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Automate the Reconciliation Process of Open Payables Invoices and Migration Extract During Data Conversion

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ABSTRACT

Data migration of Accounts Payables (AP) invoices from Oracle E-Business Suite (EBS) to Oracle Fusion Cloud ERP is a complex and critical process, with the accuracy of the migration hinging on the selection of all eligible open payables invoices. Ensuring that these invoices are correctly extracted for migration requires meticulous reconciliation with the Oracle E-Business Suite Payables Trial Balance. Traditionally, this reconciliation process is performed manually, demanding significant time and effort while being prone to human error. The manual approach often results in discrepancies that can lead to incomplete or incorrect data migration, affecting the integrity of financial records in the new system. This article explores a solution approach to automating the reconciliation process, aiming to streamline and enhance the accuracy of the data conversion. By automating the comparison of open invoices in the migration extract with the Oracle E-Business Suite Payables Trial Balance, organizations can significantly reduce the risks associated with manual reconciliation. The proposed automation solution leverages advanced data extraction, transformation, and validation techniques to ensure that all relevant invoices are accurately captured and prepared for migration. The automation process not only increases efficiency but also improves data integrity by minimizing human intervention and errors. Furthermore, the article discusses the practical implementation of this automated reconciliation solution within the broader context of data migration projects. It delves into the technical aspects of setting up the automation framework, including the use of specific tools and technologies compatible with Oracle EBS ERP. By automating this critical reconciliation task, organizations can achieve a smoother transition to Oracle Fusion Cloud ERP, ensuring that financial data remains accurate and reliable throughout the migration process. This approach ultimately supports better decision-making and financial reporting in the post-migration environment.

Keywords: Oracle Cloud Fusion, Oracle Cloud ERP, Enterprise Resource Planning, Financials, Accounts Payables, Data Migration, Invoices, Oracle E-Business Suite, EBS.

INTRODUCTION

In today's fast paced business, the migration of Accounts Payables (AP) invoices from Oracle E-Business Suite (EBS) to Oracle Fusion Cloud ERP represents a significant milestone in the digital transformation journey for many organizations. As businesses transition to the more advanced and integrated capabilities of Oracle Fusion, ensuring the accuracy and completeness of data migration becomes paramount. Among the various challenges involved in this process, one of the most critical tasks is the accurate selection and migration of all eligible open payables invoices. These invoices must be correctly identified, extracted, and reconciled to ensure that no financial records are lost or misrepresented during the conversion.

Traditionally, the reconciliation of extracted open payables invoices against the Oracle E-Business Suite Payables Trial Balance is a manual process. This involves painstakingly comparing records from the extract with those in the trial balance, often using spreadsheets and other basic tools to ensure that every eligible invoice is accounted for. While this manual approach can be effective, it is also time-consuming, labor-intensive, and prone to human error. Mistakes in this process can lead to significant discrepancies, which may only be discovered after the migration, potentially causing disruptions in financial operations and reporting.

The need for a more efficient and reliable reconciliation process has led to the exploration of automation as a solution. Automating the reconciliation process offers numerous advantages, including increased accuracy, faster processing times, and reduced reliance on manual labor. By leveraging automation, organizations can ensure that the reconciliation is thorough and that all eligible invoices are captured without the risk of oversight or error that

comes with manual processes. This automation also allows for better scalability, handling larger volumes of data with ease, which is particularly beneficial for organizations with extensive payables records.

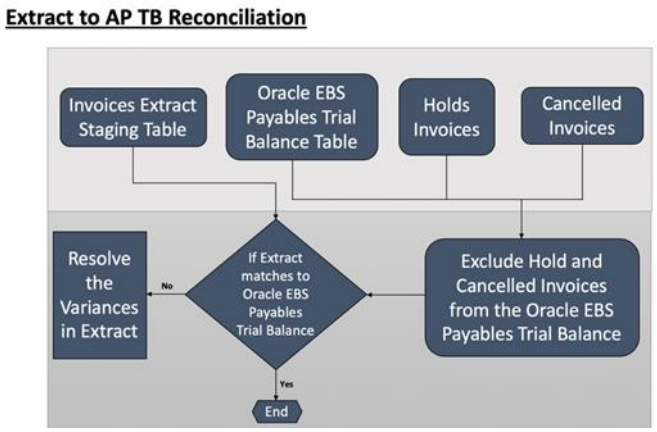

Fig. 1. *This figure represents the high-level flow of reconciliation process from Extract to AP TB.*

In this article, we will discuss the solution approach to automating the reconciliation process during the data migration of AP invoices. We will explore the key components of an automated reconciliation framework, including data extraction, transformation, and validation techniques. The discussion will also cover the tools and technologies that can be used to implement this automation, focusing on how they integrate with both Oracle EBS and Oracle Fusion Cloud ERP to provide a seamless transition. Additionally, we will consider the benefits of automation in terms of improving data integrity and operational efficiency, as well as the potential challenges and considerations that organizations should be aware of when adopting this approach.

Ultimately, the goal of automating the reconciliation process is to ensure that the migration of payables invoices is as accurate and efficient as possible, minimizing the risk of errors and ensuring a smooth transition to Oracle Fusion Cloud ERP. By adopting an automated approach, organizations can not only safeguard their financial data but also streamline the overall migration process, freeing up valuable resources to focus on other critical aspects of the transition. This article aims to provide a comprehensive guide to achieving these objectives through automation, offering insights and practical advice for IT and finance teams involved in the data migration process.

```
# Reconciled Invoices between Extract and R12 TB
-------------------------------------------------------------
SELECT <<...select all the required columns - invoice_number, vendor_number,
   vendor_site, invoice_amount,
   functional_amount, invoice_date....>>,
      'Matched' R12TB_TO_EXTRACT_RECON_STATUS
FROM  XX_AP_R12_APTB_STG           R12TB,
      XX_AP_CLOUD_INV_HDR_STG      EXTRACT
WHERE     1 = 1
AND R12TB.INVOICE_ID NOT IN
            (SELECT INVOICE_ID FROM XX_AP_HOLD_INV_R12_STG)
AND R12TB. INVOICE_ID NOT IN
            (SELECT INVOICE_ID FROM XX_AP_CANCELLED_INV_R12_STG)
AND R12TB.R12TB.INVOICE_ID  = EXTRACT.INVOICE_ID;
```

Fig. 2. *Code snippet for retrieving the Invoices reconciled between R12 AP TB and Extract.*

CHALLENGES FACED BY ORGANIZATIONS TO RECONCILE DURING THE DATA CONVERSION

When migrating Accounts Payables (AP) invoices from Oracle E-Business Suite (EBS) to Oracle Fusion Cloud ERP, one of the most crucial tasks is ensuring that all eligible open payables invoices are accurately selected and migrated. This requires a meticulous reconciliation process between the extracted invoices and the Oracle E-Business Suite Payables Trial Balance. Traditionally, this reconciliation is done manually, which presents several significant challenges.

A. Time-Intensive Process

Manual reconciliation is an inherently time-consuming process. Each invoice must be cross-referenced with the trial balance to ensure it has been correctly included in the data extract. Given the potentially large volume of transactions, this process can take an inordinate amount of time, slowing down the entire migration project. This extended timeline can also cause delays in the overall implementation of Oracle Fusion Cloud ERP.

B. High Risk of Human Error

The manual reconciliation process is prone to human error, which can lead to significant discrepancies in the migrated data. Errors such as missed invoices, incorrect data entries, or misinterpretation of financial records can

easily occur, especially under the pressure of tight deadlines. These mistakes can result in incomplete or inaccurate data migration, leading to financial discrepancies in the new system.

C. Scalability Issues

As the volume of invoices increases, the manual reconciliation process becomes increasingly difficult to scale. Managing larger datasets manually not only requires more time but also demands more resources. This lack of scalability can overwhelm teams, leading to further delays and increasing the potential for errors as the process becomes more complex and cumbersome.

D. Difficulty in Identifying Discrepancies

Manually identifying discrepancies between the extracted invoices and the EBS Payables Trial Balance can be particularly challenging. With large volumes of data, spotting differences or missing invoices requires a sharp eye and significant attention to detail. However, the manual nature of the process increases the likelihood of discrepancies going unnoticed, leading to incomplete or inaccurate data migration.

E. Limited Auditability

Manual reconciliation often lacks a comprehensive audit trail, making it difficult to trace back steps and understand how specific conclusions were reached. This limited auditability poses a significant risk, especially if discrepancies are discovered after the migration. Without a clear record of the reconciliation process, identifying and correcting errors becomes challenging, potentially compromising the integrity of the migrated data.

F. Resource-Intensive

The manual reconciliation process requires significant human resources. Typically, a dedicated team is needed to perform this task, diverting skilled personnel from other critical activities in the migration project. The resource-intensive nature of this task can strain project teams and increase costs, particularly in large organizations with extensive payables records.

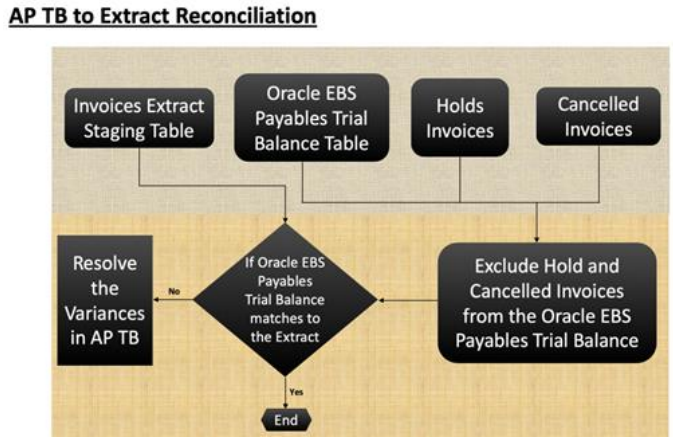

Fig. 3. *This figure represents the high-level flow of reconciliation process from AP TB to Extract.*

G. Difficulty in Handling Complex Scenarios

Complex invoice scenarios, such as those involving multiple payments, adjustments, or foreign currencies, are particularly challenging to reconcile manually. These scenarios often require specialized knowledge and additional time to ensure that they are accurately reflected in the data extract. The manual approach struggles to adapt to these complexities, increasing the risk of errors and further complicating the reconciliation process.

H. Delayed Issue Resolution

When discrepancies or errors are identified during manual reconciliation, resolving them can be a slow and cumbersome process. Each issue needs to be addressed individually, which can take considerable time and effort. This delay in issue resolution can disrupt the migration timeline and lead to further complications, especially if issues are discovered late in the process.

I. Stress on Project Timelines

The cumulative effect of these challenges is a significant strain on the overall project timeline. Manual reconciliation introduces delays at multiple stages of the migration process, from initial data extraction to final verification across multiple testing cycles. These delays can push back the go-live date for Oracle Fusion Cloud ERP, affecting business operations and prolonging the transition period.

SOLUTION APPROACH TO AUTOMATE THE PAYABLES INVOICES RECONCILIATION DURING THE DATA CONVERSION

Given these challenges, it becomes clear that manual reconciliation is not only inefficient but also poses substantial risks to the accuracy and success of the data migration process. Automating the reconciliation of payables invoices

offers a promising solution, enabling organizations to overcome these challenges and achieve a smoother, more reliable migration to Oracle Fusion Cloud ERP.

```
# Invoices in R12 TB and Not in Extract
-------------------------------------
SELECT <<...select all the required columns - invoice_number,
   vendor_number, vendor_site, invoice_amount,
   functional_amount, invoice_date....>>,
      'Not in Extract' R12TB_TO_EXTRACT_RECON_STATUS
FROM  XX_AP_R12_APTB_STG          R12TB
WHERE     1 = 1
AND R12TB.INVOICE_ID NOT IN
            (SELECT INVOICE_ID FROM XX_AP_HOLD_INV_R12_STG)
AND R12TB. INVOICE_ID NOT IN
            (SELECT INVOICE_ID FROM XX_AP_CANCELLED_INV_R12_STG)
AND R12TB.R12TB.INVOICE_ID  NOT IN ( SELECT INVOICE_ID FROM  XX_AP_CLOUD_INV_HDR_STG );
```

Fig. 4. *Code snippet for retrieving the Invoices present in R12 AP TB and not in Extract.*

A. Load the Extract to a Staging Table

First step in the reconciliation process is to get the extract of all the open payables invoices from the Oracle E-Business Suite database. This extract will be loaded to the custom staging table XX_AP_CLOUD_INV_HDR_STG and XX_AP_CLOUD_INV_LINES_STG. Data from the table XX_AP_CLOUD_INV_HDR_STG will be used in the reconciliation process. This will be the invoices details at the header level. All open invoices which are Validated and Accounted will be consider for the data migration. Invoices on Hold and Cancelled invoices will not be considered during the extraction.

B. Store the Oracle EBS Payables Trial Balance

Generate the Oracle EBS Payables Trial Balance from the R12 instance where the invoices are extracted for the data migration. In general the data conversion process is performed after completing the month-end process. For example if the data is being migrated to 1-Jan-2020, the invoices data that will be extracted are those that are open as of 31-Dec-2019. The Payables Trial Balance will be generated as of 31-Dec-2019. This data will be programmatically inserted into the custom table XX_AP_R12_APTB_STG. This table will be used in the next steps of the reconciliation process discussed in the next sub sections.

C. Identify the Invoices on Hold

The Payables Trial Balance data loaded in the table XX_AP_R12_APTB_STG will be inclusive of invoices on Hold. As mentioned in the sub section [A], the invoices on hold will not be considered for conversion, hence it is essential to exclude the invoices on Hold from the Payables Trial Balance data in XX_AP_R12_APTB_STG. To facilitate this process all the invoices on Hold will be extracted and stored in the table XX_AP_HOLD_INV_R12_STG.

D. Identify the Cancelled Invoices

The Payables Trial Balance data loaded in the table XX_AP_R12_APTB_STG will be inclusive 'Cancelled' invoices. As mentioned in the sub section [A], the 'Cancelled' invoices will not be considered for conversion, hence it is critical to eliminate the 'Cancelled' invoices from the Payables Trial Balance data in XX_AP_R12_APTB_STG. To support this elimination all the 'Cancelled' invoices will be extracted and stored in the table XX_AP_CANCELLED_INV_R12_STG.

E. Exclude the Hold and Cancelled Invoices from the Oracle EBS Payables Trial Balance

Based on the data generated in the sub sections [B], [C] and [D], this will be a critical step in the overall process. Link the tables XX_AP_R12_APTB_STG,XX_AP_HOLD_INV_R12_STG and XX_AP_CANCELLED_INV_R12_STG using the INVOICE_ID by excluding the invoices on Hold and Cancelled invoices from the Payables Trial Balance tables XX_AP_R12_APTB_STG.

```
# Invoices in Extract and Not in R12 TB
-------------------------------------
SELECT <<...select all the required columns - invoice_number, vendor_number,
   vendor_site, invoice_amount,
   functional_amount, invoice_date....>>,
      'Not in R12 TB' R12TB_TO_EXTRACT_RECON_STATUS
FROM  XX_AP_CLOUD_INV_HDR_STG EXTRACT
WHERE 1 = 1
AND   EXTRACT.INVOICE_ID NOT IN
            ( SELECT INVOICE_ID FROM XX_AP_R12_APTB_STG WHERE 1 =1
                                                AND INVOICE_ID NOT IN (SELECT INVOICE_ID FROM XX_AP_HOLD_INV_R12_STG)
                                                AND INVOICE_ID NOT IN (SELECT INVOICE_ID FROM XX_AP_CANCELLED_INV_R12_STG)
            );
```

Fig. 5. *Code snippet for retrieving the Invoices present in Extract and not in R12 AP TB.*

F. Compare Each Records in Extracts Table to Oracle EBS Payables Trial Balance

At this point the data preparations steps are complete. Fig. 1. represents the process flow of executing the reconciliation process. Using the INVOICE_ID as a link across the custom tables discussed in the above sub

sections each record in the Extract table XX_AP_CLOUD_INV_HDR_STG is compared to each record in the XX_AP_R12_APTB_STG by excluding the invoices on Hold and Cancelled invoices. Fig. 2. shows the code snippet for getting the matched records. Fig. 5. shows the code snippet for find the list of invoices in the Extract table XX_AP_CLOUD_INV_HDR_STG and not present in the Payables Trial Balance tables XX_AP_R12_APTB_STG. Ideally this process should not return any records.

G. Compare Each Records in Oracle EBS Payables Trial Balance to Extracts Table

To get the variance of data present in the Payables Trial Balance and not present in the Extract, each record in the table XX_AP_R12_APTB_STG is compared to XX_AP_CLOUD_INV_HDR_STG after excluding the invoices on Hold and Cancelled invoices from XX_AP_R12_APTB_STG. Fig. 2. shows the code snippet for getting the matched records. Fig. 4. shows the code snippet to find the list of invoices in the Payables Trial Balance tables XX_AP_R12_APTB_STG and not in the Extract table XX_AP_CLOUD_INV_HDR_STG. In the ideal scenario this process should not return any records. Fig. 3. shows the overall flow of this Payables Trial Balance to the Extract reconciliation process.

H. Resolve the Variances

This will be the last step in the reconciliation process. The variances if any obtained from sub section [F] and [G] will need to be further analyzed to find the root cause. For the variance discussed in sub section [G], if the roots cause points to a code defect in the extraction process, then this will have to be fixed by the technical team before the next extraction. Alternatively if there are any variance from the steps performed in the sub section [F], then the business team need to analyze those transactions to identify why they are missing from the Payables Trial Balance report.

IMPACT

Automating the reconciliation process of payables invoices during data conversion from Oracle E-Business Suite (EBS) to Oracle Fusion Cloud ERP has several major impacts. Firstly, it significantly reduces the time and effort required to complete the reconciliation, enabling organizations to accelerate the overall migration process. Automation eliminates the human errors that are common in manual reconciliation, thereby improving the accuracy and reliability of the data being migrated. Additionally, automation enhances scalability, allowing the reconciliation process to handle large volumes of invoices without the need for proportional increases in manual labor. This leads to a more efficient, cost-effective migration, ensuring that all eligible invoices are accurately selected and transferred, ultimately contributing to the integrity and success of the ERP transition.

SCOPE

The process of implementing the auto reconciliation process for the Payables Invoices data migration between the Payables Trial Balance and the conversion data Extract is in the scope of this article. This article focuses solely on the advantages and the solution approach to successfully reconcile at a faster pace eliminating the need for manual efforts.

CONCLUSION

Automating the reconciliation process of payables invoices during data conversion from Oracle E-Business Suite (EBS) to Oracle Fusion Cloud ERP offers a transformative solution to one of the most critical tasks in the migration process. As organizations undertake this complex transition, the ability to ensure that all eligible open payables invoices are accurately selected and migrated is paramount. Manual reconciliation, while traditional, presents significant challenges, including time consumption, human error, and scalability issues. Automation provides a compelling alternative that addresses these challenges by streamlining the process, enhancing accuracy, and reducing reliance on manual efforts.

By automating the reconciliation process, organizations can achieve a level of efficiency that is unattainable through manual methods. Automation not only accelerates the reconciliation of invoice data with the Oracle EBS Payables Trial Balance but also ensures that discrepancies are identified and resolved more quickly. This efficiency is particularly beneficial in large-scale migrations where the volume of data can be overwhelming. With automation, the process becomes more manageable, enabling project teams to meet deadlines and maintain the overall project timeline.

Furthermore, the reduction in human error that comes with automation cannot be overstated. Manual processes are inherently prone to mistakes, especially when dealing with large datasets or complex invoice scenarios. Automation minimizes these risks by providing consistent, repeatable, and accurate results. This not only improves the quality of the migrated data but also enhances the integrity of the financial records in the new Oracle Fusion Cloud ERP system. As a result, organizations can have greater confidence in their data migration outcomes, reducing the risk of post-migration discrepancies that could impact financial reporting and decision-making.

Another significant advantage of automation is the ability to scale the reconciliation process to meet the needs of organizations of any size. Whether dealing with thousands or millions of invoices, an automated system can handle

the workload efficiently without the need for proportional increases in human resources. This scalability is crucial for organizations that are growing or that have complex financial structures, as it ensures that the reconciliation process remains effective regardless of the data volume.

In conclusion, automating the reconciliation process of payables invoices during data conversion is not just a technological enhancement, it is a strategic move that aligns with the goals of accuracy, efficiency, and scalability in the migration to Oracle Fusion Cloud ERP. By embracing automation, organizations can overcome the inherent challenges of manual reconciliation, ensuring a smoother, faster, and more reliable migration process. As businesses continue to evolve in their digital transformation journeys, automation of critical processes like this will become increasingly indispensable, driving better outcomes and positioning organizations for long-term success in their new ERP environments.

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