QUICK START GUIDE

MBRM UNIVERSAL Add-ins® version 10.3 (32-bit and 64-bit)
ALL USE SUBJECT TO LICENSE AND LIMITED WARRANTY (SEE LICENSE.PDF)

The **UNIVERSAL**™ **Add-ins are compatible with**
Excel (including the multi-threaded calculation / MTC feature), Access,
VB.NET/Visual Basic/VBA, C/C++/C#, Java, Python, Fortran, etc.
running on all major versions of Windows.

UNIX (Solaris, Linux, AIX) static and shared libraries available.

C/C++ source code license also available.

This "quick start guide" (file README.PDF) is very useful as an initial roadmap of how to use our software. You can refer back to it by either :

- Clicking the shortcut "**Quick Start Guide**" in the "**MBRM Universal Add-ins**" program group (accessed via Windows' "Start" button). The shortcuts can also be used to view the manuals, brochures, price list, discount schemes, order form, press extracts, client feedback, background article on risk management system development, Visual Basic and C/C++ examples etc.
- Or, opening the file **README.PDF** (in the installation directory, e.g. **C:\MBRM**).

Table of Contents

1. Installing MBRM Universal Add-ins

The Universal Add-ins auto-install program will automatically install the Universal Add-ins, and can be rerun at any time to do a reinstall or repair (e.g. to refresh files that have been accidentally changed or deleted). The UNIVERSAL Add-ins® are compatible with Excel (including the multi-threaded calculation / MTC feature), Access, VB.NET/Visual Basic/VBA, C/C++/C#, Java, Python, Fortran, etc. running on all major versions of Windows. It is recommended that the person installing the software should be logged on with a user name having local administrator (or Operator) privilege to ensure that all files and registry keys are created properly.

2. Knowing Your Machine id

The Universal Add-ins auto-install program will inform you of the unique MBRM "machine id" of your computer. The machine id is a number, 6 digits or less. Do not confuse the machine id returned by the Universal Add-ins with a "desk" or "serial" number allocated internally by your IT department.

You can also get the MBRM machine id at any time, check the license status on the machine, enter new license or move the existing license by running the MBRM License Utility - MBRM_License_Utility.exe   (for   32-bit   Universal   Add-ins)   or MBRM_License_Utility_x64.exe (for 64-bit Universal Add-ins).

Make a note of the machine id since you will need it when requesting your Universal Add-ins license number (activation key). The machine id would remain the same even if you switched the computer off, or reinstalled the Universal Add-ins on the same computer.

When you load any of our add-ins in Excel *[e.g. using the shortcuts in the "MBRM Universal Add-ins" program group (as described in section 4); or using the "long way" of opening the .XLM/.XLA/.XLL files (as described in section 5); or using Excel's Add-ins manager (as described in section 7)]* the add-ins will quote the same machine id and ask you to enter a license number (activation key) to activate the Universal Add-ins. Section 3 below will describe how to get the license number. Once the license number is entered, the add-in will not ask you for the license number again.

If your machine id is negative or begins with a "T", this is a temporary machine id and could change every time you log on as a different user [which would require you to get a new license number].   To avoid this, you should log in with a user name having administrator (or Operator) privilege and then re-run the installation program.

Useful Tip : Excel users should also note that once the Universal Add-ins are attached in Excel, the menu "MBRM" under Excel's "Add-ins" ribbon will display the "machine id" and confirm which of the Universal Add-ins are attached to Excel (and their version numbers). See section 4 for details.

3. Getting your License Number (activation key)

After you have installed the Universal Add-ins (steps 1 and 2 above), you will be prompted to enter a license number when you first try to use the Universal Add-ins. Without a valid license number, the Universal Add-in functions will all return either 0 or the error value of

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-99,999,999.9 (which could be displayed as -1E+8 if the column width is not wide enough to display the number in full).

The only difference between the purchased and free trial versions of the Universal Add-ins is the validity period of the LICENSE NUMBER which we will provide.   If at the end of a trial you decide to purchase the add-ins, you can simply enter the new purchased license number and continue using the software without needing to reinstall.   This considerably easies the migration from a trial period to live trading.

You can get purchased and trial license numbers from our **MBRM Web Service** :

<p style="text-align:center">http://www.mbrm.com/asp</p>

- If you don't have an existing account on our **MBRM Web Service**, you can quickly register on-line by using the "**New Users Register Here**" box.
- If you do have an existing account, but you don't know your password, you can request it by using the "**Forgotten password**" box.

Once you log into the **MBRM Web Service**, you can :

- Obtain both free trial and purchased license numbers by choosing the main menu options:
  "License Administrator for FREE 30 Day Trial Requests"
  or
  "License Administrator for Purchased Software"

- Manage your list of supported users by choosing the main menu option :
  "Register the users to be covered by your Support Contract"

- See a listing of your previous license requests by choosing the main menu option :
  "Your Universal Add-ins License History"

  With this option, you can get a listing of all your previously issued license numbers. Indeed, it is a free asset tracking system which provides a record of where our software is installed in your organization.

Note about alternative hardware protection devices :
We believe our software based license number scheme offers many more advantages to our users than if we chose to use physical hardware protection devices (which are sometimes called "Dongles"). Most of these hardware devices require background "driver" software to be installed and left running on your machine even when you are not using the software. This can potentially complicate the maintenance, enhancement, compatibility and upgradeability of your machine. Also, if a "Dongle" is lost, stolen or breaks down, it is much slower to get a replacement than the alternative of getting a new license number from our MBRM Web Service. Using license numbers, it is also easier to enable parallel test running when moving machines.

For full details on moving or de-installing our add-ins (purchased licenses), please use the following page :

<p style="text-align:center">http://www.mbrm.com/deinstall8.shtml</p>

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4. Attaching the Universal Add-ins in Excel

If calling the Universal Add-ins from a programming language (e.g. Visual Basic, C/C++, Fortran or ActiveX/COM), please refer to sections 12 to 14 below.

The easiest way to attach the Universal Add-ins in Excel (i.e. enable the add-in's functions to be accessed via Excel) is to use the shortcuts in the "MBRM Universal Add-ins" program group (accessed via Windows' "Start" button). There is a separate shortcut for every add-in. Each shortcut will start Excel, attach the requested add-in, and also load the sample spreadsheet(s) for that add-in.

Once the add-in is attached, you can then attach other Universal Add-ins (see section 5 below) and/or load any of the sample spreadsheets supplied (see section 10 below for the actual file names).

Security Setting in Excel : If the Universal Add-in does not appear to be attaching, it is likely that your Excel security setting is set too high and thus disables all third-party add-ins. To overcome this:

If you are using Excel 2003 or older, lower the Macro Security Settings:

1. On the "Tools" menu, click "Macro", then "Security...".

2. On the "Security Level" tab, select "Medium", then click "OK".

With this setting, the next time you attach (load) an Excel Add-in, Excel will prompt you that certain files have macros in them and you will be given the opportunity to enable the macros.

When loading our files (at least our .xll/.xla files), you should select the option to enable macros because the Universal Add-ins need our macros in order to run.

WARNING: as Medium security setting is lower than the default Excel security setting, to avoid attacks from malicious software, users on the computer in question must exercise extra caution when using Excel. They MUST NOT choose to enable macros in any file that they do not fully trust or 100% sure about its exact origin.

If you are using Excel 2007 or newer, you can add your MBRM folder to Excel's Trusted Locations list:

A trusted location is a folder from which files can be opened without being checked by Excel's Trust Center, and does not open in Protected View.

1. Go to Excel's Options dialog.

2. Click "Trust Center".

3. Click "Trust Center Settings".

4. Click "Trusted Locations" in Trust Center.

5. Click "Add New Location" button.

6. Click Browse and locate your Universal Add-ins installation folder, select the folder (e.g. C:\MBRM), then click OK.

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5. Alternative method of Attaching the Universal Add-ins using the .XLL/.XLA files

As an alternative method to section 4 above, you can attach the Universal Add-ins by starting Excel and then loading the multi-threaded .XLL (or equivalent single-threaded .XLA) file for the desired add-in (e.g. UNIVOPT_MultiThreaded.XLL, or UNIVOPT.XLA). If more than one add-in is required, you can open each .XLL (or equivalent .XLA) file in turn, one after another.

For Excel 2007 and newer, please attach the .XLL files with names ending "_MultiThreaded.XLL", e.g. UNIVOPT_MultiThreaded.XLL etc. These are multi-thread enabled add-ins. If you have a machine with dual-core or multiple CPUs, you can experience multi-fold speed increases when using the Multi-threaded version of the Universal Add-ins under Microsoft Excel 2007 and newer. The speed increase during intensive calculations is almost directly proportional to the number of cores/CPUs used.

Once the add-ins are attached, you can then load the sample spreadsheets supplied for the add-in (see section 10 below for the actual file names).

Note to Excel specialists : the Universal Add-ins are fully .DLL & .XLL compliant.

6. Real-Time Feeds

The Universal Add-ins work with all the Real-Time data feeds which can communicate with Microsoft Excel e.g. Bloomberg, Bridge, Reuters, Dow Jones, S&P ComStock.

Therefore, whenever the market prices (or rates) alter, the input cells which our add-in functions look at would automatically alter in real-time, and therefore our add-in functions will recalculate with the latest market values.

The input cells for the Universal Add-ins can be linked with the real-time feed data items by simply "dragging and dropping" the quote from the real-time feed's screens into the add-in's Excel input cells (e.g. the input cells in the sample spreadsheets which are colored red). We recommend that the real-time feed provider shows you how to link their feed to a blank Excel spreadsheet. You would use the exact same technique to link the real-feed to spreadsheets using the Universal Add-ins.

7. Calling the add-in functions

Each add-in's functions are only useable when the add-in is attached (see sections 4 & 5 above for instructions on how to attach the add-in). You can still safely open your spreadsheet files containing the Universal Add-in functions without having the add-in attached, but these will only calculate after you have attached the Universal Add-in (Excel would display #NAME? until the add-in is attached).

Since every time you exit Excel, the add-in detaches automatically, you need to attach it when you next start Excel. This can be done automatically by using Excel's Add-ins manager dialog to select which add-ins should be automatically attached / loaded each time Excel starts.

To load the Excel Add-ins manager dialog :

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a) Go to Excel's Options dialog.

b) Click "Add-ins".

c) Then, on the bottom of the "Add-ins" screen, choose "Excel Add-ins" from the "Manage" drop-down box, and click "Go..."

After the add-in has been attached to Excel, to call a function, you can use the "Insert Function" option (or the Function Wizard "f_x" button). Our add-in functions would be in the Function Category : **"mbrm Universal Add-in"**

Alternatively, the formula can be manually typed into a spreadsheet's cell.

8. FILE PROTECTION

The sample spreadsheets supplied are protected to avoid accidental alterations. The market data can be entered (in the red cells) and the answers seen in the black cells even with the spreadsheet being protected.

The spreadsheets can be unprotected by the user, without requiring a password, by first selecting the sheet to be unprotected, and then using the "Review > Unprotect Sheet" command in Excel. It is recommended to re-protect the sheet after the alterations are done using "Review > Protect Sheet".

The exception to the above is that, during the trial period, a few sample sheets (e.g. the Bond Asset Swap Monitor sheet in USAEXAMP.XLS) are password protected. The password can be acquired from MBRM once the add-ins are fully licensed, thus you can customize the sheets to your needs (and see how we have implemented the sheet using our standard functions).

9. MANUALS, DOCUMENTATION AND BROCHURES

You can refer to these manuals and other documents by either :

- Clicking the shortcuts in the "**MBRM Universal Add-ins**" program group (via Windows' "Start" button).
- Or, opening the files in the installation directory, e.g. **C:\MBRM**.

As a convention, MBRM uses the first letters of the function or file name to identify the add-in toolkit used (e.g. functions or files beginning with "UEA" would refer to the "Universal Exotics Add-in").

manUOA.pdf	manual for UNIVOPT - Universal Options Add-in
manUEA.pdf	manual for UNIVEXOT - Universal Exotics Add-in
manUIA.pdf	manual for UNIVINT - Universal Interpolating Add-in
manUYA.pdf	manual for UNIVYLD - Universal Yield Add-in
manUSA.pdf	manual for UNIVSWAP- Universal Swap Add-in
manCMS.pdf	manual for UNIVCMS - Universal CMS & Swaptions Add-in
manULA.pdf	manual for UNIVLMM - Universal LIBOR Market Model Add-in
manUCA.pdf	manual for UNIVCONV - Universal Convertibles Add-in
UDAintro.pdf	Introduction to UNIVDRV - Universal Derivatives Add-in
manUDA.pdf	manual for UNIVDRV - Universal Derivatives Add-in

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This is a combined manual for :

UNIVEXOT+ - Universal Analytical Exotics Add-in
UNIVFDIF - Universal Finite Difference Add-in
UNIVGARCH - Universal Garch Add-in

manUVA.pdf	manual for UNIVVAR - Universal VaR Add-in "Value-at-Risk"
manUCDA.pdf	manual for UNIVCDRV - Universal Credit Derivatives Add-in
manURA.pdf	manual for UNIVRREP - Universal Risk Reporting Add-in
manFTR.pdf	manual for MBRM Futures/FRAs Arbitrage Module
manETO.pdf	manual for MBRM Exchange Traded Options System
Broch.pdf	Full brochure and order form
Feedback.pdf	Feedback from our clients
License.pdf	MBRM's License and Limited Warranty
OrderFrm.pdf	Order Form and Price List
PressExt.pdf	Press Extracts
RiskMgmt.pdf	Article on Development of Risk Management Systems
Remove.pdf	Instructions on how to deinstall the Universal Add-ins
SwapGrid.pdf	description of the MBRM Single/Cross-Currency Swap Grid
Version82.pdf	New features in Version 8.2 of our Universal Add-ins

"MBRM Delta-Gamma, Garch VaR and beyond.pps" PowerPoint Presentation

Supported users should visit the online Support/Discussion Forums and searchable Support Knowledgebase (located at the MBRM WEB SERVICE "http://www.mbrm.com/asp"). This will assist you in maximizing the benefit from using our Universal Add-ins and ensure you are one of the first to preview the latest models and enhancements.

10. *Names of the Sample Spreadsheets (workbooks) for Excel*

The sample spreadsheets (workbooks) have extensions .XLS. These include multiple example sheets, including sheets which hold portfolios. The market data are entered in the red cells with the answers shown in the black cells.   If you would like to see the "row & column headers" (i.e. the column labels A, B, C ... on the top of the sheet and the row numbers on the left of the sheet) you would use Excel's "View" ribbon and ensure "Headings" is ticked on.

As a convention, MBRM uses the first letters of the function or file name to identify the add-in toolkit used (e.g. functions or files beginning with "UEA" would refer to the "Universal Exotics Add-in").

UNIVOPT - Universal Options Add-in :
UNIVOPT_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVOPT.XLA)*
UOAexamp.XLS : *Sample spreadsheet/workbook*

UNIVEXOT - Universal Exotics Add-in :
UNIVEXOT_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVEXOT.XLA)*
UEAexamp.XLS : *Sample spreadsheet/workbook*
QUANTBSK.XLS : *Quanto average rate and standard options on multi-currency baskets*
UEA_Volatility_Tool.xls : *MBRM Volatility Tool (including LGK and HL models)*
MBRM_Cliquet_1_year.xls : *Sample spreadsheet for path dependent exotic options*

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UDA_exotic_equity_options_portfolio_v2a.xls : *(for UNIVDRV & UNIVEXOT users)*

UNIVINT - Universal Interpolating Add-in :
UNIVINT_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVINT.XLA)*
UIAexamp.XLS : *Sample spreadsheet/workbook*

UNIVYLD - Universal Yield Add-in :
UNIVYLD_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVYLD.XLA)*
UYAexamp.XLS : *Sample spreadsheet/workbook*

UNIVSWAP - Universal Swap Add-in :
UNIVSWAP_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVSWAP.XLA)*
EUR.XLS : *Currency spreadsheet for Euros (compact "swapnote" format)*
GBP.XLS : *Currency spreadsheet for Sterling*
JPY.XLS : *Currency spreadsheet for Japanese Yen*
USD.XLS : *Currency spreadsheet for US Dollars (compact "swapnote" format)*
USD_expanded.XLS : *Normal (expanded) format currency spreadsheet for US Dollars.*
   For additional currencies, the above files can be copied using "File > Save As"
USAexamp.XLS : *Sample spreadsheet/workbook*
USASENS.XLS : *Portfolio sensitivity to parallel and non-parallel yield shifts*
USAFXOPT.XLS : *Foreign Exchange Forwards and exotic/plain vanilla Options*
   portfolio analysis. Some features require UNIVVAR & UNIVDRV
SWAPGRD2.XLS : *Single currency Swap Grid. Entered market rates and the calculated*
   FRA & Swap values are displayed on the same spreadsheet
SWAPGRID.XLS : *Single / Cross-currency Swap Grid*

UNIVINFLSWAP - MBRM Inflation Swaps / Index Linked Bonds Analyser:
mbrm_inflation_swaps_and_Index_Linked_Bonds.xls

UNIVCMS - Universal CMS & Swaptions Add-in
UNIVCMS_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVCMS.XLA)*
MBRMCMS.XLS : *Sample spreadsheet/workbook*
UCMS_CAPLET_SKEW.XLS : *Caplet Implied Volatilities (with Smile / Skew)*

UNIVLMM - Universal LIBOR Market Model Add-in
UNIVLMM_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVLMM.XLA)*
ULAexamp.XLS : *Sample spreadsheet/workbook (including Multi-Currency and*
   Dual-Currency range accrual Bonds & simulations
ULA_PCA.XLS : *Principal Component Analysis (PCA) and ULA_CALC_VC( )*
   which calculates historical volatilities and correlation matrices

UNIVCONV - Universal Convertibles Add-in :
UNIVCONV_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVCONV.XLA)*
UCAexamp.XLS : *Sample spreadsheet/workbook*

UNIVDRV - Universal Derivatives Add-in :
A combined package of :
   UNIVEXOT+   - Universal Analytical Exotics Add-in
   UNIVFDIF   - Universal Finite Difference Add-in
   UNIVGARCH   - Universal Garch Add-in
UNIVDRV_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVDRV.XLA)*
UDAexamp.XLS : *Sample spreadsheet/workbook*

UDA_GARCH.XLS : *Sample spreadsheet/workbook for GARCH estimation*
UDA_exotic_equity_options_portfolio_v2a.xls : *(for UNIVDRV & UNIVEXOT users)*

UNIVVAR - Universal VaR Add-in (Value-at-Risk) :
UNIVVAR_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVVAR.XLA)*
UVAexamp.XLS : *Sample spreadsheet/workbook*

     ** UNIVVAR and UNIVDRV users should also see sample spreadsheet :
UDAexamp.XLS, sheets "Garch VaR" and "Delta-Gamma VaR".

UNIVCRD - Universal Credit Risk Add-in :
UNIVCRD_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVCRD.XLA)*
UCRAexamp.XLS : *Sample spreadsheet/workbook*

UNIVCDRV - Universal Credit Derivatives Add-in :
UNIVCDRV_MultiThreaded.XLL : *Add-in "program" file (or equivalent UNIVCDRV.XLA)*
UCDAexamp.XLS : *Sample spreadsheet/workbook*

UNIVRREP - Universal Risk Reporting Add-in
UNIVRREP.XLA : Add-in "program" file.
URAexamp.XLS : *Sample spreadsheet/workbook*

MBRM Futures/FRAs Arbitrage Module :
MBRMFTR.XLS : *(requires UNIVSWAP to be attached)*

MBRM Exchange Traded Options System :
MBRMETO.XLS : *(requires UNIVOPT and UNIVINT to be attached)*

MBRM Bond Futures "Cheapest To Deliver" (CTD) Analyser
MBRMCTD.XLS : *(requires UNIVYLD to be attached)*

11. *Portfolio handling*

Every Universal Add-in can handle portfolios. This could be by way of :

(a) Links to your in-house database. See article "RISK MANAGEMENT SYSTEM DEVELOPMENT USING LOW COST ADD-IN TOOLKITS". The article's file name is RISKMGMT.PDF and it is located in the installation directory (e.g. C:\MBRM).

You should also see the article on the "MBRM Development Partnership Program" (MBRMDPP.PDF) located in the installation directory (e.g. C:\MBRM).

and/or

(b) Every Universal Add-in has Excel sheets already set up with portfolio and deal entry facility, e.g. :

UNIVOPT - Universal Options Add-in
UOAexamp.XLS   Sample spreadsheet/workbook.
See sheet :   Portfolio
                       Portfolio2
                       Hedge

UNIVYLD - Universal Yield Add-in :
UYAexamp.XLS   Sample spreadsheet/workbook.

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See sheet :   Portfolio

UNIVSWAP - Universal Swap Add-in :
USAexamp.XLS   Sample spreadsheet/workbook.
See sheets :   FRA-IRG
                         Swap Port
                         CapColFlr

USASENS.XLS   Multi-Instrument Portfolio sensitivity
                        to parallel and non-parallel yield shifts.

USAFXOPT.XLS   Foreign Exchange Forwards and
                        exotic/plain vanilla Options portfolio analysis.

UNIVCMS - Universal CMS & Swaptions Add-in
MBRMCMS.XLS   Sample spreadsheet/workbook.
                      See sheets :   CMS_CapColFlr
                      CMS_Quanto_CapColFlr

UNIVCONV - Universal Convertibles Add-in
UCAexamp.XLS   Sample spreadsheet/workbook.
See sheet :   Portfolio

See section marked "PORTFOLIO HANDLING" in the Appendix of
manual MANUCA.PDF

UNIVDRV - Universal Derivatives Add-in :
UDAexamp.XLS   Sample spreadsheet/workbook.
See sheets :   Garch VaR
                      Delta-Gamma VaR

UNIVVAR - Universal VaR Add-in (Value-at-Risk) :
UVAexamp.XLS   Sample spreadsheet/workbook.
See sheet :   Mappings CFs & VaR

UNIVCDRV - Universal Credit Derivatives Add-in :
UCDAexamp.XLS   Sample spreadsheet/workbook.
See sheet :   Advanced functions & Portfolio

MBRM Futures/FRAs Arbitrage Module :
MBRMFTR.XLS   Sample spreadsheet/workbook.
See sheet :   Today's Trades

MBRM Exchange Traded Options System
MBRMETO.XLS   Full trade entry and position keeping
                      for exchange traded and OTC options.

All the above spreadsheets can be enhanced by the user. Indeed, many users of Excel simply call the Universal Add-in functions directly from their existing Excel spreadsheets in order to calculate their portfolio's sensitivities.

12. Visual Basic / Visual Basic for Applications (VBA) Scripting

The following files illustrate use of the add-ins in Visual Basic :

(files located in the installation directory, e.g. C:\MBRM\VB6_Using_Declare)

UCA_VB32.BAS	UCDA_LIC.BAS	UCDA_VB32.BAS
UDA_VB32.BAS	UEA_VB32.BAS	UIA_VB32.BAS
UOA_LC32.BAS	UOA_VB32.BAS	USA_VB32.BAS
UVA_VB32.BAS	UYA_VB32.BAS	

The following files illustrate use of the add-ins in VBA Scripting :

(files located in the installation directory, e.g. C:\MBRM\VBA_for_Excel)

UEA_VBA.BAS	UIA_VBA .BAS	USA_VBA.BAS

As a convention, MBRM uses the first letters of the function or file name to identify the add-in toolkit used (e.g. functions or files beginning with "UEA" would refer to the "Universal Exotics Add-in").

Please see the Universal Options Add-in manual, MANUOA.PDF, section 4.29 "CALLING THE FUNCTIONS FROM VISUAL BASIC / VBA".

13. Visual C/C++ : Calling the add-in functions from C/C++

Please see the Universal Yield Add-in manual, MANUYA.PDF, section 4.11 "CALLING THE FUNCTIONS FROM C/C++".

Please also see the C/C++ sample file **MBRMSAMP.CPP** which is located in the installation directory (e.g. C:\MBRM\C&C++). This is callable from either C or C++. This illustrates how to call our add-ins from C/C++. Header files (*.H) and Library link files (*.LIB) are also located in the installation directory.

14. Fortran : files which illustrate use of add-ins from Fortran

Please see the Universal Options Add-in manual, MANUOA.PDF, section 4.30 "CALLING THE FUNCTIONS FROM FORTRAN".

15. ActiveX (COM) objects

The ActiveX (COM) implementations of our UNIVERSAL Add-ins are provided free when you acquire our standard add-ins. The ActiveX (COM) objects are accessible from most Windows based development environments.

The Windows based visual environment would list all our add-ins and function names (and parameter lists) in the environment's object window/browser. Our ActiveX (COM) functions have exactly the same name and parameter definitions as our standard Excel and programming

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language parameter definitions. This conforms to our believe that it is in everyone's interest to have the exact same functions (with the same parameter definitions) irrespective of whether calling from a spreadsheet, traditional programming language or an ActiveX (COM) environment.

When you install our add-ins, our ActiveX (COM) components are automatically registered and thus "expose themselves" to be called. You will find a number of UNIV*_COM.DLL files (such as UNIVOPT_COM.DLL) in the install directory (e.g. c:\mbrm). These are the ActiveX (COM) files which are registered in the Windows Registry by the Universal Add-ins setup program.

In Visual Basic and VBA, the way to call the ActiveX (COM) objects is simply to define the class for the add-in, and then just call it. Please see the COM example source files distributed with the Universal Add-ins (files ending "_COM.BAS") located in the installation directory, e.g. C:\MBRM\VB6_Using_ActiveX(COM)\.

Windows based development environment have their individual ways to "register" which ActiveX (COM) libraries a user wishes to access, e.g. :

- In Visual Basic, you need to ensure that the used Universal Add-in is "ticked" (i.e. chosen) in VB's "Tools > References" menu.

  The posting in our UNIVSWAP online support forum, with subject "How do I call your ActiveX (COM) objects from Visual Basic or VBA ?", might be helpful since it compares the three different ways to call our add-ins from Visual Basic / VBA.

- In Delphi, to call these functions, you would use the "IMPORT TYPE LIBRARY" from the Delphi menu to register the UNIVOPT_COM.DLL. In Delphi, when you import a type library, it generates a separate .TLB file for each add-in.   The contents of the .TLB file will also list all the functions imported. The USES command in your .PAS file would then mention the add-in name.

The posting in our UNIVYLD online support forum, whose subject is "Installing UNIVYLD on IIS Server and calling it via ASP when Excel not installed", might be helpful if installing our add-ins on a system without Excel since it shows how to enter license number from your own code.

16. Calling the Universal Add-ins from C#

To call the Universal Add-ins functions from C#, you can use either the DLL import function, or the C# (CS) wrapper libraries that are included with the Universal Add-ins package.

We strongly recommend that you use the DLL import function ("DllImport( )") because it calls our C/C++ .DLL libraries directly and avoids the need for an extra function layer which converts the arrays from C# arrays to native arrays as used by the add-ins (and back again). This method will thus give you the best performance from C#. Example code demonstrating this method can be found in sub-folder "C#_Using_DllImport" of your Universal Add-ins' installation folder.

The C# (CS) Wrapper libraries of the Universal Add-ins on Windows are included as part of the standard Universal Add-ins download.

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The C# Wrapper of the UNIVERSAL Add-ins is an extra layer ("wrapper") on top of the core libraries of UNIVERSAL Add-ins. Details about how to call the Universal Add-in functions from C# via the provided C# wrapper are described in UniversalAddinsC#_InstallationGuide.pdf that can be found in the sub-folder " C#_Using_Wrapper" of your Universal Add-ins' installation folder.

17. Java Native Interface (JNI) of the UNIVERSAL Add-ins

The Java Native Interface (JNI) of the UNIVERSAL Add-ins is an extra layer ("wrapper") on top of the core libraries of UNIVERSAL Add-ins. Details about how to call the Universal Add-in functions from Java via the provided JNI wrapper under Windows and UNIX are described in UniversalAddinsJNI_InstallationGuide.pdf that can be found in the sub-folder "Java_Native_Interface_(JNI)" of your Universal Add-ins' installation folder. Extensive sample source code that illustrates how the Universal Add-ins can be called from Java can also be found in that folder.

18. MBRM's technical support facilities

To increase the speed in answering your questions, as well as to enable us to focus our support efforts on questions which are not already answered on our online Support/Discussion forums (or in the manuals), please note :

1) We recommend you initially search the online support/discussion forums and searchable support knowledgebase of the MBRM Web Service:

http://www.mbrm.com/asp

Supported users have free access to this to assist in maximizing the benefits from using our Universal Add-ins and ensure they are one of the first to preview the latest models and enhancements.

You may find that your question is already answered in either the above or the locally installed Acrobat PDF format manuals (MAN*.pdf) which are installed automatically on your machine when you install our add-ins.   Please see the "Quick Start Guide (README.PDF)" section 9 :
"9. MANUALS, DOCUMENTATION AND BROCHURES"

The "QUICK START GUIDE" (README.PDF) is very useful as an initial "roadmap" to the UNIVERSAL Add-ins. You can refer to it by either :

➢ Clicking the shortcut "Quick Start Guide (README.PDF)" in the "MBRM Universal Add-ins" program group (via Windows' "Start" button). The shortcuts can also be used to view the manuals, brochures, price list, discount schemes, order form, press extracts, client feedback, background article on risk management system development, Visual Basic and C/C++/Java/C# examples etc.

➢ Or, using Microsoft Word to open the file README.PDF (in the installation directory, e.g. C:\MBRM)

2) If your question is still unresolved, please e-mail MBRM's 24x7 Support Service :

support@mbrm.com

(always quoting your support invoice number and your Machine ID number as generated by our UNIVERSAL Add-ins).

It is sometimes helpful if you e-mail us one of our sample spreadsheets which shows the problem occurring together with all the input parameters used. Experience has shown that using our sample spreadsheets can greatly assist in solving issues arising when calling from your own spreadsheets (especially due to the extra results returned by our sample spreadsheets). This might also clarify whether the problem is data related.

E-mail attachments should preferably be compressed/zipped to reduce their size and increase reliability during transmission.

3)   If your problem is still unresolved, you can call technical support on +44 20-7628 2007 (quoting your support invoice number and your Machine ID number as generated by our UNIVERSAL Add-ins).

Enhanced support :

Training and Consultancy sessions using Web Conferencing

MB Risk Management uses Web Conferencing software to introduce our products and services as well as provide training and consultancy sessions remotely. This allows us to show the capabilities of our Universal Add-ins without our clients facing the hassle and expense of taking on-site visitors, yet still maintaining two way interaction.

With Web Conferencing, one of our technical representatives would be able to talk and guide you through any our Universal Add-ins at a pace suited to you.

A charge will apply for this service.