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Designing and Using Normalization Rules

Session Objectives

- Session Description: Normalization rules are created and used to modify bibliographic or holdings metadata either individually or using batch processes
- By the end of this session you will know, understand and/or be able to:
 - Create normalization rules
 - Test normalization rules to ensure correct behaviour
 - Construct normalization processes
 - Run a job against a set of records

Agenda

- 1** Creating and Testing Normalization Rules
- 2** Creating Normalization Processes
- 3** Creating Sets and Running Jobs
- 4** Next Steps, Support Resources and Feedback

Creating and Testing Normalization Rules



Normalization Rules

Written in a specific syntax, using the **drools** language, allowing cataloguing operators to create rules that enable Alma to

- Perform a batch update to sets of records by running a job,
- Relate a normalization process to an import profile
- Apply a normalization rule or process to an External Search resource

Operators may preview the outcome of applying a normalization rule to a bibliographic record

Normalization Rules

Alma operators may create rules to

- add fields and subfields
- remove fields and subfields
- modify text
- copy fields
- combine
- replace field tags
- change indicators

Working with Normalization Rules

◀ Authority Priorities | Working with Merge Rules ▶

PERMISSIONS: To work with normalization rules, you must have the following role:

- Catalog Administrator
- Catalog Manager
- Cataloger

Normalization rules provide the building blocks for making enhancements to MARC 21 records. These enhancements can be made to individual records in the MD Editor (**Edit > Enhance the Record**) or to a group of records using sets.

In order to process record enhancements to an individual record, use the Enhance Record option (refer to the section [MD Editor Menu and Toolbar Options](#) and [Enhance the Record](#)) or **Apply Changes** to an individual record when you use the Preview normalization rule capability (see the procedure [To preview the outcome of a rule file](#)).

In order to process record enhancements to a set of records, you need to create a process using the MARC Drool Normalization process (see [Working with Normalization Processes](#)) and specify the normalization rule that you create with the MD Editor (refer to the procedure [To create a new normalization rule file](#)). Once you have created the process, you can, subsequently, run a job using that process (see [Running Manual Jobs on Defined Sets](#)).

Normalization rules are created by following a specific programming syntax and using the editing window provided in the MD Editor under the Rules tab.



– Table of contents

1. Normalization Rule Syntax

- 1.1. Record Elements
- 1.2. Conditions
- 1.3. List of Actions
- 1.4. Wildcards and Special Characters

1.4.1. Example: Using the Period in a Normalization Rule with replaceContents

1.4.2. Example: Using the Period in a Normalization Rule with addField

1.5. Normalization Rule Examples

Creating a Normalization Rule Copying Syntax

The screenshot shows a software interface with a menu open. The menu items are:

- +
- Remove Field *Ctrl+F6*
- Add Subfield *F9*
- Add Alternate Graphic Representation
- Add Rule** (highlighted with a green box and arrow)
- Enhance the Record *Ctrl+Alt+E*
- Expand from Template *Ctrl+E* (highlighted with a green arrow)
- Generate Author Number *F4*
- Split Editor *F6*
- Full Screen *F7*
- Open Form Editor *Ctrl+F*
- Close Form Editor *Esc*
- Cut *Ctrl+X*
- Copy *Ctrl+C*
- Paste *Ctrl+V*
- Show Directional Characters
- Insert Directional Characters

The 'Add Rule' submenu is open, showing a list of normalization rules:

- Change 955 to 655 for Swedish Nat. Cat unconditionally
- Change field 536 to 973 if 536 has Donated or donated anywhere in subfield a
- Create and replace 245 h according to multiple values in multiple control fields
- Create or fix 245 2nd indicator according to language defined in 008
- Delete 866 867 868 except for ones which have a 0 in subfield 8
- Delete 866 867 868 if it has a subfield 8
- Delete 900 if subfield a has text Local

Creating a Normalization Rule From Scratch

The image shows a software interface for creating normalization rules. On the left, a text editor displays a rule definition:

```
copy contents of 035 field to 982 field

rule "copy contents of 035 field to 982 field"

  when
    (TRUE)
  then
    copyField "035" to "982.a"
  end
```

In the center, a list of existing normalization rules is shown. The rule "copy contents of 035 field to 982 field" is highlighted with a red box. The list includes:

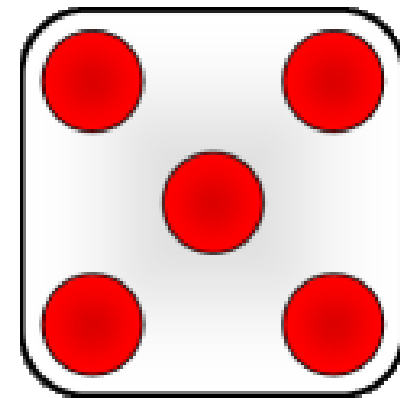
- Normalization rules
 - Private
 - Shared
 - Change 856 2nd indicator
 - Change 900
 - Copied from WorldCat
 - Copy Ofchange holdings location from Grad to Science
 - Delete 952 fields
 - Delete 9XX and 029 fields
 - Delete 9XX fields
 - add 245 h [Video]
 - add 245 h [vidéo]
 - add 245 h [אידי]
 - change holdings
 - change holdings location from Grad to Science
 - change indicator 1 in 852
 - copy contents of 035 field to 982 field**
 - drools/fix-245-2nd-indicator.dslr
 - drools/normalize_980_981_eocr.dslr
 - drools/normalize_bib_to_holding.dslr
 - drools/remove856.dslr
 - drools/remove949.dslr
 - remove 999.dslr
- Community
 - Merge rules
 - Indication rules
 - Brief level rules
 - Authority headings rules
 - Normalization Rules (DC)

At the bottom right of the interface, there are "Preview" and "Save" buttons.



Testing Normalization Rules – Five Steps

1. Using the Repository Search, locate and open a record on which to test the rule in the Metadata Editor.
2. Switch to split editor mode with the record in the left pane.
3. Click on the blank right pane of the split editor.
4. Go to the Rules tab, select the normalization rule you want to test and click edit to open the rule in right pane.
5. Test the rule by clicking on the **Preview** button.



Creating Normalization Processes



Normalization Processes



- Normalization rules, created in the Metadata Editor, may be used in processes that focuses on global data change
- Normalization rule processes, configured by a Catalog Administrator, may include one or more normalization rules

Normalization Processes

Profile Details

MARC21 Bibliographic

Family	MARC21	Type	Bibliographic
Usage	BIB_MMS		

Fields | Normalization Processes | Validation Processes | Validation Exception Profile List | Other Settings

[+ Add Process](#)

Active	Name	Description	Contributed by
<input checked="" type="checkbox"/>	Add 245 sf h [Video]	This will add 245 sub field h video when pos. 6 of the LDR field is "g"...	-
<input checked="" type="checkbox"/>	Add 900 copied from worldcat	Add 900 copied from worldcat	-
<input type="checkbox"/>			

Process Details - General Information

BIB_MMS

Business Entity ID	Bibliographic title	Type	Marc 21 Bib normalization
--------------------	---------------------	------	---------------------------



Name *

Description *

Status

Normalization Processes – Adding Tasks

Add Tasks

	Name	Description
1	<input type="checkbox"/> marc21BibResequenceTask	MARC21 BIB Re-Sequence task
2	<input checked="" type="checkbox"/> MarcDroolNormalization	Marc Drool Normalization
3	<input type="checkbox"/> marc21BibClearEmptyFieldsTask	MARC21 BIB Clear Empty Fields task
4	<input type="checkbox"/> MmsTagSuppressed	Sets the Suppressed flag of MMS
5	<input type="checkbox"/> MmsTagSyncExternal	Sets the SyncExternal flag of MMS
6	<input type="checkbox"/> marc21createControlNumber	MARC21 BIB Create Control Number task

Normalization Processes – Adding Tasks

Process Details - Add Tasks 1 2 3 Cancel Back Next

BIB_MMS

Business Entity Name	Bibliographic title Replace hc with hardcover in 020a	Type	Marc 21 Bib normalization
-----------------------------	--	-------------	---------------------------

+ Add Tasks 🔗 ⚙️

	Name	Description	
1	MarcDroolNormalization	Marc Drool Normalization	⋮

Normalization Processes – Task Parameters

Process Details - Task Parameters

1 2 3 Cancel Back Save

BIB_MMS

Business Entity Name	Bibliographic title Replace hc with hardcover in 020a	Type	Marc 21 Bib normalization
-----------------------------	--	-------------	---------------------------

MARC DROOL NORMALIZATION

Drools File Key *

- Change 856 2nd indicator
- Change 900
- Copied from WorldCat
- Copy Ofchange holdings location from Grad to Science
- Delete 952 fields
- Delete 9XX and 029 fields
- Delete 9XX fields
- Replace hc with hardcover in 020\$a (unconditional)**
- add 245 h [Video]
- add 245 h [vidéo]

Replace hc with hardcover in 020\$a (unconditional)

Normalization Processes

Process Details - Task Parameters

1 — 2 — 3

Cancel Back Save

BIB_MMS

Business Entity Name		Type	
Bibliographic title		Marc 21 Bib normalization	
Replace hc with hardcover in 020a			

MARC DROOL NORMALIZATION

Drools File Key *

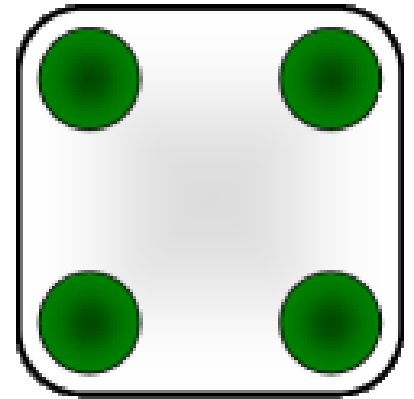
Creating Sets and Running Jobs Using Normalization Processes



Running Normalization Processes

Normalization processes may be run...

1. Via **Enhance the record** option in Metadata editor
2. For a set of records assembled via **Manage Sets** function
3. When adding a file of records via **Import** function
4. While importing individual records via **External Search**



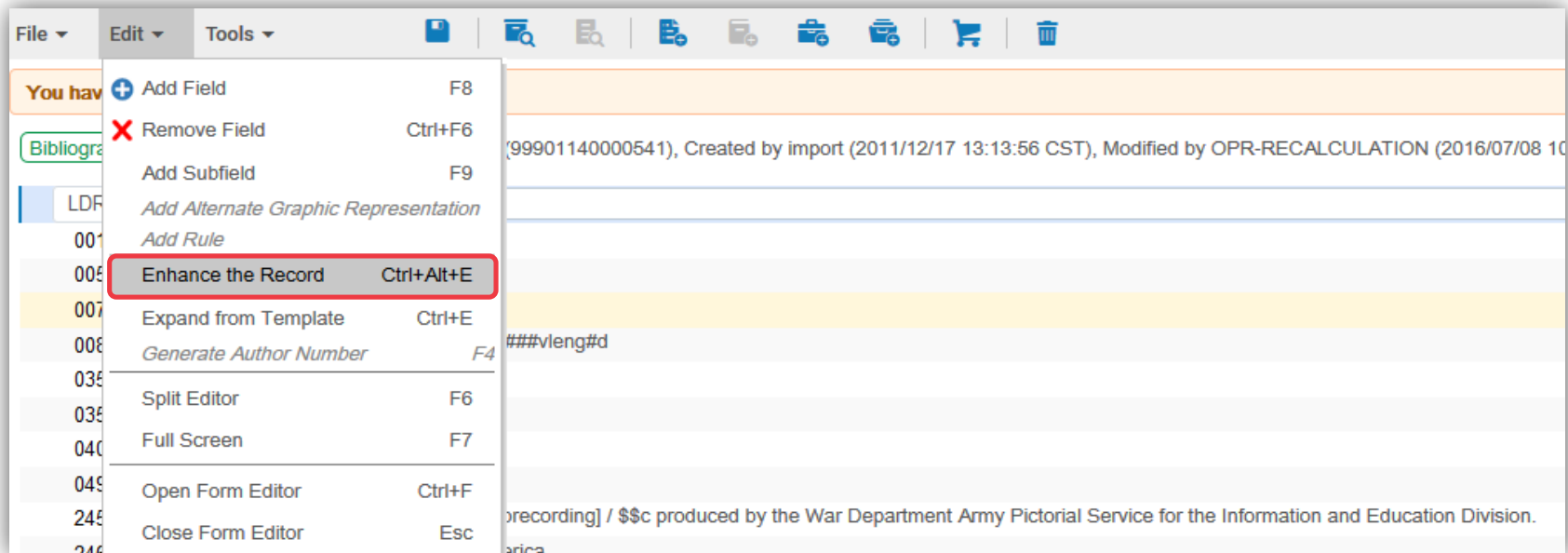
Enhance the Record

Bibliographic

Working on - War comes to America (99901140000541), Created by import (2011/12/17 13:13:56 CST), Modified by OPR-RECALCULATION (2016/07/08 1

LDR	01402ngm#a2200301la#4500
001	99901140000541
005	20160708100405.0
007	vf-bbaho-
008	870119s1986####nyu066#e#####vleng#d
035	\$\$a ocm15087874
035	\$\$a (TrN)43369-train20072_c2db
040	\$\$a VFC \$\$c VFC \$\$d SHC
049	\$\$a SHCI
245 0 0	\$\$a War comes to America \$\$h [videorecording] / \$\$c produced by the War Department Army Pictorial Service for the Information and Education Division.
246 3 3	\$\$a Frank Capra's War comes to America.
260	\$\$a New York : \$\$b Goodtimes Home Video Corp., \$\$c 1986.
300	\$\$a 1 videocassette (VHS) (66 min.) : \$\$b sd., b& \$\$c 1/2 in.
490 0	\$\$a Why we fight
500	\$\$a VGT-2005
500	\$\$a "Special Service Division information film #7."
500	\$\$a Originally produced as a motion picture in 1945 under the direction of Frank Capra.
500	\$\$a This videocassette produced as part of Goodtimes Movie Classics' World War II, Collector's edition series.

Enhance the Record



The screenshot shows a software interface with a menu open. The menu items are:

- File ▾
- Edit ▾
- Tools ▾
- ➕ Add Field F8
- ✖ Remove Field Ctrl+F6
- Add Subfield F9
- Add Alternate Graphic Representation
- Add Rule
- Enhance the Record Ctrl+Alt+E** (highlighted with a red box)
- Expand from Template Ctrl+E
- Generate Author Number F4
- Split Editor F6
- Full Screen F7
- Open Form Editor Ctrl+F
- Close Form Editor Esc

The background shows a record editor with fields like 'You have', 'Bibliography', 'LDR', '001', '005', '007', '008', '035', '036', '040', '045', '245', '246'. The '005' field contains the text: '(99901140000541), Created by import (2011/12/17 13:13:56 CST), Modified by OPR-RECALCULATION (2016/07/08 10'. The '008' field contains '###vlang#d'. The '245' field contains 'Recording] / \$c produced by the War Department Army Pictorial Service for the Information and Education Division. The '246' field contains 'erica'.

Enhance the Record

Bibliographic

Working on - War comes to America (99901140000541), Created by import (2011/12/17 13:13:56 CST), Modified by OPR-RECALCULATION (2016/07/08 10:04:00)

LDR	01402ngm#a2200301la#4500
001	99901140000541
005	20160708100405.0
007	vf-bbaho-
008	870119s1986####nyu066#e#####vleng#d
035	\$\$a ocm15087874
035	\$\$a (TrN)43369-train20072_c2db
040	\$\$a VFC \$\$c VFC \$\$d SHC
049	\$\$a SHC
245 0 0	\$\$a War comes to America
246 3 3	\$\$a Frank Capra
260	\$\$a New Line
300	\$\$a 1 videocassette
490 0	\$\$a Why
500	\$\$a VGI
500	\$\$a "Special Service Division
500	\$\$a Originally produced as
500	\$\$a This videocassette prod
520	\$\$a Briefly reviews the histo caused the United States to
650 0	\$\$a World War, 1939-1945
650 0	\$\$a World War, 1939-1945
651 0	\$\$a United States \$\$x Histo
700 1	\$\$a Capra, Frank, \$\$d 1897

Enhance the Record

Choose: Add 245 sf h [Video]

Normalization: Add 245 sf h [Video]

Type: Add 900 copied from worldcat

Ok: Add BIB to Collection

Change holdings location from main to edu-juv

Delete all 9XX fields

Fix 856 2nd indicator

Marc21 Bib Initial Normalization

Marc21 Bib normalize on save

Marc21 Bib Re-sequence

Marc21 Bib Re-sequence And Clear empty fields

remove 245 \$\$h [videorecording]

Remove Bib Field 999

Remove Vendor Data 856

Remove Vendor Data 949

Remove Vendor Data 980 981 993

Suppress Bib records from discovery

Synchronize Bib records with external catalog

ment Army Pictorial Service for the Information and Education Division.

Capra.

ar II, Collector's edition series.

, and beliefs of the American people. Explains the events from 1931 to 1941 that

Enhance the Record

Enhance the Record

Choose

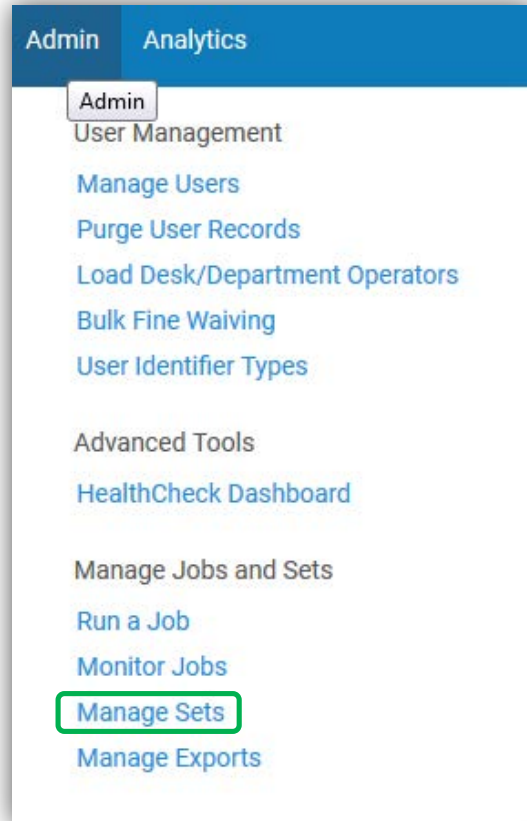
Normalization

Type:

Enhance the Record

Bibliographic	
Working on - War comes to America (99901140000541), Created by import (2011/12/17 13:13:56 CST), Modified by connie.braun (2011/12/17 13:13:56 CST)	
LDR	01384ngm#a2200301la#4500
001	99901140000541
005	20180413124154.0
007	vf-bbaho-
008	870119s1986####nyu066#e#####vleng#d
035	\$\$a ocm15087874
035	\$\$a (TrN)43369-train20072_c2db
040	\$\$a VFC \$\$c VFC \$\$d SHC
049	\$\$a SHCI
245 0 0	\$\$a War comes to America / \$\$c produced by the War Department Army Pictorial Service for the Information and Education Division.
246 3 3	\$\$a Frank Capra's War comes to America.
260	\$\$a New York : \$\$b Goodtimes Home Video Corp., \$\$c 1986.
300	\$\$a 1 videocassette (VHS) (66 min.) : \$\$b sd., b& \$\$c 1/2 in.
490 0	\$\$a Why we fight
500	\$\$a VGT-2005
500	\$\$a "Special Service Division information film #7."
500	\$\$a Originally produced as a motion picture in 1945 under the direction of Frank Capra.
500	\$\$a This videocassette produced as part of Goodtimes Movie Classics' World War II, Collector's edition series.

Normalization Job for a Set



- Each process may be run on a set of records
- Assumes processes have been created
- Choose “Run Process” from within Resource Configuration menu

Normalization During Import

Processes we configure may also be used with an import profile to *Correct the data* of records in the file

The screenshot displays a web interface for loading bibliographic records. The main title is "Loading Bibs with No Inventory - Binary". Below the title, there are tabs for "Profile Details", "Normalization & Validation", "Match Profile", and "Set Management". The "Normalization & Validation" tab is active. Under the "Filter" section, there is a dropdown menu labeled "Filter out the data using". The "Normalization" section contains a dropdown menu labeled "Correct the data using" which is open, showing a list of options: "Add 245 sf h [Video]", "Add 900 copied from worldcat", "Add BIB to Collection", "Change holdings location from main to edu-juv", and "Delete all 9XX fields". The "Delete all 9XX fields" option is highlighted with a red rectangular box. Below the normalization options, there is a section for "Validation Exception Process" with a dropdown menu labeled "Handle invalid data using".




Normalization During Import

```
=LDR 01238cam a22003258i 4500
=001 19726588
=005 20170628150859.0
=008 170619s2017\\uctu\\\\\\\\\\\\\\\\000\\0\\end\\
=906 \\$a7$bcbc$corignew$d1$eecip$f20$gy-gencatlg
=925 0\\$aacquire$b1 shelf copy$xpolicy default
=955 \\$br12 2017-06-19$irl12 2017-06-19 to Dewey$wxm08 2017-06-23 (telework)
=010 \\$a 2017012830
=020 \\$a9781493027552 (hardcover : alk. paper)
=020 \\$z9781493027569 (ebook)
=040 \\$aDLC$beng$erda$cDLC
=042 \\$apcc
=050 00$aTR729.D6$bD692 2017
=082 00$a779/.32977$223
=100 1\\$aDratfield, Jim,$eauthor.
=245 10$aDay of the dachshund /$cJim Dratfield.
=263 \\$a1710
=264 11$aGuilford, Connecticut :$bLyons Press,$c[2017]
=300 \\$apages cm
=336 \\$atext$btxt$2rdacontent
=337 \\$aunmediated$bn$2rdamedia
=338 \\$avolume$bnc$2rdacarrier
=650 10$aPhotography of dogs.
=650 10$aDachshunds$vPictorial works.
=776 08$iOnline version:$aDratfield, Jim, author.$tDay of the dachshund$dGuilford, Connecticut : Lyons Press, [2017]$z9781493027569$w(DLC) 2017030604
=963 \\$aCaroline McManus; phone: 203-4584557; email: cmcmanus@rowman.com; bc: mmcclellan@rowman.com
```

Normalization During Import

Bibliographic

Working on - Day of the dachshund (99210541500521), Created by Ex Libris (2018/04/16 08:42:49 CDT), Modified by System (2018/04/16 08:42:20 CDT)

LDR	01238cam#a22003258i#4500
001	99210541500521
005	20170628150859.0
008	170619s2017####ctu#####000#0#eng##
010	\$\$a ##2017012830
020	\$\$a 9781493027552 (hardcover : alk. paper)
020	\$\$z 9781493027569 (ebook)
040	\$\$a DLC \$\$b eng \$\$e rda \$\$c DLC
042	\$\$a pcc
050 0 0	\$\$a TR729.D6 \$\$b D692 2017
082 0 0	\$\$a 779/.32977 \$\$2 23
 100 1	\$\$a Dratfield, Jim, \$\$e author.
245 1 0	\$\$a Day of the dachshund / \$\$c Jim Dratfield.
263	\$\$a 1710
264 1	\$\$a Guilford, Connecticut : \$\$b Lyons Press, \$\$c [2017]
300	\$\$a pages cm
336	\$\$a text \$\$b txt \$\$2 rdacontent
337	\$\$a unmediated \$\$b n \$\$2 rdamedia
338	\$\$a volume \$\$b nc \$\$2 rdacarrier
 650 0	\$\$a Photography of dogs.
 650 0	\$\$a Dachshunds \$\$v Pictorial works.
776 0 8	\$\$i Online version: \$\$a Dratfield, Jim, author. \$\$t Day of the dachshund \$\$d Guilford, Connecticut : Lyons Press, [2017] \$\$z 9781493027569 \$\$w (DLC) 2017030604

Import via External Search

Copied from WorldCat

```
rule "Add data field 900 with subfield a = Copied from WorldCat if it doesnt exist"  
when  
  ( not exists "900.a.Copied from WorldCat" )  
then  
  addField "900.a.Copied from WorldCat"  
end
```

BIB_MMS

Business Entity Name	Bibliographic title	Type	Marc 21 Bib normalization
	Add 900 copied from worldcat		

General Information

Task List

Task Parameters

MARC DROOL NORMALIZATION

Drools File Key *

Copied from WorldCat

Import via External Search

File Edit Tools

Search Cataloging Profile WorldCat

Find: AND Any Field Contains Phrase

AND Title Contains Phrase

AND Creator Contains Phrase

AND Subjects Contains Phrase

AND ISBN Contains Phrase

AND ISSN Contains Phrase

AND System Number Contains Phrase

AND Year of Publication Contains Phrase

Equals

Cancel Clear Search

Import via External Search

External Search Profile List Ba

1 - 5 of 5 + Add External Search Profile

	▲ Name	↕ Description	
1	British Library	British Library Public Catalog	<input type="button" value="..."/>
2	DNB - Deutsche Nationalbibliothek	DNB - Deutsche Nationalbibliothek	<input type="button" value="..."/>
3	Libraries Australia	Libraries Australia	<input type="button" value="..."/>
4	Library of Congress	Library of Congress (LOC)	<input type="button" value="..."/>
5	WorldCat	WorldCat	<input type="button" value="..."/>

General Information **Resource List**


External Resources Selected ▼



1 - 1 of 1

	Resource Name	
1	WorldCat	<input type="button" value="..."/>

Import via External Search

Search External Resource Setup

1 - 6 of 6 [+ Add External Resource](#) 

▲ Resource Name	
1	British Library Public Catalog 
2	COPAC 
3	DNB - Deutsche Nationalbibliothek 
4	Libraries Australia 
5	Library of Congress (United States Library of Congress (LOC)) 
6	WorldCat 

Import via External Search

Search External Resource Setup

WorldCat

Resource ID	XXX02510	Creator	OCLC / FirstSearch
Publisher	OCLC	Resource Type	Index
Free/By Subscription	By Subscription	Description	OCLC WorldCat database is the OCLC online catalog
Search Hints	-	URL Site	http://www.oclc.org/support/documentation/firstsearch/

Institution Details

Resource Name	<input type="text" value="WorldCat"/>	Normalization Process	<input type="text" value="Look-up or select"/>
Merge Method	<input type="text" value="Overlay all fields but local"/>	Credentials	<input type="text" value="Add 245 sf h [Video]"/>
			<input type="text" value="Add 900 copied from worldcat"/>

Import via External Search

File Edit Tools

Search Cataloging Profile WorldCat

Find: Any Field Contains Phrase

AND Title Contains Phrase unlikely diplomats

AND Creator Contains Phrase campbell

AND Subjects Contains Phrase

AND ISBN Contains Phrase

AND ISSN Contains Phrase

AND System Number Contains Phrase

AND Year of Publication Equals

Cancel Clear Search

WorldCat (OCLC)(7)

Refine Search

1 - 7 of 7 Records

1 **Unlikely diplomats : the Canadian brigade in Germany, 1951-64 /** View Import

By Campbell, Isabel, (Book UBC Press., Vancouver, British Columbia :, 2013)

ISBN: 9780774825634

Record Source: NLC

Held By Me: No Total found: 0

Subjects: History., 1900-1999, Kanada ...

Other System Number: (OCoLC)858117357, (OCoLC)854497793

Import via External Search

Bibliographic

Working on - Unlikely diplomats : (99152582339603941)

- 610 1 0 \$\$a Canada. \$\$b Canadian Armed Forces \$\$x History \$\$y 20th century.
- 610 2 0 \$\$a North Atlantic Treaty Organization \$\$x Armed Forces \$\$z Germany.
- 651 0 \$\$a Canada \$\$x Military policy.
- 651 0 \$\$a Canada \$\$x Military relations \$\$z Germany.
- 651 0 \$\$a Germany \$\$x Military relations \$\$z Canada.
- 610 1 7 \$\$a Canada. \$\$b Canadian Armed Forces. \$\$2 fast \$\$0 (OCoLC)fst00531186
- 610 2 7 \$\$a North Atlantic Treaty Organization. \$\$2 fast \$\$0 (OCoLC)fst00529467
- 650 7 \$\$a Armed Forces. \$\$2 fast \$\$0 (OCoLC)fst00814586
- 650 7 \$\$a Military policy. \$\$2 fast \$\$0 (OCoLC)fst01021386
- 650 7 \$\$a Military relations. \$\$2 fast \$\$0 (OCoLC)fst01353799
- 651 7 \$\$a Canada. \$\$2 fast \$\$0 (OCoLC)fst01204310
- 651 7 \$\$a Germany. \$\$2 fast \$\$0 (OCoLC)fst01210272
- 650 7 \$\$a Militär \$\$2 gnd
- 611 2 7 \$\$a BMBF-Statusseminar \$\$2 gnd
- 600 0 7 \$\$a Kanada \$\$2 gnd
- 648 7 \$\$a 1900-1999 \$\$2 fast
- 655 7 \$\$a History. \$\$2 fast \$\$0 (OCoLC)fst01411628
- 775 1 \$\$a Campbell, Isabel, 1957- \$\$t Unlikely diplomats. \$\$k Studies in Canadian military history \$\$k Studies in Canadian military history \$\$w (CaOONL)20139051880
- 776 1 \$\$a Campbell, Isabel, 1957- \$\$t Unlikely diplomats. \$\$k Studies in Canadian military history \$\$k Studies in Canadian military history \$\$w (CaOONL)20139051880
- 830 0 \$\$a Studies in Canadian military history.
- 900 \$\$a Copied from WorldCat

Next Steps, Support Resources and Feedback



Next Steps and Resources

- Include documentation links in the CKC relative to your topic:
 - [Working with Normalization Rules](#)
- Additional support resources within the ExLibris Ecosystem:
 - [Idea Exchange](#)
 - [Developer Network](#)
- [2018 Technical Seminar Presentations](#) (Cross-Product section of CKC)

Questions?

Any Final Questions?





Thank You!

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