

MSC-LIMS™ *Insights*

The source for news and tips of interest to users of MSC-LIMS,
an affordable laboratory information management system for small labs.

Issue No. 19

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Welcome

Welcome to **MSC-LIMS *Insights***.

This newsletter will help current MSC-LIMS users get the most out of their software, and will complement the product literature and downloadable demo that prospective users can find on our web site at www.msc-lims.com.



Join our mailing list for more information. Sign up at www.msc-lims.com/lims/maillist.html.

This newsletter is for and about MSC-LIMS users. We welcome your comments, and your suggestions for topics you would like to see addressed in upcoming issues. Please send your thoughts to newsletter@msc-lims.com. ▲

Users Welcome Version 4.0

Released in late November 2012, MSC-LIMS version 4.0 has been universally well received. Users appreciate the larger screens amid the new color scheme and look and feel of the Access 2010 interface. The driving force behind the development of version 4.0 was the need to solve the Jet 4 performance problems of version 3.x instigated by Windows 7. Providing access to available development tools was also an important consideration in the move to Access 2010.

MSC-LIMS 4.0's tabbed windows provide quick intuitive access to multiple open screens and reports. Save or email any system report in PDF or XPS format without any additional third-party software.

MSC-LIMS 4.0 requires a minimum screen resolution of 1024 by 768. The batch login screen, for example, benefits from the additional screen real estate by including the previous summary view popup within the single screen.

New fields to record invoice numbers, invoice date, purchase orders, and analysis dilution factors are among the new features added.

As in preceding versions, MSC-LIMS 4.0 installs and uses an isolated version of the Access 2010 runtime. This allows MSC-LIMS 4.x to coexist with any version of Microsoft Office with or without Microsoft Access.

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From the Developer

With justifiable pride and understandable relief, I am happy to announce the recent release of MSC-LIMS 4.0 and its overwhelming acceptance by users. The development of version 4.0 has been the most difficult of all MSC-LIMS upgrades, due mainly to a new version of Microsoft Access.

In the past, Microsoft has garnered a good reputation for maintaining backward compatibility in its operating systems and applications. However, the amount of VBA code we had to write for version 4.0, just to “fix” previously working code so that it works properly with Access 2010, is evidence that backward compatibility is no longer a priority in Redmond. Our Alt+Z keystroke workaround (see the MSC-LIMS 4.0 Release Notes) to broken hotkeys on forms with tabs is just one example.

Perhaps I am just an aging developer growing increasingly reluctant to change. But maintaining a stable, efficient, and productive tool for all MSC-LIMS users is our primary focus. When the underlying operating systems and development tools are unpredictable, that mission is made more difficult, but we remain committed to the task.

We always appreciate hearing from users and we have enjoyed your thoughts on version 4.0. Users make MSC-LIMS better with each release and we are grateful for your contributions.



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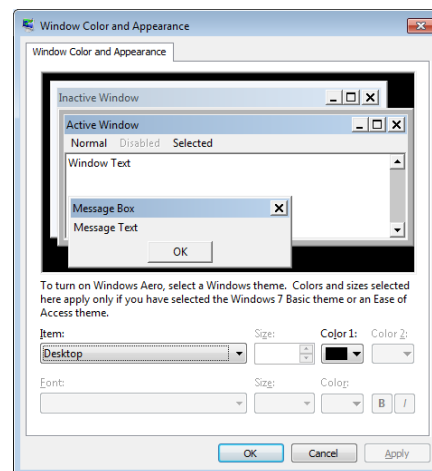
MSC-LIMS Version 4.0 Screen Colors


While many have praised the appearance of the new MSC-LIMS 4.0 screen layout and colors, it is important to note that the color scheme adopted by version 4.0 is not entirely our doing.

Section 508 of the U.S. Rehabilitation Act requires that a federal agency’s information technology must remain accessible to people with disabilities. Users with visual impairment may require a high contrast color scheme to affectively work with software applications. In addition to the federal government, many state and local governments also adopt some or all of the Section 508 standards and are included in the ranks of MSC-LIMS users. To maintain accessibility, MSC-LIMS continues to use a color scheme that is derived from Windows’ system colors.

Since every screen element including buttons, captions, fields, and titles uses a specific Windows screen attribute to derive its color, MSC-LIMS’ screen colors can be altered using the Windows’ Window Color and Appearance dialog. In Windows 7, color and appearance is easily altered using predefined and custom Themes. The screen below shows the

appearance of some of the screen items using the Windows 7 Basic theme.



MSC-LIMS 4.0’s selection of screen colors favors Windows 7’s available screen items, yielding an appearance that is visually optimized for Windows 7. Users running MSC-LIMS 4.0 on a Windows XP system will find the colors acceptable but noticeably different than a Windows 7 installation. 

Using Date and Time Analyses

Each MSC-LIMS sample includes fields to record the following dates and times:

Collected date	Collected time
Received date	Received time
Started date	Due date
Completed date and time	Reported date and time

Only the collected date is required. Both the Completed and Reported date and time are automatically updated when a sample is completed and optionally reported so these fields are not available for data entry. The remaining fields are often sufficient to document your sample's dates and times. However, you may encounter circumstances where you need to record additional dates and times, such as when specific testing was initiated and completed. While you could record this information in the sample's Notes field, consider using date and time analyses for more flexibility.

Results for analyses are either a floating point result value, a short predefined result type (e.g. Pass, Fail, Positive, Negative, etc.), or a combination of result type and value (e.g. < 0.01). Since dates and times in an Access database are represented and stored internally as a single floating point value (more on these values below), MSC-LIMS supports analyses with date, time, and date and time results.

To create an analysis for date and time results, simply add a new analyte in the Analyses setup screen, set the result and warning maximum to a large number such as 1E+99, and set the result and warning minimum to zero. Next, enter an appropriate format in the Report Format field. Since the date and time format options are numerous, the Report Format pick list does not include such formats. However, MSC-LIMS supports both named and user-defined format options for dates and times. The table below lists example formats you can use in the Report Format field. Use the Test button adjacent to the field to experiment.

General Date	1/31/2013 2:45:00 PM
Long Date	Thursday, January 31, 2013
Medium Date	31-Jan-13
Short Date	1/31/2013
m/d/yy	1/31/13
ddd mm/dd/yyyy	Thu 01/31/2013

m/d/yyyy hh:mm	1/31/2013 14:45
Long Time	2:45:00 PM
Medium Time	02:45 PM
Short Time	14:45
h:m	14:45
hh:mm am/pm	02:45 pm

For more information, see [Visual Basic for Applications Format Function](#) for a complete list of the named date and time formats as well as the characters you can use to create user-defined date/time formats.

To enter date, time, or date and time values in the results entry screens, either right-click within the result value field and select "Date/Time Value..." from the shortcut menu or enter a forward slash (/), colon (:), or semi-colon (;) to open the popup form for date and time entry. Right-click within the popup form's fields to access the shortcut menu options for dates and times including the popup calendar.

When you enter a date or time and close the popup you will see that Microsoft Access stores dates and

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times as a floating point value where the integer portion represents the date and the decimal portion represents the time.

Result			
Type	Value	Report	Units
▼	41275	1-Jan-13	n/a
▼			n/a
▼			n/a

A date value of zero represents December 30, 1899. Access stores dates before December 30, 1899 as negative numbers and those after as positive numbers. Valid time values are .0 (00:00:00) to .99999 (23:59:59), which represents a fraction of a day. Since Microsoft Excel uses the same numeric representation for dates and times, you can use Excel to "view" the numeric value. Enter a date or a time then change the cell's format to General or Number. Similarly, the example below shows numeric values formatted as dates, times, and dates and times. Columns B, D, and F repeat the values in the preceding column but with alternate cell formatting.

	A	B	C	D	E	F
1	41275	1-Jan-13	0.125	3:00:00 AM	41275.125	1-Jan-13 3:00 AM
2	41285	11-Jan-13	0.25	6:00:00 AM	41285.25	11-Jan-13 6:00 AM
3	41295	21-Jan-13	0.5	12:00:00 PM	41295.5	21-Jan-13 12:00 PM
4	41305	31-Jan-13	0.625	3:00:00 PM	41305.625	31-Jan-13 3:00 PM
5	41315	10-Feb-13	0.75	6:00:00 PM	41315.75	10-Feb-13 6:00 PM
6	41325	20-Feb-13	0.875	9:00:00 PM	41325.875	20-Feb-13 9:00 PM

You can use the numeric representation of dates and times to enter appropriate result and warning minimum and maximum values for your analyte. For example, if a time analyte should only allow values

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The system requirements to install MSC-LIMS 4.0 generally mirror those required for Office 2010:

- 500 MHz or faster processor
- 512 MB RAM
- 3.0 GB available disk space
- 1024 x 768 or higher resolution monitor
- Windows XP SP1, Windows Vista SP1, Windows 7
- Internet Explorer 6 or later

between 8:00 AM and 5:00 PM, enter these times in Excel cells then change the cell formats to General and you will see that you can set the analyte's result minimum to 0.33333 and result maximum to 0.70833.

You can also use the numeric representation of dates and times to query samples using your date and time analyses. Again, use Excel to find the date or time values then use the values in an analyte-specific criterion on the Analytes tab of the query control. The example below shows the criterion to find samples with the My Date analyte with a value between 1-Jan-13 and 31-Jan-13.

Add date and time analyses to your LIMS projects and samples whenever you need to document additional dates and times. Add data entry specifications and query capabilities and put date and time analyses to work for you. 

How to Copy and Open an Excel Template

Many newcomers to MSC-LIMS find the use and manipulation of Excel template files less than intuitive. This overview should alleviate any reservations and help you put your own Excel templates to use.

Most Microsoft Office applications including Excel support templates from which you can quickly create new documents. For simplicity, we will use here - and you should continue to use - Excel templates in Excel 97-2003 format. Such files have an xlt file extension to identify the file.

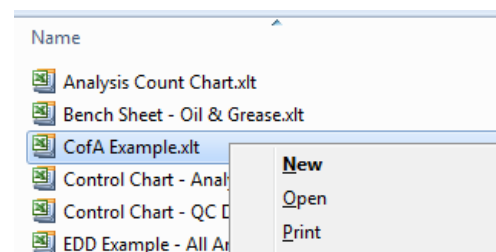
Before we start, it is advantageous to ensure Windows is configured to show a file's extension (e.g. xls, xlt, etc.). If you do not see file extensions following file names in Windows Explorer, use Tools | Folder Options, select the View tab then disable the "Hide extensions for known file types" option and click the OK button. With file extensions visible in Windows Explorer, Excel will also include file extensions in its title bar.

Simply put, a **template file** is used to create new documents which are derived from the template. To see this process at work, open Windows Explorer, navigate to the MSC-LIMS example templates in folder C:\MSC-LIMS\Examples\Excel Export Templates then double-click any file with an xlt file extension. Your double-click action will open Excel if it is not already running, then instruct Excel to create a **new workbook** in memory only (i.e. not yet a file) from the selected template.


It is very important to note that double-clicking did not open the actual template file. As evidence, note the name of the file in Excel's title bar. For example, if you double-click on file CofA Example.xlt in Windows Explorer, Excel will list CofA Example1 without an extension in its title bar. It is Excel's practice to append a sequence number to the file name when creating a new workbook from a template. Double-clicking a second time will yield a second workbook titled CofA Example2. Note that the lack of an extension (if Windows file extensions are enabled) indicates the workbook is only in memory and has not yet been saved as a file.

The easiest method to create your own template is to copy an MSC-LIMS example template. Once you have decided which template you need, simply use Windows Explorer's features to make a copy of the xlt file. For example, select the template file, use Ctrl+C to copy, then Ctrl+V to paste. Now rename your new template file accordingly.

To make changes to a template file you must open the xlt file (as we've already seen, double-clicking the file in Windows Explorer does not open the file; rather it creates a new workbook from the file). Open a template file by right-clicking in Windows Explorer and selecting Open from the shortcut menu as shown below. Note that double-clicking a template file is the equivalent of selecting New from the right-click shortcut menu.



You can also open a template file directly from within Excel. Whenever you intend to make a change to a template file, ensure you have opened the actual template by inspecting Excel's title bar. If you have opened the template file and Windows file extensions are enabled, you will see the xlt file extension in the title bar.


One final note about working with Excel templates for use with MSC-LIMS. An Excel workbook created by exporting a report's data to a template should not itself be saved as a template. The resulting workbook will include LIMS data and the named ranges automatically created for the data. Attempting to export to such a workbook saved as a template will result in numerous errors as the template's macro attempts to recreate named ranges that already exist. Excel templates used with MSC-LIMS should lack any LIMS data and their corresponding named ranges. 

Notes from Technical Support

Export Analysis Results to Excel

We frequently receive emails from users who need to get the results for one analyte across many samples into Excel.

To export existing results to Excel, export an appropriate LIMS report to a suitable template. With the exception of the generic MSC-LIMS Export Template all export templates are designed to receive data from a specific LIMS report. For example, all our final report example templates must be used with the Sample Summary report.


Since the generic MSC-LIMS Export Template has empty macros, you can export any LIMS report to this template to explore the report's available data. To export the results for one analyte from multiple samples, export an Analyte Comparison report to the MSC-LIMS Export Template. The results for the first analyte displayed on the Analyte Comparison report will appear in a column labeled "1" on the LIMSData sheet, the second analyte in column "2", etc. 

Importing Dates from Excel

A user importing samples from Excel, using Spreadsheet | Import Samples in the Batch Login screen, recently asked:

We are having a few issues with customers filling the [spreadsheet] properly for the date. Like 827/12 and it imported as 12/1/287. Is there any way to have the fields automatically demand the appropriate format to work with LIMS?

To ensure realistic dates are imported from Excel you can update your workbooks and add data validation to the date cells. Select the date cells in the workbook and use Data | Validation, set the Allow field to Date then enter an acceptable date range. You can also use formulas in the date range fields. For example, if the date should always be within the last 30 days use the formula =TODAY () - 30 in the Start date field and

=TODAY () in the End date field. Add your own messages on the Input Message and Error Alert tabs. 

Startup Errors


We often receive support calls or emails listing one of the following or similar error messages when MSC-LIMS is started.

"The expression entered has a function name that MSC-LIMS can't find."

"The Microsoft Jet database engine could not find the object 'MSysDb'."

After investigating, we frequently learn that the error is specific to one LIMS workstation and is often the result of a workstation crash that required a Windows reboot or another severe error that occurred while MSC-LIMS was running. The resulting errors are often due to a corrupt LimsCodeN.mde file, which can occur when MSC-LIMS is not closed normally. The solution is to copy a new LimsCode3.mde or LimsCode4.mde file to the folder where MSC-LIMS was installed (normally C:\MSC-LIMS).

To correct the problem with MSC-LIMS 3.x, simply copy file LimsCode3.mde from the Setup folder with the MSC-LIMS installation files to folder C:\MSC-LIMS, overwriting the existing file.

In MSC-LIMS 4.x, the problem can be corrected using one of two methods: If you are using Windows 7, open file MSC-LIMS.cab in the Setup folder containing the MSC-LIMS installation files. MSC-LIMS.cab is a cabinet file of compressed files. Copy file LimsCode4.mde from MSC-LIMS.cab to folder C:\MSC-LIMS, overwriting the existing file. Alternatively, if you are not running Windows 7 or can't otherwise open MSC-LIMS.cab, simply run Setup.exe in the Setup folder and follow the prompts to update your MSC-LIMS installation, which will copy a new LimsCode4.mde to the C:\MSC-LIMS folder. 

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For Customers Only

This section of *MSC-LIMS Insights* is devoted to current users of MSC-LIMS. Here we briefly introduce only the most recent additions to MSC-LIMS.com Customers Only pages. Use your login name and password to log on to the Customers Only section of our website.

Knowledge Base

[Creating an MSC-LIMS 4.x Edit LimsCode Shortcut](#)

If you have an MSC-LIMS Full System license and a full copy of Microsoft Access 2010 you can customize the MSC-LIMS software by modifying your LimsCode4.mdb file. You will need to create a new shortcut to start Access 2010 with MSC-LIMS' workgroup security file LimsUser4.mdw, then open LimsCode4.mdb using the Shift bypass key to preserve the Access 2010 ribbon. This article provides step-by-step instructions to create an "Edit LimsCode" shortcut and open LimsCode4.mdb.

File Library

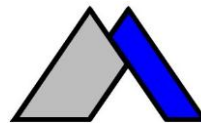
[MSC-LIMS Programmers Guide.pdf](#)

Full System licensees will find the MSC-LIMS Version 4.0 Programmer's Guide in the File Library as well as in the MDB folder within the Setup folder containing the MSC-LIMS 4.0 installation software. Version 4.0 of the Programmer's Guide has been updated for Access 2010.

Contact Us

Questions, comments, suggestions?

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