“Alma records have all been published successfully to Primo”
– Believe It or Not?

Yiu-On Li, Head of Systems Section
Gary Wong, Senior Information Technology Officer
1. Daily scheduled procedures are *not reliable*, there is **NO** guarantee that:

→ all new/updated Alma records have successfully been published to Primo

→ all these records have been indexed successfully and been searchable in Primo.
2. In HKBU, we have recently developed a new full automatic computer program to monitor and keep track the status of Alma-Primo publishing procedures.
A. Background: HKBU Library
B. Analysis of Alma Publishing to Primo Problems
C. Alma and Primo Record Publishing Monitor Program
D. Publishing Problems – A Case Study
E. Conclusion
A. Background: HKBU Library
1. Hong Kong Baptist University (HKBU)

- was founded in 1956.
- is a publicly funded tertiary liberal arts institution with a Christian education heritage.
2. HKBU Faculties and Schools

- now offers bachelor, master and doctoral degrees from:
  - Faculty of Arts
  - Faculty of Science
  - Faculty of Social Science
  - School of Business
  - School of Chinese Medicine
  - School of Communications
  - School of Continuing Education
3. Google Map
4. Campus Photos
5. HKBU Library

- is made by a Main Library, and two branch libraries
  - Chinese Medicine Library
  - Shek Mun Campus Library
6. HKBU Library Website

- [https://library.hkbu.edu.hk/](https://library.hkbu.edu.hk/)
7. HKBU Library – Collection Statistics 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume Count</td>
<td>1,256,224</td>
</tr>
<tr>
<td>Audiovisual Materials &amp; Microforms (items)</td>
<td>153,085</td>
</tr>
<tr>
<td>Serials Count (titles)</td>
<td>2,484</td>
</tr>
<tr>
<td>e-Books</td>
<td>1,313,485</td>
</tr>
<tr>
<td>e-Journals</td>
<td>125,405</td>
</tr>
<tr>
<td>e-Databases</td>
<td>335</td>
</tr>
</tbody>
</table>
8. HKBU Library – Photos
8a. HKBU Library – Photos
B. Analysis of Alma Publishing to Primo Processes
1. Our Question?

“Have all Alma records been published successfully to Primo?”

- To answer this Question, we need to have an in-depth analysis of the workflow: **Alma Records Publish to Primo**
2. Alma Records Publishing to Primo

- According to the Alma product documentation, this job indeed contains two major *separate* and *independent* processes running on Alma and Primo:

1. Alma Exports – sftp connection to Primo
2. Primo Indexing – harvesting and normalizing

3a. Alma Exports – sftp connection to Primo

- “The Alma publishing process is run after the bibliographic, holdings, circulation data, and optional course reserves data has been populated in Alma”.
- “Alma exports the full set of records the first time and then exports the changed records daily”.
3b. Primo Indexing

“After Alma exports the records, Primo harvests and normalizes the exported records to be searched and viewed by end users via Primo’s Front End”.
4. Reports Checking

- In order to reply the Question of “Have all Alma records been published successfully to Primo?”, the **most simple way** is to check job status reports in Alma and Primo.

- the most simple way may **not** be
  - the most cost-effective and cost-efficient way
  - reliable way
5. Reports Checking -- IZ

First of all, we would say the work of Alma job status report checking is neither cost-effective nor cost-efficiency, because this kind of checking must be done in manually.

After the completion of above two jobs every day, we have to go to check the status of job reports in BU Alma and Primo (IZ) respectively.
5a. IZ Checking -- Alma

- Alma > Monitor Jobs > Publishing to Primo
### Environment 1 (Institutional Primo) - JULAC Production

Primo Home > Monitor Primo Status > Pipe Monitoring

#### Job monitor

**History for HKBU_IZ_Regular**

<table>
<thead>
<tr>
<th>Owner</th>
<th>Name</th>
<th>Stage</th>
<th>Status</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKBU_ALMA</td>
<td>2019.08.16-15.00.00-1317985674</td>
<td>completed successfully</td>
<td>completed</td>
<td>16/08/19 15:00:07</td>
<td>16/08/19 15:00:56</td>
</tr>
<tr>
<td>HKBU_ALMA</td>
<td>2019.08.16-09.00.00-13178453235</td>
<td>completed successfully</td>
<td>completed</td>
<td>16/08/19 09:00:21</td>
<td>16/08/19 09:00:21</td>
</tr>
<tr>
<td>HKBU_ALMA</td>
<td>2019.08.16-03.00.00-1317780721</td>
<td>completed successfully</td>
<td>completed</td>
<td>16/08/19 03:00:09</td>
<td>16/08/19 03:02:58</td>
</tr>
</tbody>
</table>
6. Reports Checking -- NZ

- HKBU Library is a member of the consortium, JULAC

- JULAC comprises eight government-funded Universities in HK

- “So Happy Together: Change for One, Change for Eight. The Hong Kong Shared Experience”, Peter E Sidorko (University Librarian of HKU)

- HKBU Library needs to contribute our Alma records to NZ Primo (JULAC HKALL). Thus, it is also required to check the job reports on NZ Alma and Primo
6a. NZ Checking -- Alma

Job Report

Network Publishing Job

- Process ID: 13196376940003406
- Started on: 16/08/2019 16:02:31 HKT
- Total run time: 12 Minutes 54 Seconds
- Status: Completed Successfully
- Status date: 16/08/2019 16:15:25 HKT
- Records processed: 62542
- Records with exceptions: 0

Network Zone Report

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>New</th>
<th>Updated</th>
<th>Deleted</th>
<th>Not published</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic Records Inventory</td>
<td>405</td>
<td>9231</td>
<td>3</td>
<td>31635</td>
</tr>
</tbody>
</table>

Member inventory records expanding Network Zone records

<table>
<thead>
<tr>
<th>Member</th>
<th>Resource Type</th>
<th>New</th>
<th>Updated</th>
<th>Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 City University of Hong Kong</td>
<td>Bibliographic Records Inventory</td>
<td>709</td>
<td>8409</td>
<td>0</td>
</tr>
<tr>
<td>2 Chinese University of Hong Kong</td>
<td>Bibliographic Records Inventory</td>
<td>841</td>
<td>8605</td>
<td>0</td>
</tr>
<tr>
<td>3 Education University of Hong Kong</td>
<td>Bibliographic Records Inventory</td>
<td>424</td>
<td>5030</td>
<td>0</td>
</tr>
<tr>
<td>4 Hong Kong Baptist University</td>
<td>Bibliographic Records Inventory</td>
<td>962</td>
<td>7843</td>
<td>0</td>
</tr>
<tr>
<td>5 Hong Kong Polytechnic University</td>
<td>Bibliographic Records Inventory</td>
<td>760</td>
<td>6262</td>
<td>0</td>
</tr>
<tr>
<td>6 The University of Hong Kong</td>
<td>Bibliographic Records Inventory</td>
<td>1027</td>
<td>9548</td>
<td>0</td>
</tr>
<tr>
<td>7 Hong Kong University of Science and Technology</td>
<td>Bibliographic Records Inventory</td>
<td>8971</td>
<td>25903</td>
<td>0</td>
</tr>
<tr>
<td>8 Lingnan University</td>
<td>Bibliographic Records Inventory</td>
<td>437</td>
<td>5871</td>
<td>0</td>
</tr>
</tbody>
</table>
### Environment 2 (Standalone HKALL) - JULAC Production

- **Primo Home** > **Monitor Primo Status** > **Pipe Monitoring**

#### Job monitor

**History for JULAC_ALMA_REGULAR**

<table>
<thead>
<tr>
<th>Owner</th>
<th>Name</th>
<th>Stage</th>
<th>Status</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>JULAC_NETWORK</td>
<td>2019.08.16-11.00.00-914417750</td>
<td>completed successfully</td>
<td>completed</td>
<td>08/16/19 11:00:29</td>
<td>08/16/19 11:45:45</td>
</tr>
<tr>
<td>JULAC_NETWORK</td>
<td>2019.08.15-17.00.00-914195986</td>
<td>completed successfully</td>
<td>completed</td>
<td>08/15/19 17:00:14</td>
<td>08/15/19 18:05:04</td>
</tr>
<tr>
<td>JULAC_NETWORK</td>
<td>2019.08.15-11.00.00-914130944</td>
<td>completed successfully</td>
<td>completed</td>
<td>08/15/19 11:00:09</td>
<td>08/15/19 11:31:05</td>
</tr>
<tr>
<td>JULAC_NETWORK</td>
<td>2019.08.14-17.00.00-914083585</td>
<td>harvesting-copy-files</td>
<td>completed</td>
<td>08/14/19 17:00:23</td>
<td></td>
</tr>
<tr>
<td>JULAC_NETWORK</td>
<td>2019.08.14-11.00.00-913816457</td>
<td>completed successfully</td>
<td>completed</td>
<td>08/14/19 11:00:18</td>
<td>08/14/19 12:02:49</td>
</tr>
</tbody>
</table>
7. Daily Manual Checking is Vital

- Manual Checking must be done **every day** to ensure the record synchronization between Alma and Primo, because:

  1. **EXL is not reliable** -- sometimes they do not aware that Alma Publishing process have not been completed.

  2. Thus, you have to do a manual checking yourself. In case, the Publishing on certain days have not been completed successfully, you have to report to SalesForces and ask them to re-run the Alma Publishing.
8. Manual Checking is not Recommended

However, we do not recommend you to do report checking every day. Reasons are:

1. Daily manual checking on two different systems are tedious, cumbersome and very time-consuming.
   - in HKBU situation, 4 reports checking -- IZ and NZ
2. Report status are not very clear, sometimes even misleading (see discussions below).
8a. Manual Checking is not Recommended

- Most importantly, systems people, like us, do not like to do manual jobs.
- Even worse, this is not a one-time off labour work, rather a **daily routine work requiring manual labour**.
Obviously, it can help *save time, money and efforts* if

1. Checking work can be performed by a computer program automatically

2. Generate an alert email notification to responsible staff when it is detected that the Alma Records Publishing to Primo work cannot be completed successfully
C. Alma and Primo Record Publishing Monitor Program
1. Main Program Workflow Design

- **Program Algothrim**: When can we say that a daily job of Alma records have successfully been published to Primo?

- Subject to the results of a publishing job, that is, whether “the exported records to be searched and viewed by end users via Primo’s Front End”.
1a. Main Program Workflow Design

The Program contains *two main Workflows*:

1. **Alma**: Update a catalog record every day
2. **Primo**: Check whether the above updated catalog can be searched and found on Primo
1b. Main Program Workflow Design

- If this record can be found on Primo, the Alma Records Publishing to Primo Work on that day is proven to be completed successfully.

- If records Not Found →
  - Indexing Work incomplete – more indexing time is required, do additional checking later.
  - Work failure – harvesting or indexing pipe stuck → Generate alert email notifications to System staff.
2. Alma: Auto Update an record everyday

- In order to prove all Alma records (including new created/updated) have been published to Primo successfully every day, we have created 31 dummy records in Alma for daily checking.
2a. Alma: Auto Update an record everyday
Each Alma record has an **unique title** which will be changed and updated by the program.

These 31 records are updated on a basis of monthly rotation.

Each Title contains a **unique** Day-Time stamp indicating when it is updated:

- Primo testing record HKBU [day of the week] [yyyymmd] [hhmm]
2c. Alma: Auto Update an record everyday

- An **Alma API script** is scheduled to edit the Title of a pre-defined Alma record every day.
- For example, the table below illustrates the Titles of the Alma Records updated by this API on:
  - **Days:** 1, 15, 28, 30, 31
  - **Month:** Feb, Jun, July (2019)
## 2d. Alma: Auto Update an record everyday

<table>
<thead>
<tr>
<th>Alma MMSID</th>
<th>Day of Month</th>
<th>Feb 2019</th>
<th>Jun 2019</th>
<th>July 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>991025951745003409</td>
<td>1</td>
<td>Primo testing record HKBU Friday 20190201 1300</td>
<td>Primo testing record HKBU Saturday 20190601 1300</td>
<td>Primo testing record HKBU Monday 20190701 1300</td>
</tr>
<tr>
<td>991025951743603409</td>
<td>15</td>
<td>Primo testing record HKBU Friday 20190215 1300</td>
<td>Primo testing record HKBU Saturday 20190615 1300</td>
<td>Primo testing record HKBU Monday 20190715 1300</td>
</tr>
<tr>
<td>991025951742303409</td>
<td>28</td>
<td>Primo testing record HKBU Thursday 20190228 1300</td>
<td>Primo testing record HKBU Friday 20190628 1300</td>
<td>Primo testing record HKBU Sunday 20190728 1300</td>
</tr>
<tr>
<td>991025951742103409</td>
<td>30</td>
<td>--</td>
<td>Primo testing record HKBU Sunday 20190630 1300</td>
<td>Primo testing record HKBU Tuesday 20190730 1300</td>
</tr>
<tr>
<td>991025951742003409</td>
<td>31</td>
<td>--</td>
<td>--</td>
<td>Primo testing record HKBU Wednesday 20190731 1300</td>
</tr>
</tbody>
</table>
3. Primo: Automatic Searching by Title

- **Two Primo PNX API** scripts are scheduled to perform an automatic checking against HKBU Primo and HKALL Primo respectively

- **Title – Contains (exact phrase)** searching the Alma record updated most recently
3a. Primo: Automatic Searching by Title

For example:
1. Today’s day = Friday 2019-08-23
2. Alma API script update a catalog record at 13:00, of which the **Title** = 
   Primo testing record HKBU _Friday 20190823 1300_
3. An Primo PNX API script is scheduled to check against HKBU Primo by **Title exact phrase searching**
3b. Primo: Automatic Searching by Title

- If this Title is *found* on HKBU Primo:
  1. the script will log down the Alma-Primo Lag (Days) on Web Report, i.e. *n days*

= Day-Time of a Alma record to be searched on Primo – Day-Time of this Alma record is updated on Alma
## 3c. Primo: Automatic Searching by Title

http://lib-nt.hkbu.edu.hk/primo_record_check/home.asp#

---

### Alma and Primo Record Publishing Status

<table>
<thead>
<tr>
<th>Alma update date</th>
<th>Title</th>
<th>HKBU</th>
<th>HKALL</th>
<th>HKBU Primo check date</th>
<th>HKALL Primo check date</th>
<th>HKBU Alma-Primo Lag (Days)</th>
<th>HKALL Alma-Primo Lag (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-08-24 13:00:03</td>
<td>Primo testing record HKBU Saturday 20190824 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-24 15:00:02</td>
<td>2019-08-24 15:00:03</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2019-08-23 13:00:04</td>
<td>Primo testing record HKBU Friday 20190823 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-23 23:00:02 Less</td>
<td>2019-08-23 23:00:03 Less</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>2019-08-22 13:00:03</td>
<td>Primo testing record HKBU Thursday 20190822 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-22 23:00:03 More</td>
<td>2019-08-22 23:00:03 More</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>2019-08-21 13:00:02</td>
<td>Primo testing record HKBU Wednesday 20190821 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-21 23:00:02 More</td>
<td>2019-08-21 23:00:03 More</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

---
If this Title is *Not Found* on HKBU Primo: the script

1. is scheduled to continue the automatic Title checking until this record is found.
2. will generate an alert email to responsible staff every day automatically if: Lag Days is *over 0.5*,
   - i.e. the Alma record is still unable to be found in HKBU Primo 0.5 days after it is updated
3e. Primo: Automatic Searching by Title

- Auto email notification: the Alma record is still unable to be found in HKALL Primo 2 days after it is edited.

<table>
<thead>
<tr>
<th>Alma update date</th>
<th>Title</th>
<th>HKBU Primo check date</th>
<th>HKBU Alma-Primo Lag (Days)</th>
<th>HKALL Primo check date</th>
<th>HKALL Alma-Primo Lag (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-01-15 13:00:05</td>
<td>Primo testing record HKBU Monday 20180115 1300</td>
<td>2018-01-15 23:00:06</td>
<td>0.8 (Not found yet)</td>
<td>2018-01-15 23:00:06</td>
<td>0.8 (Not found yet)</td>
</tr>
<tr>
<td>2018-01-13 13:00:02</td>
<td>Primo testing record HKBU Saturday 20180113 1300</td>
<td>2018-01-14 15:00:03</td>
<td>1.1</td>
<td>2018-01-15 23:00:05</td>
<td>2.8 (Not found yet)</td>
</tr>
<tr>
<td>2018-01-12 13:00:03</td>
<td>Primo testing record HKBU Friday 20180112 1300</td>
<td>2018-01-13 15:00:03</td>
<td>1.1</td>
<td>2018-01-15 23:00:05</td>
<td>3.8 (Not found yet)</td>
</tr>
<tr>
<td>2018-01-11 13:00:03</td>
<td>Primo testing record HKBU Thursday 20180111 1300</td>
<td>2018-01-12 15:00:02</td>
<td>1.1</td>
<td>2018-01-15 23:00:05</td>
<td>4.8 (Not found yet)</td>
</tr>
</tbody>
</table>

Detail: [https://lib-nt.hkbu.edu.hk/primo_record_check/home.asp](https://lib-nt.hkbu.edu.hk/primo_record_check/home.asp)
D. Publishing Problems
-- A Case Study
1. Email Alert Notification

- On 5 Aug 2019, we received an Alert Email report that there were problems to search Alma records updated on 2-Aug and 3-Aug.

<table>
<thead>
<tr>
<th>Alma update date</th>
<th>Title</th>
<th>HKBU Primo check date</th>
<th>HKBU Alma-Primo Lag (Days)</th>
<th>HKALL Primo check date</th>
<th>HKALL Alma-Primo Lag (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-08-03 13:00:04</td>
<td>Primo testing record HKBU Saturday 20190803 1300</td>
<td>2019-08-04 23:00:05</td>
<td>1.8 (Not found yet)</td>
<td>2019-08-03 23:00:03</td>
<td>0.4</td>
</tr>
<tr>
<td>2019-08-02 13:00:03</td>
<td>Primo testing record HKBU Friday 20190802 1300</td>
<td>2019-08-04 23:00:04</td>
<td>2.8 (Not found yet)</td>
<td>2019-08-03 23:00:02</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Detail: [https://lib-nt.hkbu.edu.hk/primo_record_check/home.asp](https://lib-nt.hkbu.edu.hk/primo_record_check/home.asp)
When we went to check our Alma-Primo Monitor Program, it was surprised to find that the Primo Indexing Problem should only be occurred on 2-Aug (Friday) and 3 Aug (Saturday), the indexing process was resumed back to normal on 4 Aug.
### 2a. Problems caused by a Primo Monthly New Release

<table>
<thead>
<tr>
<th>Alma update date</th>
<th>Title</th>
<th>HKBU</th>
<th>HKALL</th>
<th>HKBU Primo check date</th>
<th>HKALL Primo check date</th>
<th>HKBU Alma-Primo Lag (Days)</th>
<th>HKALL Alma-Primo Lag (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-08-04 13:00:05</td>
<td>Primo testing record HKBU Sunday 20190804 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-04 23:00:05 More</td>
<td>2019-08-04 23:00:06 More</td>
<td>0.4</td>
<td>0.8 (Not found yet)</td>
</tr>
<tr>
<td>2019-08-03 13:00:04</td>
<td>Primo testing record HKBU Saturday 20190803 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-04 23:00:05 More</td>
<td>2019-08-03 23:00:03 More</td>
<td>1.8 (Not found yet)</td>
<td>0.4</td>
</tr>
<tr>
<td>2019-08-02 13:00:03</td>
<td>Primo testing record HKBU Friday 20190802 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-04 23:00:04 More</td>
<td>2019-08-03 23:00:02 More</td>
<td>2.8 (Not found yet)</td>
<td>1.4</td>
</tr>
<tr>
<td>2019-08-01 13:00:04</td>
<td>Primo testing record HKBU Thursday 20190801 1300</td>
<td>MMSID Title</td>
<td>MMSID Title</td>
<td>2019-08-01 23:00:03 More</td>
<td>2019-08-02 23:00:03 More</td>
<td>0.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>
2b. Problems caused by a Primo Monthly New Release

- On 4 August (Sunday), EXL have sent us an email that our BU Primo has Hot swap and Indexing problem due to a New Release Update on Primo.

---

From: SystemStatus@exlibrisgroup.com
Sent: Sunday, August 04, 2019 8:37 AM
To: SystemStatus@exlibrisgroup.com
Subject: New Update for Primo APAC02

Dear customer,

Current status: Service Alert Information
04-Aug-2019 UTC 0:37:18

Due to technical issues, the Hotswap could not be completed today in your environment, and thus the new-indexed data will not be available.

The issue is being handled by our engineers with high priority, in order to resume the normal daily index process.

Ex Libris Cloud

Regards,

Ex Libris Cloud Team
2b. Problems caused by a Primo Monthly New Release

- This Indexing problem have influenced the Alma records to be published to our BU institution Primo on 2 Aug and 3 Aug respectively, rather than on 4 Aug.
3. Primo Indexing Report – Not Reliable

- One more special finding is that Primo Indexing Report is NOT reliable
- Even the Primo Indexing Report indicated that the job status had completed, but the Alma records updated on 2-Aug and 3-Aug still could not be searched on Primo
# 3a. Primo Indexing Report – Not Reliable

## Environment 1 (Institutional Primo) - JULAC Production

[Primo Home > Monitor Primo Status > Process Monitoring]

### Job monitor

**History for Ongoing Indexing**

<table>
<thead>
<tr>
<th>Owner</th>
<th>Stage</th>
<th>Status</th>
<th>Records Succeeded</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>JULAC - Production</td>
<td>Indexing</td>
<td>Running</td>
<td>183400</td>
<td>04/08/19 20:50:07</td>
<td></td>
</tr>
<tr>
<td>JULAC - Production</td>
<td>Completed</td>
<td>Completed</td>
<td>1635</td>
<td>04/08/19 17:46:50</td>
<td>04/08/19 20:50:06</td>
</tr>
<tr>
<td>JULAC - Production</td>
<td>Completed</td>
<td>Completed</td>
<td>58</td>
<td>04/08/19 02:21:19</td>
<td>04/08/19 17:46:51</td>
</tr>
<tr>
<td>JULAC - Production</td>
<td>Completed</td>
<td>Completed</td>
<td>4068</td>
<td>02/08/19 11:54:37</td>
<td>04/08/19 02:21:19</td>
</tr>
<tr>
<td>JULAC - Production</td>
<td>Completed</td>
<td>Completed</td>
<td>113197</td>
<td>01/08/19 21:30:21</td>
<td>02/08/19 11:54:35</td>
</tr>
<tr>
<td>JULAC - Production</td>
<td>Completed</td>
<td>Completed</td>
<td>83801</td>
<td>01/08/19 16:27:56</td>
<td>01/08/19 21:30:19</td>
</tr>
</tbody>
</table>
As usual, EXL did not aware of the Problem.
We have to report the Problem to SaleForce and ask them to re-run the Primo Indexing and Hot swap processes for Aug-2 and Aug-3 records
E. Conclusion
1. Problem Statistics

- From 1 Jan 2018 to 15 Aug 2019, a total of 6 Record Publishing incidents are detected by our Monitor program.
  - 2018-01-05
  - 2018-02-01
  - 2018-03-09
  - 2018-12-24
  - 2019-05-15
  - 2019-08-04

- In average, 1 problem occurs per 3.3 months.
2. EXL responses

- In all incidents, EXL did not aware of the problem occurred.
- SalesForces would take actions only after we have detected the problem and reported to them.
3. Our Answer to the Question

“Alma records have all been published successfully to Primo”

– *Believe It or Not?*

- What an answer would you expect?

“Of course, *NOT*, unless you have a mechanism to ensure the Alma daily exported records can be searched and found on Primo”
The End

Q & A