

Centura Team Developer 2000 Release Notes

Thank you for choosing Centura Team Developer (CTD) 2000 for your strategic e-business application development and deployment needs.

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New Features Centura Team Developer 2000

This release of Centura Team Developer has as its goal increased interoperability. The main areas of improvement are related to COM server development (building reusable, self-contained components for use in a variety of applications), Web application development (using robust new classes and features such as scripting, validation, and threading to build sophisticated Web applications), and object-oriented programming. There are many other miscellaneous enhancements as well.

The new features are summarized in the Help topic 'New Features', and are also listed here – please see the Help and the online books for more details.

COM Server Generation

This release of Centura Team Developer allows you to generate WinDNA compliant COM servers. To learn more about COM server support, read chapter 20 of the *Developing with SQLWindows* book. The following specific features related to COM server generation are now part of the product:

COM wizard: The COM wizard lets you generate CoClasses and corresponding Interfaces, with optional generation of MTS related classes, or independent Interface classes for use with existing CoClasses in COM Servers.

COM server support: You can write COM automation servers with SQLWindows and create non-visual business objects. Automation Servers developed with SQLWindows are compatible with MTS and can be added to MTS Packages (on Windows NT 4) and COM+ Applications (on Windows 2000).

Threading Support

SQLWindows supports threading in both EXE and DLL COM servers. CTD manages all threading issues including thread creation (for *.EXE servers), synchronization, thread local storage, and deadlock. Thread control functions are not exposed in SAL.

Web Application Development

This release includes these new features for Smart Web Clients. These features include enhanced support for building both stateless and dedicated applications, improved UI capabilities (including XML generation and the ability to write WML applications) and a re-architected application server.

Enhanced Object Oriented Programming

The existing Object Oriented features of the SAL language have been augmented by dynamic instantiation (including a 'new' operator), object destructors, and the pseudo variable 'this'. The 'new' operator has become a reserved word. However, 'this' is not a reserved word, and a variable can be declared with the name 'this' (in which case, the use of 'this' within that will resolve to the variable rather than the self-reference that might otherwise be the case). 'this' can be used outside the scope of a functional class, in which case it does not hide anything. The function name "ObjectDestructor" is reserved for class destructor code, and cannot be used for any other purpose.

Miscellaneous New Features

ADO Support: Centura Team Developer is an OLE DB consumer that can work with any OLE DB provider to

access both relational databases and non-relational data sources. The OLE DB providers require Microsoft Data Access Components (MDAC) 2.5, and the English version of this is installed when you choose one or more OLE DB providers. Other language versions are available for free download from the Microsoft Web site at http://www.microsoft.com/data/download_250rtm.htm

Multi-connection transactions: Multiple database connections can now be used in a single application by using the newly introduced Session Handle data type.

ActiveX Explorer: A new programmers productivity aid for use with ActiveX controls and COM servers.

Electronic Licensing

Centura Software Corporation has introduced electronic licensing in Centura Team Developer 2000. This licensing gives us a better knowledge of our customers, so we can better serve them.

The CTD 2000 software includes a temporary electronic license file enabling the software to run for a fixed period of time. In order to receive a permanent license, you need to register all CTD 2000 purchased products and upgrades. Centura then sends you an electronic license enabling the software to run without a time limit on your development machine. For licensing information, please visit Centura's Web site at <http://www.centurasoft.com/license>. If you have questions about electronic licensing, please contact your local Centura office.

Activating your Temporary License

Your package may contain a Temporary License card. This card includes information to help you activate your temporary license. If your software is able to run immediately after installing, you do not need to activate your temporary license.

1. Run the License Update utility found in your Centura directory (LicUpdate.exe). This utility displays the type of license you have for each Centura product you have installed. For CTD 2000, the Product field displays "Enterprise". Select the product you wish to activate with the temporary license.
2. Your product package contains a printed Temporary License card with an expiration date and license code. Enter this information in the appropriate fields.
3. Click the Update button to Activate your Temporary License. Your software now runs and allows you to work for a period of time while you are obtaining your permanent license.

Requesting a Permanent License

To receive a permanent license for your software, you need to supply Centura with information about the software, the machine where you install the product, and yourself.

1. Run the License Administrator utility found in your Centura directory (LicAdmin.exe). This utility displays the Authorization Code from your software package, which you entered during the install process, and your machine's unique identification number.
2. For CTD 2000, the Product field displays "Enterprise". You may also have purchased and installed other product packages, such as Report Builder. Choose the product for which you wish to receive a permanent license.
3. Choose the license delivery method. If you are registering the software on Centura's Web site, you need to enter the Authorization Code and Machine Identification number in the Web page, along with your contact information. If Web registration is not available to you, supply your contact information in the License Administrator.
4. When you are finished, click Done. The License Administrator saves your registration information to a file, which you can either email or fax to Centura. See the licensing Web site or the information printed on your Registration insert for the email address or fax number. Please provide information that is as complete as possible so we can process your request quickly.

Notes for Beta Testers

If you have used any pre-release version of Centura Team Developer 2000 (e.g. a Beta release, or Preview version), please uninstall that copy of the product before you install this final version. You will need to recompile

applications developed with any pre-release versions of the product.

BEFORE YOU UNINSTALL YOUR PREVIOUS BUILD, REMEMBER TO UN-REGISTER ANY COM SERVERS YOU MAY HAVE BEEN DEVELOPING.

To correctly uninstall an existing Beta, please make sure that you uninstall the "Centura Team Developer [Matterhorn]" component LAST.

Migration Notes

The following notes describe changes which you might encounter when moving from a previous version of Centura Team Developer to this version. There are also notes about how to manage the coexistence of different versions of the product on the same machine.

Gcmal.apl has been renamed. To gain consistency with the rest of the product, the gcmal.apl library has been renamed cgmal.apl. You will need to update any applications which use this APL.

In previous versions of CTD, SqlDisconnect treated the Sql Handle argument as an input argument. CTD 2000 treats the Sql Handle as an input-output argument. If the SqlDisconnect was successful, CTD sets the handle to Null Handle. This way, you can check anywhere in the code if the handle is still valid or not. This is a change in behavior that was introduced on the basis of customer feedback. Along the same lines, the newly introduced SqlFreeSession also treats the Session Handle as input-output argument. If the SqlFreeSession call was successful, the session handle is set to the Null Handle by SQLWindows.

A long-standing defect in the behaviour of Data Fields when set to "Editable = No" has been fixed. In the past non-Editable fields were created using the Disabled Windows style, which led to problems with fore- and background color settings, and with navigation. In this release, non-Editable fields are created with the Windows Read-only style, and so they have a different appearance (and will honor color settings), are navigable, and allow for the selection and copying of their content text. Calls to SalEnableWindow() will reset the Read-only style, and allow editing of the field contents. Note that there is not a direct SAL call to reverse SalEnableWindow for a field created as non-Editable, though you can use SalSendMessage to send the EM_SETREADONLY Windows message, with wParam set to FALSE, to reset the field to its original state.

Centura Team Developer 2000 is built using Microsoft Visual C++ 6.0. This means that C/C++ libraries shipped with the product to which you may wish to link your own DLLs (e.g. cdbll.lib) are not compatible with MSVC 5.0.

When using Centura Team Developer 2000 and previous versions on the same machine, please be aware of issues which might arise as a result of PATH ordering. While most of the core files of CTD have version-dependent names – thus avoiding version conflict issues – there are files which do not include the version number in their names. In particular, APL files are found on the system path as well as the SQLWindows path, and previous version APLs may be incompatible with the latest version. Also, the Help file which is first on the PATH will be invoked, so please be aware of which one you need. One solution is to remove the 1.5 directories from the system path and create a DOS Box shortcut which runs a batch file to set the PATH, prepending the 1.5 directories. This DOS Box should be used to launch 1.5, with 2.0 as the default version of CTD for the machine. (To setup the shortcut, use a Target of the form: "%SystemRoot%\system32\cmd.exe /k ctd15.bat".)

The C++ CDK is no longer provided in Source Code form: CTD now uses the CDK internally, and so the version shipped with the product must remain unchanged. However, to support extensions and enhancements, the CDK is shipped as an AFX Extension DLL, so that you can subclass the CDK classes to extend or override the built in functionality.

The C++ CDK has been renamed to CDKi20.dll, and cdk.lib remains as the library against which you should link your C++ CDK applications. CRiXX.DLL is no longer shipped, and all of the functions which were exported from it in previous releases are now incorporated into CDKi20.DLL.

The Sal CDK APL has been renamed to from CBCDK.APL to CDK.APL.

Note: because the C++ CDK is shipped as a Release Mode MFC DLL you should not attempt to build MFC Debug applications which link to it; the memory layout of MFC objects differs between Debug and Release modes, and simultaneous use of both Debug and Release MFC DLLs is unsafe. To debug your MFC C++ CDK clients, you should create a special target, "Win32 Release Symbols", which is based on the "Win32 Release" target, but which enables Debug Info generation (on the C++ Settings tab select "Program Database" for the

"Debug Info" setting, and on the Link tab check the "Generate Debug Info" checkbox).

In 1.5.x the Create function of the Object class was used to create all COM proxy objects. However, this was often not appropriate - you should not, for example, create a Word Document object directly: it must be created by the Word Automation Server, and returned to you through a function parameter or return value, but the Sal COM classes in 1.5 did not prevent this.

To address this problem, both the code generation of ActiveX proxy APLs and the Automation base class "Object" have been changed:- the COM Proxy class has been added to represent COM CoClasses, and creation functions "Create" and "CreateEx" are generated within the COM Proxy Class if the CoClass supports external creation. Because the COM Proxy Class may define "Create", the "Create" function which existed in the Object Class in 1.5 has been renamed.

- to support late-bound creation of Dispatch objects, the "Create" function in the Object Class has been replaced by "CreateObject".

Known Problems and Limitations

When deploying Web applications, please remember to run the CTD runtime installer (deploy20.exe) when you install your application. The Web Deploy installer does not include CTD runtime files.

Netscape Web Servers later than Enterprise version 3.6 cannot be detected by the CTD 2000 installer. Please choose 'Other' as the Web server, rather than 'Netscape', if you are running a server later than 3.6 and 'Netscape Web Server' is not marked by default in the "Web Server Document Directory" installation dialog.

When first running the Tutorial application in Web mode, you may see an error ("Error in comIslandPRODUCT.Create() : COM Server Failed") due to registration ordering issues if Web App Manager is automatically started as a Service. Restarting the application using AppConsole will resolve this issue.

In AppConsole, it is not necessary to set Minimum Processes higher than 1 for dedicated applications, since each user will create and destroy processes when they use the application. For reusable applications, Minimum Processes can be set higher, so that performance is increased because these applications do not destroy processes. An optimum number for small to mid-sized applications may be in the range of 10-20. Having large numbers of processes running can result in errors due to running out of resources.

Starting and stopping AppManager from AppConsole in rapid succession may result in initialization errors which can crash AppManager.

If a machine running AppManager is shutdown, and the AppManager is being remotely administered from AppConsole, AppConsole may hang until the machine is re-started.

Microsoft Personal Web Server and IIS 4 have been observed to truncate long POST messages to browsers - this can affect the operation of state variables.

The Object Compiler cannot be used to compile Web applications on Windows 2000.

The format of COM proxy libraries (AxLibs APLs) has changed since Centura Team Developer 1.5. You should regenerate any of these which you require in applications working with CTD 2000.

The CTD runtime deployment installer (deploy20.exe), Report Builder and Web Deployment installers can all be run in silent mode. To do so, execute
deploy20.exe /S /M=silent.ini

The '/S' is for Silent Mode and '/M' will read the values file. The values in silent.ini can be modified to suit your installation.

Since the version number of this release has changed, the names of most CTD EXEs and DLLs have changed in order to avoid potential version conflicts. For example, CDLLi15.dll is now CDLLi20.dll. If you happen to have linked directly to one of these DLLs in your application (rather than using an APL provided by Centura), you should change the reference in your application in order to avoid strange behaviour and crashes.

UDVs passed as parameters to top-level Windows cannot be modified by assignment, either to other UDVs of an

appropriate type or to the result of calling 'new'. External UDFs known only to an external outline are not fully supported. There are two known issues: `SalObjIsDerived()` does not work with these type of external objects (objects created in a different outline without any definition in the outline using it), and parameter type checking does not work for functions needing external objects.

Assignment of Window classes derived from a base Functional class is not supported. This will not generate a compiler error, but will produce indeterminate results.

Type Information is not embedded within COM DLL servers built on Windows 95.

MTS component activation within a SQLWindows client EXE is not supported. CTD Client EXEs can only use MTS-registered components which are configured to run within a dedicated server process (Activation: Server Package).

When starting Web App Manager with multiple active applications (i.e. `MinProcs > 1`) that connect to SQLBase using anonymous pipes (SQLAPIPE), if SQLBase is not already started you may see an error to the effect that a server initialization failed because SQLBase was already running. This is a benign error and can be ignored. It is the result of a minor race condition during the auto-start behaviour of SQLAPIPE.

In the case of a crash of a Web application, system resources can be left open. Use Task Manager to end any orphan processes before restarting Web App Manager.

The Customizer is being deprecated in favour of the Attribute Inspector for modifying object properties. There are some known problems with the appearance of the Customizer on Windows 2000, and we recommend use of the Attribute Inspector instead.

Certain samples require the presence of particular ActiveX controls (in particular, the Calendar Control 8.0). The COM servers used by the sample applications are fairly common, but may not be installed on your machine. If attempts to run the samples produce ActiveX error dialogs, you may not have the required server installed, or you may have an incompatible version.

Connectivity Limitations:

You cannot connect to SQLBase from a Web application using the anonymous pipes protocol (sqlpipe) unless SQLBase is running as a service. Another workaround is the use the TCP/IP protocol instead.

Microsoft SQL Server OLE DB Provider does not support converting a long database type (text, image) into a BSTR type. So, if a CTD application is trying to read a database text/image column into a String variable type, the fetch call fails. However, a similar operation succeeds through the ODBC router.

Microsoft SQL Server OLE DB Provider has limitations in converting a BSTR type into a datetime database type. So, if a CTD application is trying to insert a String variable into a datetime column, the provider requires that the datetime format in the String be <yyyy-mm-dd hh:mm:ss>. If the datetime format is different, insert call fails. The problem is that the SQLBase string datetime format is different. SQLBase format is <yyyy-mm-dd-hh:mm:ss.msmsms>. Note here the difference is in the hyphen (-) character between the date part and the hour part. But, a similar operation succeeds through the ODBC router.

Microsoft SQL Server OLE DB Provider does not support converting a datetime database type into a BSTR type. So, if a CTD application is trying to fetch a datetime column type into a CTD String variable, the fetch call fails. However a similar operation succeeds through the ODBC router.

When using OLE DB, the error reporting behaviour at `EndOfFetch` is slightly wrong. At the end of a fetch, `SqlFetchNext()` correctly returns `FALSE` and sets `FetchIndicator` to `EOF (1)`. However, a call to `SqlGetStatementErrorInfo()` will return an error number of 0 (and no error text). This behaviour, which also applies to result sets returned from stored procedures, does not occur when using the native routers. In the case of native routers, a call to `SqlGetStatementErrorInfo()` will correctly return error number 1 (and the text "End of fetch").

`SqlPrepareSP` does NOT support Output parameters when used with Microsoft SQLServer. Output parameters are supported with Oracle PLSQL - both with Microsoft Oracle Provider and Merant Oracle Provider. Array type parameters are NOT supported with any provider. Return status is supported with Microsoft SQLServer. There is

no separate function to get the value of the return status.

With Microsoft Oracle OLE DB Provider, If the user has only Oracle 7.x client software installed, they cannot use the OLE DB provider to execute PL/SQL Statements that have out parameters. The out parameters are not updated.

Connecting to Oracle 8.x databases in an MTS environment is quite involved. Please refer to the following Microsoft Knowledgebase article for instructions on this subject:
<http://support.microsoft.com/support/kb/articles/Q193/8/93.asp>. The Oracle 8.1.6 client works best with MTS.
NOTE: Oracle 8.1.6 client was still in Beta at the time of this release.

CTD 2000 has increased the number precision from 18 digits to ~40 digits. This significant improvement can be used with a database only if you use the OLE DB connectivity. If you connect to SQLBase or via the Native routers to any of the databases (ODBC Router or Oracle Router and so on), you will get the old precision of up to 18 digits.

The Native router for Ingres is not threadsafe. You should not use Ingres connectivity with 'Single Threaded Apartment' COM servers. Usage in Web applications may also give unpredictable results.

SqlGetParameter (DBP_BRAND) for all OLE DB statements created, will return 41 (SQLBOLE). Whether the datasource was Microsoft SQLServer or Oracle, the call will always return SQLBOLE.

The Merant XML OLE DB provider must be used with the Merant Reflector to enable SQL operations from SQLWindows. At the time of this release, an apparent regression in the Reflector prevents you from creating catalogs in the Merant OLE DB Administrator. Without creating catalogs, a call to SqlCreateStatement() will return an error.

Certification Information

SQLRouter / Oracle

SQLRouter / Oracle provides native connectivity from Centura Team Developer to Oracle.

SQLRouter / Oracle Compatibility

This version of the SQLRouter / Oracle is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Oracle Software

- Oracle 8.1.5
- Oracle 8.0.5
- Oracle 8.0.4
- Oracle 7.3.4
- SQL*Net 8

Network Software

- TCP/IP

SQLRouter / Microsoft SQL Server

SQLRouter / Microsoft SQL Server supports Microsoft SQL Server 7, using its native call-level interface-ODBC. The following section contains information about SQLRouter / Microsoft SQL Server 7.

SQLRouter / Microsoft SQLServer Compatibility

This version of the SQLRouter / Microsoft SQLServer is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Microsoft software

- Microsoft ODBC 3.5 Driver Manager

Microsoft SQL Server software

- Microsoft SQL Server 7.0. on Windows NT

Microsoft SQL Server client software

- Microsoft SQL Server ODBC driver version 3.70.06.23, ODBC version 3.51

SQLRouter / ODBC

SQLRouter / ODBC supports generic ODBC interfaces.

SQLRouter / ODBC Compatibility

This version of the SQLRouter / ODBC is certified with:

Operating systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Microsoft software

- Microsoft ODBC 3.5 Driver Manager

ODBC drivers certified

- Microsoft SQL Server 7.0 driver from Microsoft v7.00.623

Network Software

- TCP/IP

SQLRouter / Velocis

SQLRouter / Velocis supports connectivity to the Centura Velocis 3.0 database, through ODBC.

SQLRouter / Velocis Compatibility

This version of the SQLRouter / Velocis is certified with:

Operating systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Microsoft software

- Microsoft ODBC 3.5 Driver Manager

Velocis ODBC driver certified

- Centura Velocis 3.0 driver v1.03.00.00

Network Software

- TCP/IP

SQLRouter / Sybase

SQLRouter / Sybase provides native connectivity from Centura Team Developer to Sybase Adaptive Server 11.x using Sybase CT-Lib.

SQLRouter / Sybase compatibility

This version of SQLRouter / Sybase is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Sybase System 11 software

- Sybase SQL Server Release 11.0 for Sun-svr4/OS 5.4 (Solaris)
- Sybase Open Client Client-Library Release 11.5
- Sybase Open Client Net-Library Release 11.5
- Sybase Open Client Client-Library Release 11.9.2
- Sybase Open Client Net-Library Release 11.9.2

Network Software

- TCP/IP

SQLRouter / Informix

SQLRouter / Informix provides native connectivity from Centura Team Developer to Informix OL and Informix SE.

SQLRouter / Informix Compatibility

This version of SQLRouter / Informix is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0

Centura Software

- SQL/API 751 PTF1

Informix software

- Informix-OL 7.3 on Windows
- Informix SE 7.3 on Solaris 2.4

Informix Client software

- Informix-Net TCP/IP 7.3 TD 1 for Windows NT and Windows 2000

Network Software

- TCP/IP

SQLRouter / Ingres

The following section contains information about SQLRouter / Ingres. This release of SQLRouter / Ingres supports CA-OpenIngres v1.2 for Windows NT. Please read *Connecting Centura Objects to Databases* for information regarding connectivity to Ingres. Note that the native Ingres router is not thread-safe (see *Known Problems and Limitations*).

SQLRouter / Ingres Compatibility

This version of SQLRouter / Ingres is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQL/API 751 PTF1

Ingres Software

- CA-OpenIngres for Windows NT version 2.0 (w/1.2 Client)
- CA-OpenIngres NET (int.wnt/03)
- Patch 4015

Network Software

- TCP/IP

OLE DB Data Providers

OLE DB provides connectivity from Centura Team Developer to different databases through OLE DB Data Provider.

Merant Oracle 7 ADO Provider v02.50.0000

This version of the OLE DB provider is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Oracle Software

- Oracle 7.3.4

Network Software

- TCP/IP

Merant Oracle 8 ADO Provider v02.50.0000

This version of the OLE DB provider is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Oracle Software

- Oracle 8.1.5
- Oracle 8.0.5
- Oracle 8.0.4

Network Software

- TCP/IP

Centura SQLBase OLEDB Provider v1.0.00 PTF2

This version of the OLE DB provider is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Centura Software

- SQLBase 7.5.1 PTF1

Network Software

- TCP/IP

Merant Sybase ADO Provider v02.50.0000

This version of the OLE DB provider is certified with:

Operating Systems

- Microsoft Windows 2000
- Microsoft Windows NT 4.0
- Microsoft Windows 98
- Microsoft Windows 95

Sybase Software

- Sybase SQL Server Release 11.0 for Sun-svr4/OS 5.4 (Solaris)
- Sybase Open Client Client-Library Release 11.5
- Sybase Open Client Net-Library Release 11.5

- Sybase Open Client Client-Library Release 11.9.2
- Sybase Open Client Net-Library Release 11.9.2

Network Software

- TCP/IP