LiveCode 7.0.0-dp-1 Release Notes

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Overview

The LiveCode engine has undergone a large quantity of changes for the 7.0 release. The way values of variables are stored internally has been changed - in particular where before the engine used C-strings, it now uses a reference counted MCStringRef type. Every bit of code that displays text in LiveCode has been updated, and all the platform-specific API functions that manipulate characters now use the Unicode versions; as a result LiveCode is now fully Unicode compatible.
The other significant change to engine internals is the work done on syntax refactoring. The code that deals with statement execution, function evaluation and property access has been cleaned up and separated out from the parsing code, and moved into distinct modules based on functionality. This represents a major first step towards being able to implement Open Language.

Known issues

Every effort has been made to ensure that externally, the engine behaviour is identical to the current unrefactored release. In other words, users should not notice any difference in functionality in their existing stacks. However, users will notice a general slow-down caused by lack of optimisation in this release - this will be addressed for DP 2.

- 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 engine files are much larger than previous versions due to inclusion of ICU data
- LiveCode does not run correctly when installed to Unicode paths on OSX
- On Windows, executing LiveCode from the installer fails as it cannot find the IDE
- Android app label is not yet Unicode compatible
- Auto-updater process doesn't terminate when dismissed

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
- 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:

- 10.5.8 and later (Leopard) on Intel and PowerPC
- 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 7.0.0-dp-1
- Linux: /opt/runrev/livecode-7.0.0-dp-1
- Mac: /Applications/ LiveCode 7.0.0-dp-1.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 7.0.0-dp-1
- Linux: ~/.runrev/components/livecode-7.0.0-dp-1
- Mac: ~/Applications/ LiveCode 7.0.0-dp-1.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 rev install. e.g.

```
cd /opt/runrev/livecode-7.0.0-dp-1
```

- 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@runrev.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 both Mac and Windows. When invoked in this fashion, no GUI will be displayed, configuration being supplied by arguments passed to the installer.
On both 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 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 RunRev 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 and glib on Linux

Engine changes

Unicode Support (7.0.0-dp-1)

Unicode and LiveCode

Traditionally, computer systems have stored text as 8-bit bytes, with each byte representing a single character (for example, the letter 'A' might be stored as 65). This has the advantage of being very simple and space efficient whilst providing enough (256) different values to represent all the symbols that might be provided on a typewriter.

The flaw in this scheme becomes obvious fairly quickly: there are far more than 256 different characters in use in all the writing systems of the world, especially when East Asian ideographic languages are considered. But, in the pre-internet days, this was not a big problem.

LiveCode, as a product first created before the rise of the internet, also adopted the 8-bit character sets of the platforms it ran on (which also meant that each platform used a different character set: MacRoman on Apple devices, CP1252 on Windows and ISO-8859-1 on Linux and Solaris). LiveCode terms these character encodings "native" encodings.

In order to overcome the limitations of 8-bit character sets, the Unicode Consortium was formed. This group aims to assign a unique numerical value ("codepoint") to each symbol used in every written language in use (and in a number that are no longer used!). Unfortunately, this means that a single byte cannot represent any possible character.

The solution to this is to use multiple bytes to encode Unicode characters and there are a number of schemes for doing so. Some of these schemes can be quite complex, requiring a varying number of bytes for each character, depending on its codepoint.

LiveCode previously added support for the UTF-16 encoding for text stored in fields but this could be cumbersome to manipulate as the variable-length aspects of it were not handled transparently and it could only be used in limited contexts. Unicode could not be used in control names, directly in scripts or in many other places where it might be useful.

In LiveCode 7.0, the engine has been extensively re-written to be able to handle Unicode text transparently throughout. The standard text manipulation operations work on Unicode text without any additional effort on your part; Unicode text can now be used to name controls, stacks and other objects; menus containing Unicode selections no longer require tags to be usable - anywhere text is used, Unicode should work.

Adding this support has required some changes but these should be minor. Existing apps should continue to run with no changes but some tweaking may be required in order to adapt them for full Unicode support - this is described in the next section - Creating Unicode Apps.

Creating Unicode Apps

Creating stacks that support Unicode is no more difficult than creating any other stack but there are a few things that should be borne in mind when developing with Unicode. The most important of these is the difference between text and binary data - in previous versions of LiveCode, these could be used interchangeably; doing this with Unicode may not work as you expect (but it will continue to work for non-Unicode text).

When text is treated as binary data (i.e when it is written to a file, process, socket or other object outside of the LiveCode engine) it will lose its Unicode-ness: it will automatically be converted into the platform's 8-bit

native character set and any Unicode characters that cannot be correctly represented will be converted into question mark '?' characters.

Similarly, treating binary data as text will interpret it as native text and won't support Unicode.

To avoid this loss of data, text should be explicitly encoded into binary data and decoded from binary data at these boundaries - this is done using the **textEncode** and **textDecode** functions (or its equivalents, such as opening a file using a specific encoding).

Unfortunately, the correct text encoding depends on the other programs that will be processing your data and cannot be automatically detected by the LiveCode engine. If in doubt, UTF-8 is often a good choice as it is widely supported by a number of text processing tools and is sometimes considered to be the "default" Unicode encoding.

New & Existing apps - things to look out for

- When dealing with binary data, you should use the **byte** chunk expression rather than **char** - **char** is intended for use with textual data and represents a single graphical character rather than an 8-bit unit.
- Try to avoid hard-coding assumptions based on your native language - the formatting of numbers or the correct direction for text layout, for example. LiveCode provides utilities to assist you with this.
- Regardless of visual direction, text in LiveCode is always in logical order - word 1 is always the first word; it does not depend on whether it appears at the left or the right.
- Even English text can contain Unicode characters - curly quotation marks, long and short dashes, accents on loanwords, currency symbols…

New Commands, Functions & Syntax

Chunk expressions: byte, char, codepoint, codeunit

byte *x* **to** *y* **of** *text* -- Returns bytes from a binary string
char *x* **to** *y* **of** *text* -- As a series of graphical units
codepoint *x* **to** *y* **of** *text* -- As a series of Unicode codepoints
codeunit *x* **to** *y* **of** *text* -- As a series of encoded units

A variety of new chunk types have been added to the LiveCode syntax to support the various methods of referring to the components of text. This set is only important to those implementing low-level functions and can be safely ignored by the majority of users.

The key change is that **byte** and **char** are no longer synonyms - a byte is strictly an 8-bit unit and can only be reliably used with binary data. For backwards compatibility, it returns the corresponding native character from Unicode text (or a '?' if not representable) but this behaviour is deprecated and should not be used in new code.

The **char** chunk type no longer means an 8-bit unit but instead refers to what would naturally be thought of as a single graphical character (even if it is composed of multiple sub-units, as in some accented text or Korean ideographs). Because of this change, it is inappropriate to use this type of chunk expression on binary data.

The **codepoint** chunk type allows access to the sequence of Unicode codepoints which make up the string. This allows direct access to the components that make up a character. For example, á can be encoded as (a,combining-acute-accent) so it is one character, but two codepoints (the two codepoints being a and combining-acute-accent).

The **codeunit** chunk type allows direct access to the UTF-16 code-units which notionally make up the

internal storage of strings. The codeunit and codepoint chunk are the same if a string only contains unicode codepoints from the Basic Multilingual Plane. If, however, the string contains unicode codepoints from the Supplementary Planes, then such codepoints are represented as two codeunits (via the surrogate pair mechanism). The most important feature of the 'codeunit' chunk is that it guarantees constant time indexed access into a string (just as char did in previous engines) however it is not of general utility and should be reserved for use in scripts which need greater speed but do not need to process Supplmentary Plane characters, or are able to do such processing themselves.

The hierarchy of these new and altered chunk types is as follows: **byte** *w* of **codeunit** *x* of **codepoint** *y* of **char** *z* of **word**...

Chunk expressions: paragraph, sentence and trueWord

The **sentence** and **trueWord** chunk expressions have been added to facilitate the processing of text, taking into account the different character sets and conventions used by various languages. They use the ICU library, which uses a large database of rules for its boundary analysis, to determine sentence and word breaks. ICU word breaks delimit not only whitespace but also individual punctuation characters; as a result the LiveCode **trueWord** chunk disregards any such substrings that contain no alphabetic or numeric characters.

The **paragraph** chunk is identical to the existing **line** chunk, except that it is also delimited by the Unicode paragraph separator (0x2029), which reflects paragraph breaking in LiveCode fields.

The hierarchy of these new chunk types is as follows: **trueword** *v* of **word** *w* of **item** *x* of **sentence** *y* of **paragraph** *z* of **line**...

Synonym: segment

The **segment** chunk type has been added as a synonym to the existing **word** chunk. This in order to allow you to update your scripts to use the newer syntax in anticipation of a future change to make the behaviour of the **word** chunk match the new **trueWord** behaviour.

We would anticipate changing the meaning of **word** with our 'Open Language' project. It requires us to create a highly accurate script translation system to allow old scripts to be rewritten in new revised and cleaner syntax. It is at this point we can seriously think about changing the meaning of existing tokens, including **word**. Existing scripts will continue to run using the existing parser, and they can be converted (by the user) over time to use the newer syntax.

Property: the formSensitive

set the **formSensitive** to false -- Default value

This property is similar to the **caseSensitive** property in its behaviour - it controls how text with minor differences is treated in comparison operations.

Normalization is a process defined by the Unicode standard for removing minor encoding differences for a small set of characters and is more fully described in the **normalizeText** function.

Command: open file/process/socket ... for <encoding> text

open file *"log.txt"* **for utf-8 text read** -- Opens a file as UTF-8

Opens a file, process or socket for text I/O using the specified encoding. The encodings supported by this command are the same as those for the **textEncode** / **textDecode** functions. All text written to or read from the object will undergo the appropriate encoding/decoding operation automatically.

Functions: textEncode, textDecode

textEncode(*string*, *encoding*) -- Converts from text to binary data
textDecode(*binary*, *encoding*) -- Converts from binary data to text

Supported encodings are (currently):

- "ASCII"
- "ISO-8859-1" (Linux only)
- "MacRoman" (OSX only)
- "Native" (ISO-8859-1 on Linux, MacRoman on OSX, CP1252 Windows)
- "UTF-16"
- "UTF-16BE"
- "UTF-16LE"
- "UTF-32"
- "UTF-32BE"
- "UTF-32LE"
- "UTF-8"
- "CP1252" (Windows only)

Spelling variations are ignored when matching encoding strings (i.e all characters other than [a-zA-z0-9] are ignored in matches as are case differences).

It is very highly recommended that any time you interface with things outside LiveCode (files, network sockets, processes, etc) that you explicitly **textEncode** any text you send outside LiveCode and **textDecode** all text received into LiveCode. If this doesn't happen, a platform-dependent encoding will be used (which normally does not support Unicode text).

It is not, in general, possible to reliably auto-detect text encodings so please check the documentation for the programme you are communicating with to find out what it expects. If in doubt, try "UTF-8".

Functions: numToCodepoint, codepointToNum

numToCodepoint(*number*) -- Converts a Unicode codepoint to text
codepointToNum(*codepoint*) -- Converts a codepoint to an integer

These functions convert between the textual form of a Unicode character and its numerical identifier ("codepoint"). Codepoints are integers in the range 0x000000 to 0x10FFFF that identify Unicode characters. For example, the space (" ") character is 0x20 and "A" is 0x41.

The codepointToNum function raises an exception if the argument contains multiple codepoints; it should generally be used in the form:

```
codepointToNum(codepoint x of string)
```

The numToCodepoint function raises an exception if the given integer is out of range for Unicode codepoints (i.e if it is negative or if it is greater than 0x10FFFF). Codepoints that are not currently assigned to characters by the latest Unicode standard are not considered to be invalid in order to ensure compatibility with future standards.

Functions: numToNativeChar, nativeCharToNum

numToNativeChar(*number*) -- Converts an 8-bit value to text
nativeCharToNum(*character*) -- Converts a character to an 8-bit value

These functions convert between text and native characters and are replacements for the deprecated **numToChar** and **charToNum** functions.

As the "native" character sets for each platform have a limited and different repertoire, these functions should not be used when preservation of Unicode text is desired. Any characters that cannot be mapped to the native character set are replaced with a question mark character ('?').

Unless needed for compatibility reasons, it is recommended that you use the **numToCodepoint** and **codepointToNum** functions instead.

Function: normalizeText

normalizeText(*text*, *normalForm*) -- Normalizes to the given form

The **normalizeText** function converts a text string into a specific 'normal form'.

Use the **normalizeText** function when you require a specific normal form of text.

In Unicode text, the same visual string can be represented by different character sequences. A prime example of this is precomposed characters and decomposed characters: an 'e' followed by a combining acute character is visually indistinguishable from a precombined 'é' character. Because of the confusion that can result, Unicode defined a number of "normal forms" that ensure that character representations are consistent.

The normal forms supported by this function are:

- "NFC" - precomposed
- "NFD" - decomposed
- "NFKC" - compatibility precomposed
- "NFKD" - compatibility decomposed

The "compatibility" normal forms are designed by the Unicode Consortium for dealing with certain legacy encodings and are not generally useful otherwise.

It should be noted that normalization does not avoid all problems with visually-identical characters; Unicode contains a number of characters that will (in the majority of fonts) be indistinguishable but are nonetheless completely different characters (a prime example of this is "M" and U+2164 "M" ROMAN NUMERAL ONE THOUSAND).

Unless the **formSensitive** handler property is set to true, LiveCode ignores text normalization when performing comparisons (is, <>, etc).

Returns: the text normalized into the given form.

```
set the formSensitive to true

put "e" & numToCodepoint("0x301") into tExample  -- Acute accent

put tExample is "é"      -- Returns false

put normalizeText(tExample, "NFC") is "é"  -- Returns true
```

Function: codepointProperty

codepointProperty("A", "Script") -- "Latin"
codepointProperty("β", "Uppercase") -- false
codepointProperty("σ", "Name") -- GREEK SMALL LETTER SIGMA

Retrieves a UCD character property of a Unicode codepoint.

The Unicode standard and the associated Unicode Character Database (UCD) define a series of properties for each codepoint in the Unicode standard. A number of these properties are used internally by the engine during text processing but it is also possible to query these properties directly using this function.

This function is not intended for general-purpose use; please use functions such as toUpper or the "is" operators instead.

There are many properties available; please see the version 6.3.0 of the Unicode standard, Chapter 4 and Section 5 of Unicode Technical Report (TR)#44 for details on the names and values of properties. Property names may be specified with either spaces or underscores and are not case-sensitive.

Examples of supported properties are:

- "Name" - Unique name for this codepoint
- "Numeric_Value" - Numerical value, e.g. 4 for "4"
- "Quotation_Mark" - True if the codepoint is a quotation mark
- "Uppercase_Mapping" - Uppercase equivalent of the character
- "Lowercase" - True if the codepoint is lower-case

Updated Functions

Function: binaryEncode

A new letter has been introduced to allow one to binary encode unicode strings.
Following the dictionary definitions, it consists of:

u{<encoding>}: convert the input string to the encoding specified in the curly braces, and output up to amount bytes of the string created - stopping at the last encoded character fitting in the amount - padding with '\0'.

U{<encoding>}: convert the input string to the encoding specified in the curly braces, and output up to amount bytes of the string created - stopping at the last encoded character fitting in the amount - padding with encoded spaces, and then '\0' if the last encoded space cannot fit within the amount specified.

The encoding, surrounded by curly braces, is optional - no one specified would default to the behaviour of 'a' - and must match one of those applicable to textEncode

Function: binaryDecode

A new letter has been introduced to allow one to binary decode unicode strings.
Following the dictionary definitions, it consists of:

u{<encoding>}: convert amount bytes of the input string to the specified encoding, padding with '\0'.

U{<encoding>}: converts amount bytes of the input to the specified encoding, skipping trailing spaces.

The encoding, surrounded by curly braces, is optional - no one specified would default to the behaviour of 'a'

- and must match one of those applicable to textEncode

Deprecated Features

Functions: numToChar, charToNum

These functions should not be used in new code as they cannot correctly handle Unicode text.

Property: useUnicode

This property should not be used in new code, as it only affects the behaviour of **numToChar** and **charToNum**, which are themselves deprecated.

Functions: uniEncode, uniDecode

These functions should not be used in new code as their existing behaviour is incompatible with the new, transparent Unicode handling (the resulting value will be treated as binary data rather than text). These functions are only useful in combination with the also-deprecated unicode properties described below.

Function: measureUnicodeText

This function should not be used in new code. **measureUnicodeText**(*tText*) is equivalent to **measureText**(**textDecode**(*tText*, "UTF16")).

Properties: unicodeText, unicodeLabel, unicodeTitle, unicodeTooltip, unicodePlainText, unicodeFormattedText

These properties should not be used in new code; simply set the text, label, title etc. as normal. Assigning values other than those returned from **uniEncode** to these properties will not produce the desired results.

The following are now equivalent:

```
set the unicodeText of field 1 to tText

set the text of field 1 to textDecode(tText, "UTF16")
```

and similarly for the other unicode-prefixed properties.

Dictionary additions

- **codepointProperty** (*function*) has been added to the dictionary.
- **codepointToNum** (*function*) has been added to the dictionary.
- **nativeCharToNum** (*function*) has been added to the dictionary.
- **normalizeText** (*function*) has been added to the dictionary.
- **numToCodepoint** (*function*) has been added to the dictionary.
- **numToNativeChar** (*function*) has been added to the dictionary.
- **textDecode** (*function*) has been added to the dictionary.
- **textEncode** (*function*) has been added to the dictionary.

- **codepoint** (*keyword*) has been added to the dictionary.
- **codepoints** (*keyword*) has been added to the dictionary.
- **codeunit** (*keyword*) has been added to the dictionary.
- **codeunits** (*keyword*) has been added to the dictionary.
- **paragraph** (*keyword*) has been added to the dictionary.
- **paragraph** (*keyword*) has been added to the dictionary.
- **segment** (*keyword*) has been added to the dictionary.
- **segments** (*keyword*) has been added to the dictionary.
- **sentence** (*keyword*) has been added to the dictionary.
- **sentences** (*keyword*) has been added to the dictionary.
- **trueWord** (*keyword*) has been added to the dictionary.
- **trueWords** (*keyword*) has been added to the dictionary.
- **formSensitive** (*property*) has been added to the dictionary.

Dictionary changes

- The entry for **repeat** (*control structure*) has been updated.
- The entry for **charToNum** (*function*) has been updated.
- The entry for **numToChar** (*function*) has been updated.
- The entry for **uniDecode** (*function*) has been updated.
- The entry for **uniEncode** (*function*) has been updated.
- The entry for **byte** (*keyword*) has been updated.
- The entry for **character** (*keyword*) has been updated.
- The entry for **word** (*keyword*) has been updated.
- The entry for **words** (*keyword*) has been updated.
- The entry for **unicodeText** (*property*) has been updated.

Previous Release Notes

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
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