



**Team Developer 2005: Windows and Linux  
Specifics**

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**Write once –  
deploy cross  
platform**

**All major  
Windows and  
Linux  
distributions  
supported**

**New Java based  
installer on both  
Windows and  
Linux**

## Abstract

The most powerful Rapid Application Development (RAD) tool now offers its strengths on Linux as well as Windows, resulting in true cross platform capability. Develop your business applications once on either platform and have the ability to deploy cross platform with no code rewrite and the same functionality.

This paper introduces Team Developer 2005, supported platforms and installation specifics. It explains any functional differences and key points to be considered when migrating your Windows applications to Linux.

## Platforms supported

- Windows 98, ME. Note: No support for Windows95
- Windows NT4, 2000, XP, 2003
- Linux Requirements: Distributions with Kernel at least version 2.4x and GLIBC at least 2.2.5.x
- Specific versions :
  - Red Hat Enterprise Linux v3 (Desktop, Workstation & Enterprise)
  - SUSE Professional 9.x (9.0, 9.1 & 9.2)
  - SUSE Linux Enterprise Server – 8.x and 9.0
  - Novell Linux Desktop

## Installation

GUPTA has implemented a new Java based installer for both Linux and Windows.

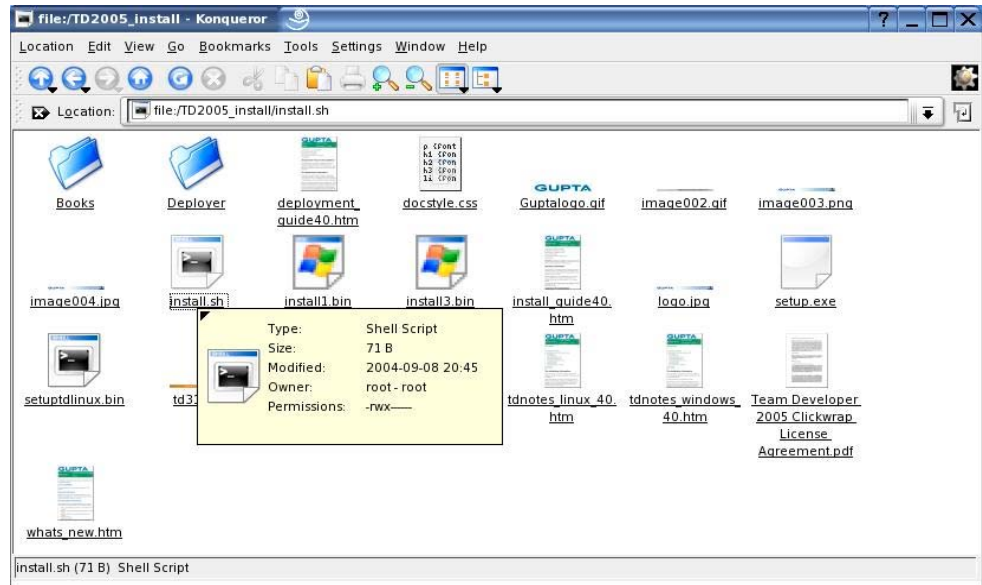
A Product Media Code (PMC) will be needed to activate the product within 45 days of installation. The new GUPTA License Management System (GLMS) is not dependent on Microsoft cryptography. Hence, it does not have any dependencies on Internet Explorer (IE). There is a relaxed upgrade installation – the process allows upgrade even if a prior version is installed on non fixed drives.

### ***Windows:***

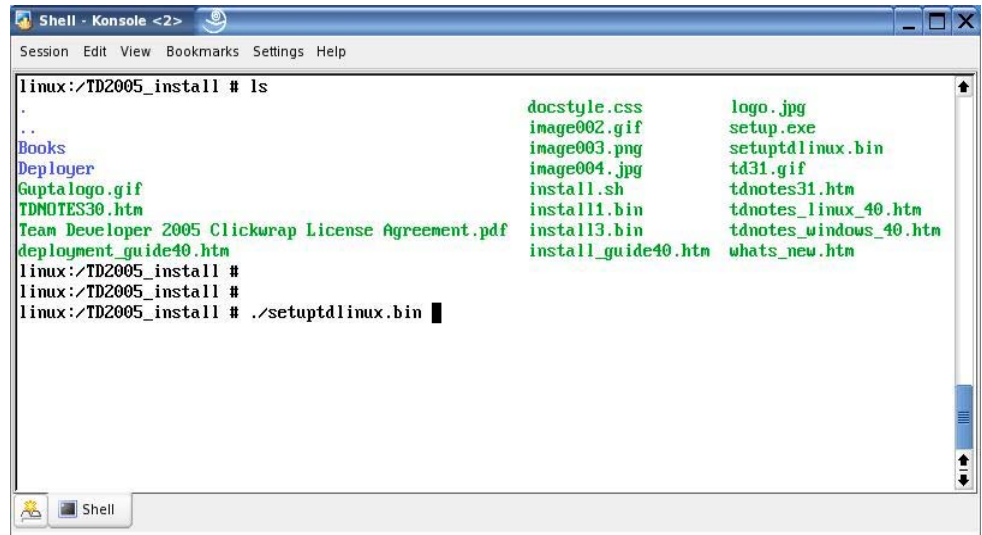
The Team Developer 2005 Windows installer behaves as previous installers: running setup.exe, accepting the license agreement, entering a PMC, determining which products will install, then choosing specific options.

## Linux:

The Team Developer 2005 Linux installer can be run from a suitable GUI file manager (available on KDE or GNOME desktops) by clicking on install.sh



or at the command prompt by executing setuptdlinux.bin



Again, the PMC entered will determine the appropriate product that will be installed.



**Team Developer 2005 ships with a custom build of Crossover's Wine API**

Team Developer 2005 on Linux runs Windows binaries and related files using the Wine API [www.winehq.org](http://www.winehq.org). GUPTA has partnered with CodeWeavers [www.codeweavers.com](http://www.codeweavers.com) who supply a 'custom' build of the Wine API based on the CrossOver 4.0 released November 2004.

The Linux installer ships with the custom build of CrossOver 4.0. Team Developer 2005 will also inter-operate with a previously installed CodeWeavers CrossOver 4.x product.

**Automatic detection of any existing CrossOver installation**

If the Linux distribution already has an existing CrossOver 4.0 or higher installed, the installation process will detect it automatically and the Team Developer installation will integrate with that environment. Otherwise, the installer copies its own 'custom' Wine binaries and configures them for Team Developer.

If the user is root, then Team Developer 2005 will be configured as 'managed multi-user', enabling all other users on that machine to run Team Developer 2005. If the user is not root, then Team Developer 2005 will be configured for that user only.

As the Wine environment mimics Windows, during installation the user will be prompted where to install Team Developer 2005. This would normally be "C:\Program Files\Gupta\Team Developer 2005".

It is important to note the actual directory structure, location of binaries and other specifics after the install:

**Team Developer 2005 on Linux supports different configurations**

**Managed Multi-User configuration (root installation)**

The Wine binaries will be located in folder /opt/tdx and the actual Windows directory: opt/tdx/support/dotwine/fake\_windows. Each user (except root) will get the following configuration:

- User-specific configuration files located at ~/.tdx
- Wine Configuration file: ~/.tdx/dotwine/config
- Windows directory: ~/.tdx/dotwine/fake\_windows/Windows

- Program Group entries (short cuts) are visible for ALL users
- Registration and activation needs to be done only once
- Each user gets their own environment – registry changes are visible only to individual users
- Team Developer and Wine binaries are shared by all users

- Team Developer 2005 applications will be shared across all user logins but the user-specific configuration and registry will not be shared. Each logged in user will have their own .tdx folder where user specific configurations are stored
- Any user can uninstall (this can be done only once!)
- License restrictions will govern how many users will be allowed to work with Team Developer 2005 on any given machine

### Normal user configuration

The Wine binaries will be located in the user's 'home' folder: ~/tdx.

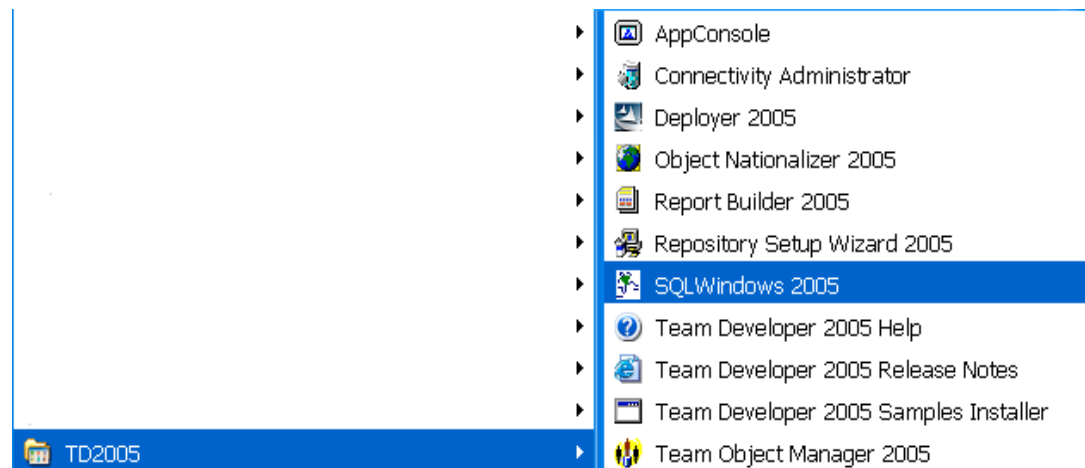
As before:

- User-specific configuration files are located at ~/.tdx
- Wine Configuration file: ~/.tdx/dotwine/config
- Windows directory: ~/.tdx/dotwine/fake\_windows/Windows

Finally, note that a full installation guide is available with the released product.

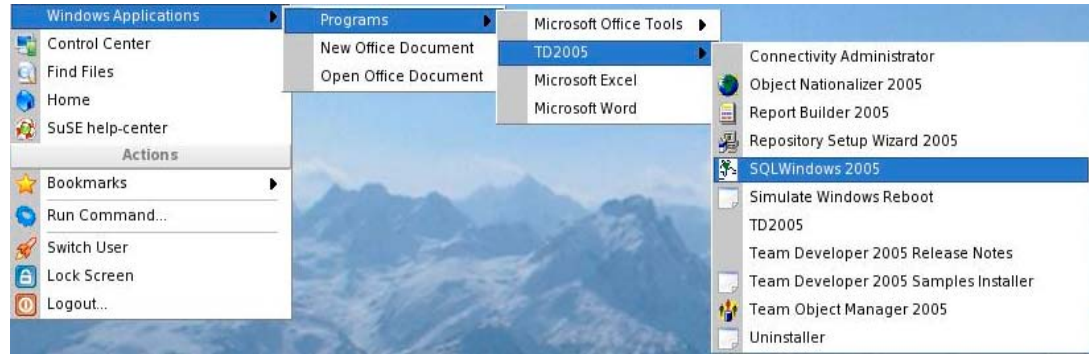
### Program Groups

*Windows:*





**Linux:**



**Uninstallation  
specific to type of  
Wine libraries  
'custom' or  
'existing => 4.x'**

**UnInstallation**

On Windows, uninstall through Control Panel, Add/Remove Programs.

Team Developer on Linux with 'custom' Wine libraries

There is a "Uninstaller" menu item under "GUPTA Team Developer 2005" program group. Clicking on Uninstaller will remove both Wine binaries and Team Developer. All the files and folders under tdx and .tdx will be removed. Any data under tdx and .tdx will be lost. It is important that user not store the application source files in that directory at the time of uninstallation.

If Team Developer 2005 was setup with the root login, uninstallation should first be done for each individual user (to remove individual configuration files) before doing an uninstallation as root.

Team Developer on Linux with existing Crossover 4.x Wine libraries

If Team Developer 2005 is installed over CrossOver 4.0 or higher, then the user has to click on program shortcut menu "CrossOver → Office Setup". This display the CrossOver setup dialog box listing the "GUPTA Team Developer 2005" under installed software group in "Add/Remove" page. Select "GUPTA Team Developer 2005" item and click on "Repair / Remove" button.



## Removing Team Developer 2005 when installed over existing Crossover 4.x libraries



### Flexible deployment options

#### Team Developer 2005 runtime deployment

The Team Developer 2005 deployer is intended to place required runtime files on the machine of an end user who will be running applications developed in the full version of Team Developer. The runtime files do not include any files that are used for the process of application development.

The deployment files for Windows (deploy40.exe) and Linux (deploy40 and deploy40.sh) are found in the root directory of your product media. You must copy them from the product media yourself. Team Developer applications will also need a connectivity file (sql.ini), which by default should be placed in the same directory as the Team Developer runtime files.

### ***Full options method:***

Run `deploy40.exe` on Windows or `deploy40` on Linux to allow options to be selected for the deployment. On Linux you will need to select the option to simulate a 'restart' once the deployment 'install' has finished.

### ***Default method on Linux:***

The script `deploy40.sh` must be run from the shell. The user will receive no prompts, and all default values are applied automatically.

### Console mode

To run the deployer in text mode without GUI interaction on Linux run:

- `deploy40 -console`

### Silent mode

By default, the deployer prompts the end user for specific options during installation. If you want to avoid showing any screens to your end users during deployment but still need to configure non-default options, use a command-line argument. For example, invoking the Java class 'beanmain' in the installer:

- `deploy40 -silent -P beanmain.InstallLocation="/home/td/deploy"`

...installs the deployer into `/home/td/deploy` directory on Linux.

### ***Uninstalling deployment files***

On Windows run `uninstall-deploy40.exe` and on Linux run `_uninstall/uninstall-deploy40` both from the directory containing the runtime files.

For full details on details on Team Developer 2005 deployment please refer to the 'deployment guide' supplied with the product release.

## **Team Developer 2005 products**

The following products are available:

- Standard Edition for Windows
- Standard Edition for Linux
- Both editions include ReportBuilder and appropriate platform specific Deployment files
- Windows edition has full Web components.
- ReportBuilder can be purchased as a separate product with its own PMC
- Cross Platform Bundle includes the Windows and Linux versions of Team Developer 2005

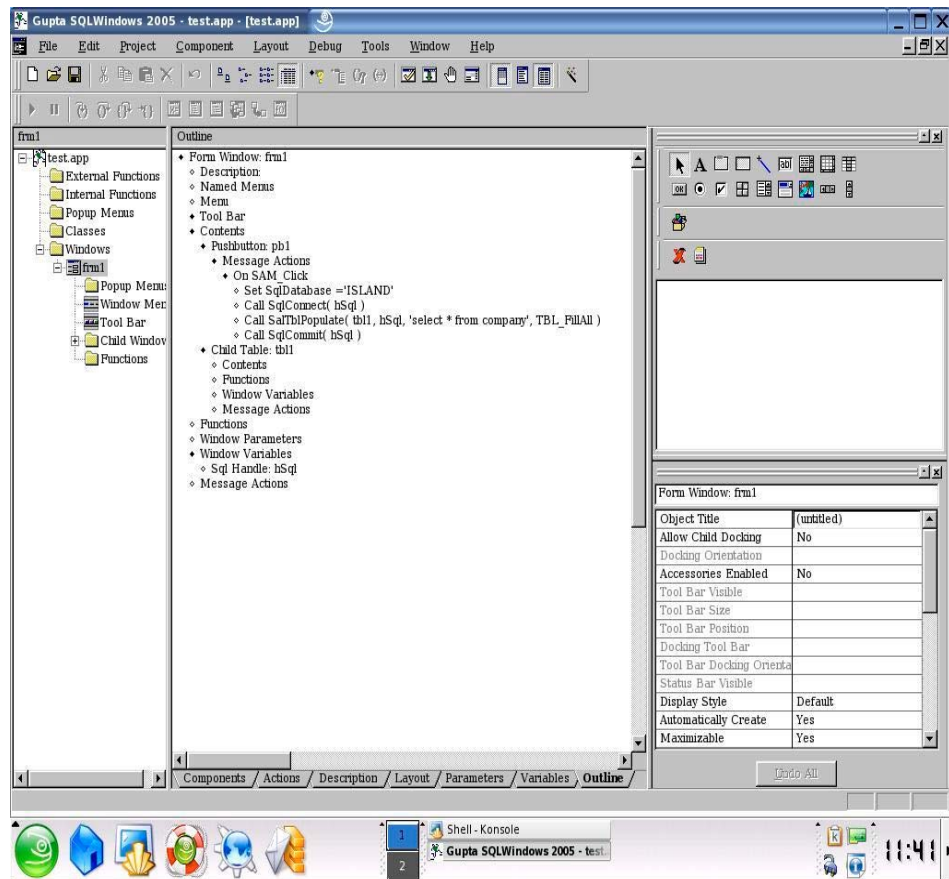
**ReportBuilder now available as a separate product**

## SQLWindows on Linux

The IDE has the same look-and-feel as Windows. When migrating existing applications they should be saved as .apt's, then copied from the Windows environment and simply recompiled. Note that the same is true for new applications built on Linux – they can be migrated over to Windows in a similar fashion. So source code is compatible; however, binaries are NOT compatible. In each migration, you will need to rebuild executables and appropriate .apt's as required.

*The Linux IDE: The same look-and-feel as Windows*

Team Developer  
2005 on Windows  
and Linux have  
the same look-  
and-feel



## ***Considerations when developing applications with Team Developer 2005 on Linux***

All features and functionality that are supported on Windows are available on Linux with the following exceptions:

- Microsoft Transaction Server (MTS) does not exist on the Linux environment, so the related functionality is not available as we cannot build a SAL MTS dll. Specifically, there is no option to build COM objects that are to be deployed on MTS. Related to this, the 9 SAL MTS functions:
  - SalMTSCreateInstance
  - SalMTSDisableCommit
  - SalMTSEnableCommit
  - SalMTSGetObjectCont
  - SalMTSIsCallerInRole
  - SalMTSIsInTransaction
  - SalMTSIsSecurityEnabled
  - SalMTSSetAbort
  - SalMTSSetComplete)

will have no effect. The developer will see no compile errors; only runtime errors.

- Web Application Manager (WAM) is not available on Linux. You cannot build Team Developer 2005 applications and host them on a Linux machine. The ability to run Team Developer 2005 Web applications on a Windows machine and utilize a Web server on a Linux machine (made available in TD 3.1) is still available.
- Invoking 'help' does not work as expected on Linux. One needs to view help files like sqlwin.hlp by using 3rd party tools such as HelpExplorer available at:  
<http://www.kamasoftware.com/helpexplorer.php>
- The Object Compiler has been taken out of the Team Developer 2005 release. The tool has been open-sourced.
- When migrating Windows applications that make use of ActiveX controls, customers need to make sure that they have a valid license for the controls they want to use on Linux.
- It is important for customers to install the right printer drivers and first test printing outside of Team Developer applications. All printing operations work fine on Linux with the exception of print-to-file which is detailed in the release notes
- Object Linking and Embedding (OLE) is not recommended for use on Linux.
- The Connectivity Administrator is not available for Linux in this release. Use a text editor instead to maintain the configuration file (sql.ini).

**Team Developer  
2005 release  
notes has a  
comprehensive  
list of known  
migration issues  
and workarounds**

**SQLBase 'native' connectivity and Oracle router available on Linux**

All other functionality is consistent with the functionality on Windows, including Visual Toolchest and Team Object Manager. Please refer to the release notes for a list of further known issues and given workarounds.

### **Database Connectivity on Linux**

The Oracle router and SQLBase clients are the 'native' Linux binaries available. The native libraries talk directly to the kernel maximizing performance and do not use any the Wine binaries.

It is planned that the ODBC router will be ported to Linux in the next release.

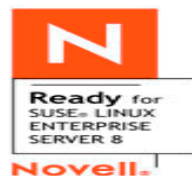
### **SQLBase 9.0 shipped with Team Developer 2005**

**Team Developer and SQLBase are tightly integrated**

Team Developer 2005 ships with SQLBase 9.0 server on Linux. The SQLWindows development environment and SQLBase server are tightly integrated which maximizes performance from each API call.

With SQLBase 9.0 for Linux, customers can combine the ultra-low TCO of Linux with the ultra-low TCO of SQLBase to significantly reduce costs. SQLBase 9.0 is the fastest SQLBase server to be released and internal tests have shown SQLBase 9.0 for Linux to be approximately 15% faster than on Windows. SQLBase's strong benefits include:

- Easy installation and configuration
- DBA-less operations, open connectivity
- Ability to secure data on the hard drive and over-the-wire with triple-DES encryption
- Unmatched deployment support
- Comprehensive Linux support partnering with the leading Linux providers Novell/SuSE and RedHat.



Note: SQLBase needs to be set to listen to TCP/IP for connectivity – this is the only comdll supported for direct connection to SQLBase on Linux.

## Linux connectivity libraries

The native Linux connectivity libraries that are installed are:

- libsqltcbip.so : For connecting to SQLBase Linux server
- libsqlora32.so : For connecting to Oracle 9i / 10-g
- sqlwntm.dll.so : Built-in Wine library and used for loading the native Linux connectivity libraries

## Database Connectivity – Binaries

For Linux the configuration files ~/.tdx/dotwine/config (for root /opt/tdx/dotwine/config) should have the following DllOverrides section for enabling native Linux connectivity:

```
[DllOverrides]
"sqlwntm" = "builtin, native"
"orasal32" = "builtin, native"
```

### Library equivalents

Windows	Linux
sqlwntm.dll	sqlwntm.dll.so
sqlbapw.dll	libsqlbapl.so
Orasal32.dll (New!)	orasal32.dll.so
Sqlora32.dll	libsqlora32.so <ul style="list-style-type: none"><li>▪ libsqlora32-9i.so</li><li>▪ libsqlora32-10g.so</li></ul>

## Database Connectivity – Oracle Router on Linux

Team Developer 2005 supports connecting via 9i and 10g clients.

```
libsqlora32-9i.so is used for connecting using 9i client
libsqlora32-10g.so is used for connecting using 10g client
```

The configora.sh must be used to create the libsqlora32.so, a symbolic library. The script accepts 9 or 10 as a parameter. Additionally, the following steps need to be done:

The .bashrc / .bash\_profile need to be updated with the following export variables:

```
export LD_LIBRARY_PATH=$ LD_LIBRARY_PATH $ORACLE_HOME/lib
export LD_PRELOAD=$ORACLE_HOME/lib/libcIntsh.so
```

Note: the latter is needed for an Oracle 9i client to avoid segmentation fault on shared library unload.

### Database Connectivity – SQL.INI entries

Windows	Linux
[win32client] clientname=td40	[linuxclient] clientname=td40
[win32client.dll] comdll=sqlws32 comdll=sqlora32	[linuxclient.dll] comdll=sqltcpip comdll=sqlora32
[win32client.ws32] serverpath=server1,localhost, 2155/*	[linuxclient.tcpip] serverpath=server1,localhost, 2155/*
[oragtwy] remotedbname=ora10g, @ora10db longbuffer=32767 fetchrow=20	[oragtwy] remotedbname=ora10g, @ora10db longbuffer=32767 fetchrow=20

### Support for Team Developer 2005 on Linux

GUPTA will support the installation, configuration and running of Team Developer 2005 and Report Builder 2005 on all major Linux distributions as long as basic requirements are met: kernel >= 2.4.x and GLIBC >= 2.2.5.x.

### Known Issues / Defects

Please use this link to the Team Developer 2005 release notes for a list of new features, known issues and migration issues:

<http://www.guptaworldwide.com/Products/DownloadsDisplay.aspx?ProdID=2>.

Additionally, the 'installation guide' is a good reference detailing specifics about installation and configuration information on both Windows and Linux platforms.

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