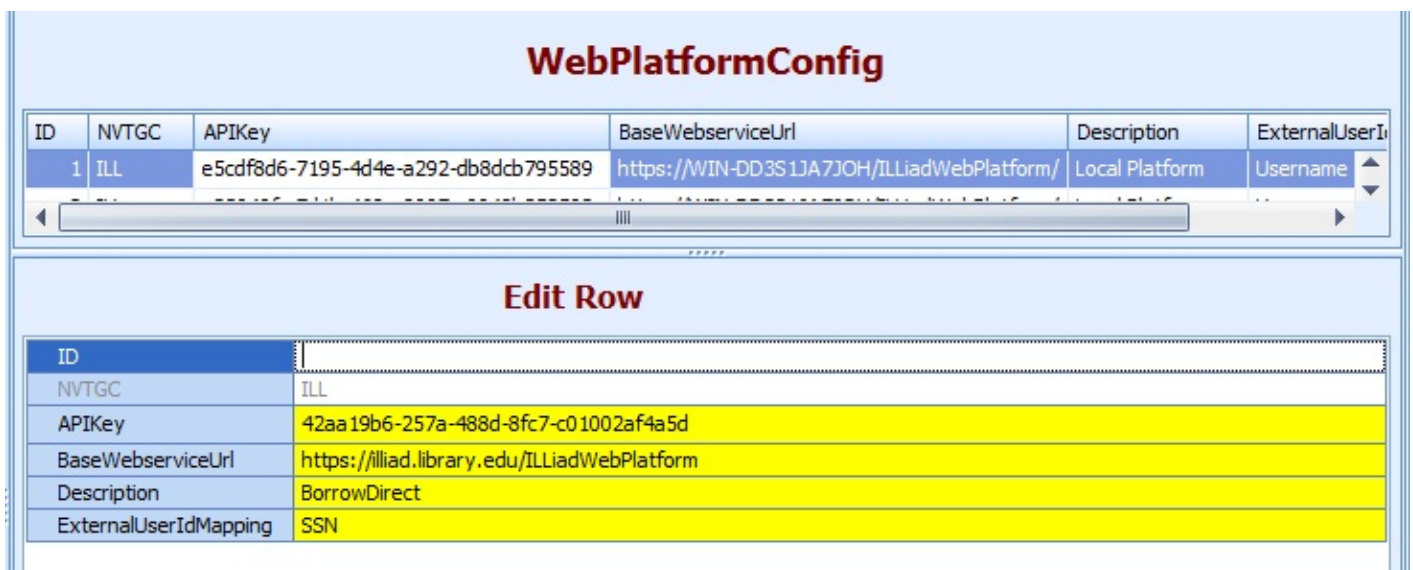# ILLiad Integration Workflows with External Systems

ILLiad addons and exposed API methods in the ILLiad web platform (i.e. API) allow for a complete request workflow between ILLiad and external systems such as Relais D2D, library catalogs and/or discovery layers. It is possible for requests to be born in either ILLiad or an external systems and forwarded to the other system for fullfilment.

ILLiad API Keys

Each ILLiad library will have their own Web Platform endpoint. The external system will need to store the library's ILLiad Web Platform URL and a secure API key. Staff at the library will need to create a new unique API key for the external system. Library staff can be directed to review documentation on generating an API key in the [ILLiad documentation](#).

Example WebPlatform Configuration

In the new entry the library will set the `BaseWebServiceUrl` to their existing ILLiad Web Platform address. The `Description` should be set to a descriptive name for the external system. The value of the `Description` is used in ILLiad history & tracking entries to indicate who made an update to the ILLiad request.

ILLiad Born Requests

Requests born in ILLiad are requests where the patron creates the request in ILLiad directly. Examples of this is the patron entering the request via ILLiad Web forms, OpenURL, or a staff member creates the request for the patron in the ILLiad staff client.

The request is being transferred to the external system for fulfillment. ILLiad provides 2 actions to allow the external system to update the ILLiad request as being filled or unfilled by the external system.

For an external system to accept requests born in ILLiad, an API must be available that can accept the creation of new requests on the external system. Custom ILLiad addons can be configured to integrate with the external API. The external system should accept the unique ILLiad transaction number as part of the request in the external system so that the external system can push updates at a later time.

Marking an ILLiad request filled

When an external request has been fulfilled the external system can mark the originating ILLiad request as fulfilled. Using the ILLiad Web Platform URL and API key that a library partner provided to the external system, along with the unique transaction number that was provided when the external request was created, the external system should send the filled message to the ILLiad web platform.

For more information on the ILLiad Filled API action, visit the [ILLiad Web Platform documentation](#)

The `lender` parameter should provide the unique lender symbol or name as they are known in the external system.

Example

```
PUT https://illiad.library.edu/ILLiadWebPlatform/Transaction/12345/filled/
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
{ "Lender" : "UCHICAGO" }
```

Marking an ILLiad request unfilled

In the event that the external system is unable to fulfill the request, the external system should mark the originating ILLiad request as unfilled. By marking the ILLiad request unfilled the borrowing institution will be notified in ILLiad that the request could not be fulfilled through the external system and will need to use other methods of obtaining the material for their patron. The request in ILLiad will be routed back to a processing queue to allow staff to search and send the request via other systems (i.e. OCLC). The unfilled action requires a reason that the request could not be fulfilled. The reason is a string value and can include any relevent information for the borrowing institution.

For more information on the ILLiad Unfilled API action, visit the [ILLiad Web Platform documentation](#)

Example

```
PUT https://illiad.library.edu/ILLiadWebPlatform/Transaction/12345/unfilled/
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
{ "Reason" : "Material not on shelf at UCHICAGO." }
```

External Born requests

In the event that a request starts within an external system but cannot be filled within that system, the external system can transfer the request to ILLiad for fulfillment. The external system will create an ILLiad transaction for a specific ILLiad username.

Finding Users

The unique username may be different between ILLiad and the external system. For this reason the external system should first lookup the ILLiad user record based on the external user id. An ILLiad library will map the external user id to an ILLiad user field when they creates an API key for the external system. The external system will perform a GET request on the Web Platform Users/ExternalUserId action with the external user id. The ILLiad web platform will return the matching user information.

Example

```
GET https://illiad.library.edu/ILLiadWebPlatform/Users/ExternalUserId/123456789
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
```

Creating Requests

After finding the ILLiad username the external system should create a request in ILLiad. The POST Transaction requires the ILLiad username, a RequestType, and ProcessType to create a request. All other fields are optional and should not be included in the body of the API request if the external system does not want to explicitly set the field. An example of standard mappings is included below but the external system should consult with their library for mappings between data in the external system and ILLiad. The response will contain information on the newly created transaction, including the new TransactionNumber which can be used to retrieve status information in the future.

For more information on the ILLiad Create Transaction API action, visit the [ILLiad Web Platform documentation](#)

Article (Copy)

The external system should use the ILLiad *Article* `RequestType` and Journal/Article fields when creating a request for an article (or other material that is not returned to the lending institution).

Loan Fields

- **ProcessType** should be set to *Borrowing*
- **RequestType** must be set to *Article*
- **PhotoJournalTitle** is the journal title
- **PhotoArticleTitle** is the article title
- **PhotoArticleAuthor** is the article author
- **PhotoJournalVolume** is the journal volume
- **PhotoJournalIssue** is the journal issue
- **PhotoJournalYear** is the year the journal was published
- **PhotoJournalMonth** is the month the journal was published
- **PhotoJournalInclusivePages** is the page range of the article, e.g. 252–307.
- **PhotoItemPlace** is the publication location
- **PhotoItemPublisher** is the name of the publisher
- **PhotoItemEdition** is the edition of the work
- **ISSN** is the ISSN standard number

Example

```
POST https://illiad.library.edu/ILLiadWebPlatform/Transaction
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
{
"Username" : "jdoe",
"RequestType" : "Article",
"ProcessType" : "Borrowing",
"PhotoJournalTitle" : "Journal of Interlibrary Loan, Document Delivery & Electronic
Reserve",
"PhotoArticleTitle" : "Interlibrary Loan in the United States: An Analysis of Academic
Libraries in a Digital Age",
"PhotoArticleAuthor" : "Williams, Joseph; Woolwine, David",
"PhotoJournalVolume" : "21",
"PhotoJournalIssue" : "4",
"PhotoJournalYear" : "2011",
"PhotoJournalInclusivePages" : "165-183",
"ISSN": "1072-303X"
}
```

Book (Returnable material)

The external system should use the ILLiad *Loan* `RequestType` and Loan fields when create a request for a book (or other returnale types of material).

Loan Fields

- **ProcessType** should be set to *Borrowing*
- **RequestType** must be set to *Loan*
- **LoanTitle** is the book title
- **LoanAuthor** is the author of the book
- **ISSN**, despite the field name, the external system should put the standard number/ISBN into this field
- **LoanPublisher** is the publisher name
- **LoanPlace** is the publication location
- **LoanDate** is the publication date/year
- **LoanEdition** is the edition of the work

Example

```
POST https://illiad.library.edu/ILLiadWebPlatform/Transaction
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
{
"Username" : "jdoe",
"RequestType" : "Loan",
"ProcessType" : "Borrowing",
"LoanTitle" : "Journal of Interlibrary Loan, Document   Delivery & Electronic Reserve",
"LoanAuthor" : "Williams, Joseph; Woolwine, David",
"ISSN": "1072-303X"
}
```

Requesting Status Information

An external system can find status information of an ILLiad request by retrieivng transaction information. Since each ILLiad library may use a different set of transaction statuses the external system may need to follow up with the library to better understand the data. ILLiad will store transaction status information and the date it was switched to that status in the `TransactionStatus` and `TransactionStatusDate` fields respectively.

Example

```
GET https://illiad.library.edu/ILLiadWebPlatform/Transactions/123456789
APIKey: 42aa19b6-257a-488d-8fc7-c01002af4a5d
Content-Type: application/json
Accept: application/json
```