

Use of NSIS installation scripts in ICIS

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Introduction

- From http://cropwiki.irri.org/icis/index.php/ICIS_Deployment_Issues:
- "ICIS is installed to users via InstallShield package. Currently, it only supports MS Access installation as the backend. Patches to the modules and to the backend are applied manually. There is a need to extend the InstallShield package to cater both fresh installation and module upgrades."
- NSIS and a collection of NSIS example scripts from each center that could be shared in the Cropwiki or Cropforge would contribute very nicely towards the above goals.

NSIS features

- NSIS means NullSoft Install System
- NSIS is open-source and free for any use and has a large user community (even outside NullSoft) which supports the installer package and helps users with installation problems
- NSIS is script based so it is easy to exchange installer code between developers without sending big bloated files with installable files included. It is easy to compare different versions of a script because it is text based
- NSIS has all the main components of a full-featured professional installer

NSIS features

- NSIS has its own built-in programming language and can be programmed from a rich set of functionalities
- Having a large and well documented forum, it is possible to seek solutions in virtually any aspect of installation matters, within the forum questions and answers
- NSIS has support for plug-ins created in other programming languages, for instance C++ or Delphi
- NSIS can call external procedures and obtain the return code (error encountered or a successful call)

NSIS downloads

- I have developed a prototype that could be the basis for other ICIS installers developed by each center: IWIS3-2007-05-30.NSI
- I will be available by email for questions like how to implement center-specific extra files or functionalities
- Download NSIS from http://nsis.sourceforge.net/Main_page
- Download HM NIS Edit from <http://hmne.sourceforge.net>
- Download NSISarray from http://nsis.sourceforge.net/Arrays_in_NSIS
- Get ICIS installer prototype from the CD at the workshop, or download from IP 201.147.111.113 subdirectory bioinfo with password biocimje (will be ready during/after the workshop)

nullsoft scriptable install system

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Main Page

NSIS (Nullsoft Scriptable Install System) is a professional open source system to create Windows installers. It is designed to be as small and flexible as possible and is therefore very suitable for internet distribution.

Being a user's first experience with your product, a stable and reliable installer is an important component of successful software. With NSIS you can create such installers that are capable of doing everything that is needed to setup your software.

NSIS is script-based and allows you to create the logic to handle even the most complex installation tasks. Many plug-ins and scripts are already available: you can create web installers, communicate with Windows and other software components, install or update shared components and more.

[Detailed list of features...](#)



Solutions for scripting problems

Developer Center →



EclipseNSIS
a new development environment

Latest NSIS release

NSIS 2.27 ([Release Notes](#))
May 05, 2007

Download ↓

Forum

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Features

NSIS can create Windows installers that are capable of installing, uninstalling, setting system settings, extracting files, etc. Because NSIS is based on script files, you can create both simple and advanced installers.

Small overhead size

NSIS is created to be small, fast and efficient. While other installers often add hundreds of kilobytes or several megabytes to your installer data, a full-featured NSIS installer has an overhead of only 34 KB.

Compatible with all major Windows versions

You can create a single installer that is compatible with Windows 95, Windows 98, Windows ME, Windows NT, Windows 2000, Windows XP, Windows Server 2003 and Windows Vista.

Unique compression methods

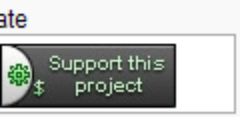
You can choose between three different integrated compression methods (ZLib, BZip2, LZMA). The new LZMA compression gives better results than any other common compression method. You don't have to use large self-extracting archive modules or other applications. The compression support is included in the 34 KB overhead.

Script based

Unlike other systems that can only generate installers based on a list of files and registry keys, NSIS has a powerful scripting language. This script language is designed for installers and has commands that help you to perform many installation tasks. You can easily add custom logic and handle different upgrades, version checks and more.

For standard installers or as a starting point for more complex ones, you can use one of the available script generation tools.

Search

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Multiple languages in one installer

One installer can support multiple interface languages. More than 40 translations are already included, but you can also create your own language files. RTL (right-to-left) languages such as Arabic and Hebrew are fully supported.

Many features and checks for the target system

The script language provides commands you can use on the target system, from simple features like folder creation and registry editing to text/binary file modification, modification of environment variables and system reboots. Using provided plug-ins, you can even use Windows API.

Custom dialogs and interfaces

You can create custom wizard pages to get user input or integrate configuration options. NSIS includes a classic and modern wizard interface, but it is even possible to create your own custom interface.

Plug-in system

NSIS can be extended with plug-ins that can communicate with the installer. They can be written in C, C++, Delphi or another language and can be used to perform installation tasks or extend the installer interface. You can use the plug-in with a single line of script code. Plug-ins can also be compressed like other installation data and will only be included when you are using the provided features.

Support for web installation, file patching

The NSIS distribution includes a set of plug-ins that allow you to download files from the internet, make internet connections, patch existing files and more.

Project integration, different releases and automatic builds

files and more.

Project integration, different releases and automatic builds

The NSIS compiler features a powerful preprocessor. This allows you to easily integrate multiple projects into a single installer or automatically generate installer builds. You can also generate different releases such as lite and full versions.

Easy and human readable file formats

The NSIS script format and the format used for interface dialogs are easy, documented and humanly readable, so you can edit your files with your favorite editor. This also makes automatic script generation possible.

Portable Compiler

The NSIS compiler can be compiled for POSIX platforms like Linux and *BSD. Generated installer will still run on Windows only, but this way they can be generated without Windows or WINE.

Bigger list of features

- Generates self-contained executable installers
- Support for ZLib, BZip2 and LZMA data compression (files can be compressed individually or together)
- Uninstall support (installer can generate an uninstaller)
- Customizable user interface (dialogs, fonts, backgrounds, icons, text, checkmarks, images etc.)
- Classic and Modern wizard interface
- Fully multilingual, support for multiple languages (including RTL languages) in one installer. More than 40 translations are already available, but you can also create your own.
- Page system: You can add standard wizard pages or custom pages
- User selection of installation components, tree for component selection
- Multiple install configurations (usually Minimal, Typical, Full), and custom configuration
- Installer self-verification using a CRC32 checksum
- Small overhead over compressed data size (34 KB with default options)
- Ability to display a license agreement in text or RTF format
- Ability to detect destination directory from the registry

http://nsis.sourceforge.net/Features

Google

Winamp Media Player - MP3 ... Features - NSIS

Herramientas

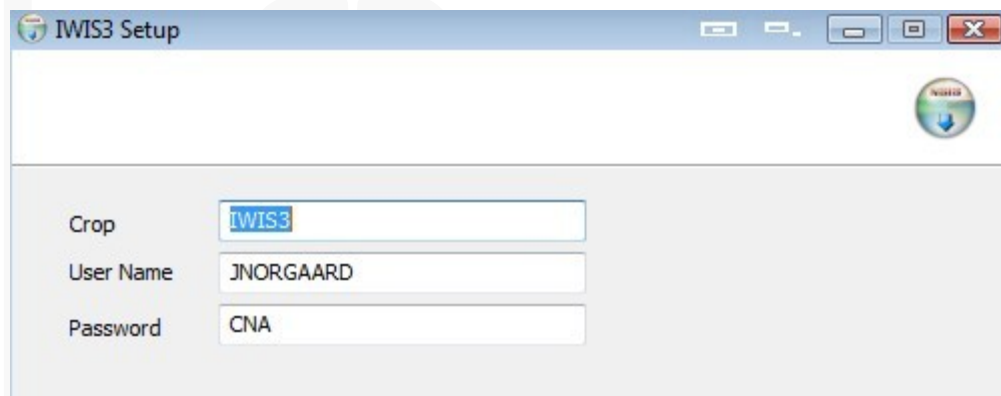
- Installer self-verification using a CRC32 checksum
- Small overhead over compressed data size (34 KB with default options)
- Ability to display a license agreement in text or RTF format
- Ability to detect destination directory from the registry
- Easy to use plug-in system (lots of plug-ins for creation of custom dialogs, internet connections, HTTP downloading, file patching, Win32 API calls, etc. are included)
- Installers can be as large as 2GB
- Optional silent mode for automated installations
- A preprocessor with support for defined symbols, macros, conditional compilation, standard predefines
- A lovely coding experience with elements of PHP and assembly (includes user variables, a stack, real flow control, etc.)
- Installers have their own VMs that let you write code that can support:
 - File extraction (with configurable overwrite parameters)
 - File/directory copying, renaming, deletion, searching
 - Plug-in DLL calling
 - DLL/ActiveX control registration/unregistration
 - Executable execution (shell execute and wait options)
 - Shortcut creation
 - Registry key reading/setting/enumerating/deleting
 - INI file reading/writing
 - Generic text file reading/writing
 - Powerful string and integer manipulation
 - Window finding based on class name or title
 - User interface manipulation (font/text setting)
 - Window message sending
 - User interaction with message boxes or custom pages
 - Branching, comparisons, etc.
 - Error checking
 - Reboot support, including delete or rename on reboot
 - Installer behavior commands (such as show/hide/wait/etc.)
 - User functions in script
 - Callback functions for user actions

Features of IWIS3-2007-05-30 installation

- Runs separate installers ICISprog.exe and ICISdocs.exe
- Uses multilingual support for 3 languages (English, Spanish, Danish)
- Using superior compression rate of LZMA compression, it installs the central databases for both GMS (1.39 Gb) and DMS (1.16 Gb), old programs and documentation, new 5.4 executables, ICIS INI file, local databases, script examples etc. on a single 700 Mb CD
- Modular installation design: Main installer is small and can be launched from memory stick. It will run separate installation executables of big files from CD. If installation logic is changed, CD is still usable

Features of IWIS3-2007-05-30 installation

- Input screen for crop, user name and password are all the inputs required for the installation; all other items are handled by the installer



- Installer sets up ODBC data sources in the registry
- Using ODBC techniques, central user information from central DB is copied to the local databases to avoid manual intervention in setup
- Installation root (e.g. C:\ICIS5 or E:\ICIS5) is kept in the registry for reuse by installer and uninstaller
- Uninstaller is automatically created at installation, and added to Add/Remove Programs in Control Panel

Features of IWIS3-2007-05-30 installation

- NSISarray is a plug-in for managing arrays in script data, used in the example script for getting the mapped drive to the central databases if found on a network drive
- Writes key strings to the ICIS.INI file under the name IWIS3.INI
- Creates shortcuts to Launcher and to ODBC data sources in the user desktop
- IWIS3-2007-05-30 installation has about 2000 lines and has not been tested extensively so it probably still has bugs. It has not been tested on a variety of environments of Windows, nor tested with DBs other than ACCESS although in theory it should work. See IWIS3-INSTALL-DMS-DATA.NSI for a simple example of installing a single file (with compression)

Drawbacks compared to using a commercial installer

- There is no automatic uninstallation, and you have to include each file explicitly to be uninstalled. There is no checking if a file installed is also included in the uninstallation, or if a file in the uninstallation is no longer part of the installation etc.
- Some screen dialog customization is easier in commercial installers
- Programmed functionality within a script is not reusable directly. For instance, both GetDrive and un.GetDrive with identical source code must be created in order to use same functionality in both installer and uninstaller
- No checking of already existing file versions. If you want that, you have to program it manually (to avoid overwriting the existing file if that file is newer)
- Conditional coding (if, switch) needs an include statement to work and is not part of basic functionality of NSIS

Other problems in NSIS

- LZMA compression aborted for me when using a lot of files, e.g. 400+. It also has problems with bigger files than 2 Gb according to documentation. Even though these problems exist it only means you will have to switch to one of ZLib or BLib2 compression, accepting more moderate compression rates
- Compiling a script with big files included will use a lot of time, because even if fixed files are included, there is no saving scheme where the files already once compressed are not compressed again, reusing the previous compression (this is part of Wise 4.0 from 1996!). Workaround: Comment out lines which copy a big file with “;” and before you compile the end-user version, activate them again
- Script functionalities for text manipulation and integer handling can be quite quirky if programming “free-hand” in contrast to copying an existing NSIS script code example which usually works

Features of HM NIS Edit GUI

- Main interface for NSIS is rudimentary, and isn't capable of designing customized dialogs with user, so ... HM NIS Edit has custom page designer (InstallOptions designer)
- Source code is checked for obsolete functions and include statements, which are reported so you can remove them easily
- Links easily from program to NSIS Help, NSIS Forum, FAQ etc.
- Includes a Wizard which guides beginners through a Windows setup file
- Creates scripts from template files
- Provides help when hovering cursor over an NSIS script command
- Presents error messages so that you can click on one to jump to the source code referenced

Presentation of NSIS

- Hands-on demonstration

Presentation of NSIS

- Thank you!
- Comments, questions?