Integrating Oracle® Receivables with Vertex® Quantum

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Integrating Oracle® Receivables with Vertex® Quantum

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Primary Authors: Toru Kawamura, Nigel Smith

Contributors: Tanji Koshio, Kenichi Mizuta, Stephen Damiani

Contents

Preface

This implementation guide provides you with all the information you need to integrate Oracle Receivables and Oracle Order Entry / Shipping with Vertex Quantum. It is organized for easy access to the following information:

- Implementation procedures
- Day to day operations
- Reconciliation, support, and audit procedures
- Technical reference material
- Commonly asked questions

This preface explains how this implementation guide is organized and introduces other sources of information that can help you.

About This Implementation Guide

This guide is the primary source of information about integrating Vertex Quantum with Oracle Receivables and Oracle Order Entry. It contains overviews as well as task and reference information. This manual includes the following chapters:

- Chapter 1 describes the installation and implementation steps required to integrate Vertex Quantum with Oracle Receivables and Oracle Order Entry.
- Chapter 2 describes the normal operation of Oracle Receivables and Oracle Order Entry when the Vertex products are implemented.
- Chapter 3 provides an overview of the various accounting and business processes required for the Vertex integration.
- Chapter 4 describes the internal communication parameters between Oracle and Vertex, the Oracle tax view functions that support this communication, and how to extend the integration using user descriptive flexfields and the PL/SQL functions. Additionally, this chapter includes some commonly asked questions about using Vertex Quantum with Oracle Receivables.

This guide is available online

All Oracle Applications user's guides are available online in Adobe Acrobat format. This manual is also available in hardcopy and as a separate document in Adobe Acrobat format.

The paper and online versions of this manual have identical content; use whichever format is most convenient.

You can order an Oracle Applications Documentation Library CD containing Adobe Acrobat versions of each manual in the Oracle Applications documentation set. Using this CD, you can search for information, read it onscreen, and print individual pages, sections, or entire books. When you print from Adobe Acrobat, the resulting printouts look just like pages from an Oracle Applications hardcopy manual.

Assumptions

This manual assumes that you will consult with qualified tax professionals when setting up your system. The examples in this manual are for illustrative purposes only; your specific implementation may be different. This manual also assumes you are familiar with Oracle Receivables. If you have never used Oracle Receivables, we suggest you attend one or more of the Oracle Receivables training classes available through Oracle Education. For more information about Oracle Receivables and Oracle training, see: Other Information Sources: page vii.

This guide also assumes that you are familiar with the Oracle Applications graphical user interface. To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide.*

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle provides powerful tools you can use to create, store, change, retrieve and maintain information in an Oracle database. But if you use Oracle tools like SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using an Oracle Applications form can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications forms, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications forms to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. But, if you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Consequently, we STRONGLY RECOMMEND that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to

modify Oracle Applications tables, unless we tell you to do so in our manuals.

Other Information Sources

You can choose from many sources of information, including documentation, training, and support services, to increase your knowledge and understanding of Oracle Receivables.

Most Oracle Applications documentation is available in Adobe Acrobat format on the *Oracle Applications Documentation Library* CD. We supply this CD with every software shipment.

If this manual refers you to other Oracle Applications documentation, use only the Release 11 versions of those manuals unless we specify otherwise.

Oracle Receivables Tax Manual

This manual provides everything you need to know about calculating tax within Oracle Receivables, Oracle Order Entry / Shipping, Oracle Sales and Marketing, and Oracle Web Customers. It includes information about implementation procedures, setup forms and windows, the Oracle Receivables tax calculation process, tax reports and listings, and open interfaces.

Oracle Applications User's Guide

This guide explains how to navigate, enter data, query, run reports, and introduces other basic features of the graphical user interface (GUI) available with this release of Oracle Receivables (and any other Oracle Applications product). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent requests.

You can also access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Related User's Guides

Oracle Receivables shares business and setup information with other Oracle Applications products. Even if you have not installed them as separate products, your Oracle Receivables application includes some

forms and functionality from other Oracle Applications. Therefore, you may want to refer to other user's guides when you set up and use Oracle Receivables.

If you do not have the hardcopy versions of these manuals, you can read them by choosing Library from the Help menu, by reading from the Oracle Applications Document Library CD, or by using a web browser with a URL that your system administrator provides.

Oracle Receivables User's Guide

This manual explains how to create and maintain transactions, enter and apply receipts, and enter customer information in Oracle Receivables. It also describes several Oracle Receivables open interfaces, such as AutoLockbox which lets you create and apply receipts and how to use AutoInvoice to import and validate transactions from other systems into Oracle Receivables.

Oracle Applications Flexfields Guide

This manual provides flexfields planning, setup, and reference information for your implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

Oracle Alert User's Guide

This manual explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Country–Specific Manuals

Use these manuals to meet statutory requirements and common business practices in your country or region. They also describe additional features added to Oracle Receivables to meet those requirements. Look for a user's guide appropriate to your country; for example, see the *Oracle Financials for the Czech Republic User's Guide* for more information about using this software in the Czech Republic.

Oracle Applications Character Mode to GUI Menu Path Changes

This is a quick reference guide for experienced Oracle Applications end users migrating from character mode to a graphical user interface

(GUI). This guide lists each character mode form and describes which GUI windows or functions replace it.

Oracle Financials Open Interfaces Guide

This guide contains a brief summary of each Oracle Financial Applications open interface. For detailed information about the Oracle Receivables open interfaces, refer to the *Oracle Receivables User's Guide.*

Multiple Reporting Currencies in Oracle Applications

If you use the Multiple Reporting Currencies feature to report and maintain accounting records in more than one currency, refer to this manual before implementing Oracle Receivables. The manual details additional steps and setup considerations for implementing Oracle Receivables with this feature.

Multiple Organizations in Oracle Applications

If you use the Oracle Applications Multiple Organization Support feature to use multiple sets of books for one Oracle Receivables installation, use this guide to learn about setting up and using Oracle Receivables with this feature.

Oracle Report eXchange Documentation

Read this documentation to learn more about Report eXchange, which lets you customize the output of certain reports and download them to a spreadsheet program. This information is part of the Oracle Applications Desktop Integrator documentation.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards*. It also provides information to help you build your custom Developer / 2000 forms so that they integrate with Oracle Applications.

Oracle Applications User Interface Standards

This manual contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the

Oracle Applications products and how to apply this UI to the design of an application built by using Oracle Forms 4.5.

Installation and System Administration

Oracle Applications Installation Manual

This manual and the accompanying release notes provide information you need to successfully install Oracle Financials, Oracle Public Sector Financials, Oracle Manufacturing, or Oracle Human Resources in your specific hardware and operating system software environment.

Oracle Applications Upgrade Manual

This manual explains how to prepare your Oracle Applications products for an upgrade. It also contains information on finishing the upgrade procedure for each product. Refer to this manual and the *Oracle Applications Installation Manual* when you plan to upgrade your products.

Oracle Applications System Administrator's Guide

This manual provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage processing.

Oracle Receivables Applications Technical Reference Manual

The *Oracle Receivables Applications Technical Reference Manual* contains database diagrams and a detailed description of Oracle Receivables and related applications database tables, forms, reports, and programs. This information helps you convert data from your existing applications, integrate Oracle Receivables with non–Oracle applications, and write custom reports for Oracle Receivables.

You can order a technical reference manual for any product you have licensed. Technical reference manuals are available in paper format only.

Other Information

Training

Oracle Education offers a complete set of training courses to help you and your staff master Oracle Applications. We can help you develop a training plan that provides thorough training for both your project team and your end users. We will work with you to organize courses appropriate to your job or area of responsibility.

Training professionals can show you how to plan your training throughout the implementation process so that the right amount of information is delivered to key people when they need it the most. You can attend courses at any one of our many Educational Centers, or you can arrange for our trainers to teach at your facility. In addition, we can tailor standard courses or develop custom courses to meet your needs.

Support

From on–site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle Receivables working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle server, and your hardware and software environment.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 45 software modules for financial management, supply chain management, manufacturing, project systems, human resources, and sales and service management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers**,** and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 140 countries around the world.

Thank You

Thank you for using Oracle Receivables and this manual.

We value your comments and feedback. At the end of this manual is a Reader's Comment Form you can use to explain what you like or dislike about Oracle Receivables or this document. Mail your comments to the following address or call us directly at (650) 506–7000.

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Or, send electronic mail to **appsdoc@us.oracle.com**.

CHAPTER

1

Implementing the Vertex Quantum Integration

This chapter describes the installation and implementation steps required to integrate Vertex Quantum with Oracle Receivables and Oracle Order Entry / Shipping.

Implementing the Vertex Quantum Integration

Oracle Receivables provides a Tax Vendor Extension to integrate external tax calculation programs with Oracle Applications. This Extension lets you provide for complex tax calculations while retaining the full power of Receivables to create and store all other tax data.

The Tax Extension is called whenever a tax rate is calculated by the Receivables Tax Engine. When implemented, the Tax Extension will return a tax rate or amount from the vendor program. Receivables will use this information to create the appropriate tax line(s) and related accounting information.

> **Note:** If your Receivables installation uses multiple organizations (multi–org), the profile option Tax: Use Tax Vendor lets your system administrator control which users can call an installed third party application for tax calculations. The default value is Yes; this indicates that a user can call a third party application to calculate tax. See: Overview of Receivables Profile Options in the *Oracle Receivables User's Guide.*

Scope

This implementation guide is for the integration of the tax vendor extension with Oracle Receivables Release 11.0.2 or higher. The tax vendor extensions have been implemented using Vertex's Quantum Sales and Use Tax.

> **Attention:** This integration can only be used with Oracle GUI application products; it will not function with Oracle character mode applications. Additionally, the Vertex Quantum integration is only supported for US state and local taxes. Do not implement this integration for Canada or any other country. For more information on international taxation handling, including Canadian taxes, please refer to the *Oracle Receivables Tax Manual.*

Related Documents

This integration guide is intended as a supplement to the *Oracle Receivables Tax Manual.*

When Implementing Vertex Quantum within Oracle Receivables, you should first review the Implementing US Sales Tax topical essay. Only after completing all of the steps described in that essay should you execute the additional steps required for Vertex Integration. For more

information, see: Implementing US Sales Tax in the *Oracle Receivables Tax Manual*.

Sales Tax Rate Interface

Both Oracle Order Entry and Receivables provide an interface to load tax rates, zip code ranges, and location names from data files supplied by external vendors. This information is used by the Receivables Customers windows to validate addresses and create compiled sales tax data whenever an address is updated or created.

Receivables provides the sample Vertex SQL*Loader control file, arvertex.ctl. This file will load state, county, city, zip ranges, GeoCodes, and jurisdiction code from the Vertex SEQMAST.dat data file into the Oracle AR_TAX_INTERFACE table. Once loaded, the GeoCode will be automatically used by the Vertex views. For more information, see: Sales Tax Rate Interface in the *Oracle Receivables Tax Manual*.

Tax Database Views and Functions

Receivables provides database views to control which database columns are passed into the Tax Engine to calculate tax for your transaction lines. The database views call PL / SQL functions to provide a consistent and flexible access to vendor–specific data.

Generic Tax Extension

The Tax Extension is called whenever a tax rate is calculated by the Receivables Tax Engine. Tax rates are calculated in the following windows, concurrent programs, and reports:

- Adjustments windows
- AutoInvoice
- Copy Transactions window
- Credit Transactions window
- Quote window (Oracle Sales and Marketing)
- Sales Orders window (Oracle Order Entry)
- Sales Order Acknowledgment Report
- Transactions window
- Web Customer Orders

The Tax Extension can be implemented to generate single or multiple tax lines for every invoice line. Receivables will store each tax line in the RA_CUSTOMER_TRX_LINES table.

Integration with Oracle Order Entry

Vertex Quantum is fully integrated with Oracle Order Entry. At the time of order entry, the tax amount for an order or line is calculated by calling the Receivables Tax Engine. Consequently, if you have installed a Tax Vendor, it will be called to calculate tax on the order in the same way as on the invoice.

> **Note:** Tax on an order is for information only and will be recalculated at the time of invoice creation. This is necessary because tax rates change over time and there could be a significant difference in the rates between the order date and the invoice date.

Integration with Oracle Sales and Marketing

Vertex Quantum is fully integrated with Oracle Sales and Marketing (OSM). At the time of quote entry, the tax amount for the quotation is calculated by calling the Receivable Tax Engine. Consequently, if you have installed a Tax Vendor, it will be called to calculate tax on quotes in the same way as on invoices and sales orders.

Integration with Oracle Web Customers

Vertex Quantum is fully integrated with Oracle Web Customers. At the time of submitting an order to Oracle Order Entry, the tax amount for the order is calculated by calling the Receivables Tax Engine. Consequently, if you have installed a Tax Vendor, it will be called to calculate tax on on–line sales orders the same way as on invoices, sales orders, and quotes.

> **Note:** Tax on an order, quote, or an on–line order are for information only and will be recalculated at the time of invoice creation. This is necessary because tax rates change over time and there could be a significant difference in the rates between the order date and the invoice date.

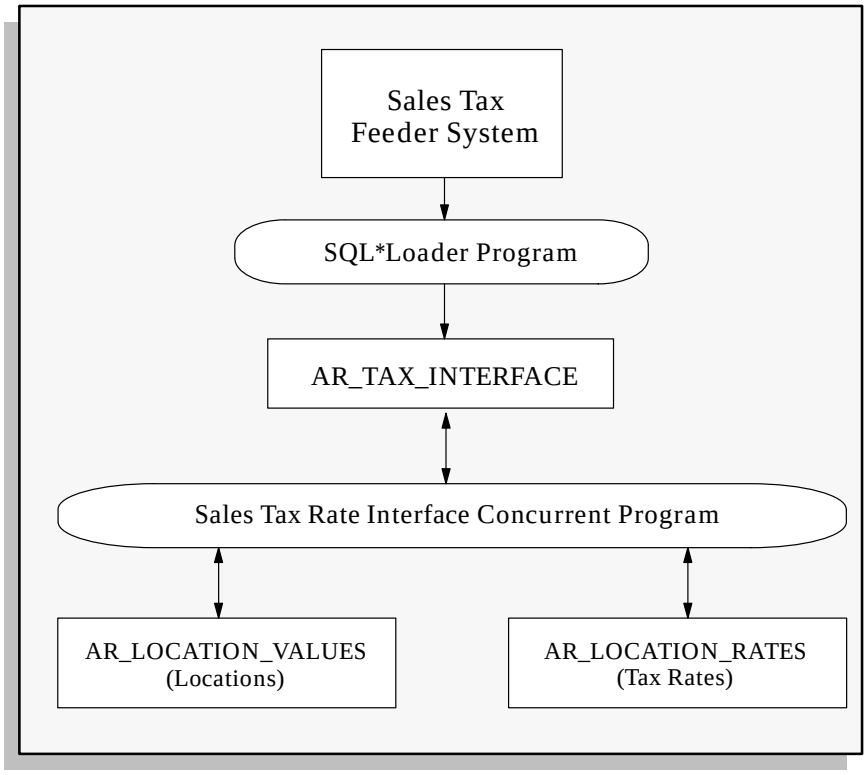
The tax extension is a PL/SQL procedure that is called by the Oracle Tax Engine every time a tax rate is calculated within Receivables or Oracle Order Entry.

Load External Tax Information

Receivables provides a sample Vertex SQL*Loader control file, $AR_TOP/bin/arvertex.ctl, to load new locations and tax rates from the SEQMAST data file supplied by Vertex. These programs let you load multiple tax rates for the same location, which may cover different date ranges and postal codes. The following diagram shows how your Tax Vendor's data is imported into Receivables tax tables.

> **Note:** Receivables provides six possible Sales Tax Location Flexfield structures. The sample Vertex SQL*Loader file arvertex.ctl only supports the structure State.County.City. If you select another structure, you will need to modify these SQL*Loader files.

Figure 1 – 1 Sales Tax Rate Interface

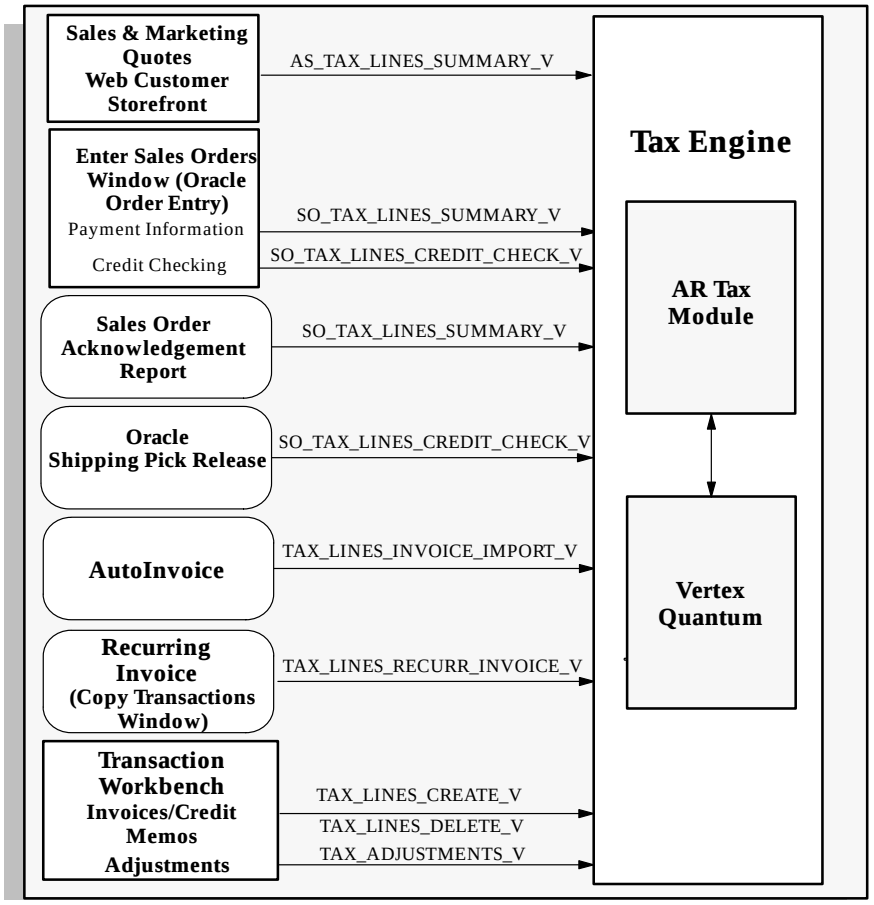


Receivables provides database views to pass tax information to the Tax Engine. You can use these views to control which database columns are passed into the Tax Engine for every transaction line that you tax. The following views have been defined:

- SO_TAX_LINES_SUMMARY_V
  Used by the Order Entry Sales Orders window.
- SO_TAX_LINES_CREDIT_CHECK_V
  Used by the Order Entry Sales Orders window.
- AS_TAX_LINES_SUMMARY_V
  Used by the Oracle Sales and Marketing Quote Workbench
- TAX_LINES_INVOICE_IMPORT_V
  Used by the Receivables AutoInvoice program.
- TAX_LINES_RECURR_INVOICE_V
  Used by the Receivables Recurring Invoice program (Copy Transactions window).
- TAX_LINES_CREATE_V
  Used by the Receivables Transactions Workbench.
- TAX_LINES_DELETE_V
  Used by the Receivables Transactions Workbench.
- TAX_ADJUSTMENTS_V
  Used by the Receivables Transactions Workbench.

For more information, please refer to the *Oracle Receivables Applications Technical Reference Manual* and the *Oracle Order Entry/Shipping Applications Technical Reference Manual*.

Figure 1 – 2 Using the Tax Engine to Calculate Tax



Receivables Tax Engine

The Tax Engine uses the information passed by the database views to calculate tax, regardless of whether an external Tax Vendor is installed. Both the Tax Extension and the AR Tax Module are components of the Tax Engine and are called every time the Tax Engine is requested to calculate tax.

If an external tax vendor is installed, the Tax Engine will use the tax rate or amount returned by the Tax Extension to override the rate or amount calculated by the AR Tax Module. The following table highlights key columns used by your tax vendor.

View Column Name	Description
TRX_NUMBER	Transaction Number
TRX_DATE	Transaction Date
SHIP_TO_CUSTOMER_NAME	Ship–to customer name
BILL_TO_CUSTOMER_NAME	Bill–to customer name
SHIP_FROM_ADDRESS_CODE	Jurisdiction code for Ship From Address
SHIP_TO_ADDRESS_CODE	Jurisdiction code for Ship–To Address
PART_NUMBER	Inventory Part Number

Table 1 – 1 Columns used by your tax vendor.

Tax Jurisdictions

Within the United States, a tax rate is calculated from Ship–To, Ship From, Point of Order Origin, and Point of Order Acceptance. To implement the Tax Extension using each of these addresses, you will need to store the latter three values in descriptive flexfields at the appropriate level: Invoice Line or Header, or Order Line or Header.

If you use AutoInvoice to import orders from Oracle Order Entry, AutoInvoice will populate the item line Transaction Flexfield with packing slip information. This can be used to source the Ship From site use and address for each order. See Integrating Oracle Order Entry with Oracle Receivables in the *Oracle Financials Open Interfaces Manual*.

The jurisdiction codes are loaded by the Sales Tax Rate Interface into attribute 1 of the table ar_location_rates. To load vendor jurisdiction codes into the other view columns, you will need to modify the views to join ar_location_rates with your appropriate customized table.

If you require postal code data to nine characters (zip+4) to segregate customer addresses by jurisdiction code, you will need to manually update the address data provided by your Tax Vendor. You can use the Tax Location and Rates window to update the postal code data to comply with your jurisdiction code requirements.

Below is an example of multiple jurisdiction codes within a standard five digit zip code designation:

location_segment_id	from_postal_code	to_postal_code	jurisdiction_code
43 (San Francisco)	94110	94116	code 1
43 (San Francisco)	94117	94117	code 2
43 (San Francisco)	94118	94118–3999	code 3
43 (San Francisco)	94118–4000	94118–9999	code 4

Table 1 – 2 Jurisdiction codes

Installing the Vertex Quantum Integration

The tax vendors will provide a mechanism to install their PL / SQL packages, tables, data, and any other necessary objects. These database objects should all be created in a separate vendor schema. Once the vendor has been installed, there are several manual steps that need to be performed to enable the functionality.

Character Mode Upgrade

If you are upgrading from Oracle Applications Release 10 character mode applications, integrating with Vertex Quantum using the solution from Design Migration Services, please contact Oracle Design Migration Services or your Oracle account manager for consulting assistance.

Prerequisites

- ❑ Install Vertex's Quantum Sales and Use Tax version 1.2.0 or 1.3.0 (PL / SQL)
- ❑ Quantum, TDM, Returns, and implementation training from Vertex, Inc.
- ❑ Implement US Sales Tax. To do this, you need to perform all of the steps described in the Implementing US Sales Tax essay in the *Oracle Receivables Tax Manual*.
- ❑ Upload the Vertex SEQMAST data file into Oracle Receivables Address Validation tables. You need to upload this file before loading any customer addresses. This two step process is described in Monthly Procedures: page 3–6.

- ❑ Validate customer addresses. All Ship–to and Bill–to Customer Addresses within the US must have been validated by Oracle Receivables by setting the Address Validation field in the System Options window to 'Error.'
- ❑ Oracle SQL*Plus access to the APPS schema
- ❑ Permission to relink Oracle executables
- ❑ Test database

Setup Checklist for the Vertex Quantum Integration

Complete the following steps in the order shown to implement the Tax Vendor Extension:

- Step 1 Provide Grants to the APPS Schema
- Step 2 Remove the C Tax Vendor (optional)
- Step 3 Re–create Synonyms
- Step 4 Set Profile Options
- Step 5 Set Up Lookup Code ARTAXVDR: Location Qualifier
- Step 6 Set Up Lookup Code Tax Exemption Reason
- Step 7 Set Up Vendor–Specific Tax Codes
- Step 8 Set Up Vendor Tax Views
- Step 9 Verify Tax Vendor Implementation
- Step 10 Implement Descriptive Flexfields (optional)

Step 1 – Provide Grants to the APPS Schema

Once the vendors have been installed, certain grants must be given to the APPS schema so that these vendor packages can be executed.

```
CONNECT <Vertex schema>/<Vertex password>
GRANT ALL ON QSU TO <APPS Schema>
WITH GRANT OPTION;
GRANT ALL ON GEO TO <APPS Schema>
WITH GRANT OPTION;
GRANT ALL ON REGPRERETURNSTBL TO <APPS Schema>
WITH GRANT OPTION;
```

Step 2 – Remove the C Tax Vendor (optional)

This step is required only if you are upgrading from the DMS integration. To use the PL/SQL version of the tax vendor extensions, the C tax vendor extension must be taken out of all Oracle executables. This integration will make obsolete the integration from DMS.

First, the $FND_TOP/usrxit/devenv files VNDARSL and VNDARPL should include the vendor–specific object files. These need to be removed.

The following objects have been defined for Vertex in VNDARPL and VNDARSL. Please remove any references to these objects.

- $(AR_TOP)/lib/arvertex.o
- $(VERTEX_TOP)/lib/libvst.a
- $(VERTEX_TOP)/lib/libloc.a
- $(VERTEX_TOP)/lib/libport.a

Next, relink aiap, AutoInvoice, recurring invoices, OE Transaction Manager, and the reports executables by issuing the following commands:

```
adrelink force=y ranlib=y "fnd aiap"
adrelink force=y ranlib=y "fnd ar25run"
adrelink force=y ranlib=y "ar RAXTRX"
adrelink force=y ranlib=y "ar ARXREC"
adrelink force=y ranlib=y "ar ARTXMT"
adrelink force=y ranlib=y "oe OEORPC"
adrelink force=y ranlib=y "oe OESREL"
adrelink force=y ranlib=y "oe OEBSHC"
adrelink force=y ranlib=y "oe OECMWC"
adrelink force=y ranlib=y "oe OEIIRA"
adrelink force=y ranlib=y "oe OEKCII"
adrelink force=y ranlib=y "oe OEOBOE"
adrelink force=y ranlib=y "oe OEPREL"
adrelink force=y ranlib=y "oe OERLDI"
adrelink force=y ranlib=y "oe OERLRI"
adrelink force=y ranlib=y "oe OERPRS"
adrelink force=y ranlib=y "oe OESHTM"
adrelink force=y ranlib=y "oe OEVINV"
adrelink force=y ranlib=y "oe OEWREL"
adrelink force=y ranlib=y "oe OEZMAI"
adrelink force=y ranlib=y "oe WSHARI"
adrelink force=y ranlib=y "oe WSHIAR"
adrelink force=y ranlib=y "oe WSHREL"
```

Step 3 – Re–create Synonyms

Once the packages have been installed, you need to recreate certain synonyms to point to the correct vendor packages.

```
CONNECT <APPS_Schema>/<APPS_Password>

DROP SYNONYM ARP_TAX_VERTEX_QSU;
DROP SYNONYM ARP_TAX_VERTEX_GEO;
DROP SYNONYM ARP_TAX_VERTEX_AUDIT;

CREATE SYNONYM ARP_TAX_VERTEX_QSU FOR <Vertex
Schema>.QSU;
CREATE SYNONYM ARP_TAX_VERTEX_GEO FOR <Vertex
Schema>.GEO;
CREATE SYNONYM ARP_TAX_VERTEX_AUDIT FOR <Vertex
Schema>.REGPRERETURNSTBL;
```

Step 4 – Set Up Profile Options

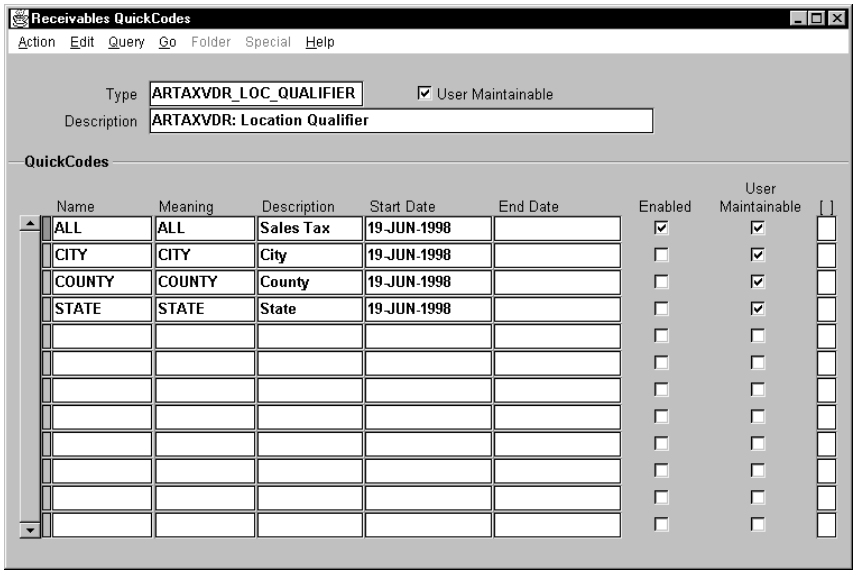
The following profile options are used by the tax vendor extensions:

Profile Name	Default Value	Description
Tax: Use Tax Vendor	Yes	This indicates that the vendor tax engine should be used.
Tax: Use PL/SQL Vendor	Null	This indicates which tax vendor should be used in a multi–org environment where multiple tax vendors are installed.
Tax Vertex: Use Secondary Taxes	Use Secondary Tax	This indicates whether secondary taxes should be returned to Oracle. Accept the default value 'Use Secondary Taxes' for this option.

Table 1 – 3 Profile Options and Default Values

Step 5 – Set Up Lookup Code ARTAXVDR: Location Qualifier

The lookup code ARTAXVDR: Location Qualifier determines whether tax lines should be created separately for State, County, and City, or if the tax rates and amounts should be summed up into one tax line. Use the Receivables QuickCodes window to define this lookup code.



Navigate–> Setup–> System –> QuickCodes –> Receivables

Required Setup: Enable ALL and disable STATE, COUNTY, and CITY to get a consolidated, single tax line.

Step 6 – Set Up Lookup Code Tax Exemption Reason

Use the Receivables QuickCodes window to set up the Tax Exemption Reason lookup code. These reason codes are used by the tax vendor in determining the exemption reason and are restricted in the number of characters that are used by the vendors.

Attention: Vertex is restricted to 1 character. Therefore, define these exemption reasons such that the first character is unique.

Step 7 – Set Up Vendor–Specific Tax Codes

When using the tax vendor extensions, you need to define a location–based tax. Only location–based taxes will be calculated by the tax vendor extensions.

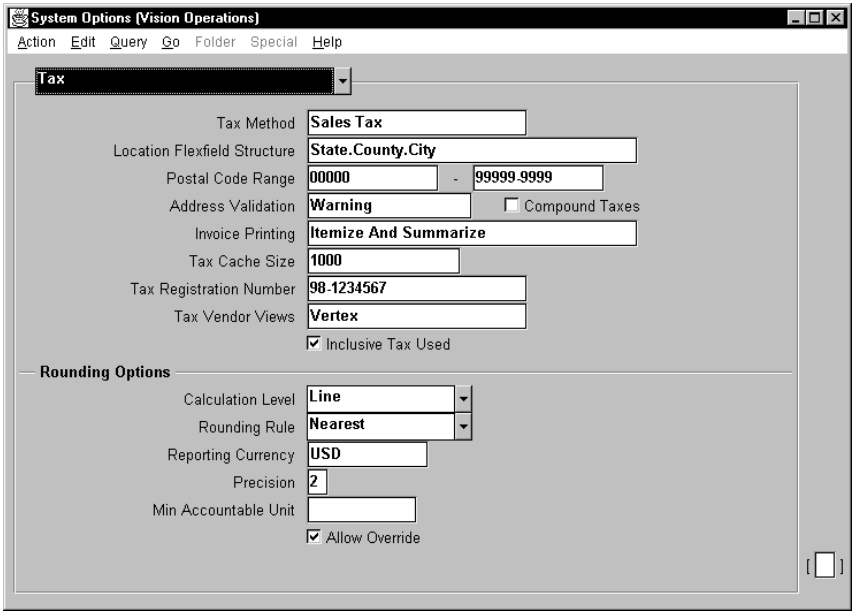
This integration will generate one tax line per invoice. The State, County, City, Secondary County and Secondary City amounts are held in the Global Descriptive Flexfield for the tax line. This enhancement enables Oracle to provide a more detailed level of tax reporting and reconciliation without requiring three tax lines per invoice line and multiple tax codes.

Oracle Receivables will use the Tax Account identified in the Tax Locations and Rates window to control the tax liability posting so that each state may have its own state tax liability account.

Step 8 – Set Up Vendor Tax Views

The default tax views will not work properly with the tax vendor extensions. These views should be replaced with the vendor tax views provided. These views have been installed under a different name (see below).

In the Tax alternative region of the System Options window, set the Tax Vendor Views field to Vertex. This changes the database views for this organization so that they will use the data source derived from the Vertex views.



Step 9 – Verify Tax Vendor Implementation

Perform the steps below to verify that the tax vendor was implemented successfully.

> **Note:** After each step, confirm that the vendor's tax reports reconcile to Oracle Receivables.

- Create Customer Addresses
  Customer addresses are validated against existing locations.

- Create a sales order and run the Sales Order Acknowledgment Report.
  The tax vendor extensions have been integrated with Order Entry to allow tax estimations to be calculated.
- Import a sales order using AutoInvoice
  Tax will be calculated using the vendor tax extensions on invoices imported from Oracle Order Entry or other feeder systems.
- Maintain Imported Invoices using the Transaction Workbench
  Any modifications to imported invoices will be reconciled with your vendor's tax reports.
- Credit this invoice
  When you create credit memos, tax amounts will always reconcile to your vendor's tax reports.
- Adjust an invoice
  Tax adjustments will reconcile with your vendor's tax reports. Only approved adjustments of type 'Tax' are reflected in your vendor's tax reports. This lets you control which write–offs have recoverable sales tax from the state, county, and city.
- Copy (Recur) this invoice
  Tax will be calculated using the vendor tax extensions on recurred invoices.
- Create an invoice in the Transaction Workbench
  Tax will be calculated using the vendor tax extensions on manual invoices created from within Oracle Receivables.
- Create an exempt order
  Oracle Receivable exemptions can be used to calculate tax with the vendor tax extensions.

Step 10 – Implement Descriptive Flexfields (optional)

The descriptive flexfields on Warehouse, Salespeople, and Customer Addresses can be used to extend the basic functionality of this integration. Specifically, ship–from and point of order acceptance GeoCodes can be used to support tax calculations using both ship–from and ship–to addresses. For more information on these optional flexfields, see: Descriptive Flexfields: page 4–13.

CHAPTER

2 Tutorial

This chapter describes the normal operation of Oracle Receivables and Oracle Order Entry when the Vertex products are implemented. Use this tutorial to learn how your daily transactions are reflected in the Vertex Sales Tax Register.

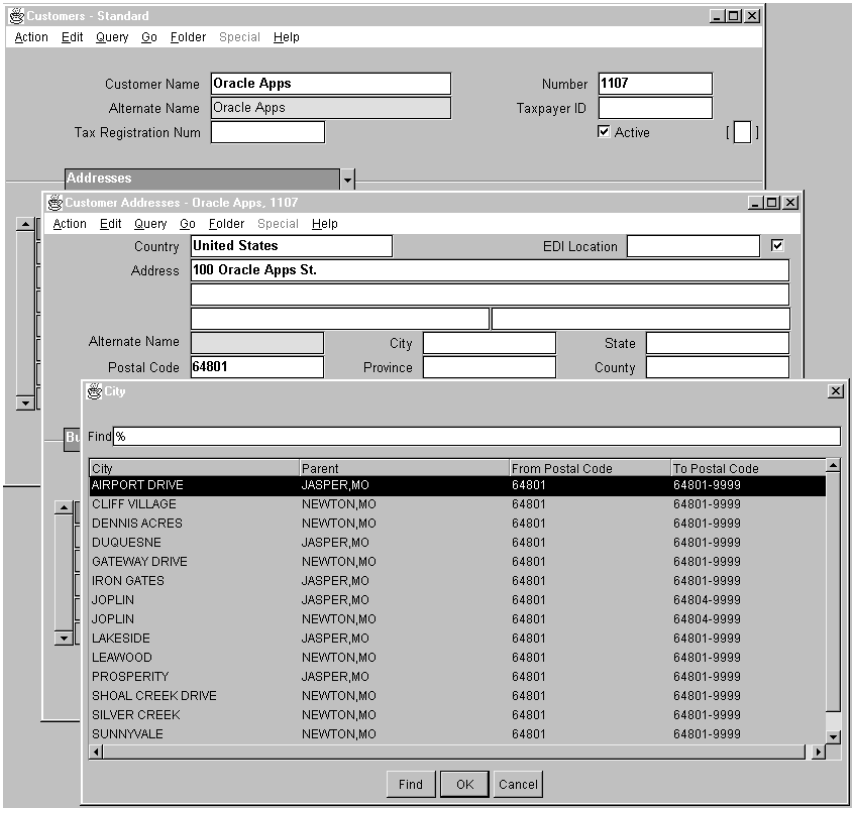
Tutorial

This section describes the Demonstration Script for a standard implementation.

Create Customer Addresses

When creating a new address for a customer, the state, county, city, and zip code are validated against existing locations. These locations are imported into Oracle Receivables using the Vertex SEQMAST file and the Receivables Sales Tax Rate Interface. In this way, each customer site is guaranteed to have an address that is associated with a valid jurisdiction code.

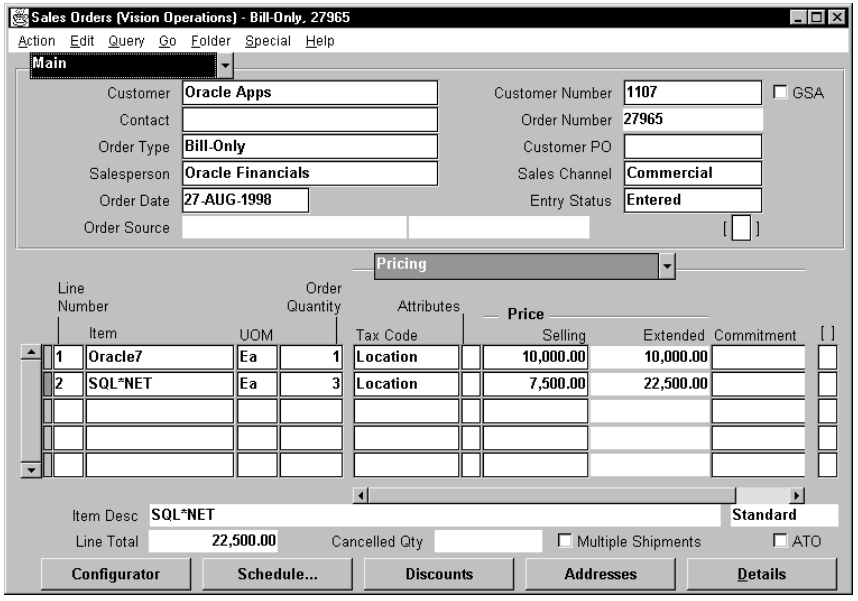
When entering the address, the zip code can be used to automatically populate the state, county, and city. In cases where multiple jurisdiction codes are available for a particular zip code, a pop up list will appear as shown below.



In this example the zip code 64801 is defined in several jurisdictions in the state of Missouri. The poplist helps you select the correct jurisdiction code for your addresses.

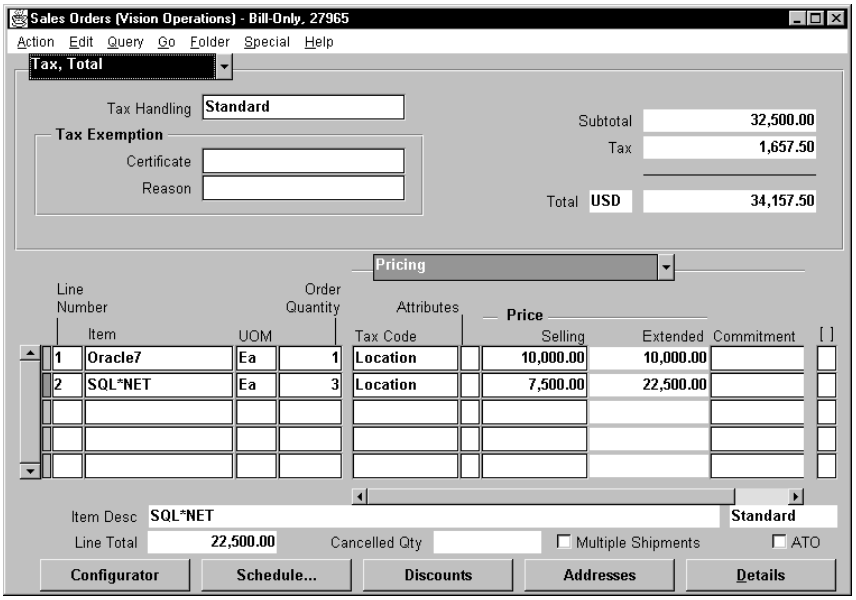
Create a Sales Order

Sales orders can be created in Oracle Order Entry and the tax amount will be calculated automatically. The sales order includes the customer (which defines the ship–to address) and the salesperson can be assigned the point–of–order acceptance. Also, if the order is a shipped order, the warehouse from which the order is shipped will define the ship–from address.



Tax Calculation on Sales Orders

The tax calculated on a sales order is an estimation since many factors, including the ship–to address, can change. Also, since there is no accounting for the tax amounts at this time, the vendor will calculate the tax, but will not update its audit files.

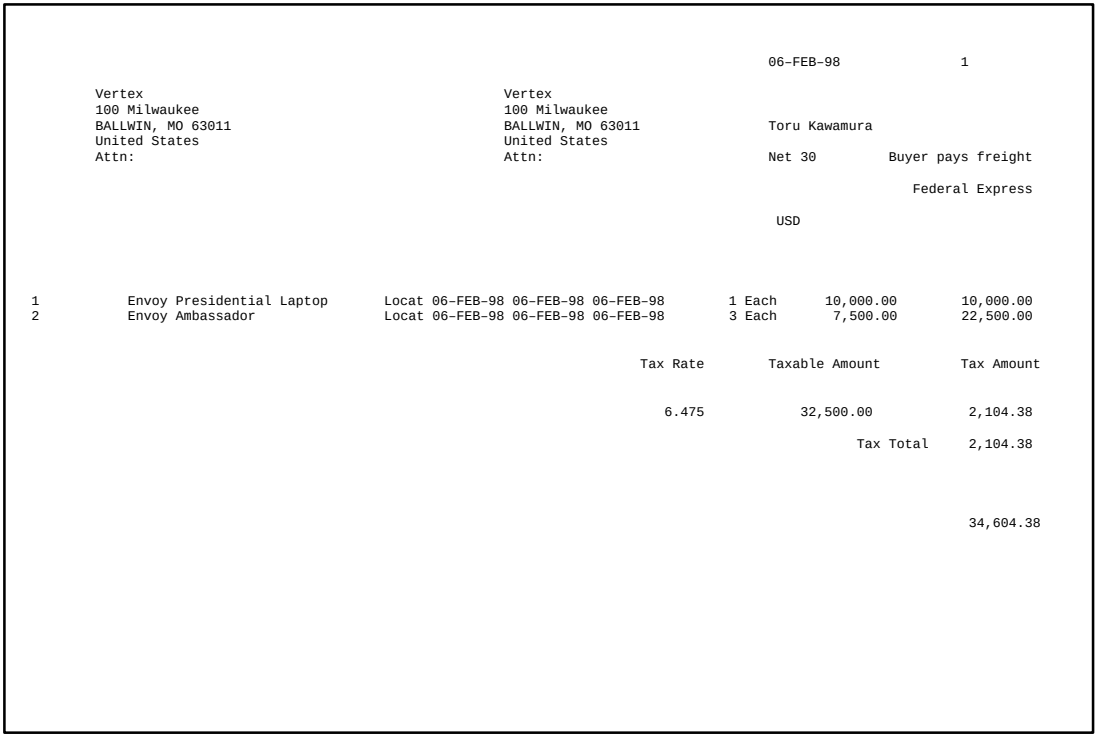


Run the Sales Order Acknowledgment Report

Use the Sales Order Acknowledgment Report to view the order on a printed document. The tax is calculated by the vendor and is summarized by tax rate. As with the creation of the sales order, since there is no accounting for the tax amount here, the vendor does not update its audit files with this tax amount.

The following report shows the order entered in the previous steps. The two order lines are shown with the tax amount for both lines summarized. The total sales order amount is displayed at the end of the page.

Figure 2 – 1 Sales Order Acknowledgement Report



06–FEB–98 1

Vertex
100 Milwaukee
BALLWIN, MO 63011
United States
Attn:

Vertex
100 Milwaukee
BALLWIN, MO 63011
United States
Attn:

Toru Kawamura

Net 30 Buyer pays freight

Federal Express

USD

1	Envoy Presidential Laptop	Locat 06–FEB–98 06–FEB–98 06–FEB–98	1 Each	10,000.00	10,000.00
2	Envoy Ambassador	Locat 06–FEB–98 06–FEB–98 06–FEB–98	3 Each	7,500.00	22,500.00

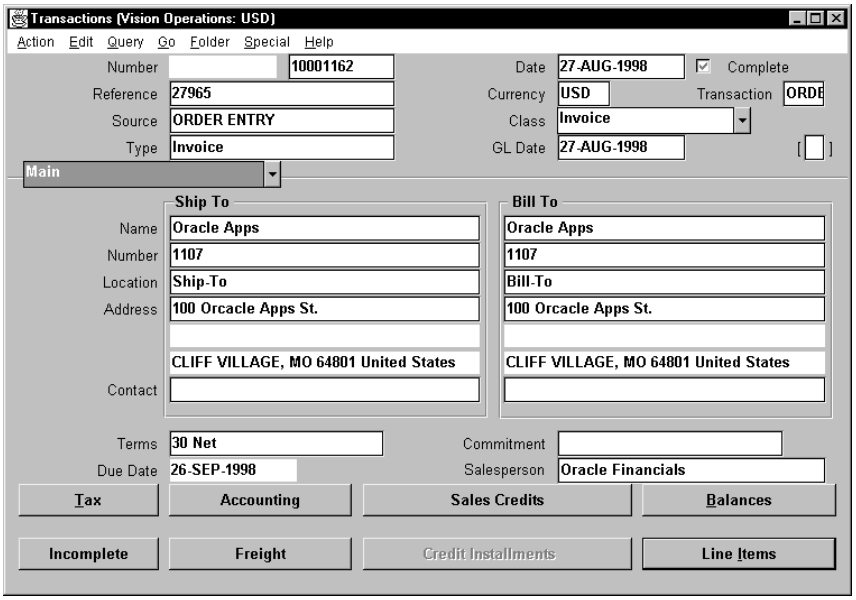
Tax Rate	Taxable Amount	Tax Amount
6.475	32,500.00	2,104.38
	Tax Total	2,104.38

34,604.38

Import Sales Orders Using AutoInvoice

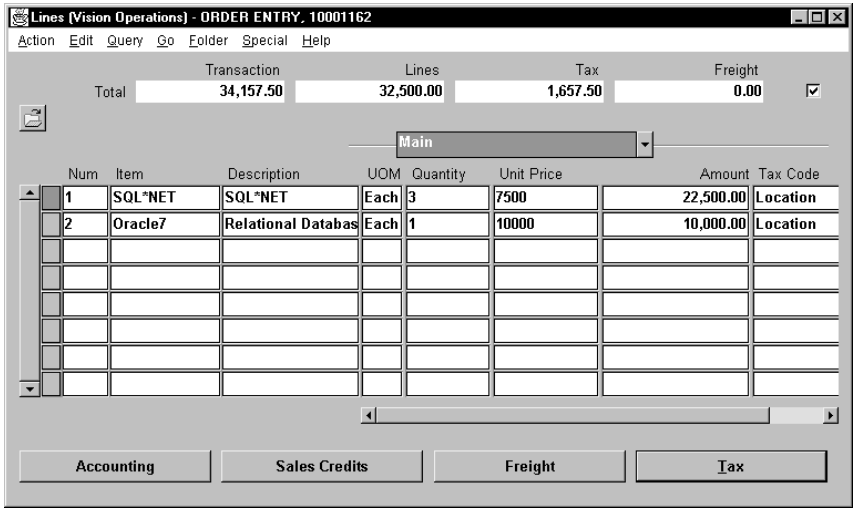
Orders created in Oracle Order Entry or documents created in other feeder systems can be imported into Oracle Receivables using AutoInvoice. Tax will be calculated using the vendor tax extension. AutoInvoice will generate the accounting and sales credits, creating a fully validated invoice in Oracle Receivables.

The figure below shows the invoice imported from the order created in the previous steps. The reference number shows the order number of the original sales order.



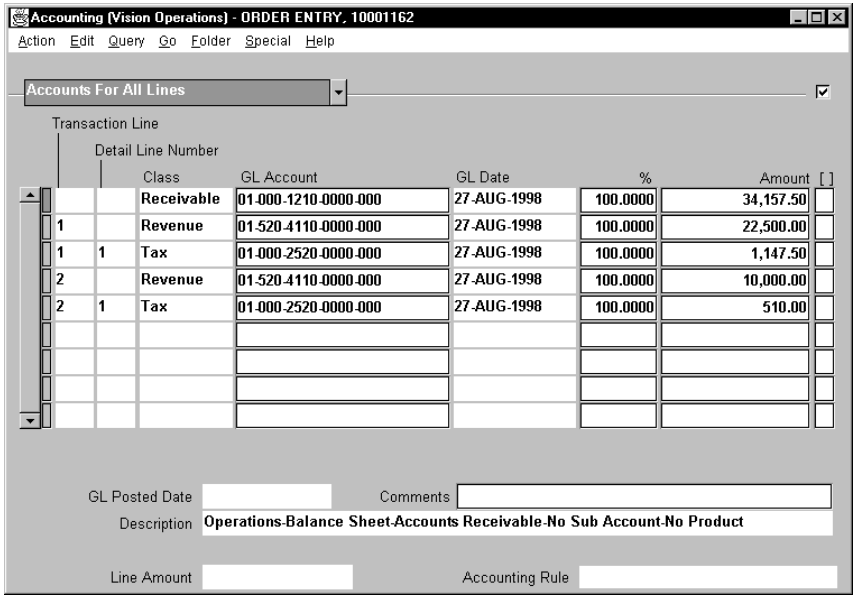
Invoice Lines from an Imported Order

The order lines are imported by AutoInvoice and the following invoice lines are created. The top section of the window shows the totals for the transaction, lines, tax, and freight.



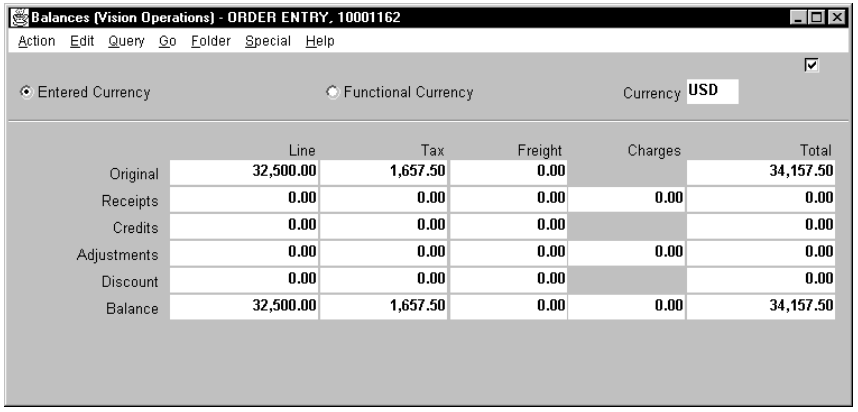
Accounting for the Imported Order

The accounting entries are created for the imported order, including the accounting for the tax lines calculated by the tax vendor extension.



Balances

The Balances window shows the balance due for the Line, Tax, Freight, and Bank Charges. The balance can be modified by applying payments, credit memos, adjustments, or early payment discounts. The tax balance will reconcile with your vendor's tax reports.



Vertex Tax Reports (After AutoInvoice)

The vendor tax reports are signature–ready sales tax reports. These reports will reconcile with the balances in Oracle Receivables.

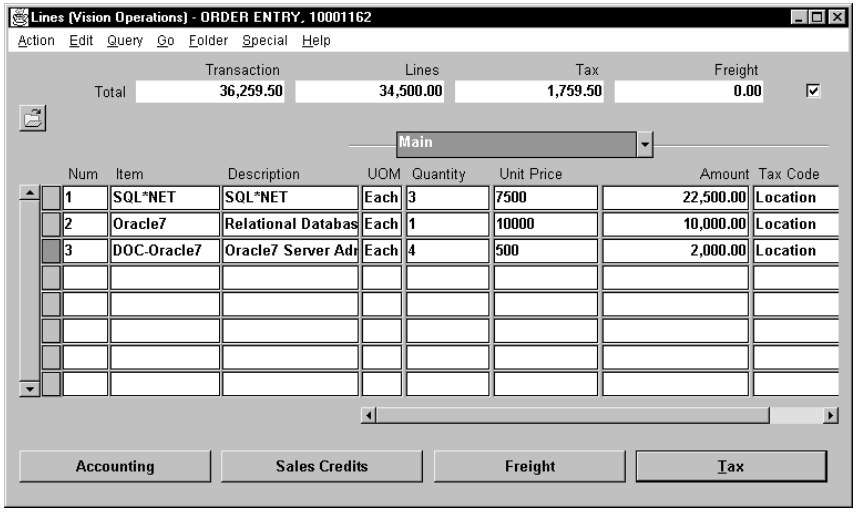
The following report shows the outcome of importing the order with AutoInvoice.

```
RELEASE:  1.2  05/05/1997                               KM                                                      PAGE    1
RUN DATE  02/06/1998                          SALES TAX REGISTER – DETAIL (PRE)          TRANS PERIOD:      START – END
                                                                                       INVOICE PERIOD:      START – END
COMPANY–CD: KM     DIVISION–CD: ALL    TYPE: ALL           SUBTYPE: ALL          TAX–TYPE: ALL    STATE: ALL

                                  STATE                COUNTY                 CITY             DISTRICT             TOTAL TAX
-----------------------------------------------------------------------------------------------------------------------------------
..........MISSOURI
-----------------------------------------------------------------------------------------------------------------------------------
CITY: BALLWIN                   COUNTY: ST LOUIS      GEOCODE: 26–189–0020 STR:           T 26–189–0020 F 26–189–0020 A 36–119–5524
    COMPANY–CD: KM     DIVISION–CD: 01     CUST–CD: 1002481                           TRANS–CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 1007659       DATE: 02/06/1998  LINE: 00001  PROD–CD: A23808                              USER: 1010631
    TAX RATE/TYPE-----             .042250 S             .017500 S             .005000 S             .000000 ZS
    GROSS SALES-------       22,500.00             22,500.00             22,500.00             22,500.00
    ZERO RATE AMT-----             .00                   .00                   .00             22,500.00
    TAXABLE AMT-------        22,500.00             22,500.00             22,500.00                   .00
    TAX AMT-----------           950.63                393.75                112.50                   .00              1,456.88
CITY: BALLWIN                   COUNTY: ST LOUIS      GEOCODE: 26–189–0020 STR:           T 26–189–0020 F 26–189–0020 A 36–119–5524
    COMPANY–CD: KM     DIVISION–CD: 01     CUST–CD: 1002481                           TRANS–CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 1007659       DATE: 02/06/1998  LINE: 00001  PROD–CD: A23809                              USER: 1010632
    TAX RATE/TYPE-----             .042250 S             .017500 S             .005000 S             .000000 ZS
    GROSS SALES-------       10,000.00             10,000.00             10,000.00             10,000.00
    ZERO RATE AMT-----             .00                   .00                   .00             10,000.00
    TAXABLE AMT-------        10,000.00             10,000.00             10,000.00                   .00
    TAX AMT-----------           422.50                175.00                 50.00                   .00                647.50
-----------------------------------------------------------------------------------------------------------------------------------
CITY TOTALS-----: BALLWIN
    GROSS SALES-------       32,500.00             32,500.00             32,500.00             32,500.00
    ZERO RATE AMT-----            .00                   .00                   .00             32,500.00
    TAXABLE AMT-------       32,500.00             32,500.00             32,500.00                   .00
    TAX AMT-----------        1,373.13                568.75                162.50                   .00              2,104.38

COUNTY TOTALS---: ST LOUIS
    GROSS SALES-------       32,500.00              32,500.00             32,500.00             32,500.00
    ZERO RATE AMT-----            .00                   .00                    .00             32,500.00
    TAXABLE AMT-------       32,500.00             32,500.00             32,500.00                   .00
    TAX AMT-----------       1,373.13               568.75                162.50                   .00              2,104.38

STATE TOTALS----: MISSOURI
    GROSS SALES-------       32,500.00             32,500.00             32,500.00            32,500.00
    ZERO RATE AMT-----            .00                   .00                   .00            32,500.00
    TAXABLE AMT-------       32,500.00             32,500.00             32,500.00                  .00
    TAX AMT-----------        1,373.13                568.75                162.50                  .00              2,104.38
----------------------------------------------------------------------------------------------------------------------------------


-----------------------------------------------------TAX–SUMMARY---------------------------------------------------------------

       SALES TAX              1,373.13                568.75                162.50                   .00              2,104.38
         USE TAX                   .00                   .00                   .00                   .00                   .00
      RENTAL TAX                   .00                   .00                   .00                   .00                   .00
    OVERRIDE TAX                   .00                   .00                   .00                   .00                   .00
     SERVICE TAX                   .00                   .00                   .00                   .00                   .00
CONSUMER USE TAX                   .00                   .00                   .00                   .00                   .00
      -----------------------------------------------------------------------------------------------------------------------------
       TAX TOTALS             1,373.13                568.75                162.50                   .00              2,104.38


                               *** BREAKDOWN BY TRANSACTION SUBTYPE ***
                                    TAXABLE         NON–TAXABLE         TAX
                P – PROPERTY       32,500.00                .00       2,104.38
```

Inserting New Lines

Invoices imported using AutoInvoice can be maintained using the Transaction Workbench. Modifying attributes such as the transaction date or customer will force the invoice lines to recalculate the tax using the tax vendor extension. Additionally, invoice lines can be deleted, updated, or inserted.

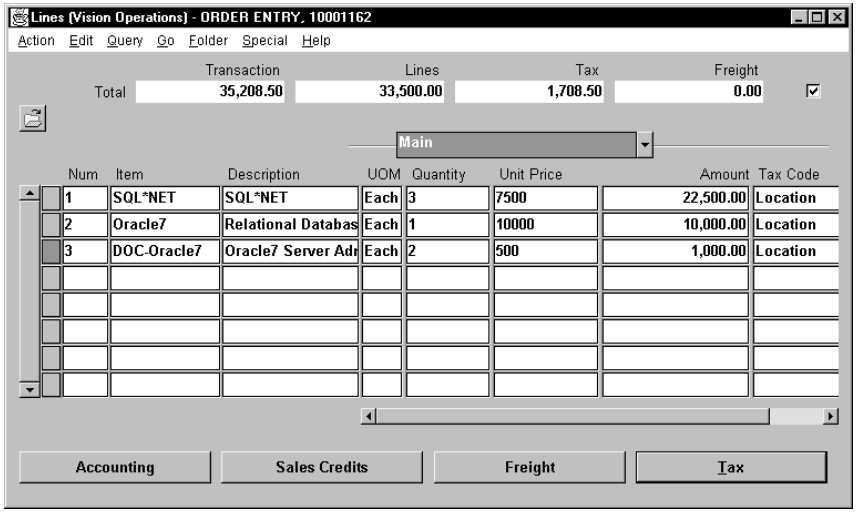
The following figure shows a third invoice line being added to the imported invoice.



Update Invoice Lines

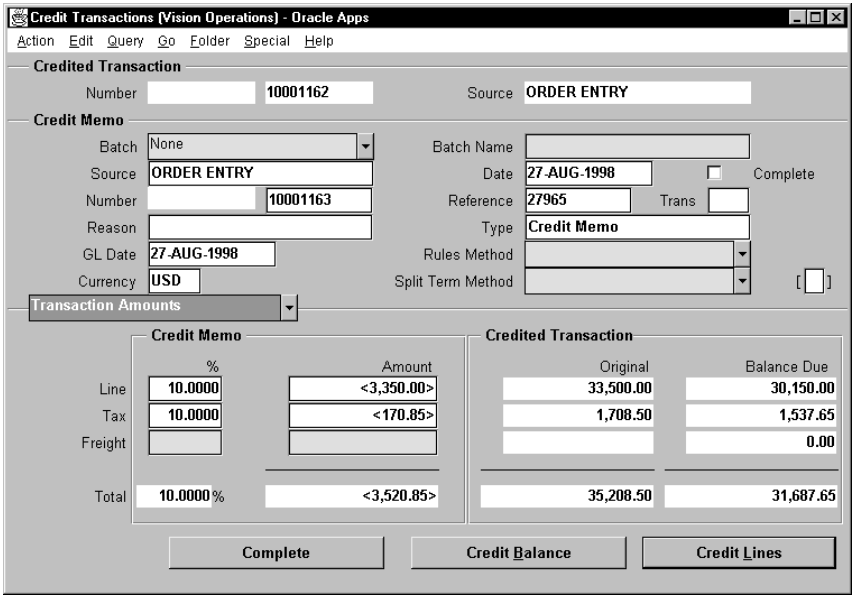
In the figure below, the quantity of the third invoice line is changed from 4 to 2. The original tax amount for this invoice line will be deducted from the vendor's audit files and the new tax amount will be inserted.

Any modifications to the tax amounts will always be maintained across the vendor's audit files.



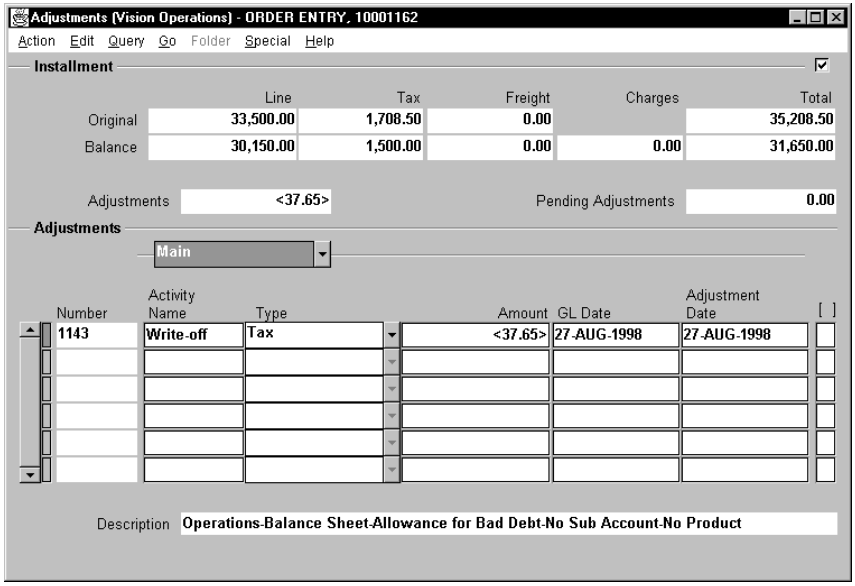
Credit the Invoice

Manual credit memos can be applied to an invoice through Oracle Receivables. The tax amounts for this credit memo will always reconcile to your vendor's tax reports.



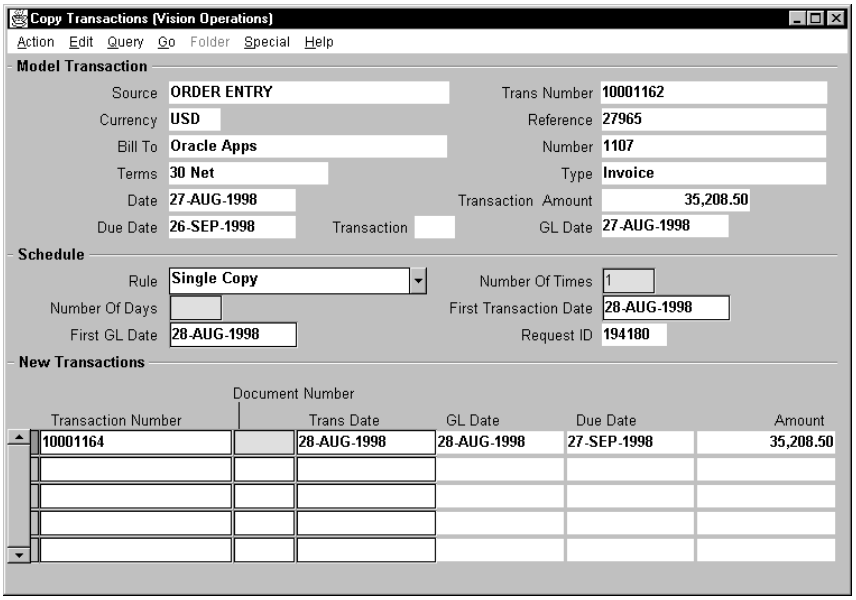
Adjust the Invoice

As with manual credit memos, manual adjustments can be applied to your invoice and the tax amounts will also reconcile to your vendor's tax reports. Only approved adjustments of type 'Tax' will be applied to the vendor's tax reports. This gives you greater control over which adjustments should reduce the sales tax liability.



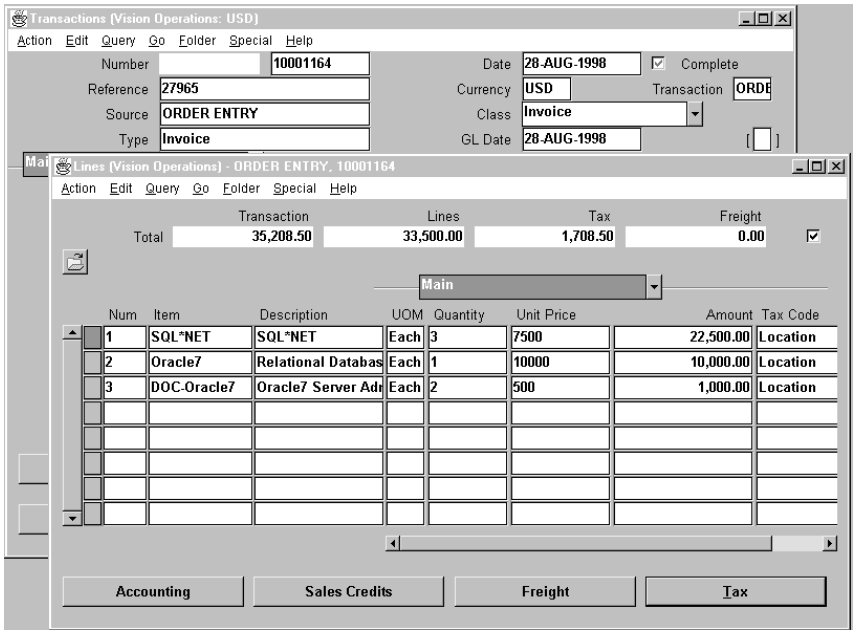
Copy (Recur) an Invoice

When you copy (recur) transactions, tax will be calculated using the tax vendor extension on all copied invoices.



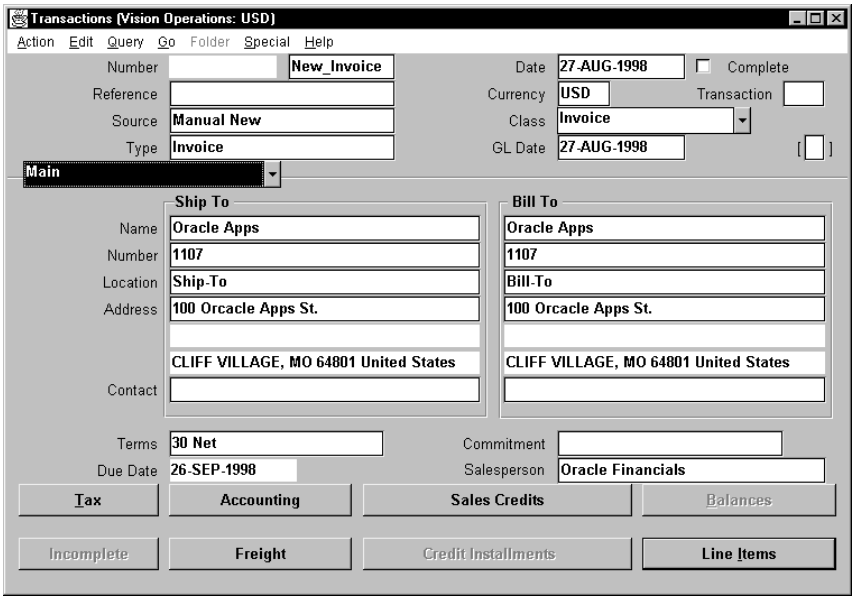
Viewing the Copied Invoice

The copied invoice will have the exact same invoice lines as the original invoice. The tax amounts will automatically be recalculated by the tax vendor extension which may give different results if the tax rates have changed over time.



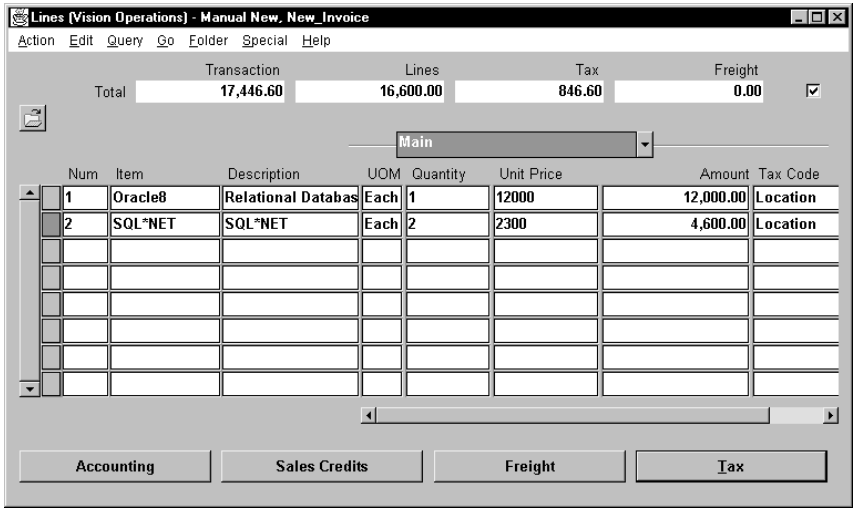
Creating Manual Invoices

You can also create invoices manually in Oracle Receivables using the Transactions window. The tax amounts will be calculated by the tax vendor extension and will reconcile to your vendor's tax reports.



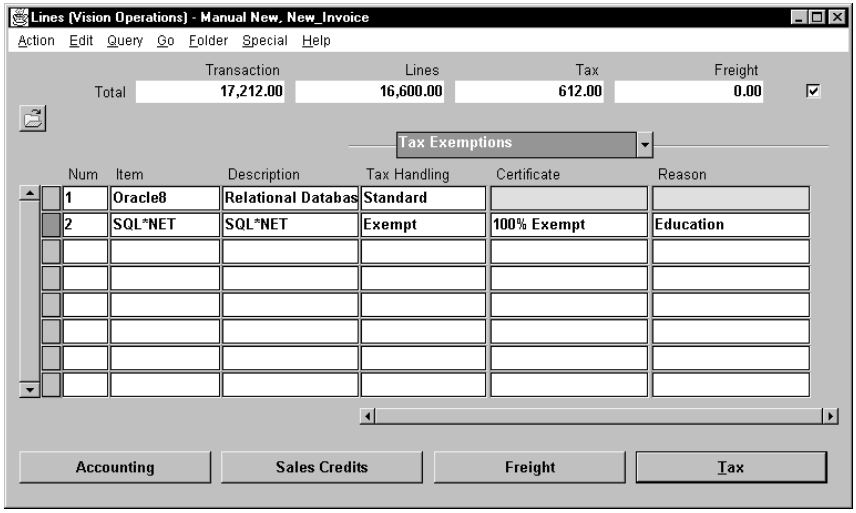
Invoice Lines on Manual Invoices

The figure below shows the invoice lines for this manually created invoice. As with invoices imported through AutoInvoice, tax amounts will always be recalculated when you update, delete, or insert invoice lines and the tax amounts will reconcile with your vendor's tax reports.



Apply Exemptions to Invoice Lines

Vertex's TDM will always be used to determine if an invoice line should be exempt. Optionally, an Order Entry clerk or a Receivables clerk may want to mark a particular invoice line 'exempt.' Tax exemptions defined in Oracle Receivables can be applied to an invoice line and the tax vendor extension will override the TDM and exempt the invoice line.



Vendor Tax Reports (Complete)

The following vendor tax report shows the result of all of the transactions entered in this section.

```
RELEASE:  1.2  05/05/1997                                                                                                    PAGE    1
RUN DATE  08/27/1998                          SALES TAX REGISTER - DETAIL (PRE)           TRANS PERIOD:      START - END
                                                                                        INVOICE PERIOD:      START - END
COMPANY-CD: ALL    DIVISION-CD: ALL    TYPE: ALL            SUBTYPE: ALL          TAX-TYPE: ALL    STATE: ALL

                                  STATE                COUNTY                  CITY              DISTRICT              TOTAL TAX
-------------------------------------------------------------------------------------------------------------------------------
.........MISSOURI
-------------------------------------------------------------------------------------------------------------------------------
 1
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD: SQL*NET                                 USER: 10160
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    GROSS SALES-------        22,500.00             22,500.00             22,500.00             22,500.00
    ZERO RATE AMT-----              .00                   .00             22,500.00             22,500.00
    TAXABLE AMT-------        22,500.00             22,500.00                   .00                   .00
    TAX AMT-----------           950.62                196.88                   .00                   .00              1,147.50
-------------------------------------------------------------------------------------------------------------------------------
 2
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD: Oracle7                                 USER: 10160
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    GROSS SALES-------        10,000.00             10,000.00             10,000.00             10,000.00
    ZERO RATE AMT-----              .00                   .00             10,000.00             10,000.00
    TAXABLE AMT-------        10,000.00             10,000.00                   .00                   .00
    TAX AMT-----------           422.50                 87.50                   .00                   .00                510.00
-------------------------------------------------------------------------------------------------------------------------------
 3
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD: DOC-Oracle7                            USER: 10160
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    GROSS SALES-------         2,000.00              2,000.00              2,000.00              2,000.00
    ZERO RATE AMT-----              .00                   .00              2,000.00              2,000.00
    TAXABLE AMT-------         2,000.00              2,000.00                   .00                   .00
    TAX AMT-----------            84.50                 17.50                   .00                   .00                102.00
-------------------------------------------------------------------------------------------------------------------------------
 4
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD: DOC-Oracle7                            USER: 10160
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    GROSS SALES-------        -2,000.00             -2,000.00             -2,000.00             -2,000.00
    ZERO RATE AMT-----              .00                   .00             -2,000.00             -2,000.00
    TAXABLE AMT-------        -2,000.00             -2,000.00                   .00                   .00
    TAX AMT-----------           -84.50                -17.50                   .00                   .00               -102.00
-------------------------------------------------------------------------------------------------------------------------------
 5
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD: DOC-Oracle7                            USER: 10160
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    GROSS SALES-------         1,000.00              1,000.00              1,000.00              1,000.00
    ZERO RATE AMT-----              .00                   .00              1,000.00              1,000.00
    TAXABLE AMT-------         1,000.00              1,000.00                   .00                   .00
    TAX AMT-----------            42.25                 8.75                   .00                   .00                 51.00
-------------------------------------------------------------------------------------------------------------------------------
 6
CITY: CLIFF VILLAGE             COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:           T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001162      DATE: 08/27/1998  LINE: 00001  PROD-CD:                                       USER: 1722
    TAX RATE/TYPE-----              .042250 S             .008750 S            .000000 ZS            .000000 ZS
    TAXABLE AMT-------              .00                   .00                  .00                   .00
    TAX AMT-----------           -31.19                 -6.46                   .00                   .00                -37.65
-------------------------------------------------------------------------------------------------------------------------------
```

7

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001163      DATE: 08/27/1998  LINE: 00001  PROD-CD: SQL*NET                        USER: 10161
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------        -2,250.00           -2,250.00           -2,250.00           -2,250.00
    ZERO RATE AMT-----              .00                  .00          -2,250.00           -2,250.00
    TAXABLE AMT-------        -2,250.00           -2,250.00                .00                 .00
    TAX AMT-----------           -95.06              -19.69                .00                 .00              -114.75
```

8

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001163      DATE: 08/27/1998  LINE: 00001  PROD-CD: Oracle7                        USER: 10161
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------        -1,000.00           -1,000.00           -1,000.00           -1,000.00
    ZERO RATE AMT-----              .00                  .00          -1,000.00           -1,000.00
    TAXABLE AMT-------        -1,000.00           -1,000.00                .00                 .00
    TAX AMT-----------           -42.25               -8.75                .00                 .00               -51.00
```

9

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001163      DATE: 08/27/1998  LINE: 00001  PROD-CD: DOC-Oracle7                    USER: 10161
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------          -100.00             -100.00             -100.00             -100.00
    ZERO RATE AMT-----              .00                  .00             -100.00             -100.00
    TAXABLE AMT-------          -100.00             -100.00                .00                 .00
    TAX AMT-----------            -4.22                -.88                .00                 .00                -5.10
```

10

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001164      DATE: 08/28/1998  LINE: 00001  PROD-CD: SQL*NET                        USER: 10162
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------        22,500.00           22,500.00           22,500.00           22,500.00
    ZERO RATE AMT-----              .00                  .00          22,500.00           22,500.00
    TAXABLE AMT-------        22,500.00           22,500.00                .00                 .00
    TAX AMT-----------           950.62              196.88                .00                 .00             1,147.50
```

11

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001164      DATE: 08/28/1998  LINE: 00001  PROD-CD: Oracle7                        USER: 10162
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------        10,000.00           10,000.00           10,000.00           10,000.00
    ZERO RATE AMT-----              .00                  .00          10,000.00           10,000.00
    TAXABLE AMT-------        10,000.00           10,000.00                .00                 .00
    TAX AMT-----------           422.50               87.50                .00                 .00               510.00
```

12

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: 10001164      DATE: 08/28/1998  LINE: 00001  PROD-CD: DOC-Oracle7                    USER: 10162
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------         1,000.00            1,000.00            1,000.00            1,000.00
    ZERO RATE AMT-----              .00                  .00           1,000.00            1,000.00
    TAXABLE AMT-------         1,000.00            1,000.00                .00                 .00
    TAX AMT-----------            42.25                8.75                .00                 .00                51.00
```

13

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: New_Invoice   DATE: 08/27/1998  LINE: 00001  PROD-CD: Oracle8                        USER: 10163
    TAX RATE/TYPE-----              .042250 S            .008750 S            .000000 ZS           .000000 ZS
    GROSS SALES-------        12,000.00           12,000.00           12,000.00           12,000.00
    ZERO RATE AMT-----              .00                  .00          12,000.00           12,000.00
    TAXABLE AMT-------        12,000.00           12,000.00                .00                 .00
    TAX AMT-----------           507.00              105.00                .00                 .00               612.00
```

14

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON       GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
```

```
    EXEMPT CERTIFICATE #:
    INV: New_Invoice   DATE: 08/27/1998  LINE: 00001  PROD-CD: SQL*NET                          USER: 10163
    TAX RATE/TYPE-----            .042250 S            .008750 S           .000000 ZS           .000000 ZS
    GROSS SALES-------        4,600.00             4,600.00            4,600.00             4,600.00
    ZERO RATE AMT-----            .00                  .00             4,600.00             4,600.00
    TAXABLE AMT-------        4,600.00             4,600.00                 .00                  .00
    TAX AMT-----------          194.35                40.25                 .00                  .00                234.60
```

15

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: X  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #:
    INV: New_Invoice   DATE: 08/27/1998  LINE: 00001  PROD-CD: SQL*NET                          USER: 10163
    TAX RATE/TYPE-----            .042250 S            .008750 S           .000000 ZS           .000000 ZS
    GROSS SALES-------       -4,600.00            -4,600.00           -4,600.00            -4,600.00
    ZERO RATE AMT-----            .00                  .00            -4,600.00            -4,600.00
    TAXABLE AMT-------       -4,600.00            -4,600.00                 .00                  .00
    TAX AMT-----------         -194.35               -40.25                 .00                  .00               -234.60
```

16

```
CITY: CLIFF VILLAGE            COUNTY: NEWTON        GEOCODE: 26-145-3755 STR:          T 26-145-3755 F 26-145-3755 A 26-145-3755
    COMPANY-CD: 01     DIVISION-CD: 01     CUST-CD: 1107                          TRANS-CD: N  TYPE: SALE     SUBTYPE: P
    EXEMPT CERTIFICATE #: 100% Exempt
    INV: New_Invoice   DATE: 08/27/1998  LINE: 00001  PROD-CD: SQL*NET                          USER: 10163
    TAX RATE/TYPE-----            .042250 ES           .008750 ES          .000000 ES           .000000 ES
    GROSS SALES-------        4,600.00             4,600.00            4,600.00             4,600.00
    EXEMPT AMT/CD-----        4,600.00  E          4,600.00  E         4,600.00  E          4,600.00  E
    TAXABLE AMT-------            .00                  .00                 .00                  .00
    TAX AMT-----------            .00                  .00                 .00                  .00                  .00
-------------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------------------
CITY TOTALS-----: CLIFF VILLAGE
    GROSS SALES-------       80,250.00            80,250.00           80,250.00            80,250.00
    EXEMPT AMT--------        4,600.00             4,600.00            4,600.00             4,600.00
    ZERO RATE AMT-----            .00                  .00           75,650.00            75,650.00
    TAXABLE AMT-------       75,650.00            75,650.00                 .00                  .00
    TAX AMT-----------        3,165.02               655.48                 .00                  .00              3,820.50

COUNTY TOTALS---: NEWTON
    GROSS SALES-------       80,250.00            80,250.00           80,250.00            80,250.00
    EXEMPT AMT--------        4,600.00             4,600.00            4,600.00             4,600.00
    ZERO RATE AMT-----            .00                  .00           75,650.00            75,650.00
    TAXABLE AMT-------       75,650.00            75,650.00                 .00                  .00
    TAX AMT-----------        3,165.02               655.48                 .00                  .00              3,820.50

STATE TOTALS----: MISSOURI
    GROSS SALES-------       80,250.00            80,250.00           80,250.00            80,250.00
    EXEMPT AMT--------        4,600.00             4,600.00            4,600.00             4,600.00
    ZERO RATE AMT-----            .00                  .00           75,650.00            75,650.00
    TAXABLE AMT-------       75,650.00            75,650.00                 .00                  .00
    TAX AMT-----------        3,165.02               655.48                 .00                  .00              3,820.50
-------------------------------------------------------------------------------------------------------------------------------


      ------------------------------------------------------TAX-SUMMARY-------------------------------------------------------

       SALES TAX              3,165.02               655.48                 .00                  .00              3,820.50
         USE TAX                  .00                  .00                 .00                  .00                  .00
      RENTAL TAX                  .00                  .00                 .00                  .00                  .00
    OVERRIDE TAX                  .00                  .00                 .00                  .00                  .00
     SERVICE TAX                  .00                  .00                 .00                  .00                  .00
CONSUMER USE TAX                  .00                  .00                 .00                  .00                  .00
      -------------------------------------------------------------------------------------------------------------------------
       TAX TOTALS             3,165.02               655.48                 .00                  .00              3,820.50


                         *** BREAKDOWN BY TRANSACTION SUBTYPE ***
                              TAXABLE         NON-TAXABLE         TAX
              P - PROPERTY      75,650.00                .00       3,820.50
```

The boldfaced, larger numbers in this tax report correspond to the lines in the operations described below:

- AutoInvoice and Importing Invoices: Inserts lines 1 and 2
- Inserting New Lines: Inserts line 3

- Updating Lines: Backs out of original tax amount with Line 4; Inserts line 5
- Manual Credit Memos: Inserts lines 7, 8, and 9
- Manual Adjustments: Inserts line 6
- Copy (Recur) an Invoice: Inserts lines 10, 11, and 12
- Creating Manual Invoices: Inserts line 13 and 14
- Updating a line with an exemption backs out the original tax amount with line 15: inserted line 16 has a 100% exemption applied to it

  Note: Oracle Receivables and Vertex view the interaction between exemptions and taxable amounts in slightly different ways. Oracle Receivables deducts the tax rate to give the correct tax amount, whereas Vertex deducts the taxable amount to derive the correct tax amount. Therefore, the total taxable amount may differ between Oracle Receivables and the vendor's tax reports.

CHAPTER

3

Business Processes

This chapter provides an overview of the various accounting and business processes required for the Vertex integration. The following sections are included:

- Accounting for State and Local Taxes
- Working with Vertex Tax Decision Maker (TDM)
- Using Vertex GeoCodes
- Monthly Procedures
- Reconciliation and Audit Procedures
- Support Procedures

Accounting for State and Local Taxes

Oracle Receivables will use the Tax Accounts defined in the Tax Locations and Rates window for each tax amount that you record on the customer invoice. Using Oracle Receivables, you can set up different liability accounts for each ship–to state of the invoice. Using different ship–to states lets you reconcile total tax amounts for each state to the Oracle and Vertex reports. This reconciliation can be used during audit to ensure that any given state has the total tax recorded correctly.

We recommend that you create liability accounts for each state. After you create these accounts and assign them to each state using the Tax Locations and Rates window, those accounts will be used automatically during invoice entry.

Origin and Destination–Based Taxes

Transactions that are subject to Origin and Destination–based tax will have the entire portion of tax recorded in the account noted on the Ship–to State. This does not impact reconciliation because Origin–based taxes are typically levied on District or other local taxes for intra–state transactions (transactions where the ship–from and ship–to states are the same).

Working with Vertex Tax Decision Maker

The Vertex Tax Decision Maker (TDM) lets you control the taxability of transactions. By using Vertex TDM with Oracle Receivables, you can control taxability at state, county, city, and district levels based on Item, Bill–to Customer, or Ship–to Jurisdiction. Once set up, the TDM will automatically apply these rules to all sales orders and invoices.

The Tax Decision Maker will use the Company, Division, Customer, Address & Part Number, and Category fields for controlling taxability. The integration provides this information to TDM as follows:

TDM Field	Oracle Value
Company Code	Constant 01
Division Code	Constant 01
Customer Code	Bill–to customer number of the invoice or order
Customer Class	(not used)
Address	The GeoCode associated with the Ship–to Address (State, County, City, Zip)
Product Code	Segment1 of the Oracle Inventory Item Key Flexfield

Table 3 – 1 Vertex Tax Decision Maker Values

When implementing Oracle Receivables, you can choose to record all of your taxability rules and customer / product exemptions using Vertex, Oracle, or a combination of both. If an Oracle exemption is found and applied to the tax calculation, the Vertex programs will still be called and the Vertex Tax Register will include the exempt tax line for complete audit and reconciliation.

For more information on using and changing the standard values of the TDM fields, see: Tax View Functions: page 4–4.

Integration with Oracle Exemption Handling

Define Tax Exemptions

Exemption Certificates created within Oracle Receivables using the Tax Exemptions window can be used to control Vertex Quantum and TDM. If you enable Customer Exemptions in the Oracle Receivables System Options window, then any Primary Exemption Certificate that is applicable to a given Bill–to Customer and Ship–to State will be automatically used on Vertex Quantum tax calculations.

Using Oracle you can migrate from Oracle Tax Exemptions to the Tax Decision Maker, allowing a flexible transition from legacy tax controls to the Vertex Quantum Tax Decision Maker.

Order and Invoice level Overrides

You can use the transaction level Tax Handling fields of Oracle Order Entry and Oracle Receivables to provide transaction–level control of Exemptions. These fields allow the Order Entry or Invoice Entry clerks to override the TDM module, letting you identify a transaction as exempt, and documented with the Reason and Certificate Number fields. The Oracle Receivables profile option Tax: Allow Override of Customer Exemptions lets you secure access to this feature.

Working with Vertex GeoCodes and GeoCoder

GeoCodes

GeoCodes are used by Vertex to identify a taxing jurisdiction. The GeoCode supplements or replaces the address fields (State, County, City, ZIP) with a 9 digit numeric code. This code is an internal code that is understood by the Vertex Quantum Integration.

A GeoCode is typically needed when the state, zip, and city fields of an address do not uniquely identify the exact taxing jurisdiction. For example, the same city and zip can be found in multiple counties.

Using GeoCodes with Oracle Applications

The Oracle Receivables Customer Workbench and Oracle Sales & Marketing Contacts Workbench will automatically populate the County field of an address given the other field values.

Alternatively, all three fields (state, county, city) are automatically populated when you enter a single zip code. If multiple candidates exist, then only those applicable location values are shown in the list of values. As a result, you rarely need to research an address and manually identify the county or GeoCodes before the customer can be invoiced.

The association of an address to a GeoCode is an automatic process, but can be manually overridden. For more information, see: Descriptive Flexfields: page 4–13.

GeoCoder

The Vertex GeoCoder is a PL/SQL program unit or API that will convert address information into GeoCodes. The Vertex Quantum integration will call the GeoCoder API's at calculation time if needed. The PL/SQL function SHIP_TO_ADDRESS_CODE will attempt to return the GeoCode for every tax calculation. If this function fails to return a GeoCode, then the GeoCoder API is called automatically.

Vertex Quantum will raise a Vertex error message if after both attempts for a GeoCode is not found for a given tax calculation.

The GeoCoder is only called for the Ship–to Address; if no GeoCode is found for the SHIP_FROM and POA addresses, then the Ship–to GeoCode will be used for these values.

Database Storage Requirements

The Oracle Receivables tables AR_LOCATION_VALUES and AR_LOCATION_RATES should be sized to allow a full upload of the Vertex SEQMAST data file; a full upload requires approximately 100MB of free space. An additional 100MB of free space is required in the Vertex schema to allow the Vertex tables to be initialized.

Each audited tax calculation requires approximately 800 bytes of database storage within the Vertex Schema. Normally, each Oracle Receivables transaction line will need one audited tax calculation; however, manual changes to the invoice lines will require an additional 1600 bytes for each change.

For more information, please refer to the *Vertex Quantum Installation Manual* and Preparing to Load Sales Tax Rates in the *Oracle Receivables Tax Manual*.

Address Validation Data – Vertex SEQMAST file

Each month Vertex will send an updated version of the SEQMAST data file. You need to upload the SEQMAST file into both Vertex Quantum and Oracle Receivables. This will ensure that Oracle Receivables has the latest information for address validation and GeoCode assignments.

As part of your standard monthly procedures, you can use the SQL*Loader script $AR_TOP/bin/arvertex.ctl to load the SEQMAST data file into the Oracle Receivables Tax Interface tables. Then, run the Sales Tax Rate Interface program to transfer this data into Oracle Receivables. Repeat both of these steps each month as the Vertex data file is updated. These procedures will ensure that you have up to date address validation data available.

Use the following Unix script to execute the SQL*Loader program:

```
mv SEQMAST SEQMAST.dat
sqlload apps/apps control=$AR_TOP/bin/arvertex.ctl \
data="SEQMAST" discard="vertex.dis" skip=1 rows=4096
```

Next, run the Oracle Receivables concurrent program Sales Tax Rate Interface using the following parameters:

Parameter	Value
Review or Upload	Load Changed Data Only in Tax Interface Table
Print Format	Print Warnings in Detail
State	<null>

Sales Tax Reporting and Reconciliation Processes

Before completing your tax returns using the Vertex Quantum reports, you should reconcile the total tax amounts held in Oracle Receivables, Oracle General Ledger, and Vertex Quantum.

Oracle Receivables will post all tax amounts to the Vertex Quantum Tax Ledger so that Quantum reports can be used to assist the state and local tax filing process. Using Oracle, the Vertex Tax Ledger is posted online as the transactions are entered. This allows Oracle and Vertex to provide tax reports without a lengthy period end close procedure and long running posting program. This online posting of tax, using Vertex, is a key benefit of the Oracle / Vertex product integration.

Since Oracle performs this posting of tax amounts automatically and for all transactions that you enter, you should ensure that the steps in the Reconciliation Checklist below have been completed before you close your period and report your state and local taxes.

Reconciliation Checklist

- ❑ All transactions must be completed and posted to the General Ledger. You should verify that no incomplete, manually entered transactions exist for your reporting period. Incomplete invoices will appear as Tax Liabilities in Vertex without an appropriate receivable in Oracle.

  All incomplete transactions must be either completed or deleted from Oracle Receivables before the period is closed.

  Suggestion: Run the Oracle Receivables Incomplete Invoice report to see all incomplete invoices, debit memos, and credit memos that exist for your reporting period.

- ❑ Reconcile Oracle Receivables total tax amounts by state to Oracle General Ledger. The Total Tax amounts by State reported by the Oracle Receivables US Sales Tax Report should reconcile to each

state tax liability account held in Oracle General Ledger. If this reconciliation step fails, refer to Reconciling US Sales Tax in the *Oracle Receivables Tax Manual*.

- ❑ Reconcile Oracle total tax amounts by state to Vertex Quantum. After you run the Vertex reports, you should be able to reconcile the tax amounts by state to both Oracle Receivables and Oracle General Ledger. If this reconciliation step fails, verify that you have no incomplete transactions in Oracle Receivables.

Audit Process

Each taxable transaction line within Oracle Receivables will be recorded in the Vertex Quantum Reports as a single Vertex report line.

If a Receivables transaction line is updated, the integration will post two audit records to the Vertex Quantum Register to record the update. The first will reverse out the original value for tax, the second record will then post the updated values. This is illustrated in Update Invoice Lines: on page 2–9 and in sections 4 and 5 of: Vendor Tax Reports: page 2–16.

During your audit, a given line in the vertex register report may need to be grouped with the other lines within the same report before it can be reconciled to Oracle Receivables.

This process allows for a rapid period close, as long running posting programs do not have to be completed before the AR period is closed.

Support Procedures

If you have a support request concerning tax calculations, Oracle Receivables will document all the input and output parameters to the tax calculation. You can then use this information to document your support request.

Vertex error messages are prefixed with 'APP–11526: Vertex.' These messages can be received when creating invoices or sales orders. If you receive an error message and are unsure why the error occurred, follow these procedures to document the parameters to the Vertex tax calculation, then refer to the Vertex Quantum documentation and support procedures.

If you are using Oracle Receivables AutoInvoice or the Copy Transactions program, run either program with the Message Level field in the Receivables System Options window set to 3. You can then use the complete log file to help document your support request.

If you are using the Oracle Receivables Transaction Workbench or Oracle Order Entry Sales Orders Workbench, please follow the steps below to document your support question.

Step 1 Enable Log File

Open the Oracle Receivables Transactions Workbench, then choose Tools –> Examine from the Help menu.

```
Block: Parameters
Item Name: AR_DEBUG_FLAG
Item Value: FS <Pathname> <Filename>
```

The <Pathname> must be a pathname that is already specified in the UTL_FILE_DIR parameter of this instances INIT.ORA file. For example:

```
Item Value: FS /tmp vertex001.txt
```

Attention: To execute this procedure you will need your DBA to provide:

- Access to the Help–>Tools–>Examine window
- A pathname, listed in the INIT.ORA file for the parameter UTL_FILE_DIR

Step 2 Execute Tax Calculation

Using either the Oracle Receivables Transactions Workbench or the Oracle Order Entry Sales Orders Workbench, enter a transaction line. The system will calculate the tax amount and record all of the calculation parameters in the named text file.

Step 3 Exit Oracle Applications

Once the system has started recording the tax calculations it will continue to record this information until you exit the application.

CHAPTER

4 Technical Reference

This chapter describes the internal communication parameters between Oracle and Vertex, the Oracle tax view functions that support this communication, and how to extend the integration using user descriptive flexfields and the PL/SQL functions. This chapter also includes some commonly asked questions about using Vertex Quantum with Oracle Receivables.

Available Parameters

The structure ARP_TAX.tax_info_rec is the communications area for the integration with Vertex Quantum. This structure passes information that is selected from the database views. The tax extension then calculates the tax and passes back all of the necessary output parameters through the same structure.

Member Related View Column	Data Type	Parameter Type	Null Allowed?
BILL_TO_CUSTOMER_ID	number	input	no
SHIP_TO_CUSTOMER_ID	number	input	yes
TRX_HEADER_ID	number	input	yes
TRX_NUMBER	number	input	yes
BILL_TO_CUSTOMER_ NUMBER	number	input	yes
SHIP_TO_CUSTOMER_ NUMBER	number	input	yes
BILL_TO_CUSTOMER_NAME	varchar2	input	yes
SHIP_TO_CUSTOMER_NAME	varchar2	input	yes
PREVIOUS_TRX_HEADER_ID	number	input	yes
PREVIOUS_TRX_NUMBER	number	input	yes
TRX_DATE	date	input	yes
GL_DATE	date	input	yes
SHIP_TO_SITE_USE_ID	number	input	yes
BILL_TO_SITE_USE_ID	number	input	yes
SHIP_TO_POSTAL_CODE	varchar2	input	yes
BILL_TO_POSTAL_CODE	varchar2	input	yes
SHIP_TO_LOCATION_CCID	number	input	yes
BILL_TO_LOCATION_CCID	number	input	yes
INVOICING_RULE_ID	number	input	yes
FOB_CODE	varchar2	input	yes
CURRENCY_CODE	varchar2	input	yes
EXCHANGE_RATE	number	input	yes

Member Related View Column	Data Type	Parameter Type	Null Allowed?
MINIMUM_ACCOUNTABLE_ UNIT	number	input/output	yes
PRECISION	number	input/output	yes
TAX_HEADER_LEVEL_FLAG	varchar2	input	yes
TAX_ROUNDING_RULE	varchar2	input	yes
TRX_LINE_ID	number	input	yes
PREVIOUS_TRX_LINE_ID	number	input	yes
TRX_LINK_TO_CUST_TRX_ LINE_ID	number	input	yes
MEMO_LINE_ID	number	input	yes
TAXED_QUANTITY	number	input	yes
INVENTORY_ITEM_ID	number	input	yes
EXTENDED_AMOUNT	number	input	yes
TAX_CODE	varchar2	input/output	yes
VAT_TAX_ID	number	input/output	yes
TAX_EXCEPTION_ID	number	input/output	yes
TAX_RATE	number	input/output	yes
USSGL_TRANSACTION_CODE	varchar2	input	yes
AUDIT_FLAG	varchar2	input	no
LOCATION_QUALIFIER	varchar2	input	no
SHIP_FROM_ADDRESS_CODE	varchar2	input	yes
SHIP_TO_ADDRESS_CODE	varchar2	input	yes
POO_ADDRESS_CODE	varchar2	input	yes
POA_ADDRESS_CODE	varchar2	input	yes
VENDOR_CONTROL_ EXEMPTIONS	varchar2	input	yes
TAX_EXEMPT_FLAG	varchar2	input/output	yes
TAX_EXEMPT_NUMBER	varchar2	input/output	yes
TAX_EXEMPT_REASON	varchar2	input/output	yes
TAX_EXEMPT_PERCENT	number	input/output	yes
TRX_LINE_TYPE	varchar2	input	yes
PART_NUMBER	varchar2	input	yes

Member Related View Column	Data Type	Parameter Type	Null Allowed?
DIVISION_CODE	varchar2	input	yes
COMPANY_CODE	varchar2	input	yes
ATTRIBUTE1–5	varchar2	input	yes
NUMERIC_ATTRIBUTE1–5	number	input	yes
TAXABLE_FLAG	varchar2	input	yes
TAX_LINE_NUMBER	number	input	yes
TAX_AMOUNT	number	input/output	yes

Table 4 – 1 Input Members of the Data Structure arp_tax.tax_info_rec

Tax View Functions

The views that will be used by the tax vendors will return some extra information that were passed a NULL in the Oracle views. These values will be passed to the views through PL/SQL functions from the package ARP_TAX_VIEW_VERTEX.

Additionally, the package will define the procedure GET_EXEMPTIONS, which will return information about exemptions. This procedure is not called by the views, but rather by the interface package.

The following functions will be defined for Vertex (ARP_TAX_VIEW_VERTEX package).

Column Name	Function Name	Default Value
COMPANY_CODE	COMPANY_CODE	01
DIVISION_CODE	DIVISION_CODE	01
PRODUCT_CODE	PART_NUMBER	SEGMENT1 of MTL_ SYSTEM_ITEMS
POA_ADDRESS_ CODE	POA_ADDRESS_ CODE	Ship–to address GeoCode
SHIP_FROM_ ADDRESS_CODE	SHIP_FROM_ ADDRESS_CODE	Warehouse address GeoCode
SHIP_TO_ ADDRESS_CODE	SHIP_TO_ADDRESS_ CODE	Salesperson GeoCode

Column Name	Function Name	Default Value
ATTRIBUTE1	TRX_LINE_TYPE	SALE
NUMERIC_ ATTRIBUTE1	USE_SECONDARY	Profile: TAXVDR_SECTAXS

Table 4 – 2 Vertex Functions

The PL / SQL functions are included in the Oracle Receivables file $AR_TOP / patch / 110 / sql / ARTXVWVB.pls.

The functions will be defined as follows; if the returned value has a combined meaning (for example, if the first character means something and the rest of the string means something else), this will be described; if the value is derived from a descriptive flexfield defined on a table, this will also be defined; if the function is relevant only to a particular vendor, this will also be marked.

```
FUNCTION COMPANY_CODE (
          p_view_name          IN VARCHAR2,
          p_header_id          IN NUMBER,
          p_line_id            IN NUMBER) RETURN
                               VARCHAR2;

 INPUT    p_view_name          Name of view calling
                               this function
          p_header_id          ID of transaction
                               header
          p_line_id            ID of transaction line
 RETURNS  Company code
```

This value is used to control the tax reporting level. Returns ’01’ for Vertex.

The PL / SQL global variable ARP_STANDARD.SYSPARM.SET_OF_BOOKS_ID and ARP_STANDARD.SYSPARM.ORG_ID can be referenced from within these functions for set of books and organization information.

FUNCTION CUSTOMER_CLASS (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER,
	p_customer_id	IN NUMBER) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
	p_customer_id	ID of customer (ship–to, bill–to, or other)
RETURNS	Customer class	

Returns the customer class code of the customer. This value is used to determine exemption eligibility. Returns NULL.

FUNCTION DIVISION_CODE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
RETURNS	Division code	

This value is used to control the tax reporting level. Returns ’01’ for Vertex.

The PL/SQL global variable ARP_STANDARD.SYSPARM.SET_OF_BOOKS_ID and ARP_STANDARD.SYSPARM.ORG_ID can be referenced from within these functions for set of books and organization information.

PROCEDURE GET_EXEMPTIONS(

	p_exemption_id	IN NUMBER
	p_cert_no	OUT VARCHAR2,
	p_state_exempt_ percent	OUT NUMBER,
	p_state_exempt_ reason	OUT VARCHAR2;
	p_county_ exempt_percent	OUT NUMBER,
	p_county_ exempt_reason	OUT VARCHAR2,
	p_city_exempt_ percent	OUT NUMBER,
	p_city_exempt_ reason	OUT VARCHAR2,
	p_district_ exempt_percent	OUT NUMBER,
	p_district_ exempt_reason	OUT VARCHAR2);
INPUT	p_exemption_id	ID of exemption
OUTPUT	p_cert_no	Certificate Number
	p_<juris>_ exempt_percent	Exemption percent for jurisdiction
	p_<juris>_ exempt_reason	Exemption reason for jurisdiction

This function is called by ARP_TAX_VERTEX (interface package) to determine the jurisdiction level exemptions.

If p_exemption_id is passed a NULL value, then no exemptions were found. Therefore, all output parameters will be passed back a NULL value.

Otherwise, p_cert_no will inherit the actual Oracle exemption certificate number and the exemption reasons for all jurisdictions will inherit the actual Oracle exemption reason.

The exemption percent will be derived from ATTRIBUTE12, ATTRIBUTE13, ATTRIBUTE14, ATTRIBUTE15 for the district, state, county, city exemption percentages respectively from the Tax Exemption Information descriptive flexfield. If they do not exist, then the exemption percentages will be set to that of the actual Oracle exemption.

```
FUNCTION PART_NUMBER (
        p_view_name          IN VARCHAR2,
        p_header_id          IN NUMBER,
        p_line_id            IN NUMBER,
        p_item_id            IN NUMBER,
        p_memo_line_id       IN NUMBER) RETURN
                             VARCHAR2;

INPUT   p_view_name          Name of view calling
                             this function
        p_header_id          ID of transaction
                             header
        p_line_id            ID of transaction line
        p_item_id            ID of inventory item
        p_memo_line_id       ID of memo line
RETURNS Item Category
```

This function returns the part number used by the vendors to determine exemptions for this line. This function will return SEGMENT1 from the MTL_SYSTEM_ITEMS table (System Items key flexfield). If a memo line is passed instead of an inventory item, then a NULL value is passed.

FUNCTION POA_ADDRESS_CODE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER,
	p_salesrep_id	IN NUMBER) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
	p_salesrep_id	ID of the primary sales representative
RETURNS	The Point–of–Order–Acceptance Jurisdiction code and In / Out City Limits flag	

The first character of this function will return the In / Out City Limits flag. If this value is 1, then the Point–of–Order–Acceptance is within city limits; if this value is 0, then it is outside city limits.

The rest of the string will be the value of the jurisdiction code for the Point–of–Order–Acceptance.

The In / Out City Limits will be derived from ATTRIBUTE14 of the Sales Representative Information descriptive flexfield. The jurisdiction will be derived from ATTRIBUTE 15 of the Sales Representative Information descriptive flexfield.

If this information is not available, then the default value of 'XXXXXXXXXX' will be returned. This will indicate to the interface package that the ship–from GeoCode should be used. If no ship–from GeoCode is found, then the ship–to GeoCode will be used in place of POA_ADDRESS_CODE.

FUNCTION SHIP_FROM_ADDRESS_CODE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER,
	p_warehouse_id	IN NUMBER) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
	p_warehouse_id	ID of warehouse of the ship–from

RETURNS The Ship–from Jurisdiction code and In / Out City Limits flag

The first character of this function will return the In / Out City Limits flag. If this value is 1, then the Ship–from is within city limits; if this value is 0, then it is outside city limits.

The rest of the string will be the value of the Jurisdiction code for the ship–from.

The In / Out City Limits will be derived from ATTRIBUTE19 of the Additional Organization Unit Details descriptive flexfield. The Jurisdiction code will be derived from ATTRIBUTE 20 of the Additional Organization Unit Details descriptive flexfield.

If either of these information is not available, then the default value of 'XXXXXXXXXX' will be returned. This will indicate to the interface package that the ship–to address code should be used in place of the SHIP_FROM_ADDRESS_CODE.

FUNCTION SHIP_TO_ADDRESS_CODE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER
	p_ship_to_address_id	IN NUMBER,
	p_ship_to_location_id	IN NUMBER,
	p_trx_date	IN DATE,
	p_ship_to_state	IN VARCHAR2,
	p_postal_code	IN VARCHAR2) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
	p_ship_to_address_id	ID of Ship–to address
	p_ship_to_location_id	ID of Ship–to location
	p_trx_date	Transaction Date
	p_ship_to_state	State of the Ship–to
	p_postal_code	Zip code for the Ship–to
RETURNS	The Ship–to Jurisdiction code and In / Out City Limits flag	

The first character of this function will return the In / Out City Limits flag. If this value is 1, then the Ship–to is within city limits; if this value is 0, then it is outside city limits. The rest of the string will be the value of the Jurisdiction code for the Ship–to.

The In / Out City Limits will be derived from ATTRIBUTE14 of the Address Information descriptive flexfield. The Jurisdiction code will be derived from ATTRIBUTE15 of the Address Information descriptive flexfield.

If the In / Out City Limits flag is not found at ATTRIBUTE 14 of the Address Information descriptive flexfield, this function will default to within city limits ('1').

If the Jurisdiction code is not found at ATTRIBUTE15 of the Address Information descriptive flexfield, this function will search for the Jurisdiction code in ATTRIBUTE1 of AR_LOCATION_RATES table.

If a value is not found, then a NULL value is passed back from Vertex. This will then cause an error to occur within the tax engine.

FUNCTION STATE_TYPE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER) RETURN NUMBER;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
RETURNS	GL account type	

This function returns 1 or 2: 1 indicates that one GL account should be used for State, County and City; '2' indicates that one GL account should be used per State, County, and City. Returns the value of the profile option 'Tax Vertex: State Type.'

FUNCTION TRX_LINE_TYPE (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER) RETURN VARCHAR2;
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
RETURNS	Transaction type	

This function returns the transaction type. Valid values are PURCHASE, RENTAL, SALE, or SERVICE. Returns 'SALE.'

FUNCTION USE_SECONDARY (

	p_view_name	IN VARCHAR2,
	p_header_id	IN NUMBER,
	p_line_id	IN NUMBER) RETURN VARCHAR2
INPUT	p_view_name	Name of view calling this function
	p_header_id	ID of transaction header
	p_line_id	ID of transaction line
RETURNS	Use Secondary tax flag	

This value controls whether secondary taxes should be returned. '1' for Yes and '2' for No. Returns the value of the profile option 'Tax Vertex: Secondary Taxes.'

Descriptive Flexfields

Many of the above functions derive their value from descriptive flexfields. The following table organizes these descriptive flexfields. Included are the value sets (which dictate the format of the value) that are expected in these columns. If these columns are not used, then a default value will be assigned.

> **Note:** All of the fields are optional. If you do not use these fields, only the ship–to GeoCode will be used. If you are using these fields, ensure that you register each field as required.

Table Name	Descriptive Flexfield Name	Column	Description	Value Set Name
HR_ ORGANIZATION_ UNITS	Additional Organization Unit Details	ATTRIBUTE20	Ship–from Jurisdiction Code	AR_TAXVDR_ VERTEX_GEO
		ATTRIBUTE19	Ship–from In / Out City Limits	AR_TAXVDR_ YES_NO
RA_SALESREPS	Sales Representative Information	ATTRIBUTE15	POA Jurisdiction Code	AR_TAXVDR_ VERTEX_GEO
		ATTRIBUTE14	POA In / Out City Limits	AR_TAXVDR_ YES_NO

Table Name	Descriptive Flexfield Name	Column	Description	Value Set Name
RA_ADDRESSES	Address Information	ATTRIBUTE15	Ship–to Jurisdiction Code	AR_TAXVDR_ VERTEX_GEO
		ATTRIBUTE14	Ship–to In / Out City Limits	AR_TAXVDR_ YES_NO
RA_TAX_ EXEMPTIONS	Tax Exemption Information	ATTRIBUTE12	District Exempt Percent	AR_TAXVDR_ PERCENT
		ATTRIBUTE13	State Exempt Percent	AR_TAXVDR_ PERCENT
		ATTRIBUTE14	County Exempt Percent	AR_TAXVDR_ PERCENT
		ATTRIBUTE15	City Exempt Percent	AR_TAXVDR_ PERCENT

Table 4 – 3 Descriptive Flexfields and their Values

Warning: Use of these columns are considered customizations. Functions supplied by Oracle may change in future releases to support these fields in core tables. Additionally, if these columns are in use by your customizations, you will need to either redefine the view functions so that they look in other attribute columns, or your customizations will need to be changed so that they reside in other locations.

Commonly Asked Questions

What benefits are there to the Vertex Quantum Integration?

- Oracle Receivables provides a simple solution to US Sales Tax Compliance that does not consider Origin Based Taxes, Quantity Thresholds, or Muni/District Taxes.
- The integration with Vertex Quantum allows you to calculate, account for, and report on these complex taxes. You may be required to consider these tax issues if you have multiple warehouses or you have warehouses that are located in jurisdictions that include origin–based tax.
- Vertex Inc. provides leadership and expertise in state and local tax research.
- Quantum Calculation Engine: Provides the ability to calculate complex state, local, and district taxes based on ship–to, ship–from, and order acceptance locations.
- Quantum TDM:
  - Flexible tax exemption and exception processing
  - Central control by Tax Department
  - Eliminate IS involvement
- Quantum Returns:
  - Windows GUI application
  - Supports over 350 laser printed tax returns
  - Eliminates manual preparation of tax returns, allowing more time for tax planning.

Who should I call to obtain the Vertex products and services?

Vertex Sales Department
1–800–355–3500
http://www.vertexinc.com

When is the Tax Extension called to calculate a rate?

The Tax Extension is called whenever Receivables or Oracle Order Entry calculates a sales tax or VAT rate. The following concurrent programs and windows do this:

- Oracle Order Entry Sales Orders Workbench
- Oracle Order Entry Sales Acknowledgment Report
- Receivables AutoInvoice program
- Receivables Transaction Workbench
- Receivables Copy Transactions program
- Sales and Marketing Quotes window
- Web Customer Orders

What Sales Tax Location Flexfield structure should I select when implementing the Tax Extension within the US?

Oracle Applications provides the following default location structures for sites within the US:

- State.County.City

The State.County.City structure provides the greatest accuracy in locating a tax jurisdiction and tax rate given a customer address. Additionally, the SQL*Loader control file arvertex.ctl supports the State.County.City location flexfield structure.

How do we make orders or invoices exempt from tax when using a Tax Vendor?

Receivables and Oracle Order Entry will automatically find customer exemptions based on the bill–to customer and ship–to site. If found, the exemption certificate number and reason will be passed down to the Tax Vendor.

How do we distinguish between tax rates calculated by Oracle and tax rates calculated by an installed Tax Vendor?

Receivables will mark tax lines for an invoice that have been calculated by an installed Tax Vendor.

How do I implement tax on freight?

Receivables will calculate tax on freight lines if you can enter freight as a revenue line item. Additionally, you can automatically present freight lines as revenue lines during the Ship Confirm process within Oracle Order Entry. If the Oracle Order Entry user profile Tax: Invoice Freight

as Revenue is set to Yes, the Oracle Order Entry Receivables Interface program will generate a standard invoice line for the freight amount, optionally using the inventory item defined by the user profile Tax: Inventory Item for Freight. Refer to the *Oracle Receivables Tax Manual* for more information.

Does the Customer Interface program allow me to import US customer addresses without a County field when I have address validation set to 'Error' and a Sales Tax Location flexfield of 'State.County.City'?

No. When preparing to convert legacy data that only tracks state, city, and zip code, you will need to manually assign the correct county to each customer address before you import that customer into Oracle Receivables.

Reader's Comment Form

Integrating Oracle® Receivables with Vertex® Quantum
A66669–01

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information we use for revision.

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- Is the information clearly presented?
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