



What's New in Team Developer 2005.1

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Abstract

This technical whitepaper will cover all features released in Team Developer 2005.1, a sophisticated programming tool offering high-speed development of dynamic business applications.

Introduction

Team Developer 2005.1 for Windows provides everything the user needs to develop Microsoft Windows desktop applications, COM+ business logic development and Web applications. Team Developer also includes a single-user SQLBase license for development, Team Object Manager for project management & version management, and native database routers for Microsoft SQLServer, Oracle, Sybase and Informix. Also included is ODBC and OLE DB connectivity for connecting to virtually any data source available. These features will be discussed in this whitepaper.

Team Developer 2005.1 for Linux offers a true RAD business application development environment for Linux Desktops. A rich and easy-to-use interface helps the user benefit 50-100% faster development than if done in Java.

XML Features

Improved enterprise integration via XML for applications

There is a growing need for applications to interoperate with other systems and with applications across the enterprise. Some examples include: office software, Enterprise Application Servers, Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP). XML has become the de facto standard for data exchange between systems. Team Developer 2005.1 delivers full built-in XML support ensuring that it is easy to exchange data with any other system that supports XML (eXtensible Markup Language). The built-in support includes:

- Using XML to exchange data with other applications and systems such as Microsoft Office, Open Office, SAP, J2EE and .NET
- A new DOM class library to create and manipulate XML files
- Creating XML files from SQL query results
- New functions to facilitate the serialization and de-serialization between User-Defined Variables(UDVs) and XML

XML serialization

In Team Developer 2005.1 the XML serialization functions have been simplified. The functions *SalXMLSerializeUDVArray* and *SalXMLDeserializeUDVArray* have been eliminated, and their functionality is now part of the existing functions *SalXMLSerializeUDV* and *SalXMLDeserializeUDV*. In those two functions already found in Team Developer the first parameter has changed from the symbol name of a UDV to a string which contains the name of a UDV or an array. In addition, the serialization functions were previously unable to handle a UDV that was itself an instance variable of another UDV. That restriction has now been lifted.

An example of XML serialization is shown here:

- **Set bOk = SalXMLSerializeUDV(o_cInvoice, 'Invoice.xml, Document)**
- **Set bOk = SalXMLDeserializeUDV(o_cInvoice, 'Invoice.xml', “)**

SQLWindows applications can read, write, and manipulate XML documents using the Document Object Model (DOM). Details of these XML capabilities are available in a new chapter titled *Handling XML*, in the book *Developing With SQLWindows* (under the file name *dev.pdf*) which comes included in Team Developer's *Books* directory. Similar information is available through online help under the table of contents entry [SQLWindows Programming / Handling XML](#).

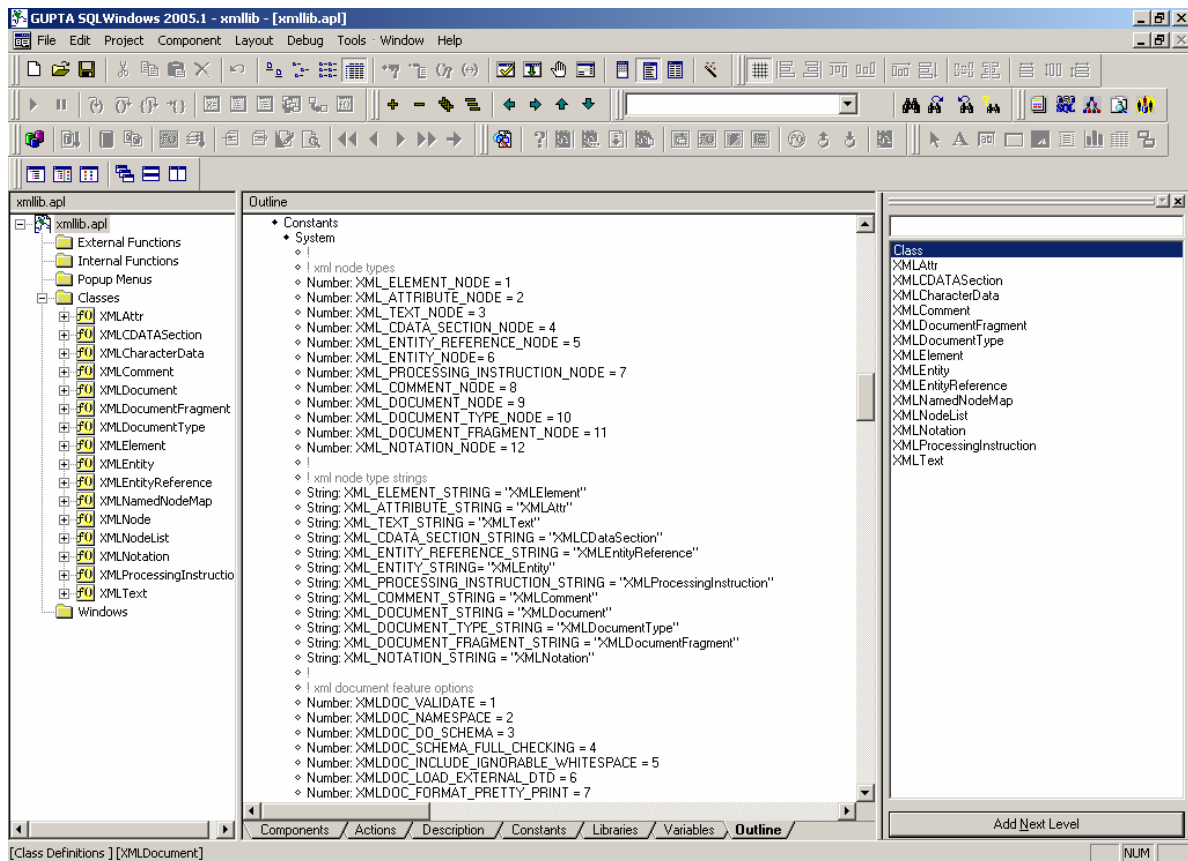
New XML DOM class library

Cross-platform XML file creation and manipulation is now based on a new XML class library within Team Developer 2005.1.

An example of XML manipulation is shown here:

- **If nNewNodeType=XML_ELEMENT_NODE**
- **Set oElement = new XMLElement**
- **Set bOk = oDoc.createElement(oElement, dfText)**
- **Set nodeTypes[nodeIndex]=XML_ELEMENT_NODE**
- **Set nodes[nodeIndex] = oElement**
- **Set bOk = oCurrentNode.appendChild(oElement)**
- **Set nNewIndex=nodeIndex**

A screenshot of SQLWindows running an XML Library application file is shown below.



XML in Team Developer 2005.1 makes data exchange easier & more efficient

Team Developer's new cross-platform XML class library provides all the functions necessary to read, analyze, change and write XML files. For example, an online store sends an XML file for every purchase to a Team Developer business process. This process analyzes the XML structure and writes the order into a CRM system, then inserts the same data into a financial system for order processing. XML is an excellent way to exchange application data.

XML files from other applications can be read a lot easier

XML Serialization is an important feature when reading XML files coming from other applications. Serialize UDV's or UDV arrays to XML. Deserialize XML files to UDV's or UDV arrays. Team Developer directly interfaces with XML using its powerful Object-Oriented Programming (OOP) capabilities. An example of this would be storing status information of an application when a user has gone through several screens of an application to process a transaction, but does not finalize it. In this case the application can store the status information in a XML file and load it again when the user wants to continue his work.

New reserved words in SQLWindows

There are a large number of new function and constant names related to XML processing. However, these are stored not in the core outline of SQLWindows, but in a supplied library – *xmllib.apl*, which you may optionally include in your application. Examine that file to see the new names. In addition to those names, the following names are reserved:

- SalTblCreateColumnEx
- SalXMLSerializeUDV
- SalXMLDeserializeUDV
- SalXMLGetLastError

UDV Serialization & De-Serialization

Closely related to XML support is the ability to serialize the instance variables of a UDV (User-Defined Variable), or array, to an XML document, and to de-serialize an XML document into a UDV or array. These abilities can be extremely useful, particularly to those developers who wish to save and reuse the "state" of an application.

To support serialization, there are three new choices available when you modify an instance variable in a class definition (when using the Coding Assistant or choosing "Add Next Level" in the right-click context menu):

- **XML Serialize:** This allows you to indicate whether the specific instance variable should take part in serialization operations. The default setting is *Yes*.
- **XML Datatype:** Allows you to designate a general SQLWindows data type such as "Number" to a more specific XML data type such as "Currency". No default value is given.
- **XML Nulls Allowed:** This permits you to indicate whether null values in the XML document are permitted when de-serializing XML into a UDV. Default is *Yes*.

Find & Replace Enhancements

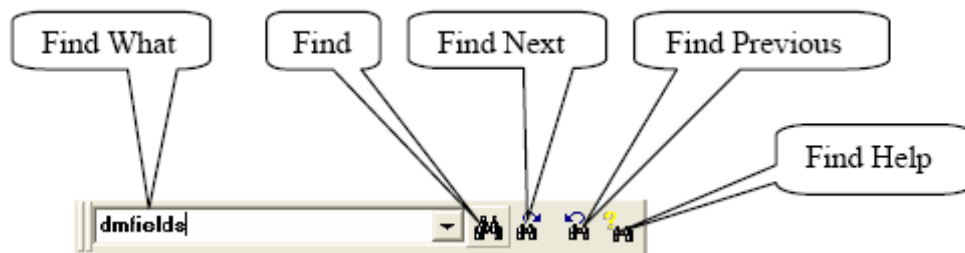
The *Find and Replace* function now implements the following feature enhancements:

- Toolbar extension
- Context Menu extension
- Wild character support

Toolbar extension

A new *Find* toolbar has been implemented having the following controls as shown in the figure below:

- **Find What:** This is a drop down combo box. You can enter the find string here. It shows the most recently used find string and provides the same functionality of the *Find What* combo box in the *Find* and *Find and Replace* dialog boxes. When you have entered a text string, pressing Enter will begin a search forward.
- **Find:** This is a push button. Clicking this button displays the *Find and Replace* dialog box with the *Find* page active.
- **Find Next:** This is a push button. Clicking this button begins a forward search for the currently active search string.
- **Find Previous:** This is another push button. Clicking this button begins a backward search for the currently active search string.
- **Find Help:** This is also a push button. Clicking on this button displays the online help for Find.



The **Find** toolbar shown above.

You can add and remove the *Find* toolbar using the **Tools** **Toolbar...** menu item.

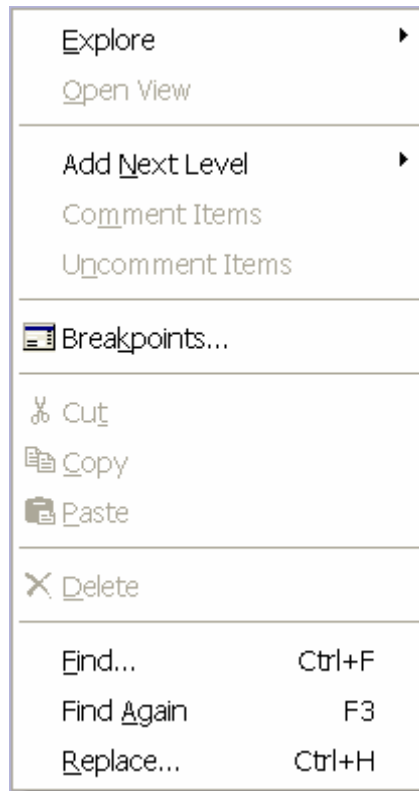
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Context Menu extension

The Context Menu is displayed when you click the right mouse button in the outline. You now have the following three menu items for *Find and Replace*. Their functionality is similar to menu items listed under the *Edit* popup menu:

- Find
- Find Again
- Replace

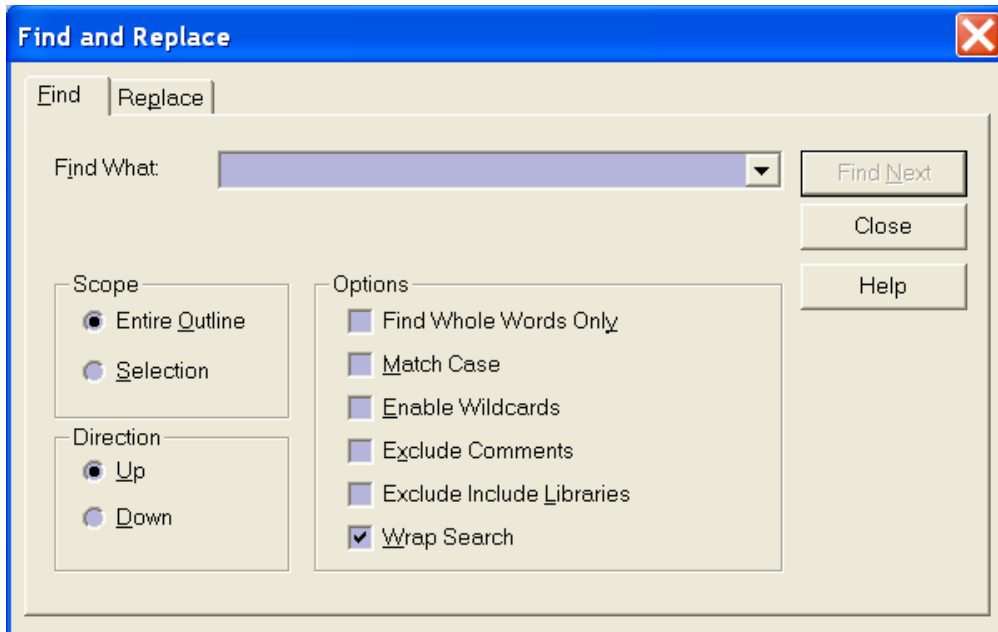
The Find & Replace popup Context Menu:



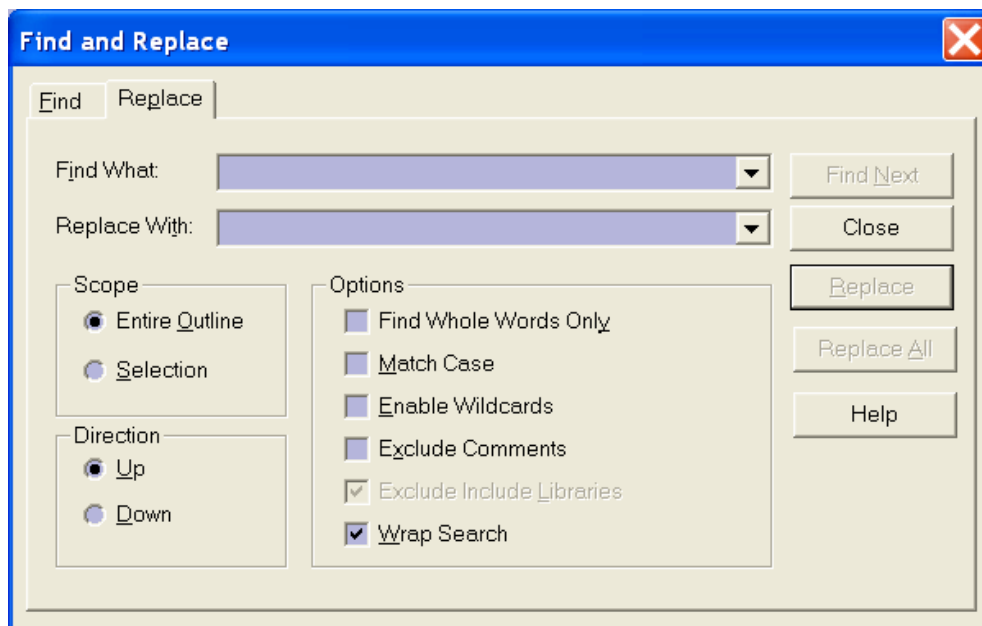
Wildcard character support

The *Find and Replace* dialog has been enhanced to support the wildcards * and ?. See the two figures below showing the enhanced dialog boxes that now include the option to *Enable Wildcards*.

The next page will show screenshots of the Find and Replace dialog box.



The Find & Replace dialog box above shows the Find tab with Enable Wildcards listed in the checkbox menu.



The Find & Replace dialog box above shows the Replace tab. When you check the Enable Wildcards box, the Find Whole Words Only option will become disabled. Note that the user selection of Find Whole Words Only will be preserved when disabled but it will not be used.

Report Builder 2005.1

Printing reports is one of the most vital tasks of database business applications. Report Builder 2005.1, which is included in Team Developer 2005.1, provides many powerful enhancements to printing simple and complex data reports including printing and viewing binary long data like pictures being served from the database. Enhancements include:

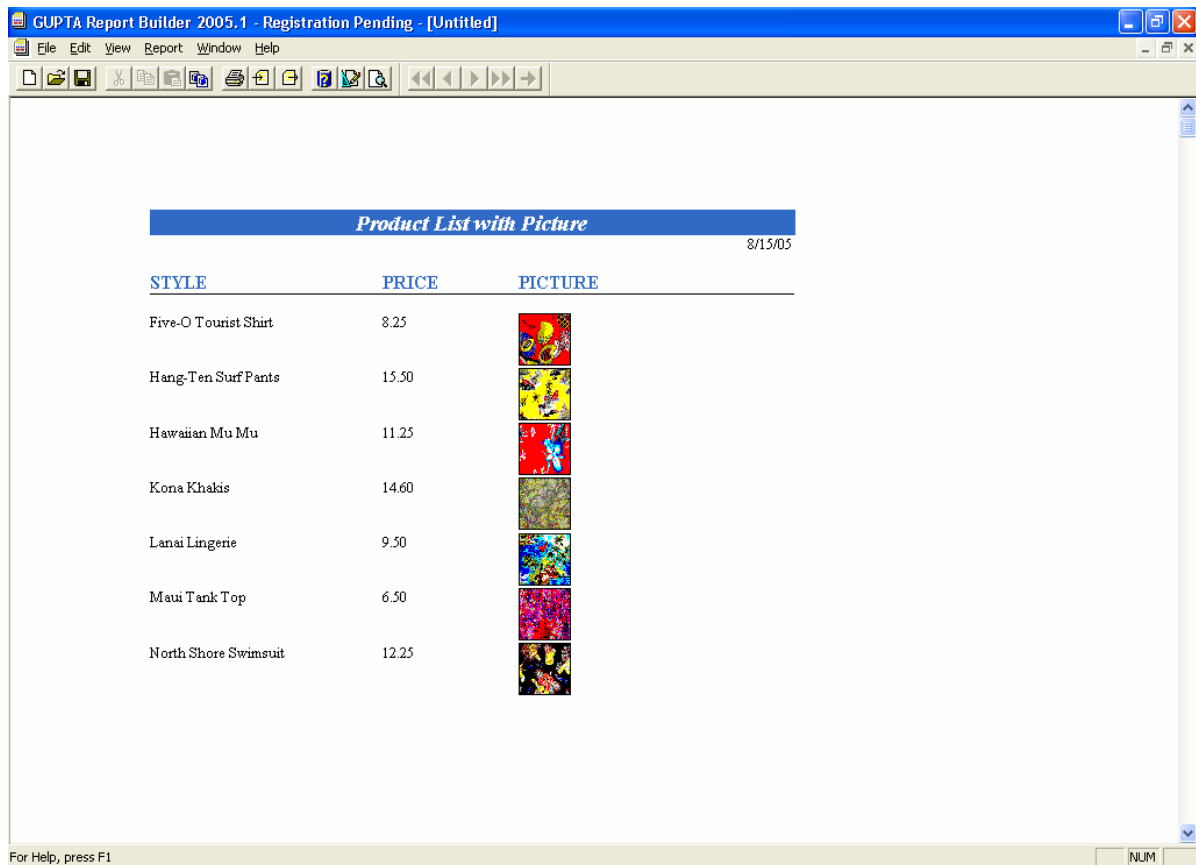
- The *Conditional Output* feature that is available in many blocks of a report is now also available for the *Page Header* and *Page Footer* blocks.
- The *Define Query* dialog now shows the datatypes of columns that are available for use in the query.
- The *Define Query* dialog also allows you to edit the names of specific columns used in the *Conditions* tab (*Column/Formula*), the *Sort* tab (*Sort By, Asc/Desc*), and the *Group Conditions* tab (*Column/Formula*).
- The *Define Query* dialog now permits you to enter case-sensitive database table names when delimited by quotes. Because of this new feature, you must now take extra care when working with table names that contain one or more quotes as part of the name (some database vendors permit quote characters in the names of tables). If you encounter such a quote character you, must “escape” it by appending a second quote character next to the name itself. Otherwise the quote in the table name might be misinterpreted as the delimiter of a case-sensitive name, instead of part of the name itself.
- The *Define Query* dialog now permits you to control the sequence of columns in the result set by dragging columns to new positions using the mouse.
- LOB datatypes (BLOB and CLOB) can be passed to an input item, and Report Builder will show a picture (if the BLOB is a known graphic type such as JPG) or a text box (if it is a CLOB containing text).
- The *Format Block* command now provides the ability to specify general formatting properties (font, color, etc.) for all fields within a report using a single dialog. It is still possible to override those properties for an individual field.
- The *Between Lines* setting in the *Borders* page of the *Fields* properties is now saved with the rest of the report design.
- It is now possible to cut and paste report elements between multiple Report Builder windows within the same Report Builder instance.

- The *Formula Editor* dialog now gives you the choice of displaying all formulas, or unused formulas. Thus you can delete all unused formulas by displaying a list of them, then deleting them.

You can view & print images stored in long binary columns

Printing product catalogues including product images is much more convenient in Team Developer 2005.1. Or you can print a list of employees including images of the employees. Making sense of image data is a lot easier in the release of Report Builder 2005.1 included in Team Developer 2005.1.

The screenshot on the next page is that of a report created in Report Builder 2005.1



A created report shown above as it appears in Report Builder 2005.1

Easy and powerful formatting

You can select an entire block or multiple objects and assign properties to all objects in one single step. For example set font attributes to a group in one single step.

Flexibility and query definition

There is now the feature of auto-scrolling columns for fast column selection without the need to scroll with the mouse. Simply type the initial characters of a name and scrolling automatically moves to the right position. The data type of columns is displayed in the table and column selection dialog. This helps to understand what

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columns contain what data, speeding up the query definition process. Many database servers support lower case table definitions, Report Builder 2005.1 allows you to enter table names in lower case.

Report formula housekeeping

Reports can get rather complex after using them for a long time with the many changes made to them over time.. The new Report Builder 2005.1 provides support for report housekeeping by an easy way of detecting used and unused formulas. To delete the overhead of unused formulas from the report file just select unused formulas in the report dialog and then delete the unused formulas.

Table Window Enhancements

The new SAL function *SalTblCreateColumnEx* allows you to create new table window columns dynamically at runtime, specifying the data type of the column as well as other features such as title, display width, column position, and data length in characters.

Linux Enhancements

More database choices are available with Unify's Linux version of Team Developer 2005.1. You can connect to almost any Linux and open source database from Team Developer 2005.1 and the new driver allows connections to MySQL, Firebird, PostgreSQL, Sybase and other ODBC compliant databases.

Miscellaneous Enhancements

For connections to Informix databases, using the function *SqlGetParameter* with parameter *DBP_BRAND* will now return value *DBV_BRAND_INFORMIXONLINE* rather than the more generic value *41*.

The command line used for invoking an external application (*Tools > User Tools* menu in SQLWindows) now requires an additional parameter: *-MTX*. This parameter ensures that shared outline memory is properly managed. Team Developer applications developed using the Developer Extension Kit (CDK) will also require this additional parameter. This requirement applies to applications that are executables – if the application is a SQLWindows *.app* file, the *-MTX* parameter is not required.

About Unify

Unify is a global provider of software development technology and solutions that helps IT customers participate in Service-Oriented Architecture (SOA). Unify's productive and re-liable development tools, migration solutions and databases enable organizations to build and modernize business essential applications for SOA. Composer for Lotus Notes offers a complete, like for like, production to production migration solution for Lotus Notes applications. Unify's award-winning NXJ Developer enables IT teams to be extremely productive, learn new technologies fast and deliver Web services-based applications on time and on budget. The Team Developer, SQLBase, DataServer, ACCELL and VISION product families enable cross-platform rapid development on Java/J2EE, Linux or Windows. Unify has a rich heritage in delivering rich, cost-effective technologies to its thousands of IT customers and ISV, VAR and distributor partners. Unify is headquartered in Sacramento, Calif., and can be reached at (916) 928-6400 or by visiting www.unify.com.

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