third party system to use the EQUELLA Digital Repository as an integrated tool to discover and return content. A typical usage would be adding course content, via an integration, to deliver to students.

EQUELLA provides a URL that is a hook into the content discovery engine. Once at this URL (typically displayed within a frameset of the third party system), the user can search, create, manage and share content that they have access to within EQUELLA. The hook is designed to provide seamless single sign-on access and can be customised to present a look-and-feel similar to the integrating system.

Single sign-on authentication

When single sign-on (SSO) to EQUELLA is required, an authentication token should be included in the URL. Including a token in the URL logs the user nominated in the token into EQUELLA, providing access to all EQUELLA pages the user has privileges for, and ensures the security and auditing integrity are maintained.

Token generation

The format of the token parameter is most easily specified by the following code:

```
public String createToken (String username, String shareId, String sharedSecret) {
    String time = Long.toString (System.currentTimeMillis ());

    return URLEncoder.encode (username, "UTF-8")
        + ":"
        + URLEncoder.encode(shareId, "UTF-8")
        + ":"
        + time
        + ":"
        + new Base64Encoder ().encode (
            new Md5 (
                username
                + shareId
                + time
                + sharedSecret
            ).getDigest ());
}
```

Once a token is generated, it can be URL-encoded and added to the hook URL as the token parameter. This token can be used as a parameter on any EQUELLA page and may also be used to initiate SOAP sessions. There is a maximum time difference of 30 minutes

between a token and the current time on the server (GMT). Tokens with a larger difference are considered to be expired and invalid.

The single sign-on relies on the EQUELLA Shared Secrets plug-in being set up with an appropriate shared secret. Shared Secrets are configured in the Administration Console's User Management tool; an example is shown in Figure 1.

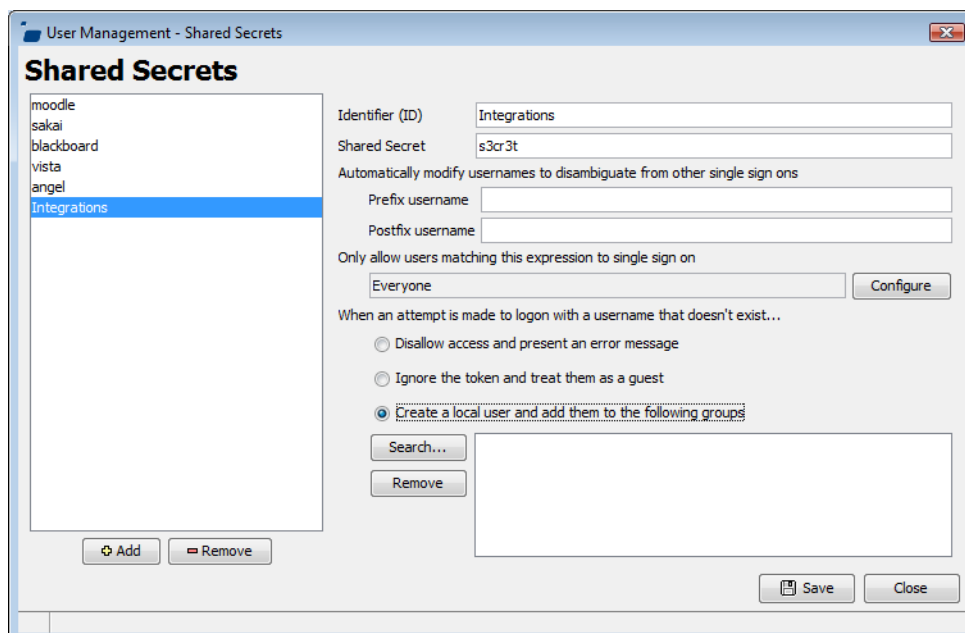


Figure 1 User Management—Shared Secrets plug-in

The Shared Secret plug-in provides the following options:

- Specification of **Identifier (ID)** and **Shared Secret**.
- Automatically modify usernames, with prefix and/or postfix, to disambiguate from other single sign-ons.
- An access control expression to allow only certain users to login with this shared secret.
- Automatic denial or acceptance of guest user access.
- Automatic creation of local users if they do not exist at the time of login.

Further information on shared secrets is provided in the *Shared Secret plug-in* section of the *EQUELLA User Management Configuration Guide*.

Integration hook URL

The integration hook URL comprises several parameters that include methods, actions, URLs and authentication. These parameters allow complete access to EQUELLA pages from an integration and provide a means for performing tasks in the EQUELLA Digital Repository.

Integration hook actions

An integration must forward to your EQUELLA institution with *'signon.do'* appended to the hosting server URL where a selection session will be started. All selection sessions provide a means for performing tasks in the EQUELLA Digital Repository that result in the selection of an item or attachment by the user.

As an example the following URL:

'http://equella.myinstitute.edu/institution/logon.do'

would become the hook URL

'http://equella.myinstitute.edu/institution/signon.do'.

Input parameters

The following parameters can be appended to the URL:

method (required)	This should always have the value <i>'lms'</i> .
token (optional)	A string to enable single sign-on to EQUELLA. If the token is not provided the user will have to provide authentication whenever the hook URL is used. Refer to the Single sign-on authentication section on page 4 for further information.
returnurl (required)	The URL that the user is redirected to when the action is complete. This URL can comprise parameters; an example is provided in the following table.
cancelurl (optional)	The URL that the user is redirected to if they choose to cancel access.
returnprefix (required)	A prefix that will be prepended to all parameters that are added to the return URL. The prefix will ensure that the parameters will not conflict with your own.
action (required)	The action that needs to be undertaken. These are predefined strings and are listed on page 9. Optionally a URL path to redirect to can also be used. This path must start with a slash <i>'/'</i> e.g. <i>'/access/contribute.do'</i> .
courseCode (optional)	The ID of a course that has been defined in the Administration Console Course tool. This is to allow the Copyright system to know which course a particular resource is being activated for. Note: a value for this parameter overrides the <code>courseId</code> parameter if both are supplied.
courseId (optional)	Note: This parameter is overridden by the <code>courseCode</code> parameter if both are supplied. The ID of a course that has been defined in the

	Administration Console Course tool. This is to allow the Copyright system to know which course a particular resource is being activated for.
attachmentUuidUrls (optional)	If passed in with a value of <i>'true'</i> , the URLs for selected attachments will use the attachment UUID rather than the attachment name. This allows attachment names to be renamed without breaking existing URLs in an LMS.
cancelDisabled (optional)	If passed in with a value of <i>'true'</i> , any close or cancel buttons in the EQUELLA interface will be suppressed. This is useful for integrations that provide their own close/cancel buttons.
options (optional)	Extended set of parameters that can be used for further configuration. These are predefined strings and are listed under the section on the Options parameter .
forcePost	If passed in with a value of <i>'true'</i> the user's selections will be POSTed back to your integration in JSON format (See Output parameters) instead of via URL query string parameters.
selectMultiple	Allow selection of multiple resources during the selection session. Note that if selectMultiple is <i>'true'</i> then the final selections will always be posted back to your integration as per forcePost.
attachmentonly	Set to true if you do not wish users to be able to select resource summaries and only select attached content.
structure	<p>A JSON representation of your destination folders. (See "structured" action value). It is highly recommended that this value be POSTed rather than included in the URL parameters due to the size of the value.</p> <p>The format for this value is:</p> <pre> { "name": "Course Name", "code": "Course Code", "id": "A unique ID #1", "targetable": true false, "selected": true false, "folders": [{ "name": "Folder 1", "id": "A unique ID #2", "targetable": true false, "selected": true false, "folders": [<any number of folders in same format as Folder 1>] }, ...] } </pre>

	<p>A "targetable" value of false means the user cannot add resources to this location.</p> <p>Only one location should be marked as "selected". This location will be highlighted and selected when the selection session starts. It must be a targetable location.</p> <p>Every targetable location must have a unique "id" value. This value will be sent back to your integration to indicate where the resources were added to. (See Output parameters)</p> <p>Each location can have any number of folders, and each of these folders can have any number of folders and so on.</p> <p>The top level folder does not have to be a course. The "code" field is optional and is not currently used.</p>
--	--

Example values for URL parameters may be as follows:

method	<i>lms</i>
token	<i>demouser:sharedSecretID:1115854854000:4Qw4nf92EV6ev/1OCYII2Q==</i>
returnurl	<i>http://lms.institution.edu/module/mod.do?session=47f23cd29&course=3&folder=1</i>
cancelurl	<i>http://lms.institution.edu/module/cancelled.do</i>
returnprefix	<i>xxx</i>
action	<i>structured</i>

These values need to be URL-encoded for inclusion in the hook URL, the final URL (with added line-breaks) is:

```

http://equella.myinstitute.edu/signon.do?
method=lms
&token=demouser%3AsharedSecretID%3A1115854854000%3A4Qw4nf92EV6ev%2F1O
CYII2Q%3D%3D
&returnurl=http%3A%2F%2Flms.institution.edu%2Fmodule%2Fmod.do
%3Fsession%3D47f23cd29%26course%3D3%26folder%3D1
&cancelurl=http%3A%2F%2Flms.institution.edu%2Fmodule%2Fcancelled.do
&returnprefix=xxx
&action=selectOrAdd
    
```

This is the URL that the user is redirected to when the action is complete.

Predefined actions

The following actions are recommended for easily providing access to most EQUELLA functions through a single entry point:

selectOrAdd	Provides access to all EQUELLA searching and contribution methods. Loads the EQUELLA Selection Home Page.
searchResources	Provides access to all EQUELLA searching methods.
contribute	Provides access to all EQUELLA contribution methods.
structured	Provides access to all EQUELLA searching and contribution methods. Loads the search results page with a graphical representation of the target folders (sent from your system) on the right hand side, with which users can drag and drop resources onto. Must be used with the structure

Figure 2 shows an example of the **selectOrAdd** option.

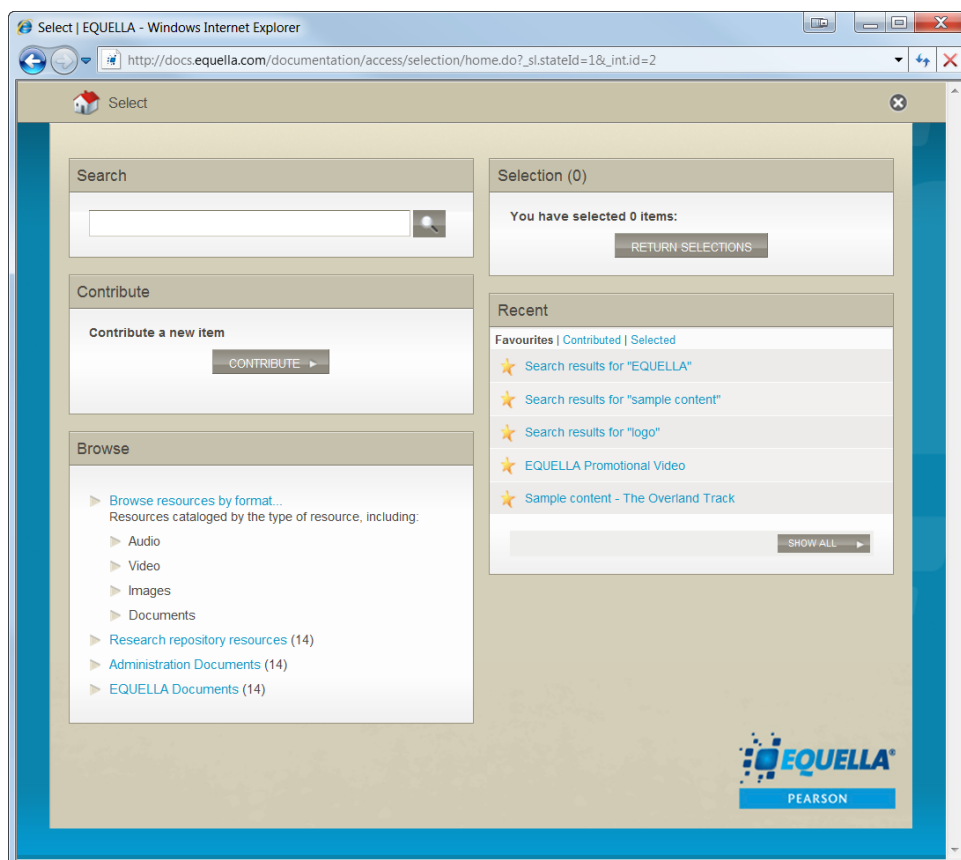


Figure 2 Selection EQUELLA Home Page using selectOrAdd entry point

'Options' parameter

The following is a list of the current pre-defined parameter values that can be assigned to the **options** parameter, and the corresponding function in EQUELLA that they provide access to:

allCollections	Turn on or off the availability of all collections for searching. (true/false)
allPowerSearches	Turn on or off the availability of all power searches for searching. (true/false)
allContributionCollections	Turn on or off the availability of all collections for contribution. (true/false)
collectionIds	Provide a list of collection UUIDs to make available for searching.
powerSearchIds	Provide a list of power search UUIDs to make available for searching.
contributionCollectionIds	Provide a list of collection UUIDs to make available for contribution.
dynamicCollectionIds	Provide a list of dynamic collection UUIDs to make available for contribution.

Output parameters

The parameters that are appended to the return URL are as follows:

name	String representing the name of the item found.
description	String representing the description of the item found.
url	The absolute URL to the item found. Do not rely on the format of the URL being an integ/gen style URL. This is not part of the integration interface and may change depending on the type of attachment or item selected, or in future versions of EQUELLA.
uuid	Persistent identifier for the item.
itemdefuuid	Persistent identifier for the collection for the item.
version	Persistent identifier for version of the item.
result	<i>"success" "cancelled" "failed"</i> <i>Note: this is still supported but deprecated. If possible, integrations should not rely on this value.</i>
type	<i>"resource" "plan"</i>

	<i>Note: this is still supported but deprecated. If possible, integrations should not rely on this value.</i>
--	---

Using the example of returning from a Moodle™ integration, the user will be redirected to:

```
http://lms.institution.edu/module/mod.do?↵
session=47f23cd29↵
&course=3↵
&folder=1↵
&xxxresult=success↵
&xxxname=Sample%20item↵
&xxxdescription=Very%20interesting%20description↵
&xxxurl=http%3A%2F%2Fequella.myinstitute.edu%2Fitem%2Ftf↵
%2Fc7f6e44d-4101-c1dd-f936-0195cb51403a%2F1%2F↵
&xxxuuid=c7f6e44d-4101-c1dd-f936-0195cb51403a↵
&xxxtemdefuuid=1ed3feb1-2e04-1bad-cfbb-7e6168c4a8ca↵
&xxxversion=1
```

where the module on the integration at `'/module/mod.do'` can interpret these parameters to add a link to the EQUELLA item. (Note: the parameters added by EQUELLA are prefixed with 'xxx' as specified in the **returnprefix** parameter.)

If a "structured" action is used, or if either `selectMultiple=true` or `forcePost=true` was specified to start the integration session, a JSON array value will be POSTed back to your integration under the "links" form parameter.

The fields of each link object are:

name	String representing the name of the item or attachment selected.
description	Will be blank if an attachment was selected, otherwise it will be the description of the selected item.
url	The absolute URL to the item found. Do not rely on the format of the URL being an integ/gen style URL. This is not part of the integration interface and may change depending on the type of attachment or item selected, or in future versions of EQUELLA.
uuid	Persistent identifier for the item.
version	Persistent identifier for version of the item.

attachmentUuid	Will be blank if an item summary was selected, otherwise it will be the UUID of the selected attachment.
thumbnail	The URL for the thumbnail image representing this item or attachment.
datecreated	Date that the item was created in Unix time. (http://en.wikipedia.org/wiki/Unix_time).
datemodified	Date that the item was last modified in Unix time (http://en.wikipedia.org/wiki/Unix_time).
owner	The owner of the item (friendly name, not the user ID)
itemName	The name of the item. This will match the name parameter if an item was selected, otherwise it is the name of the item that contains the selected attachment.
attachmentName	Will be absent if an attachment was not selected. Otherwise it is the name of the selected attachment.
mimetype	Will be absent if an attachment was not selected.
filesize	Will be absent if an attachment was not selected. This is the file size (in bytes) of the attachment (if any).
filename	Will be absent if an attachment was not selected. This is the filename of the attachment (if any).
folder	In the case of a structured session, the folder property indicates where the resource should be added to.

For example:

```
[
  {
    "url": "http://YOUR_INST/integ/gen/9a4b5423-7340-4562-bfea-97e4dccb30a9/1/",
    "name": "A Resource Name",
    "description": "Some description",
    "attachmentUuid": "",
    "thumbnail": "http://YOUR_INST/thumbs/9a4b5423-7340-4562-bfea-97e4dccb30a9/1/",
    "datecreated": 1367469056810,
    "datemodified": 1367469192507,
    "owner": "Joe Smith [jsmith]",
    "folder": "A unique ID #1"
  },
]
```

```
{
  "url": "http://YOUR_INST/integ/gen/6a678dfa-7e99-4321-97ba-
f6477753afa6/1/attachment.jpg",
  "name": "Another Resource Name",
  "description": "A descriptive description",
  "attachmentUuid": "c1525791-5fd5-4659-8766-43e119d27a48",
  "thumbnail": "http://YOUR_INST/thumbs/6a678dfa-7e99-4321-97ba-
f6477753afa6/1/c1525791-5fd5-4659-8766-43e119d27a48",
  "datecreated": 1368753894640,
  "datemodified": 1368753894633,
  "owner": "Joe Smith [jsmith]",
  "folder": "A unique ID #2"
}
```

Contact Client Support

We are always happy to help.

If your organisation has a support agreement with EQUELLA then help is available at <http://equella.custhelp.com>.