

# NUON Markup Tools Reference

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The tools described in this manual are used to turn text files written in NML, NS, and/or SNML into binary files that can be previewed on a Windows PC and that can be burned on a CD to be loaded and played on a NUON DVD player.

## NMLC.exe

NMLC is the compiler that converts a .nml text file into a .npg binary file that can be read by the WinPreview tool and can be bundled into the NUON file that can be burned on a CD for use on a NUON DVD player. The .nml file must be a well-formed XML file that uses only the elements and properties defined in the NML Reference Manual. In other words, the file must be a valid canonical NML document. We do not yet have an XML Document Type Declaration or Schema that can be used to validate a document, but the NMLC tool will issue errors and warnings if your NML document is not valid.

NMLC runs on the Windows 2000 OS in a DOS Window using Command Line syntax.

The syntax is:

```
nmlc -o {outfilename}.npg {infilename}.nml
```

An example can be found in the compile.bat batch file.

The binary file that begins the application should always have the name startup.npg

Other npg files can have any names.

## bobc2.exe

bobc2 is the compiler that converts a .bob text file into a .bbo binary file that can be read by the WinPreview tool and can be bundled into the NUON file that can be burned on a CD for use on a NUON DVD player. The .bob file must be a text file that contains bob functions, variables and declarations. Legal NUON Script statements are described in the bob Reference manual.

NMLC runs on the Windows 2000 OS in a DOS Window using Command Line syntax. The syntax is:  
bcbc2 -o {outfilename}.bbo {infilename}.bob  
An example can be found in the bob.bat batch file.

## **Ramload.exe**

Ramload is a program that creates a ramdisk image of a set of files. This image can then be processed by the CreateNuiCD.exe program to create a file that can be burned onto a CD and loaded into a NUON DVD player.

Ramload runs on the Windows 2000 OS in a DOS Window using Command Line syntax. The normal syntax is:

ramload -z -o {outfilename}.dat {name of folder containing files to be bundled}

The folder to be processed should contain all the npg and bbo files that are in the application. The -z flag specifies that the files will be compressed in the ramdisk image. This allows more data to fit in the application space. The outputfile is the ramdisk image, and it is processed by the CreateNuiCD tool to create the CD image.

An example can be found in the bundle.bat batch file. Other syntax options are described in the Ramload Reference manual.

## **Saxon.exe**

Saxon is an open source implementation of XSLT written by Michael Kay. The version included in the tools folder is Instant Saxon 6.4.3 The latest version including source code can be found at <http://sourceforge.net/projects/saxon>.

XSLT (eXtensible Stylesheet Language: Transformations) is a W3C standard method used to translate an XML document of one kind into an XML document of another kind. There are many free and commercial implementations of XSLT. There is complete documentation at W3C.org and there are several books written about XSLT. In our case, it is used only to transform a SNML document into an NML document, so no understanding of XSLT is required.

Instant Saxon runs on the Windows 2000 OS in a DOS Window using Command Line syntax. The normal syntax is

saxon -o {outfilename}.nml {infilename}.snml transcode.xsl

The transcode.xsl file is a transformation stylesheet provided by VMLabs that controls the transformation of snml documents into canonical nml documents. This file will be updated from time to time as features are added to the snml language. An example of the syntax can be found in the transcode.bat batch file.

## WinPreview.exe

WinPreview is a program that allows you to preview your application on the Windows OS prior to actually burning it on a CD and loading it onto a NUON DVD player.

WinPreview runs on the Windows 2000 OS. It can be initiated in a DOS Window with the command *winpreview*, or by double-clicking the winpreview icon. The program opens up two windows on the desktop titled NUON Screen and NUON Messages. The NUON Screen menu has a File menu. The Load NUON Page File entry can be used to navigate to the beginning file of your application which must be titled startup.npg. This file can reference other .npg and bbo files and also resource files such as ttf, gif, and jpeg files. However, the path references in the files must correspond to the actual configuration of the files at runtime. The easiest way to accomplish this may be to use the batch files, compile.bat, bob.bat, ...bundle.bat which create a directory called “compiled” with subdirectories for fonts, scripts, pages, and so on.

The NUON Screen file represents the TV screen target of your application. It has exactly the same number of pixels, and uses the same graphics libraries. Colors on the Windows monitor will be similar but not identical to colors that appear on your TV when using the NUON DVD player.

You can use the WinPreview tool to verify that your nml graphics descriptions are correct, and you can also verify that widget interactions with the DVD remote control are correct. The standard Remote Control Keys are represented on the Windows PC keyboard by the four arrow keys and the Enter key.

The NUON Messages window has two purposes. The main purpose is to display error messages and warning messages encountered by the WinPreview program while attempting to execute your application.

A second purpose is to allow you to interact with the application by typing bob expressions. For example, click in the NUON Messages window and then type 2+3; and then press Enter. Enter causes a valid bob expression to be evaluated. So the result is that --> 5 is printed on the next line. The bob Reference manual contains more information about using this interactive feature.

## CreateNuiCD.exe

CreateNuiCD is a program that creates a file named NUON.CD that you can burn onto a CD and then load into a NUON DVD player.

CreateNuiCD runs on the Windows 2000 OS in a DOS Window using Command Line syntax. The syntax is:  
CreateNuiCD -o {outfilename} {infilename}

The default output filename is NUON.CD which must be the name of the file that you burn onto a CD. The infilename will generally be the ui.dat file that you created with the ramload.exe tool. So the normal command line will simply be:

CreateNuiCD ui.dat

An example can be found in the bundle.bat batch file.

After creating the NUON.CD file, use your own CD writer software on a personal computer and write NUON.CD to the root directory of a CD-R or CD-RW. "Root directory" means the top directory. NUON.CD cannot be inside any other directory or folder on the CD. The disc must use the ISO9660 disc format. Joliet extensions are not required but will work OK. It can then be loaded into a NUON DVD player and run.