

# Getting more out of MARC for music and movies with Primo: strategies for display, search and faceting

## 1. MARC record

336		text #b txt #2 rdacontent
337		unmediated #b n #2 rdamedia
338		volume #b nc #2 rdacarrier
386		Americans #a Women #2 lcdgt

- Primo is a library search interface that can incorporate both MARC and non-MARC data from multiple sources

- All incoming records are transformed into a standard format: PNX (Primo normalized XML)
- PNX record has **sections**, such as search, display, facets, links
- Each section has **fields**, both out-of-the-box fields, such as title and creator, and 50-150 locally-defined fields



☆ **A fierce brightness : twenty-five years of women's poetry**  
 Margarita Donnelly, editor, writer of foreword.; Beverly McFarland, 1937- editor.; Micki Reaman, 1963- editor.; Hilda Raz, writer of introduction.; Carole Oles, writer of introduction.; Corvallis, Oregon : Calyx Books; 2002

● Available at Knight Library 2nd-4th Floors (PS589 .F54 2002 ) and other locations

Find in a library Details

Genre/Form: Poetry; Poetry  
 Additional subjects: 1900-1999; American poetry; American poetry -- Women authors; Women  
 Identifier: ISBN: 093497182X ;ISBN: 9780934971829 ;ISBN: 0934971838 ;ISBN: 9780934971836  
 OCLC Number: 50583369  
 Alma IZ record number: 99111879301852  
 Alma NZ record number: 99177940550001451

## 3. Primo display

Work Information: Creator Demographic Group: Americans; Women;

```
<record xmlns="http://www.exlibrisgroup.com/xsd/
primo/primo_nm_bib" xmlns:sear="http://www.exlib
risgroup.com/xsd/jaguar/search">

  <control>...</control>

  <display>
    <type>pbook</type>
    <title>A fierce brightness : twenty-
      five years of women's
      poetry</title>
    ...
    <lds19>Creator Demographic Group:
      Americans; Women;</lds19>
    <lds37>Poetry; Poetry</lds37>
    ...
  </display>
  ...
</record>
```

## 2. PNX record

- Normalization rules to transform incoming records into PNX are written in Primo's web-based Back Office interface

# Example Normalization Rule

Field name (local field #19 in display section)

Rule number 4 in list of rules for local display field 19; sometimes order does matter

Input for the rule (MARC 386 \$a); rule processes one field at a time, but all instances of a subfield from the same field at once

Conditions that have to be met for input to be written to the PNX record (The current 386 field must include, in addition to \$a, either \$3 or \$i)

The screenshot shows a rule configuration interface with several sections:

- Rule group:** display\_ids19
- Source:** MARC
- Field:** 386
- Subfield:** Include a
- Enabled:**
- Conditions logic:** True
- Conditions relation:** Or
- Condition 1 - Logic:** True
- Condition 1 - Source:** Type: MARC, Field: 386, Ind1: , Ind2: , Subfield: Include 3, Success If: Match Current
- Condition 1 - Routines:** General Parameter: , Routine: Input exists, Parameter:
- Condition 2 - Logic:** True
- Condition 2 - Source:** Type: MARC, Field: 386, Ind1: , Ind2: , Subfield: Include i, Success If: Match Current
- Condition 2 - Routines:** General Parameter: , Routine: Input exists, Parameter:
- Transformations:** Transformation: Define subfield delimiter, Parameter: ;^
- Action:** MERGE, Behavior: , First delimiter: , First delimiter Space: After, Repeat Number: , Remaining delimiters: , Remaining delimiters spaces: None

Changes that will be made to the input before it is written to the PNX record (adds punctuation between multiple instances of \$a by converting the subfield marker into a semicolon and space, where ^ represents the space); by default, subfields are separated by a space  
ex. Americans Women → Americans; Women

How **output** of this rule relates to output of previous rules (merge = append to previous data, in this case content of \$3 and/or \$i, as part of the same instance of local display field 19)

# 257 (Country of Producing Entity) Display: Accounting for Variations

Two ways to record data in 257:

1. **string** (AMIM—Archival Moving Image Materials—cataloging style)

257 \$aFrance ; Italy.

2. **subfielded values from controlled vocabulary with no punctuation:**

257 \$aFrance\$aItaly\$2naf

**Additional variants** are not uncommon:

257 \$aFrance ;\$aItaly.\$2naf

257 \$aFrance ; Italy\$2naf

(\$a is same as 1<sup>st</sup> example in 1<sup>st</sup> column except it lacks final period)

## Goal: Display all variants in a standard, readable form

1. Change any subfield delimiters to “;” (^ indicates space)

Transformation

Parameter

Define subfield delimiter

;;^

2. Replace double semicolons with a single semicolon (@@ separates term to find and term to replace with)

Replace string by string ;;;@@;

3. Replace spaces with “++” Need this intermediate step because “replace string by string” won’t take space as input (either “ ” or “^”)

Replace Spaces by String ++

4. Remove any spaces in front of a semicolon by replacing “++;” with “;”

Replace string by string ++;@@;

5. Change “++” back to space

Replace string by string ++@@^

6. Remove periods from the end of the string Remove characters from the end .

	Start (\$a)	\$aFrance ; Italy.	\$aFrance\$aItaly	\$aFrance ;\$aItaly.
1	\$a → “;”	France ; Italy.	France;Italy	France ;;Italy.
2	“;;” → “;”	France ; Italy.	France; Italy	France ; Italy.
3	“ ” → “++”	France++;++Italy.	France; ++Italy	France++; ++Italy.
4	“++;” → “;”	France; ++Italy.	France; ++Italy	France; ++Italy.
5	“++” → “ ”	France; Italy.	France; Italy	France; Italy.
6	Remove “.”	France; Italy	France; Italy	France; Italy

# 382 (Medium of Performance): Making Data Display Intelligibly

1. First rule forces the start of a new PNx field

Source: MARC 382 Include \*

Transformation: Write constant Parameter: ^

Behavior: Action: ADD

2. 382 \$s [total number of performers] = 4

Source: MARC 382 Include s

Transformation: Use mapping table Parameter: no\_musical\_parts

Behavior: Action: MERGE

First delimiter: None

no\_musical\_parts mapping table

sourceCode1*	targetCode
2	Duet
3	Trio
4	Quartet
5	Quintet
6	Sextet
7	Septet
8	Octet
9	Nonet
1	Solo

*Quartet: violin (2); viola (1); cello (1)*

Mapping tables are used to transform lists of values; currently only goes to 9, but could be expanded

3. 382 \$t [total number of ensembles] = 1

Transformations+

Transformation: Copy As Is Parameter: ^ensembles

Transformation: Add to end of string Parameter: ^ensembles

Transformation: Replace string by string Parameter: 1 ensembles@@1^ensemble

Behavior: Action: MERGE

First delimiter: None

*1 ensemble, 1 solo: clarinet (1); big band (1) (solos for: clarinet)*

4. 382 \$r [total number of individuals performing alongside ensembles] = 1

Transformations+

Transformation: Copy As Is Parameter: ^solos

Transformation: Replace string by string Parameter: 1 solos@@1^solo

Behavior: Action: MERGE

First delimiter: ,

First delimiter Space: After

*1 ensemble, 2 solos: trumpet (1); trombone (1); band (1) (solos for: trumpet; trombone)*

Comma in first delimiter box for merge action changes the **initial \$r** into a comma before merging it with any preceding text in the same instance of this PNx field. If there is no preceding text, it does nothing. "After" in the first delimiter space box puts a space after that comma.

5. 382 \$a [medium of performance], \$b [soloist],  
 \$e [number of ensembles of the same type],  
 \$n [number of performers of the same medium] =

\$b violin \$n 1 \$a singing bowl \$n 1  
 \$p crotales \$n 1 \$a string orchestra \$e 1

When combining different types of MARC subfields from the same field in one PNx field, there are two options:

A. **Write separate rules for each subfield and then merge them** (rules 2-4, 6-9):

- Can treat subfields differently
- Cannot retain order of subfields; each type of subfield is processed sequentially

B. **Write one rule that takes multiple subfields as input** (rule 5):

- Must treat all subfields the same way
- Retains order of subfields

Transformation: Define subfield delimiter Parameter: ;  
 Violin; 1; singing bowl; 1; 1; string orchestra; 1

Replace string by string: ; 1@@^(1)  
 Replace string by string: ; 2@@^(2)

...  
 Replace string by string: ; 9@@^(9)  
 Violin (1); singing bowl (1) (1); string orchestra (1)

Replace string by string: ) (1)@@  
 Replace string by string: ) (1)@@  
 ...  
 Replace string by string: ) (7)@@  
 Replace string by string: ) (8)@@

violin (1); singing bowl (1); string orchestra (1)  
 (alternate instrumentation: crotales) (solos for:  
 violin) [alternative for singing bowl]

Behavior: MERGE First delimiter: : First delimiter Space: After

All subfield delimiters have to be changed to the same string

Notice extra 1 from \$n that goes with \$p (alternate instrumentation); \$p not included in this rule because it can't be distinguished (see rule 7 for \$p)

Uses the fact that \$n and \$e are always numbers to remove extra semicolons and add parentheses around numbers; currently only works for numbers 1-9; need to look at data to see how high to go

Removes extra numbers; same problem with how high to go as above

Adds colon space to beginning of string if merging with data from \$s, \$t or \$r (rules 2-4); does nothing if none of these subfields are present

6. 382 \$d [doubling instrument] = bass drum

Transformation		Parameter	
Define subfield delimiter		;^	
Add to beginning of string		(doubling:^	
Add to end of string		)	
Behavior	First delimiter	First delimiter Space	Repeat Number
Action MERGE		Before	

Quartet: violin (2); viola (1); cello (1) (doubling: bass drum)

7. 382 \$p [alternative medium of performance] = cornet

Transformation		Parameter	
Define subfield delimiter		;^	
Add to beginning of string		(alternate instrumentation:^	
Add to end of string		)	
Behavior	First delimiter	First delimiter Space	Repeat Number
Action MERGE		Before	

Solo: trumpet (1) (alternate instrumentation: cornet)

Extra words that are added to the display, such as doubling, alternate instrumentation, solo, and duet, are also added to the general search index (not shown)

8. 382 \$b [soloist] = cello

Transformation		Parameter	
Define subfield delimiter		;^	
Add to beginning of string		(solos for:^	
Add to end of string		)	
Behavior	First delimiter	First delimiter Space	Repeat Number
Action MERGE		Before	

Duet: cello (1); piano (1) (solos for: cello)

9. 382 \$v [note] = boy's chorus

Transformation		Parameter	
Add to beginning of string		[	
Remove characters from the end		^	
Add to end of string		]	
Behavior	First delimiter	First delimiter Space	Repeat Number
Action MERGE		Before	

bass voice (1); male voice (7); children's chorus; chorus; orchestra (solos for: bass voice) [boy's chorus]

Genre	Country of Production	Original Date	Music: Musical Key	Music: Numeric Designation
Drama (898)	United States (510)	2010s (252)	C major (51)	op. 17 (9)
Feature films (804)	Great Britain (131)	2000s (180)	A minor (31)	op. 33 (7)
Fantasy films (490)	Japan (91)	1990s (93)	C minor (27)	K. 454 (1)
Fiction films (426)	France (84)	1980s (74)		op. 23 op. 87 (1)
Film adaptations (245)	Canada (25)	1970s (53)		K. 386 (1)
More options ▾				

## Experimenting with Facets

Language	Original Language	Creator Demographic Group	Composer	Performer
English (2,914)	English (828)	Americans (1,226)	Beethoven, Ludwig van, 1770-1827 (939)	London Symphony Orchestra (522)
Spanish (870)	Japanese (177)	African Americans (704)	Mozart, Wolfgang Amadeus, 1756-1791 (817)	Philharmonia Orchestra (London, England) (369)
French (865)	French (56)	Men (701)	Schubert, Franz, 1797-1828 (654)	Royal Philharmonic Orchestra (283)
Japanese (308)	Spanish (36)	Gay men (78)	Chopin, Frédéric, 1810-1849 (528)	London Philharmonic Orchestra (261)
Chinese (128)	Chinese (31)	Oregonians (44)	Liszt, Franz, 1811-1886 (381)	Jandó, Jenő, 1952- (229)
Director	Performer	Audience		
Yates, David, 1963- (30)	Radcliffe, Daniel, 1989- (4)	Children (28,508)		
Miyazaki, Hayao, 1941- (16)	Watson, Emma, 1990- (4)	Adults (4,887)		
Charney, Nicolas H (16)	Grint, Rupert, 1988- (44)	General audience (3,195)		
Tatge, Catherine (1)	Smith, Maggie, 1934- (40)	School children (1,768)		
Jackson, Peter, 196	Rickman, Alan (39)	Specialized audience (1,134)		



# 382: Faceting on Medium of Performance

Facets shown after keyword search on “piano”

## Refine Search

Include Exclude Music: **Number of Parts**

\$s total number or performers; followed by part(s)  
 \$e number of ensembles → “ensemble”

- 2 parts (4,769)
- 1 part (3,728)
- Ensemble (1,350)
- 3 parts (1,060)
- 4 parts (583)
- 5 parts (437)
- 9 parts (51)

Music: **Medium of Performance**

- piano (11,406)
- violin (2,182)
- cello (1,724)
- orchestra (990)
- flute (890)
- viola (860)
- clarinet (845)
- piano (solo) (664)
- percussion (408)

\$a medium of performance  
 \$b soloist  
 List \$b a second time followed by (solo)

Music: **Medium of Performance Statement**

- piano (1) (3,748)
- violin (1); piano (1) (801)
- piano (2) (413)
- piano (1); orchestra (1) (349)
- clarinet (1); piano (1) (207)
- piano (1); violin (1); cello (1) (163)
- violin (1); cello (1); piano (1) (161)
- piano (1); orchestra (128)
- piano (100)
- oboe (1); piano (1) (90)
- piano (1); violin (2); viola (1); cello (1) (68)
- piano (1); violin (1); viola (1); cello (1) (50)
- violin (2); viola (1); cello (1); piano (1) (43)
- violin (1); viola (1); cello (1); piano (1) (36)

\$a medium of performance  
 \$b soloist  
 \$e number of ensembles of same type  
 \$n number of performers of same medium

## Challenges for collocation:

Numbering (\$n) matters:


- piano (1)
- piano

Order matters:

- piano (1); violin (2); viola (1); cello (1)
- violin (2); viola (1); cello (1); piano (1)



Refined by: Music: Medium of Performance: **violin** x Music: Medium of Performance: **harpsichord** x

1  ☆ **A miscellaneous collection of instrumental music for the organ, orchestra, chamber, and harpsichord**  
George Frideric **Handel**, 1685-1759, composer.; Friedrich Chrysander, 1826-1901, editor.; William Babel, approximately 1690-1723, arranger of music.; Deutsche **Händel**-Gesellschaft, issuing body.; Ridgewood, New Jersey, U.S.A. : Gregg Press Incorporated; 1965

● **Check holdings**

Find in a library Details

**Music Info:** organ (1); orchestra (1) (solos for: organ)  
organ (2); orchestra (1) (solos for: organ)  
organ (1); string orchestra (1) (solos for: organ)  
Duet: viola da gamba (1); **harpsichord** (1)  
**violin** (2); continuo  
flute (1); continuo  
instrument (1); continuo  
orchestra (1)  
string orchestra (1)  
Solo: **harpsichord** (1)  
Duet: **harpsichord** (2)  
singer (1); instrumental ensemble (1)

**Aggregates can be misleading:**  
Limiting results to medium of performance of harpsichord and violin will retrieve resources that include both those instruments, **even if they are not from the same piece**  
The medium of performance statement facet tries to compensate for this specific situation, but can't connect medium of performance with other facets, such as composer or musical key

Try it out:

[http://alliance-primo-sb.hosted.exlibrisgroup.com/primo\\_library/libweb/action/search.do?vid=UO NRWG](http://alliance-primo-sb.hosted.exlibrisgroup.com/primo_library/libweb/action/search.do?vid=UO NRWG)

<https://tinyurl.com/ydea3veq>

Send feedback and suggestions to:  
**Kelley McGrath**  
[kelleym@uoregon.edu](mailto:kelleym@uoregon.edu)