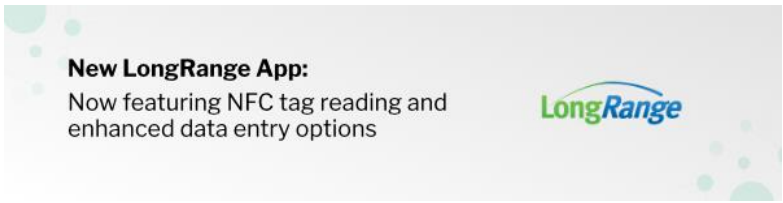
LANSA NEWSLETTER

New LongRange version

Version 1.38 now available!

We are excited to announce the latest release of the LongRange v1.38.0 application.



LongRange is a mobile app builder for creating and maintaining native apps for Apple iOS, Android and Windows PCs and Tablets using IBM i development tools and methods.

This enhancements focused release is an effort to improve the user experience and usability for the LongRange application.

The updated application is available in the Android, iOS and Windows App stores.

This release consists of numerous new features that have been long requested by our customers and will greatly enhance their LongRange user experience and overall application capabilities.

This includes:

- Enhancements to the image element to allow for selection of multiple pictures.
- aXes Mobile ASR-022 (Barcode reader) support.
- Support for NFC tag reading on iOS and Windows devices.
- Ability to show an "English keyboard" for the Barcode element.

INSIDE THIS ISSUE

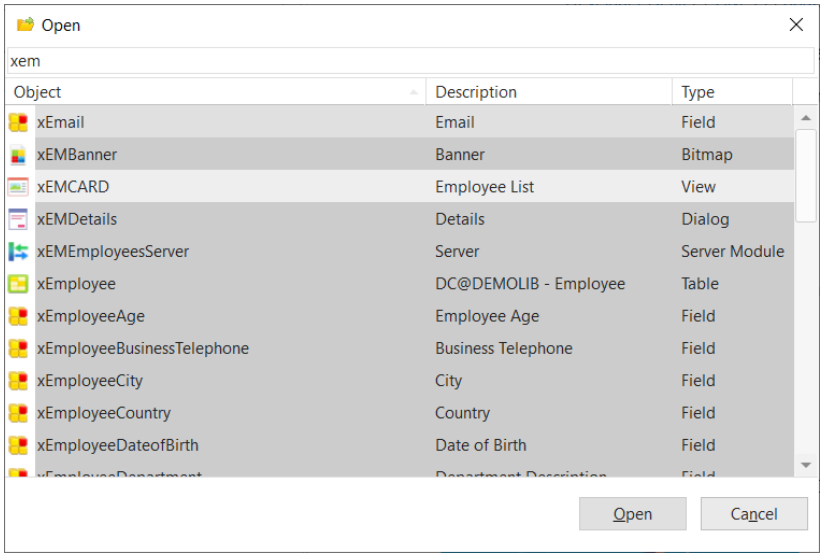
EPC150050

New EPC available for LANSA V15!

We recently released a new EPC for LANSA V15. It contains lots of new features and solved problems. This section outlines the new features and solved defects of EPC150050.

New features

- Improve UTF8 support in Deployment Tool.
  - Improved UTF8 support in the Deployment Tool to provide better interface experience for Japanese.
- List EPCs and Patches in the EPC log by date applied, not by numbered sequence.
  - EPC Log and Imports Log now sortable by date or name.
- Support logical files in the New Server module / Application template.
- Add support for Ctrl+A (select all) in VL Open dialog.
  - Select all shortcut Ctrl+A is now supported in the Open dialog.



- Support BitShiftLeft and BitShiftRight intrinsics.
  - Bit shift is a bitwise operation where the order of several bits is moved, either to the left or right, to efficiently perform a mathematical operation. Bit shifts help with optimization in low-level programming because they require fewer calculations for the CPU than conventional math. Bit shifting operations may be declared explicitly by the programmer, or automatically by the compiler if it can identify that such an optimization is possible.
  - For example, consider the integer 23, represented with eight bits:

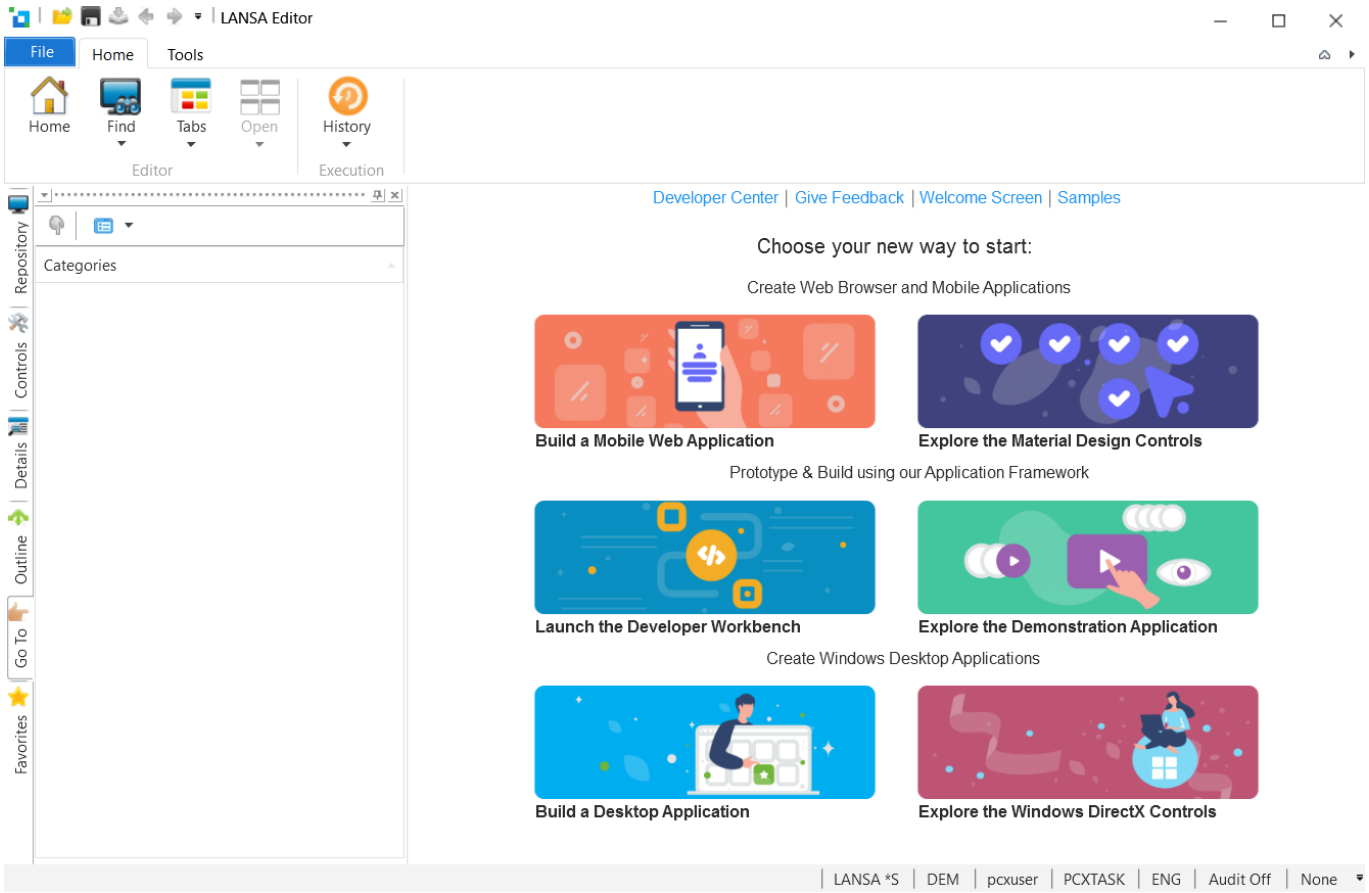
    ```
    00010111
    ```

    If we shift all the bits left one place, discard the leftmost bit, and insert a zero on the right, the result is the binary representation of 46:

    ```
    00101110
    ```

    This action is effectively the same as multiplying the number by two.
  - These intrinsics are available on LANSA Integer fields.

- Enhancements to generated Web Page for routing template.
    - Minor enhancements to interface and template used to generate a new Web Page with Routing.
- Upgrade jQuery UI to version 1.13.0.
    - Upgrade to enable jQuery UI to work with jQuery 3.6.0.
    - **User actions:** If you use jQuery for your own Javascript code, you may need to make changes due to jQuery deprecating functions and features.
- Request to include LongRange license into AWS Scalable license.
- Upgrade CKEditor to version 4.17.1.
- Upgrade jQuery File Upload to version 10.32.0.
    - jQuery File Upload plugin upgraded to version 10.32.0.
- Upgrade json-js to version 2019-08-25.
    - Json-js is a shim that was initially shipped with LANSA to support outdated browsers such as IE8. As the most dated browser in our supported platforms already defines the native Javascript JSON object, this shim is no longer required. We have updated it to its current release in case users are including it as it is shipped as an external resource.
    - **User actions:** Remove json-js from your WAMs as it is no longer needed. LANSA plans to remove this external resource in a later release.
- Upgrade big-js to version 6.1.1.
- Add IASP details to LANSA About.
    - IASP details added to LANSA About. OSU library (no longer shipped) removed.
- Remember size for Import dialog in IDE.
    - The Import dialog now opens to the same size as last opened.
- Modernise images on Home page and Welcome page.



- Upgrade jQuery for LANSA:XHTML to version 3.6.0.
  - jQuery Core for Technology Service LANSA:XHTML upgraded to version 3.6.0. Note that jQuery Core for Technology Service LANSA:JQMOBILE remains at version 1.12.4 as version 3.6.0 is not compatible with jQuery Mobile. The jQuery Mobile project is no longer supported: https://jquerymobile.com/.
- Allow user to cancel from the version control dialog.
  - This provides the ability to cancel long running jobs or to cancel from a job which gets into a state which requires user input.
- Cannot scroll a webpage on mobile until a field is touched to set focus to it.
- Update request to add more material design icons.
  - Latest set of Material Design Font Icons incorporated into IDE and VL-Web Runtime.
- HHMM format for AsTime intrinsic and HH:MM and HH:MM AM/PM for AsDisplayString.
  - Added HHMM and HHsMM as AsDisplayString, AsNumber and AsTime options.
  - Added CustomDisplayString to Date and Time data classes to enable more formatting that includes AM/PM options.
  - Enabled CustomDisplayString for Date, Time and DateTime on the web.
- Drag and drop a component to a Web Pages resource tab incomplete.
  - Server Modules can now be added to the Resources tab of a Web Page.
- Enhance the Go To feature to separate the different types of routines.
- IBM i OTHER file with many join logicals slow to load in V15.
  - Checkboxes have been added to allow for the selection of Logical Views to be imported and to show any Join Logicals. Join Logicals are not available to be imported.
- LANSA V15 fails to compile components due to Fatal Crude Complexity Rating.
  - Option to "Suppress FATAL Crude element Complexity Rating in function" is now supported in VCS environment.
- APIs and Blobs: file name is being sent as string not as a base64 blob.
  - *Issue addressed with the following enhancements:*
    1. Fragment string handler used by #PRIM_JSON.Reader for tokens longer than 64K.
    2. New method TokenAsBase64BinaryFile added to #PRIM_JSON.Reader.
    3. New features IsStringChunked and AsBase64BinaryFile added to #PRIM_JSON.Node.
    4. Web API formats 'Byte' (existing) and 'BytesAsObject' (new) support Base64 data for BLOB(s) in operation request and response payloads.

Solved defects

- TouchSize property of textarea not working as expected.
- VCS: Objects with duplicate YAML files can cause confusion with Git Status.
- Paste of SBCS & DBCS of exact same length as field incl SO/SI bytes crashes.
- Exported excel file contains mixed fonts, without any observable pattern.
- SQLNULL date/numbers do not display empty when exporting to Excel, PDF and CSV.
  - They are now displayed similar to how they appear in the list.
- Export to CSV not handling quotes or commas in cell values.
  - All edit masks for numbers are removed (only decimal separator remains) as export to CSV is a data export (no formatting). Text with quotes and commas are now handled according to CSV rules.
- Prompter visualization on a grid is not displayed in certain circumstances.
- Date display is out by 1 day when exporting *SQLNULL to Excel using #List.Export.
  - Workaround implemented to bypass defect in ExcelJS third party library.
- After displaying and closing a message box from a dialog, focus is not returned.
  Horizontal scroll bar does not follow focus cell when tabbing or pressing enter.
  Objects set to null / Unrealized take a long time to disappear.
- Clicking on prompter button on field on web page causes IDE to crash.

- Cannot use Host Monitor after changing SBMJOB command default to MSGQ(*WRKSTN).
  - Create and compile batch jobs, import/export and Host Monitor in LANSA now specify explicitly to send the messages to the user profile. The RDML SUBMIT command has the same change. This is to overcome problems in sites that override the IBM i supplied SBMJOB command to a value different to the IBM default *USRPRF.
- ExpanderPanel PrivateStyle is not working as expected.
- IDE abend when registering a specific ActiveX control (Fujifilm Docuviewer v9.1).
- Caption of field can get truncated for picklist if caption is longer than field.
- Webmodules.conf has conversion issues after check-in to French IBM i.
- Numbers in fields with no edit code are displayed blank in exported Excel file.
- CSP: Need to add *.gstatic.com to list of sites for allowable styles.
  - Domain *.gstatic.com added to allowable style source.
- Support Cloud Licensing for AWS SKU lansa-scalable-stack-2.
- Events not fired as expected when using Enter to move around list.
- Menu bar not shown the second time a modal form is shown.
- Error not issued on DEF_ARRAY if RDMLX field used in OVERLAYING.
- Images in a Web App are not deployed.
  Error 0211 (DBCS string too long) error for DBCS shift J field.
- AWS EPC Check error due to insufficient rights to enumerate services.
- Using Tab navigation in list view hides the column header.
- VL editor crash opening a Reusable Part with "Target render Type" set to Win32.
- Tabstop order is incorrect when editing Process's [Attachments].
- V15 Listener can look for a license file with the wrong extension.
- #PRIM_LIST.DropdownColumn shows selected value only when focus is lost.
- IDE crashes when selecting a specific ActiveX (QRMakerAD).
  Prompter weblet display position is wrong after upgrade from V13 to V15.
  - Prompter window was not taking into account the scrolled position of the prompter button.
- Japanese description of User Name in 'Connect to Remote System' is corrupted.
  - Japanese translation provided for User Name in Remote Connect dialog.
- Excel file created by list export is corrupted if the list has Edit Code 'A'.
- Warning message 'extended identifier XG_... remains unexpanded' in editor.
- IDE abends with unquoted FaceName value.
- "Dragstyle(Automatic)" for list change behavior of checkbox with Material Design.
- IDE crash when server module API and Data Model tabs use MasterOnly field.
- The caption of list dropdown is truncated.
- The second message box on a webpage does not get the focus.
- VCS cmd line compile defects.
  - 1. Tables using the partition default library were always flagged as errors.
  - 2. Errors used the Alternate Name which did not always exist for an object
    3. Logic for detecting whether an object was compiled was incorrect (and still needs more changes).
  - 4. Derivation of the executable name did not implement the correct algorithm. Foreign language replacements for @#$ were not accounted for and 1st character replacement was not correct.
  - 5. Enhancement - added list of objects skipped.
  - 6. Reporting on object state when an object was skipped/filtered out.
  - 7. Make compile.cmd completely prompt free.
  - 8. Clarify log file locations in logging messages.
- XSL Editor: Customizer dialog window not large enough for content.
- Tab panels custom property editor buttons not rendering correctly.
- Editing the disabled property of an inline checkbox throws a JS error.
- EPC/hotfix and upgrade backout libraries not created in the correct IASP.
- Required imports not available in partition init option for new RDML partition.
  - List of imports for an RDML multi-lingual partition was incomplete. This defect has now been rectified.
- When hovered over, the first row of DropDown is retrieved as the CurrentItem.

- Control using FixedPosition(True) is not correctly positioned by table layout.
- Messages cleared when XPrim_JSONObject is destroyed - may clear app messages.
- Issues when deleting and recreating an object with same long name.
- Saving resuable part window positioned before field visualisation window.
- V15 Logon dialog Help link shows as V14 documentation.
- If a password contains '%' the Sys Init fails with Character '%' not valid error.
- ThemeDrawStyle applied to dropdown list is not correctly applied to items.
- File checked in from IDE has incorrect field labels when viewed from RUNQRY.
    - When checking in a file definition, errors will now be returned for fields in the file definition that are not yet defined in the repository and labels will be blank for those fields.
      Before checking in a file definition, ensure all file field definitions are checked in.
- Cannot run SELECT_SQL on @@RRNO column - both #@@RRNO and X_RRNO fail.
- Cannot perform multiple installations of the same web application on same server.
    - *Note the following:*
      This has been tested using the currently logged on user as the webuser too. E.g. if logged on as user1 then the webuser is also user1.
    - Other combinations may work. If they seem not to then you need to reproduce the issue using this test case in order to receive support.
    - The user (e.g. user1) must be given dbowner rights to the database so that tables can be created.
    - The install will create a USER DSN for the current user. If the webuser is different then you must log on as that user and manually create a User DSN.
      The steps are:
      1. Open an Administrator command prompt
      2. Install as user that is the web user and has db_owner rights to the database
      1. Install to a different directory
      2. Install to a different database
      3. Specify the current user on the web user dialog with the correct password
      4. Next available ports will be used, or choose to configure the ports yourselves
      3. Do not need to Create User DSN as same user being used
      4. There is no System DSN to delete
      5. Change the Webalias as appropriate - .\run\conf\lansaweb.conf
    - When uninstalling, ensure the uninstall is ALSO run from an administrative command prompt.
    - A test has been performed where 5 separate installs were done. All had data entered which was not visible to any of the other installations. When 1 application was uninstalled, the rest still ran correctly after the uninstall (IIS has to be stopped during installs and uninstalls). Installing the same application again to the same database showed the data as it was before the uninstall.
      Default ip ports were used for all installs. (V15 install auto detects ports in use and uses the next free port in sequence).
- Unable to consume the LANSA Scalable License in 2016 AMI when using SuperServer.
- Text size for the field caption in a Dialog changes between fields.
- New View does not create required Notes and Attachments code or icons.
- Embedded page gets stuck on loading when using service workers.
- Unable to use own icon in a PWA application.
- Prim_list - Virtualization(Page) causes blank items to be shown.
- Failure to export list to PDF when list contains a hidden column.
- Can no longer drag and drop on Mobile devices after applying EPC150040.
- Details properties tab needs vertical scroll bar for SM, API, Schema Properties.
- PWA icon not being recognized or used after applying EPC150040.
- ButtonDefault not working with EPC150040.
- For PWA, not possible to configure an Icon for "homescreen" on iOS.
  Snapping form to side of screen reverts to default location with CLR_MESSAGE use.

- Partition Init errors and web execution errors after upgrading to Windows 11.
    - After upgrading from Windows 10 to Windows 11, all web connections to the D/A server generate a 404 error.
      Errors are also issued for select imports in the Partition Initialization. Refer to the entry in https://www.lansa.com/support/v15news/
- No help available when pressing F1 on the Create a new web page (with routing).
- V15 API response times out and fails to send the data > 8MB in Model B.
- Using the source parameter for #prim_md.ListEdit will crash IDE.
- IDE Crash with Runtime Error while switching between Source and Design Tab.
- V15 WebService failure if size of characters in base64 field increased.
  PRIM_SOND unable to clear or reset file name.
- Runtime error when loading a view containing #PRIM_LIST.DropdownColumn.
- JSON reader is interpreting the Number Property incorrectly.

EPC140070

New EPC available for LANSA V14!

We recently released a new EPC for LANSA V14. It contains lots of new features and solved problems. This section outlines the new features and solved defects of EPC140070.

New features

- Update OPENSSL to the later version 1.1.1d.
- Add events for List.CellLostFocus and List.CellGotFocus.
- Native Chart support in Visual LANSA for the Web.
    - Visual LANSA for the Web now supports Charts as native LANSA controls.
      Previously charts were done through Widgets, now you can drag and drop them from the Controls Tab and style and manipulate them at design time just like you can with all other LANSA controls.
      Implementation at runtime is done through the ChartJS library, which draws directly onto the HTML5 canvas. This means it's all done in memory which doesn't require a connection to the internet, unlike the shipped GoogleChart widgets.
- Do not automatically delete old layout when creating new layout.
- FilePicker shows an unwanted hint (No file chosen) on Chrome/Firefox.
- Allow Session Token to be stored and shared between browser tabs.
    - It is now possible to save and restore the session token between browser sessions through the use of the #SYS_WEB.Session object.
- Support new AWS Marketplace Offers - Visual LANSA.
- DC@F23V1 has huge number of opens per minute on heavy load Webevent application.
    - Option added to enable caching language level check through F23.
      This option is disabled by default.
      To enable, set data area DC@LWEB position 500 length 1 to 'Y'.
- XSS vulnerabilities found in a LANSA WAM.
    - Context item values now scrubbed to prevent XSS injections.

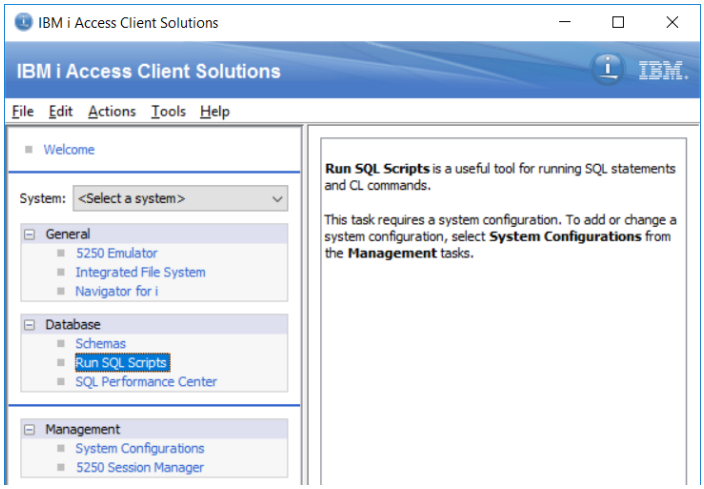
Solved defects

- VL crashes when pulling or checking out a branch from Git.
- Android devices not detecting data in fields.
- Blob/Clob files with DBCS names cause a server error in SuperServer.
    - This relates to working lists which contain BLOB or CLOB fields being exchanged in CALL_SERVER_FUNCTION. If the BLOB/CLOB was assigned a file which had a DBCS name an error would occur.
- PRIM_TREE scrolling issue when item height exceeds the viewport.
- Error MCH1210 for Export List on IBM i (very large exports).
    - Exports with many large WAMs and TSP/language permutations may cause a sequence counter to overflow.
- LANSA Runtime error when showing a popup panel more than once
- SELECT - ISO date key field used in startkey select crashes
    - User Action: Recompile any effected OAMs.
- X_RUN error in combase.dll when closing form on Windows 2016.
- *TIMEDATEC, *TIMEDATE, *TIMEDATE8C and *TIMEDATE8 are missing on the WEB.

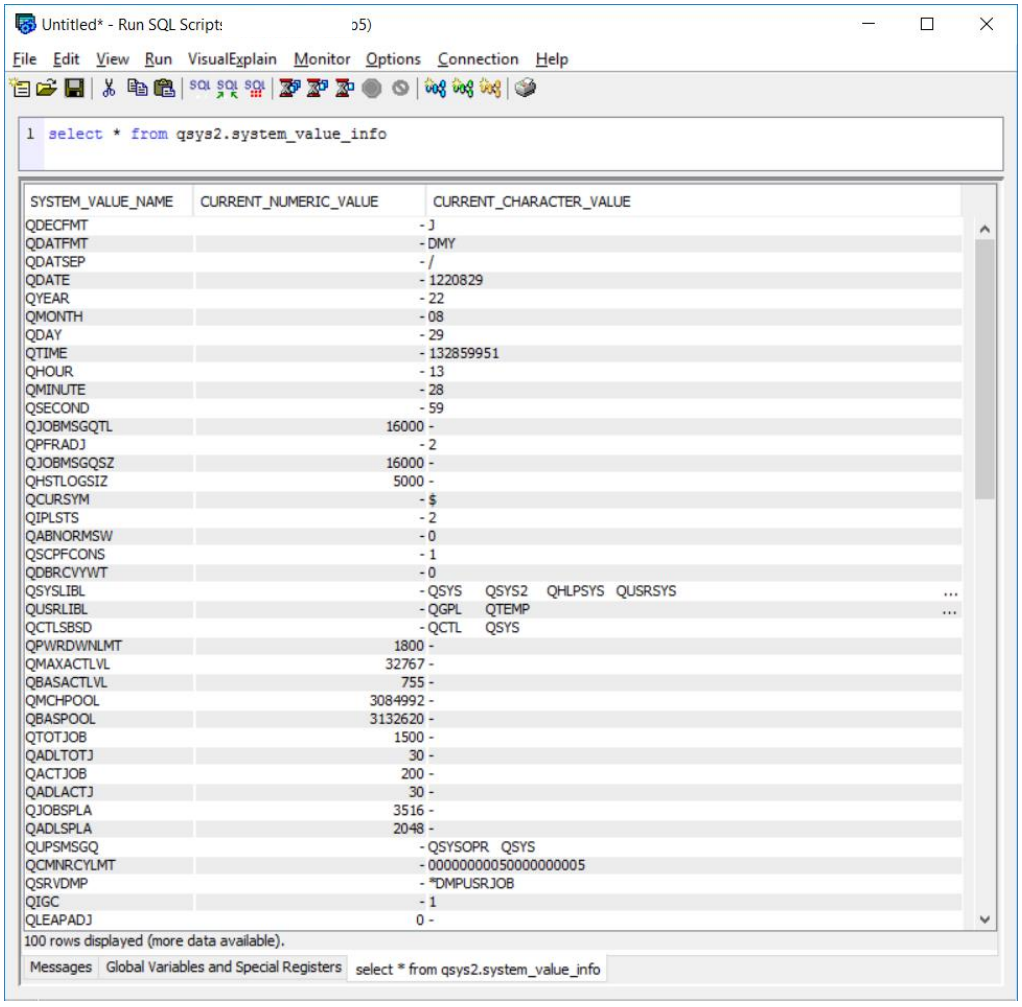
- SYS_WEB.Navigate crashes on Edge if Enterprise Mode is enabled.
- Memory leak in PRIM_CCOL.CalculateHash stops components from being destroyed.
- FaceName truncated when used in PRIM_THM.
- Material Design File Picker runtime error.
- Windows Azure VMs fail to be licensed under certain circumstances.
- Shortcut key event handler does not work in a GRID on a Japanese OS.
- Web Page layout is changing when pressing save button.
- Inconsistent behaviour in Replace intrinsic in a DBCS IBMi environment.
- Field visualizations should ignore a layout's variable sizing directives.
- Access violation error in Memo control with TypeRender=W.
    - Value modification of Multiline edit field visual when unrealized sometimes triggered a runtime error and other times an access violation.
- Improve pre-V15 (openssl 1.0) connect compatibility with V15 (openssl 1.1).
- Browser freezes when moving focus after adding many records to a list.
- Command-line build abends because of duplicate YAML files.
- Cannot input DBCS in memo box with NVarChar source field.
- LceLansaCall error 'The process definition cannot be found' calling CL program.
- In a web page, the menu width shrinks each time popup menu is shown.
- The width of the calendar of MD datetime picker shrinks when down arrow clicked.
- Visual LANSA unlicensed in AWS Windows 2016+ VMs.
- IDE abend when registering a specific ActiveX control (Fijifilm Docuviewer v9.1).
- Support Cloud Licensing for AWS SKU lansa-scalable-stack-2.
- Menu bar not shown the second time a modal form is shown.
- A list that is larger than the viewport incorrectly scrolls the page on a click.
- VL Application using .NET control fails with x_run dump at runtime.
- Incorrect alignment of text in a Web Page when using Flow Layout Manager.
- Multiplication operator rounding issue.
    - Rounding inconsistencies on Windows only when rounding results of maths that use component variables with decimals.
- IDE slowness: Large Reusable Parts can take a long time to close.
- Access Violation with AutoActions after VLF upgrade.
- Instance list processing very slow compared to older LANSA Versions.
- When a BLOB is being added to a table a temporary lock is created using DC@FOL.
- #SYS_WEB.StorageChanged event can fire even when storage is not changed.
- LANSA WAMS - Prompt & incorrectly resolves to &
    - Reentry fields are now retrieved using innerText instead of innerHTML. That is, any markup is ignored. The content is handled as simple text.
- Issues with PRIM_JSON objects - values not being parsed correctly.
- Import on VCS system crashes.
- Small typo in VLWEB locale JSON file for Dutch.
    - Typo in long day Dutch translation.
- Issue updating text field in EditorChanged event in grid after V13.
- Unlicensed message on Azure deployment due to missing Telemetry Service.
- Fatal Error when downloading the LANSA Package Manager when using v14.
- Problems with #PRIM_MD.FilePicker in LANSA V14 SP2.
- Wrong maximum length used to check password length when password rules in use.
    - Signon was checking maximum password length against system value QPWSMAXLEN when password rules other than *PWDSYSVAL were defined.
- Scalable license Azure VM Check fixed.
- Unable to consume the LANSA Scalable License in 2016 AMI when using SuperServer.
- Snapping form to side of screen reverts to default location when CLR_MESSAGE use.
- Partition Init errors and web execution errors after upgrading to Windows 11.
    - After upgrading from Windows 10 to Windows 11, all web connections to the D/A server generate a 404 error.
      Errors are also issued for select imports in the Partition Initialization. Refer to the entry in https://www.lansa.com/support/v14news/.
- IDE Crash with Runtime Error while switching between Source and Design Tab.

Show all IBMi System Variables via SQL script

The IBMi Access Client Solutions Windows tool has a Run SQL Script Database option.



If you run select * from qsys2.system_value_info, you will get a results of all IBMi system variables in one overview:



Web execution and Partition Initialization in Windows 11

Upgrading from Windows 10 to Windows 11 introduces web execution 404 errors and partition init import failures for all supported versions of Visual LANSA.

If you upgrade from Windows 10 to Windows 11, you can encounter several related problems in Visual LANSA. These errors can occur irrespective of LANSA version or EPC level.

The symptoms of the windows 11 compatibility issues are:

- A web execution error 404 is issued for pages that previously executed OK in Windows 10.
- Performing a Partition init of any of the options (Mandatory partition initialization/Visual LANSA Framework/WAM development/LANSA Client field and file definitions/Sample Material) will fail for some imports, for example Standard Widgets, Standard Resources, VLF.
  The import error is:
  Operating system Error occurred when attempting to perform EXECUTE operations.
- Connecting to a windows backend server (on Windows 11) in the Web Administrator will give a Connection failed (0x0000001c) error.

This compatibility issue has been fixed and the fix will be shipped in the next EPCs for V14 SP2 (EPC140070) and V15 (EPC150050) respectively.

VL Web and QuillJS

"Build a Mobile Web Application" from the main LANSA home uses a JavaScript library called QuillJS for Notes. However, the sample implementation in the Widget xNoteQuillEditor only uses some of the features available. This is a quick note on expanding and one of the issues with a potential solution.

xNoteQuillEditor refers to version 1.1.5 of quill.js. The latest is 1.3.6 so first thing would be to copy the existing widget and update the Scripts and Style Sheets under Resources.

What icons the user sees on the toolbar is controlled by the toolbarOptions variable. The inner arrays control space/flow of the toolbar.

This is what is shipped:

```
  var toolbarOptions = [
    [{ 'font': [] }],
    ['bold', 'italic', 'underline'],
    [{ 'list': 'ordered'}, { 'list': 'bullet' }],
    [{ 'color': [] }, { 'background': [] }],
    [{ 'align': [] }]
  ];
```

This is an example with additional options so users can add sizes, colour, images etc:

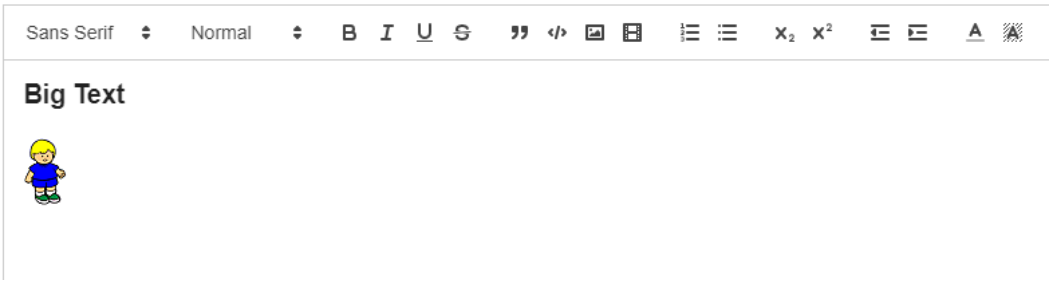
```
  var toolbarOptions = [
[{ 'font': [] }],
[{ 'header': [1, 2, 3, 4, 5, 6, false] }],
['bold', 'italic', 'underline', 'strike'],
['blockquote', 'code-block','image','video'],
[{ 'list': 'ordered'}, { 'list': 'bullet' }],
[{ 'script': 'sub'}, { 'script': 'super' }],
[{ 'indent': '-1'}, { 'indent': '+1' }],
[{ 'color': [] }, { 'background': [] }],
[{ 'align': [] }], ['clean']
  ];
```

Most of this works well out of the box. However, the major issue is with how images are implemented. This stores the image in the data as base64. With a string up to 64K, this potentially could use a lot of room.

However, there is a solution…..
Quill allows the customisation of actions. After quill has been registered an override can be added, so when a user clicks the image icon on the Quill toolbar it will call the JavaScript function selectLocalImage:

```
quill.getModule('toolbar').addHandler('image', () => {
  selectLocalImage(this.quill);
});
```

T
his then can be linked to a webservice to upload the image to a server, and return a registered URL. The URL will then be saved in the data, instead of base64. This means lots of extra room for the written word.



The data is stored like this:
{"ops":[{"insert":"Big
Text"},{"attributes":{"header":2},"insert":"\n"},{"insert":"\n"},{"insert":{"image":"http://localhost:8081/file/get/14911F6C45434CAA909C09CB13041939.gif"}},{"insert":"\n\n"}]}

Did you know?

Busy cursor

One simple way to provide feedback if a process takes a while to complete, is to show the Windows busy cursor. Event handling routines have a com_cursor() parameter which shows the hourglass cursor immediately, or after a delay of 1, 2 or 4 seconds.

If you test source below in a Form, you can see how it behaves:

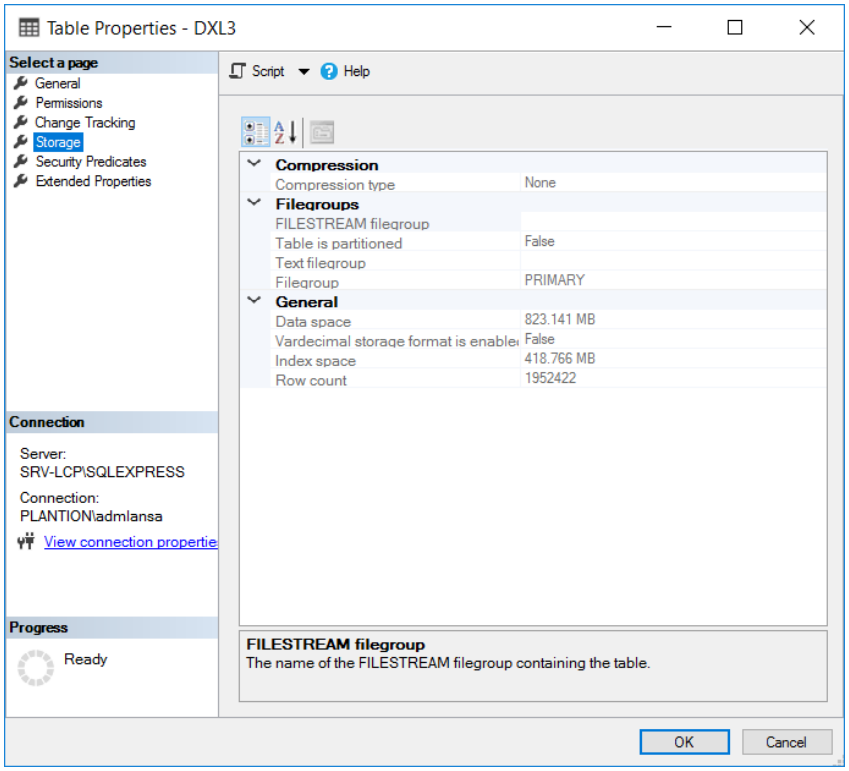
```
Evtroutine Handling(#Button1.Click) Com_Cursor(*IMMEDIATE)
  #std_int := 0
  Begin_Loop From(#std_int) To(500000000)
    #std_int += 1
  End_Loop
Endroutine
```

Com_Cursor parameter values are:

- *DEFAULT
- *DELAY_01
- *DELAY_02
- *DELAY_04
- *IMMEDIATE
- *NEVER

MS SQL Query: show table sizes

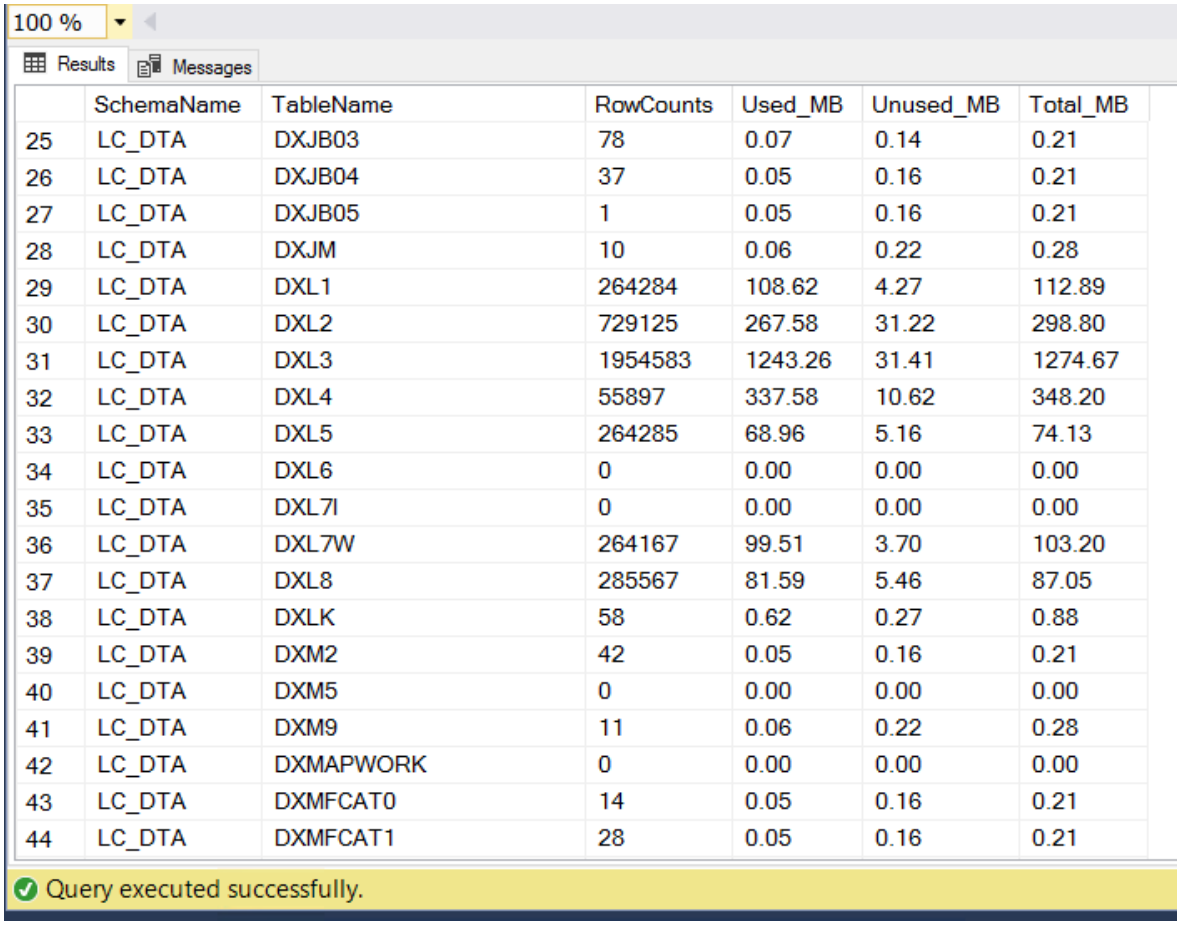
If you like to know the table size in MS SQL Server, you can open the Microsoft SQL Management Studio tool, select the table properties in a database to see:



If you are interested in info like this for all tables in your database, you can run script below (where the name of the database in script below is SRV-ABC)

```
USE [SRV-ABC]
GO
SELECT
s.Name AS SchemaName,
t.Name AS TableName,
p.rows AS RowCounts,
CAST(ROUND((SUM(a.used_pages) / 128.00), 2) AS NUMERIC(36, 2)) AS Used_MB,
CAST(ROUND((SUM(a.total_pages) - SUM(a.used_pages)) / 128.00, 2) AS NUMERIC(36, 2)) A
S Unused_MB,
CAST(ROUND((SUM(a.total_pages) / 128.00), 2) AS NUMERIC(36, 2)) AS Total_MB
FROM sys.tables t
INNER JOIN sys.indexes i ON t.OBJECT_ID = i.object_id
INNER JOIN sys.partitions p ON i.object_id = p.OBJECT_ID AND i.index_id = p.index_id
INNER JOIN sys.allocation_units a ON p.partition_id = a.container_id
INNER JOIN sys.schemas s ON t.schema_id = s.schema_id
GROUP BY t.Name, s.Name, p.Rows
ORDER BY s.Name, t.Name
GO
```

The script will show:



100 %

Results | Messages

	SchemaName	TableName	RowCounts	Used_MB	Unused_MB	Total_MB
25	LC_DTA	DXJB03	78	0.07	0.14	0.21
26	LC_DTA	DXJB04	37	0.05	0.16	0.21
27	LC_DTA	DXJB05	1	0.05	0.16	0.21
28	LC_DTA	DXJM	10	0.06	0.22	0.28
29	LC_DTA	DXL1	264284	108.62	4.27	112.89
30	LC_DTA	DXL2	729125	267.58	31.22	298.80
31	LC_DTA	DXL3	1954583	1243.26	31.41	1274.67
32	LC_DTA	DXL4	55897	337.58	10.62	348.20
33	LC_DTA	DXL5	264285	68.96	5.16	74.13
34	LC_DTA	DXL6	0	0.00	0.00	0.00
35	LC_DTA	DXL7I	0	0.00	0.00	0.00
36	LC_DTA	DXL7W	264167	99.51	3.70	103.20
37	LC_DTA	DXL8	285567	81.59	5.46	87.05
38	LC_DTA	DXLK	58	0.62	0.27	0.88
39	LC_DTA	DXM2	42	0.05	0.16	0.21
40	LC_DTA	DXM5	0	0.00	0.00	0.00
41	LC_DTA	DXM9	11	0.06	0.22	0.28
42	LC_DTA	DXMAPWORK	0	0.00	0.00	0.00
43	LC_DTA	DXMFCAT0	14	0.05	0.16	0.21
44	LC_DTA	DXMFCAT1	28	0.05	0.16	0.21

Query executed successfully.

RUNSQL parameters and usage

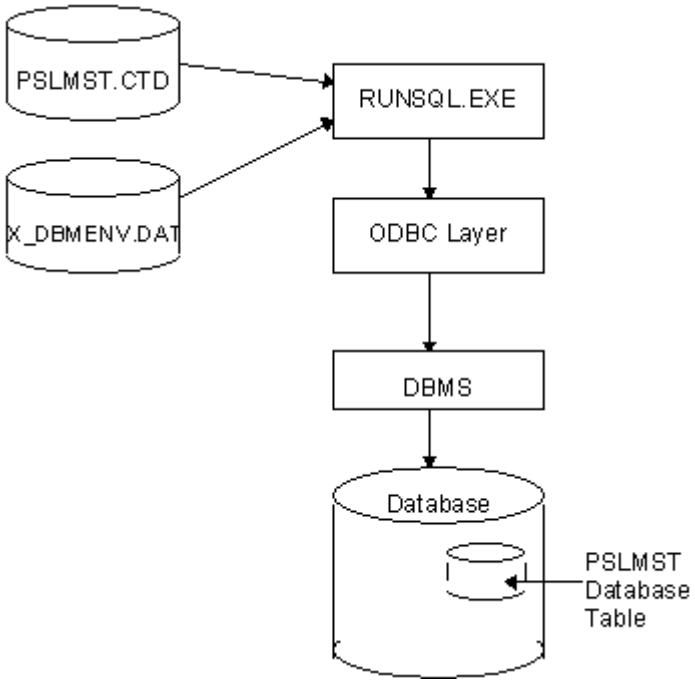
As documented (*) the RUNSQL utility can be very powerful in some cases
(*) see: https://docs.lansa.com/15/en/lansa015/index.htm#lansa/DEPB7_0040.htm?Highlight=runsql)

All Visual LANSA systems are shipped with a utility named RUNSQL.

RUNSQL can be used to automatically create the definition of a table into any supported DBMS system.

RUNSQL, combined with a .CTD (Common Table Definition File) file created by Visual LANSA during table compilation, form the essential ingredients that you need to move table definitions (not data) between different supported DBMS systems.

To understand how RUNSQL works consider this diagram:



If you imagine that you are attempting to transfer the definition of a table named PSLMST (that you have previously defined and compiled in your development environment) into another DBMS, then the key things shown in this diagram are:

- When the RUNSQL utility is invoked it reads in the file named PSLMST.CTD. This is the "Common Table Definition" (CTD) of table PSLMST that is created by Visual LANSA whenever you compile a table in your development environment. It defines table PSLMST and its associated views and indices in a common cross platform / cross DBMS format.
- RUNSQL also reads in a standard Visual LANSA file named X_DBMENV.DAT (Database Environment Definitions) that defines the unique characteristics of the DBMS that it is about to work with.
- By using PSLMST.CTD and X_DBMENV.DAT the RUNSQL utility can assemble the unique "create" commands appropriate for the selected DBMS.
- Once the "create" commands are assembled the DBMS is invoked (via ODBC in Windows environments) and it is asked to create the necessary table, view, indices, etc.

RUNSQL is a simple program. It has the following positional and non-positional parameters:

1	The (qualified) name of the .ctd (Common Table Definition) file that contains the definition of the table to be created. Common Table Definition files are created whenever you create a table in your Windows development environment. The.ctd files can be found in the X_LANSA\X_ppp\SOURCE directory (where "ppp" is the partition identifier). **A Visual LANSA table definition:** when the Table Schema is defined as using the partition's Default Table Schema then the CTD is located in: ..\x_win95\x_ppp\<Default Table Schema>\source when the Schema is defined as using the partition's Module Library then the CTD is located in: ..\x_win95\x_ppp\<Module Library>\source when the Schema is uniquely defined such that is not using the Default Table Schema and is not using the Module Library then the CTD is located in: ..\x_win95\x_ppp\source **Non-Visual LANSA table definition (i.e Imported tables):** the CTD is always located in: ..\x_win95\x_ppp\source
2	The name of the database or data source that the table is to be created into.
3	Commitment Option. Must be Y or N and indicates whether a commit operation is to be issued after the table has been successfully created. You should always set this parameter to Y.
4	Reporting Option. Must be Y, N or F to indicate the level of reporting that RUNSQL should use. Y = Report on all messages and warnings. N = Do not report any messages or warnings. F = Report on fatal messages only.
5	The type of database. This value is used to locate the database characteristics in the X_DBMENV.DAT file in ...\x_win95\x_lansa. Some of the standard shipped database types are: - SQLANYWHERE (Sybase Adaptive Server Anywhere and Sybase SQL/Anywhere) - MSSQLS (Microsoft SQL/Server)
6	The User ID/Password to be used when attempting to connect to the specified database or data source. This parameter is required even when using a Trusted Connection. In the case of a trusted connection, you could enter, for example: SA/TEST to specify that User ID SA with Password TEST is to be used when connecting to the database or data source. (The provided values are not used.)
7	Specifies the directory in which the X_DBMENV.DAT file can be found: ...\x_win95\x_lansa
8	Optional New Collection Name. Specify *DEFAULT to ignore this parameter.
9	Optional CTD Connection data option. Must be Y if the connection information contained in the .ctd file is to be used. Only Imported tables will have connection data in the .ctd file. N or blank if not used.
10	Optional Prompt User ID/ Password option. Is Y if the User ID and Password in the .ctd file is to be used. N or blank if not used.
11	Optional *(this is an undocumented feature on the LANSA website)* Drop option for Table/Index/View. Default is L. Y = Drop Table, I = Drop Indexes, V = Drop views, L = Drop Logical Views (Indexes and Views), A = Alter Table, U = User Handled, drop everything as I know what I'm doing!

Non-Positional Parameters

OLDCTD=	Old .ctd file name. This is the .ctd file that was last used to create/change the table. The new and the old CTD are compared and any changes or new columns are added to the table without deleting the existing data.

Note that non-positional parameters can be placed anywhere on the command line separated by spaces from the other arguments.

For example, this command executed from the x_Lansa\source directory compares myfile.ctd to myfile_old.ctd and makes the changes to the table.

Note that it also uses the x_dbmenv.dat file from the parent directory - – which in this case is the x_lansa directory:

Runsql "…\myfile.ctd" LX_LANSA Y Y MSSQLS uid/pswd "…\x_win95\x_lansa"

or

Runsql "…\myfile.ctd" LX_LANSA Y Y MSSQLS uid/pswd "…\x_win95\x_lansa *DEFAULT N N A OLDCTD="…\myfile_old.ctd"