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Notes Iris Today

Think globally:
Creating a *multilingual*
Notes/Domino
environment

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Your employees speak different languages. Your customers speak different languages. Shouldn't your software speak different languages?

The World Wide Web is, by its very nature, global and therefore multilingual. And for most global companies, multilingual capabilities are a must. With offices around the world, you need clients and servers that support and enable the transfer of information in multiple languages for all employees and customers.

A retailer may have servers in main offices in London and Tokyo that are linked to distribution plants in Brazil and Berlin. Retail sales outlets in 50 cities on two continents are tied into the same servers. Each user—from the inventory manager in Germany to the sales clerk in Paris—must be able to use the applications with ease and confidence, and that means in their preferred language. In addition, information must flow effortlessly among all the sites, and just as important, the company's Web site needs to present its information in all the languages required to reach its market.

Lotus is committed to providing the tools you need to succeed in the global marketplace, so it's no surprise that all of this is possible with Domino. This article will explain some of the options, configurations, and considerations when creating a global, multilingual environment with Notes and Domino.

Character set and locale support

Error free character set handling or character set conversion between platforms and/or applications is at the heart of running a multilingual environment. Over time, many different character sets have been developed that support different language groups on different hardware platforms. This means that for every character in every language (remember, there are thousands of characters in some Asian languages), global software such as Notes and Domino must effortlessly and correctly handle every character set conversion across applications and platforms.

In an attempt to solve the problem of proliferating and mutually exclusive code pages, members of the high tech community (including Lotus and IBM) came together in 1991 to form the **Unicode Consortium** with the goal of providing "a unique number for every character, no matter what the platform, no matter what the program, no matter what the language." Unicode™ does this with a single code page, in lieu of what exists in hundreds of code pages to this day. Notes and Domino support Unicode in addition to all other native operating system character sets that are in widespread use today.

Character set handling is one aspect of globalization support, locale is another. Locale is defined by Nadine Kano in her book *Developing International Software* as, "The features of the user's environment that are dependent on language, country, and cultural conventions." This includes, for example, date formats, currency symbol, and sorting order.

The locale is set on the operating system of the machine. Domino and Notes use the information from the locale to display data appropriately for the user. One example of the effects of locale is the date format in your mail memo. The date display format is drawn from the user's locale. Therefore, if

you are using the Notes client and have your operating system locale set for English - US, you will see the date as mm/dd/yy. However, if you have your operating system locale set for English - UK, you will see the date as dd/mm/yy.

Notes and Domino options
There are two important points to know about running Notes and Domino in a global environment:

- Notes and Domino share a single, worldwide code base for all languages assuring the same high quality and 100 percent compatibility for all language versions.
- Notes and Domino are able to seamlessly manipulate character set data across any of the languages supported by Notes and Domino.

The Lotus Notes client is available in more than 25 national language versions (NLV). NLVs provide underlying character set and locale support as well as a translated user interface, translated templates, and translated user assistance components. For example:
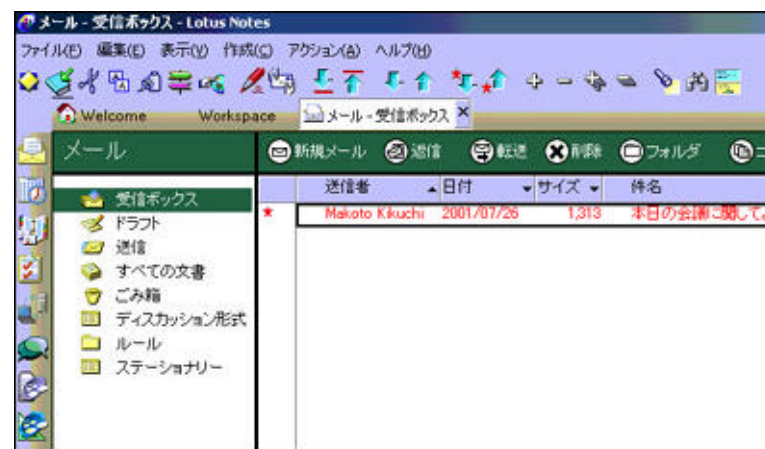
Beyond that, the Lotus Notes client provides the underlying character set and locale support for 15 additional languages. This is known as national language support (NLS). As a result, 99 percent of the world's IT market is covered by the Notes client language versions.

The Domino server is available, fully translated, in nine Asian, Latin American, and Western European languages. Server Language Packs (LP) are available for many platforms in languages that can be added to the Global English Server to support more than 40 end-user languages while maintaining a consistent English UI for the server administrator.

The **Notes/Domino language versions and support** sidebar lists what is currently available for both the Notes client and the Domino server.

While it is usually preferable to use a translated version of the Notes client, larger global companies typically choose Global English servers with translated templates and User Assistance Language Packs. This allows them the flexibility of presenting end users with critical information in their own language.

One benefit of running Global English Domino servers is that administrators from any location can manage and troubleshoot servers quickly and efficiently, as the server console and log messages are all in English. This means that error and log messages are more easily located in the **Lotus Knowledgebase**.

A User Assistance Language Pack provides translated Domino application

templates as well as translated online, server-based Help and translated Web resources.

Language Packs are also bundled in CD kits containing multiple languages. This makes it easier for administrators to get at the language support files they need, especially when an enterprise supports many languages. Language Packs are also cross-platform, that is, the same language pack can be installed on any of the supported platforms. Most important, Notes and Domino will maintain data integrity between any language versions of Notes and Domino. For a complete listing and explanation of the client and server language offerings, see **Lotus Globalization Technologies**.

Deciding on language support

There are many considerations when deciding which Notes and Domino language versions are best for your company. When choosing a client, you should ask:

- What are the language preferences of the users?
- Are they fluent in English or are they more comfortable in their own language?
- What is the corporate policy for providing users with language support?
- Is local IT support available in their preferred language?

When choosing a client operating system, consider the following questions:

- What languages do the users need to communicate in and which operating system version supports the input (keyboard drivers) for these languages?
- Do the users need to input Japanese, traditional or simplified Chinese, Korean, Thai, Arabic or Hebrew? If so, they will need a localized version of Windows 95, Windows 98, or Windows NT. They can also use any version of Windows 2000, which supports input for all languages.

When choosing the server version, think about these questions:

- Do the servers need to be administered remotely? If so, all the administrators need to be able to comprehend the server console and log messages.
- Or is this purely a localized deployment in which all the administrators are able to comprehend the local language?

Deciding the server's locale

Once you have decided what language support your company needs, you can begin installing and setting up your Domino server. If you are creating and maintaining a multilingual Notes and Domino server environment, you need to decide the optimal setting for the locale of the server operating system. The locale affects the indexing of attachments, the sort order, and the time zone.

Since file attachments are objects stored within Notes documents, the text contained within them needs to be extracted and converted to Unicode before they can be indexed. If the code page of the attachment is not known, Domino uses the operating system code page when it performs these conversions. Consider setting the locale of your server to the locale that matches where your highest volume of document attachments originate.

The server operating system locale also drives the default sorting or collation settings. Let's say the user of a Notes client in the United States accesses a Domino server in Denmark (with the operating system locale of the server set for Denmark). When he or she opens the Domino Directory on the server, the names will appear sorted according to the Denmark locale collation rules. Application developers can override the server collation at the database level.

The time zone of the server affects all those who are accessing the server from a Web browser. All dates and times will be expressed in the server's

time zone, which may not be optimal for certain applications. (For an in-depth discussion on how Notes handles time zone differences, see the *Iris Today* article, **Keeping Time: How Notes handles time zones and daylight-saving time**.) In addition, locale-specific conventions such as date formatting will be derived from the server and not the browser.

Therefore, an optimal server configuration would be one where the time zone and locale match that of the bulk of the Web users who will be accessing it.

Once you have installed the Domino server, there are a few more things to consider for global deployment: alternate user names, MIME, and multilingual Web server settings.

Using alternate user names

Alternate user names is a feature of Domino R5 that allows users to display their name in their character set and to enter names in those characters. Alternate names are also used for name lookup purposes. This is especially useful for people whose names cannot be written using ASCII, such as the name shown in the following screen:


The Domino administrator can register and certify one alternate name for a user, using the user's character set. The alternate name is a fully authenticated name, as opposed to an alias, which is not fully authenticated. Because recognition of non-ASCII characters is not standardized or widespread in the Internet world, primary user names should be composed of ASCII characters, and alternate user names should be used for names in native character sets.

Administrators must add an alternate language and name to the certifier ID and then add the user's alternate name to the user ID. This is accomplished through recertification. For full instructions on registering users with alternate name support, see the **Domino R5 Administration Help**.

To display alternate names in a Notes client, you need to enable several settings. First, you must have a font installed on your computer that is capable of displaying the characters. Unicode fonts are an easy way to provide support for many types of script within a single font. Lotus supplies some Unicode fonts with R5 in the \apps directory of the Notes CD. Windows 2000 supplies Unicode fonts as well.

Once you have the correct font installed, open the User Preferences dialog box in your Notes client, click the Default Fonts button on the Basics panel, and specify those fonts as the Default Sans Serif font and the Default Multilingual font in the Default Fonts dialog box:
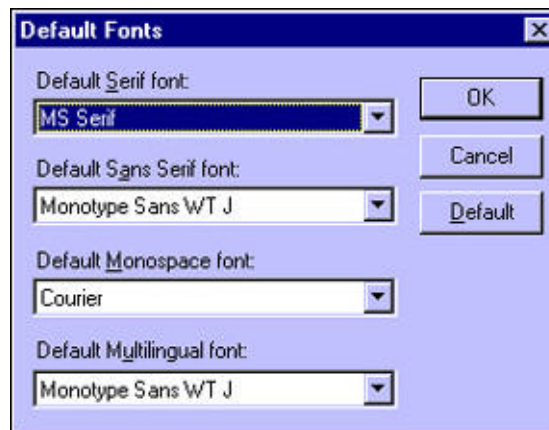
You must also select Enable Unicode display under the Additional Options section of the Basics panel of the User Preferences dialog box:
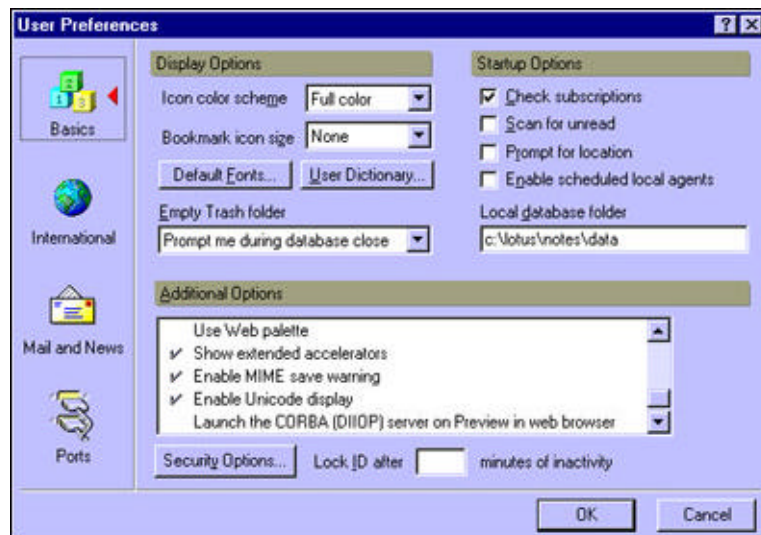
On the International panel of the User Preferences dialog box, click the Change button for the Alternate name language setting and select the alternate languages you want to display in the Alternate Name Language dialog box. This tells Notes what scripts you are able to read, so that only names in those languages are presented to you with the alternate name:
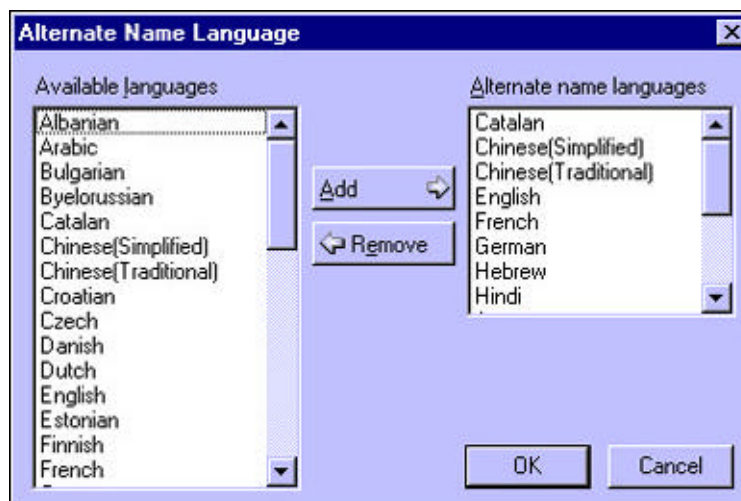
Finally, you need to edit your Location document in your Name and Address Book, selecting Display Alternate Names for the Default display name field on the right side of the Basics tab:
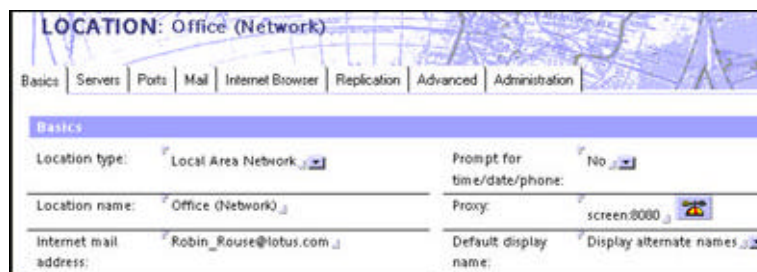
MIME support

Another enhancement to R5 is the expanded Multipurpose Internet Mail Extensions (MIME) capabilities. The MIME protocol was developed to allow Internet messages to evolve beyond plain text transmissions. Notes and Domino R5 both support native MIME Internet mail inbound and outbound. If you are a large global company, chances are that people around the world will be sending messages in character sets that are not the default character sets on the receiving machine.

Notes and Domino serve up Internet mail with the correct code page. Unfortunately, some Internet mail arrives with the wrong character set information—or none at all. In that case, if your Notes client is set up to save Internet mail as native MIME, you can change the character set information or encoding that Notes uses to store the message.

Let's say you get mail from someone whom you know is writing to you in Japanese. When you open the mail memo, you see lots of identical default squares or dots:

Choose View - Encoding. From the menu, choose the character set that you think the message might have been authored in. You should be able to see

the language text, if you have made the correct assumption and if your operating system supports those fonts:
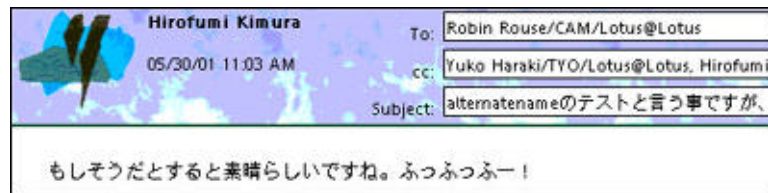
To store Internet mail in native MIME format as opposed to the Notes and Domino native storage, there are some server-side and client-side settings that need to be configured. For a full discussion of these settings, see the *Iris Today* article, **Worldwide messaging: Using International MIME in R5** .

Domino Web server settings

The global Web presence is a huge consideration for international companies. The Domino Web server easily supports multilingual users, with some attention to a few additional settings and configurations. Just as MIME messages include character set information, so too do Web pages. When Domino publishes a page to the Web, the browser must read that information first, to know what character set to use in displaying the page. If this information is wrong, the browser will not be able to display the page. Domino assures that what it publishes to the Web will have the correct character set information by allowing you to configure the Character Set Mapping in the Server document.

To set up the HTTP Web publishing default character set, open the Server document in the Domino Administrator. Click the Internet Protocol tab and then the Domino Web Engine tab. The character mapping settings are at the lower right of this document:

```
Character Set Mapping
Default character set group:    "Western "▼
Convert resource strings to:    "English "▼
Use UTF-8 for output:           "No "▼
Use auto-detection if           "No "▼
database has no language
information:
Western:                        "ISO-8859-1 "▼
Central European:               "Windows-1250 "▼
Japanese:                       "SJIS "▼
Traditional Chinese:            "Big5 "▼
Simplified Chinese:             "GB "▼
Korean:                         "KSC5601(EUC) "▼
Cyrillic:                       "KOI8-R "▼
Greek:                          "Windows-1253 "▼
Turkish:                        "Windows-1254 "▼
Thai:                           "Windows-874 "▼
Baltic:                         "Windows-1257 "▼
Arabic:                         "Windows-1256 "▼
Hebrew:                         "ISO-8859-8i "▼
Vietnamese:                     "Windows-1258 "▼

Character set in header:        "Enabled "▼
Meta character set:             "Disabled "▼
```

The following table, adapted from the **Domino R5 Administration Help**, explains the character set mapping fields in the Server document:

Field	Description
Default character set group	Select a character set group from which users choose their preferred character set when they create or edit documents.
Convert resource string to	Select the language to use for messages, HTML for default search pages, and static strings in pages. You can choose a language other than English only for international versions of the Domino server that have translated text.
Use UTF-8 for output	Yes generates pages using UTF-8. No generates pages according to the settings of the character set group fields (Western through Vietnamese).
Use auto-detection if database has no language information	Yes automatically detects the language to use for a database if no default language is selected on the Design tab of the Database properties box. No uses the language specified in the "Use UTF-8 for output" field.
Character set groups (Western through Vietnamese)	Choices for the character set groups depend on the Default character set group setting.
Character set in header	Yes adds the character set to the "Content-Type" HTTP header of an HTML

	page. The browser finds the character set before rendering the page. No excludes the characters from the HTTP header of an HTML page. Use this option if you use early versions of browsers that do not understand the character set tag in the HTTP header.
Meta character set	Yes adds the character set to the <META> tag of an HTML page. This lets you save the character set information when you save an HTML file on a server or on your hard disk. No excludes the character set from the <META> tag of an HTML page.

Future globalization features

Notes and Domino give you the tools you need to create a global presence. You can give your users an interface that allows them to work efficiently in their own language while assuring that data integrity is preserved between any language versions of Notes and Domino. What are the future globalization features for Notes/Domino? Here are a few things that are in the works for Rnext, the next major release of Notes/Domino.

Currently, one set of language templates can be installed on the server. For example, when a Language Pack is installed in R5, it replaces the current language support with the new language. In Rnext, the Domino server will be able to support templates for multiple languages, making it much easier for end users with different language preferences to share a single server. Language Packs can be added to a server when there is a need for the server to support additional languages.

Administering users with different language preferences will also become easier because administrators will be able to create mail files and assign language preferences based on the needs of the users. The ability of a common server to support multiple languages will also reduce the number of servers needed and the workload for administrators.

Of course proper display of the data is important, but now that you are displaying Japanese, Dutch, or German on your client, can you understand them? Maybe someday, you'll be able to open an e-mail written in French and read it in English. With products like Notes/Domino Rnext, Lotus Translation Components, and other **globalization technologies**, that future is not too far away.

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Notes/Domino language versions and support

NLV = National Language Version
NLS = National Language Support
LP = Domino Server Language Packs

Language	Notes client			Domino server			
	Windows 95 Windows 98 Windows NT	**Mac**	**Windows NT**	**AIX**	**AS400**	**S390**	**SPARC Linux INTEL**
North America, Western Europe, Latin America							
Danish	NLV	NLS	NLV	LP	NLV & LP	LP	LP
Dutch	NLV	NLS	NLV	LP	NLV & LP	LP	LP
English	NLV	NLV	NLV	NLV	NLV	NLV	NLV
French	NLV	NLV	NLV	NLV & LP	NLV & LP	LP	LP
Finnish	NLV	NLS	NLV	LP	NLV & LP	LP	LP
German	NLV	NLV	NLV	NLV & LP	NLV & LP	LP	LP
Italian	NLV	NLS	NLV	NLV & LP	NLV & LP	LP	LP
Norwegian	NLV	NLS	NLV	LP	NLV & LP	LP	LP
Portuguese - Brazilian	NLV	NLS	NLV	NLV & LP	NLV & LP	LP	LP
Portuguese - Iberian	NLV	NLS	NLS	NLS	NLS	NLS	NLS
Spanish - Latin American	NLV	NLS	NLV	NLV & LP	NLV & LP	LP	LP
Swedish	NLV	NLS	NLV	LP	NLV & LP	LP	LP
Eastern Europe, Middle East, Mediterranean							
Arabic	NLV		NLS	NLS	NLS	NLS	
Czech	NLV		NLV	NLS	NLS	NLS	NLS
Greek	NLV		NLV	NLS	NLS	NLS	NLS
Hebrew	NLV		NLS	NLS	NLS	NLS	
Hungarian	NLV		NLV	NLS	NLS	NLS	NLS
Polish	NLV		NLV	NLS	NLS	NLS	NLS
Russian	NLV		NLV	NLS	NLS	NLS	NLS
Slovenian	NLV		NLS	NLS	NLS	NLS	NLS
Turkish	NLV		NLV	NLS	NLS	NLS	NLS
Asia							
Chinese - Simplified	NLV		NLV	LP	NLV & LP	LP	LP
Chinese - Traditional	NLV		NLV	LP	NLV & LP	LP	LP

Hindi	NLV		NLS				
Japanese	NLV	NLV	NLV	NLV & LP	NLV & LP	LP	LP
Korean	NLV		NLV	LP	NLV & LP	LP	LP
Thai	NLV		NLV	LP	NLS	LP	LP