LiveCode 8.1.10 Release Notes

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Overview

LiveCode 8.1 provides important improvements for delivering high-quality cross-platform applications!

- LiveCode Indy and Business editions now come with the tsNet external, which supercharges LiveCode's Internet features and performance. LiveCode 8.1 also introduces mergHealthKit, for accessing activity, sport and health data on iOS devices.

- The standalone builder now has a greatly-improved user experience for including externals, script libraries and LiveCode Builder extensions in your cross-platform application. Usually, it'll now do the right thing automatically, but you can still select the specific inclusions you need.

- The IDE has lots of other upgrades, too: a keyboard-navigable Project Browser that highlights any scripts that failed to compile, an improved dictionary user interface, and access to the message box just by starting to type.

- The player control can be used in Windows application without any need for users to install any additional libraries or dependencies, thanks to a brand new player implementation based on DirectShow. For most apps, it should now be unnecessary to install or use QuickTime at all.

- The LiveCode Builder programming language has had some enhancements as part of the
Infinite LiveCode project. Variables now get initialised by default, unsafe blocks and handlers can be used to flag sections of code that do dangerous things, and you can even include raw bytecode if necessary.

Known issues

- The installer will currently fail if you run it from a network share on Windows. Please copy the installer to a local disk before launching on this platform.
- The browser widget does not work on 32-bit Linux.
- 64-bit standalones for Mac OS X do not have support for audio recording.

Platform support

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

Windows

LiveCode supports the following versions of Windows:

- Windows 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)
- Windows 10

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

Linux

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

- Ubuntu 14.04 and 16.04
- Fedora 23 & 24
- Debian 7 (Wheezy) and 8 (Jessie) [server]
- CentOS 7 [server]
LiveCode may also run on Linux installations which meet the following requirements:

- **Required dependencies for core functionality:**
  - glibc 2.13 or later
  - glib 2.0 or later

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

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

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

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

**Mac**

The Mac engine supports:

- 10.6.x (Snow Leopard) on Intel
- 10.7.x (Lion) on Intel
- 10.8.x (Mountain Lion) on Intel
- 10.9.x (Mavericks) on Intel
- 10.10.x (Yosemite) on Intel
- 10.11.x (El Capitan) on Intel
- 10.12.x (Sierra) on Intel
- 10.13.x (High Sierra) on Intel

**iOS**

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

Currently, the supported versions of Xcode are:

- Xcode 4.6 on MacOS X 10.7
- Xcode 5.1 on MacOS X 10.8
- Xcode 6.2 on MacOS X 10.9
- Xcode 6.2 and 7.2 on Mac OS X 10.10
- Xcode 8.2 on MacOS X 10.11
- Xcode 9.2 on MacOS 10.12 (Note: You need to upgrade to 10.12.6)
- Xcode 9.3 on MacOS 10.13 (Note: You need to upgrade to 10.13.2)
It is also possible to set other versions of Xcode, to allow testing on a wider range of iOS simulators. For instance, on OS X 10.10 (Yosemite), you can add Xcode 5.1 in the Mobile Support preferences, to let you test your stack on the iOS Simulator 7.1.

We currently support deployment for the following versions of iOS:

- 6.1 [simulator]
- 7.1 [simulator]
- 8.2 [simulator]
- 9.2
- 10.2
- 11.2
- 11.3

### Android

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

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

The Android engine supports devices using ARMv6, ARMv7 or ARMv8 processors. It will run on the following versions of Android:

- 2.3.3-2.3.7 (Gingerbread)
- 4.0 (Ice Cream Sandwich)
- 4.1-4.3 (Jelly Bean)
- 4.4 (KitKat)
- 5.0-5.1 (Lollipop)
- 6.0 (Marshmallow)
- 7.0 (Nougat)
- 8.0 (Oreo)

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

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

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

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

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

### HTML5

LiveCode applications can be deployed to run in a web browser, by running the LiveCode engine in JavaScript and using modern HTML5 JavaScript APIs.

HTML5 deployment does not require any additional development tools to be installed.
LiveCode HTML5 standalone applications are currently supported for running in recent versions of Mozilla Firefox, Google Chrome or Safari. For more information, please see the "HTML5 Deployment" guide in the LiveCode IDE.

Setup

Installation

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

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

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

<table>
<thead>
<tr>
<th>Platform</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>&lt;x86 program files folder&gt;/RunRev/LiveCode &lt;version&gt;</code></td>
</tr>
<tr>
<td>Linux</td>
<td><code>/opt/livecode/livecode-&lt;version&gt;</code></td>
</tr>
</tbody>
</table>

The installations when installing for "This User" are:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>&lt;user roaming app data folder&gt;/RunRev/Components/LiveCode &lt;version&gt;</code></td>
</tr>
<tr>
<td>Linux</td>
<td><code>~/.runrev/components/livecode-&lt;version&gt;</code></td>
</tr>
</tbody>
</table>

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

Uninstallation

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

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

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

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

Please include the following information in your report:

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

The installer log file can be located as follows:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000/XP</td>
<td>&lt;documents and settings folder&gt;/&lt;user&gt;/Local Settings/</td>
</tr>
<tr>
<td>Windows Vista/7</td>
<td>&lt;users folder&gt;/&lt;user&gt;/AppData/Local/RunRev/Logs</td>
</tr>
<tr>
<td>Linux</td>
<td>&lt;home&gt;/.runrev/logs</td>
</tr>
</tbody>
</table>

**Activating LiveCode Indy or Business edition**

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

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

**Command-line installation**

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

Run the installer using a command in the form:

```
<installer> install noui [OPTION ...]
```

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

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-allusers</td>
<td>Install the IDE for &quot;All Users&quot;. If not specified, LiveCode will be installed for the current user only.</td>
</tr>
</tbody>
</table>
Place a shortcut on the Desktop (Windows-only)

- **desktopshortcut**

Place shortcuts in the Start Menu (Windows-only)

- **startmenu**

The folder to install into. If not specified, the **LOCATION** defaults to those described in the "Installation" section above.

- **location**

- **LOCATION**

The file to which to log installation actions. If not specified, no log is generated.

- **log**

  - **LOGFILE**

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

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

On Windows, the command is:

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

**Command-line uninstallation**

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

Run the uninstaller using a command of the form:

```
<uninstaller> uninstall noui
```

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

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

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

**Command-line activation for LiveCode Indy or Business edition**

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

Activate LiveCode using a command of the form:

```
<livecode> activate -file LICENSEFILE -passphrase SECRET
```
where `<livecode>` should be replaced with the path to the LiveCode executable or app that has been previously installed.

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

It is also possible to deactivate LiveCode with:

```livecode
deactivate
```

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

On Windows, the command is:

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

On Mac OS X, you need to do:

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

### Engine changes

**Improved ul_TraceLocals output (8.1.10-rc-1)**

The ul_TraceLocals function in revLibURL has been improved so that it prints out keys and values of the script local arrays in the library. This is useful for troubleshooting libURL issues.

**Script-only deploy (8.1.10-rc-1)**

It is now possible to use script-only stacks in the mainstack and auxiliary stack parameters to the deploy command.

**Script only stacks with behavior (8.1.10-rc-1)**

Script only stacks can now store a stack behavior as part of the file format. A `with behavior` clause is added to the header of a script only stack, if it has a behavior property which references a stack.
When a script-only-stack with such a clause is loaded, the behavior is set as part of the loading.

### Send script form of send command (8.1.10-rc-1)

The syntax

```
send script <script> to <obj>
```

has been added to allow a chunk of script to be executed in the context of an object without any attempted evaluation of parameters that occurs with the original form of the send command.

For example, suppose there is a stack named "Stack" with script

```plaintext
on doAnswer pParam
  answer pParam
end doAnswer

function myName
  return the short name of me
end myName
```

and a button on the stack named "Button" with script

```plaintext
on mouseUp
  send "doAnswer myName()" to this stack
  send script "doAnswer myName()" to this stack
end mouseUp

function myName
  return the short name of me
end myName
```

clicking the button would result in an answer dialog first saying "Button" as the `myName` function would be evaluated in the button context, then "Stack" as using the script form would result in the `myName` function being evaluated in the stack context.

### Add param that suppresses success message when building standalone (8.1.10-rc-1)

By default `revSaveAsStandalone` displays the message

```
answer information "Standalone application saved successfully."
```

when it is done. You can turn off this message by setting the test environment to true but doing so suppresses all error messages and other feedback as well.
I am calling `revSaveAsStandalone` from my own scripts multiple times and want feedback and error reporting but not the success message. Adding an additional parameter to `revSaveAsStandalone` that suppress the success message would allow this.

**Throw error when changing behavior from behavior script (8.1.10-rc-1)**

Previously it was theoretically possible to change the behavior of an object from that object’s existing behavior script. This will now result in an execution error

parentScript: can't change parent while parent script is executing

This change was necessarily as the engine would occasionally crash when changing a behavior this way, and would be guaranteed to crash if stepping over the behavior script line that changes the behavior.

**Fix problems with printing PDFs to some printers (8.1.10-rc-1)**

It was possible for LiveCode to generate PDFs which were incompatible with some printers. This has been fixed by upgrading the PDF generation library which LiveCode uses (cairo).

**Ensure CMYK JPEGs display correctly on Mac (8.1.10-rc-1)**

This fixes the incorrect rendering of CMYK JPEGs containing an ICC profile on Mac.

**Add builtin implementation of field 'Select All' (8.1.10-rc-1)**

The field control will now understand Cmd/Ctrl+A as the 'Select All' action - causing the whole text of the field to be selected.

**Improve efficiency of compiled regex cache (8.1.10-rc-1)**

The efficiency of lookups of previously compiled regexs has been improved. To take full advantage of the regex cache make sure that you either use a string constant for the regex pattern, or a variable which is not mutated between uses. e.g.

get matchText(tTarget, "someregexpattern") -- efficient
get matchText(tTarget, tUnchangedPatternVar) -- efficient
get matchText(tTarget, tPatternPrefix & tPatternSuffix) -- inefficient

In general you will only gain advantage from the regex cache if you repeated use the same regex pattern in the way described above repeatedly in a tight loop.
Ensure matchText and replaceText don't affect target string (8.1.10-rc-1)

Previously calling matchText or replaceText on a string would cause subsequent uses of that string to use slower codepaths causing unexpected performance degradation.

clipboard always converts plain text to styled text (8.1.10-rc-1)

Whenever text was placed on the clipboard, it was first converted to LiveCode styled text and then put on the clipboard as styled text, RTF, HTML, and plain text. This introduced errors when pasting to other applications since they would prefer the HTML version which made the text appear double spaced.

Fix deletion of the target in safe cases (8.1.10-rc-1)

You can now safely 'delete the target' as long as there are no handlers on the stack owned by the target.

After deleting 'the target', 'the target' will become empty which will result in an execution error when an attempt is made to dereference it.

Type should work with accented characters (8.1.10-rc-1)

The type command now handles Unicode characters in a manner consistent with normal keyboard entry. If a Unicode character is typed and it has a native mapping, then it is propagated as a keypress with the keycode being the code of the character. If it has no native mapping, it is propagated with keycode equal to the Unicode codepoint with bit 22 set to 1. In either case the string value of the keypress is the Unicode codepoint.

Ensure browser widgets are in the correct location (8.1.10-rc-1)

Browser widgets in nested groups now remain in the correct location rather than shifting down vertically out of sync with everything else.

Synthesize an MS Paint compatible clipboard format for images (8.1.10-rc-1)

The engine will (once again) synthesize a DIBV5 format when an image is copied to the clipboard. This will be a 32-bit RGBA DIB. Windows then automatically synthesize a 24-bit RGB DIB format.

revAvailableHandlers and revAvailableVariables now in all engines (8.1.10-rc-1)

The 'the [effective] revAvailableHandlers' and 'the revAvailableVariables' properties are now available in both the IDE and Standalone engines.
Note: These properties are currently undocumented, and reserved for IDE related uses. You are free to use in your own code, but their semantics could change in any release.

Fix treatment of NUL containing arguments in ask dialogs (8.1.10-rc-1)
Prior to 7, any arguments passed to LiveCode provided ask dialogs (e.g. ask question) containing NUL would be truncated at the NUL. After 7, any such arguments would cause incorrect calling of the ask dialog. The pre-7 behavior has been resurrected, meaning that trailing NUL bytes in arguments passed to ask dialogs will be ignored.

Remove legacy mergExt externals (8.1.10-rc-1)
The following mergExt deprecated externals are no longer included in LiveCode.
- mergAES - we have revsecurity based encryption for mobile
- mergDropbox & mergDropboxSync - these use the now abandoned by Dropbox (v1 API). We have a script library available for v2 API.
- mergSocket - we have sockets in the engine for mobile
- mergZXing - no longer supportable as the ZXing project no longer supports iOS. Use mergAVCam for barcode capture instead.

Make the encoding property of field char chunks more useful (8.1.10-rc-1)
The 'encoding' char-level field property will now return native if all chars in the chunk can be encoded in the native encoding, and unicode otherwise.

This means that the property will now return the identical value as it did in 6.7 and before, assuming that the field text hadn't had its encoding changed by script (via the textFont ',unicode' flag).

Support resizing stacks for orientation changes in fullscreen modes (8.1.10-rc-1)
A new mobile command mobileSetFullScreenRectForOrientations has been implemented to allow stacks that use the fullscreenMode property to be resized when the device orientation changes.

Improve export/import snapshot from screen on iOS (8.1.10-rc-1)
The from screen form of export/import snapshot has been changed to use a different API on iOS7+, which allows a greater variety of native layers to be captured.

Specific engine bug fixes (8.1.10-rc-2)
Specific engine bug fixes (8.1.7-rc-1)

17098 Ensure cursor moves to end of last tab in line.

Specific engine bug fixes (8.1.10-rc-1)

10947 Fix hypercard-compatibility dynamic path behavior
11039 Throw error when changing behavior from behavior script
11146 Ensure that the initial orientation is not upside down on Android when “portrait” is selected.
11170 Disable keyboard suggestion when entering password in Android native input field.
11313 Support mobilePickPhoto() maximum width and height settings on Android
11727 Fix arrow key not work in Android field
12187 Make sure keyboardActivated/keyboardDeactivated messages are sent when the status bar is hidden on Android
13055 Improve formatting of try syntax description
13151 Correct example of setting "listIndent" for whole field
13180 Allow GPS access from Android Browser
13370 Correct terminology in "convert" command documentation
13482 Document optional catch clause in try control structure
13857 Correct dictionary entry for revProfile
13935 Fix modal dialog opening behind other windows on Linux
13992 Fixed bug causing crash on mouse enter
14080 Fix find command not finding in specified field when not on current card
14238 Ensure background pattern stays aligned in long fields
14266 Fixing crash when using "import eps"
15302 Fix common misspelling of occurred
15384 Fix incorrect handling of a 204 response from a server.
15997 Implement player 'mirrored' property on Windows
16131 Ensure backdrop is sized to fill the screen on Linux
16388 Fix setting dragdata["files"] when filename has spaces
16551 Ensure the "hilitedButtonName" returns the name of the hilited button
16758 Fixed bug causing crash when setting 65535 points to a graphic
16965 Fix incorrect placement of browser widget after stack rect change when fullscrenmode used.
17008 Fix selection handles remaining after selected object deleted
17247 Remove selection artefacts when handles are drawn outside of parent group rect
17323 Ensure backdrop window is behind all other windows on Linux
17540 Fix crash on Mac when displaying IDE usage message
17541 Fix problems with printing PDFs to some printers
17577 Make sure we can set the hilitedItemName property of the navBar widget
17622 Fix extra data added on Windows when pasting html data from the clipboard
<table>
<thead>
<tr>
<th>Code</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17639</td>
<td>Fix vertical placement of caret on long wrapped lines</td>
</tr>
<tr>
<td>17657</td>
<td>Make sure modifier keys are recognised in keysDown()</td>
</tr>
<tr>
<td>17779</td>
<td>Fix scrolling group drawing outside its bounds when acceleratedRendering used.</td>
</tr>
<tr>
<td>17850</td>
<td>Fix inconsistent browser callbacks in browser widget on iOS</td>
</tr>
<tr>
<td>17918</td>
<td>Make sure setting clipboarddata[&quot;text&quot;] and clipboarddata[&quot;html&quot;] works as expected</td>
</tr>
<tr>
<td>17969</td>
<td>Fixed bug preventing correct rendering of ovals when creating them</td>
</tr>
<tr>
<td>17973</td>
<td>Make sure the machine can distinguish between iOS device and simulator</td>
</tr>
<tr>
<td>18058</td>
<td>Fix keyboard not show in landscape orientation</td>
</tr>
<tr>
<td>18243</td>
<td>Ensure horizontal two finger scrolling on Linux respects the system settings</td>
</tr>
<tr>
<td>18264</td>
<td>Don't fail standalone build completely if unlicensed platforms are selected</td>
</tr>
<tr>
<td>18273</td>
<td>Prevent crash when rendering card with invalid objptr</td>
</tr>
<tr>
<td>18275</td>
<td>Enable sqlite FTS5 feature</td>
</tr>
<tr>
<td>18277</td>
<td>Calculate the height of the mac desktop space correctly</td>
</tr>
<tr>
<td>18287</td>
<td>Update sqlite version to 3.15.0</td>
</tr>
<tr>
<td>18293</td>
<td>Crash when deleting a stack that is used as a popup menu</td>
</tr>
<tr>
<td>18295</td>
<td>Fix empty specialFolderPath(&quot;resources&quot;) on Windows</td>
</tr>
<tr>
<td>18343</td>
<td>Fix incorrect result from itemOffset when first character of stringToSearch is the delimiter</td>
</tr>
<tr>
<td>18349</td>
<td>Fix variable contents modified when used to set stack name</td>
</tr>
<tr>
<td>18353</td>
<td>Remove duplicated urlResponse documentation</td>
</tr>
<tr>
<td>18358</td>
<td>Make sure mobileControlGet does not return rounded values of startTime/endTime/currentTime</td>
</tr>
<tr>
<td>18369</td>
<td>Add explicit instruction to DMG images</td>
</tr>
<tr>
<td>18379</td>
<td>Don't include incorrectly copied resource forks in standalones</td>
</tr>
<tr>
<td>18392</td>
<td>Ensure &quot;ceiling&quot; is listed as a reserved word</td>
</tr>
<tr>
<td>18406</td>
<td>Fix delay in triggering handlers when called by JavaScript in browser widget</td>
</tr>
<tr>
<td>18407</td>
<td>Fixed bug preventing the use of &quot;set the visible of line &lt;&gt; of field &lt;&gt;&quot;</td>
</tr>
<tr>
<td>18440</td>
<td>Respect SB Copy Files pane relative / absolute path distinction on mobile</td>
</tr>
<tr>
<td>18441</td>
<td>Make sure the purchaseStateUpdate callback is sent with status=complete when necessary</td>
</tr>
<tr>
<td>18443</td>
<td>Ensure 'private' clipboard is reset when another application sets the clipboard</td>
</tr>
<tr>
<td>18444</td>
<td>Make sure put cookie with empty value works as expected</td>
</tr>
<tr>
<td>18447</td>
<td>Moved misplaced text in iconGravity dictionary entry</td>
</tr>
<tr>
<td>18454</td>
<td>Allow socket to send broadcast packet on Android.</td>
</tr>
<tr>
<td>18459</td>
<td>Fix incorrect behavior of files() and folders() function on Android.</td>
</tr>
<tr>
<td>18472</td>
<td>'load url' is not properly cleaned up on socketError</td>
</tr>
<tr>
<td>18473</td>
<td>Prevent hang when adjusting field pixmap offset</td>
</tr>
<tr>
<td>18484</td>
<td>Prevent mobilePlaySoundOnChannel crash on Android</td>
</tr>
<tr>
<td>18488</td>
<td>Error returned by hostnametoaddress was not being reported in libURL.</td>
</tr>
<tr>
<td>18496</td>
<td>Fix memory leak when using filter on unicode strings</td>
</tr>
<tr>
<td>18498</td>
<td>Ensure bundled Android externals are available on Windows and Linux</td>
</tr>
<tr>
<td>18499</td>
<td>Fix libUrlSetStatusCallback on mobile platforms when tsNet is in use</td>
</tr>
<tr>
<td>18514</td>
<td>Make sure setting clipboarddata[&quot;html&quot;] works as expected on Windows</td>
</tr>
<tr>
<td>18521</td>
<td>Resolve folder path before processing files(folder) and folders(folder)</td>
</tr>
<tr>
<td>18526</td>
<td>Allow command key shortcuts to work in color dialog</td>
</tr>
</tbody>
</table>
Added support for Xcode 8.1 / iOS 10.1
Don't change the defaultFolder on startup
libURL inserts "::" between host and port when creating CONNECT request
Ensure color name rgb value mapping is in alphabetical order
Fix crash when quitting from script editor
Fix crash when converting objective-c objects to LiveCode values
Add code examples to tsNet dictionary entries
Fix Linux player crash when accessing properties
Delete slash at the end of specialFolderPath("resources") to be consistent with other result of special folders.
Remove tsnerror: from the start of output of tsNetVersion()
Fix browser javascript handlers not working on iOS after loading a new page
Make sure the Standalone Application Settings on Windows are respected
Mark the copyResource function as deprecated
Fixed crash on iOS 10 when trying to read local notifications
Fix occasional crash when getting the clipboard data [*text*] on Windows.
Encode bundle display name as utf-8 in ios app plist
Fix when find command matches text in sharedText field on non-current card
Fixed bug preventing all table names being retrieved in MySQL db's
Fix crash on iOS 10 when the app needs access to the device's microphone
Fix a crash related to the message watcher
Fixed bug causing erroneous cursor movement when using arrow keys
Provide mergExt Builds for building against iOS 10.1 SDK
Provide tsNet Builds for building against iOS 10.1 SDK
Fix handling of new tsNet network requests when an existing network request is still waiting to connect
Cannot deploy an app to iOS 10.1 simulator
Fix incorrect cross-references in lockLocation dictionary entry
Fix data loss when cr inserted into a styledText run
Fix loss of BMP as supported clipboard image format
Fix a rare crash on saving after cloning a field
Send standalone saving messages at correct time
Resolve delay in opening Windows standalones that include tsNet 1.2.4 and the Internet inclusion
Prevent lock up of PI when not selecting choice from font menu
Fix a crash when cutting controls
Fix crash when opening cards referencing images on non-open cards
Fix a crash when popping up transient windows
Fix a crash when drag-selecting controls
Don't change name of tsNet stack during standalone build
Fix exception thrown in IDE when saving standalone with more than one stack
Fix encrypt/decrypt operations broken by the OpenSSL 1.1.0 update
Fix crash caused by calling tsNetGetSync() repeatedly against the same URL
Add support for upper and lower case field shortcuts on Mac
Fix documentation of valid values for lineSize property
Fix crash when playing non-imported audioclip
18893  Fix formatting in description of stack mode property
18894  Don't strip context tags from HTML clipboard formats
18900  Fix a crash when closing a stack with substacks still open
18911  Fix graphical artefacts when reshaping polygon graphics while selected
18912  Ensure objects can't be deleted if their behaviors are handling a message or they are the target
18923  Ensure CMYK JPEGs display correctly on Mac
18925  Prevent crashes on memory exhaustion
18938  Fix text encoding issues when pasting HTML into LiveCode
18939  Fix player image incorrectly scaled in edit mode
18946  Fix browserNavigateComplete not firing when document has frames
18948  Make 'obj of me' consistent across all control types
18955  Fix crash when using HTML file input dialog in browser widget
18958  Make sure our prebuilt libs do not use reserved (by Apple private APIs) function names
18959  Fix crash after getting the points of a regular polygon graphic
18962  Fix crash when using field
18969  Add builtin implementation of field 'Select All'
18977  Ensure setting the card triggers openCard / closeCard in no UI mode
18982  Improve shift+click behavior of text selection in XPDF
18988  Deal wth stack id cache correctly on stack delete
19003  Stackfiles under the mainstack path preserve folder structure in standalone
19004  Improve efficiency of compiled regex cache
19005  Ensure matchText and replaceText don't affect target string
19008  Place modals at their own location when neither the defaultStack or topStack can provide useful relative locations
19009  mergExt external builds for iOS 10.2
19010  Provide iOS 10.2 builds for tsNet
19017  Fix crash when deleting object which is being moved
19024  Prevent crash when calling mobileStoreRequestProductDetails
19026  Fix DNS resolver issue causing connection hang when using tsNet on Linux
19032  Prevent crash when creating and deleting two data grids
19035  Fix crash when using tsNet with OS X 10.6 and 10.7
19036  Fix incorrect local file path when setting url of browser widget on Android.
19044  Prevent crash when deleting stack which has an open substack
19045  Fix BiDi algorithm for surrogate pairs
19049  Prevent crash when deleting mousestack stack via button click
19051  Make sure the player endtime property cannot be set to a value greater than the player duration
19060  Ensure error when binding widget is caught correctly
19069  Fixed bug causing crash when building standalone
19076  Prevent redraw recursion when going to stack twice in no ui mode
19080  Do not show linking warnings when building iOS standalones
19084  Ensure text is copied as unstyled on mac
19088  Do not show "Success" dialog if an error occurred in S/B
19093  Prevent recursion when fetching mouseColor in mouseMove handler
19097 Ensure all menus are updated after mouseDown to menu group
19105 Resolve crash when deleting a stack in the message path in a front script
19108 Correct references for scriptOnly property docs
19116 Ensure tsNetGetStatus reports transfer status as "uploading" appropriately during POST requests
19120 Ensure substacks with cantDelete don't cause execution errors when deleting the mainstack
19121 Pass correct folder to standaloneSaved message
19138 Update OpenSSL to version 1.1.0d
19154 Fix widget browser stuck on handling javascript
19158 Prevent crash when using undo to bring back removed controls
19185 Ensure the dragData["private"] isn't cleared during a drag
19192 Add ios and android to "allowDatagramBroadcasts" dictionary entry
19200 Make sure printSettings are set correctly
19206 clipboard always converts plain text to styled text
19212 Prevent a crash when calling mobileComposeMail with just one param (tSubject)
19215 Make sure button icons are present in standalones when building for multiple platforms
19229 Fix crash when connecting an IR Receiver
19246 Remove objects from message path ASAP when deleted
19275 Fix Android crash when a stack is deleted shortly after switching to another stack.
19279 Prevent mobilePickMedia crash without 'Write External Storage' permission
19287 Make sure the clickLoc is updated on mouseDown/touchEnd on mobile
19293 Server returns 'ELF' over HTTP
19298 Make sure "Search for Inclusions" detects correctly widget inclusions on iOS simulator
19307 Prevent crash when saving standalone while player is playing
19313 Fix crash when saving field with fdata
19320 Fix SVG parsing of 'a' instruction
19327 Fix incorrect browser widget location when stack has a menu on OSX
19328 Standalone startup stack needs to be mainstack before resolving parent scripts
19352 Fix crash when getting the urlResponse
19361 Added missing parantheses for revIsSpeaking()
19390 Reposition native layer controls correctly when resizing stacks
19404 Fix crash on iOS when calling play empty followed by play path/to/audio/file
19416 Ensure all object messages are cleared when obj or ancestor is deleted
19417 Use correct comment syntax in docs on documentation
19420 Fix crash on startup when resuming android app after quit
19424 Make sure getting the securityPermissions returns the expected result
19457 Prevent crash when deleting selected objects with the backspace key
19469 Make sure the long time format is correct if twelveHourTime is false
19490 Make sure launch url sets the result to empty on success
19500 Fix crash when invalid url is used with iOS native browser
19509 Make sure Android Studio works with LiveCode
19515 Ensure the formattedRect of line N always returns the correct result
19520 Make sure mirrored property works correctly on Mac
Fix SFTP connection hang when remote directory doesn't exist
Allow 'relaunch' message to be in behavior of main stack
Fix incorrect snapshot area when primary screen origin is not 0,0
Fixed error causing blue rectangle to be drawn incorrectly when doing CMD-A on text
Fixed bug preventing users from selecting text of length 65535
Fix clipboard ownership checks on windows causing private clipboard data to be cleared
Provide iOS 10.3 builds for tsNet
Fix crashes related to card deletion
Fix crash after leaving edit group mode
Ensure colors round-trip through styledText correctly
Do not send pushNotificationReceived/localNotificationReceived message twice
Allow deletion of a message's target object in a frontscript
Fix deletion of the target in safe cases
Prevent crash when deleting combo box
Type should work with accented characters
Ensure correct source rect is used for 'print card from lt to rb'
Make sure unicode characters display correctly when set htmlText in browser
Make sure setting the htmlText of a field does not remove superscripts
Fixed references in the quit dictionary entry
Update cursor when entering window on windows
Make sure setting the iphoneSetAudioCategory is respected
Modify tsNet libUrl wrapper to treat HTTP status codes > 400 as errors
Ensure browser widgets are in the correct location
Errors building iOS standalones should only be reported once
Make sure using mobile camera does not change the value of mobileLockIdleTimer
Correctly parse multiple bytes escaped as hex in the format function
Fix tsNet proxy support on Linux, OS X and Android
Refresh player on windows when mirroring property is set
Make sure you can set more than one javascriptHandlers on CEF Browser
Fixed bug causing crash when using custom undo
Prevent crash on throwing certain errors
Preserve error from chunk-of-code send form
Ensure 'put the objProp' causes a parse error
Ensure closed players use no system resources
Fixed bug that overrides previous matches in matchText
Try HTTP basic authentication if a HTTP server responds with 401 without supplying the WWW-Authenticate header
Synthesize an MS Paint compatible clipboard format for images
Fix resolution of relative paths of images in Mac standalones
Fix crash when deleting an object when a socket has a reference to a deleted object
Fix crash when checking a watched variable on a deleted object
Fix FTPS connection support on LC server under Linux
Fix various error inconsistencies in selected object cut and delete
Fix crash when SSL is unavailable on HTML5
Implement put before msg in HTML5
Notify property listener when text of control is changed via put cmd
Given the dictionary entries for remove and place references to each other.
Fix iOS simulator deployment with Xcode 8.3.3
Fixed regression introduced by bugfix-19535
Fix crash due to deletion of object with pending message
Message box does not find handlers in behaviors
Given the dictionary entries for remove and place references to each other.
Fix iOS simulator deployment with Xcode 8.3.3
Fixed regression introduced by bugfix-19535
Fix crash due to deletion of object with pending message
Message box does not find handlers in behaviors
Fix crash on startup on Linux when RGBA is not supported
The effective revAvailableHandlers only includes private handlers of the target
Ensure player controller thumb shows within the allowed range
Ensure player respects startTime in reverse playback
Fix crash when using click command with invalid mouse stack or click stack
Made various improvements to the show and hide dictionary entries
Ensure window masks with no transparency still work on Mac
Fix crash due to invalid object in event queue
Fix error when building a standalone if the added stackfiles have substacks
Make sure setting playRate to negative does have an effect when player has reached the end of movie
Ensure put URL tUrl does not return empty when tUrl is invalid
Ensure startup stack substacks are cleanly removed from memory
Fixed several errors in the start/stop using font dictionary entries.
Ensure GetPixelHeightOfCanvas() returns the height of the canvas
Ensure the S/B always uses a valid certificate when codesigning iOS standalones
Ensure data is not lost when opening and saving a stack with a widget that is not loaded
Fix malformed documentation of the the universal time
Corrected hiliteChanged dictionary entry for the switch button extension.
Fix capitalization of menu item "Hide Others" on Mac
Ensure the controlNames does not return numbers instead of names for controls in groups
Mention in revBrowserOpenCEF dictionary entry that it is no longer supported on Mac in LC 8+
Generate correct RGB values in rtftext
Ensure setting the enabledTracks of a player is reliable
Fix crash on Windows when exiting with taskbar hidden.
Ensure dragdata["files"] returns a Unix path on all platforms
Ensure answer folder shows the prompt on OSX 10.11 and above
Ensure iOS picker subview width scales correctly
Fix crash when inserting large binary data to SQLite databases that aren't opened with the "binary" option
Throw parse error when dispatch ... with has empty params
Ensure 'the engine folder' returns a LiveCode path on Windows
Fix crash when dispatching to an object and the defaultStack has been deleted
Fixed bug causing crash when using chunks of the type 'the last char to -4 of
20293  "fdwbfdf"
20298  Ensure a diamond checkmark is used when requested on Mac
20308  Fix iOS 64-bit Mach-O structure
20310  Make pasting from MS Paint work
20321  Fix treatment of NUL containing arguments in ask dialogs
20322  Remove legacy mergExt externals
20324  Convert dropped file paths correctly on Windows
20335  Mac folder dialog missing "add folder" button
20349  Fix crash when deleting the focused object
20363  Update DIB format when image placed on Windows clipboard
20405  Fixed bug causing incorrect formattedWidth to be returned for buttons
20413  Add documentation for android specialFolderPath external prefix
20419  Fix accelRender issues on Android
20423  Add tsNet builds for iOS SDK 11.0
20424  Add mergExt builds for iOS SDK 11.0
20434  Fix crash on iOS when the app uses HealthKit
20467  Fixed bug causing crash when using multiple players.
20478  Prevent crash on quit when using the commandName
20489  Remove revVideoGrabber external from IDE as it can no longer be supported
20490  Fix crash when closing color dialog on macOS High Sierra
20503  Fix quote key not working with Turkish keyboard layout on Mac
20507  Ensure Y is respected in 'read from socket X for Y'
20510  Fix crash on Windows when using revDatabaseTableNames()
20538  Ensure flushEvents("all") works on MacOS
20565  Fix setting stack to fullscreen hides all other stacks on Linux
20582  Ensure the iOS device plist has correct values for the version of Xcode and SDKs used to build the standalone
20592  Ensure iOS standalones are treated as unique by fingerprint scanning
20627  Set default timeout in tsNet to prevent app hangs when Internet connection drops
20628  Add tsNet builds for iOS SDK 11.1
20633  Ensure vtab doesn't interfere with styling
20641  Added support for splash screens and icon for iPhone X
20642  Fix crash when undoing a group deletion
20654  Fix crash when trying to write to a disconnected socket
20670  [Xcode 9+] Detect correctly if a simulator device is already open
20742  Add tsNet builds for iOS SDK 11.2
20755  Fix crash when calling iPhoneSetRemoteControlDisplay
20758  Fix performance regression in replaceText
20759  Fix crash saving images to iOS photo library
20760  Fixed documentation for tsNetSetTimeouts to specify correct units for all parameters
20763  Fix crash when deleting datagrid then undoing
20811  Make the encoding property of field char chunks more useful
20848  Fixed AppStore submission error when minimum deployment target is iOS 11.0 or more
20898  Fix crash when converting from utf16 with revDataFromQuery
IDE changes

Create script only stack behavior (8.1.10-rc-1)

The menu for assigning a behavior to a control has two additional options:

- Create behavior from new script only stack
- Create behavior using control script and script only stack

Either option will prompt you for a stack name and a location for the script only stack. The new stack will be saved, assigned as the behavior of the control, and then added to the stackfiles property of control's stack.

Default handlers (8.1.10-rc-1)

Objects no longer have default scripts that appear in the script editor when their empty scripts are edited. Instead, all the associated message handlers for the object type now appear in a list underneath the list of handlers that are present in the script. When clicked, these lines add the selected default handler to the end of the current script.

If there is a default script for this handler and object type in the appropriate location (Toolset/resources/supporting_files/default_scripts/ for 'classic' objects, /support/ for widgets), the content of the handler is obtained from that script (including preceding comments).

If there is no default script for this handler and object type, the handler is constructed using information from the documentation, namely the Summary element is used as a preceding comment to describe the handler, and then the handler declared with all the specified parameters.
First run backdrop (8.1.10-rc-1)
The IDE now has a backdrop by default on first-run. This can be turned off as usual via the view menu. Users with existing preferences should be unaffected.

ideScriptEdited message (8.1.10-rc-1)
A new IDE message has been added:

ideScriptEdited pScript, pObj

This message is sent when the script of an object as displayed in the script editor is changed. pScript contains the current contents of the script editor field for pObj, which, until applied, is not necessarily the same as the script of pObj.

Script editor handler menu (8.1.10-rc-1)
The Handler menu of the script editor menubar has been modified in accordance with the default handler changes to the script editor handler list. It now has the following structure:

- Go to handler...
- list of extant handlers

- Add default handler...
- list of default handlers

- Show default handlers

The show default handlers menu item toggles the script editor preference to show the default handler list, which defaults to true.

Interactive Tutorial syntax (8.1.10-rc-1)
The syntax load stack <FileName> has been added to interactive tutorials. This allows prepared stacks to be imported as operating stacks in the current tutorial.

The prepared stack will be loaded from the internal resources folder of the tutorial (i.e. from _resources/<FileName>). Any cTutorialTag custom property of objects on the stack will be converted to tags for objects which can subsequently be used in the current tutorial.

Allow substack to become a mainstack via property inspector (8.1.10-rc-1)
The property inspector Basic pane for substacks now has a button beneath the mainstack labelled "Make mainstack". Note that once pressed this button will disappear, as the stack will no longer a substack.

Reinstate store tab of extension manager (8.1.10-rc-1)
The store tab of the extension manager has been reinstated and the revBrowser implementation has been replaced with a browser widget.
Drag and drop stackfiles (8.1.10-rc-1)
You can now drag and drop stack files onto the stackFiles field in the PI.

Specific IDE bug fixes (8.1.10-rc-1)

15917 Font Size for Project Browser can now be set from LiveCode Preferences -> Project Browser
17447 Reinstate resize checkbox in property inspector Position pane
17448 Make sure messages are sent when going to stacks/cards from the Project Browser
17485 Allow accessing Image Library and Object Library from LiveCode menubar
17536 Fix or mitigate effect of nudging many controls at once
17618 Reinstate 'fit content' button in property inspector Position pane
17819 Enable cmd+c in dictionary
17889 Repaired confusing layout of fill gradient control in Property Inspector
18029 Show 20 fonts at a time in property inspector font menu
18035 Make sure the gradient popup stack is displayed as expected
18088 Allow setting multi-line tooltips from the Property Inspector
18177 Reinstate text properties and graphic effects to datagrid inspector
18201 Make sure rulers can be hidden
18290 Use datagrid template safely while building custom headers
18292 Fix hidden palettes not reappearing
18300 property inspector custom property list is not sorted
18302 Retain custom prop changes when clicking on tree view in editor
18393 [Project Browser] Change "Sort controls by number" to "Sort controls by layer" to avoid confusion + make sure they are sorted numerically
18452 Saving a substack from the Project Browser no longer asks for a path to save
18455 Show the correct version of LiveCode in Start Center title
18460 Mark stack as edited when property changed from the PI
18483 Prevent iOS display name standalone setting becoming utf-8 encoded data
18485 Ensure relayering menu items don't relayer objects out of owner groups
18491 Allow substack to become a mainstack via property inspector
18549 Make sure lock cursor works in the IDE
18557 Ensure dragging object from tools palette is smooth
18586 Make sure the Project Browser stack/card/group view can always expand
18598 Prevent error on backspace in empty script editor
18685 Remember the last position of menubar on Windows and Linux
18701 Prevent over-enthusiastic save prompts
18721 Make sure unchecking "Notify me of development releases" is respected
18726 Make sure the Bug Report checkmark appears at the correct place in Standalone Settings
18791 Fix PI list editors not updating when value changed
18804 Update locked inspectors when mainstack names change
18857 Import as control > Text file doesn't set text of control
Setting stackFiles in PI causes an error if you "cancel" the file dialog or select multiple
18878
"Show Sections" for Project Browser can now be set from LiveCode Preferences -> Project Browser

Allow a 'set the name of stack' step in interactive tutorials

Reinstate store tab of extension manager

Added tooltip to iOS icon and splash screen selection

Reinstate fixedLineHeight for tableField

Disable custom property editor when no node selected

Reset the templateStack after datagrid creation

Show warning if the new stack name begins with "rev"

Ensure objects can not be dragged to invisible open stacks from the tools palette

Make sure the S/B respects the "iPad initial orientations" settings

Update guide images for LiveCode 8

Add test to ensure default folder doesn't change when loading IDE

Add tests for standalone builder inclusions

Ensure tutorial has location set when being skipped

Make outputting debug vars from message box work in all contexts

Allow vertical scrolling in "Value" field of Variable Visualizer window

Ensure extension is installed before deleting files

Ensure LCB errors display reasonably in script editor

Ensure the "Effects" settings stack always appears onscreen

Don't try to delete breakpoint while it is a target in the call stack

Ensure message box execution succeeds first time if no compile error

Move "User Guide" higher in Help menu

Fixed bug preventing users from finding | and - in the script editor

Prevent error when deleting script editor tab

Improve rendering of Interactive Tutorial on Windows when screenPixelScale > 1

Fix 'put globalVar' in msg box

Clear deleted objects from project browser correctly

Check for changes in filename when getting object row in project browser

Unsubscribe from ideExtensionLog when extension builder closes

Add explicit 'select object' steps to the Interactive Tutorials to ensure the correct object is always selected.

Prevent extension builder from duplicating logs

Fix some minor typos and errors in interactive tutorials

Allow tutorial instruction window to be moved

Always use Return key in tutorial instructions instead of Enter key.

Fix typos in BMI tutorial

Fix ambiguity in a couple of BMI tutorial instructions

Fix second parameter evaluation for script in message box

Ensure default script is editable from within the Extensions Builder

Ensure custom props value comparison is case-sensitive

Remove errant group from the script editor

Position tutorial controls in better location when using 'Do It For Me'

Use smaller images of todo list on smaller screens

Prevent tutorials breaking when stack name is changed
LiveCode Builder changes

LiveCode Builder Standard Library

Foreign function interface

- When passing a Number to one of the foreign integer types (LCInt, LCUInt, IntSize, UIntSize), an error will be thrown if the value is outside the range of the requested type.

- The IntSize and UIntSize types can hold the full 64-bit integer range, however the maximum magnitude which is supported for converting to and from Number is $2^{53}$. An error will be thrown for any conversions outside this range.

Specific LCB bug fixes (8.1.10-rc-1)
18856 Use cached numeric values when converting numbers to/from strings
19067 Ensure an error is thrown if there is no script access
19214 Increase usable range of IntSize and UIntSize types
19244 Nil pointers should bridge to nothing

LiveCode extension changes

Tree View widget

Limit display calculations

Previously when an array was expanded in the Tree View widget, all of the display calculations for were done before the next redraw. Now the keys are sorted (as before) but the display calculations are made for a maximum of 1000 rows. When more rows are needed due to scrolling, another 1000 are calculated at that point. This provides a near-continuous scrolling experience for arrays with large numbers of keys, and ties the expense of expanding an array to that of sorting its keys.

Specific extension bug fixes (8.1.10-rc-1)

16241 Runtime error when changing itemCount by more than one
18319 Prevent segmented control fill from bleeding outside border.
18391 Correctly order default marker styles
18500 Ensure color properties are documented correctly
18693 Prevent long delays when expanding arrays with many keys
19261 Clear selection when deleting selected node
19350 Remember iconPresetName in SVG Icon when reopening
19907 Prevent LCB error when deleting key at path with no selection
20534 Ensure segmented widget created in LC 9.x opens in LC 8.1.x too

Dictionary additions

- `deleteAudioclip (message)` has been added to the dictionary.
- `mobileSetFullScreenRectForOrientations (command)` has been added to the dictionary.

Previous release notes