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# Encumbrance Accounting Solution “A to Z”

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## The Encumbrance Problem

Encumbrance accounting is a feature that is not widely used within the Oracle Applications user community. Use is primarily found in public type organizations such as government (federal, state, provincial, regional, and municipal), educational, health services, and boards. This contingent represents approximately 5 percent of the overall Oracle Applications user community.

The accounting engine at the heart of Oracle Applications is very complex in nature. The encumbrance accounting functionality has placed great strain on the engine. The results have been reflected through the more than 900 technical assistance requests (TARS). The significance of the problems ranged from minor annoyances to major risk items, such as the failure of "funds available" security.

Identifying encumbrance problems, as well as reproducing them, is a difficult and tedious task consuming hours of in-house support energy. Oracle support has resolved many of the issues within release 11.03 through various patch levels. However, Oracle support has concluded that it cannot resolve all issues. To this end, Oracle support has recommended that a reporting solution be used to ensure accuracy.

The encumbrance functionality that is known to have problems is highly correlated to certain documents and actions. Actions like the creation of requisitions, purchase orders and invoices usually operate successfully. However, problems can occur when changes are made to these documents. Operations such as the cancellation of auto created PO lines; changes in received shipments; unit price variance with final closing; multi-year encumbrances; and matching variances are all areas that have experienced problems. These problems have an impact in the general ledger as the encumbered amount is either not updated correctly or the sub-ledger to ledger link is broken.

Most organizations discover problems while attempting to reconcile their sub-ledger balance to the general ledger. The symptoms, over or under statement of the encumbrance balances, mean the funds available calculations are in some part inaccurate. In each occurrence of the problem journals were either created in error or the link between the sub-ledger(s) and general ledger was broken. In either case, the integrity of the system is at risk and the ability to report the organization's current position may not be possible.

## The Encumbrance Functionality

The encumbrance accounting feature in Oracle is supported by a process called funds reservation, which is implemented in the General Ledger as a user-exit or spawned program. Essentially the process involves the verification of available funds based on pre-defined summary templates. Journals are then recorded in a special table called GL\_BC\_PACKETS, where they will sit temporarily before being converted by a nightly concurrent process called "Program - Create journal" into permanent encumbrance journals.

The modules capable of initiating such transactions are the purchasing module for the creation of three documents, Standard Purchase Order, Requisition and Purchase Order Releases and the Accounts Payable module for the different invoices. It is possible to control the type of encumbrance created by these modules via the set-up of the applications.

The benefit of the encumbrance accounting feature is the ability to have the system control the expenditure budget from the General Ledger, reducing the risks of potential over expenditure. This is often a legislated requirement for public organizations.

Essentially this process allows the different manager to understand their "funds available" based on the following formula.

$$\text{Funds Available} = \text{Budget} - \text{Actual} - \text{Encumbrance}$$

The Oracle system has the ability to control this formula per fiscal period using the different balances tracked within GL\_BALANCES (Essentially the General Ledger) by PTD (Period To Date), QTD (Quarter To Date), YTD (Year To Date), PJTD (Project To Date).

## Phase I - 'The Encumbrance Audit'

The 'MONTAGE ENCUMBRANCE SOLUTION' begins with an audit of the existing transactions and balances. The Accounts Payable and Purchasing modules will be fully reconciled to the General Ledger. This includes ensuring that journal balances and sub-ledger to ledger links are correct. Where problems are found, the audit results will include a detailed summary of each problem and what resolution is required.

### Configuration Analysis

The encumbrance audit begins with an understanding of the configuration structure in place. Essentially, through the configuration analysis, the criterion that must be reflected in the audit scripts is derived. This includes analysis of:

- GL Operating parameters
- PO Operating parameters
- AP Operating parameters

There are numerous permutations that are possible when reviewing these parameters. Examples of parameters that greatly influence these permutations are items such as posting in summary/detail, encumbrance types, budgeting controls, matching requirements, receiving, accruals, year end and multi year considerations etc.

### Application Version and Patch Analysis

There have been over 900 TARS logged that pertain to the encumbrance issue. A number of patches and patch sets have been issued to resolve encumbrance problems. The application version and patch analysis phase determines where the organization is positioned as far as patching levels.

MONTAGE has designed a template that includes all TARS and related symptoms. An analysis will be completed that will include a review of the patch levels. All known major risk items will be tested, regardless of existing patch levels. Where Oracle patching has not been applied, testing will be completed to determine whether the patch/patch set should be considered.

### Purchasing Module/Business Process Mapping

Interviews will be held with Purchasing, Payables and Accounting (General Ledger) officers to understand the procurement flow through. The results will form a critical part of the audit, as they will help identify potential throughput issues that may be correlated to various encumbrance functionality problems. The results will be mapped and presented.

This stage will also include developing an understanding of how encumbrance journal problems were resolved prior to the audit. This data will be reflected in the audit scripts and final reconciliation and audit report.

The completion of this stage will confirm the understanding of the system.

### Development of Audit Scripts

Based on the information collected, audit scripts will be developed. These audit scripts will be used to extract and compare GL balances with the purchasing and payables data. Results will be sorted and qualified. Further scripts will be used to drill down details and transaction history where incorrect balances are found.

The results of the audit, including detailed sub-ledger and general ledger data, will be summarized and presented.

### Recommendation Report

A recommendation report will be presented. This report will illustrate all of the findings. This will include details of sub-ledger and general ledger data and resolution options. An estimate of person effort required balancing journals and/or establishing sub-ledger general ledger data links will be included.

Recommendations on patch considerations and throughput issues will also be included.

A recommendation as to whether or not the organization should proceed to Phase II will be included.

## Phase II - Encumbrance Accounting Solution 'A to Z'

The 'MONTAGE ENCUMBRANCE SOLUTION' is a patch and reporting solution. No custom or intrusive code is required as part of this solution. Essentially, the solution begins with an understanding of the organizations current patch level. An analysis of available patches is conducted and the need for additional patching is determined. The primary method used to determine if a need for patching exists is testing (see Phase I, section 1.2 - Application Version and Patch Analysis).

The reporting solution includes developing reports that are used to assist in the reconciliation of the sub-ledgers (AP and PO) with GL. Specifically, these reports will present GL, PO and AP items that appear problematic. Further reports will be available to drill down and group related data.

The new encumbrance reports will be added to the existing day, month and period end reporting tools. The reports will provide the functional module manager with the tools needed to manage and reconcile the sub-ledger. The audit report should be run on a daily basis to ensure that funds available balances have not been compromised.

### Business Process and Purchasing Module Utilization Analysis

The results of the audit stages Configuration Analysis and Purchasing Module/Business Process Mapping will be utilized.

The organizations use of the Purchasing and Accounts Payable modules will be reviewed. Throughput that is deemed to be correlated to encumbrance problems will be identified. Recommendations will be put forward.

### Development and Registration of Encumbrance Reports

A functional specification will be prepared that introduces the reports to be developed. The specification will include detailed information about the organization that must be recognized during the development of the scripts. The specification will also include report parameters that can be used to manipulate and summarize data. Mock diagrams of reports will also be illustrated.

A technical specification and code movement document will be developed as part of the report development. The technical specification will clearly outline all code, by section and function, fully commented.

The code movement document will include detailed step-by-step instructions of how each report can be ported into other environments (Development, Testing etc).

All documentation, including functional and technical specifications is developed in accordance with FlexWORKS™. The layout and information available within the functional and technical specifications will help maintenance and support teams quickly comprehend and support the code.

The following reports will be developed:

Encumbrance Balance Audit Report - This report will identify suspect balances and account combinations that may be in error. Parameters will be included to include date and other limiting factors.

Journal Drilldown Report - Based on the results of the Encumbrance Balance Audit Report, the Journal Drilldown Report will provide detailed information within the GL. This report will provide a cross sectional view of a particular distribution or account code combination, including all Purchasing, Accounts Payable and General Ledger details. All will be grouped and presented for quick and easy analysis. Suspect data can be easily identified.

AP/PO Data Report - Based on the results of the Encumbrance Balance Audit Report, the AP/PO Data Report will provide detailed information of the data within the AP/PO sub-ledgers. This information can then be compared to both the Encumbrance Balance Audit Report and the Journal Drilldown Report.

### Report Integration Into Purchasing Module Management Procedures

A review of day, month, period end management, reconciliation and closing procedures will be completed. Where possible, alternative procedures will be recommended based on other experiences. The encumbrance reporting solution will be incorporated into these procedures.

The Purchasing, Accounts Payable and Accounting Manager (General Ledger) will be trained in the use of the encumbrance reports.

### Conclusion

The results of Phase I and II will be consolidated into a single report. The report will be presented in a sectional format, illustrating the results of each step.

# MONTAGE eIntegration - Profile and Related Experience

## Company Profile

MONTAGE is a leader in today's high technology marketplace, providing eIntegration™ to companies positioning themselves for success in the new economy. By developing customized Internet and eBusiness strategies, MONTAGE helps its clients harness the potential of the Internet and emerging technologies. The benefits of eIntegration include: gaining a competitive advantage through the effective use of new technologies, building on the value of current legacy systems, and creating eBusiness strategies for the future.

MONTAGE's service offering address a range of business processes, including eMarketing, eSelling, eCommerce; Enterprise Resource Planning (ERP); Business Intelligence (BI); and Enterprise Security Services (ESS). The company's experience in these areas extends across a broad spectrum of sectors including telecommunications, manufacturing, financial services, energy, and various levels of government in countries across North America and Europe. MONTAGE's client list includes Nortel Networks, JDS Uniphase, Red Hat, United Nations, Newbridge, TELUS Communications, Shaw Communications, ADP, Chapters Online, Enbridge, Suncor, Gulf, Government of Canada, Shell Canada, University of Calgary, CP Rail, EPCOR, ATCO, Enmax, TransAlta, Calgary Parking Authority, SMED International and Canada 3000.

Since its founding in 1986, MONTAGE has enjoyed impressive financial growth, strong employee retention and long-lasting client relationships. Strategic partnerships with companies such as Oracle, Microsoft, Sun Microsystems, Business Objects, Entrust Technologies, and Apple have been key to the company's growth. MONTAGE also takes pride in the technical strength of its workforce, and its reputation as a provider of innovative solutions and speedy delivery.

With offices across Canada, the United States and Europe, MONTAGE is well positioned to capitalize on the global market for eBusiness services, which is projected to grow to \$100 Billion by 2003.<sup>1</sup>

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<sup>1</sup> Source: Forrester Research