QAD Enterprise Applications
Enterprise Edition

Installation Guide

QAD Sales and Use Tax Interface

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Change Summary

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

Date/Version	Description	Reference
March 2012 EE	*Technical Reference: QAD Sales and Use Tax Interface* divided into two guides: • *User Guide: QAD Sales and Use Tax Interface* • *Installation Guide: QAD Sales and Use Tax Interface*	--
	Added Vertex 4.0 to release and platform compatibility table	page 3
	Added new chapter on installation for SUTI 4.0	page 35

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 Vertex's Quantum for Sales and Use Tax to calculate taxes in QAD's ERP application.

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 installation of SUTI for several versions of QAD's ERP application. These releases vary in the version of Quantum and the operating systems supported. The following table summarizes the relationships between QAD releases, Quantum releases, and supported platforms. It also indicates where installation instructions for the various combinations are found.

See *User Guide: QAD Sales and Use Tax Interface* for information on the use of SUTI.

Table 1.1
Release and Platform Compatibility

QAD Release	Quantum Release	UNIX Platforms	Windows Platforms	Installation Instructions
eB eB2 eB2.1 QAD 2007 QAD 2007.1	3.0	• HP-UX 11.0 32 bit • HP-UX 11i 32/64 bit • Solaris 8 32/64 bit • Solaris 9 32/64 bit • AIX 5.1 32 bit • AIX 5.2 32 bit • HP Compaq Tru64 5.1 • Linux 2.4	• NT 4.0 • Windows 2000 • Windows 2003 • Windows XP	See Chapter 2, "Installing SUTI for Quantum 3.0," on page 5.
QAD 2008 SE QAD 2008 EE QAD 2008.1 EE QAD 2009 SE QAD 2009 EE QAD 2009.1 EE QAD 2010 SE QAD 2010 EE QAD 2010.1 EE QAD 2011 SE QAD 2011 EE	3.2	• HP-UX 11pa 32/64 bit • HP-UX 11ia 32/64 bit • Solaris 10 64 bit • AIX 5.3 64 bit • Linux 2.4 32 bit • Linux 2.6 32 bit	• Windows 32 bit • Microsoft .Net Framework 2.0	See Chapter 3, "Installing SUTI for Quantum 3.2," on page 15.

QAD Release	Quantum Release	UNIX Platforms	Windows Platforms	Installation Instructions
QAD 2008 SE QAD 2008 EE QAD 2008.1 EE QAD 2009 SE QAD 2009 EE QAD 2009.1 EE QAD 2010 SE QAD 2010 EE QAD 2010.1 EE QAD 2011 SE QAD 2011 EE	3.3	• HP-UX 11pa 32/64 bit • HP-UX 11ia 32/64 bit • Solaris 10 32/64 bit • AIX 5.3 32/64 bit • Linux 2.6.9 32/64 bit • Linux 2.6.18 32/64 bit	• Windows 32 bit • Microsoft .Net Framework 2.0	See Chapter 4, “Installing SUTI for Quantum 3.3,” on page 25.
QAD 2012 EE	4.0	• HP-UX 11ia v2 32 bit/64 bit • HP-UX 11ia v3 32 bit/64 bit • Red Hat Linux 4.0 32 bit/64 bit • Red Hat Linux 5.0 32 bit/64 bit	• Windows 32 bit or Windows 64 bit • Microsoft .Net Framework 3.0 • QAD .NET UI Version 2.9.5	See Chapter 5, “Installing SUTI for Quantum 4.0,” on page 35.

Product Names

As part of the process of developing solutions that reflect its evolving vision, QAD has rebranded some existing products. The product formerly known as MFG/PRO is now known as QAD Enterprise Applications—Enterprise and Standard editions.

Product versioning is indicated by incrementing the year—for example, the product that would have been called MFG/PRO eB3 using the previous product nomenclature is now called QAD Enterprise Applications, Enterprise Edition—or QAD EE. Subsequent releases in the same year are identified by a decimal number; for example, QAD 2011.1 EE. The same numbering scheme applies to the former eB2.1 version, which is now identified as QAD Enterprise Applications, Standard Edition—or QAD SE. (Note that the service pack 5 and 6 versions of eB2.1 were identified as QAD 2007 and QAD 2007.1, respectively.)

Other Documentation

- For QAD installation instructions, refer to the appropriate installation guide for your system
- For instructions on navigating the Windows and character environments:
  - For MFG/PRO eB, eB2, eB2.1, QAD 2007, QAD 2008 SE, and QAD 2009 SE, see *User Guide Volume 1: Introduction*
- For instructions on navigating the Network User Interface (.NET UI) and Desktop environments:
  - For MFG/PRO eB, see *User Guide: eB Desktop and Network User Interface*
  - For MFG/PRO eB2 and eB2.1, see *User Guide: QAD Desktop*

  - For QAD 2007, QAD 2008 SE, QAD 2008 EE, QAD 2009 SE, and QAD 2009 EE, see *User Guide: QAD .NET User Interface Guide*
  - From QAD 2010 SE and QAD 2010 EE onward, see *User Guide: QAD Introduction to Enterprise Applications*
- For information on using the software, see *User Guide: QAD Sales and Use Tax Interface*
- For details on Global Tax Management (GTM):
  - For eB, eB2, and eB2.1, see *User Guide Volume 6: Master Files* (*Master Data* in QAD 2007 and later)
  - For QAD SE, see *User Guide: QAD Master Data*
  - For QAD EE versions prior to QAD 2010 EE, see *User Guide: QAD Financials B*
  - For QAD 2010 EE and later QAD EE versions, see *User Guide: QAD Global Tax Management*

Chapter 2

Installing SUTI for Quantum 3.0

This chapter outlines the steps for installing the Sales and Use Tax Interface for Vertex's Quantum version 3.0.

Installation Overview

This chapter describes how to install and configure the SUTI API for Vertex Quantum 3.0. Instructions are included for Windows and UNIX systems. Refer to the steps appropriate to your operating system environment.

- If you are using Quantum 3.2, see Chapter 3, “Installing SUTI for Quantum 3.2,” on page 15.
- If you are using Quantum 3.3, see Chapter 4, “Installing SUTI for Quantum 3.3,” on page 25.
- If you are using Quantum 4.0, see Chapter 5, “Installing SUTI for Quantum 4.0,” on page 35.

The SUTI API installation consists of two principal steps:

1. Copy required files from the installation CD-ROM. A dynamic link library (DLL) is supplied for Windows systems. A compiled C program is used on UNIX systems. The DLL and C programs are specific to each operating-system platform.
2. Configure an initialization file used by QAD to locate the API program, log files (UNIX only), and the SUTI databases.

On UNIX systems, you must also set shared library variables. If you are using QAD Desktop, special setup may be required.

Installing SUTI on Windows Systems

This section outlines steps for installing SUTI in a Windows environment.

System Requirements

The installation in this section is for MFG/PRO eB, eB2, eB2.1, QAD 2007, and QAD 2007.1 interfacing with Vertex’s Quantum for Sales and Use Tax release 3.0. Consult the Vertex installation documentation for the Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

Desktop

The system requirements for SUTI on Desktop 2 are as follows:

- Intel Pentium 800 MHz or faster processor
- Windows 2000, 2003, or NT 4.0
- MFG/PRO eB and eB2 with a Progress database
- Progress Version 9.1D or above; see the installation guide for your ERP application for specific Progress requirements
- Internet Explorer 6.0 or above
- Vertex’s Quantum for Sales and Use Tax, release 3.0, using an ISAM database

QAD .NET UI

You can also install SUTI with .NET UI. The system requirements are as follows:

- Intel Pentium 800 MHz or faster processor
- Windows 2000, 2003, or NT 4.0
- MFG/PRO eB2.1, QAD 2007, and QAD 2007.1 with either a Progress or Oracle database
- QAD .NET UI versions 2.5.1, 2.5.2, or 2.5.3, all of which include QAD Desktop 2.10.5.
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Internet Explorer 6.0 or above
- Vertex's Quantum for Sales and Use Tax, release 3.0, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

UI Requirements

Copy Required Files

1. Create a new directory below the QAD ERP application root directory named `SUTI30`. You will install the components of the API into this directory. For example, if you installed the QAD ERP application in `C:\QADInstallDir`, create the following directory:

   ```
   C:\QADInstallDir\SUTI30
   ```

2. Insert the distribution CD-ROM in your drive.

3. Locate the directory appropriate for your system on the CD-ROM. The directory structure looks like the following example:

   ```
   win2k
       vqapi.ini
       isam
          vqapi.dll

   winnt
       vqapi.ini
       isam
          vqapi.dll
   ```

4. Copy the `vqapi.ini` file below the appropriate directory to `SUTI30`, the directory created in step 1.

5. Copy the appropriate DLL into `SUTI30`. For example, on a Windows NT system, copy from:

   `CDRomDrive``:\winnt\isam\vqapi.dll`

   To:

   ```
   C:\QADInstallDir\SUTI30
   ```

6. Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this two ways:

   a. Move `vqapi.ini` into the QAD ERP application root directory. This directory should already be in the PROPATH.

   b. Add the path to the new `SUTI30` directory to the PROPATH.

7. Make sure that `vqapi.dll` is included in the user's PATH.

Tailor the INI File

The QAD ERP application uses the `vqapi.ini` file to locate the API program and the Quantum databases. To complete the installation, you must specify values for your environment in this `.ini` file. Table 2.1 lists the settings to be modified.

Table 2.1
`vqapi.ini` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified name of the `SUTI30` directory where the API program for Windows is located. Do not include the name of the DLL. The QAD ERP application automatically appends `vqapi.dll` to the end of this path; for example: `vqapi_dir=C:\QADInstallDir\SUTI30`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

1. Locate the `.ini` file in the QAD ERP application root directory.
2. Open the `.ini` file in any text editor such as Notepad.
3. Enter values for the settings listed in Table 2.1. You do not need to change the value of `db_type.`
4. Save your changes and close the text editor.

Note Before starting SUTI, include both the directory path containing the SUTI 3.0 API (`vqapi.dll`) and Quantum's `utils` directory in your Windows system environment path.

User Guide: QAD Sales and use Tax Interface includes information on error messages generated if the `.ini` file is not set up properly. Some installation issues are also discussed in "Installation Troubleshooting" on page 14.

Installing SUTI on UNIX Systems

This section outlines steps for installing SUTI in a UNIX environment.

System Requirements

The installation in this section is for eB, eB2, eB2.1, QAD 2007, or QAD 2007.1 interfacing with Vertex's Quantum for Sales and Use Tax release 3.0. Consult the Vertex installation documentation for Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on UNIX are as follows:

- Platforms and operating systems:

  - HP-UX 11.0 32 bit
  - HP-UX 11i 32/64 bit
  - Solaris 8 32/64 bit
  - Solaris 9 32/64 bit
  - AIX 5.1 32 bit
  - AIX 5.2 32 bit
  - Compaq Tru64 5.1
  - Linux 2.4
- MFG/PRO eB, eB2, eB 2.1, QAD 2007, or QAD 2007.1 with a Progress database
- Progress 9.1 or above (version 10 on later ERP application versions); see the installation guide for your ERP application for specific Progress requirements
- Vertex's Quantum for Sales and Use Tax, release 3.0, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

The following section outlines steps for installing SUTI on a UNIX server.

Copy Required Files from CD-ROM

1. Log on as the `root` user ID.
2. If necessary, create a `cdrom` directory: `mkdir /cdrom`.
3. Insert the distribution CD-ROM into your drive.
4. Mount the CD-ROM in the `cdrom` directory.

   The mount command differs from system to system. Table 2.2 lists sample commands for mounting the SUTI CD-ROM on common systems:

Table 2.2
Mount Commands

Platform	Command
HP-UX 11, 11i	`mount -F cdfs -r -o cdcase` <*device-name*> <*mount-point*>
IBM AIX 5.1, 5.2	`mount -v cdfs -r` <*device-name*> <*mount-point*>
Linux 2.4	`mount -t` <*type*> <*device-name*> <*mount-point*>
Sun Solaris 8, 9	`mount -F cdfs -r -o cdcase` <*device-name*> <*mount-point*>
Compaq Tru64 5.1	`mount -F cdfs -r -o cdcase` <*device-name*> <*mount-point*>

   For others, refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9660 format. You may be able to type `man mount` to determine the correct command.

5. Change to the `cdrom` directory: `cd /cdrom`.
6. Locate the `unix` directory on the CD-ROM. The directory structure looks like the following example:

```
unix
    vqapi.ini
    isam
        aix51_32
           vqapi
        aix52_32
           vqapi
        hpuxll_32
           vqapi
        hpux11i_32
           vqapi
        hpux11i_64
           vqapi
        linux24
           vqapi
           vqapi.o
        solaris8_32
           vqapi
        solaris8_64
           vqapi
        solaris9_32
           vqapi
        solaris9_64
           vqapi
        tru64-51_32
           vqapi
```

7 Create a new directory below the QAD ERP application root directory named `SUTI30`.

8 Copy the `vqapi.ini` file located below the `unix` directory to the directory created in the previous step.

```
cp /cdrom/unix/vqapi.ini /dr01/QADInstallDir/SUTI30
```

Note If you copy `vqapi.ini` into a directory other than the root QAD ERP application directory, be sure to include the path to `vqapi.ini` in your PROPATH.

9 Copy all the UNIX API programs into the new directory, preserving the operating system-specific directory names and structure; for example:

```
cp -r /cdrom/unix/isam/* /dr01/QADInstallDir/SUTI30
```

On Linux systems, make sure you copy both programs. The SUTI API for Linux is named `vqapi.o`. The `vqapi` file is a shell script that exports `LD_LIBRARY_PATH` and executes `vqapi.o`.

Important Do not change any directory names. The QAD ERP application expects the names and structure to match those on the CD-ROM. The API will fail if the corresponding directory is not found.

10 Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this in either of two ways:

a Move `vqapi.ini` into the QAD ERP application root directory. This directory should already be in the PROPATH.

b Add the path to the new `SUTI30` directory to the PROPATH.

Tailor the INI File

The QAD ERP application uses the `vqapi.ini` file to locate the API program, the Quantum databases, and two log files. To complete the installation, you must specify values for your environment in this `.ini` file. Table 2.3 lists the settings to be modified.

Table 2.3
`vqapi.ini` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified path of the SUTI30 directory containing the operating-system specific directories and UNIX API programs. QAD ERP dynamically determines the specific operating-system version using the command `uname -rs`. It uses this value to look up the directory name in the OS Map Section of `vqapi.ini` and then appends the program name `vqapi` to construct the fully qualified path; for example: `vqapi_dir=/dr01/QADInstallDir/SUTI30`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_ source`	Directory containing the Quantum Location database.
`rate_ source`	Directory containing the Quantum Rate database.
`tdm_ source`	Directory containing the Quantum Tax Decision Maker database.
`reg_ source`	Directory containing the Quantum Registration database.
`log_file`	Fully qualified name of the API log file. This file is typically located in the same directory as `vqapi.ini`; for example: `log_file=/dr01/QADInstallDir/SUTI30/vqapi.log`
`quantum_l ogfile`	Fully qualified name of the Quantum log file. This file is typically located in the same directory as `vqapi.ini`; for example: `quantumlog_file= /dr01/QADInstallDir/SUTI30/vst.log`

1. Locate the `.ini` file in the QAD ERP application root directory.
2. Open the `.ini` file in any text editor, such as vi.
3. Enter values for the settings listed in Table 2.3. You do not need to change the value of `db_type`.
4. Save your changes and close the text editor.

Set Shared Library Environment Variables

On UNIX systems, you must set a shared library environment variable to point to the location where Quantum shared libraries are stored. This variable contains the path to the `lib` directory under the QSUT 3.0 root directory where Vertex's Quantum was installed.

To set this variable, you must use the variable appropriate for your operating system and the syntax of your command shell. For additional information, refer to the *Quantum for Sales and Use Tax Administrator's Guide*.

Table 2.4 lists the environment variables to use on supported UNIX platforms.

Table 2.4
Environment Variables

Platform	Environment Variable
HP-UX 11, 11i	SHLIB_PATH
Sun Solaris 8, 9	LD_LIBRARY_PATH
IBM AIX 5.1, 5.2	LIBPATH
Linux 2.4	LD_LIBRARY_PATH
Tru64 5.1	LD_LIBRARY_PATH

For example, if you installed Quantum 3.0 on a Solaris 8 or 9 system, you would enter the following Korn shell commands:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/dr01/vertex30/lib
export LD_LIBRARY_PATH
```

To ensure the variable is always set correctly, add these commands to your client startup script.

Set Up for IBM Only

On AIX systems, the shared library variable setting may not be retained by the operating system. As a workaround, create soft links in the `usr/lib` directory to point to each Quantum shared library file. For example:

```
ln -s libloc.so /dr01/vertex30/lib/libloc.so
ln -s libqutil.so /dr01/vertex30/lib/libqutil.so
ln -s libvst.so /dr01/vertex30/lib/libvst.so
ln -s libcb63.so /dr01/vertex30/lib/libcb63.so
```

Set Up for Linux Only

On Linux systems, you must configure the `vqapi` script to export the library variable and execute `vqapi.o`. To do this, insert the `LD_LIBRARY_PATH` statement in the `vqapi` script located in:

```
SUTI30/unix/isam/linux24
```

Both of these edits are shown in the example below:

```
LD_LIBRARY_PATH=/dr01/vertex30/lib
export LD_LIBRARY_PATH
exec /dr01/QADInstallDir/SUTI30/unix/isam/linux24/vqapi.o
```

Set Permissions

For the API to run correctly, all SUTI users need read and write permission to the Quantum database directory and the Quantum databases. In addition, confirm that users have read and write permission to the SUTI 3.0 API directory before starting the API.

Installing SUTI for Use with Desktop

SUTI for UNIX can be set up to operate in conjunction with Desktop clients.

Note MFG/PRO eB2.1 and later versions work with the QAD .NET UI, which includes QAD Desktop.

If Desktop has been deployed using a two-tiered approach, you should install Vertex on the platform where the telnet sessions for Desktop run. See *Installation Guide: QAD Desktop*.

Since SUTI uses platform-dependent libraries, you must set these variables as needed for your system in the telnet connection scripts. Make sure that you set the variable appropriately in:

- The connection script defined with the Connection Manager Configuration Update page, which is used for HTML programs
- The telnet scripts defined for the telnet character screens using User Option Telnet Maintenance (36.20.10.3)

See Table 2.4 on page 12 for the appropriate variable to use on each platform.

Example QAD 2007 is installed on an HP-UX platform, and Tomcat and Desktop 2 are installed on Linux. Desktop starts a telnet session on the Linux computer to access the databases on the HP-UX computer. Since telnet sessions start on Linux, use the `LD_LIBRARY_PATH` (not the `SHLIB_PATH` for HP-UX systems) on Linux to point to the locally installed platform-dependent Vertex library files.

Note Starting (and shutting down) the API must occur from within a character session, since the start and stop functions are not available in Desktop.

Windows Client Setup

SUTI for UNIX can be set up to operate in conjunction with Windows clients. For more information, see “Installing SUTI on Windows Systems” on page 6.

Installation Troubleshooting

This section lists some of the common errors that can occur when a user attempts to log in to the QAD ERP application and the Vertex library is not set or the initialization file is missing or incorrect.

User Guide: QAD Sales and Use Tax Interface includes information on all error messages generated if the `.ini` file is not set up properly.

1. If the following error occurs, it means that Vertex is enabled in Tax Interface Control (36.5.3.24) but the Quantum Vertex software initialization file (`vqapi.ini`) cannot be found:

   ```
   ERROR: Quantum status 311. ini file not found.
   ```

2. If the following error occurs, it typically means a missing or incorrect `vqapi.ini` file.

   ```
   ERROR: Quantum status 141. API not available.
   ```

3. If the following error occurs, it typically means that the Vertex initialization file does not contain sufficient information to allow Vertex to start. A typical cause might be an operating system change. Since operating system information (`uname -rs`) is used in the `vqapi.ini` file, the new OS needs to be correctly represented in the file.

   ```
   ERROR: Non-Progress executable program not found.
   ```

4. If Vertex is enabled in Tax Interface Control (36.5.3.24) and an old version of `vqapi.ini` is being used, the cursor may hang in the bottom right hand corner of the QAD welcome screen, preventing users from logging in.

5. On UNIX systems, when the `LD_LIBRARY_PATH` is missing or incorrect, the following messages display to the user:

   ```
   ** Invalid character in numeric input l. (76)
   ** Pipe to subprocess has been broken. (140)
   Press space bar to continue.
   ```

Chapter 3

Installing SUTI for Quantum 3.2

This chapter outlines the steps for installing the Sales and Use Tax Interface for Vertex's Quantum version 3.2.

Installation Overview

This chapter describes how to install and configure the SUTI API for Vertex Quantum 3.2. Instructions are included for Windows and UNIX systems. Refer to the steps appropriate to your operating system environment.

- If you are using Quantum 3.0, see Chapter 2, “Installing SUTI for Quantum 3.0,” on page 5.
- If you are using Quantum 3.3, see Chapter 4, “Installing SUTI for Quantum 3.3,” on page 25.
- If you are using Quantum 4.0, see Chapter 5, “Installing SUTI for Quantum 4.0,” on page 35.

The SUTI API installation consists of two principal steps:

1. Copy required files from the installation CD-ROM. A dynamic link library (DLL) is supplied for Windows systems. A compiled C program is used on UNIX systems. The DLL and C programs are specific to each operating-system platform.
2. Configure an initialization file used by QAD to locate the API program, log files (UNIX only), and the SUTI databases.

On UNIX systems, you must also set shared library variables.

Installing SUTI on Windows Systems

This section outlines steps for installing SUTI in a Windows environment.

System Requirements

The installation in this section is for QAD 2008 SE, QAD 2008 EE, QAD 2008.1 EE, QAD 2009 SE, QAD 2009 EE, QAD 2009.1 EE, QAD 2010 SE, QAD 2010 EE, QAD 2010.1 EE, QAD 2011 SE, and QAD 2011 EE interfacing with Vertex’s Quantum for Sales and Use Tax release 3.2. Consult the Vertex installation documentation for Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI with QAD .NET UI are as follows:

- Intel Pentium 800 MHz or faster processor
- Windows 32 bit operating system
- QAD .NET UI Version 2.7, 2.7.1, or 2.7.2, including QAD Desktop 2.10.5
- Microsoft .Net Framework 2.0
- QAD SE or QAD EE with a Progress database
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Internet Explorer 6.0 or above
- Vertex’s Quantum for Sales and Use Tax, release 3.2, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

Copy Required Files

1. Create a new directory below the QAD SE or QAD EE root directory named `SUTI32`. You will install the components of the API into this directory. For example, if you installed QAD SE or QAD EE in `C:\QADInstallDir`, create the following directory:

   `C:\QADInstallDir\SUTI32`

2. Insert the distribution CD-ROM in your drive.

3. Locate the directory appropriate for your system on the CD-ROM. The directory structure looks like the following example:

   ```
   win32
       vqapi.ini
       isam
          vqapi.dll
   ```

4. Copy the `vqapi.ini` file below the appropriate directory to `SUTI32`, the directory created in step 1.

5. Copy the appropriate DLL into `SUTI32`. For example, on a Windows system, copy from:

   `CDRomDrive``:\win32\isam\vqapi.dll`

   To:

   `C:\QADInstallDir\SUTI32`

6. Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this two ways:

   a. Move `vqapi.ini` into the QAD SE or QAD EE root directory. This directory should already be in the PROPATH.

   b. Add the path to the new `SUTI32` directory to the PROPATH.

7. Make sure that `vqapi.dll` is included in the user's PATH.

Tailor the INI File

QAD SE or QAD EE uses the `vqapi.ini` file to locate the API program and the Quantum databases. To complete the installation, you must specify values for your environment in this `.ini` file. Table 3.1 lists the settings to be modified.

Table 3.1
`vqapi.ini` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified name of the `SUTI32` directory where the API program for Windows is located. Do not include the name of the DLL. QAD automatically appends `vqapi.dll` to the end of this path; for example: `vqapi_dir=C:\QADInstallDir\SUTI32`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

1. Locate the `.ini` file in the QAD SE or QAD EE root directory.
2. Open the .`ini` file in any text editor such as Notepad.
3. Enter values for the settings listed in Table 3.1. You do not need to change the value of `db_type`.
4. Save your changes and close the text editor.

Note Before starting SUTI, include both the directory path containing the SUTI 3.2 API (`vqapi.dll`) and Quantum's `utils` directory in your Windows system environment path.

User Guide: QAD Sales and Use Tax Interface includes information on error messages generated if the `.ini` file is not set up properly. Some installation issues are also discussed in "Installation Troubleshooting" on page 23.

Installing SUTI on UNIX Systems

This section outlines steps for installing SUTI in a UNIX environment.

System Requirements

The installation in this section is for QAD SE or QAD EE interfacing with Vertex's Quantum for Sales and Use Tax release 3.2. Consult the Vertex installation documentation for Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on UNIX are as follows:

- Platforms and operating systems:
  - HP-UX 11pa 32/64 bit
  - HP-UX 11ia 32/64 bit
  - Solaris 10 64 bit
  - AIX 5.3 64 bit

  - Linux 2.4 32 bit
  - Linux 2.6 32 bit
- QAD SE or QAD EE with a Progress database
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Vertex's Quantum for Sales and Use Tax, release 3.2, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

The following section outlines steps for installing SUTI on a UNIX server.

Copy Required Files from CD-ROM

1. Log on as the `root` user ID.
2. If necessary, create a `cdrom` directory: `mkdir /cdrom`.
3. Insert the distribution CD-ROM into your drive.
4. Mount the CD-ROM in the `cdrom` directory.

   The mount command differs from system to system. Listed below are sample commands for mounting the SUTI CD-ROM on common systems:

Table 3.2
Mount Commands

Platform	Command
HP-UX 11pa, 11ia	`mount -F cdfs -r -o cdcase` <*device-name*> <*mount-point*>
IBM AIX 5.3	`mount -v cdfs -r` <*device-name*> <*mount-point*>
Linux 2.4/2.6	`mount -t` <*type*> <*device-name*> <*mount-point*>
Sun Solaris 10	`mount -F cdfs -r -o cdcase` <*device-name*> <*mount-point*>

   For others, refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9660 format. You may be able to type `man mount` to determine the correct command.

5. Change to the `cdrom` directory: `cd /cdrom`.
6. Locate the `unix` directory on the CD-ROM. The directory structure looks like the following example:

```
unix
    vqapi.ini
    isam
        aix53_64
           vqapi
        hpuxllpa_32
           vqapi
        hpuxllpa_64
           vqapi
        hpux11ia_32
           vqapi
        hpux11ia_64
           vqapi
        linux24
```

```
      vqapi
      vqapi.o
   linux26
      vqapi
      vqapi.o
   solaris10_64
      vqapi
```

7 Create a new directory below the QAD ERP application root directory named `SUTI32`.

8 Copy the `vqapi.ini` file located below the `unix` directory to the directory created in the previous step.

```
cp /cdrom/unix/vqapi.ini /dr01/QADInstallDir/SUTI32
```

Note If you copy `vqapi.ini` into a directory other than the root QAD ERP application directory, be sure to include the path to `vqapi.ini` in your PROPATH.

9 Copy all the UNIX API programs into the new directory, preserving the operating system-specific directory names and structure; for example:

```
cp -r /cdrom/unix/isam/* /dr01/QADInstallDir/SUTI32
```

On Linux systems, make sure you copy both programs. The SUTI API for Linux is named `vqapi.o`. The `vqapi` file is a shell script that exports `LD_LIBRARY_PATH` and executes `vqapi.o`.

Important Do not change any directory names. QAD SE or QAD EE expects the names and structure to match those on the CD-ROM. The API will fail if the corresponding directory is not found.

10 Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this in either of two ways:

a Move `vqapi.ini` into the QAD ERP application root directory. This directory should already be in the PROPATH.

b Add the path to the new `SUTI32` directory to the PROPATH.

Tailor the INI File

The QAD ERP application uses the `vqapi.ini` file to locate the API program, the Quantum databases, and two log files. To complete the installation, you must specify values for your environment in this `.ini` file. Table 3.3 lists the settings to be modified.

Table 3.3
`vqapi.ini` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified path of the SUTI32 directory containing the operating-system specific directories and UNIX API programs. The QAD ERP application dynamically determines the specific operating-system version using the command `uname -rs`. It uses this value to look up the directory name in the OS Map Section of `vqapi.ini` and then appends the program name `vqapi` to construct the fully qualified path; for example: `vqapi_dir=/dr01/QADInstallDir/SUTI32`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.
`log_file`	Fully qualified name of the API log file. This file is typically located in the same directory as `vqapi.ini`; for example: `log_file=/dr01/QADInstallDir/SUTI32/vqapi.log`
`quantum_ logfile`	Fully qualified name of the Quantum log file. This file is typically located in the same directory as `vqapi.ini`; for example: `quantumlog_file= /dr01/QADInstallDir/SUTI32/vst.log`

1. Locate the `.ini` file in the QAD ERP application root directory.
2. Open the `.ini` file in any text editor, such as `vi`.
3. Enter values for the settings listed in Table 3.3. You do not need to change the value of `db_type`.
4. Save your changes and close the text editor.

Set Shared Library Environment Variables

On UNIX systems, you must set a shared library environment variable to point to the location where Quantum shared libraries are stored. This variable contains the path to the `lib` directory under the QSUT 3.2 root directory where Vertex's Quantum was installed.

To set this variable, you must use the variable appropriate for your operating system and the syntax of your command shell. For additional information, refer to the *Quantum for Sales and Use Tax Administrator's Guide*.

Table 3.4 lists the environment variables to use on supported UNIX platforms.

Table 3.4
Environment Variables

Platform	Environment Variable
HP-UX 11pa, 11ia	SHLIB_PATH
Sun Solaris 10	LD_LIBRARY_PATH
IBM AIX 5.3	LIBPATH
Linux 2.4/2.6	LD_LIBRARY_PATH

For example, if you installed Quantum 3.2 on a Solaris 2.7 system, you would enter the following Korn shell commands:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/dr01/vertex32/lib
export LD_LIBRARY_PATH
```

To ensure the variable is always set correctly, add these commands to your client startup script.

Set Up for IBM Only

On AIX systems, the shared library variable setting may not be retained by the operating system. As a workaround, create soft links in the `usr/lib` directory to point to each Quantum shared library file. For example:

```
ln -s libloc.so /dr01/vertex32/lib/libloc.so
ln -s libqutil.so /dr01/vertex32/lib/libqutil.so
ln -s libvst.so /dr01/vertex32/lib/libvst.so
ln -s libcb63.so /dr01/vertex32/lib/libcb63.so
```

Set Up for Linux Only

On Linux systems, you must configure the `vqapi` script to export the library variable and execute `vqapi.o`. To do this, insert the `LD_LIBRARY_PATH` statement in the `vqapi` script located in:

```
SUTI32/unix/isam/linux24
```

or:

```
SUTI32/unix/isam/linux26
```

Both of these edits are shown in the example below:

```
LD_LIBRARY_PATH=/dr01/vertex32/lib
export LD_LIBRARY_PATH
exec /dr01/QADInstallDir/SUTI32/unix/isam/linux24/vqapi.o
```

Set Permissions

For the API to execute correctly, all SUTI users need read and write permission to the Quantum database directory and the Quantum databases. In addition, confirm that users have read and write permission to the SUTI 3.2 API directory before starting the API.

Installing SUTI for Use with Desktop

SUTI for UNIX can be set up to operate in conjunction with Desktop clients. Desktop is installed as part of a QAD .NET UI implementation.

If Desktop has been deployed using a two-tiered approach, you should install Vertex on the platform where the telnet sessions for Desktop run.

Since SUTI uses platform-dependent libraries, you must set these variables as needed for your system in the telnet connection scripts. Make sure that you set the variable appropriately in:

- The connection script defined with the Connection Manager Configuration Update page, which is used for HTML programs
- The telnet scripts defined for the telnet character screens using User Option Telnet Maintenance (36.4.14; 36.20.10.3 in earlier QAD ERP versions)

See Table 3.4 on page 22 for the appropriate variable to use on each platform.

Example QAD SE is installed on an HP-UX platform, and Tomcat and Desktop 2.10.5 are installed on Linux. Desktop starts a telnet session on the Linux computer to access the databases on the HP-UX computer. Since telnet sessions start on Linux, use the `LD_LIBRARY_PATH` (not the `SHLIB_PATH` for HP-UX systems) on Linux to point to the locally installed platform-dependent Vertex library files.

Note Starting (and shutting down) the API must occur from within a character session, since the start and stop functions are not available in Desktop.

Windows Client Setup

SUTI for UNIX can be set up to operate in conjunction with Windows clients. For more information, see “Installing SUTI on Windows Systems” on page 16.

Installation Troubleshooting

This section lists some of the common errors that can occur when a user attempts to log in to QAD and the Vertex library is not set or the initialization file is missing or incorrect.

User Guide: QAD Sales and Use Tax Interface includes information on all error messages generated if the `.ini` file is not set up properly.

1. If the following error occurs, it means that Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions), but the Quantum Vertex software initialization file (`vqapi.ini`) cannot be found:

   ```
   ERROR: Quantum status 311. ini file not found.
   ```

2. If the following error occurs, it typically means a missing or incorrect `vqapi.ini` file.

   ```
   ERROR: Quantum status 141. API not available.
   ```

3 If the following error occurs, it typically means that the Vertex initialization file does not contain sufficient information to allow Vertex to start. A typical cause might be an operating system change. Since operating system information (`uname -rs`) is used in the `vqapi.ini` file, the new OS needs to be correctly represented in the file.

```
ERROR: Non-Progress executable program not found.
```

4 If Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions) and an old version of `vqapi.ini` is being used, the cursor may hang in the bottom right hand corner of the welcome screen, preventing users from logging in.

5 On UNIX systems, when the `LD_LIBRARY_PATH` is missing or incorrect, the following messages display to the user:

```
** Invalid character in numeric input l. (76)
** Pipe to subprocess has been broken. (140)
Press space bar to continue.
```

Chapter 4

Installing SUTI for Quantum 3.3

This chapter outlines the steps for installing the Sales and Use Tax Interface for Vertex's Quantum version 3.3.

Installation Overview

This chapter describes how to install and configure the SUTI API for Vertex Quantum 3.3. Instructions are included for Windows and UNIX systems. Refer to the steps appropriate to your operating system environment.

- If you are using Quantum 3.0, see Chapter 2, “Installing SUTI for Quantum 3.0,” on page 5.
- If you are using Quantum 3.2, see Chapter 3, “Installing SUTI for Quantum 3.2,” on page 15.
- If you are using Quantum 4.0, see Chapter 5, “Installing SUTI for Quantum 4.0,” on page 35.

The SUTI API installation consists of two principal steps:

1. Copy required files from the installation CD-ROM. A dynamic link library (DLL) is supplied for Windows systems. A compiled C program is used on UNIX systems. The DLL and C programs are specific to each operating-system platform.
2. Configure an initialization file used by QAD to locate the API program, log files (UNIX only), and the SUTI databases.

On UNIX systems, you must also set shared library variables.

Installing SUTI on Windows Systems

This section outlines steps for installing SUTI in a Windows environment.

System Requirements

The installation in this section is for QAD 2008 SE, QAD 2008 EE, QAD 2008.1 EE, QAD 2009 SE, QAD 2009 EE, QAD 2009.1 EE, QAD 2010 SE, QAD 2010 EE, QAD 2010.1 EE, QAD 2011 SE, and QAD 2011 EE interfacing with Vertex’s Quantum for Sales and Use Tax release 3.3. Consult the Vertex installation documentation for Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on QAD. NET UI are as follows:

- Intel Pentium 800 MHz or faster processor
- Windows 32 bit operating system with Microsoft .Net Framework 2.0 installed
- QAD .NET UI Version 2.7, 2.7.1, or 2.7.2, including QAD Desktop 2.10.5
- QAD SE or QAD EE with a Progress database
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Internet Explorer 6.0 or above
- Vertex’s Quantum for Sales and Use Tax, release 3.3, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

Copy Required Files

1. Create a new directory below the QAD SE or QAD EE root directory named `SUTI33`. You will install the components of the API into this directory. For example, if you installed QAD SE or QAD EE in `C:\`*`QADInstallDir`*, create the following directory:

   ```
   C:\QADInstallDir\SUTI33
   ```

2. Insert the distribution CD-ROM in your drive.

3. Locate the directory appropriate for your system on the CD-ROM. The directory structure looks like the following example:

   ```
   Win32
       vqapi.ini
       isam
          vqapi.dll
   ```

4. Copy the `vqapi.ini` file below the appropriate directory to `SUTI33`, the directory created in step 1.

5. Copy the appropriate DLL into `SUTI33`. For example, on a Windows system, copy from:

   `CDRomDrive``:\win32\isam\vqapi.dll`

   To:

   `C:\`*`QADInstallDir`*`\SUTI33`

6. Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this two ways:

   c. Move `vqapi.ini` into the QAD SE or QAD EE root directory. This directory should already be in the PROPATH.

   d. Add the path to the new `SUTI33` directory to the PROPATH.

7. Make sure that `vqapi.dll` is included in the user's PATH.

Tailor the INI File

QAD SE or QAD EE uses the `vqapi.ini` file to locate the API program and the Quantum databases. To complete the installation, you must specify values for your environment in this `.ini` file.

1. Locate the `.ini` file in the QAD SE or QAD EE root directory.

2. Open the `.ini` file in any text editor such as Notepad.

3. Enter values for the settings listed in Table 4.1. You do not need to change the value of `db_type`.

Table 4.1
`vqapi` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified name of the `SUTI33` directory where the API program for Windows is located. Do not include the name of the DLL. The QAD ERP application automatically appends `vqapi.dll` to the end of this path; for example: `vqapi_dir=C:\QADInstallDir\SUTI33`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

4 Save your changes and close the text editor.

Note Before starting SUTI, include both the directory path containing the SUTI 3.3 API (`vqapi.dll`) and Quantum's `utils` directory in your Windows system environment path.

User Guide: QAD Sales and Use Tax Interface includes information on errors, including a list of errors generated if the `.ini` file is not set up properly. Some installation issues are also discussed in "Installation Troubleshooting " on page 33.

Installing SUTI on UNIX Systems

This section outlines steps for installing SUTI in a UNIX environment.

System Requirements

The installation in this section is for QAD SE or QAD EE interfacing with Vertex's Quantum for Sales and Use Tax release 3.3. Consult the Vertex installation documentation for Quantum system requirements.

Important It is recommended that you install Quantum for Sales and Use Tax prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on UNIX are as follows:

- Platforms and operating systems:
  - HP-UX 11pa 32/64 bit
  - HP-UX 11ia 32/64 bit
  - Solaris 10 32/64 bit
  - AIX 5.3 32/64 bit
  - Linux 2.6.9 32/64 bit
  - Linux 2.6.18 32/64 bit
- QAD SE or QAD EE with a Progress database

- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Vertex's Quantum for Sales and Use Tax, release 3.3, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

The following section outlines steps for installing SUTI on a UNIX server.

Copy Required Files from CD-ROM

1. Log on as the `root` user ID.
2. If necessary, create a `cdrom` directory: `mkdir /cdrom`.
3. Insert the distribution CD-ROM into your drive.
4. Mount the CD-ROM in the `cdrom` directory.

The mount command differs from system to system. Listed below are sample commands for mounting the SUTI CD-ROM on common systems:

Table 4.2
Mount Commands

Platform	Command
HP-UX 11, 11i	`mount -F cdfs -r -o cdcase <device-name> <mount-point>`
IBM AIX 5.3	`mount -v cdfs -r <device-name> <mount-point>`
Linux 2.4/2.6	`mount -t <type> <device-name> <mount-point>`
Sun Solaris 10	`mount -F cdfs -r -o cdcase <device-name> <mount-point>`

For others, refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9660 format. You may be able to type `man mount` to determine the correct command.

5. Change to the `cdrom` directory: `cd /cdrom`.
6. Locate the `unix` directory on the CD-ROM. The directory structure looks like the following example:

```
unix
    vqapi.ini
    isam

aix53_32
    vqapi

aix53_64
    vqapi

hpuxll_32
    vqapi

hpux11i_32
    vqapi

hpux11i_64
    vqapi
```

```
linux269_32
    vqapi
    vqapi.o

linux269_64
    vqapi
    vqapi.o

linux2618_32
    vqapi
    vqapi.o
linux2618_64
    vqapi
    vqapi.o
            solaris10_32
                vqapi
            solaris10_64
                vqapi
```

7 Create a new directory below the QAD SE or QAD EE root directory named `SUTI33`.

8 Copy the `vqapi.ini` file located below the `unix` directory to the directory created in the previous step.

```
cp /cdrom/unix/vqapi.ini /dr01/QADInstallDir/SUTI33
```

Note If you copy `vqapi.ini` into a directory other than the QAD SE or QAD EE root directory, be sure to include the path to `vqapi.ini` in your PROPATH.

9 Copy all the UNIX API programs into the new directory, preserving the operating system-specific directory names and structure; for example:

```
cp -r /cdrom/unix/isam/* /dr01/QADInstallDir/SUTI33
```

On Linux systems, make sure you copy both programs. The SUTI API for Linux is named `vqapi.o`. The `vqapi` file is a shell script that exports LD_LIBRARY PATH and executes `vqapi.o`.

Important Do not change any directory names. QAD SE and QAD EE expect the names and structure to match those on the CD-ROM. The API will fail if the corresponding directory is not found.

10 Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this in either of two ways:

a Move `vqapi.ini` into the QAD SE or QAD EE root directory. This directory should already be in the PROPATH.

b Add the path to the new `SUTI33` directory to the PROPATH.

Tailor the INI File

QAD SE or QAD EE uses the `vqapi.ini` file to locate the API program, the Quantum databases, and two log files. To complete the installation, you must specify values for your environment in this `.ini` file. Table 4.3 lists the settings to be modified.

1 Locate the `.ini` file in the QAD SE or QAD EE root directory.

2 Open the `.ini` file in any text editor, such as `vi`.

3 Enter values for the settings listed in Table 4.3. You do not need to change the value of `db_type`.

Table 4.3
`vqapi` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified path of the SUTI33 directory containing the operating-system specific directories and UNIX API programs. The QAD ERP application dynamically determines the specific operating-system version using the command `uname -rs`. It uses this value to look up the directory name in the OS Map Section of `vqapi.ini` and then appends the program name `vqapi` to construct the fully qualified path; for example: `vqapi_dir=/dr01/QADInstallDir/SUTI33`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

`log_file`	Fully qualified name of the API log file. This is typically located in the same directory as `vqapi.ini`; for example:
	`log_file=`
	`/dr01/QADInstallDir/SUTI33/vqapi.log`

`quantum_logfile`	Fully qualified name of the Quantum log file. This is typically located in the same directory as `vqapi.ini`; for example:
	`quantumlog_file=`
	`/dr01/QADInstallDir/SUTI33/vst.log`

4 Save your changes and close the text editor.

Set Shared Library Environment Variables

On UNIX systems, you must set a shared library environment variable to point to the location where Quantum shared libraries are stored. This variable contains the path to the `lib` directory under the QSUT 3.3 root directory where Vertex's Quantum was installed.

To set this variable, you must use the variable appropriate for your operating system and the syntax of your command shell. For additional information, refer to the *Quantum for Sales and Use Tax Administrator's Guide*.

Table 4.4 lists the environment variables to use on supported UNIX platforms.

Table 4.4
Environment Variables

Platform	Environment Variable
HP-UX 11, 11i	SHLIB_PATH
Sun Solaris 10	LD_LIBRARY_PATH
IBM AIX 5.3	LIBPATH
Linux 2.4/2.6	LD_LIBRARY_PATH

For example, if you installed Quantum 3.3 on a Solaris 10 system, you would enter the following Korn shell commands:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/dr01/vertex32/lib
export LD_LIBRARY_PATH
```

To ensure the variable is always set correctly, add these commands to your client startup script. See *QAD User Interfaces Installation Guide*.

Set Up for IBM

On AIX systems, the shared library variable setting may not be retained by the operating system. As a workaround, create soft links in the `usr/lib` directory to point to each Quantum shared library file. For example:

```
ln -s libloc.so /dr01/vertex33/lib/libloc.so
ln -s libqutil.so /dr01/vertex33/lib/libqutil.so
ln -s libvst.so /dr01/vertex33/lib/libvst.so
ln -s libcb63.so /dr01/vertex33/lib/libcb63.so
```

Set Up for Linux

On Linux systems, you must configure the `vqapi` script to export the library variable and execute `vqapi.o`. To do this, insert the `LD_LIBRARY_PATH` statement in the `vqapi` script located in:

```
SUTI33/unix/isam/linux24
```

or:

```
SUTI33/unix/isam/linux26
```

Both of these edits are shown in the example below:

```
LD_LIBRARY_PATH=/dr01/vertex33/lib export
LD_LIBRARY_PATH exec /dr01/QADInstallDir/SUTI33/unix/isam/linux26/vqapi.o
```

Set Permissions

For the API to execute correctly, all SUTI users need read and write permission to the Quantum database directory and the Quantum databases. In addition, confirm that users have read and write permission to the SUTI 3.3 API directory before starting the API.

Installing SUTI for Use with Desktop

SUTI for UNIX can be set up to operate in conjunction with Desktop clients. Desktop is installed as part of a QAD .NET UI implementation.

If Desktop has been deployed using a two-tiered approach, you should install Vertex on the platform where the telnet sessions for Desktop run.

Since SUTI uses platform-dependent libraries, you must set these variables as needed for your system in the telnet connection scripts. Make sure that you set the variable appropriately in:

- The connection script defined with the Connection Manager Configuration Update page, which is used for HTML programs

- The telnet scripts defined for the telnet character screens using User Option Telnet Maintenance (36.4.14; 36.20.10.3 in earlier QAD ERP versions)

Example QAD SE is installed on an HP-UX platform, and Tomcat and Desktop 2.10.5 are installed on Linux. Desktop starts a telnet session on the Linux computer to access the databases on the HP-UX computer. Since telnet sessions start on Linux, use the `LD_LIBRARY_PATH` (not the `SHLIB_PATH` for HP-UX systems) on Linux to point to the locally installed platform-dependent Vertex library files.

Note Starting (and shutting down) the API must occur from within a character session, since the start and stop functions are not available in Desktop.

Windows Client Setup

SUTI for UNIX can be set up to operate in conjunction with Windows clients. For more information, see “Installing SUTI on Windows Systems” on page 26.

Installation Troubleshooting

This section lists some of the common errors that can occur when a user attempts to log in to QAD SE or QAD EE and the Vertex library is not set or the initialization file is missing or incorrect.

User Guide: QAD Sales and Use Tax Interface includes information on all error messages generated if the `.ini` file is not set up properly.

If the following error occurs, it means that Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions) but the Quantum Vertex software initialization file (`vqapi.ini`) cannot be found:

```
ERROR: Quantum status 311. ini file not found.
```

See Table 2.3 on page 27 for the appropriate variable to use on each platform.

1. If the following error occurs, it typically means a missing or incorrect `vqapi.ini` file.

   ```
   ERROR: Quantum status 141. API not available.
   ```

2. If the following error occurs, it typically means that the Vertex initialization file does not contain sufficient information to allow Vertex to start. A typical cause might be an operating system change. Since operating system information (`uname -rs`) is used in the `vqapi.ini` file, the new OS needs to be correctly represented in the file.

   ```
   ERROR: Non-Progress executable program not found.
   ```

3. If Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions) and an old version of `vqapi.ini` is being used, the cursor may hang in the bottom right hand corner of the QAD SE or QAD EE welcome screen, preventing users from logging in.

4. On UNIX systems, when the `LD_LIBRARY_PATH` is missing or incorrect, the following messages display to the user:

   ```
   ** Invalid character in numeric input l. (76)
   ** Pipe to subprocess has been broken. (140)
   Press space bar to continue.
   ```

Chapter 5

Installing SUTI for Quantum 4.0

This chapter outlines the steps for installing the Sales and Use Tax Interface for Vertex's Quantum version 4.0.

Installation Overview

This chapter describes how to install and configure the SUTI API for Vertex Quantum 4.0. Instructions are included for Windows and UNIX systems. Refer to the steps appropriate to your operating system environment.

- If you are using Quantum 3.0, see Chapter 2, “Installing SUTI for Quantum 3.0,” on page 5.
- If you are using Quantum 3.2, see Chapter 3, “Installing SUTI for Quantum 3.2,” on page 15.
- If you are using Quantum 3.3, see Chapter 4, “Installing SUTI for Quantum 3.3,” on page 25.

The SUTI API installation consists of two principal steps:

1. Copy required files from the installation CD-ROM. A dynamic link library (DLL) is supplied for Windows systems. A compiled C program is used on UNIX systems. The DLL and C programs are specific to each operating-system platform.
2. Configure an initialization file used by QAD to locate the API program, log files (UNIX only), and the SUTI databases.

On UNIX systems, you must also set shared library variables.

Installing SUTI on Windows Systems

This section outlines steps for installing SUTI in a Windows environment.

System Requirements

The installation in this section is for QAD 2012 EE interfacing with Vertex’s Quantum for Sales and Use Tax release 4.0. Consult the Vertex installation documentation for Quantum system requirements.

Important We recommend that Quantum for Sales and Use Tax be installed prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on QAD. NET UI are as follows:

- Intel Pentium 800 MHz or faster processor
- Windows 32 bit or Windows 64 bit operating system with Microsoft .Net Framework 3.0 installed
- QAD .NET UI Version 2.9.5
- QAD 2012 EE with a Progress database
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements
- Internet Explorer 7.0 or 8.0
- Vertex’s Quantum for Sales and Use Tax, release 4.0, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

Copy Required Files

1. Create a new directory below the QAD EE root directory named `SUTI40`. You will install the components of the API into this directory. For example, if you installed QAD EE in `C:\QADInstallDir`, create the following directory:

   ```
   C:\QADInstallDir\SUTI40
   ```

2. Insert the distribution CD-ROM in your drive.

3. Locate the directory appropriate for your system on the CD-ROM. The directory structure looks like the following example:

   ```
   Win32
       vqapi.ini
       isam
          vqapi.dll
   ```

4. Copy the `vqapi.ini` file below the appropriate directory to `SUTI40`, the directory created in step 1.

5. Copy the appropriate DLL into `SUTI40`. For example, on a Windows system, copy from:

   CDRomDrive`:\win32\isam\vqapi.dll`

   To:

   `C:\`*QADInstallDir*`\SUTI40`

6. Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this two ways:

   c. Move `vqapi.ini` into the QAD EE root directory. This directory should already be in the PROPATH.

   d. Add the path to the new `SUTI40` directory to the PROPATH.

7. Make sure that `vqapi.dll` is included in the user's PATH.

Tailor the INI File

QAD EE uses the `vqapi.ini` file to locate the API program and the Quantum databases. To complete the installation, you must specify values for your environment in this `.ini` file.

1. Locate the `.ini` file in the QAD EE root directory.

2. Open the `.ini` file in any text editor such as Notepad.

3. Enter values for the settings listed in Table 5.1. You do not need to change the value of `db_type`.

Table 5.1
`vqapi` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified name of the `SUTI40` directory where the API program for Windows is located. Do not include the name of the DLL. The QAD ERP application automatically appends `vqapi.dll` to the end of this path; for example: `vqapi_dir=C:\QADInstallDir\SUTI40`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

4 Save your changes and close the text editor.

Note Before starting SUTI, include both the directory path containing the SUTI 4.0 API (`vqapi.dll`) and Quantum's `utils` directory in your Windows system environment path.

User Guide: QAD Sales and Use Tax Interface includes information on errors, including a list of errors generated if the `.ini` file is not set up properly. Some installation issues are also discussed in "Installation Troubleshooting " on page 43.

Installing SUTI on UNIX Systems

This section outlines steps for installing SUTI in a UNIX environment.

System Requirements

The installation in this section is for QAD 2012 EE interfacing with Vertex's Quantum for Sales and Use Tax release 4.0. Consult the Vertex installation documentation for Quantum system requirements.

Important It is recommended that you install Quantum for Sales and Use Tax prior to installing the Sales and Use Tax Interface.

The system requirements for SUTI on UNIX are as follows:

- Platforms and operating systems:
  - HP-UX 11ia v2 32 bit/64 bit
  - HP-UX 11ia v3 32 bit/64 bit
  - Red Hat Linux 5.0 32 bit/64 bit
  - Red Hat Linux 5.0 32 bit/64 bit
- QAD 2012 EE with either a Progress database
- Progress Version 10 or above; see the installation guide for your ERP application for specific Progress requirements

- Vertex's Quantum for Sales and Use Tax, release 4.0, using an ISAM database

Note You cannot currently use the SUTI API with Quantum and an Oracle database.

The following section outlines steps for installing SUTI on a UNIX server.

Copy Required Files from CD-ROM

1. Log on as the `root` user ID.
2. If necessary, create a `cdrom` directory: `mkdir /cdrom`.
3. Insert the distribution CD-ROM into your drive.
4. Mount the CD-ROM in the `cdrom` directory.

The mount command differs from system to system. Listed below are sample commands for mounting the SUTI CD-ROM on common systems:

Table 5.2
Mount Commands

Platform	Command
HP-UX	`mount -F cdfs -r -o cdcase <device-name> <mount-point>`
Linux	`mount -t <type> <device-name> <mount-point>`

For others, refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9660 format. You may be able to type `man mount` to determine the correct command.

5. Change to the `cdrom` directory: `cd /cdrom`.
6. Locate the `unix` directory on the CD-ROM. The directory structure looks like the following example:

```
unix
    vqapi.ini
    isam

hpux11iav2_32
    vqapi

hpux11iav2_64
    vqapi

hpux11iav3_32
    vqapi

hpux11iav3_64
    vqapi

    linux40_32
        vqapi
        vqapi.o

    linux40_64
        vqapi
        vqapi.o

    linux50_32
        vqapi
        vqapi.o

    linux50_64
```

```
vqapi
vqapi.o
```

7 Create a new directory below the QAD EE root directory named `SUTI40`.

8 Copy the `vqapi.ini` file located below the `unix` directory to the directory created in the previous step.

```
cp /cdrom/unix/vqapi.ini /dr01/QADInstallDir/SUTI40
```

Note If you copy `vqapi.ini` into a directory other than the QAD EE root directory, be sure to include the path to `vqapi.ini` in your PROPATH.

9 Copy all the UNIX API programs into the new directory, preserving the operating system-specific directory names and structure; for example:

```
cp -r /cdrom/unix/isam/* /dr01/QADInstallDir/SUTI40
```

On Linux systems, make sure you copy both programs. The SUTI API for Linux is named `vqapi.o`. The `vqapi` file is a shell script that exports `LD_LIBRARY` PATH and executes `vqapi.o`.

Important Do not change any directory names. QAD EE expects the names and structure to match those on the CD-ROM. The API will fail if the corresponding directory is not found.

10 Ensure that the `vqapi.ini` file is in each user's PROPATH. You can do this in either of two ways:

a Move `vqapi.ini` into the QAD EE root directory. This directory should already be in the PROPATH.

b Add the path to the new `SUTI40` directory to the PROPATH.

Tailor the INI File

QAD EE uses the `vqapi.ini` file to locate the API program, the Quantum databases, and two log files. To complete the installation, you must specify values for your environment in this `.ini` file. Table 5.3 lists the settings to be modified.

1 Locate the `.ini` file in the QAD EE root directory.

2 Open the `.ini` file in any text editor, such as `vi`.

3 Enter values for the settings listed in Table 5.3. You do not need to change the value of `db_type`.

Table 5.3
`vqapi` Settings

INI Setting	Description
`vqapi_dir`	Fully qualified path of the SUTI40 directory containing the operating-system specific directories and UNIX API programs. The QAD ERP application dynamically determines the specific operating-system version using the command `uname -rs`. It uses this value to look up the directory name in the OS Map Section of `vqapi.ini` and then appends the program name `vqapi` to construct the fully qualified path; for example: `vqapi_dir=/dr01/QADInstallDir/SUTI40`
`db_type`	The Quantum database type, either ISAM or RDBMS (Oracle). This is preset to ISAM since Oracle is not currently supported.
`loc_source`	Directory containing the Quantum Location database.
`rate_source`	Directory containing the Quantum Rate database.
`tdm_source`	Directory containing the Quantum Tax Decision Maker database.
`reg_source`	Directory containing the Quantum Registration database.

`log_file`	Fully qualified name of the API log file. This is typically located in the same directory as `vqapi.ini`; for example:
	`log_file=`
	`/dr01/QADInstallDir/SUTI40/vqapi.log`

`quantum_ logfile`	Fully qualified name of the Quantum log file. This is typically located in the same directory as `vqapi.ini`; for example:
	`quantumlog_file=`
	`/dr01/QADInstallDir/SUTI40/vst.log`

4 Save your changes and close the text editor.

Set Shared Library Environment Variables

On UNIX systems, you must set a shared library environment variable to point to the location where Quantum shared libraries are stored. This variable contains the path to the `lib` directory under the QSUT 4.0 root directory where Vertex's Quantum was installed.

To set this variable, you must use the variable appropriate for your operating system and the syntax of your command shell. For additional information, refer to the *Quantum for Sales and Use Tax Administrator's Guide*.

Table 5.4 lists the environment variables to use on supported UNIX platforms.

Table 5.4
Environment Variables

Platform	Environment Variable
HP-UX 11ia v2/v3	SHLIB_PATH
Linux 4.0/5.0	LD_LIBRARY_PATH

For example, if you installed Quantum 4.0 on a Linux system, you would enter the following shell commands:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/dr01/vertex40/lib
export LD_LIBRARY_PATH
```

To ensure the variable is always set correctly, add these commands to your client startup script.

Set Up for Linux

On Linux systems, you must configure the `vqapi` script to export the library variable and execute `vqapi.o`. To do this, insert the `LD_LIBRARY_PATH` statement in the `vqapi` script located in:

```
SUTI40/unix/isam/linux40
```

or:

```
SUTI40/unix/isam/linux50
```

Both of these edits are shown in the example below:

```
LD_LIBRARY_PATH=/dr01/vertex40/lib export
LD_LIBRARY_PATH exec /dr01/QADInstallDir/SUTI40/unix/isam/linux40/vqapi.o
```

Set Permissions

For the API to execute correctly, all SUTI users need read and write permission to the Quantum database directory and the Quantum databases. In addition, confirm that users have read and write permission to the SUTI 4.0 API directory before starting the API.

Installing SUTI for Use with Desktop

SUTI for UNIX can be set up to operate in conjunction with Desktop clients. Desktop is installed as part of a QAD .NET UI implementation.

If Desktop has been deployed using a two-tiered approach, you should install Vertex on the platform where the telnet sessions for Desktop run.

Since SUTI uses platform-dependent libraries, you must set these variables as needed for your system in the telnet connection scripts. Make sure that you set the variable appropriately in:

- The connection script defined with the Connection Manager Configuration Update page, which is used for HTML programs
- The telnet scripts defined for the telnet character screens using User Option Telnet Maintenance (36.4.14; 36.20.10.3 in earlier QAD ERP versions)

Example QAD 2012 EE is installed on an HP-UX platform, and Tomcat and Desktop 2.10.5 are installed on Linux. Desktop starts a telnet session on the Linux computer to access the databases on the HP-UX computer. Since telnet sessions start on Linux, use the `LD_LIBRARY_PATH` (not the `SHLIB_PATH` for HP-UX systems) on Linux to point to the locally installed platform-dependent Vertex library files.

Note Starting (and shutting down) the API must occur from within a character session, since the start and stop functions are not available in Desktop.

Windows Client Setup

SUTI for UNIX can be set up to operate in conjunction with Windows clients. For more information, see “Installing SUTI on Windows Systems” on page 36.

Installation Troubleshooting

This section lists some of the common errors that can occur when a user attempts to log in to QAD QAD EE and the Vertex library is not set or the initialization file is missing or incorrect.

User Guide: QAD Sales and Use Tax Interface includes information on all error messages generated if the `.ini` file is not set up properly.

If the following error occurs, it means that Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions) but the Quantum Vertex software initialization file (`vqapi.ini`) cannot be found:

```
ERROR: Quantum status 311. ini file not found.
```

See Table 2.3 on page 27 for the appropriate variable to use on each platform.

1. If the following error occurs, it typically means a missing or incorrect `vqapi.ini` file.

   ```
   ERROR: Quantum status 141. API not available.
   ```

2. If the following error occurs, it typically means that the Vertex initialization file does not contain sufficient information to allow Vertex to start. A typical cause might be an operating system change. Since operating system information (`uname -rs`) is used in the `vqapi.ini` file, the new OS needs to be correctly represented in the file.

   ```
   ERROR: Non-Progress executable program not found.
   ```

3. If Vertex is enabled in Tax Interface Control (29.12.24; 36.5.3.24 in earlier QAD ERP application versions) and an old version of `vqapi.ini` is being used, the cursor may hang in the bottom right hand corner of the QAD EE welcome screen, preventing users from logging in.

4. On UNIX systems, when the `LD_LIBRARY_PATH` is missing or incorrect, the following messages display to the user:

   ```
   ** Invalid character in numeric input l. (76)
   ** Pipe to subprocess has been broken. (140)
   Press space bar to continue.
   ```

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