LiveCode 6.7.8–rc–3 Release Notes

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LiveCode Builder changes
Previous Release Notes
Overview
This document describes all the changes that have been made for LiveCode 6.7.8-rc-3, including bug fixes and new syntax.

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.

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
The engine supports the following Windows OSes:
- Windows XP SP2 and above
- Windows Server 2003
- Windows Vista SP1 and above (both 32-bit and 64-bit)
- Windows 7 (both 32-bit and 64-bit)
- Windows Server 2008
- Windows 8.x (Desktop)

Note: On 64-bit platforms the engine still runs as a 32-bit application through the WoW layer.

Linux
The linux engine requires the following:
- 32-bit installation, or a 64-bit linux distribution that has a 32-bit compatibility layer
- 2.4.x or later kernel
- X11R5 capable Xserver running locally on a 24-bit display
- glibc 2.3.2 or later
- gtk/gdk/glib (optional – required for native theme support)
- pango/xft (optional – required for pdf printing, anti-aliased text and unicode font support)
- lcms (optional – required for color profile support in JPEGs and PNGs)
- gksu (optional – required for elevate process support)

Note: The optional requirements (except for gksu and lcms) are also required by Firefox and Chrome, so if your linux distribution runs one of those, it will run the engine.
Note: If the optional requirements are not present then the engine will still run but the specified features will be disabled.
Note: LiveCode and standalones it builds may work on remote Xservers and in other bit-depths, however this mode of operation is not currently supported.

Mac
The Mac engine supports:

- 10.6.x (Snow Leopard) on Intel
- 10.7.x (Lion) on Intel
- 10.8.x (Mountain Lion) on Intel
- 10.9.x (Mavericks) on Intel

**Note:** The engine runs as a 32-bit application regardless of the capabilities of the underlying processor.
Setup

Installation

Each distinct version has its own complete folder – multiple versions will no longer install side-by-side: on Windows (and Linux), each distinct version will gain its own start menu (application menu) entry; on Mac, each distinct version will have its own app bundle.

The default location for the install on the different platforms when installing for 'all users' are:

- Windows: `<x86 program files folder>/RunRev/LiveCode 6.7.8-rc-3`
- Linux: `/opt/runrev/livecode-6.7.8-rc-3`
- Mac: `/Applications/LiveCode 6.7.8-rc-3.app`

The default location for the install on the different platforms when installing for 'this user' are:

- Windows: `<user roaming app data folder>/RunRev/Components/LiveCode 6.7.8-rc-3`
- Linux: `~/.runrev/components/livecode-6.7.8-rc-3`
- Mac: `~/Applications/LiveCode 6.7.8-rc-3.app`

Note: If your linux distribution does not have the necessary support for authentication (gksu) then the installer will run without admin privileges so you will have to manually run it from an admin account to install into a privileged location.

Uninstallation

On Windows, the installer hooks into the standard Windows uninstall mechanism. This is accessible from the appropriate pane in the control panel.

On Mac, simply drag the app bundle to the Trash.

On Linux, the situation is currently less than ideal:

- open a terminal
- `cd` to the folder containing your LiveCode install. e.g.

  `cd /opt/runrev/livecode-6.7.8-rc-3`

- execute the `.setup.x86` file. i.e.

  `./.setup.x86`

- follow the on-screen instructions.

Reporting installer issues

If you find that the installer fails to work for you then please file a bug report in the RQCC or email support@livecode.com so we can look into the problem.

In the case of failed install it is vitally important that you include the following information:

- Your platform and operating system version
- The location of your home/user folder
- The type of user account you are using (guest, restricted, admin etc.)
- The installer log file located as follows:
  - Windows 2000/XP: `<documents and settings folder>/<user>/Local Settings/`
Windows Vista/7: `<users folder>/</user>/AppData/Local/RunRev/Logs
Linux: `<home>/runrev/logs
Mac: `<home>/Library/Application Support/Logs/RunRev

**Activation**

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.

**Multi-user and network install support (4.5.3)**

In order to better support institutions needing to both deploy the IDE to many machines and to license them for all users on a given machine, a number of facilities have been added which are accessible by using the command-line.

**Note:** These features are intended for use by IT administrators for the purposes of deploying LiveCode in multi-user situations. They are not supported for general use.

**Command-line installation**

It is possible to invoke the installer from the command-line on Mac, Linux and Windows. When invoked in this fashion, no GUI will be displayed, configuration being supplied by arguments passed to the installer.

On the three platforms, the command is of the following form:

```
<exe> install noui options
```

Here `options` is optional and consists of one or more of the following:

- `-allusers` Install the IDE for all users. If not specified, the install will be done 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 location to install into. If not specified, the location defaults to those described in the `Layout` section above.
- `-log logfile` A file to place a log of all actions in. If not specified, no log is generated.

Note that the command-line variant of the installer does not do any authentication. Thus, if you wish to install to an admin-only location you will need to be running as administrator before executing the command.

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

In what follows `<installerexe>` should be replaced with the path of the installer executable or app (inside the DMG) that has been downloaded.

On Windows, you need to do:
```
start /wait <installerexe> install noui options
```

On Mac, you need to do:
```
"<installerexe>/Contents/MacOS/installer" install noui options
```
On both platforms, the result of the installation will be written to the console.

Command–line uninstallation

It is possible to uninstall LiveCode from the command-line on Windows and Linux. When invoked in this fashion, no GUI will be displayed.
On both platforms, the command is of the following form:
<exe> uninstall noui
Where <exe> 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.
In the same way as for the installer, there is no authentication possible with the command-line variant of the uninstaller. It means that you need to run the uninstaller as administrator to uninstall LiveCode, if it was installed in an admin-only location.
The result of the installation will be written to the console.

Command–line activation

In a similar vein to installation, it is possible to activate an installation of LiveCode for all-users of that machine by using the command-line. When invoked in this fashion, no GUI will be displayed, activation being controlled by any arguments passed.
On both platforms, the command is of the form:
<exe> activate -file license -passphrase phrase
This command will load the manual activation file from license, decrypt it using the given passphrase and then install a license file for all users of the computer. Manual activation files can be downloaded from the 'My Products' section of the LiveCode customer accounts area.
This action can be undone using the following command:
<exe> deactivate
Again, as the LiveCode executable is actually a GUI application it needs to be run slightly differently from other command-line programs.
In what follows <livecodeexe> should be replaced with the path to the installed LiveCode executable or app that has been previously installed.
On Windows, you need to do:
start /wait <livecodeexe> activate -file license -passphrase phrase
start /wait <livecodeexe> deactivate
On Mac, you need to do:
"<livecodeexe>/Contents/MacOS/LiveCode" activate -file license -passphrase phrase
"<livecodeexe>/Contents/MacOS/LiveCode" deactivate
On both platforms, the result of the activation will be written to the console.

Proposed changes

The following changes are likely to occur in the next or subsequent non-maintenance release:

- The engine (both IDE and standalone) will require gtk, gdk, glib, pango and xft on Linux
Engine changes

Application Transport Security (ATS) (6.7.8-rc-3)

Apple introduced in iOS SDK 9.0 the Application Transport Security which 'enforces best practices in the secure connections between an app and its back end' (see the technical notice).

The most noticeable effect on applications created using Xcode 7.0 (and following versions) is that URLs using HTTP protocol are no longer considered valid, and the iOS engine will not process them; only URLs using HTTPS are deemed secure enough, and will be loaded.

This means that nativeBrowser cannot load a webpage such as http LiveCode, but will happily load https LiveCode. The same applies to the LiveCode function url.

To allow our users to create apps letting Web navigation accept unsecure webpages, we added a checkbox Disable ATS in the Standalone Settings for iOS, in the Requirements and Restrictions section. If you check this box, then ATS will be disabled, and the application can load Webpages using HTTP (as it used to do).

Android Hardware Acceleration (6.7.8-rc-1)

In order to have the Native Android Browser object being able to play videos, the Hardware Acceleration of the activity must be enabled.

However, activating the hardware acceleration rendering decreases the stack rendering speed considerably due to our use of a frequently changing bitmap as the stack view.

Thus, we added an option in the Standalone Settings to let users choose between a fast-rendering application (without the Hardware Acceleration) or an application whose Native Browsers can play videos.

Add beta testing entitlement to iOS apps standalone settings (6.7.8-rc-1)

From LiveCode 6.7.8 RC 1 and LiveCode 7.1.1 RC 1, a checkbox allows users to add a beta testing entitlement to their iOS applications.

Ability to set the dontUseQT property for a player object (Windows and OSX) (6.7.8-rc-1)

It is now possible to set the dontUseQT property for a player object. On Windows, the default value of the dontUseQt (global) property is false. This means that any player object created will use the QuickTime API for multimedia playback. With this new feature, you can set the dontUseQT property of a player to true, without changing the value of the global dontUseQt property. In that way you can have both QuickTime and non-QuickTime players playing at the same time.

On OSX, the default value of the dontUseQT (global) property is true if the OSX version is greater or equal to 10.8. This means that any player object created will use the AVFoundation API for multimedia playback. With this new feature, you can set the dontUseQT property of a player to false, without changing the value of the global dontUseQt property. In that way you can have both QuickTime and AVFoundation players playing at the same time. This can be particular useful for supporting some media formats or codecs that are not supported by the default AVFoundation player (for example .midi files, Sorenson Video 3, H.261 codecs etc)
background audio on iOS (6.7.8-rc-1)

A new "experimental" feature has been added, which allows audio to continue playing while the app is on the background (i.e. when switching apps). We have added a new checkbox "Background Audio (experimental)" in the Standalone Application Settings for iOS, which enables this feature by modifying the plist settings in the appropriate way.

The reason for this being "experimental" is that the engine does not yet support suspend/resume explicitly - this means that you do have to check your applications work correctly on startup / exit. In particular, if your app saves state on shutdown you might need to ensure it is saved more frequently so if your app gets terminated when in the background, data is not lost.

New "mirrored" property for the OSX player. Applies to both QTKit and AVFoundation player. (6.7.8-rc-1)

The default value of this property is "false". Setting this property to "true" makes the video frames to be displayed mirrored.

Syntax: set the mirrored of player "myPlayer" to true

New 'readyForDisplay' ios player property (6.7.8-rc-1)

We added a new readyForDisplay property to the ios player. This maps to the native readyForDisplay property, and is read-only. For more details see the dictionary entry of mobileControlGet function.

Windows default videograbber is now DirectX (6.7.8-rc-1)

Since QuickTime has been deprecated by Apple for a long time and is not maintained anymore, and that it is getting more and more difficult to install QT on the newer Windows versions, the default Windows videograbber has been updated to be DirectX.

Xcode 7.0 (6.7.8-rc-1)

iOS 9.0 SDK is now part of the valid SDKs that can be used for iOS standalone application deployment, from Mac OSX 10.10.4.

If you installed the new version of Xcode at another location than the previous one, we invite you to update the Xcode in Preferences > Mobile Preferences.

All the previously existing versions of iOS supported are still supported.

Some arrays encoded in 6.7 format from 7.0 won't load into 6.7. (6.7.8-rc-1)

It was possible for an array in 7.0 to have a key that contained the empty array. When encoded in 6.7 format using arrayEncode, the resulting data would not decode correctly in 6.7 - producing a truncated result.

This has been fixed - 6.7 will now successfully load such arrays when generated from 7.0.

revCapture – revCaptureListVideoCodecs() results in crash (6.7.8-rc-1)

To palliate this problem, some getters in the library revCapture must return possibly UTF-8 encoded names (such as the codecs) to allow the script writer to set them.
In the same idea, some setters can be given UTF-8 encoded strings.

Affected getters:
- revCaptureListAudioInputs
- revCaptureListVideoInputs
- revCaptureGetAudioInput
- revCaptureGetVideoInput
- revCaptureGetPreviewImage
- revCaptureListAudioCodecs
- revCaptureListVideoCodecs
- revCaptureGetAudioCodec
- revCaptureGetVideoCodec
- revCaptureGetRecordOutput

Affected setters:
- revCaptureSetAudioInput
- revCaptureSetVideoInput
- revCaptureSetPreviewImage
- revCaptureSetAudioCodec
- revCaptureSetVideoCodec
- revCaptureSetRecordOutput

Multimedia on MacOS with AVFoundation (6.7.7-rc-1)

What has changed?

The player object until now used QuickTime/QTKit APIs for audio and video playback. Since both QuickTime and QTKit have been deprecated by Apple, we have updated the player to use the new AVFoundation API. AVFoundation does not provide a controller for multimedia playback until OSX 10.9 and their new control bar is also missing some of the features provided by the QTKit controller, which required us to implement our own controller to ensure backward compatibility.

We have added three new properties to the player object enabling you to customise the appearance of the controller:

- The **hilitecolor** of a player is the color of the played area, the colour of the volume area, as well as the background color of a controller button when it is pressed.

- The **forecolor** of a player is the color of the selected area. The selected area is the area between the selection handles.

- The **backcolor** of a player is the color of the controller icons (volume icon, play/pause icon, scrub back/scrub forward icon).

We have also added support for getting information about the download progress of a remote multimedia file:

- The **loadedtime** of a player is the time up to which the movie can be played. The download progress is also displayed on the controller well.

You can also query the **status** property of the player. This property can take either of the values:
- **loading** (for remote multimedia files)
- **playing**
- **paused**

A new message is added to the player:
- The **playRateChanged** message is sent to the player when the rate is changed by the rate scrollbar controller. To enable the rate scrollbar controller, hold shift + click on scrubForward/scrubBack buttons of
the player controller.

Note AVFoundation player is supported in OSX 10.8 and above. On systems running OSX 10.6 and 10.7, LiveCode continues to provide player functionality using the QTKit API.

Objects are only deleted on idle (6.7.7–rc–1)

The engine will now flush any recently deleted objects after each command as long as they were created during the current event handling loop.

If an object is created during one event handling loop, and then deleted during another nested event handling loop it won't be flushed until control returns to the original event handling loop.

The upshot is that in tight loops, creating and deleting objects will result in objects being flushed immediately, reducing memory usage and making it easier to right object processing code which creates and deleted many objects.

Default buttons lose their glow when another button is clicked on Yosemite. (6.7.6–rc–1)

On Yosemite, default buttons should always glow regardless of whether other buttons are pressed (unless the app is in the background).

Font mapping feature (6.7.5–rc–1)

From 6.7.5 RC 1, a support for font name mapping had been added in the standalone builder settings for iOS.

Updating to iOS 8.1 caused some stacks to startup extremely slowly, and that is due to the fact that setting a font using a name different from its actual PostScript name has gotten dramatically slower from iOS 8.1 (that slowdown was already present earlier, but not that noticeable).

We internally added a mapping file for all the default iOS fonts, so that the displayed names will not change.

As for the custom fonts any user would add in an application, we are not able to provide such a mapping file. Whence adding a custom font mapping file to a project is now possible from the iOS standalone settings.

Font mapping file

Each font name is mapped to its PostScript name in this way, one mapping per line:

<font name>=<PostScript name> <font name 2>=<PostScript name 2>

- font name is the name used in the call set the font of <object> to <font name>
- PostScript Name is the PostScript name as referenced from the Font Book.

Relocation of resources for Mac standalone applications (6.7.5–rc–1)

As stated in their Technical Note 2206, Apple does not allow application to have unsigned code in the MacOS folder.

To comply with this new rule, every non-executable file is now copied in the folder 
<App>.app/Contents/Resources/_MacOS.
As for the executable files, they are still copied alongside the engine, and located in
specialFolderPath("engine").

This change does not impact any of the engine functions, which automatically redirect any path targeting
the former location of the resource files.

However, the same does not apply to the externals, as they cannot determine if a path belongs to the app
bundle or not; that affects also LiveCode external, such as revDatabase, this relocation breaks any script
calling externals with a resource file.

In order to help with this overcoming this issue, the option Resources has been added for specialFolderPath
on Desktop platforms, in LiveCode 6.7.2.

That will allow you to get the right path to the resources, being in development or standalone mode.

For instance, a code which used to be

```
// Get the place Resources folder
put the filename of this stack into tDatabasePath
delete the last item of tDatabasePath
// Append the SQLite file
put "/database/db.sqlite" after tDatabasePath
put revOpenDatabase("sqlite",tDatabasePath) into tDatabaseID
```

can be updated to

```
put specialFolderPath("resources") into tDbPath
// Append the SQLite file
put "/database/db.sqlite" after tDatabasePath
put revOpenDatabase("sqlite",tDatabasePath) into tDatabaseID
```

Add revBrowser error callback messages. (6.7.4–rc–1)

Added two new callbacks sent by revBrowser.
Note that these messages are only sent from browsers opened with revBrowserOpenCEF.

Callback messages:

- browserDocumentFailed
  - sent to the current card when the browser has encountered an error while loading a URL.
- browserDocumentFailedFrame
  - sent to the current card when the browser has encountered an error while loading a URL into a frame.

New iOS status bar style (6.7.4–rc–1)

What has changed?

The way the status bar is displayed changed in iOS 7. Previously, if the status bar was visible,
the app view was shifted down by height of the status bar (20 pixels). From iOS 7 and above,
the app view is given these 20 pixels of extra height, and the status bar is displayed on top of
the app view (i.e there is an overlapping). This is a feature added by Apple, to give developers
control over what appears behind the content of the status bar.

Some users reported this change of behaviour as a bug, since it changed the way their existing
stacks were displayed in iOS 7 and above. A quick fix to this would be updating the engine to move
the app view down 20 pixels, if the status bar is opaque. However, this fix would not guarantee
backwards compatibility, since some users may have already adjusted for iOS 7 status bar behaviour,
and have modified their code to work with those changes.

So we decided to add a new **solid** status bar style, which is opaque and automatically shifts down
the view content by 20 pixels. So the difference between “opaque” and “solid” status bar styles is the
following:

| pre-iOS 7 | iOS 7+
|-----------|------------------------|
| opaque    | move the stack below the status bar | the status bar will be over the top
| solid     | move the stack below the status bar | move the stack below the status bar

[[ In App Purchase ]] Calling mobileStoreRestorePurchases when there are no previous
purchases to restore (6.7.4–rc–1)

**What has changed**

Previously, if mobileStoreRestorePurchases was called and no previous purchases were made with that
user account, nothing happened.
Now, a purchaseStateUpdate message is sent with state=restored and productId=""

**Voice Over support (6.7.1–rc–4)**

**What has changed?**

Prior to LC 6.6.4 RC3 one could not interact with LC stacks when Voice Over was turned on, for example, a
LC button would not respond to touch events. This changed in LC 6.6.4 RC3, but broke interaction with
native iOS controls, for example, links inside a mobile browser window did not work as expected with Voice
Over. To address this issue, we added a new property to iOS native controls, `ignoreVoiceOverSensitivity`,
that allow turning off voice Over sensitivity for those objects.

Example:

```livecode
on ShowVOBrowser
    global gVOBrowserID
    if the platform = "iPhone" then
        if gVOBrowserID = empty then
            MobileControlCreate "browser"
            put the result into gVOBrowserID
        end if
        mobilecontrolset gVOBrowserID,"dataDetectorTypes","link"
        mobilecontrolset gVOBrowserID, "ignoreVoiceOverSensitivity",true
        mobilecontrolset gVOBrowserID,"rect",0,0,300,300
        mobilecontrolset gVOBrowserID,"visible",true
    end if
end ShowVOBrowser

on hideVOBrowser
```

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global gVOBrowserID
if the platform = "iPhone" then
    mobilecontrolset gVOBrowserID,"visible",false
    mobilecontrolset gVOBrowserID,"IgnoreVoiceOverSensitivity","false"
end if
end hideVOBrowser

Moreover, we added a new LiveCode function, `mobilelsVoiceOverRunning`, to detect if Voice Over is turned on.

Cocoa Support (6.7.0)

With 6.7 we have replaced the majority of Carbon API usage with Cocoa. The goals of this work are threefold:

- Allow embedding of native 'NSViews' into LiveCode windows (in particular, browser controls).
- Enable submission of LiveCode apps to the Mac AppStore.
- Enable eventual building of 64-bit versions of LiveCode for Mac.

We have achieved the first two of these goals in 6.7.

The instability issues caused by the AppStore sandbox when using mixed Cocoa and Carbon APIs has been resolved - LiveCode apps built with 6.7 can be successfully sandboxed and thus submitted to the AppStore.

The `dontUseQT` property is now true by default on Mac. This means that, by default, the AVKit implementation of the player will be used on 10.8 and above. Note that, as it stands, when `dontUseQT` is true neither QT visual effects nor sound recording will work.

The final goal (64-bit support) will be gradually worked towards over the next few LiveCode versions as the engine gets 'decarbonated' (usage of Carbon APIs which do not have 64-bit equivalents removed).

An important internal change which will affect maintainers of Mac externals that use the `windowId` is that this property now returns the 'global window number' (which is the unique ID the Window Server uses to identify windows). To turn this into a Cocoa `NSWindow` pointer use `[NSApp windowWithWindowNumber: t_window_id]`. Note that it is no longer possible to get a Carbon `WindowRef`, nor should this be attempted as trying to mix Carbon and Cocoa in this manner will cause instability inside the sandbox environment required by the Mac AppStore.

An important script visible change that has occurred due to the move to Cocoa is screen updating. Previously (when using Carbon) the OS would 'coalesce' successive requests to update the screen - the window buffer would be updated, but the window buffer would only be flushed when the OS decided to. In Cocoa, after a screen update the window buffer is always flushed. Outside of 'lock screen', the engine applies any screen updates after each command execution therefore in 6.7+ make sure you use lock screen around blocks of code that make many screen updates - unless you want each update to be visible. It should be noted that the behavior in 6.7 is now the same as on Windows and Linux however the OS takes longer to flush window updates to the screen on Mac than on the other platforms meaning that using lock screen is important.

Note: QTVR movies are no longer supported as they are not supported by QTKit nor AVKit.

Note: Drawers no longer work on Mac, they will appear as normal stacks.
Location Services Disabled with LC 6.6.4 (rc1) (6.7.0)

A new function `mobileLocationAuthorizationStatus` (or `iphoneLocationAuthorizationStatus`) has been added. This returns the current location authorization status of the calling application. The status can be one of the following:

- **notDetermined**: User has not yet made a choice with regards to this application
- **restricted**: The application is not authorized to use location service
- **denied**: User has explicitly denied authorization for this application, or location services are disabled in Settings.
- **authorizedAlways**: User has granted authorization to use their location at any time, including monitoring for regions, visits, or significant location changes.
- **authorizedWhenInUse**: User has granted authorization to use their location only when the app is visible to them (it will be made visible to them if you continue to receive location updates while in the background). Authorization to use launch APIs has not been granted.

We have also changed the flow of the messages being sent to the user when using Location Services in iOS 8:

- In the standalone application settings tab, the developer can choose the type of the authorization request for their app. The two available options are either "always" or "when in use". Selecting "always" means that the app will prompt the user to grant authorization to use their location at any time, including monitoring for regions, visits, or significant location changes. The app then has access to the user's location even when the app is in the background. On the contrary, if "when in use" is selected, the app will prompt the user to grant authorization to use their location only when the app is visible on screen. You can choose only one type, not both. This means that if you go to Settings -> Privacy -> Location, you will see only two choices available ("Never" and either "Always" or "While using the app") for this app, keeping it consistent with other iOS apps.

- When the app is installed (on device or simulator) for the very first time, a dialog will pop up asking the user to authorize the app to use their location "always" or "when in use", depending on what was previously chosen in the standalone application settings.

- Every time the app is launched, it remembers the user's preference. No other popup dialogs will appear.

- The user can at any time change their preferences in Settings -> Privacy -> Location -> ..

- In that way, you need not modify your existing scripts that used Location Services, in order to add iOS 8 support.

iOS 8 Support (6.7.0–rc–3)

Support for iOS 8 device and simulator builds has been added to 6.6.4-rc-1 for OS 10.9 users. This means that if you are using OS 10.9 you must now have Xcode 6 installed in order to perform device builds. The requirements for all previous OS X versions will remain the same.

Bugs relating to orientation, push notifications and screen sizes on iOS 8 have been resolved in addition to standalone builder updates allowing for the specification of new iPhone 6 splash screens.

Copy files do not work with the iOS 8 simulator (6.7.0–rc–3)

This fix has been tweaked for 6.6.4-rc-3. If, when attempting to deploy to the iOS 8 simulator you get the error "Unable to start simulation: Unable to run app in Simulator", delete any previous version of the app installed on the simulator and redeploy.
Non-executable file redirection on Mac (6.7.0–rc–2)

Mac AppStore rules require that only executables (including bundles and apps) are present within the Contents/MacOS folder in the application bundle.

However, historically (for cross-platform purposes), LiveCode applications traditional place resources relative to the engine executable, resulting in non-executable files to be present in the Contents/MacOS folder which violates AppStore signing policy.

To remedy this situation without requiring users to change scripts, a simple redirection facility has been implemented in the engine:

If an attempt is made to open a file for read which falls within Contents/MacOS and does not exist, the engine will attempt to open the same path but under Contents/Resources/_MacOS instead.

If an attempt is made to list files in a folder which falls within Contents/MacOS, the engine will list files in that folder and concatenate them with files within the same folder under Contents/Resources/_MacOS. Additionally the standalone builder has had an extra processing step added on Mac:

After the Mac bundle has been built, the S/B recurses through Contents/MacOS and creates an identical folder structure based at Contents/Resources/_MacOS. All non-executable files in any folders under Contents/MacOS are moved to the same folder under Contents/Resources/_MacOS whereas any Mach-O executable files are left where they are.

The result of this is that after building a standalone, from a script's point of view nothing has changed; but the app bundle will conform to the rules required for signing for the Mac AppStore.

Determining the edition of the running engine (6.7.0–dp–9)

There is a new global property the editionType. This property can be used to determine what edition of the engine is currently running.

It returns community if the currently running engine is the LiveCode Community IDE or a standalone built with LiveCode Community.

It returns commercial if the currently running engine is the LiveCode Commercial IDE or a standalone built with LiveCode Commercial.

Sound recording returns error message (6.7.0–dp–9)

The Quicktime implementation of sound recording has been updated to use the SGAudioMediaType in place of the deprecated SoundMediaType, to fix various errors with sound recording. Moreover a pausing feature has been added to the sound recorder, via the syntax record pause and record resume.

Threaded Rendering (6.7.0–dp–8)

In an effort to boost graphic rendering performance, when LiveCode is run on a machine with multiple cores, all stacks with accelerated rendering turned off will be split into multiple tiles, with each tile being rendered individually (and ideally concurrently). The number of tiles the stack is split into depends upon the machine the stack is running on.

So, for example, on a machine with 4 or more cores, a stack will be split up into 4 rectangular tiles - top left, top right, bottom left, bottom right. (On dual core machines, we use a top half bottom half split). Each tile will be rendered individually, meaning that in an ideal situation, we have 4 concurrent drawing operations providing a 4 fold speed increase. This is the ideal, but in reality, in the above case, we see closer to a 2 fold improvement. This will obviously vary with the number of concurrent operations the given machine can perform.

Note that this feature is currently disabled on Windows due to threading conflicts caused by the player object.
Effective points of graphics (6.7.0–dp–7)

You can now use 'the effective points' and 'the effective relativePoints' properties of a graphic object to fetch a polygon representation of rectangle, round rectangle, oval and regular polygon graphic objects.

Player messages aren't sent correctly. (6.7.0–dp–7)

The occurrence of playStarted, playPaused and playStopped messages has been cleaned up.

The playStarted message will only be sent when the rate of the movie changes from zero to non-zero - whether via clicking the play button, setting the playRate or by using play start / play resume via script.

The playPaused message will only be sent when the rate of the movie changes from non-zero to zero - whether via clicking the pause button, setting the playRate or by using play pause / play stop.

The playStopped message will only be sent when the movie reaches the end of playback.

These are the only cases in which the messages will be sent - in particular, setting the filename will no longer send any messages and you will not get multiple messages of the same type in succession.

Showing a modal dialog confuses mouse state. (6.7.0–dp–6)

When a modal dialog is shown, the engine will now immediate reset the mouse state to ensure the context of events is the new dialog. In particular, mouseRelease will be sent if the mouse is down and mouseLeave will be sent if the mouse is within the previous window.

Nine-way stretch for images (6.7.0–dp–5)

You can now set 'the centerRect' property of an image. This property should be a rectangle, with co-ordinates relative to the formattedRect of the image.

The property specifies the area of the image that should be stretched when the image is scaled.

For example, if the centerRect of an image which is 16x16 is set to 4,4,12,12 then:

- The 4x4 corner portions of the image will not be stretched
- The top 4x8 and 8x4 side portions of the image will be stretched horizontally or vertically (depending on orientation)
- The middle 8x8 area will stretch to fill the middle.

This property is useful for using images as backgrounds to buttons and interface elements - allowing a non-stretched border with stretched interior to be specified.

Updated text rendering for iOS and OS X (6.7.0–dp–5)

In order to improve performance, the text rendering routines for iOS and OS X and been updated to use the latest APIs. This has had a significant improvement in the text rendering speed, particularly on OS X.

It's worth noting that the previous OS X routines used synthesised font styles. That is, bold and italic styles were emulated (by slanting or thickening) if the font being rendered was not bold or italic. This is not the case for the new routines. If there is not a font present on the system with the given style, the plain alternative will be used.

The is the case with the default font - Lucida Grande. By default, systems only come with the bold variant. Thus, if you have a field with the default font and italic style, it will be rendered in plain style.

As part of LiveCodes progression toward unicode, the use of older symbol fonts is no longer fully supported.
In order to ensure symbol fonts are drawn correctly, the font must be unicode encoded. The fonts that come with the latest versions of OS X are all unicode encoded.

**Export snapshot with metadata (6.7.0–dp–5)**

An optional `with metadata <metadata array>` clause has been added to the `export snapshot` command. Currently the only metadata key that is implemented is `density` which can be used to include pixel density metadata in pixels per inch.

For example:

```
put 144 into theMetadataA["density"]
```

Export snapshot of group 1 at size the width of group 1 2, the height of group 1 2 with metadata theMetadataA

**New variant of open and secure socket (6.7.0–dp–5)**

New variants of open and secure socket have been added:

- `open secure socket socket with verification for host host`
- `secure socket socket with verification for host host`

The new host parameter allows the user to specify the host name the connection should be verified against. This is particularly useful if server your socket is directly connected to is not the end host you are talking to. For example when tunnelling through a proxy to connect to a HTTPS URL.

**Multiple density image support for patterns. (6.7.0–dp–5)**

This extends the existing image resolution independence features to any pattern using that image. When an object pattern is set to a multiple density image, that pattern will automatically use the best source image for the density at which it is drawn.

**QT–related features don't work. (6.7.0–dp–5)**

QT effects and sound recording will now work as long as `dontUseQT` is set to false. In this case, the player will default to using QTKit. If you are submitting an app to the Mac AppStore, or wish to use AVFoundation player on 10.8 and above, ensure that `dontUseQT` is set to true in your startup handler, or before any code or stack which uses QT is run.

**Objects which are adjacent don't necessary appear so at non integral scale factors. (6.7.0–dp–5)**

At non-integral scale factors (such as 150% Hi-DPI mode on Windows), objects which should appear next to each other can have a visible channel. This issue isn't completely fixable due to the nature of approximations used when compositing to the screen. However, this problem has been mitigated in a couple of ways - firstly antialiasing is forced on whenever the scale factor is non-integral; secondly clipping rectangles always fall on device pixel boundaries.
Queuing too many pending messages causes slowdown and random crashes. (6.7.0-dp-5)

A limit on the number of user-defined pending messages (those created with 'send in time') has been imposed. If there are more than 64k messages in the pending message queue, 'send in time' will now throw an error when attempting to queue another one. This limit has been imposed to prevent engine lock up and eventual instability due to memory exhaustion in the case that pending message loops cause rapid increases in the number of pending messages.

Inconsistencies in behavior when doing 'delete the selectedChunk'. (6.7.0-dp-5)

The following should all operate the same way after selecting a line in a field by doing 'triple-click', or just selected the whole line without the paragraph break:

- pressing backspace
- executing 'delete the selectedChunk'
- executing 'get the selectedChunk; delete it'

Previously, 'delete the selectedChunk' would cause paragraph styles not to be set correctly on the resulting paragraph; or the paragraph break to be included when it should not be - this is no longer the case.
Previously, 'get / delete it' would only work correctly the first time the command was executed - this is no longer the case.

In-App Purchasing (6.7.0-dp-3)

Why has the API changed?

The LiveCode engine until now supported in-app purchasing for apps distributed through the Google Play store (formerly Android Market), as well as the Apple AppStore. This support is now extended so that apps distributed through other avenues (the Amazon & Samsung app stores) can make use of the in-app purchase features provided. For this reason, new LiveCode commands have been added, and some of the old ones have slightly changed. However, all of the old commands are still supported (for the Google Play Store and the Apple AppStore). In order the existing scripts users have written to continue to work, all it needs is to add one or two extra lines, depending on the store. More details on this later. Moreover, the new API allows the user to query specific product information (such as price, description etc) before they make a purchase, and supports purchasing of subscription items for all available stores. Furthermore, for the Google Play Store, the new API uses the newest version of Google In-App Billing API (v3), that offers synchronous purchase flow, and purchase information is available immediately after it completes. This information of in-app purchases is maintained within the Google Play system until the purchase is consumed. More on the consumption of purchased items later.

Note that our in-app purchasing implementation for the Amazon Appstore is unfortunately restricted to commercial license holders only. This is due to the Amazon PML license being incompatible with the GPL. If you wish to use the Amazon in-app purchasing features of LiveCode you will need to be a valid commercial licence holder.

What has changed?

To start with, the main changes are the following:

- Each item has an extra property, the itemType, that has to be specified before making a purchase. This is done using the mobileStoreSetProductType command. The itemType can either be subs, for subscription items, or inapp for consumable and non-consumable items.

- Due to a restriction of the newest version of Google In-App Billing API, you cannot buy consumable
items more than once, unless you consume them. This is done using the `mobileStoreConsumePurchase` command. Note that this command is actually only used when interacting with the Google Play Store API. What it does is sending a consumption request to Google Play, so that you will be able to buy this product again. You would typically implement consumption for items that can be purchased multiple times (i.e. for consumable products, such as in-game currency, fuel etc). Note that in case you call `mobileStoreConsumePurchase` on a non consumable product, then you no longer own this item.

- The new purchase flow has become simpler.

Instead of

- creating a purchase request (`mobilePurchaseCreate` `productID`)  
- store the new purchase request ID (put the result into `tPurchaseID`),  
- setting properties such as quantity and developer payload (`mobilePurchaseSet` `tPurchaseID`, "quantity", `pQuantity`)  
- sending a purchase request to the store (`mobilePurchaseSendRequest` `tPurchaseID`)  

now all it needs is just

- set the product type (`mobileStoreSetProductType` `productID`, `itemType`)  
- make a purchase (`mobileStoreMakePurchase` `productID`, `quantity`, `developerPayload`)  

- The `purchaseStateUpdate` message that the store sends in response to `mobileStoreMakePurchase`, contains not only the purchase identifier and the state of the purchase, but also the product identifier of the requested item:

  ```plaintext
  purchaseStateUpdate purchaseID, productID, state
  ```

- So you can query a purchased product property using the product identifier, instead of the purchase identifier:

  ```plaintext
  mobileStoreProductProperty productID, propertyName
  ```

Note that the old function `mobilePurchaseGet` `purchaseID`, `propertyName` will still work.

- You can get information on a specific item (such as product identifier, product type, price etc), using the `mobileStoreRequestProductDetails` command. The store responds:

  ```plaintext
  In case the request is successful, a productDetailsReceived message is sent by the store.
  In case of failure, a productRequestError message is sent by the store.
  ```

- You can get a list of all known completed purchases using `mobileStorePurchasedProducts` function. This returns a list of product identifiers of restored or newly bought purchases.

What needs to change in existing scripts?

It is recommended that scripts which were written using previous versions of LiveCode (and thus use the old LiveCode API for in-app purchasing), should be used to run on these versions. However, it is still possible to run an existing script (that makes use of in-app purchasing feature) on LiveCode 6.7, only by changing a few things:
- **purchaseStateUpdate** message is now called with 3 parameters, (purchaseID, productID, state), instead of two (purchaseID, state). This applies to apps built for both the Google Play Store and the Apple AppStore.

- before sending a **mobilePurchaseSendRequest**, you have to specify the type (subs or inapp) of the item using **mobileStoreSetProductType productID, type** command (Google Play Store only).

- if you want to buy more than one consumable item, you have to consume it first. This can be done by using the **mobileStoreConsumePurchase productID** command (Google Play Store only).

If you want to build apps for Amazon and/or Samsung Store, you have to use the newest LiveCode API. Â

**How to use the new API?**

**Setup**

Before you can use IAP, you must set up products in each vendor's developer portal. In brief, you have to:

- Create each product you want to sell, giving it a unique identifier. Note that for the Samsung Seller Office, the developer cannot choose the product identifier. This is assigned by the store.
- Submit the items for approval to the appropriate store. Some stores may require additional metadata, such as screenshots of your for sale items.
- Set up unique test accounts. The user is not charged when making a purchase using the test account details. This applies to Apple and Google. Amazon and Samsung have different methods for testing.

For more detailed store-specific information, you can have a look at the links below:

- **Apple AppStore**
- **Google Play Store**
- **Amazon Appstore**
- **Samsung Apps Store** and more specifically click [here](#)

**Purchase Types**

There are three classes of products users can purchase:

1. One-time purchases that get "consumed". Typically, these items are called **consumables**. The user can buy as many times as they want (virtual coins/bullets in a game), except in apps built for the Google Play Store, where the user has to consume the purchased item first, and then buy (one) more.

2. One-time purchases that last forever, such as unlocking extra features, downloading new content once. These items are usually called **non-consumables**.

3. Subscriptions where the app user pays a periodical fee to receive some ongoing service. Subscriptions can either be auto-renewable or non-renewable.

Each vendor uses different terminology for these purchases:

<table>
<thead>
<tr>
<th></th>
<th><strong>Apple</strong></th>
<th><strong>Google</strong></th>
<th><strong>Amazon</strong></th>
<th><strong>Samsung</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>one-time, gets consumed</td>
<td>consumable</td>
<td>unmanaged</td>
<td>consumable</td>
<td>consumable</td>
</tr>
<tr>
<td>one-time, lasts forever</td>
<td>non-consumable</td>
<td>managed</td>
<td>non-consumable</td>
<td>non-consumable</td>
</tr>
<tr>
<td>subscriptions</td>
<td>auto-renewable, non-renewable</td>
<td>auto-renewable</td>
<td>auto-renewable</td>
<td>non-renewable</td>
</tr>
</tbody>
</table>
Testing

Again, each store uses a different method of testing.

For the Apple AppStore, you can create test accounts. More details here.

For the Google Play Store, you can create test accounts as well as test using static responses. More details here. Note that you cannot test subscriptions using the test account. This means that the test user will be charged when purchasing a subscription item. A possible workaround to this is to log into the Google Wallet Service as a seller, using your Google Developer account details, and “refund” and then “cancel” the order of the subscription item that the test user had just purchased.

For the Amazon Appstore, you can test your app using SDK Tester. This is a developer tool that allows users of the Amazon Mobile App SDK to test their implementation in a production-like environment before submitting it to Amazon for publication. More details here.

For the Samsung Apps Store, Samsung IAP API offers three modes to test the service under various conditions: Production Mode, Test Mode Success, Test Mode Fail. During development period, you can select the mode in the Standalone Application Settings window. Before releasing your application, you must change to Production Mode. If you release your application in Test Mode, actual payments will not occur. More details on page 6 and 7 here.

Note that in Production Mode, your app can only interact with item groups with sales status. This information exists in the Samsung Seller Office. However, item groups are only given sales status after the app has been certified. In other words, you can test your app in Production Mode only after it has been certified by Samsung.

Syntax

Implementing in-app purchasing requires two way communication between your LiveCode app and the vendor’s store. Here is the basic process:

- Your app sends a request to purchase a specific in-app purchase to the store
- The store verifies this and attempts to take payment
- If payment is successful the store notifies your app
- Your app unlocks features or downloads new content / fulfills the in-app purchase
- Your app tells the store that all actions associated with the purchase have been completed
- Store logs that in-app purchase has been completed

Commands, Functions and Messages

To determine if in-app purchasing is available use:

mobileStoreCanMakePurchase()

Returns true if in-app purchases can be made, false if not.

Throughout the purchase process, the store sends purchaseStateUpdate messages to your app which report any changes in the status of active purchases. The receipt of these messages can be switched on and off using:

mobileStoreEnablePurchaseUpdates
mobileStoreDisablePurchaseUpdates

If you want to get information on a specific item (such as product identifier, product type, price etc), you can use:
mobileStoreRequestProductDetails productID

The productID is the identifier of the item you are interested. Then, the store sends a productDetailsReceived message, in case the request is successful, otherwise it sends a productRequestError message:

productDetailsReceived productID, details

The productID is the identifier of the item, and details is an array with the following keys - that are different depending on the store:

For Android stores (Google, Amazon, Samsung), the keys are:

- productID : identifier of the requested product
- price : price of the requested product
- description : description of the requested product
- title : title of the requested product
- itemType : type of the requested product
- itemImageUrl : URL where the image (if any) of the requested product is stored
- itemDownloadUrl : URL to download the requested product
- subscriptionDurationUnit : subscription duration unit of the requested product
- subscriptionDurationMultiplier : subscription duration multiplier of the requested product

Note that some Android stores do not provide values for all the above keys. In this case, the value for the corresponding key will be empty.

For iTunes Connect store (Apple), the keys of details array are the following:

- price : price of the requested product
- description : description of the requested product
- title : title of the requested product
- currency code : price currency code of the requested product
- currency symbol : currency symbol of the requested product
- unicode description : unicode description of the requested product
- unicode title : unicode title of the requested product
- unicode currency symbol : unicode currency symbol of the requested product

If mobileStoreRequestProductDetails is not successful, then a productRequestError message is sent:

productRequestError productID, error

The productID is the identifier of the item, and error is a string that describes the error.

Before sending a purchase request for a particular item, you have to specify the type of this item. To do this, use:

mobileStoreSetProductType itemType

The itemType can either be subs or inapp.

To create and send a request for a new purchase use:

mobileStoreMakePurchase productID, quantity, developerPayload

The productID is the identifier of the in-app purchase you created in the vendor's developer portal and wish to purchase. The quantity specifies the quantity of the in-app purchase to buy (iOS only - always "1" in Android). The developerPayload is a string of less than 256 characters that will be returned with the
purchase details once complete. Can be used to later identify a purchase response to a specific request
(Android only).

To get a list of all known completed purchases use:

**mobileStorePurchasedProducts()**

It returns a return-separated list of product identifiers, of restored or newly bought purchases which are
confirmed as complete. Note that in iOS, consumable products as well as non-renewable subscriptions will
not be contained in this list.

Once a purchase is complete, you can retrieve the properties of the purchased product, using:

**mobileStoreProductProperty**(productID, property)

The parameters are as follows:

- **productID**: identifier of the requested product
- **property**: name of the purchase request property to get

Properties which can be queried can differ depending on the store:

For the Samsung Apps Store (Android), you can query the properties:

- **title**: title of the purchased product
- **productId**: identifier of the purchased product
- **price**: price of the purchased product
- **currencyUnit**: currency unit of the product price
- **description**: description of the product as specified in the Samsung Seller Office
- **itemImageURL**: URL where the image of the purchased product is stored
- **itemDownloadURL**: URL to download the purchased product
- **paymentId**: payment identifier of the purchased product
- **purchaseId**: purchase identifier of the purchased product
- **purchaseDate**: purchase date, in milliseconds
- **verifyUrl**: IAP server URL for checking if the purchase is valid for the IAP server, using the **purchaseId**
  value

For the Google Play Store (Android), you can query the properties:

- **productId**: identifier of the purchased product
- **packageName**: application package from which the purchase originated
- **orderId**: unique order identifier for the transaction. This corresponds to the Google Wallet Order ID
- **purchaseTime**: time the product was purchased, in milliseconds
- **developerPayload**: developer-specified string that contains supplemental information about an order. You
can specify a value for this in **mobileStoreMakePurchase**
- **purchaseToken**: token that uniquely identifies a purchase for a given item and user pair.
- **itemType**: type of the purchased item, **inapp** or **subs**
- **signature**: string containing the signature of the purchase data that was signed with the private key of the
developer. The data signature uses the RSASSA-PKCS1-v1_5 scheme

For the Amazon Appstore (Android), you can query the properties:

- **productId**: identifier of the purchased product
- **itemType**: type of the purchased product. This can be **CONSUMABLE**, **ENTITLED** or **SUBSCRIPTION**
- **subscriptionPeriod**: string indicating the start and end date for subscription (for subscription products only)
- **purchaseToken**: purchase token that can be used from an external server to validate purchase
For Apple AppStore (iOS), you can query the properties:

- **quantity**: amount of item purchased. You can specify a value for this in `mobileStoreMakePurchase`
- **productId**: identifier of the purchased product
- **receipt**: block of data that can be used to confirm the purchase from a remote server with the iTunes Connect store
- **purchaseDate**: date the purchase / restoration request was sent
- **transactionIdentifier**: unique identifier for a successful purchase / restoration request
- **originalPurchaseDate**: date of the original purchase, for restored purchases
- **originalTransactionIdentifier**: the transaction identifier of the original purchase, for restored purchases
- **originalReceipt**: the receipt for the original purchase, for restored purchases

Once you have sent your purchase request and it has been confirmed, you can then unlock or download new content to fulfill the requirements of the in-app purchase. You must inform the store once you have completely fulfilled the purchase using:

`mobileStoreConfirmPurchase productID`

Here, `productID` is the identifier of the product requested for purchase.

`mobileStoreConfirmPurchase` should only be called on a purchase request in the `paymentReceived` or `restored` state (more on the states of the purchase later). If you don't send this confirmation before the app is closed, `purchaseStateUpdate` messages for the purchase will be sent to your app the next time updates are enabled by calling the `mobileStoreEnablePurchaseUpdates` command.

To consume a purchased product use:

`mobileStoreConsumePurchase productID`

Here, `productID` is the identifier of the product requested for consumption. Note that this command is actually only used when interacting with the Google Play Store API. This is because the Google Play Store API has a restriction that ensures a consumable product is consumed before another instance is purchased. *Consume* means that the purchase is removed from the user's inventory of purchased items, allowing the user to buy that product again.

Note that `mobileStoreConsumePurchase` must only be called on consumable products. If you call `mobileStoreConsumePurchase` on a non-consumable product, then you no longer own this product.

To instruct the store to re-send notifications of previously completed purchases use:

`mobileStoreRestorePurchases`

This would typically be called the first time an app is run after installation on a new device to restore any items bought through the app.

To get more detailed information about errors in the purchase request use:

`mobileStorePurchaseError (purchaseID)`

The store sends `purchaseStateUpdate` messages to notifies your app of any changes in state to the purchase request. These messages continue until you notify the store that the purchase is complete or it is cancelled.

`purchaseStateUpdate purchaseID, productID, state`

The state can be any one of the following:

- **sendingRequest**: the purchase request is being sent to the store / marketplace
- **paymentReceived**: the requested item has been paid for. The item should now be delivered to the user and confirmed via the mobileStoreConfirmPurchase command
- **alreadyEntitled**: the requested item is already owned, and cannot be purchased again
- **invalidSKU**: the requested item does not exist in the store listing
- **complete**: the purchase has now been paid for and delivered
- **restored**: the purchase has been restored after a call to mobileStoreRestorePurchases. The purchase should now be delivered to the user and confirmed via the mobileStoreConfirmPurchase command
- **cancelled**: the purchase was cancelled by the user before payment was received
- **error**: An error occurred during the payment request. More detailed information is available from the mobileStorePurchaseError function

**Clipboard data 'styledText' array accessor. (6.7.0–dp–1)**

A new clipboard format has been added 'styledText'. This format returns (or sets) the clipboard to a styled text array - the same format as the 'styledText' property of field chunks. All text formats can convert to and from the 'styledText' key.

For example, you can now do:

```plaintext
set the clipboardData["styledText"] to the styledText of line 5 of field 3
set the styledText of line 6 of field 3 to the clipboardData["styledText"]
```

Note that the dragData can now also be used with this new format in exactly the same way.

**Improved revBrowser external (6.7.0–dp–1)**

The revBrowser external has been updated to support Cocoa on OSX, and now embeds the browser control properly within the window.

In addition a new browser component based on CEF (Chromium Embedded Framework) has been added.

This new browser allows for a consistent appearance across all platforms with a modern, well supported feature set.

To use the new CEF browser use the `revBrowserOpenCef` command in place of `revBrowserOpen`. This will create a CEF browser instance which can be used with the existing revBrowser commands and functions in exactly the same way as before.

**JavaScript integration**

The new chrome browser allows us to add the ability to call LiveCode handlers from within the browser using JavaScript. To make a LiveCode handler visible to JavaScript, use the `revBrowserAddJavaScriptHandler` command, and to remove it use the `revBrowserRemoveJavaScriptHandler` command. LiveCode handlers are added as functions with the same name attached to a global 'liveCode' object. When called, these functions will result in the corresponding LiveCode handler message being sent to the browser card with the browser instance ID and any function arguments as parameters.

**Example:**

With the handler "myJSHandler" registered using `revBrowserAddJavaScriptHandler`, it can be called from the browser like so:

```javascript
liveCode.myJSHandler(tFieldContents, tAction);
```

the LiveCode handler would then be called with the following parameters:

- `pBrowserInstance` (the browser instance id, as returned from the `revOpenBrowserCef` function)
OS 10.5 (Leopard) Support (6.7.0–dp–1)

As of version 6.7-dp-1, Mac OS 10.5 (Leopard) support has been dropped from LiveCode. This is primarily for technical reasons: In order to support the latest OS X features (e.g. Cocoa) dropping 10.5 support was required.

As Leopard was the last Mac version to support PPC, support for the PPC architecture has also been dropped and the Universal and PPC options have been removed from the Standalone Builder.

Users wishing to produce 10.5 compatible executables can still do so using LiveCode version 6.6.x (and earlier).

Setting the label of an option or combo-box does not update the menuHistory. (6.7.0–dp–1)

Previously, setting the label of an option or combo-box control would not update the menuHistory property. Now, setting the label of such a control will search through the list of items in the control and set the menuHistory to the first item that matches (taking into account the setting of the caseSensitive local property).

Note: Unlike setting the menuHistory property direct, this does not cause a menuPick message to be sent.

Specific bug fixes (6.7.8–rc–3)

(bug fixes specific to the current build are highlighted in bold, reverted bug fixes are stricken through)

16299 Unable to mobileControlSet URL with http:// URL on iOS 9.1 Simulators and Devices
16284 First iOS standalone build with Xcode 7.0/7.1 causes "linking for arm" error
16268 Use the server-revdb.dll external for Windows server

Specific bug fixes (6.7.8–rc–2)

16258 Remove unneeded load-time dependence on QTKit.
16257 When switching between windows on Mac
16234 MobileControlDelete crashes app in LC 6.7.8 (RC 1) on iOS sim 9.0
16232Externals in the Copy Files of a standalone causes the app to crash in the iOS simulator

Specific bug fixes (6.7.8–rc–1)

16154 Allow audio playing when app is on background on iOS
16120 [Global Jam] Can't deploy to iOS 9 Simulator when using referenced images
16111 Save As dialog always opens in a folder deep in LiveCode's app bundle
16047 open process / launch does not work with quotes around the executable name
16035 Check for update does not work
16027 Android audio/video controller disappears after some seconds of inactivity
16017 Message box doesn't remember where it was placed
15987 iOS environment variable is built using libc environ
15971 strokeGradient in subgraphics of polygon is off
15934 Holding down the SHIFT key while pressing the Backspace key does nothing
15925 MobileControl Player on Android Needs Parity with IOS for Monitoring Data Buffering
15878  Fix a crash caused by waiting during modal window setup
15875  Rotating Android causes app to restart if minimum version is set above 3.1 at deployment
15873  Closing a minimized stack in LC676 saves the stacks rect as -32000
15814  Can’t read a file using UNC path in Windows
15799  Some arrays encoded in 6.7 format from 7.0 won't load into 6.7.
15763  Can’t select the last control by chunk expression
15692  [Docs] Dictionary entry for “flip” command is missing text
15606  systemVersion reports incorrect value from Windows 8.1
15255  Windows videograbber should default to DirectX
15096  Escape key does not dismiss the ’answer color’ dialog
14706  Request to add beta testing entitlement to iOS apps
14447  [[Docs]] QTVersion of QuickTime return 0.0
13923  formattedHeight of a button is incorrect if button has an icon
13820  Player object cannot play a midi file on Yosemite.
13754  Changing the scalefactor might hide the stack off screen
13575  Dictionary - iphoneSetKeyboardReturnKey examples
13537  Global variables should not trigger a strict compilation error if a local variable has the same
       name in another object script
11709  Set the vScroll property of a native scroller does not work on Android
11133  uninstall noui does not trigger uninstaller with no UI
9942   The ”system time” is always retured in long format on Linux
9744   iOS video playback starts with black frames
7217   selectionChanged not sent on arrow navigation
1751   command ”flip the selobj vertical” returns errors

Specific bug fixes (6.7.7–rc–4)
15898  Building 32-bit slice only causes app to crash on iPad 1

Specific bug fixes (6.7.7–rc–3)
15743  iOS standalone engine do not build anymore in Debug mode
15718  ‘SSL library not found’ error thrown on iOS when using SSL & Encryption library
15705  strange flash occurring under iOS with visual effect push left/right
15703  iOS app saved with minimum version 8.4 won't install on a device running iOS 8.4
15685  Fix the path to the OSX standalone engine on Linux

Specific bug fixes (6.7.7–rc–2)
15654  LiveCode 6.7.7 RC 1 / 7.1.0 DP 1 won’t install on 10.6.8
15642  revZip fails to open archive in 64-bit iOS
15625  ”record sound” is not replacing existing sound file
15619  Opening sqlite on iOS return ”revdberror
15590  Crop image within a repeat loop causes crash to desktop after a few iterations
11569  Scrolling a group crashes LiveCode when hiding scrollbar

Specific bug fixes (6.7.7–rc–1)
French application menu is not translated.
Do not run "after" handlers if an error occurs.
Preferences Mobile Support can't find the SDK for Xcode 6.4
Tooltip appears for controls out of the visible window
Erroneous assertion failure logged on server when doing 'go stack'
The filename / effective filename of the root script returns empty in LiveCode server.
[Player] Progress Bar does not update when playing audio files and alwaysBuffer is true
Large files can EOF prematurely on Linux.
DataGrid library missing in standalones
Player doesn't accept filenames starting with file://
Update SQLite to 3.8.10.2
Cannot hide cursor on Mac from LiveCode 6.7
[[Player]] Make default foregroundColor a colour a colour other than black
[[Player]] foregroundColor and hiliteColor not saved with stack
[[Player]] player object in hidden group still displays video image
[[Player]] enhancement set colour of player controller buttons using backcolor property
iphoneHeadingCalibrationTimeout returns empty
set the RTFText of field does not work on Android
Objects are only deleted on idle
FormattedHeight does not take into account controller
eraser tool in magnify palette is 1 pixel off

Specific bug fixes (6.7.6–rc–3)
Make rawKeyUp and rawKeyDown consistent on non-Latin chars

Specific bug fixes (6.7.6–rc–2)
Trailing 'break point' in the points of a graphic not preserved.

Specific bug fixes (6.7.6–rc–1)
libURL handles Content-Transfer-Encoding incorrectly
Filename of stack not properly handling tilde character
Crash when building a SQLite query with out-of-bounds placeholders
Deleted objects can still be accessed in some circumstances.
the defaultFolder is initialised to the iOS SDK path
Setting the points of a graphic to a string with trailing returns causes erroneous points to be added.
keyUp on MacOS is sent with wrong value
Wait with messages causes crash on Mac OS
in iOS
Minimum Android Version - add 4.0
Default buttons lose their glow when another button is clicked on Yosemite.
2.2 Android Froyo standalone application crashes
IDE crashes after deleting a control
Problems with players
Can't use mouse events in QT players on a Mac
LiveCode Server provides no POST data when Content-Type is application/x-www-form-urlencoded; charset=<...>

Specific bug fixes (6.7.5–rc–3)

15320 Standalones with externals quit when launched if built for multiple platforms
15300 Cannot build iOS app using Xcode 6.2 on Yosemite
15288 library dropbox working as standalone
15244 revdb always put in standalones
15232 Android - acceleration rendering causing flicker when turned on
15110 Android turning on "acceleratedRendering" causes a black screen flash
14257 OpenSSL version outdated

Specific bug fixes (6.7.5–rc–1)

All root folders are added (empty) in the Mac standalone's Externals folders if
~/Documents/My LiveCode/Runtime/Mac OS X/x86-32/Externals/externals.txt file does not exist
15187 Xcode 6.3 cannot be selected for iOS deployment
15125 [Docs] Updated datetItems entry
15091 go to card on mousedown causes crash on IDE
15090 App quits with setting accelerated rendering on opening in iphone 5S and 6
15052 set EnabledTracks does not actually set the enabled tracks
14972 Hard crash on iOS during startup
14921 Player becomes unresponsive when changing cards in a background
14879 android mobile app launch hangs up while processing the opencard handler
14794 unable to test ios standalones on iPad 1 running ios 5.1.1
14664 Mac OS too many screen updates when focussing field
14466 read from socket x until empty returns nothing
14333 mobileClearTouches clears touches after a mouseDown handler has completed
14295 standalone built for Yosemite cannot connect to database if it is within the app bundle
14244 acceleratedRendering property causes crash
14205 Crash when using dictation
13452 revVideoGrabber crashes in Windows 8
13385 Fix a null-pointer crash on Linux server

Specific bug fixes (6.7.4)

15070 mobilePick position wrong on iOS8.2 and iPhone 6 scaled

Specific bug fixes (6.7.4–rc–3)

15037 Simulators listed in Preference > Mobile Support are not in the Development > Test Target list
15011 Crash when sorting non-shared text field in a group
14946 More Room For Prompt/Message in mobile busy indicator
14866 Can't Use XCode Version 6.2 (6C131e)
14858 [In-app purchase] Calling mobileStoreProductProperty(prodID
14816 iOS fullcreen video controller not visible when tapping on movie rect
14408 Using beep while audio is playing on mobile
Wrong Splash screen on iPhone 6+
Script Editor incorrectly highlights block comments as if they nest.

Specific bug fixes (6.7.4-rc-1)

14779  [in-app purchase] Android: Receive a purchaseStateUpdate message with state=complete after calling mobileStoreConfirmPurchase
14752  Quitting LiveCode with revBrowserCEF window open causes a hang
14689  Option menu crashes app in Simulator 8.0
14665  fatal exception - Service not registered: com.runrev.android.billing.google.lahelper
14625  iOS standalones with RevZip externals and iOS Min Version >= 7.0 do not build
14588  Intermittent crash on MCPlatformWindowMaskRelease()
14525  video controller not responding
14521  IDE crashes when viewing with Inspector
14489  MobilePick Fails on Android 5 every other load
14483  fiddling with alphaData crashes/hangs LC 7.0.2
14461  [[ In-app purchase ]] mobileStorePurchasedProducts returns empty on iOS
14456  Google Play Store - No Information on Product Details
14450  Google Play Store - Extra error message when an in-app purchase fails
14402  [[ InApp Purchase ]] Calling mobileStoreRestorePurchases when there are no previous purchases to restore
14140  Location of modal stacks incorrect on OSX
14011  Printing is inconsistent
13586  LC and standalones use wrong version icon in Ubuntu Launcher
11544  iOS 7 Status Bar Hidden

Specific bug fixes (6.7.2)

14422  Binary submitted to App Store rejected due to minimum version mismatch

Specific bug fixes (6.7.2-rc-2)

14421  Text breaking can lead to hang LiveCode with Unicode text
14406  Unable to enter Chinese characters in script editor
14392  New resource folder location prevent from using 'launch' in standalones
14350  Standalone crashes after closing a palette window
14347  crash with illegal imagesource manipulation
14346  Menu items which point to submenus are selectable
14345  [[Player]] Audio files do not play in player object
14290  Faulty implementation of location services plist file in Livecode 6.7
13764  iOS 8 GPS chips should be used even though NA is selected in standalone settings
13213  Android externals libraries are not copied in the apk on Linux
13211  Crash when pressing backspace key after writing an accented character

Specific bug fixes (6.7.2-rc-1)

14308  Answer color returns the wrong color on OS X after using magnifying glass
14306  IconGravity does not work in windows
14285  mobileCanMakePurchase() stops in Android
14269  Play audioclip loops when followed by wait until the sound is done
14253  [[ Player ]] For some videos
14252  [[Player]] documentation does not include error result for setting filename
14245  Video Player not managing relative paths
14238  background pattern of a field out of sync if formattedHeight > roughly 32768
11417  mobileExportImageToAlbum don't work on Android

Specific bug fixes (6.7.1)

14249  Buttons with no icon but an icongravity make LiveCode crash on load
14233  [[Player]] retains previously open movie when invalid path used.
14232  [[Player]] does not return correct result when setting player filename to invalid path or corrupt movie
14211  referencing the next line causes the IDE to crash
14210  LiveCode IDE crashes changing textColor of the button
14185  Command D has to be pressed twice to trigger "Don't Save" in stack save dialog when triggered by Quit
13860  MobileExportImageToAlbum fails to export a referenced image in iOS

Specific bug fixes (6.7.1–rc–4)

14176  Macmousedown sound plays every other time
14152  Wait… with messages locks text typing
14141  IDE Unresponsive after setting the fileName of a player object during a playStopped message
14067  numpad key codes changed [regression]
14066  Export empty ranges if they have attributes
14019  Color picker can cause IDE to lock up
13871  Allow hostname to IP address resolution when only loopback interfaces are configured.
13253  mobileBusyIndicatorStop not working properly when multiple instances of busy indicators are present on android
13169  mobileUpdateContact cannot be dismissed
13168  mobileShowContact cannot be dismissed
12899  mobilePick with empty list inside of inputBeginEditing crashes app
12784  Selecting text in field with traversalOn set to false confuses selectedField and focusedObject
12726  Crash if you copy the tempate button
11688  Take margins into account for pageHeight and pageRanges field props

Specific bug fixes (6.7.1–rc–3)

14098  answer color with color not correctly working LC 6.7.1 RC2
14093  Printing crashes on MAC
14070  text color in menuButton does not invert
14035  server-based video not working in LiveCode 7 or 7.0.1 (rc1 or rc2)
14034  Non-explicit return values from functions needs documenting
14028  export snapshot doesn't work on invisible objects
13927  Local notifications not working in iOS 8 simulator

Specific bug fixes (6.7.1–rc–2)
MobilePickContact always returns empty in iOS8

export snapshot not working as expected for video snapshot exports

[[Player]] Looping does not work within selection

The IDE crashes when saving a specific project

audioClip looping cannot be stopped

Snapshot on iOS 8.0 is offset wrongly if orientation is landscape

An application with no menus can not be quit with the menu or key commands

setting alphaData does not replace alphaData but somehow adds to alphaData from LC 6.7 on

LiveCode server unable to find handlers in script only stack
dontuseqt value is ignored in player creation when reopening a recently closed stack that contains a player

Standards menus can't be translated

command-alt-tab does not toggle browse/edit mode

Fix a default button highlight issue for Yosemite

Deleting whitespace at beginning of a script is buggy

Missing dictionary entry for "status" property

Setting defaultMenubar is flaky

Images with resizeQuality set to "good" are rendered oddly depending on coordinates

Corrupted stack file crashes LiveCode

External tail calls do not execute correctly on Desktop.

arrowKeys trigger mouse down in menu bar

Unable to uncomment lines of code via keyboard shortcut in OSX

Script Editor auto-indenting no longer works as in previous versions

Cards don't resize & redraw in wrong place after clicking the title bar

Sheet dialog won't stay at the right place

command "play stop" does not work

Fix the colour picker on OSX Yosemite

Specific bug fixes (6.7.1–rc–1)

Popup menu items with Quit / Preferences or About are hidden on Mac.

Cmd+

On OSX Yosemite

Change in how formattedRect of chunk is reported

Could not generate package manifest when newer Android Build tools are installed

Use Helvetica Neue as the default font on OSX Yosemite

Make sure the first callback is always sent

Instability when deleting a space before a handler definition on the very first line of a script.

Export snapshot from rect at size selects the wrong source rectangle

Older versions of LiveCode report a corrupt stack when opening a file from newer version

On OSX

After Android hardware backKey is pressed

Specific bug fixes (6.7.0)

Project Browser reports incorrect control for behavior of a card
Double-Clicking On a Player Doesn't Show Inspector
Picker broken on iPhone 4 iOS 7.1
the shape property of stacks is broken
Externals using 'LCObjectPost' don't always cause the action to trigger - particularly on Yosemite.
Player plays audio but not video
[[Player]] video image not shown under some circumstances
mobilepickphoto in landscape orientation causes an orientation change
[[ iOS 8 ]] Denying access to location services when the app is launched for the very first time causes the app to freeze
iOS 8 Keyboard is invisible if privacy set to "While Using the App"
iOS Picker appears under the keyboard on iOS 8
Scrollbar for the font selection in the script editor preferences doesn't work
Ask/answer calls in (pre)openstack cause iOS 8 apps to hang
Make sure PATH variable passes through to shell() properly on Yosemite.
Location Services Disabled with LC 6.6.4 (rc1)
Shutdownrequest message sent twice when triggered from quit in menu or Cmd-Q on Mac.
Scroll is being reset in 6.7 when it is not in 6.5.2
Text wraps when field width set to formattedWidth
LiveCode application takes up 98% of processor
printing a field with listbehaviour set to true makes gray background

Specific bug fixes (6.7.0–rc-3)
OS X standalone can't be run out of app bundle
When Voice Over is turned on
iOS 8 ask and answer dialogs do not handle rotation correctly
Crash when opening stack
wait loop not being broken
mobilepickcontact works under ios 7 but not under ios 8
screenshots taken in landscape view are rotated by 90 degrees on iOS 8
mobileFindContact fails silently on iOS 7.1 and higher
Simulator launches with incorrect version
Copy files do not work with the iOS 8 simulator
changes to [[Player]] in preOpenCard are visible to user
Extra undo of paint tools crashes live code
keydown event not getting passed to mainstack in modal dialogs
[[Player]] Shift + click in controller sets showSelection to true
menuPick not triggered under certain conditions
Threaded rendering crash
Stack location reported incorrectly if mouse released while dragging window
Fix OSX specialFolderPath("asup")
pull down menus do not work properly in modal dialogs
if an error is encountered after a drag-and-drop
4 inch iPhone apps do not use the full screen
PDF printing does not work correctly on iOS 8.
Referenced image fails to load in 6.7.0 RC2 and 7.0 RC1
Manifest file not needed in standalone bundle
mobilePick and mobilePickDate do not work in iOS 8
revPrintField clips document under some circumstances
RGB imageData values (charToNum) are different on Mac / Windows
Go stack in window displays new stack before before preopenStack/preopenCard messages
are triggered
Mark the installer as retina-capable
mobilePickPhoto camera view is rotated on iPad when in landscape or in portraitUpsideDown
Image file color profiles don't seem to be handled correctly
Fix post-install launching on Linux
The effective sreenrect returns incorrect values when hiding/showing keyboard on iOS
mobileSensorReading("location"
Use correct pixel order for OSX PPC
major speed degradation between 7.x

Specific bug fixes (6.7.0–rc–2)
Memory leak when setting the text of an image
Non-executable file redirection on Mac
Project Browser control layer display
Crash due to multicore rendering.
rawKeyDown for arrowKey up and down fires twice when holding altKey down
Fix crash when using magnifier tool.
Dead char followed by an invalid character sends an invalid RawKeyDown message
IDE systemVersion comparison no longer works with Yosemite
Sample - Book Library.livecode edit and delete features broken
playloudness should be rounded to nearest integer rather than down
[[Player]] Can't make left to right selection
LiveCode hangs when setting the text of a field with HGRID and a hidden last line
Control-Tab key combos not being passed to rawKeyDown
script editor opens rwmenubar script when no other stack is open
App store no longer allows use of deprecated
MPMoviePlayerContentPreloadDidFinishNotification
Cannot install Android standalone on some devices
[[Player]] - Shift + Space Bar whilst focus is on player should create selection
Setting menuhistory with a stack panel sends invalid menuPick second parameter
[[Player]] add new property loadedTime to the dictionary
[[Player]] setting playLoudness by script does not update speaker icon
[[Player]] loadedTime initially has the value of last movie
Image distortion when setting imageData to the imageData.
[[ CEF browser ]] Closing a stack without closing the browser
Fix a button focus issue
Moving graphic while editing gradient causes artifacts
[[Player]] new controller does not have playRate scrollbar control
[[ Player ]] Status property requested for player object
Touch on Movie does not work
[[Player]] Make controller scrollbar slightly wider

[[Player]] Movie not updated instantly when using QT player and alwaysBuffer is true

import snapshot from object is broken

Mouse is still inside the window even when resizing

rawKeyDown passes the wrong keycode if Ctrl is pressed.

templateImage framecount is not accurate for animated GIF

Setting the scrollbars property of a CEF browser to false has no effect.

SSL doesn't work with MySQL driver on Android and iOS.

[[Player]] empty player shows image of last video when loading new video

Thumb does not update properly when movie is playing in some circumstances.

App crashes when showing referenced images on Android devices

Visual effect push problem

htmlText with many nested styles can cause a crash.

Crash when rendering Mac themed scrollbars

[[Player]] Player object retains callbacks even though callbacks set to empty

Test System crashes reliably

Polygon markers draw incorrectly

Artifacts can appear in bitmap effects when multicore rendering is used.

Polyline with same starting point as ending point draws as degenerate dot in PDF printing.

Can't type in output field of message box

textFont in Text Formatting of inspector cannot scroll by a mouse

Hirigana input source causes LiveCode to hang when entering 'h' then 'a'.

[[Player]] LC hangs when you open a stack with a player with filename that does not exist

FIX: flip graphic horizontally and vertically for complex graphics

iOS standalone building fails with "$cannot find valid identity"

[[Player]] Printing players doesn't work

Text is clipped when printing to PDF from OS X

Palettes not observing decorations under certain circumstances

Setting currentTime of a player in response to a currentTimeChanged message can cause a hang.

[[Player]] progress of movie downloaded/playable not indicated in controller well

Add Hi-DPI support option to Windows standalone settings dialog.

File->Exit should be File->Quit

Toggle usePixelScale property

flip graphic gives erroneous results with complex graphics

Auto detecting WPAD on OS X added

WPAD URLs attempted to be used as proxies on OS X

Auto config pac processing broken on OS X

Crash when stack loses focus.

Tab key doesn't insert tabs into fields that should accept them.
13163  showAll and LetterBox fullscreenmodes break on iOS
13161  Setting the playloudness of the templateAudioClip adjusts the system volume
13160  playloudness does not update when the user presses the mute button on keyboard
13156  [[player]] Step back button and Callback Problems
13155  Crash setting iconGravity - only one line needed
13154  Crash when attempting to decode malformed arrayEncoded value.
13149  Crash when resizing fields containing tabbed text
13140  Quitting from the dock when app is in background waits until app is foreground to actually terminate.
13127  centerRect property has no effect when image resizeQuality is "best"
13120  [[Player]] cmd key + click on step forward and step backward button for rewind
13109  crash dragging player to an empty stack
13099  [Player] Playback is locked when alwaysBuffer is true and video is playing
13091  [[player]] callback feature doesn't work when user moves scrubber
13064  [[Player]] playSelection not working correctly
13063  [[Player]] selection by shift + click Play button delayed start and stop.
13016  Erratic behavior whilst moving a window along with excessive WindowServer CPU usage.
12966  revVideoGrabber - revVideoGrabDialog "audio" does not bring up dialog
12885  Sound recording returns error message
12867  Gradient colours display incorrectly on android
12798  libURL doesn't report actual redirect error
2902  No error indicated if malformed URL used in url expression

Specific bug fixes (6.7.0–dp–8)
13132  put the engine folder crashes in OSX 10.6
13117  multi-line button label shows incorrectly - backslash n not working
13116  Crash while drawing Mac themed controls
13114  Cmd+Ctrl+ doesn't generate keyDown messages and causes a system beep.
13113  The extents don't work if there are negative indicies.
13112  Crash while resampling images
13105  [[Player]] CurrentTimeChanged message not sent by 'step forward' or 'step backward' buttons
13104  [[Player]] updating of playRate by controller buttons inconsistent
13102  Crash while resizing field
13101  Crash when resizing fields
13098  Composition sequences can result in incorrect output if they are invalid (for example alt-e g would give gg).
13096  Answer files with relative path
13073  Initial appleEvents not handled correctly.
13072  Focusing on nothing inside focusIn / enterField will cause a crash.
13065  [[Player]] making selection with shift + click player thumb inconsistent results
13059  menupick message not sent from popup stacks
13058  Wrong mouseLeave messages if the stack is pixelScaled or scaled in any fullscreen mode.
13038  uuid: not enough randomness available
13021  high dpi images don't fill image rect if scaled images don't have the correct size
12852  Setting the label of a button after the unicodeLabel can cause an infinite loop in some cases.
9941  Accented characters in string passed to revSpeak cause nothing to be spoken.
Specific bug fixes (6.7.0-dp-7)

13046  Player doesn't wait to make sure currentTime has updated to where it has been set to.
13026  put the engine folder behaves inconsistently
13025  Linux GTK spinboxes were inverted
13011  currentTimeChanged not sent when dragging controller thumb.
13010  If an object is in a group then mouseStillDown will not fire if it is in a behavior of the object.
13009  ImageData copying to offscreen images is broken
13007  Native encoded characters > 127 don't appear in menuPick string.
13005  Modifying selection by shift + click in the controller doesn't work correctly.
13004  Controller not updated when setting currentTime by script.
13003  selectionChanged message not sent when player selection changes via controller.
13002  Empty selection results in selection of full movie.
13001  Crash when changing focus inside openField handler.
13000  Image colours not showing correctly on Android device
12997  Changing windowShape leaves artifacts behind.
12990  Popup menus always highlight first item on Mac
12989  Player incorrectly reports timeScale and duration when using AVFoundation.
12979  Setting the rect of a player object doesn't work correctly if the stack is pixelScaled or scaled
      in any fullscreen mode.
12978  Development -> Plugins opens the wrong plugin
12968  ctrl z and edit -> undo are not working
12963  Player messages aren't sent correctly.
12962  Player won't play video in certain circumstances.
12961  Print dialogs do not keep new settings if displayed as sheet.
12946  play stop command does not work.
12944  Text does not align at correct tabStops in some cases.
12923  Setting the text style in the Text menu does not update correctly
12865  LiveCode Server process does not end when run as CGI
      The contents of a folder added to the Copy Files section of the Standalone Application
12864  Settings are not copied during a standalone build when it's a subfolder of the defaultFolder
      and the defaultFolder contains the main stack file.
12844  Attempted to arrayDecode non-arrayEncoded data can cause a crash.
12822  LiveCode server fails to read from https URLs on Fedora
12819  revAvailableHandlers works on password protected stacks.
12804  Clipping incorrect when printing to PDF.
12594  NUL bytes in fields will cause printing to pdf to fail silently.
12429  Setting the defaultNetworkInterface more than once causes instability.
12298  Autocomplete text in Message Box does not line up with text you are typing
12250  File view in file dialog doesn't update if you change the filtered types.
11828  Use 64-bit file APIs on Linux
11797  scriptLimits no longer enforced
9405  Clear previous highlight before drawing Linux GTK button highlight

Specific bug fixes (6.7.0–dp–6)
Closing a modal dialog causes a pause until a system event occurs.

Stacks can receive mouseDown before resumeStack.

Engine crashes when moving stack after closing its parent.

iOS standalones won't build due to missing template files.

Showing a modal dialog confuses mouse state.

Stacks can receive mouseDown before resumeStack.

Certain images have red & blue swapped when deployed to iOS.

EnabledTracks of a player is formatted incorrectly.

Wrong button sent to mouseDown / mouseUp when targetting a card.

Inspector opening at odd location.

Shift-click on play button doesn't create selection.

Clicking in the well of a player with a selection should clear the selection.

Make sure controller is redrawn after setting selection by script.

Behavior of shift-click in well on player not correct.

RevVideo Grabber preview in wrong location after resizing stack.

Android stack drawn at wrong scale until forced redraw of object.

copying imageData between images can lead to unpredictable results.

6.7.0-dp-5 Mac installer fails if system security permissions are set.

playStopped sent for player with no filename.

setting the effective rect of a stack with vscroll > 0 doesn’t work properly.

Focus gets confused if focus changes in response to a suspendStack message on Mac.

iOS font selection does not work correctly.

Browser: Closing revBrowserCef when downloading makes LiveCode unstable.

Tool Palette location forgotten between launches.

pixelScale global property not documented.

In Dictionary the search box is only apparently selected when you come from Code Editor.

Specific bug fixes (6.7.0-dp-5)

Crash when switching to Chinese input method on Mac.

Player: scaling a player down causes controller to get confused.

Player: hilite handles do not use fill length of the bar.

arrayDecode crashes on linux with certain input.

answer file with type doesn't work correctly if only one type is specified.

Windows position in the wrong place when constrained by the windowBoundingRect.

Player callbacks not operating correctly.

[[Player]] Selection thumbs should not be visible when selection duration is 0.

[[Player]] Selection not created when clicking shift and dragging player thumb.

[[Player]] SelectionStart and SelectionFinish handles too large and can obscure player thumb.

[[Player]] Selection indicator does not align with the selection thumbs.

[[Player]] loop goes to beginning of movie not selection start time when playSelection is true.

[[Player]] controller icons not updated when keyboard shortcuts used to control playback.

[[Player]] put the tracks of player 1 does not work properly.
message box is slow
Go stack in window [windowId] doesn't work.
On Mac
The centerRect image property doesn't handle hi-res images correctly
Plugins don't load in revBrowserCEF on OSX
IDE stacks white rather than grey
After dragging onto a field when LiveCode is in the background
setting dragData[files] does not work
The effective rect of a stack with vscroll > 0 is incorrect
Player: Setting player size to < 132 width breaks some controller elements
Player: dragging the in selection hilite marker moves out marker also
Player: setting the filename to a local file that doesn't exist crashes LC
Player: Setting the "in" marker for selection playback beyond the start point of player sets marker to unexpected value
Player: setting the filename to a URL that isn't a video crashes LC
[[[Player]]] Selecting "track" from a players property inspector
Player: Can't select any audio files
Player: Click outside of a selection allows video to be played outside selection
QT-related features don't work.
Player: Progress circle and end hilite don't light up
Shortcuts: the uncomment script shortcut cmd _ does not work
Player: First frame of video is not loaded immediately when filename is set
Player: File chooser doesn't filter all available video formats
Player: Can't drag out or create a player in script
Player: Hiding and showing resized player changes player size to original size
zipalign tool not found during standalone build after update to Android SDK tools
Incomplete stack drawing when opening stack with acceleratedRendering on retina display
Project Explorer not updating after stack was changed to substack
Submenus of popups don't send menuPick on selection.
Fix sending of mouseRelease messages with new platform layer
Editing image then switching card and saving causes stack corruption
CEF browser crashes if htmltext is set to empty
Images don't appear or are clipped when printed to PDF
Some fonts have accents cut off on capital letters on Mac.
Blocking socket calls always timeout.
Can't deselect MacOS build
File and folder dialogs incorrectly use the topStack to sheet against
CEF browser pauses frequently when there is no other activity on the stack
Extra mouseMove with incorrect co-ordinates sent after mouseEnter when changing windows.
WebAuthenticationPanel class in OSX revbrowser conflicts with same class in WebKit library
File handle leak on Mac
Shell command does not accept spaces despite being quoted (Windows)
Multiple moves created whilst lock moves in effect fail to be synchronized.
Crash when fetching the alphadata of a resized image
Entries in the Project Browser won't expand
Cursor does not change correctly when over a revBrowser[CEF] instance.

minHeight setting on Mac includes title bar height when it shouldn't.

CEF browser returns incorrect values for rect property

Instability when using revAppendXML and revCopy/MoveRemoteXMLNode.

Use sub-pixel positioning for laying out text within fields

revBrowser placed incorrectly when dpi scaling enabled on Windows

Redraw slowdown in 6.7 (regression)

setting effective rect to working screenrect fails

Screen updates occur during 'menu update' mouseDown message causing pauses when updating menus on first click.

Pasting text into a field can sometimes cause strange selection behavior.

'listIndent' attribute does not round-trip through htmlText

Connecting to an HTTPS URL via a proxy fails if libURLSetVerification is true

Tunnelled proxies do not authenticate correctly

Objects which are adjacent don't necessary appear so at non integral scale factors.

The rtfText does not represent 'metadata' tags correctly.

Hiding / deleting a stack doesn't update the mouseStack when it should.

Standalone engine still links to QTKit / QuickTime.

LC 6.7 dp4 plays an imported wav only once

Project Browser does not scroll down to show everything

Hiding player controller stretches movie image vertically

[[Player]] Setting playRate of player has no effect on playRate

player currentTimeChanged message does not include time parameter

Instability with manipulating QTKit players.

Setting callbacks in player causes crash

[[ Bug 12495 ]] Animating windowShape does not work properly on Mac.

Various actions on players (such as hiding and showing) prevent it from working properly.

Maximum number of paragraphs which can be set with styledText is 64k

Terminal window appears when accessing User Samples on Windows

Middle button paste doesn't work correctly in other apps when LiveCode has the selection on Linux.

Changing decorations causes no cursor to appear over a stack.

Queuing too many pending messages causes slowdown and random crashes.

Maximize button in Windows title bar doesn't use full screen under high-dpi Windows

Crash when reading invalid image data

Popup windows and combo-box menus don't disappear when they should.

Cursor changes incorrectly for top pixel of borderless windows on Mac.

import snapshot does not always display crosshair

When using import/export snapshot from screen in non-interactive mode

Browser: revBrowserSnapshot issues in 6.7.0 DP3

Drag-drop does not work if 'private' data type is used on Mac.

Key codes are mapped differently resulting keyboard shortcuts not acting correctly with non-English keyboard layouts.

Cmd-Z shortcut missing from "Undo" menu item

AcceleratedRendering causes double-sized stack controls on Retina displays

Crash on write then read until EOF on driver
12339 mouseRelease message sent after selection from popup menu.
12321 On Windows 7 Fullscreen set to false does not return to previous size
12312 VideoGrabber doesn't work on Mac.
12303 Setting the text of a field chunk should not clear the paragraph styles of an empty line.
12297 Windows opened in popup mode have decorations.
12225 Menubar in application make revBrowser misaligned
12156 Single line message box field is too large
12055 mobileVibrate not vibrating when passed a variable
12014 Stack with iOS deployment checked(mac) when opened on windows system does not allow you to disable this deployment option. This in turn breaks Android APK generation
11928 Inconsistencies in behavior when doing 'delete the selectedChunk'.
11878 Pasting with the middle mouse button on linux doesn't work correctly.
11839 Menus in Script Editor have testSize too small
11809 Ensure that spaceAbove area is redrawn when hilite changes.
11503 Dictation is unstable on Mac.
11493 Buttons in Ask
11383 Help menu: duplicate name
11346 Command click in project browser
11240 Duplicate Menu and Replicate dialog lock messages
10942 Project Browser disappears in dual screen
10593 When setting the styledText of a range
4001 ask dialog icon is a button with its autohilite set to true

Specific bug fixes (6.7.0–dp–4)

12384 revBrowserOpenCEF doesn't send browserDocumentComplete when setting htmltext
12367 Standard menu items with tags (Cut/Copy/Paste etc.) do not enabled/disable correctly.
12364 Crash when calling revBrowserClose on revCEFBrowser

Specific bug fixes (6.7.0–dp–3)

12348 Scrollbars don't get keyboard input when focused if no field is on the card on Mac.
12329 Menu items are all disabled in modal dialogs on Mac.
12328 Make sure invisible stacks still have a valid windowId on Mac.
12324 New CEF-based revBrowser has no authentication dialog
12304 Pasting LiveCode controls from other copies of LiveCode doesn't work
12299 formattedWidth/Height of player objects is incorrect
12284 Command key shortcuts don't work if revBrowser has focus on Mac.
12270 Stack location is always constrained to screen on Mac.
12267 Resize stack cursor not set sometimes.
12264 resizable and maximize decorations not honoured correctly on Mac.
12259 Answer dialogs do not respond to mouse input if opened from a menu on Mac.
12255 dragDrop sometimes doesn't work when dropping from other applications (on Mac).
12254 dragImageOffset is incorrect horizontally on Mac.
12253 Crash after releasing mouse on stack after drag-drop operation on Mac.
12252 File > Exit menu item not hidden on Mac.
12249 Player object does not respond properly to edit tool.
12230  Accelerated rendering mode doesn't work correctly on Mac if using coregraphics mode.
12226  revBrowser doesn't grab mouse focus on Mac.
12216  the qtVersion returns empty
12163  Beach-ball shows in tight loops on Mac.
12130  Resize cursor does not always display in window edges on Mac.
12116  NullPointerException on device logcat when app was launched and closed if in-app purchasing box is not ticked
12115  Import / export snapshot from rect of window ignores rect on OSX
12109  "Export snapshot ... from window ..." wrongly scales snapshot rect
12089  Setting a player filename to a url causes hang.
12087  moveStack messages are not sent continously on Mac.
12086  rawKeyDown sends incorrect code for shifted keys on Mac.
12085  "export snapshot of window ..." locks up on OSX
12082  Changing an applied pattern causes the IDE to crash
12080  Setting hidePalettes to false does not work on Mac.
12073  Make sure 'unlock cursor' takes immediate effect
12068  No default menubar in standalones on Mac.
12056  Clicking on a cell of a table field causes the IDE to crash
12047  Arrow keys don't work in CEF browser on Mac.
11922  Players do not render at correct size on Retina Macs.
10767  Non-CEF browser not working in modal dialogs on Mac.
5545   The mouse cursor does not hide when typing on Mac.

Specific bug fixes (6.7.0–dp–1)
11917  Setting the label of an option or combo-box does not update the menuHistory.
11808  pixelScaling not enabled on Windows Commercial edition

IDE changes

HTTPS through proxy (6.7.1–rc–1)
The desktop version of LibURL has been updated to support fetching HTTPS URLs through a proxy server.

Proxy automatic configuration support (6.7.1–rc–1)
LibURL has been updated to add support for proxy auto configuration files (PAC). If no global proxy server has been set using the HTTPProxy property, when fetching a URL, LibURL will attempt to parse the systems .pac file in order to extract the proxy server (if any) to use for the given URL.

Specific bug fixes (6.7.8–rc–1)
16079  breakpoints & breaks do not work until after an answer issues
16058  Business edition is seen as Community edition by the Standalone Settings stack
15918  create/clone/copy object and setting position to negative does not work
14502  Return key doesn't trigger default button in Answer dialog
14465  Rulers don't stay fixed to the stack when moving the stack
14224  Combo box will not allow typing into an "Ask" dialog.
Newly created objects are forced to appear on-screen
some message box output in LC when aligning text using menu Text->Align->...
graphic bug in standalone application settings window
"at" option for "edit script" command not honored
impossible to change the case from all caps etc
Add Hardware accelerated option for Android Standalone Applications
Delete key completely clear Ask dialog

Specific bug fixes (6.7.7–rc–3)
15717  iOS Version resets to 5.1.1

Specific bug fixes (6.7.7–rc–1)
15580  Mobile Support JDK path not updated after changing it
15545  Setting spaceAbove or spaceBelow on the first line of a table breaks it
15535  Magnify palette cannot be used in a standalone
15522  position of cell editing field in basic table field
15515  Find and replace does not support arrow keys
15510  Project Browser forces the unlocking of the cursor
15478  message box does not auto-scroll
6649  Editing a table field cell shows focus at the wrong place when margins are changed.

Specific bug fixes (6.7.6–rc–1)
15387  mobile datagrid coding interferes with mobile scrollers
15367  Certain update notification settings not saved
15365  Needs to deactivate twice the messages
15269  Save As replaces spaces with underscores in file name
15240  datagrid mobile does not handle multiple selected lines
14802  ProjectBrowser Disclosure Triangles Not Responding
14788  Deleting lots of selected controls redraws after each delete
14475  Project Browser Can't Hold Size
13953  book database demonstration doesn't work on Linux
10722  Context menu item "Go to Definition..." always disabled in IDE scripts and names of handlers which are defined in libraries

Specific bug fixes (6.7.5–rc–3)
15329  Make sure loading/unloading revNoMessagesLibrary results in insertion into/removal from the frontscripts
15298  Cannot select minimum version iOS 8.3

Specific bug fixes (6.7.5–rc–1)
15135  [IDE] Remove dialog box asking for the version of Xcode
15131  Local notifications check box is not refreshing properly
15054  revShortCutsLibrary not managing its position in the message path correctly

Specific bug fixes (6.7.4–rc–1)
Specific bug fixes (6.7.2–rc–1)

14400 App requests notification permission when it isn't configured to use them

Specific bug fixes (6.7.1–rc–1)

14341 Menu Builder can't create menu items with both Shortcut and Tag

Specific bug fixes (6.7.1)

13947 Wrong image in "About Livecode" for LC 6.7 Community

Specific bug fixes (6.7.1–rc–4)

14155 Menu Builder does not work reliably: tags disappear

Specific bug fixes (6.7.1–rc–3)

14072 'About' menu on the Mac omits further menu item text

Specific bug fixes (6.7.1–rc–1)

13190 iOS standalone building fails with "cannot find valid identity"
13172 Auto detecting WPAD on OS X added
13171 WPAD URLs attempted to be used as proxies on OS X
13170 Auto config pac processing broken on OS X
13118 Add Hi-DPI support option to Windows standalone settings dialog.
13117 multi-line button label shows incorrectly - backslash n not working
12978 Development -> Plugins opens the wrong plugin
12968 ctrl z and edit -> undo are not working
12928 IDE: Development > Rev Online != menubar > user samples
12902 iOS standalone won't build due to missing template files.
12879 Inspector opening at odd location
   The contents of a folder added to the Copy Files section of the Standalone Application is not copied during a standalone build when it's a subfolder of the defaultFolder and the defaultFolder contains the main stack file.
12806 message box is slow
12798 libURL doesn't report actual redirect error
12756 Player: Can't select any audio files
12745 Player: File chooser doesn't filter all available video formats
12719 zipalign tool not found during standalone build after update to Android SDK tools
12709 Project Explorer not updating after stack was changed to substack
12687 Can't deselect MacOS build
12636 Entries in the Project Browser won't expand
12599 Redraw slowdown in 6.7 (regression)
12566 Tunnelled proxies do not authenticate correctly
12528 Project Browser does not scroll down to show everything
12470 Terminal window appears when accessing User Samples on Windows
12363 Cmd-Z shortcut missing from "Undo" menu item
12298 Autocomplete text in Message Box does not line up with text you are typing
12206 Buttons of menu type can't be inspected if first created object
12156 Single line message box field is too large
Stack with iOS deployment checked(mac) when opened on windows system does not allow you to disable this deployment option. This in turn breaks Android APK generation.

Menus in Script Editor have testSize too small.

Hi-res iPad icon size incorrect.

Android app name can't contain unicode text.

pixelScale global property not documented.

LiveCode cannot resolve path to Android Runtime folder when building Android standalone.

Default font in standalones causing PDF to render badly.

Script editor line numbers are not displayed.

Buttons in Ask.

Menus in Script Editor have testSize too small.

Hi-res iPad icon size incorrect.

Android app name can't contain unicode text.

pixelScale global property not documented.

LiveCode cannot resolve path to Android Runtime folder when building Android standalone.

Default font in standalones causing PDF to render badly.

Script editor line numbers are not displayed.

Buttons in Ask.

Linux "Open Stack..." dialog does not show "All Files" option.

Internal Livecode image with ID 1105 creates ID problem.

Can't quit LiveCode after setting the securityPermissions to "network".

Help menu: duplicate name.

In Dictionary the search box is only apparently selected when you come from Code Editor.

Command click in project browser.

Answer folder for XCode app bundle has a typo.

messagebox syntax for invoking functions is broken.

Project browser does not expand cards of substacks.

menu/Text: size does not work.

Start centre missing from IDE.

iOS 7 icon entries missing from bundle plist.

Duplicate Menu and Replicate dialog lock messages.

iOS 7 Hi-Res iPad icon size requirements incorrect.

Unable to set iPad status bar visibility independently of iPhone status bar visibility.

The width of the fields in the message box is wrong.

Basic table field with multiple tabStops stops inspector from working.

Preferences show wrong panel.

Populating a datagrid from a card.

Including iOS externals in Android projects (and vice versa) causes standalones to fail.

DataGrid throws error when setting show vscrollbar to false in preOpenControl on mobile.

Moving a Layer between two groups in Project Browser.

No error message when external not found when deploying to simulator.

Project Browser denies existence of existing controls!

Menu Builder Disable Item problem. Unicode characters were not being handled correctly when disabling/enabling menu items.

Plugin settings refers to Revolution. This has been updated to refer to LiveCode.

iOS minimum version in standalone builder is 3.1.3 (should be 4.3).

Script Editor doesn't include hash symbol in token delimiters.

mobileComposeMail attachment missing in Android.

LiveCode IDE breaks when opening a particular PDF file - uncaught exception fetching the properties of a DataGrid.

Find Malfunction in Script Editor for both >*/ and double-quote (").

The Project Browser does not update when a group is ungrouped.

Autoscript "compile error" with new menu items.

User Guide entry under Help menu is missing.
The PDF Printing external is not being included in Windows Standalones.

app identifier field in standalone applications settings on iOS and Android allows return characters.

Project Browser disappears in dual screen

Selecting regular polygon graphic fails to update title of Property Inspector

Mobile stack saved as iOS retains iOS settings on Windows. As the option is disabled and cannot be unchecked on Windows the standalone builder will disregard this choice on Windows. Selecting another platform to build for will still automatically unselect iOS.

Menu Text > Font > Size > Other... does nothing. Now asks the user to input a text size.

Menu Text > Font > Size > Other... does nothing. Now asks the user to input a text size.

HTTP "get URL" omits port number from HOST header

revUniqueID - the revUniqueID of the child controls of a group do not get updated when the group is cloned or duplicated.

Save this stack as syntax broken in the message box

iPad retina landscape image size warning incorrect.

Indenting of scripts can go wrong

Thumb and scrollbar appear over top of DataGrid

setting a cropped with quotes loses data

ask dialog icon is a button with its autohilite set to true
LiveCode Builder changes
Previous Release Notes

7.1.0 Release Notes  http://downloads.livecode.com/livecode/7_1_0/LiveCodeNotes-7_1_0.pdf
7.0.6 Release Notes  http://downloads.livecode.com/livecode/7_0_6/LiveCodeNotes-7_0_6.pdf
7.0.4 Release Notes  http://downloads.livecode.com/livecode/7_0_4/LiveCodeNotes-7_0_4.pdf
7.0.3 Release Notes  http://downloads.livecode.com/livecode/7_0_3/LiveCodeNotes-7_0_3.pdf
7.0.1 Release Notes  http://downloads.livecode.com/livecode/7_0_1/LiveCodeNotes-7_0_1.pdf
7.0.0 Release Notes  http://downloads.livecode.com/livecode/7_0_0/LiveCodeNotes-7_0_0.pdf
6.7.2 Release Notes  http://downloads.livecode.com/livecode/6_7_2/LiveCodeNotes-6_7_2.pdf
6.7.1 Release Notes  http://downloads.livecode.com/livecode/6_7_1/LiveCodeNotes-6_7_1.pdf
6.7.0 Release Notes  http://downloads.livecode.com/livecode/6_7_0/LiveCodeNotes-6_7_0.pdf
6.6.0 Release Notes  http://downloads.livecode.com/livecode/6_6_0/LiveCodeNotes-6_6_0.pdf
6.5.2 Release Notes  http://downloads.livecode.com/livecode/6_5_2/LiveCodeNotes-6_5_2.pdf
6.5.1 Release Notes  http://downloads.livecode.com/livecode/6_5_1/LiveCodeNotes-6_5_1.pdf
6.5.0 Release Notes  http://downloads.livecode.com/livecode/6_5_0/LiveCodeNotes-6_5_0.pdf
6.1.2 Release Notes  http://downloads.livecode.com/livecode/6_1_2/LiveCodeNotes-6_1_2.pdf