



EMu Documentation

Right-to-Left Language Support in EMu

Document Version 1.1

EMu Version 4.0



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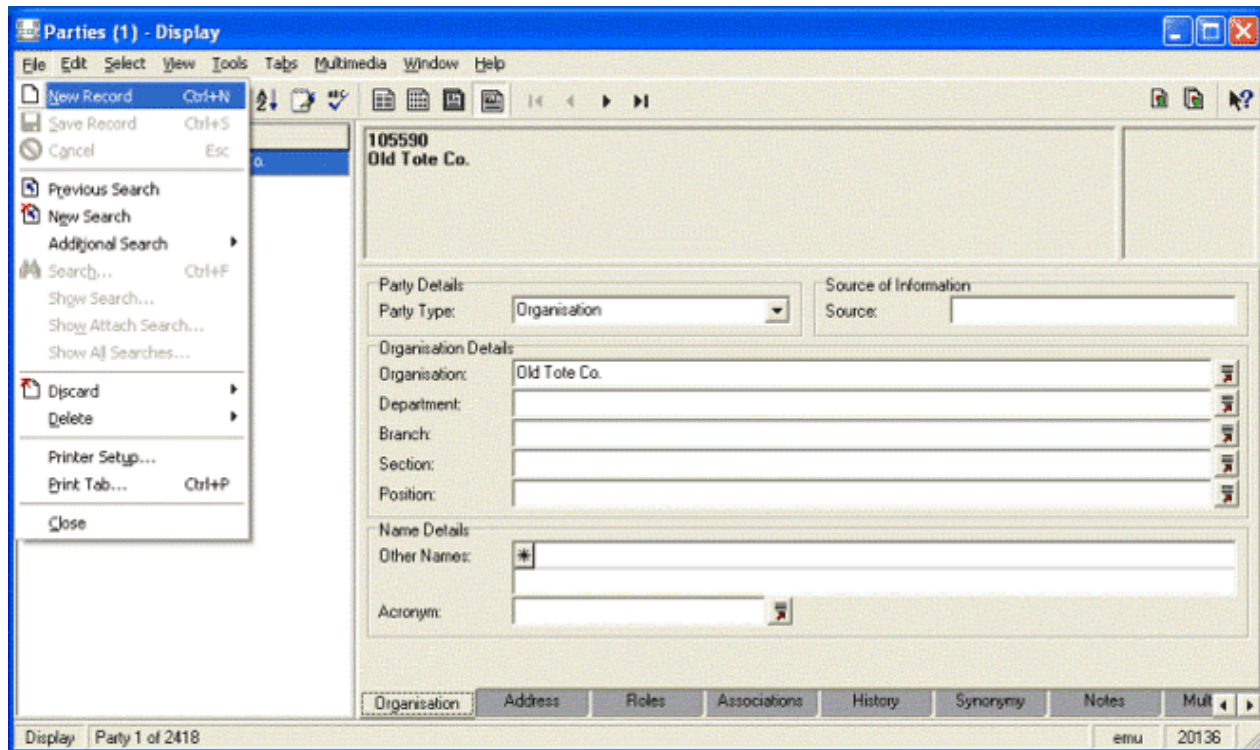
SECTION 1

Overview

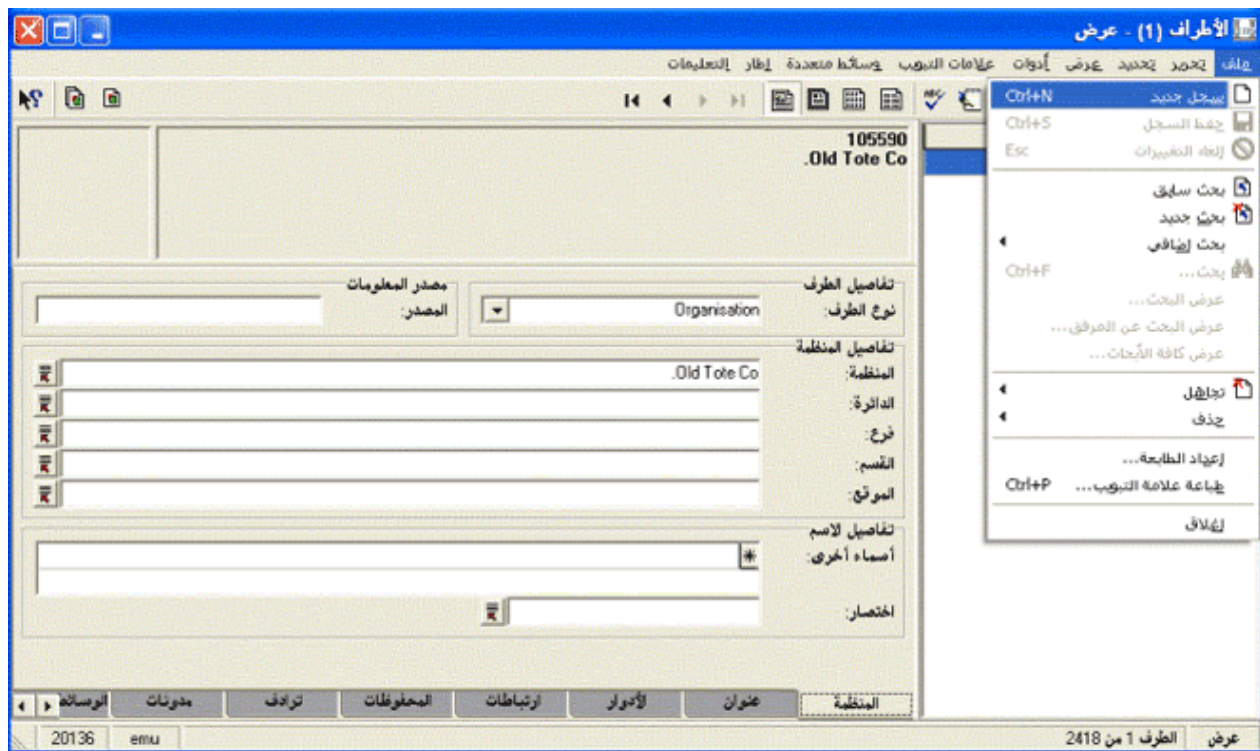
EMu 4.0.02 introduces enhanced support for languages, including right-to-left (RTL) languages. Arabic and Hebrew scripts are now supported, as are two additional left-to-right (LTR) languages, Greek and French (Canadian). Thirteen languages are now supported in EMu:

- English & English (US)
- Arabic
- Danish
- Dutch
- French & French (CA)
- German
- Greek
- Hebrew
- Italian
- Norwegian
- Polish
- Spanish
- Swedish

Switching between LTR and RTL languages is dynamic and does not require EMu to be restarted - the user interface automatically adjusts to suit the language selected. For example, selecting Arabic will result in the Menu bar moving to the right side of the module window and all controls being mirrored. The image below shows the Person tab of the Parties module with Shortcuts enabled:



This image shows the same tab with Arabic selected:



As you can see, the layout of the various controls is mirrored, even down to the module Title bar. Many of the images used in EMu (e.g. on buttons, menus, etc.) have been altered to suit RTL languages. In some cases a new image has been constructed to ensure an authentic user experience. For example, the *What's this help?* image contains a reversed question mark in the Arabic version as this is how question marks are displayed in Arabic.

All the data controls in EMu 4.0.02 have been replaced with Unicode versions, which allows EMu to determine the character set used to store information and adjust the display to show characters correctly. Whether you use UTF-8 or ISO-8859-6 (Arabic) as your data storage encoding, the display will adjust to show the characters correctly.



It may be necessary to install additional fonts on your computer to ensure that all characters can be displayed (e.g. Windows 2000 and Windows XP require the installation of right-to-left language files in order for Arabic and Hebrew characters to be shown).

A number of controls have been adjusted to show RTL data correctly. In particular the HTML editor provided with EMu (in the Field Help and Narratives modules) has been extended to support RTL orientation.

SECTION 2

Switching Languages

Two language settings can be altered in EMu:

- The first is the language used for Prompts, e.g. prompts, menus, forms, etc. Prompts in any EMu client can be switched to one of the thirteen supported languages.
- The second is the language used for Data. Data can be added in one or more languages, and it is possible to select which language or languages are used to display the data. For systems with only one language it is obviously not possible to alter the language in which Data is displayed.

Which languages are used is set in the EMu Registry via:

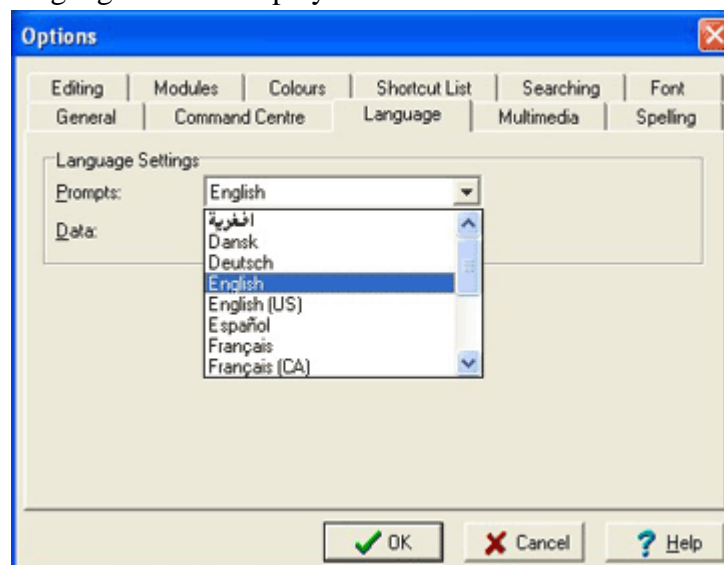
System|Setting|Language|Supported


For clients with multiple languages supported, it is possible to select any one language or all languages to display data.

EMu provides two mechanisms for switching the languages displayed in the user interface:

- The first mechanism allows the language used for Prompts and Data to be set independently.

This is achieved using the Language tab in the Options dialog box (select **Tools>Options** from the Menu bar). As the names suggest, the *Prompts* drop list specifies the language used for prompts, and the *Data* drop list specifies the language used to display data:



When changing the language of Prompts, EMu adjusts the user interface to the language selected as soon as the **OK**  button is clicked. When switching between LTR and RTL languages a small delay may occur while the user interface is adjusted.

When switching the language of Data, only the data displayed in controls is affected. The layout of the user interface and language of Prompts is not adjusted.

- The second mechanism for switching the languages displayed in the user interface allows both the language of Prompts and Data to be changed at the same time.

This is achieved by selecting **Tools>Language** from the Menu bar. For systems configured to allow more than one language for data, a **Tools>Language** sub-menu lists each language and an entry for **All Languages**.

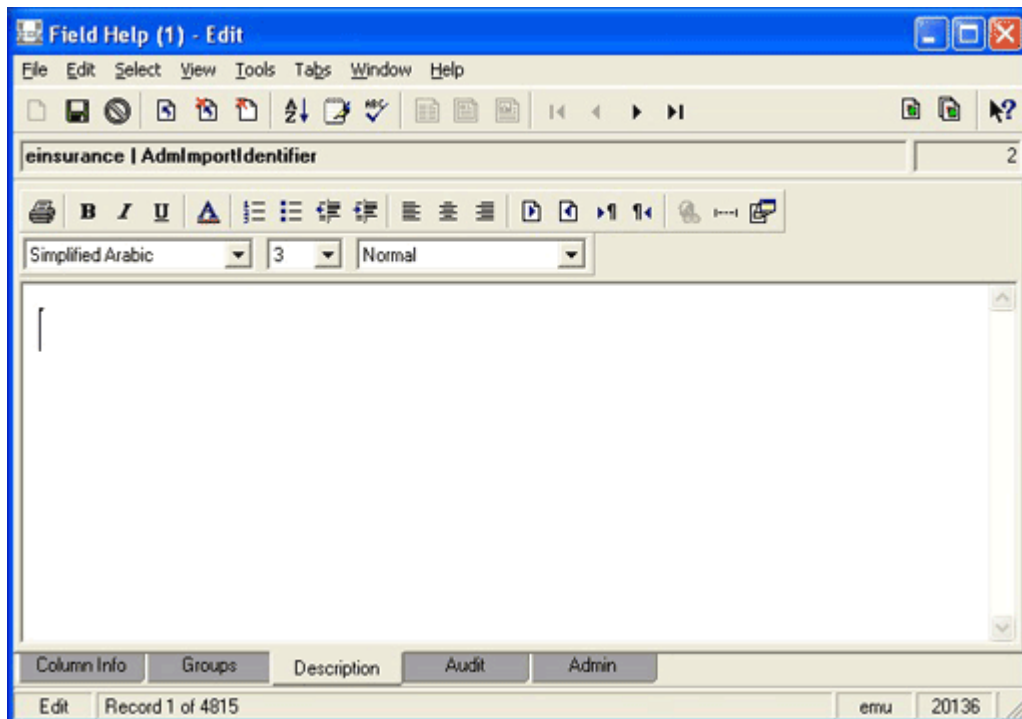
Selecting one of the menu options changes both the language of Prompts and Data at the same time.

If **All Languages** is selected, the language used for Prompts is not changed, but all languages used for Data are displayed separated by the language delimiter (normally ; : ;):





SECTION 3

HTML Editor Extensions

In order to provide full support for RTL languages, the standard EMu HTML editor has been extended to allow the page and paragraph orientation to be set:



The new buttons are:

Button	Description
	The document direction is left-to-right (same as <code><html dir="ltr"></code>). If a direction is not specified, the default direction is <code>ltr</code> .
	The document direction is right-to-left (same as <code><html dir="rtl"></code>). An <code>rtl</code> document has the scroll bar located on the left side of the window with all text right aligned by default. The standard Unicode <i>bidi</i> algorithm is used to display text. That is, English text is displayed in a left-to-right order while Arabic / Hebrew is displayed right-to-left. The setting affects the default direction of all text in the document.
	The text direction for the current paragraph is set to <code>ltr</code> (same as <code><p dir="ltr"></code>). If the document direction is <code>rtl</code> , this command will reset the direction to <code>ltr</code> for the current paragraph only. Note that Arabic text will still be displayed right-to-left but left alignment will be used. This is useful for embedding an English quote in Arabic text.
	The text direction for the current paragraph is set to <code>rtl</code> (same as <code><p dir="rtl"></code>). This is useful for embedding an Arabic quote in English text.

The RTL language features added to the HTML editor are available for all HTML based fields in EMu.

SECTION 4

Unicode Data Controls

To support RTL languages in EMu, all data controls (e.g. RichEdit, Grid and Combobox controls) have been upgraded to support Unicode. All other user interface controls (e.g. menus, tabs, etc.) have not changed and still use single byte based character sets. The change to data controls means any Unicode character may be entered into a data field and it will be displayed and saved correctly. If the EMu server encoding is set to `utf8`, the data will also appear correctly in reports and on the Internet.

For clients who do not have the EMu server encoding set to `utf8`, a mapping takes place where all data characters are translated from the server encoding that has been used into UTF-8 before being displayed, thus causing the correct characters to be shown. A reverse mapping takes place for all Unicode data entered into controls when saved to the EMu server.

When the EMu client is invoked it queries the EMu server to determine the encoding used. Once the client knows the encoding, it performs all the necessary translations to ensure the data is displayed and saved correctly.

As non-data controls have not been upgraded to their Unicode equivalent they will display text (in most cases prompts) using the character set defined by the Prompts language setting. In rare instances this may result in the incorrect display of individual characters (for example, selecting French as the language for Prompts and trying to show an Arabic character). In general this should not occur as all prompt based strings are translated using the character set for the language specified for Prompts.

SECTION 5

Installation of RTL Languages

In order to display RTL based characters correctly and to install the *bidi* algorithm used for data entry and display, it may be necessary to add RTL language files to your Windows installation. Details on how to install the RTL language files are given below for each version of Windows:

Windows 2000

1. Select **Start>Settings>Control Panel>Regional Options**.
2. On the General tab, select the language to install (e.g. **Arabic**) in the *Language settings for the system* section.
3. Click **Apply**.
4. If prompted, insert the Windows 2000 CD-ROM and click **OK**.
5. Restart your computer when prompted. If you are not prompted, select **Start>Shut Down>Restart**.

Windows XP

1. Select **Start>Control Panel>Regional and Language Options**.
2. On the Languages tab, click the check box beside *Install files for complex script and right-to-left languages (including Thai)*.
3. Click **Apply** and then **OK**.
4. Restart your computer when prompted. If you are not prompted, select **Start>Shut Down>Restart**.

Windows 2003 (Server)

1. Select **Start>Control Panel>Regional and Language Options**.
2. On the Languages tab, click the check box beside *Install files for complex script and right-to-left languages (including Thai)*.
3. Click **Apply** and then **OK**.
4. Restart your computer when prompted. If you are not prompted, select **Start>Shut Down>Restart**.

Windows Vista and Windows 7

Windows Vista and Windows 7 have RTL language fonts installed by default and there is no need to add any language files.

SECTION 6

Data Entry for RTL Languages

Once the correct language files are installed, it may be necessary to configure Windows to allow data entry in multiple languages. This involves adding a keyboard layout for the language in which you wish to enter data.

For example, to type Arabic characters it is necessary to configure the keyboard to mimic an Arabic keyboard. As each version of Windows provides a different mechanism for adding keyboard layouts, details are provided for each release:

Windows 2000

1. Select **Start>Settings>Control Panel>Regional Options**.
2. Select the **Input Locales** tab.
3. Click **Add** if the language in which you wish to type is not listed under *Installed input locales*.
4. In the Add Input Locale dialog box, select the language in which you wish to type from the Input Locale list. This automatically selects the Keyboard Layout/IME option.
5. Click **OK**.
6. In the Regional Options dialog box, click **Apply** and then **OK**.

Windows XP

1. Select **Start>Control Panel>Regional and Language Options**.
2. Select the **Languages** tab.
3. Click **Details** in the *Text services and input languages* section. The Text services and input languages dialog box appears.
4. If the language in which you wish to type is not listed under *Installed Services*, or if the language that you want is listed but the keyboard is not listed with it, click **Add**.
5. In the Input Language list, select the language in which you wish to type. This automatically populates the Keyboard layout/IME field.
6. Click **OK**. The selected language with a keyboard installed displays under *Installed Services*.
7. Click **OK** to close the Text Services and Input Languages dialog box, and then click **OK** to close the Regional and Language Options dialog box.

Windows 2003 (Server)

1. Select **Start>Control Panel>Regional and Language Options**.
2. On the Languages tab, click **Details**.
3. If the language in which you wish to type is not listed under *Installed Services*, or if the language that you want is listed but the keyboard is not listed with it, click **Add**.
4. In the Input Language list, select the language in which you wish to type. The Keyboard layout/IME field is automatically populated for you.
5. Click **OK**. The selected language with a keyboard installed displays under *Installed Services*.
6. Click **OK** to close the Text Services and Input Languages dialog box, and then click **OK** to close the Regional and Language Options dialog box.

Windows Vista and Windows 7

1. Select **Start>Control Panel>Regional and Language Options**.
2. On the **Keyboards and Languages** tab, click **Change keyboards**.
3. Under *Installed services*, click **Add**.
4. Double-click the language you want to add.
5. Double-click the text services you want to add.
6. Select the text services options you want to add.
7. Click **OK**.

After keyboard layouts have been added, it is possible to select the input language from the Language bar, which is situated in the System Tray (it is a button with the two letter name for the current input language displayed). Click the **Language** bar for a list of all possible data entry languages. Select the input language required.

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