

Enhanced ILLiad Authentication Implementation Guide—ILLiad 9.1

Improvements to the authentication process in ILLiad 9.1 allow you to import external data from a central identity repository (Shibboleth, OpenAthens, CAS, etc.) into your ILLiad user records in order to maintain better user information and ease initial registration.

The **New User Creation** process allows you automatically to create a user record upon initial log-in to ILLiad, skipping the new user registration form and using data from the external source for the new record.

The **User Record Update** process will automatically update the designated fields from the external source when return users log-in to ILLiad.

Enhanced authentication is currently available ONLY to those using **ILLiad Remote Authentication** or **ILLiad Exclusive Authentication** with local or Atlas server hosting. It is not available for those using LDAP, Patron API, or Symphony API Authentication.

To enable one or both of these features, the Customization Manager uses the **Remote Auth Validation** table. Entries to this table determine how the external information is applied to the ILLiad user record.

A **Remote Auth Validation** record is required for each field value that you want to import from your external data. This information is passed from the external source to ILLiad via the HTTP Headers (RAW). The Remote Auth Validation (RAV) table maps the fields from the external source and validates the values in order to add them to the correct fields in the ILLiad user record.

In order to implement these features, you will likely **need the assistance of your institutional IT staff** who manage the central identity repository (Shibboleth, CAS, etc.).

This Implementation Guide assists you with the collection of information required to implement these features. It includes the following:

- Decision Making and Task Worksheet (pdf)
- Appendix 1: ILLiad User Record Fields (pdf)
- Appendix 2: Remote Auth Validation Table Field Descriptions (pdf)
- Appendix 3: Remote Auth Validation Table Example Records (pdf)
- Enhanced Authentication Workbook (Excel Spreadsheets)

Decision Making and Task Worksheet

Before enabling New User Creation or User Record Update, you will need to determine which fields provided by the external source will be added to the ILLiad user record. These tasks will help you gather the information and make decisions to implement.

Task 1: Evaluate the User Fields in ILLiad

Appendix 1 contains a list of ILLiad user record fields that can be modified by the external source.

1. Review your current registration and user update forms.
2. Identify which fields are used.
3. Identify which fields are required.
4. Determine which fields you would like to be completed by the update and/or new user creation process.
 - a. Two tools are available to assist with this process.
 - i. **Appendix 1** contains a table of the default user fields in ILLiad with descriptions for reference.
 - ii. **User Field Review** worksheet in the **Enhanced Authentication Workbook**. Fill in this worksheet with information regarding current use of the user fields and how you would like the user records to be created or updated by the external information. Complete columns B, C & D. Note: Columns E, F & G will be completed in Task 2.

Required user fields, especially those related to delivery and notification methods, are frequently created as hidden values that users do not see on the registration form.

Contact your support representative if you are not certain about what fields may currently be added automatically during the registration process.

Task 2: Determine the User Fields available from the Central Identity Repository

User Record Creation and Update are limited by the fields and values provided in the HTTP Headers (RAW) from the central identity repository. If the information is not transferred from the external source, it cannot be added to the ILLiad user record. Because ILLiad has not previously used this information, it is likely that you will need to work with your institution's IT staff to add the necessary information in the data that is included in the HTTP Headers (RAW) from your central identity repository.

1. View what information is currently available to ILLiad from the central identity repository
 - a. In the ILLiad Customization Manager, go to Web Interface → System → GetBuildInfoShowDetailed
 - i. Change the key to **Yes** and **Save**.
 - b. Log-into ILLiad web pages

- c. Go to **https://[insert name of your ILLiad server here]/illiad/illiad.dll?getbuildinfo**
 - i. Example: <https://training1.atlas-sys.com/illiad/MAIN/illiad.dll?getbuildinfo>
- d. Locate the HTTP Headers (RAW) section.
 - i. Identify the field names currently available that you want to use in the Remote Authentication Validation table (see example below).
 - ii. Identify any field names **not currently** available that you want to use create and/or update user records.
 - iii. Identify the syntax used by the central identity repository to label that information
 - 1. Example: **username** in ILLiad = **uid** in central identity repository
- e. Work with your institutional IT staff to release any attributes/fields to the ILLiad DLL that you designated in Task 1. See the example below.
- f. Record the field names from the HTTP Headers (RAW) as they correspond to the ILLiad field names in Column E in the **User Field Review** worksheet in the **Enhanced Authentication Workbook**. NOTE: Some fields in this column are linked to the Authentication Mapping Worksheet.

- g. After you receive the field names from the external system, complete Columns F & G. These values will indicate if you use the information from the external system directly in the ILLiad user record or substitute an alternate value.

Example: RemoteAuth Header Statement

```
HTTP Headers (RAW)
Connection: keep-alive
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.9
Cookie: _ga=GA1.2.1593254193.1575648805; _gid=GA1.2.934237251.1578510429; _gat_gtag_UA_24099595_1=1;
_shibsession_64656661756c7468747470733a2f2f72657175657374732e6c69622e756368696361676f2e6564752f53686962626f6c657468=_ed359e15e412ef
dd41c0a2556b321fe7; ILLiadSessionID=F130734319P
Host: illiad.atlas-sys.com
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/79.0.3945.88 Safari/537.36
Upgrade-Insecure-Requests: 1
ShibSessionID: _ed359e15e412efdd41c0a2556b321fe7
ShibIdentityProvider: urn:mace:incommon:atlas-sys.com
ShibAuthenticationInstant: 2020-01-08T19:07:33.523Z
ShibAuthenticationMethod: urn:oasis:names:tc:SAML:2.0:ac:classes:PasswordProtectedTransport
ShibAuthnContextClass: urn:oasis:names:tc:SAML:2.0:ac:classes:PasswordProtectedTransport
ShibSessionIndex: _7b5b65f0cede5a2ec7f305cf413c137e
ShibSessionExpires: 1578539253
ShibSessionInactivity: 1578514066
assurance: urn:oasis:names:tc:SAML:2.0:ac:classes
entitlement: https://oclc.org/illd
eopn: atlas1@atlas-sys.com
nickname: Atlas
persistentid: urn:mace:incommon:atlas-sys.com/https://atlas-sys.com/shibboleth:swrjEdYQynX3k7EDJ5UBIfupsM=
asisMemberOf: as:applications:confluence:authorized;as:applications:library:ill:authorized; as:applications:shibboleth:abc:eligible
uid: atlas
remoteuser: atlas@astlas-sys.com
```

User Attributes from External Source

Task 3: Design entries for the Remote Auth Validation (RAV) table

The **Enhanced Authentication Workbook** contains a second worksheet called **Authentication Mapping**. This worksheet directly parallels the fields that will need to be created in the Customization Manager. We recommend creating the RAV records in this spreadsheet first and then transferring them to the Customization Manager because adding records to the RAV table activates the user record creation and update processes. Using the spreadsheet allows you to create the mapping as you have the information.

NOTE: The most commonly used values in Column C of the Authentication Mapping worksheet will be auto-filled by Column E on the User Field Review worksheet.

Fill in one row of the **Authentication Mapping** worksheet for each field of user data that will be affected by the external data. See the examples in **Appendix 3** which illustrate a few common scenarios. Recommended practice is to add to the RAV table only those fields that you plan to use for record update or record creation. For example, the external source provides an attribute for user middle name. Since you will not use that attribute in ILLiad, do not create a RAV record for it.

If you are shared server and multiple sites will be using user creation and record updates, you will need to create Remote Auth Validation table entries for each NVTGC.

In addition, the RAV table entries need to be coordinated with the required fields designated in the ILLiad Web Validation table. For example, if you require an email address on the registration form, it will also need to be included in the RAV table. If not, the user will be prompted to add the email address on the registration form.

You may need to add multiple entries for a field. See Example 3 in Appendix 3.

See **Appendix 2** for additional information on RAV record fields.

Column A—NVTG

Description: ILLiad site for this field mapping entry. Necessary only for Shared Server installations. Use ILL for all entries if you are not a Shared Server installation.

Sub-Task: Verify NVTGC codes for each location that will be adding enhanced authentication mapping. You will need to create rules for each location even if the imported data will be the same for each location.

Column B—ILLiadFieldName

Description: ILLiad field name in the User record that external data will be mapped **to** i.e. the ILLiad side of the equation. You will find these in the ILLiad Field Name of Appendix 1.

Sub-Task: Review the fields available in the User Record and decide which data you would like to populate from the central identity repository. You will need to create a Remote Auth Validation record for each field identified in Task 1.

List ILLiad Field Names in Column B of the Enhanced ILLiad Authentication Worksheet that you would like to populate and/or update from the central identity repository. The Worksheet is seeded with ILLiad Field Labels that are most commonly added or updated from the central identity repository.

You may need to add multiple records for fields where data from the external source is being replaced in ILLiad. See Example 3 in Appendix 3.

Column C—RemoteFieldName

Description: Name of the field in the external source (remoteauth header) to map **from** i.e. the central identity repository (such as Shibboleth). Some of these columns will be auto-populated from Column C in Task 2 on the User Field Review worksheet. This information will be provided in cooperation with your institutional IT staff. These fieldnames will be specific to your institution. We can provide examples, but you must determine these values from your central identification repository.

Column D—Validation

Description: Regular expression used to validate the external value coming into ILLiad e.g email address must end with @atlas-sys.com.

Sub-Task: Determine if the data coming from the external system will need to be in a specified format in order to invoke the mapping rule. If so, a regular expression will need to be created to specific valid entries. For example, the external system may indicate that user's status with this value: *staff@institution.edu*. You will need validate the incoming value with a regular expression **staff@institution.edu**. The next step of the process and resulting next entry in the mapping table will be based on whether or not this incoming data passes validation.

Validation is primarily for values that need to be replaced in the ILLiad user record. Most will be validating a direct match (as in the example above) or will only need simple validation that the field is not blank (The regular expression for not blank is *.+*). See examples in **Appendix 3**.

Column E—ValidAction

Description: Action to take when passed value passes validation (see above).

Valid entries for this ValidAction are

- Accept—use the value from the central identity repository as is
- Substitute—Substitute an alternative value as found ValidDefault field
- Reject—Do not accept the user
- Ignore—Do nothing with this field

These values are programed as a drop-down on the **ILLiad Authentication Enhancement Worksheet**.

Sub-Task: Determine which of the actions above will be applied to this field. If substitute, determine the value that will replace the one from the external system.

For example, the external system may indicate that user's Status with this value: *staff@institution.edu*. To have the system populate your ILLiad record with Staff instead of *staff@institution.edu*, you would have the ValidAction be **Substitute** rather than Accept.

Column F—InvalidAction

Description: Action to take when passed value **does not** pass validation

Valid entries

- Accept—use the value from the central identity repository as is
- Substitute—Substitute an alternative value as found InvalidDefault field
- Reject—Do not accept the user
- Ignore—Do nothing with this field

These values are programed as a drop-down on the **ILLiad Authentication Enhancement Worksheet**.

Sub-Task: Determine which of the actions above will be applied to this field. If substitute, determine the value that will replace the one from the external system.

Column G—ValidDefault

Description: Substitute value to use if validation passes and ValidAction = substitute

Sub-Task: If using a substitute Action for this field, add the value that should be substituted in the ILLiad user record for the one provided by the central identity repository. See Column E above.

For example, the external system may indicate that user's status with this value: *staff@institution.edu* and the ValidAction is *Substitute*. The ValidDefault would be **Staff**.

Column H—InvalidDefault

Description: Substitute value to use if validation fails and InvalidAction = substitute

Sub-Task: If using a substitute Action for this field, add the value that should be substituted in the ILLiad user record for the one provided by the central identity repository. See Column F above.

Column I--Overwrite

Description: If "Yes", replace ILLiad value with remoteauth value. If "IfBlank" or "No", only set changes if the ILLiad field value is blank.

Column I--LogIfChanged

Description: Add a log entry when a change is applied by this rule.

Task 4: Add entries Remote Auth Validation (RAV) table

After you have drafted Remote Auth Validation (RAV) table entries in Task 3, you can add them to the ILLiad Customization Manager in the Customization tab Web Interface | Authentication | RemoteAuthValidation. Click the **New Record** button to open the table entry window. Add the values from the ILLiad **Authentication Enhancement Worksheet** in Task 3.

Because adding records will invoke the update/creation process, we recommend you add one table entry (or groups of entries for a particular field) at a time and test after each entry (as you are able) and not during prime operational hours.

Note for those using ILLiad Exclusive Authentication:

Enhanced Authentication will only use the RAV table to **UPDATE** user records. User record creation will be based on data entered in the User Validation table. The only change to user record creation is that users will no longer need to navigate through the User Registration form.

Additional Configurations to Consider

- Access for Non-Affiliate Users
 - If you serve patrons who are not included in the central identity repository data, you'll need to implement, a dual-auth portal page for those non-affiliate users to create their accounts manually.
- Update Custom Dropdown table
 - If the data provided by the central identity repository for user status and department is different than the existing options in ILLiad, you will want to update the Custom Dropdown table in the Customization Manager to align selection options available in the Client with those being provided through automated processing.
- Existing User Record updates
 - Because the User Record update process only updates user records when the user signs-in, you may want to update all existing user records if the data provided by the central identity repository is different than the existing options in ILLiad.
- Update Profile page
 - You may want to suppress or modify the ChangeUserInformation.html page presented to users in the web to eliminate any options that should be provided only by the automated creation and/or update process.
 - Verify use of WebUserCanChangeSSN and WebUserCanChangeStatus keys in Customization Manager to insure they do not conflict with the desired functionality.

Appendix 1

ILLiad User Record Fields

Highlighted fields are protected and cannot be updated by the Enhanced Authentication process. Note that the Default Field Label may have been customized in your Client view.

Default Field Label in ILLiad Client	ILLiad Field Name	General Field Note
Username	Username	Not available for editing
NVTGC	NVTGC	Location/site for designated for user or delivery location Not available for editing
Last Name	LastName	
First Name	FirstName	
ID	SSN	Only editable by Remote Auth Validation when Customization Manager Key WebUserCanChangeSSN is set to Yes .
Status	Status	Only editable by Remote Auth Validation when Customization Manager Key WebUserCanChangeStatus is set to Yes .
Email Address	EEmailAddress	
Phone Number	Phone	
Mobile Phone Number	MobilePhone	
Department	Department	
Location or Delivery Location	NVTGC	
Password	Password	Used only for ILLiad Basic Authentication; value stored in encrypted format Not available for editing
Password Hint	PasswordHint	Not available for editing

Password Change Date	PasswordChangeDate	Not available for editing
Notification Method	NotificationMethod	Valid entries: Mail, Phone, Electronic
Delivery Method	DeliveryMethod	Article delivery method Valid entries: Hold for Pickup Mail to Address
Loan Delivery Method	LoanDeliveryMethod	Method for loan delivery Valid entries: Hold for Pickup Mail to Address
Electronic Delivery	Web	Valid entries: Yes/No Yes value is required for articles to be delivered electronically
Authorized Users	AuthorizedUsers	Name of individuals authorized to pick materials on behalf of user
Last Changed Date	LastChangedDate	Last date user record was changed/updated Not available for editing
Cleared Status	Cleared	Cleared status in ILLiad; also indicated with buttons on ribbon in User record Valid entries: Yes—Cleared No—Not Cleared B—Manual Block BO—Blocked by 3 rd Overdue New—Not yet reviewed for clearance Not available for editing
Address	Address	First Address line
City	City	
State	State	
Zip	Zip	

Site	Site	Additional location information
Expiration Date	ExpirationDate	Static date; in ILLiad 9.1 expiration date will expire user records
Number	Number	Additional id number field
Request Limit	UserRequestLimit	Number of requests permitted; set on user record and/or customization manager settings
Organization	Organization	Additional location information
Fax	Fax	
Shipping Account Number	ShippingAcctNo	
Article Billing Category	ArticleBillingCategory	Assigned category for Borrowing fees for article requests
Loan Billing Category	LoanBillingCategory	Assigned category for Borrowing fees for loan requests
Country	Country	
Secondary Address Line 1	SAddress	
Secondary Address Line 2	SAddress2	
Secondary Address City	SCity	
Secondary Address State	SState	
Secondary Address Zip	SZip	
Secondary Address Country	SCountry	
RSSID	RSSID	Code needed to generate RSS feed messages if user elects to use RSS notification
ILLiad Authentication	AuthType	Check box in user record will indicate use of ILLiad authentication method and record ILLiad in table; Default is other valid entry.
	UserInfo1	User defined field

	UserInfo2	User defined field
	UserInfo3	User defined field
	UserInfo4	User defined field
	UserInfo5	User defined field

Appendix 2

Remote Auth Validation Table Field Descriptions

NVTGC: ILLiad site for this field mapping entry. Necessary only for Shared Server installations.

ILLiadFieldName: ILLiad field name in the User record that external data will be mapped **to** i.e. the ILLiad side of the equation

RemoteFieldName: Name of the field in the external source (remoteauth header) to map **from** i.e. the central identity repository (such as Shibboleth) side of the equation

Validation: Code (i.e. Regular expression) used to validate the external value coming into ILLiad e.g. StudentID field requires ten numeric digits only.

ValidAction: Action to take when passed value passes validation. See **Actions** list below for valid entries.

InvalidAction: Action to take when passed value does not pass validation. See **Actions** list below for valid entries.

ValidDefault: Substitute value to use if validation passes and ValidAction = substitute

InvalidDefault: Substitute value to use if validation fails and InvalidAction = substitute

Overwrite: If true, replace ILLiad value with value from external source. If not, don't save changes to ILLiad user record. Valid entries = Yes or No

LogIfChanged: If true, write a log line if this field is changed. Valid entries Y/N or is this a check box?

Actions

Accept: Use the value of the Remoteauth (external source) field

Substitute: Use the value of the ValidDefault field (if Valid) or InvalidDefault (if not Valid)

Reject: Do not accept user record submitted by the external source

Remote Authentication: User will not be created; user returned to log out page with error message

ILLiad Exclusive: User is logged into ILLiad and record is not updated

Ignore: Do nothing for this field

Appendix 3

Remote Auth Validation Table Example Records

Example 1: Allow ILLiad registration only for Users with a Specific Attribute from the External Source

- Example 1 – If valid, user created and *Approved for ILL* added to the UserInfo1 field; if not valid, no user record created.
- Example 2 – If valid, user cleared, but no information added to record; if not valid, no user record created.

ID	NVTGC	ILLiadFieldName	RemoteFieldName	Validation	ValidAction	InvalidAction	ValidDefault	InvalidDefault	Overwrite	LogIfChanged
14	ILL	UserInfo1	asisMemberOf	*as:applications: library:ill*	substitute	reject	Approved for ILL		Yes	No
14	ILL	UserInfo1	asisMemberOf	*as:applications: library:ill*	ignore	reject			No	No

Example 2: New User Creation

Add a new user record where Username, First Name, Last Name are required and populated in ILLiad from the external source and SNN/ID and Department are also populated but not required. If Department is not given, add *Unspecified* to the Department field.

ID	NVTGC	ILLiadFieldName	RemoteFieldName	Validation	ValidAction	InvalidAction	ValidDefault	InvalidDefault	Overwrite	LogIfChanged
1	ILL	NVTGC	<u>ShibIdentityProvider</u>	urn:mace:inco mmon:institut ion.edu	substitute	reject	yourNVTGC		Yes	No
2	ILL	Username	eppn	.+	accept	reject			No	Yes
3	ILL	Lastname	sn	.+	accept	reject			Yes	Yes
4	ILL	Firstname	givenName	.+	accept	reject			Yes	Yes
5	ILL	SSN	barcode	.+	accept	substitute		123123123	Yes	Yes
6	ILL	EMailAddress	mail	.+	accept	reject			Yes	Yes
7	ILL	Department	<u>asDepartment</u>	.+	accept	substitute		Unspecified	Yes	Yes

Example 3: Update User Status based on Information from External Source

Substitute attribute information from External Source with ILLiad-specific information

ID	NVTGC	ILLiadFieldName	RemoteFieldName	Validation	ValidAction	InvalidAction	ValidDefault	InvalidDefault	Overwrite	LogIfChanged
9	ILL	Status	affiliation	*staff@institution.edu*	substitute	ignore	Staff		Yes	No
10	ILL	Status	affiliation	*graduate@institution.edu*	substitute	ignore	Graduate		Yes	No
11	ILL	Status	affiliation	*undergraduate@institution.edu*	substitute	ignore	Undergrad		Yes	No
12	ILL	Status	affiliation	*faculty@institution.edu*	substitute	ignore	Faculty		Yes	No

Example 4: Common User Notification and Delivery Preferences

Set default delivery and notification methods for all users to receive electronic notification and article delivery.

ID	NVTGC	ILLiadFieldName	RemoteFieldName	Validation	ValidAction	InvalidAction	ValidDefault	InvalidDefault	Overwrite	LogIfChanged
9	ILL	NotificationMethod	Illiadnotificationmethod	.+	ignore	substitute		Electronic	Yes	No
10	ILL	DeliveryMethod	Illiaddeliverymethod	.+	ignore	substitute		Hold for Pickup	Yes	No
11	ILL	LoanDeliveryMethod	Illiaddeliveryloan	.+	ignore	substitute		Hold for Pickup	Yes	No
12	ILL	Web	illiadelectdel	.+	ignore	substitute		Yes	Yes	No