LiveCode 9.0.3 Release Notes

Overview

LiveCode 9.0 enables access to libraries and platform APIs written in many other languages thanks to the community-funded 'Infinite LiveCode' project.

This includes a greatly improved LiveCode Builder virtual machine.

LiveCode 9.0 contains many additional improvements to support LiveCode app developers, including:

- A new "spinner" widget

- OAuth2 authentication library for use with web APIs (e.g. Facebook, Google and GitHub)

- A command argument parser library for building command-line standalones

- Updates and performance improvements for existing widgets

Known issues

- The installer will currently fail if you run it from a network share on Windows. Please copy the installer to a local disk before launching on this platform.

- The browser widget does not work on 32-bit Linux.

- 64-bit standalones for Mac OS X do not have support for audio recording.

Breaking changes

Standalone Building

The standalone builder has always needed to close the stacks it builds for reasons pretty deeply ingrained in the code. However this causes a few problems, for example:

- values in script locals become empty
- behaviors are broken when the parent script is on / in a stack which closes

As an attempt to improve this situation, the code that locks messages when closing and opening stacks for standalone builds has been removed. This means that where previously mainstacks would not receive any of the `(pre)open*` and `close*` messages (e.g. `preOpenStack`, `openStack`, `openCard`, `closeStack` etc) during standalone build, they now do.

If this causes problems for your stack, you can exit from the handler if standalone building is in progress:

```
on closeStack
    if the environment is "development" and \
      there is a stack "revStandaloneProgress" and \
      the mode of stack "revStandaloneProgress" > 0 then
        exit closeStack
    end if
end closeStack
```

LiveCode Builder

Exponentiation operator precedence

Prior to this release, exponentiation had lower precedence that unary minus. In order to write code that operates as expected in both this release and previous releases, please use parentheses where appropriate.

Using lc-compile tool in LiveCode 9:

```
-1^2 = -1
```

Using lc-compile tool in LiveCode 8:

```
-1^2 = 1
```

Platform support

The engine supports a variety of operating systems and versions. This section describes the platforms that we ensure the engine runs on without issue (although in some cases with reduced functionality).

Windows

LiveCode supports the following versions of Windows:

- Windows 7 (both 32-bit and 64-bit)
- Windows Server 2008
- Windows 8.x (Desktop)
- Windows 10

Note: On 64-bit Windows installations, LiveCode runs as a 32-bit application through the WoW layer.

Linux

LiveCode supports the following Linux distributions, on 32-bit or 64-bit Intel/AMD or compatible processors:

- Ubuntu 14.04 and 16.04
- Fedora 23 & 24
- Debian 7 (Wheezy) and 8 (Jessie) [server]
- CentOS 7 [server]

LiveCode may also run on Linux installations which meet the following requirements:

- Required dependencies for core functionality:

    - glibc 2.13 or later
    - glib 2.0 or later

- Optional requirements for GUI functionality:

    - GTK/GDK 2.24 or later
    - Pango with Xft support
    - esd (optional, needed for audio output)
    - mplayer (optional, needed for media player functionality)
    - lcms (optional, required for color profile support in images)
    - gksu (optional, required for privilege elevation support)

Note: If the optional requirements are not present then LiveCode will still run but the specified features will be disabled.

Note: The requirements for GUI functionality are also required by Firefox and Chrome, so if your Linux distribution runs one of those, it will run LiveCode.

Note: It may be possible to compile and run LiveCode Community for Linux on other architectures but this is not officially supported.

Mac

The Mac engine supports:

- 10.9.x (Mavericks)
- 10.10.x (Yosemite)
- 10.11.x (El Capitan)
- 10.12.x (Sierra)
- 10.13.x (High Sierra)
- 10.14.x (Mojave)

iOS

iOS deployment is possible when running LiveCode IDE on a Mac, and provided Xcode is installed and has been set in LiveCode *Preferences* (in the *Mobile Support* pane).

Currently, the supported versions of Xcode are:

- Xcode 6.2 on MacOS X 10.9
- Xcode 6.2 and 7.2 on Mac OS X 10.10
- Xcode 8.2 on MacOS X 10.11
- Xcode 9.2 on MacOS 10.12 (Note: You need to upgrade to 10.12.6)
- Xcode 10.1 on MacOS 10.13 (Note: You need to upgrade to 10.13.4)

It is also possible to set other versions of Xcode, to allow testing on a wider range of iOS simulators. For instance, on MacOS 10.12 (Sierra), you can add *Xcode 6.2* in the *Mobile Support* preferences, to let you test your stack on the *iOS Simulator 8.2*.

We currently support deployment for the following versions of iOS:

- 8.2 [simulator]
- 9.2
- 10.2
- 11.2
- 12.1

Android

LiveCode allows you to save your stack as an Android application, and also to deploy it on an Android device or simulator from the IDE.

Android deployment is possible from Windows, Linux and Mac OSX.

The Android engine supports devices using ARMv7 or ARMv8 processors. It will run on the following versions of Android:

- 4.1-4.3 (Jelly Bean)
- 4.4 (KitKat)
- 5.0-5.1 (Lollipop)
- 6.0 (Marshmallow)
- 7.x (Nougat)
- 8.x (Oreo)

To enable deployment to Android devices, you need to download the Android SDK, and then use the 'Android SDK Manager' to install:

- the latest "Android SDK Tools"
- the latest "Android SDK Platform Tools"

You also need to install the Java Development Kit (JDK). On Linux, this usually packaged as "openjdk". LiveCode requires JDK version 1.6 or later.

Once you have set the path of your Android SDK in the "Mobile Support" section of the LiveCode IDE's preferences, you can deploy your stack to Android devices.

Some users have reported successful Android Watch deployment, but it is not officially supported.

HTML5

LiveCode applications can be deployed to run in a web browser, by running the LiveCode engine in

JavaScript and using modern HTML5 JavaScript APIs.

HTML5 deployment does not require any additional development tools to be installed.

LiveCode HTML5 standalone applications are currently supported for running in recent versions of Mozilla Firefox, Google Chrome or Safari. For more information, please see the "HTML5 Deployment" guide in the LiveCode IDE.

Setup

Installation

Each version of LiveCode installs can be installed to its own, separate folder. This allow multiple versions of LiveCode to be installed side-by-side. On Windows (and Linux), each version of LiveCode has its own Start Menu (or application menu) entry. On Mac OS X, each version has its own app bundle.

On Mac OS X, install LiveCode by mounting the `.dmg` file and dragging the app bundle to the `Applications` folder (or any other suitable location).

For Windows and Linux, the default installation locations when installing for "All Users" are:

Platform	Path
Windows	`<x86 program files folder>/RunRev/LiveCode <version>`
Linux	`/opt/livecode/livecode-<version>`

The installations when installing for "This User" are:

Platform	Path
Windows	`<user roaming app data folder>/RunRev/Components/LiveCode <version>`
Linux	`~/.runrev/components/livecode-<version>`

Note: If installing for "All Users" on Linux, either the **gksu** tool must be available, or you must manually run the LiveCode installer executable as root (e.g. using **sudo** or **su**).

Uninstallation

On Windows, the installer hooks into the standard Windows uninstall mechanism. This is accessible from the "Add or Remove Programs" applet in the windows Control Panel.

On Mac OS X, drag the app bundle to the Trash.

On Linux, LiveCode can be removed using the `setup.x86` or `setup.x86_64` program located in LiveCode's installation directory.

Reporting installer issues

If you find that the installer fails to work for you then please report it using the LiveCode Quality Control Centre or by emailing support@livecode.com.

Please include the following information in your report:

- Your platform and operating system version
- The location of your home or user folder
- The type of user account you are using (guest, restricted, admin etc.)
- The installer log file.

The installer log file can be located as follows:

Platform	Path
Windows 2000/XP	`<documents and settings folder>/<user>/Local Settings/`
Windows Vista/7	`<users folder>/<user>/AppData/Local/RunRev/Logs`
Linux	`<home>/.runrev/logs`

Activating LiveCode Indy or Business edition

The licensing system ties your product licenses to a customer account system, meaning that you no longer have to worry about finding a license key after installing a new copy of LiveCode. Instead, you simply have to enter your email address and password that has been registered with our customer account system and your license key will be retrieved automatically.

Alternatively it is possible to activate the product via the use of a specially encrypted license file. These will be available for download from the customer center after logging into your account. This method will allow the product to be installed on machines that do not have access to the internet.

Command-line installation

It is possible to invoke the installer from the command-line on Linux and Windows. When doing command-line installation, no GUI will be displayed. The installation process is controlled by arguments passed to the installer.

Run the installer using a command in the form:

```
<installer> install -ui [OPTION ...]
```

where `<installer>` should be replaced with the path of the installer executable or app (inside the DMG) that has been downloaded. The result of the installation operation will be written to the console.

The installer understands any of the following `OPTION`s:

Option	Description
	Install the IDE for "All Users". If not specified, LiveCode will be installed

Option	Description
`-all`	for the current user only.
`-desktopshortcut`	Place a shortcut on the Desktop (Windows-only)
`-startmenu`	Place shortcuts in the Start Menu (Windows-only)
`-location LOCATION`	The folder to install into. If not specified, the `LOCATION` defaults to those described in the "Installation" section above.
`-log LOGFILE`	The file to which to log installation actions. If not specified, no log is generated.

Note: the command-line installer does not do any authentication. When installing for "All Users", you will need to run the installer command as an administrator.

As the installer is actually a GUI application, it needs to be run slightly differently from other command-line programs.

On Windows, the command is:

```
start /wait <installer> install -ui [OPTION ...]
```

Command-line uninstallation

It is possible to uninstall LiveCode from the command-line on Windows and Linux. When doing command-line uninstallation, no GUI will be displayed.

Run the uninstaller using a command of the form:

```
<uninstaller> uninstall -ui
```

Where is *.setup.exe* on Windows, and *.setup.x86* on Linux. This executable, for both of the platforms, is located in the folder where LiveCode is installed.

The result of the uninstallation operation will be written to the console.

Note: the command-line uninstaller does not do any authentication. When removing a version of LiveCode installed for "All Users", you will need to run the uninstaller command as an administrator.

Command-line activation for LiveCode Indy or Business edition

It is possible to activate an installation of LiveCode for all users by using the command-line. When performing command-line activation, no GUI is displayed. Activation is controlled by passing command-line arguments to LiveCode.

Activate LiveCode using a command of the form:

```
<livecode> activate -file LICENSEFILE -passphrase SECRET
```

where `<livecode>` should be replaced with the path to the LiveCode executable or app that has been previously installed.

This loads license information from the manual activation file `LICENSEFILE`, decrypts it using the given `SECRET` passphrase, and installs a license file for all users of the computer. Manual activation files can be downloaded from the My Products page in the LiveCode account management site.

It is also possible to deactivate LiveCode with:

```
<livecode> deactivate
```

Since LiveCode is actually a GUI application, it needs to be run slightly differently from other command-line programs.

On Windows, the command is:

```
start /wait <livecode> activate -file LICENSE -passphrase SECRET
start /wait <livecode> deactivate
```

On Mac OS X, you need to do:

```
<livecode>/Contents/MacOS/LiveCode activate -file LICENSE -passphrase SECRET
<livecode>/Contents/MacOS/LiveCode deactivate
```

LiveCode Community engine changes

Fix sort international order for additional locales

Additional languages supported:

- Arabic
- Bengali
- Bulgarian
- Catalan
- Chinese
- Croatian
- Czech
- Danish
- Dutch
- Estonian
- Finnish
- French

- German
- Greek
- Gujarati
- Hebrew
- Hindi
- Hungarian
- Icelandic
- Italian
- Japanese
- Kannada
- Korean
- Latvian
- Lithuanian
- Malayalam
- Marathi
- Norwegian
- Panjabi
- Persian
- Polish
- Portuguese
- Romanian
- Russian
- Serbian
- Slovak
- Slovenian
- Spanish
- Swedish
- Tamil
- Teluga
- Thai
- Turkish
- Ukrainian
- Vietnamese

Specific engine bug fixes (9.0.3-rc-2)

21869   Ensure visual effect "scroll" does honor rect
21892   Ensure TimeZone code folder is included in iOS 12.1 Runtime folders

Specific engine bug fixes (9.0.3-rc-1)

3685   Ensure setting the radioBehavior of a group does not change the tabGroupBehavior
12410   Added documentation note about the removal of trailing slashes when setting the defaultFolder
12851   Fixed outputLineEndings' documentation describing outputTextEncoding
12876   Ensure the IDE can be launched when the installer finishes
14440   Added note in the offset function's documentation about caseSensitive's effect on it.

15176	Removed inaccurate information from the revDeleteFolder dictionary entry
18359	Added note to hiliteCoordinates about non-numeric x-values.
18606	Ensure setting the imagesource of a char to a remote image works
18702	Ensure Alt+ does produce unicode characters on Windows
18919	Fix "Print All Cards from TL to BR" printing an empty page
19231	Correct code example in documentation for rawClipboardData
19277	Ensure the effective rect is fetched correctly when screen is locked
21168	Ensure path to MacOS app icon is always resolved
21340	Updated setup documentation to reflect that the "noui" argument has been replaced with "-ui"
21382	Removed unwanted HTML entities from the menu dictionary entry
21393	Ensure drawing lib works on mobile
21589	Show list of windows in dock menu on MacOS
21663	Fix error when building an Android standalone and the TimeZone library is included
21674	Ensure extension resources are found in macOS standalones
21683	Fix crash when setting a widget read-only property
21690	Fix crash when clicking on the magnify palette and a non-paint tool is selected
21718	Added note about calling mobileSensorAvailable to the mobileCurrentLocation entry
21720	Ensure revsecurity and revpdfprinter externals contain only the necessary arch slices
21728	Ensure one can set the filename of an image to a relative path
21744	Removed a duplicate example from the format dictionary entry.
21765	Ensure Android standalones can be installed in devices with no serial number returned by `adb devices`
21770	Fixed various errors in the dictionary entry for the URL keyword
21772	Ensure resources are placed in the correct folder when building Mac standalones on a Windows machine
21775	Updated SQLite to version 3.26.0
21778	Fix sort international order for additional locales
21796	Build iOS 12.1 binaries for the tsNet external
21805	Ensure stack with windowshape will display if setting its "visible" to true after "go invisible"
21807	Ensure you can set the android recorder properties more than once
21817	Removed outdated information about setting IDs for controls.
21821	Enabled JSON storage/retrieval within a SQLite database

LiveCode Community IDE changes

Specific IDE bug fixes (9.0.3)

21856 **Ensure Plugin stacks are not loaded into memory on startup**

Specific IDE bug fixes (9.0.3-rc-1)

11295	Fix error in DataGrid when form controls are cached, fixed line height is true, and showing the vertical scrollbar is set to auto.
12400	Ensure Datagrid refreshes when switching its style from table to form and back to table
17823	Updated DG property label from "Empty row height" to "Fixed row height" in the Property Inspector
18636	[SE Interactive search] Ensure pressing the return key cycles through all instances of the string to be found
18654	Added "Size" field to the Property Inspector of the image object
21247	Fix setting Project Browser Prefs from the LC Prefs pane
21379	[NavBar PI] Fix setting an itemName when navbar has more than 9 items
21555	Ensure mobileControlTarget() returns the long id of the target, if the target is a DataGrid
21721	Keep selection when formatting handler
21767	Added support for splash screens for iPhone XR and XSMAX
21798	Ensure the button's iconGravity can be set from the Property Inspector
21802	Ensure textChanged msg is sent when we cut text of a field

LiveCode Community extension changes

Specific extension bug fixes (9.0.3-rc-1)

20711	Ensure the tooltip of the treeview widget can be set more than once
21378	Ensure adding/deleting/moving items does not change the existing itemNames

Previous release notes

- LiveCode 9.0.2 Release Notes
- LiveCode 9.0.1 Release Notes
- LiveCode 9.0.0 Release Notes
- LiveCode 8.1.9 Release Notes
- LiveCode 8.1.8 Release Notes
- LiveCode 8.1.7 Release Notes
- LiveCode 8.1.6 Release Notes
- LiveCode 8.1.5 Release Notes
- LiveCode 8.1.4 Release Notes
- LiveCode 8.1.3 Release Notes
- LiveCode 8.1.2 Release Notes
- LiveCode 8.1.10 Release Notes
- LiveCode 8.1.1 Release Notes

- LiveCode 8.1.0 Release Notes
- LiveCode 8.0.2 Release Notes
- LiveCode 8.0.1 Release Notes
- LiveCode 8.0.0 Release Notes
- LiveCode 7.1.4 Release Notes
- LiveCode 7.1.3 Release Notes
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- LiveCode 6.6.2 Release Notes
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- LiveCode 6.1.0 Release Notes
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