QAD Adaptive Applications
Enterprise Edition

User Guide

QAD Sales and Use Tax Interface

Introduction to SUTI
Implementing Vertex with QAD EE
Using the Sales and Use Tax Interface
SUTI Error Messages

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QAD Inc.
100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
http://www.qad.com

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Sales and Use Tax User Guide Change Summary

Product Name Changes

Starting in September 2019, the new name for QAD's complete portfolio of products is QAD Adaptive Applications. Additionally, QAD Adaptive ERP is the new name for QAD's flagship ERP solution. QAD Adaptive ERP includes the functionality previously associated with QAD Cloud ERP and QAD Enterprise Applications - Enterprise Edition, plus the QAD Enterprise Platform and Adaptive UX which resulted from the Channel Islands program. Going forward, the terms QAD Enterprise Applications, QAD Cloud ERP, and Channel Islands will be deprecated but will remain in previous documentation and training materials. QAD's intention is to—as soon as possible—eliminate the use of the deprecated terms going forward.

Change Summary

The following table summarizes significant differences between this document and the previous version.

Date/Version	Description	Reference
January 2020	Rebranded and updated release compatibility for Vertex 7.0	
March 2015 EE	Rebranded for Vertex 5.0	
March 2014 EE	Updated release and platform compatibility table to include only Vertex 4.1. This User Guide deals only with the releases and platforms contained in the table.	page 2

Chapter 1

Introduction to SUTI

This section introduces the Sales and Use Tax Interface for Vertex's Quantum, and specifies the QAD product versions to which each Quantum version applies.

Overview

The Sales and Use Tax Interface (SUTI), in conjunction with Global Tax Management (GTM), enables users to take advantage of enhanced tax functionality and improved tax reporting accuracy by using third-party software packages to calculate taxes in the QAD Adaptive ERP application.

Currently, companies can use SUTI only with Vertex's Quantum for Sales and Use Tax. However, this interface has been designed in an open manner so that it can be used with other tax packages in the future.

Note Currently, Quantum for Sales and Use Tax supports tax calculation and compliance requirements for the United States and Canada only.

This guide covers the use of SUTI for the releases and platform in Table 1.1. See *QAD Sales and Use Tax Interface Installation Guide* for installation instructions.

Table 1.1
Vertex 7.0 Release and Platform Compatibility

QAD Release	Quantum Release	Platform
QAD 2018 and 2019 EE	7.0	Red Hat 7 64-bit

Chapter 2

Implementing Vertex with QAD EE

This chapter provides guidelines for implementing Vertex with QAD EE.

Overview

In QAD EE, it is important to understand the relationship between business relations, customer and supplier shared sets, and domains before implementing Vertex.

Business Relations

All addresses are recorded as business relations in QAD EE. Business relations are then attached to entities, customers, suppliers, and end users, and provide a a single point of entry for address data that you can then use in multiple places in the system.

You can use the same business relation for a customer who is also a supplier. If this were the case in previous software versions, you would have had to maintain addresses in two places—Customer Maintenance and Supplier Maintenance. In QAD EE, you create a single business relation to record the address, and then create customer and supplier records that both reference the business relation.

Note It is possible to define business relations by domain by selecting the Domain Restricted field in Business Relation Create. A restricted business relation can only be viewed, modified, and reported on in the domain in which it was created.

Shared Sets

In QAD SE, users must set up static data in each domain in the database separately. For example, each domain has its own customer data.

Shared sets were introduced in QAD EE, and define data that is common to a group of domains. When a domain is created, you assign shared set codes to a number of data categories (such as customers and suppliers). When implementing Vertex, the customer shared set and the supplier shared set are of great importance.

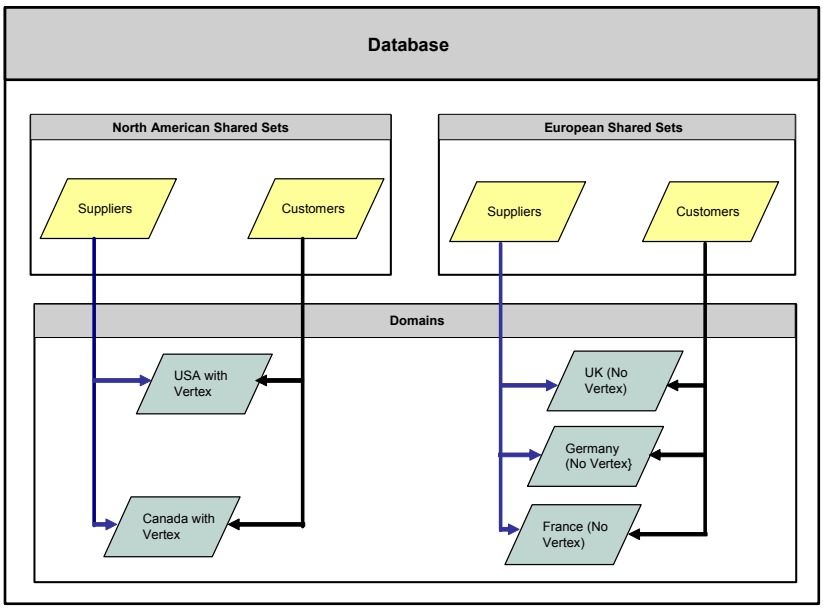
In QAD EE, certain customer data, such as address, contact, and tax data, is held at shared set level, while other customer data is stored at domain level.

When you create a customer, the customer data is first stored at shared set level. Then, the system creates domain-specific data in each domain that uses the shared set in which the customer data was originally defined. This process is also used for supplier data.

Vertex determines tax data based on the customer's or supplier's address (maintained at shared set level). In QAD EE, the Quantum GeoCode of the address is stored as a tax zone, and this is again maintained at shared set level. Therefore, you must implement Vertex in each domain that uses a customer or supplier shared set.

Figure 2.1 shows how to correctly implement shared set usage with Vertex.

Fig. 2.1
Correct Vertex Implementation

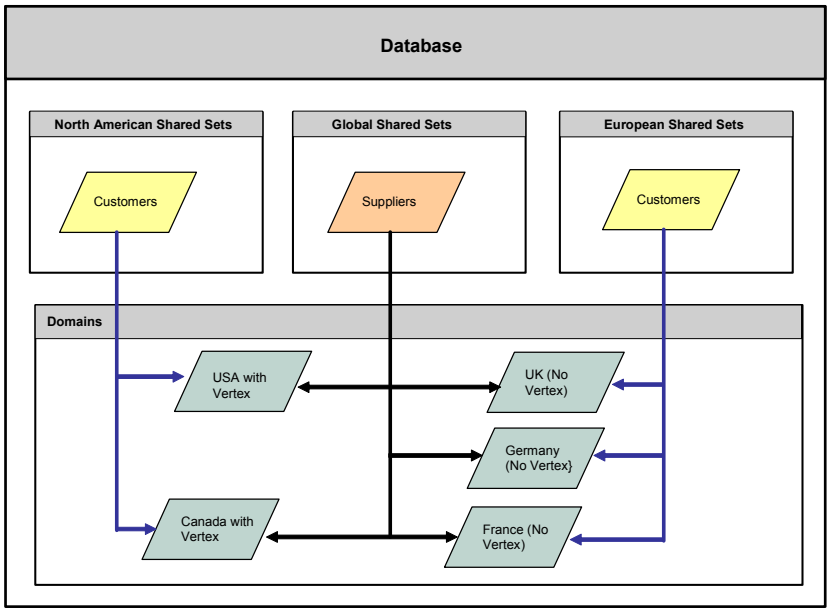


The customer and supplier shared sets are divided into two groups—one for North American operations and one for European operations.

Note It is only necessary to keep customer and supplier shared sets unique to the domains that use Vertex. Other shared sets, such as for GL accounts, sub-accounts, cost centers, and projects shared, can be used across multiple domains.

Figure 2.2 shows an example of incorrect shared set usage within a Vertex implementation.

Fig. 2.2
Incorrect Vertex Implementation



Even though the North America domains have a unique shared set for customer data, the North American domains use the same supplier shared set as the European domains. This sharing will cause problems with the Vertex implementation.

Entity Codes

In previous QAD Adaptive ERP application versions, entity codes were restricted to four characters. In QAD EE, entity codes can be 20 characters long. However, when implementing Vertex on a QAD EE system, you must limit entity codes to five characters. This restriction is due to a limitation in the Vertex software.

When you print and post an invoice in QAD EE, the system writes the invoice data to one of the Vertex databases. Vertex uses a company code to identify the invoice origin.

Note You must run Tax Interface Inv Post to Reg to update the Vertex Register database with posted invoice data from Invoice Post and Print and the Shipper Confirm functions.

The Vertex company code is the same as the entity code in QAD EE. However, the Vertex company code can only be five characters long. Therefore, when defining entities for use in domains with Vertex, limit the length of the entity codes to five characters.

Business Relations

Before implementing Vertex in QAD EE, it is important to understand how business relation data is stored. Business relations provide a single point of entry for address data that you can then use in multiple places in the system.

Business relations function at the database or system level, and are visible to all domains, unless you set the Domain Restricted field to Yes on the General settings tab in the Business Relation Create screen.

In addition to address data, business relations store tax data. If you create a business relation in a domain with Vertex, Vertex assigns a valid Quantum GeoCode to the Tax Zone field of the business relation. If you then use the business relation to create either a supplier or customer record in a shared set in a non-Vertex domain, it is important to adjust the tax zone settings on the customer or supplier record accordingly.

Similarly, if you create a business relation in a non-Vertex domain, the Tax Zone field is not assigned a Quantum GeoCode. If you then use the business relation to create a customer or supplier in a shared set in a Vertex-enabled domain, you must run the Vertex Tax Zone Update Utility to update the tax zone on the customer or supplier record with a Quantum GeoCode. See “Tax Zone Update Utility” on page 7.

Entity Addresses

QAD EE stores entity addresses differently for customer and supplier addresses. To implement Vertex on QAD EE, it is important to understand the differences.

Customer and Supplier Address Records

When creating a business relation record, you define the business relation address, which creates an address record in the database.

When you create a customer or supplier record, you assign the business relation to use with the record. This process again creates a new address record in the database, and the system copies the address information from the business relation to the customer or supplier address record.

Note Address records in the database also hold the tax information for the address. Any transactions that require customer or supplier tax data refer to the address record of the customer or supplier, not the business relation.

Entity Address Records

In QAD EE, entity addresses do not have separate address records in the database. Instead, they are linked directly to a business relation. Any transactions that require entity tax data refer to the address record of the business relation.

References

See *QAD Financials User Guide* for information on business relations, entities and entity addresses, and customer and supplier addresses.

See *QAD Global Tax Management User Guide* for information on Global Tax Management.

Tax Zone Update Utility

The Tax Zone Update Utility (29.12.13) analyzes addresses and updates tax zone data with valid Quantum GeoCodes. The utility also creates valid tax zone records for GeoCodes in the GTM module of QAD EE. There are, however, a number of restrictions and points to note when using the utility:

1. You must run the utility in a domain for which Vertex has been enabled.
2. The utility updates address information in domains other than the one in which you run it. Because the utility must update customer and supplier tax information stored at shared set level, this process is necessary.
3. The utility identifies customer and supplier shared sets used by the domain in which the utility is run. When it identifies the shared sets, the utility identifies all other domains that use the shared sets, and determines whether Vertex is enabled in those domains. If Vertex has not been enabled in the other domains, the utility will not proceed with the update.
4. When all domains have been identified, the utility verifies that all the domains use the same customer and supplier shared set. If not, the utility will not proceed with the update, and will issue an error.
5. Tax information is mirrored in the operation tables in the database, and each domain has a set of operational tables. For each domain that uses a customer and supplier shared set, the utility updates the operational tax tables.

6 In the customer shared set, the utility checks all customer tax data and, if required, updates the data with the correct Quantum GeoCode. The utility also updates the tax data mirrored in the operational tables.

7 In the supplier shared set, the utility checks all supplier tax data and, if required, updates the data with the correct Quantum GeoCode. The utility also updates the tax data mirrored in the operational tables.

8 The utility does not update tax data stored in business relations used by the customer and supplier records.

9 The utility updates the tax data stored against the business relation to which an entity address is linked. The utility also updates the tax data mirrored in the operation tables.

See “Updating QAD Records with Quantum GeoCodes” on page 22 for more information on the Tax Zone Update Utility.

Chapter 3

Using the Sales and Use Tax Interface

This chapter describes how to use SUTI with Vertex's Quantum for Sales and Use Tax.

Introduction

The Sales and Use Tax Interface (SUTI) is an application programming interface (API) designed for companies that use QAD's ERP application, and need advanced tax rate and tax calculation solutions offered by companies like Vertex.

SUTI works in conjunction with GTM and Quantum to retrieve tax jurisdiction information from the Quantum system and calculate US and Canadian regional taxes using Quantum calculation rules and tables.

For complete information on setting up and using GTM, see *QAD Global Tax Management User Guide*.

Menu Listing

Table 3.1 lists the functions available on the Sales and Use Tax Interface menu.

Table 3.1
Sales and Use Tax Interface Menu

Program	Program Name	Number
`vqstart.p`	Tax Interface Startup Utility	29.12.1
`vqshut.p`	Tax Interface Shutdown Utility	29.12.2
`vqadtzup.p`	Tax Zone Update Utility	29.12.13
`vqpm.p`	Tax Interface Control	29.12.24

Using SUTI with QAD and Multiple Domains

When SUTI is installed and enabled, it applies to an entire database. In a multi-domain environment, SUTI only affects transactions in the domains that have been set up to use it as their tax method. For example, in a domain that represents a European country, it would have no effect.

However, it is important that system administrators understand that changing settings in Tax Interface Control (29.12.24) affects all domains in the database that use the API to calculate taxes.

Features of Quantum for Sales and Use Tax

Note Currently, Quantum for Sales and Use Tax supports tax calculation and compliance requirements for the United States and Canada only.

Vertex's Quantum for Sales and Use Tax addresses the following business needs:

- Most companies do not have the resources or expertise to manually set up US and Canadian sales and use tax data.

  Quantum provides tax data to support US and Canadian sales and use taxes. This data includes tax jurisdictions for customers and suppliers, as well as applicable sales and use tax rates for each jurisdiction.

- After a tax system is implemented, tax data must be updated regularly to reflect current tax rates, rules, and exceptions. This reduces the risk of inaccurate customer billing as well as audit exposure and liability.

Vertex provides their customers with monthly database updates containing current sales and use tax rate data.

- Companies are required to file tax forms with different government agencies to report and pay sales and use taxes.

  Customers using Quantum for Sales and Use Tax can use Quantum Returns to fully automate filing of tax returns for most tax jurisdictions.

Tax Jurisdictions

Vertex's Quantum for Sales and Use Tax and SUTI cover the following tax jurisdictions:

- State
- Province
- County
- City
- District

Each tax jurisdiction is identified in the Quantum database by a unique code called a GeoCode. Quantum GeoCodes are imported into the QAD Adaptive ERP application as GTM tax zones. See "Tax Zones" on page 13.

Currency Requirements

Quantum requires US dollar amounts to calculate taxes. Therefore, the required currency for all transactions in SUTI is US dollars.

Specifying the currency code for US dollars in the US Currency field in Tax Interface Control lets the system convert all non-US dollar amounts into US dollars for Quantum calculations. See "Setting Up Tax Interface Control" on page 18.

Use Currency Create (26.1.1) and Exchange Rate Create (26.4.4) to define currency codes. After tax amounts are calculated, SUTI converts the amounts back to their original transaction currency.

Supported Modules

SUTI supports all QAD Adaptive ERP application modules that calculate tax amounts, including, but not restricted to:

- Sales Quotations
- Sales Orders and Invoices
- Purchasing
- Service and Support Management (SSM)
- Financials
- Release Management (Customer and Supplier Schedules)
- Enterprise Material Transfer (EMT)

Note GTM and SUTI do not support tax calculations for distribution orders generated by the Distribution module.

SUTI and GTM

When you process and calculate taxes using SUTI, GTM still generates tax detail records, but the tax amounts that display on those records are calculated by the Quantum system instead of GTM.

In addition, whenever SUTI is not used to calculate taxes, GTM performs the calculations as normal, with no changes in setup or processing required. This ensures that you can use Quantum to calculate US and Canadian taxes while still using GTM for all other taxes. See “Tax Rates” on page 16 for more details.

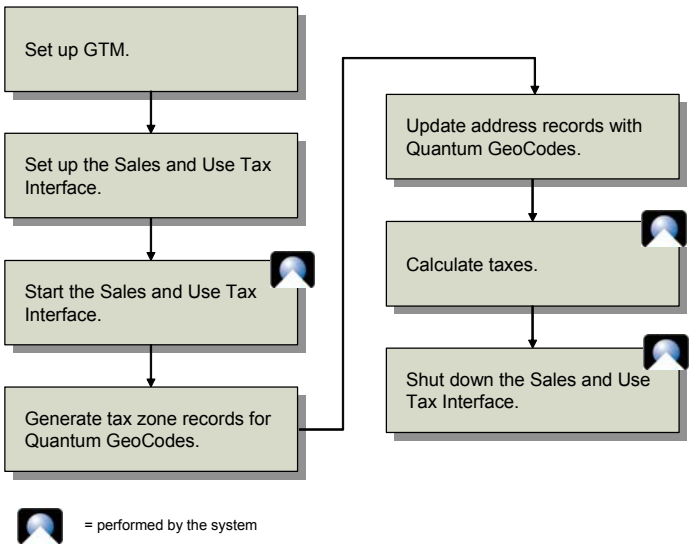
Work Flow

Figure 3.1 illustrates a typical work flow for setting up and maintaining SUTI. All steps indicated by the QAD logo are performed by the system; those not indicated by this icon are performed by users.

The first two steps are setup steps and are performed one time only.

SUTI is automatically started by the system when you log in to the QAD Adaptive ERP application and is automatically shut down when you log out of the QAD Adaptive ERP application; however, you can start and shut down the API manually, if required. See “Running SUTI” on page 26.

Fig. 3.1
SUTI Work Flow



Generating tax zone records based on Quantum GeoCodes and subsequently updating QAD Adaptive ERP address records with those GeoCodes are also setup steps. However, you should repeat these steps on a regular basis, whenever the GeoCode information in the Quantum database changes. You can perform both of these functions in the same step, if desired. See “Updating QAD Records with Quantum GeoCodes” on page 22.

When you have done the appropriate setup and SUTI is running, the system automatically calculates taxes using Quantum functions.

Setting Up SUTI

GTM Setup Specific to SUTI

SUTI requires the following setup in GTM:

- Define taxes.
  - Define tax type codes.
  - Verify presence of necessary tax accounts, sub-accounts, and cost centers in the General Ledger (GL) chart of accounts.
  - Associate tax rates with tax types.
- Assign taxes.
  - Define and assign tax zones.
  - Use tax classes and tax usage codes to define exceptions to tax zones.
  - Define tax environments to assign tax types to tax zones.
  - Assign tax zones, taxability, and city tax liability to items, customers, suppliers, and entities.

Tax Types

Business transactions can be subject to many kinds of taxes—sales taxes, domestic import duties, inventory transfer taxes, royalty fees, and so on. In GTM, a tax that is specific to a region and is individually calculated and reported is a *tax type*.

Tax types used in Quantum calculations are identified by the suffixes shown in Table 3.2.

Table 3.2
Tax Type Suffixes

Suffix	Description
VQ-00	Total of state, county, city, and district taxes
VQ-10	State tax
VQ-20	County tax
VQ-30	City tax
VQ-40	District tax

Example Tax type CA-VQ-10 could be used to identify California sales tax, while VEN-VQ-20 could be used for Ventura County tax, but VQ-10-CA would not work.

Set up Quantum-specific tax types as required in Tax Type Maintenance (29.1.1).

Tax Zones

Regions that assess tax include countries, states, provinces, counties, districts, and cities. In GTM, a region that assesses tax, or is subject to the same set of tax types, is a *tax zone*. All customer, supplier, and company address records belong to a tax zone, and each transaction has at least one set of ship-from and ship-to tax zones.

In the Quantum system, every region, or jurisdiction, that collects taxes in the US and Canada is identified by a unique code, called a GeoCode. GeoCodes identify over 7000 locations within the US and Canada.

If you use Quantum to calculate taxes, US and Canadian tax zones in QAD Adaptive ERP must correspond to Quantum GeoCodes. Use the Tax Zone Update Utility (29.12.13) to automatically generate tax zone records based on Quantum GeoCodes. See “Customer, Supplier, and Company Addresses” on page 16.

You can then associate QAD Adaptive ERP customer, supplier, and company and entity address records with appropriate tax zones either during address maintenance activities or using the Tax Zone Update Utility. See “Updating QAD Records with Quantum GeoCodes” on page 22.

Tax Classes and Usages

Within a tax zone, a tax type can affect all people and items, or only some of them.

Using Quantum’s Tax Decision Maker (TDM) program, you can track exemptions or identify other kinds of tax exceptions by customer, supplier, customer or supplier tax usage code, item tax class, tax zone, site, GL entity, or a combination of these criteria. See “Setting Up Quantum Tax Decision Maker (TDM)” on page 17.

To identify tax exceptions in TDM for groups of customers or suppliers, you must define the required groups in the QAD Adaptive ERP application using customer and supplier tax usage codes instead of tax classes. Define customer and supplier tax usage codes as needed in Tax Usage Maintenance (29.1.9).

Note In QAD EE, associate tax usage codes with the customer or supplier in the Tax Info tab of Customer Create (27.20.1.1) or Supplier Create (28.20.1.1). Tax data is read-only in Customer Data Maintenance (2.1.1) and Supplier Data Maintenance (2.3.1).

Two control settings provide additional ways to manage exceptions:

- The system uses either the customer sold-to address or ship-to address depending on the value of Use Ship-To for Customer Exceptions in Tax Interface Control. See “Use Ship-To for Customer Exceptions” on page 20.
- The Use Sold-To for Tax Usage Exceptions field determines which address that the QAD Adaptive ERP application uses to supply a default usage code during order processing. See “Use Sold-To for Tax Usage Exceptions” on page 20.

You must specify items in the TDM database by QAD Adaptive ERP item tax classes instead of individual item codes. Define item tax classes in Tax Class Maintenance (29.1.5). Associate them with individual item records in Item Master Maintenance (1.4.1).

Tax Environments

Before GTM calculates taxes, it determines which taxes apply to the addresses that ship and receive the goods—for example, state sales tax, local tax, and value added tax. In GTM, a *tax environment* is a set of tax types that applies to a combination of ship-from and ship-to tax zones and, optionally, a customer or supplier tax class.

When setting up tax environments in Tax Environment Maintenance (29.3.1), the number of tax types you specify for inclusion in a tax environment affects the performance of the Quantum tax calculation algorithm. Therefore, you should specify only the minimum number of tax types required for a given environment.

Example If only state and county taxes are applicable for a given tax environment, you should associate only the appropriate state-level (suffix VQ-10) and county-level (suffix VQ-20) tax types with that environment.

GL Accounts

Table 3.3 shows the special accounts, including sub-accounts and cost centers, used by GTM and SUTI for general ledger (GL) reporting.

Table 3.3
GL Accounts Used by GTM and SUTI

Account	Description
Sales tax	Credited for sales tax payable. Updated by Invoice Post and Print (7.13.4) and Customer Invoice Create (27.1.1.1). Note You must run Tax Interface Inv Post to Reg to update the Vertex Register database with posted invoice data from Invoice Post and Print and the Shipper Confirm functions.
Sales tax absorbed	Debited whenever your company absorbs tax instead of charging it to the customer. For example, if your company gives a customer a free replacement item, your company might still be liable for the tax. Updated by Invoice Post and Print (7.13.4) and Customer Invoice Create (27.1.1.1). Note You must run Tax Interface Inv Post to Reg to update the Vertex Register database with posted invoice data from Invoice Post and Print and the Shipper Confirm functions.
AP tax recoverable	Not used by SUTI.
AP tax retained	Not used by SUTI.

Before you set up tax rate records, you should verify that you have all the necessary tax accounts, sub-accounts, and cost centers in the GL chart of accounts. If any are missing, set them up.

The relevant GL maintenance functions are as follows:

- GL Account Create (25.3.13.1)
- Sub-Account Create (25.3.17.1)
- Cost Center Create (25.3.20.1)

See *QAD Financials* for details *User Guide*.

After you update your chart of accounts in the QAD Adaptive ERP application, specify the default codes for new tax rate records in Domain/Account Control (36.9.24). If necessary, you can later override these codes for individual tax rates.

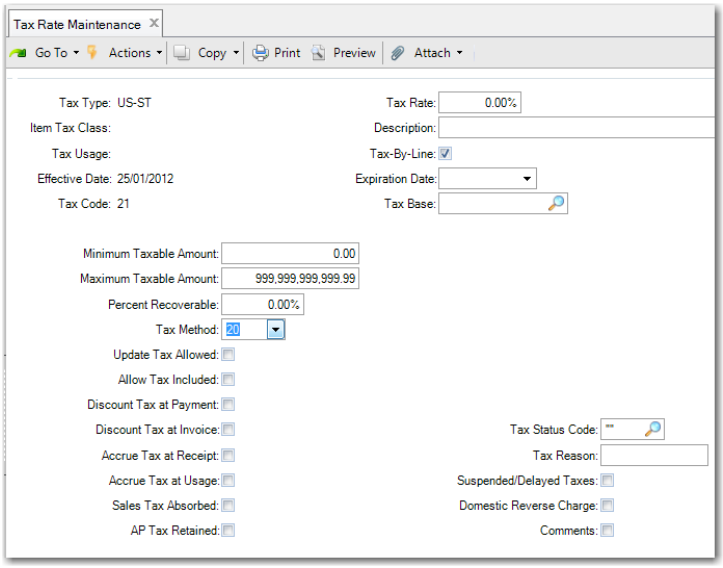
Tax Rates

In GTM, the *tax rates* associated with the tax type determine how the system calculates and posts tax amounts for each tax type.

When you use SUTI to calculate taxes, it uses the same calculation logic as GTM. Just like GTM, it needs to know which tax types apply, and which tax rate or rates apply for each type.

To use Quantum to calculate US and Canadian taxes, define the following field values in Tax Rate Maintenance (29.4.1) for each Quantum tax type.

Fig. 3.2
Tax Rate Maintenance (29.4.1)



Tax Type. Enter any valid tax type supported by SUTI. See “Tax Types” on page 13.

Tax Rate. Leave blank. Tax rates are calculated automatically by Quantum.

Tax-By-Line. Set to Yes.

Tax Method. Specify method 20; otherwise, Quantum is not used to calculate taxes.

For tax rates with tax methods other than 20, GTM performs the tax calculations using standard GTM functionality, with no changes in setup or processing required. This ensures that you can use Quantum to calculate US and Canadian taxes while still using GTM for all other taxes.

Update Tax Allowed, Discount Tax at Invoice, Discount Tax at Payment. Set to No.

Customer, Supplier, and Company Addresses

For address tax data, see Customer Create (27.20.1.1), Customer Ship-To Create (27.20.2.1), Supplier Create (28.20.1.1), End User Create (27.20.3.1), and Business Relation Create (36.1.4.3.1).

Tax Zone. When SUTI is running, this field automatically defaults to the GeoCode—that is, tax zone—value that corresponds to the address information on this record. To automatically assign appropriate Quantum GeoCode values to all addresses in the system, or to a specified range of addresses, use the Tax Zone Update Utility (29.12.13). See "Updating QAD Records with Quantum GeoCodes" on page 22.

Taxable. Set this field to Yes for all Canadian and US addresses for which SUTI will be used to calculate taxes.

In City. Set to Yes to indicate that an address is within city limits for taxation purposes; otherwise, set to No to indicate that the address is not within city limits. Quantum uses this field value in its calculations to determine whether city tax is applicable for a transaction.

Items

In Item Master Maintenance (1.4.1), set Taxable to Yes for all items for which you want Quantum to calculate taxes.

Setting Up Quantum Tax Decision Maker (TDM)

Using Quantum's Tax Decision Maker (TDM) program, you can define individual tax requirements by QAD Adaptive ERP customer or supplier ID, customer or supplier tax usage code, item tax class, tax zone, site code, GL entity, or a combination of these criteria. You can use TDM to track exemptions or identify other kinds of exceptions that require special calculation.

Use the following rules to define tax exceptions in the TDM database:

- To define tax exceptions in the TDM database by customer or supplier tax usage code, establish corresponding customer classes in the Quantum system.
- To define tax exceptions in the TDM database by item tax class, establish corresponding product codes in the Quantum system.
- Quantum GeoCodes are mapped to QAD Adaptive ERP tax zones. To define tax exceptions in the TDM database by QAD Adaptive ERP tax zone, use the corresponding GeoCodes in the Quantum system.
- To define tax exceptions in the TDM database by site, establish corresponding division codes in the Quantum system.
- To define tax exceptions in the TDM database by GL entity, establish corresponding company codes in the Quantum system.

The system uses either the primary entity—selected in Domain Create (36.1.1.1.1)—or the entity associated with the site on the invoice header, depending on the value of Use Primary/Invoice Tax Entity in Tax Interface Control. See the Use Primary/Invoice Tax Entity field on page 19.

Table 3.4 summarizes the QAD Adaptive ERP application values that you can use to define tax exceptions in the TDM database, along with the corresponding codes that you must set up for each QAD Adaptive ERP value in the Quantum system.

Table 3.4
QAD Adaptive ERP and TDM Code Values

QAD Adaptive ERP Code	Quantum TDM Code
Customer or supplier code	Customer code
Tax usage code	Customer class
Item tax class	Product code
Tax zone	GeoCode
Site code	Division code
GL entity	Company code

Setting Up Tax Interface Control

Use Tax Interface Control (29.12.24) to define settings and implementation options for managing the relationship between the QAD Adaptive ERP application and SUTI.

Important You must set up GTM before setting up this control program.

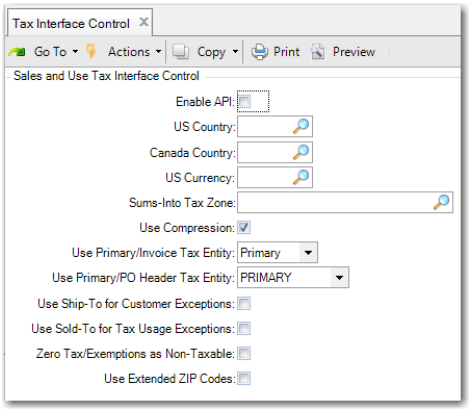
Control Settings with Multiple Domains

In QAD Adaptive ERP versions that support multiple domains, most control settings are specific to individual domains. However, settings in Tax Interface Control affect the entire database. When you enable the API, it is enabled database-wide. However, SUTI is only invoked in those domains where the proper GTM setup has been done. So, for example, SUTI would not affect the tax calculations in a European domain.

Tax elements may be common across diverse geographical regions; therefore, in QAD EE basic tax setup data is defined at database level. This avoids having to repeat similar setup in a multiple-domain environment. See Chapter 2, “Implementing Vertex with QAD EE,” on page 3 for more information.

Control Options

Fig. 3.3
Tax Interface Control (29.12.24)



Enable API. Enter Yes to enable users with access to Quantum to run SUTI.

When this field is Yes, for each user who logs into the QAD Adaptive ERP application, the system checks the User ID/Group field, also in Tax Interface Control, to determine whether they have access to SUTI. If so, it starts the API. Otherwise, the API does not start.

If you set this field to No, SUTI cannot be started for any user.

Note Setting this field to No does not close any existing open Quantum sessions.

US Country. This field establishes the country code that defaults to tax zone records generated by the Tax Zone Update Utility (29.12.13) for US addresses. Define this value in Country Code Data Maintenance (2.14.1). This field cannot be blank.

Canada Country. This field establishes the country code that defaults to tax zone records generated by the Tax Zone Update Utility (29.12.13) for Canadian addresses. Define this value in Country Code Data Maintenance. This field cannot be blank.

US Currency. Specify the currency code for US dollars, as defined in Currency Create (26.1.1).

Vertex's Quantum for Sales and Use Tax system requires transactions to be in US dollars for its calculations. SUTI uses the currency code specified here and its corresponding exchange rates to convert non-US dollar transaction amounts into US dollars for processing by Quantum, and then to convert the resulting tax amounts back into the original transaction currency. This field cannot be blank.

Sums-Into Tax Zone. Specify a sums-into tax zone to default to all tax zone records generated by the Tax Zone Update Utility.

Use Compression. Enter Yes to enable Quantum to identify compressed city names.

Example When this field is Yes and the city in a QAD Adaptive ERP address record is Riv Cty, the system identifies it as River City.

For more information about this feature, consult the Quantum user documentation.

Use Primary/Invoice Tax Entity. Indicate which entity code (Primary or Invoice) the QAD Adaptive ERP application should send to the Sales and Use Tax Interface for sales tax records maintained in the Quantum database.

Primary (the default): Invoice Post sends the value of the primary entity defined in Domain/Account Control.

Invoice: Invoice Post sends the value of the entity associated with the site specified on the invoice header. With this setting, more than one entity can be recorded in the Quantum database.

If your QAD Adaptive ERP database includes more than one entity and you report taxes by entity, you should set this field to Invoice. In this case, the sales tax reports generated from Quantum by company can be reconciled against QAD Adaptive ERP general ledger reports by entity.

Use Primary/PO Header Tax Entity. Indicate which entity code (Primary or PO Header) the QAD Adaptive ERP application should send to the Sales and Use Tax Interface for tax records for the current working domain maintained in the Quantum database.

Primary (the default): Purchase order functions send the value of the primary entity defined in Domain Create.

PO Header: These functions send the value of the entity associated with the site specified on the PO header. With this setting, more than one entity can be recorded in the Quantum database.

If the current working domain in the QAD Adaptive ERP application includes more than one entity and you report taxes by entity, you should set this field to PO Header. This allows for better control and wider functionality of the Quantum Vertex TDM (Tax Decision Maker) database and associated tax override rates and exemptions.

Use Ship-To for Customer Exceptions. Indicate which customer code (ship-to or sold-to) the QAD Adaptive ERP application should send to the Sales and Use Tax Interface for finding tax exceptions in the Quantum database.

No (the default): The customer sold-to address is used.

Yes: The customer ship-to address is used.

For sales orders and invoices, the QAD Adaptive ERP application passes a customer code to the Sales and Use Tax Interface, which is used to locate any customer tax exceptions or customer exemption certificates. Tax exemptions can be set up in Quantum for sold-to customers so that the exemption applies regardless of where goods are shipped. Some users prefer to set up exemptions by ship-to address, since regional jurisdiction may affect exemptions. This setting lets you determine which address code to use.

Use Sold-To for Tax Usage Exceptions. Indicate which customer code (ship-to or sold-to) the QAD Adaptive ERP application should use to determine the default tax usage code during order processing.

No (the default): The tax usage code associated with the customer ship-to address is used and is passed to Vertex as the customer class exception code.

Yes: The tax usage code associated with customer sold-to address is used and is passed to Vertex as the customer class exception code.

During processing of sales orders, invoices, calls, and return material authorizations (RMAs), a pop-up displays for entry of data used by Global Tax Management to calculate appropriate taxes. Most tax-related values default from the ship-to address, including taxable, tax included, and tax class. The tax environment is based on the tax zones associated with the ship-from site and ship-to address and the tax class associated with the ship-to address.

By default, tax usage also defaults from the ship-to customer. However, in some business environments, the tax usage associated with the ship-to address is not appropriate.

The tax usage code can indicate a tax exemption status for a non-profit or government organization. Some companies normally deliver goods as drop shipment; they essentially ship to their customer's customer. When the sold-to customer is a non-exempt business but the drop shipment is made to an exempt organization, full tax must still be calculated. In this case, the tax usage should be determined by the sold-to customer, not the ship-to customer.

A similar situation occurs when the sold-to is a tax exempt organization such as a government agency but items are shipped to non-exempt subcontractors. In this case, the tax exemption of the sold-to customer should apply.

In these situations, you can set Use Sold-To for Tax Usage Exceptions to Yes so that the default tax usage code is based on the customer sold-to address. If necessary, the default can be modified during order entry.

The setting of this field affects the following programs:

- Sales Quote Maintenance (7.12.1)
- Sales Order Maintenance (7.1.1)
- Pending Invoice Maintenance (7.13.1)
- Call Quote Maintenance (11.1.1.7)
- Call Activity Recording (11.1.1.13)
- Call Invoice Recording (11.1.1.15)
- RMA Maintenance (11.7.1.1)

Zero Tax/Exemptions as Non-Taxable. Specify how taxes set up for individual jurisdictions are handled in the QAD Adaptive ERP application based on TDM information when tax exemptions or zero tax rates are involved.

Yes: When taxes are set up in Quantum based on VQ-10, VQ-20, VQ-30, and VQ-40 tax types, both taxable lines with exceptions or exemptions and those with zero tax rate are recorded as non-taxable in the QAD Adaptive ERP application. See “Tax Types” on page 13.

No: This is the default value. Under the same circumstances, the non-taxable information from the TDM is recorded as taxable in the QAD Adaptive ERP application.

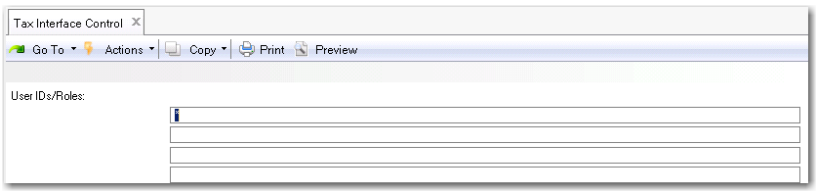
Use Extended Zip Codes. Select this field to enable the use of extended, nine-character zip codes.

Clear this field if you want the system to only recognize standard, five-character zip codes. In this case, if you create an address that has a nine-character zip code, the last four characters are not processed by the system.

Control Security

Use the second frame of Tax Interface Control to set up security for SUTI functions.

Fig. 3.4
Tax Interface Control (29.12.24)



User ID/Group. Use this field to set up security for SUTI functions by password, user, or user group.

Specify individual user IDs or user groups to identify users who can access SUTI functions. Define user IDs and user groups in User Maintenance (36.3.1). The SUTI API is started for each user in this list when they log in to the QAD Adaptive ERP application.

See *QAD Security and Controls User Guide* for more information.

Security Examples

A valid user ID and password are always required.

The asterisk (*) and exclamation point (!) are special characters when used in this field:

- Use the asterisk to give access to all users and groups. A blank operates the same way as an asterisk, allowing access to all users.
- The exclamation point restricts specific users by user ID, not by group. For example: `!user1,*` means all users except user1 have access to the interface.
- When using the exclamation point, you must enter exclusions first: `*,!user1` gives access to all users *including* user1. To exclude multiple users, enter:

  `!user1,!user2,!user3,*`

Table 3.5 shows some examples. Session IDs are not case-sensitive.

Table 3.5
Session ID Examples

String	Description
`*`	All users have access.
`!,*`	No users have access.
`payroll,*`	All users whose session ID begins with payroll have access.
`mary, manager`	Only users using the session IDs mary and manager have access.
`!jcd,*`	Everyone but the person whose session ID is jcd has access.

Using SUTI with QAD Desktop

If you are planning to use SUTI from the QAD Desktop interface, you must specify an asterisk (*) for the User ID/Group field so that any user can start the interface. This is because the telnet sessions used by the Desktop are potentially shared by many users, so the particular log-in identity is not known soon enough to start the interface when it is needed.

Updating QAD Records with Quantum GeoCodes

When setting up SUTI, you should use the Tax Zone Update Utility (29.12.13) to do the following:

- Generate a corresponding GTM tax zone record for each GeoCode in the Quantum system.
- Update the Tax Zone field in QAD Adaptive ERP customer, supplier, end user, and company or entity address records for US and Canadian addresses.

See “Customer, Supplier, and Company Addresses” on page 16.

You can also use this utility to:

- Update tax zone and address data in the QAD Adaptive ERP application when it changes in the Quantum system.
- Generate a report of changed GeoCodes in the Quantum system without modifying any records in the QAD Adaptive ERP application.

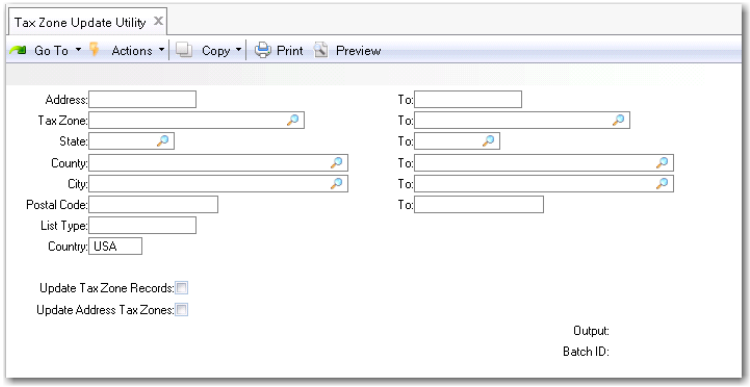
Using this utility, you can update both GTM tax zone records and address record tax zones, or tax zone records only. You may want to do the latter to set up Quantum GeoCodes in the QAD Adaptive ERP application while still using GTM functionality to calculate taxes for the address range specified.

Note Because any tax zone specified on an address record must exist in the QAD Adaptive ERP application, you cannot use this function to update only address tax zone records.

Running this utility always generates a report of tax zones (GeoCodes) and address record tax zone values that have changed in the Quantum system since this utility was last run. This report is for the record range specified, and is generated regardless of the settings of the Update Tax Zone Records and Update Address Tax Zones fields.

Note Running this utility has no impact on tax zone records with non-US or Canadian country codes.

Fig. 3.5
Tax Zone Update Utility (29.12.13)



Address. Enter a range of customer, supplier, or company (or entity) address codes to select QAD Adaptive ERP address records to update.

Tax Zone. Enter a range of existing tax zone codes to select QAD Adaptive ERP tax zone records to update.

Note When you specify a tax zone range here, Quantum GeoCodes outside this range do not have corresponding tax zone records generated or updated for them in the QAD Adaptive ERP application.

State, County, City, Postal Code, Country. Use these fields to select QAD Adaptive ERP address records to update.

List Type. Specify an address list type to identify address records to be updated by this function. If you leave this field blank, all address types are considered.

System-assigned address list types with tax data include:

- Remit-To
- Enduser
- Ship-to
- Company
- Customer
- Supplier

You can manually assign additional user-defined address list types to individual QAD Adaptive ERP address records using Address Type Create (36.1.4.1.1).

Update Tax Zone Records. Set to Yes to update existing QAD tax zone records and generate new tax zone records as needed.

The first time you run this utility with this field set to Yes, a tax zone record is generated in QAD for each GeoCode in the Quantum system.

Set this field to No to generate a report of GeoCodes that have changed in the Quantum system since the last time this utility was run. If you are running this utility for the first time, setting Update Tax Zone Records to No lets you review a report of tax zone records that will be generated when you run this utility with Update Tax Zone Records and Update Address Tax Zones set to Yes.

Update Address Tax Zones. Set to Yes to update QAD Adaptive ERP customer, supplier, and company address records with appropriate tax zones, or GeoCodes.

When Update Tax Zone Records is No, this field cannot be set to Yes.

If a GeoCode is not found for an address record, an error message displays in the report and that record is not updated.

When more than one GeoCode is found for an address record, the first GeoCode found defaults to the Tax Zone field on that record, and a message displays in the report to alert you of this.

Note When you use this utility to update the Tax Zone field for QAD Adaptive ERP address records, already-printed invoices are not reprinted, nor are tax environments on open orders updated to reflect the changes.

Self-Assessment of Taxes

The following section discusses how the Sales and Use Tax Interface (SUTI), the QAD Adaptive ERP application, and Quantum for Sales and Use Tax handle self-assessment of taxes in QAD Adaptive ERP applications.

The following subsections discuss situations in which self-assessment of taxes may be required—internal inventory consumption, service contracts—and calculating those taxes.

Internal Consumption of Inventory

Items originally purchased for inventory, either to be used to produce products for resale or to be sold alone, are typically not taxed. However, if such items are later issued from inventory for internal consumption, tax is typically owed.

Example Items are issued from inventory for a research and development project or for maintenance of equipment.

The QAD Adaptive ERP application and Quantum Returns provide features that enable you to accumulate and post self-assessed consumer use taxes on a periodic basis. The following procedures are recommended:

- Use a unique GL account for all self-assessment transactions so that transaction records can be identified and accumulated periodically by account, site, transaction type, date, and so on.

  You may want to use unique accounts to distinguish groups of transactions, for example, consumer use transactions versus seller use transactions. You can designate GL accounts for unplanned issue, unplanned receipt, and inventory transfer transactions in the QAD Adaptive ERP application.

- Use the Remarks field (tr_remark) in inventory transactions. You can set up generalized codes for this field, establishing unique values to further distinguish groups of transactions. Unplanned issue, unplanned receipt, and inventory transfer transactions all have this capability in the QAD Adaptive ERP application.

  Remarks are not included in the selection criteria for QAD transaction history reports, but do display in these reports.

- Use the Order field in inventory transactions. For example, specifying SELFASSESS in this field for every self-assessment transaction lets you use the Transactions by Order Report (3.21.13) to review transactions grouped by this order value.

  Note Transactions by Order Report does not display currency totals.

  You can use unique order values to identify groups of transactions; for example, consumer use transactions versus seller use transactions.

  Unplanned issue, unplanned receipt, and inventory transfer transactions all let you specify order values.

- Use the Transactions Accounting Report (3.21.16). If you use different accounts to track inventory transactions that need to be self-assessed, you can use this report to track those transactions.

  This report provides totals by account. Selection criteria include:

  - Transaction effective date
  - GL reference
  - Account, sub-account, and cost center
  - Project code
  - Transaction processing date
  - Transaction type

Service Contracts

In some situations, consumer use tax must be paid for parts used on a service call if they were not originally taxed on the governing service contract.

If taxes have already been charged on a service contract, then repair parts and labor are not taxed during call activity recording and call invoice maintenance. Otherwise, consumer use tax is charged, or self-assessed, based on the location where the repair was done.

Note There is no tax on repair costs for warranty items, whether parts or labor. It is assumed that these have been priced into the original sale, and, therefore, taxes are considered to have been collected. Because of this, QAD does not support tax calculations for warranty items.

Calculating and Posting Taxes

Calculate self-assessments using Quantum Returns. You can calculate taxes manually by entering the taxable amounts from QAD reports, identifying the GeoCode of the inventory site, and looking up the consumer's use tax rate for that GeoCode. At most, this would require one calculation per site.

Quantum Returns automatically recalculates taxes when preparing forms. Manually entered adjustments are included in recalculation of consumer's use tax. Also, you can enter manual adjustments directly in Returns.

Enter the tax amounts from Quantum Returns using Journal Entry Create (25.13.1.1).

Taxing Repair Center Versus Field Repairs

Service and Support Management (SSM) records and tracks both field and repair center repairs:

- Field repair: Customer item is repaired at an end-user site.
- Repair center repair: Customer item is repaired at the service provider's site.

  Note Repair center is also known as depot.

Call Activity Recording (11.1.1.13) correctly taxes both repair center repairs and field repairs. SUTI determines how to calculate taxes based on the work code—defined in Work Code Maintenance (11.21.1)—associated with the call line. Tax rates are calculated based on where the repair takes place.

- If the Tax at Repair Center field is Yes for the work code, labor and parts are taxed at the rate associated with the address record of the service provider. The ship-from and ship-to tax zones are set to the tax zone of the service provider (based on item-site).
- If the Tax at Repair Center field is No, labor and parts are taxed at the rate associated with the address record of the end user. The ship-from tax zone is set to the tax zone of the service provider (based on item-site). The ship-to tax zone is set to the tax zone of the ship-to customer.

The work code and site associated with the call header determines tax calculation for trailer codes.

Because of the impact of the work code and site fields on tax calculations, special processing occurs in Call Activity Recording (CAR) if a user changes the header site. Changing the header site will affect any new lines added to the call. It will also affect the calculation of new trailer charges added in Call Invoice Recording (11.1.1.15) as well as the recalculation of trailer charges on an existing call invoice if the invoice is reviewed in Call Invoice Recording (CIR). When the header site is changed in CAR, a warning displays indicating the potential effect on trailer charges.

Changing the work code on the call header in CAR or CIR has a similar effect, since the Repair Center setting associated with the work code determines the addresses the system uses for finding tax zones.

Running SUTI

To use the Quantum system to calculate taxes in the QAD Adaptive ERP application, SUTI must be running. When Enable API is Yes in Tax Interface Control (29.12.14), SUTI automatically starts upon user log-in, provided that the user has security access defined in the User ID/Group field in Tax Interface Control. See "Setting Up Tax Interface Control" on page 18.

Important For all users to have access to SUTI, set User ID/Group to asterisk (*) in Tax Interface Control.

Manually Starting SUTI

If, for some reason, SUTI did not automatically start when you logged into the QAD Adaptive ERP application, the Tax Interface Startup Utility (29.12.1) lets you start the interface without having to log out and then log back into the QAD Adaptive ERP application. SUTI starts only for the individual user who runs this utility; it is not started for every user logged in to the QAD Adaptive ERP application.

Note To use this feature, you must have security access to SUTI defined in Tax Interface Control.

If you are using SUTI with Desktop, you cannot run the Tax Interface Startup Utility from within the Desktop interface. This function displays one prompt:

Start Quantum API. Enter Yes to start the interface

To start SUTI, Enable API must be Yes in Tax Interface Control.

Manually Shutting Down SUTI

SUTI automatically shuts down when you log out of the QAD Adaptive ERP application. However, if you want to shut down the API without shutting down the QAD Adaptive ERP application, you can do so using the Tax Interface Shutdown Utility (29.12.2). SUTI shuts down only for the individual user who runs this utility; it is not shut down for every user logged in to the QAD Adaptive ERP application.

If you are using SUTI with Desktop, you cannot run the Tax Interface Shutdown Utility from within the Desktop interface. This function displays one prompt:

Stop Quantum API. Enter Yes to shut down the interface.

Chapter 4

SUTI Error Messages

The following chapter describes error messages that are specific to the Sales and Use Tax Interface and includes recommended steps for resolving each type of error discussed.

Introduction

The following sections describe how to assess and resolve QAD Adaptive ERP application error messages that relate to SUTI.

Note Most SUTI-specific error messages are uniquely identified by a three-digit Quantum error status code. For a complete list of SUTI-related error messages indexed by Quantum error status, see Table 4.8 on page 35.

INI File Errors

Before you can run SUTI, you must configure settings in the initialization (INI) file `vqapi.ini`. If you attempt to run SUTI without configuring these settings, an error message displays with the following format:

```
Quantum status xxx. INI file entry not found.
```

In the message, xxx is a three-digit Quantum error status code. See the installation chapters for information on updating `vqapi.ini`.

Table 4.1 summarizes the Quantum status codes associated with INI file entry errors and the settings you must configure in the `vqapi.ini` file to resolve these errors. To do this, open the `vqapi.ini` file in a text editor and specify the missing variables or directory paths as indicated in the table. For UNIX, be sure to use UNIX-style forward slash marks in the path statements.

After you configure the `vqapi.ini` file, restart the API using the Tax Interface Startup Utility (29.12.1).

Important Make sure that `vqapi.ini` is located in your client PROPATH—an environment variable containing the list of directories searched by Progress. Otherwise, the system cannot find it and displays the following error message:

```
Quantum status 311. INI file not found.
```

Table 4.1
INI File Entry Errors

Quantum Status Code	INI File Setting	Required Entry
302	`vqapi_dir`	Enter the directory path to the `vqapi` executable file.
303	`server_id`	If applicable, enter the server ID (SID) of the Oracle server on which the Quantum database is installed.
304	`loc_source`	Enter the directory path to the Quantum Location database.
305	`rate_source`	Enter the directory path to the Quantum Rate database.
306	`tdm_source`	Enter the directory path to the Quantum Tax Decision Maker database.
307	`reg_source`	Enter the directory path to the Quantum Register database.
308	`db_type`	Enter the Quantum database type—ISAM or RDBMS.

Function Failure Errors

Some Quantum API errors display when internal procedures used by SUTI to exchange tax data between Quantum and the QAD Adaptive ERP application fail to execute. Generally, this type of error indicates that one of the following has occurred:

- SUTI has stopped running and must be manually restarted using the Tax Interface Startup Utility (29.12.1). See “Running SUTI” on page 26.
- The Quantum application has stopped running or has become disconnected.

API function failure messages have the following format:

```
Quantum status xxx. Quantum API function failure
```

In the message, xxx is a three-digit Quantum error status.

Table 4.2 summarizes the Quantum status codes and corresponding internal procedures associated with SUTI function failure messages.

Note Some of these errors are discussed in greater detail in the following sections.

Table 4.2
API Function Failure Errors

Quantum Status	Failed Internal Procedure
135	LocSetNameCriteria
136	LocGetLocations
138	LocGetGeoCodeString
142	VstResetHdl
143	VstSetInv
144	VstSetCust
145	VstSetOth
146	VstSetJuris
147	VstSetTrans
148	VstSetProd
149	VstCalcTax
150	VstGetTrans
151	VstGetStateLocal
152	VstGetLocalAddtl
154	VstGetStateLocal
154	VstGetStateLocal
201	LocConnect
202	LocDisconnect
203	LocSetAttrib

Quantum Status	Failed Internal Procedure
204	LocGetAttrib
205	VstCreateConnHdl
208	VstReleaseConnHdl
209	VstSetAttrib
210	VstGetAttrib
211	VstCreateHdl
213	VstReleaseHdl
215	LocCreateFindContext
216	LocDestroyFindContext
217	LocRelease
218	VstDebugHdl
316	VstOpenDb
317	VstOpenDb
318	VstOpenDb
319	VstOpenDb
320	VstCloseDb
321	VstCloseDb
322	VstCloseDb
323	VstCloseDb

Database Open Function Failures

Table 4.3 summarizes Quantum error statuses used to indicate that a function failure occurred while opening a Quantum database. The most common reasons for these errors are:

- The interface has stopped running and must be manually restarted using the Tax Interface Startup Utility (29.12.1).
- One of the required Quantum databases is not installed.
- The system cannot locate a Quantum database because its corresponding INI file entry references the wrong directory location.

See “INI File Errors” on page 30.

Database open failure messages are referenced in Table 4.3 by their corresponding Quantum statuses. Each entry also indicates the specific Quantum database associated with the error status and the INI file parameter used to specify that database’s location.

Table 4.3
Quantum Database Open Function Errors

Quantum Status Code	Quantum Database	INI File Parameter
316	GeoCoder database	`loc_source`
317	Rate database	`rate_source`
318	Register database	`reg_source`
319	Tax Decision Maker (TDM) database	`tdm_source`

Database Close Function Failures

API function failure messages with the following Quantum statuses indicate that a function failure occurred while closing a Quantum database:

- 320
- 321
- 322
- 323

Since database close failures do not affect record retrieval or processing in SUTI, you do not need to do anything to resolve these errors.

Database and API-Related Errors

The following section lists miscellaneous API and database-related error messages that are specific to SUTI and the recommended steps for resolving each.

Note If the system is processing records when one of these errors is generated, it stops processing immediately after encountering the error.

- Invalid character in numeric input (76); Pipe to subprocess has been broken (140)

  Table 4.4 summarizes common reasons why this message displays and the actions you can take to resolve each problem.

Table 4.4
Resolving Setup Errors

Problem	Solution
User does not have execute privileges to `vqapi` file.	Confirm that execute privileges for all users are set for the `vqapi` file, located in the directory specified as the `vqapi_dir` parameter of `vqapi.ini`.
Shared library environment variable has not been set.	Confirm that the shared library environment variable to the Quantum 5.0 `lib` directory has been set for your operating system.
Read and/or write access to Quantum databases has not been set.	Confirm that read and write privileges to the Quantum databases are set for all users.

- Quantum status 214. Quantum database not open.

  Verify that Quantum is connected and running. If SUTI has stopped running, restart it using the Tax Interface Startup Utility (29.12.1).

- Quantum status 309. Unsupported database type.

  Make sure that the `db_type` variable in `vqapi.ini` is set to ISAM. See “INI File Errors” on page 30.

- Quantum Status 314. Quantum API not enabled.

  Set Enable API to Yes in Tax Interface Control (29.12.24). See “Setting Up Tax Interface Control” on page 18

- Quantum interface startup failed.

  Table 4.5 summarizes common reasons why this message displays and the actions you can take to resolve each problem.

Table 4.5
Resolving SUTI Startup Failure Errors

Problem	Solution
One or more of the Quantum databases are not installed or functioning.	Verify that all of the Quantum databases are installed and that Quantum is running. Restart the interface, if required, using the Tax Interface Startup Utility (36.5.3.1).
Tax Interface Control has not been set up.	Set up Tax Interface Control.
Enable API is No in Tax Interface Control.	Set Enable API to Yes.
The INI file `vqapi.ini` was not found in the PROPATH.	Place the INI file `vqapi.ini` in a directory visible to the PROPATH.
There are incorrect entries in `vqapi.ini`.	Verify that `vqapi.ini` is correctly configured. For more information, see “INI File Errors” on page 30.
The Quantum API executable was not found in the directory indicated by the INI file parameter `vqapi_dir`.	Enter the correct directory path for `vqapi_dir` in `vqapi.ini`.

- Non-Progress executable program not found.

This error message is generated when the system cannot locate the API executable—`vqapi` for UNIX systems and `vqapi.dll` for Windows systems. When this occurs, SUTI cannot be started.

To resolve this error, make sure that the directory path specified for vqapi_dir in the INI file `vqapi.ini` points to the location of the `vqapi` executable file. See “INI File Errors” on page 30.

Errors in the Tax Zone Update Utility

Table 4.6 summarizes error messages that are specific to the Tax Zone Update Utility (29.12.13) and the recommended steps for resolving each. See also “Function Failure Errors” on page 31.

Note Generally, when the system encounters errors in this utility, it does not stop processing records. Rather, it skips the record that generated the error and continues processing the next applicable record.

Table 4.6
Tax Zone Update Utility Errors

Error Message	Recommended Resolution Steps
Quantum status 131. Vertex Quantum control file not found.	Set up Tax Interface Control (29.12.24).
Quantum status 133. Tax zone exists for address components.	Generate a tax zone record for the GeoCode and address combination for which the error message displayed.
Quantum status 135. Quantum API function failure.	Verify that the address information is correct. If the interface has stopped running, restart it using the Tax Interface Startup Utility (29.12.1).
Quantum status 137. Quantum GeoCode not found for address.	Verify that the address information is correct. When the city name is abbreviated or compressed—for example, St. Paul—verify that Use Compression is Yes in Tax Interface Control.
Quantum status 139. Multiple Quantum GeoCodes found for address.	Verify that the address information is correct. When the city name is abbreviated or compressed, verify that Use Compression is Yes in Tax Interface Control. Refer to the Quantum documentation for information on changes to and splits in tax jurisdictions.

Tax Calculation Errors

This section discusses several SUTI-specific errors that can occur during tax calculations for QAD sales transactions. The most common reason for these errors is that SUTI has stopped running and must be manually restarted using the Tax Interface Startup Utility (29.12.1). See “Function Failure Errors” on page 31.

If you are using programs that calculate taxes from the QAD Desktop, you must complete an additional step before reactivating the interface. You must use the Desktop Administration page to close and restart the Connection Manager. Then use Tax Interface Startup Utility to start the interface.

Important Closing the Connection Manager closes any active user sessions. Make sure users are notified before executing this step. Users do not necessarily have to log out of QAD, but they cannot be executing an HTML program when the Connection Manager is closed.

Generally, when the system encounters an error while calculating taxes for sales transaction lines, it does not stop processing the transaction. Rather, it skips the line that generated the error and continues calculating taxes for subsequent lines.

The same rule applies for function failure errors generated during tax calculations, with the exception of the error indicated by Quantum status 154. When this error occurs, the system stops calculating taxes for transaction lines. See “Function Failure Errors” on page 31.

Table 4.7 lists several error messages that can display in QAD Adaptive ERP sales transactions when Quantum is used to calculate taxes.

Table 4.7
Tax Calculation Errors

Error Message	Reason Generated
Quantum status 141. API not available.	Indicates that either Quantum or SUTI has stopped running.
Quantum status 160. Unexpected result in tax calculation.	Displays after all transaction line items have been processed to indicate that an interface failure occurred during tax calculation for one or more line items.
Quantum status 310. Write to Quantum database failed.	Generated during creation of Quantum Register records. May indicate that the Quantum Register database has become disconnected.

Error Message Cross-Reference

Table 4.8 summarizes QAD error messages that are specific to SUTI, sorted by Quantum status code. Each entry includes the corresponding QAD message number and a cross-reference to the location where the error solution is discussed.

Table 4.8
Error Message Cross-Reference

Quantum Status	Msg Nbr	Message Text	Cross-Reference
131	1887	Quantum status 131. Vertex Quantum control file not found.	See page 34.
132	1888	Quantum status 132. Country code must be US or Canada.	See page 18.
133	1945	Quantum status 133. Tax Zone exists for address components.	See page 34.
134	1895	Quantum status 134. Update Tax Zones must be Yes.	See page 13.
135	1889	Quantum status 135. Quantum API function failure.	See page 34.
136	1935	Quantum status 136. Quantum API function failure.	See page 31.
137	1890	Quantum status 137. Quantum GeoCode not found for address.	See page 34.
138	1937	Quantum status 138. Quantum API function failure.	See page 31.

Table 4.8 — *Error Message Cross-Reference* — (Page 1 of 3)

Quantum Status	Msg Nbr	Message Text	Cross-Reference
139	1891	Quantum status 139. Multiple Quantum GeoCodes found for address.	See page 34.
141	1896	Quantum status 141. API not available.	See page 34.
142	1897	Quantum status 142. Quantum API function failure.	See page 31.
143	1898	Quantum status 143. Quantum API function failure.	See page 31.
144	1923	Quantum status 144. Quantum API function failure.	See page 31.
145	1924	Quantum status 145. Quantum API function failure.	See page 31.
146	1925	Quantum status 146. Quantum API function failure.	See page 31.
147	1926	Quantum status 147. Quantum API function failure.	See page 31.
148	1927	Quantum status 148. Quantum API function failure.	See page 31.
149	1928	Quantum status 149. Quantum API function failure.	See page 31.
150	1929	Quantum status 150. Quantum API function failure.	See page 31.
151	1931	Quantum status 151. Quantum API function failure.	See page 31.
152	1932	Quantum status 152. Quantum API function failure.	See page 31.
154	2011	Quantum status 154. Quantum API function failure.	See page 31 and page 34.
155	2004	Quantum status 155. Quantum Tax Type required.	See page 13.
156	2006	Quantum status 156. Tax-By-Line must be Yes.	See page 16.
157	2007	Quantum status 157. Update Tax Allowed must be No.	See page 16.
158	2008	Quantum status 158. Discount Tax at Invoice must be No.	See page 16.
159	2009	Quantum status 159. Discount Tax at Payment must be No.	See page 16.
160	2013	Quantum status 160. Unexpected result in tax calculation.	See page 34.
201	1964	Quantum status 201. Quantum API function failure.	See page 31.
202	1965	Quantum status 202. Quantum API function failure.	See page 31.
203	1966	Quantum status 203. Quantum API function failure.	See page 31.
204	1967	Quantum status 204. Quantum API function failure.	See page 31.
205	1968	Quantum status 205. Quantum API function failure.	See page 31.
208	1977	Quantum status 208. Quantum API function failure.	See page 31.
209	1978	Quantum status 209. Quantum API function failure.	See page 31.
210	1979	Quantum status 210. Quantum API function failure.	See page 31.
211	1980	Quantum status 211. Quantum API function failure.	See page 31.
213	1981	Quantum status 213. Quantum API function failure.	See page 31.
214	1983	Quantum status 214. Quantum database not open.	See page 32.
215	1942	Quantum status 215. Quantum API function failure.	See page 31.
216	1943	Quantum status 216. Quantum API function failure.	See page 31.
217	1943	Quantum status 217. Quantum API function failure.	See page 31.
218	1982	Quantum status 218. Quantum API function failure.	See page 31.

Table 4.8 — *Error Message Cross-Reference* — (Page 2 of 3)

Quantum Status	Msg Nbr	Message Text	Cross-Reference
302	1950	Quantum status 302. INI file entry not found.	See page 30.
303	1951	Quantum status 303. INI file entry not found.	See page 30.
304	1952	Quantum status 304. INI file entry not found.	See page 30.
305	1953	Quantum status 305. INI file entry not found.	See page 30.
306	1954	Quantum status 306. INI file entry not found.	See page 30.
307	1955	Quantum status 307. INI file entry not found.	See page 30.
308	1956	Quantum status 308. INI file entry not found.	See page 30.
309	1957	Quantum status 309. Unsupported database type.	See page 32.
310	1984	Quantum status 310. Write to Quantum database failed.	See page 34.
311	1985	Quantum status 311. INI file not found.	See page 30.
312	1987	Quantum status 312. Quantum API started successfully.	Not applicable.
313	1993	Quantum status 313. Quantum API already running.	Not applicable.
314	1994	Quantum status 314. Quantum API not enabled.	See page 32.
316	1969	Quantum status 316. Quantum API function failure.	See page 31.
317	1970	Quantum status 317. Quantum API function failure.	See page 31.
318	1971	Quantum status 318. Quantum API function failure.	See page 31.
319	1972	Quantum status 319. Quantum API function failure.	See page 31.
320	1973	Quantum status 320. Quantum API function failure.	See page 32.
321	1974	Quantum status 321. Quantum API function failure.	See page 32.
322	1975	Quantum status 322. Quantum API function failure.	See page 32.
323	1976	Quantum status 323. Quantum API function failure.	See page 32.
	1995	Quantum interface startup failed.	See page 32.
	1947	Non-Progress executable program not found.	See page 32.
		Invalid character in numeric input (76); Pipe to subprocess has been broken (140)	See page 32.

Table 4.8 — *Error Message Cross-Reference* — (Page 3 of 3)

Product Information Resources

QAD offers a number of online resources to help you get more information about using QAD products.

QAD Forums (community.qad.com)
Ask questions and share information with other members of the user community, including QAD experts.

QAD Knowledgebase (knowledgebase.qad.com)*
Search for answers, tips, or solutions related to any QAD product or topic.

QAD Document Library (https://documentlibrary.qad.com)
Get browser-based access to user guides, release notes, training guides, and so on; use powerful search features to find the document you want, then read online, or download and print PDF.

QAD Learning Center (learning.qad.com)*
Visit QAD's one-stop destination for all courses and training materials.

*Log-in required

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