

Platform Differences

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General Information

On Windows, UNIX and OpenVMS platforms, Natural has internally been Unicode-enabled. This means that many structures containing strings have Unicode format now. For example, the Natural source area has now Unicode format. For this reason, Unicode data can be handled at runtime in the Natural I/O as well as in the Natural development environment when writing and cataloging Natural code.

For the first version, there are some exceptions: the Natural dialogs (editor and runtime) are not Unicode-enabled. These modules will be Unicode-enabled in a later version.

Even if Natural is Unicode-enabled internally, all existing data currently has code page format. As a consequence, all this data is converted from code page format to Unicode format when used in Natural Version 6.2 or above. For example, if a source is opened with the program editor, a conversion from the code page file format to the Unicode source area format is performed. Even if you do not use the U format, this is of advantage: you can now see all language-specific characters, no matter which system code page is installed. However, the user is responsible for defining the correct code page information. See *Migrating Existing Applications* for more details.

When cataloging Natural objects, all constants which are not defined with the U prefix are converted to the code page of the corresponding source. If the source has UTF-8 format, these constants are converted to the default code page.

Note:

In most cases, Unicode data requires more memory space than code page data. Therefore, the Natural parameter `USIZE` may need to be increased with Natural Version 6.2 or above.

Windows

Unicode is fully supported in the local Natural for Windows environment.

The editors are Unicode-enabled and it is possible to enter all possible characters. When saving the source, Natural first tries to convert the source to the original code page. If this fails because the source contains characters which are not found in this code page, further processing depends on the setting of the parameter `SUTF8`. If `SUTF8` is `ON`, the source will be saved in UTF-8 format. If `SUTF8` is `OFF`, the user will be asked whether to save the source in the original code page or to cancel the current save. If the user decides to save the source in the original code page, the characters which are not found will be replaced with substitution characters. In addition, it is possible to select a code page explicitly in the **Save As** dialog box.

The program editor has been enhanced in order to support the Unicode bidirectional algorithm.

The output window is also Unicode-enabled. When characters are entered via the keyboard, A format fields accept only the characters which are available in the default code page.

UNIX and OpenVMS

Full Unicode support is only available with SPoD and the Natural Web I/O Interface. SPoD is necessary for entering Unicode input in Natural sources; the same applies as described above for the local Natural for Windows environment. The Natural Web I/O Interface is necessary for Unicode I/O from Natural applications.

If Natural is used via a terminal emulation, all output will be converted from Unicode to the default code page before displaying it. Characters which are not available in the default code page will be replaced with the substitution character of the default code page. Similar input is only possible on base of the default code page.

Note:

Natural sources which have UTF-8 format can no longer be opened with the native Natural for UNIX or Natural for OpenVMS editors.