InstallerNG

Jens Tröger

	COLLABORATORS		
	TITLE : InstallerNG		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Jens Tröger	August 10, 2022	

	REVISION HISTORY		
NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

InstallerNG

1.1 Well, some nice quotes...

```
                   Life is a strange thing
Just when you think you learned how to use it
It's gone


                              Shakespears Sister



We talk about our flights
In this queer dimension
And how we are afraid
To carry on alone
And finish our direction... flying home


                              Linda Perry



They lowered my body in a dark hole
The dry ground now covers my remains
I stood at their side and watched them crying
They can't know, the tears they are in vain


                              Rage



Remember in this game we call life
That no one said it's fair


                              Axl Rose



Und du rufst in die Welt
Daß sie dir nicht mehr gefällt
Du willst 'ne schönere erleben
Doch es wird keine and're geben


                              Witt/Heppner
```

```
                    Well who am I to complain
                    About a bit of earthly pain?
                                                Tito & Tarantula


                    How 'bout not equating death with stopping?

                                                Alanis Morissette


                    D'Oh!
                                                Homer Simpson


                    Hörst Du die Engel singen?
                    Hörst Du die Harfen klingen?
                    Hat sich das Leiden nicht gelohnt?
                    Fütter das Weiße Licht für mich!
                                                OOMPH!



                Go on
```

1.2 Installer NG

```
                                InstallerNG v1.5 pre-release

--------------------------------------------------------------------------------

                          THIS IS A PUBLIC BETA VERSION
              THUS THERE MAY BE MANY BUGS AND MISBEHAVIOURS AND MISSING FUNCTIONALITY.
                          USAGE IS YOUR OWN RISK.

      Furthermore, the current version of the MUI gui-plugin is not complete! So  ←
          be
                    prepared for missing functionality or unexpected behaviour
--------------------------------------------------------------------------------

 Maybe an error occurs while you use my InstallerNG. If this happens, follow  ←
     these
 steps:
   - restart using the InstallerNG.debug version (included in the distribution)
   - note the Hunk/Offset trace and the error (if you use e.g. Mungwall/Enforcer)
   - send me a bugreport and please include:
         a) the script, which caused the error
         b) complete error description (what you did, what happend...)
--------------------------------------------------------------------------------

  You may be upset about the errors and crashing of scripts, wich worked fine
  with the old C= Installer. Don't blame me! In the very most cases, bad  ←
     programmed
  scripts are the reason. The C= Installer is a damn lazy and error-accepting
  tool. Please contact the author of the script.
```

1.3 Introduction

Today, the installation of software products can be a very complex
procedure. This is caused by the sometimes large set of different files
or a very lowlevel intervention into the systems resources. Especially
for novice users this process can be difficult and the system may be
destroyed (worst case...).

This was the motivation for Commodore to build a tool, which covers
the installation process and offers an easy to use and graphical
interface. This thing was called the Installer. The user just tells where
and what to install and the Installer cares for the installation process
itself, i.e. the Installer checks for the versions, copies the files to
the correct destinations, sets up a correct environment for the installed
tool and so on. The user can choose, whether he wants an easy installation
(means, as less as possible queries) or if he wants to get notified for
every action.

If you are a programmer and you want to provide your user such an easy
installation, you must write an Installer-Script. This script is
simply a textfile and contains a programm, written in a special language.
This language is simple and offers very much functions for querying the user,
for setting and getting system properties, for file handling, string ←
    manipulation
and, last but not least, a lot of mathematical functions. Furthermore, put
an icon into your archive, which contains special tooltypes (for tooltypes
please refer to your workbench guide) for the Installer. When the user
double-clicks this icon, the Installer will get started and then looks for
your script to execute it.

1.4   Disclaimer

                  Since I really don't like people, who release every damn shit as ←
                     "Shareware", I decided
to make this project "Freeware". Maybe an upcoming "developer version" (which ←
    includes
a source-level debugger, a script creator etc...) will be "Shareware", but this
InstallerNG won't.

This version 1.0+ pre-release is Freeware. You are allowed to spread this ←
    package,
as long as the archive is complete and as long as no profit (in any way) will be ←
     made.
You are also allowed to put this InstallerNG into your own releases for ←
    installing your
stuff, as long as you put the guide also into your release. For commercial ←
    distributions
you must contact the
                author
                . For additional information and rules
please read the .LICENSE file, which is also included in this archive.

Suggestions, bugreports, money are always welcome ;)

1.5   I need your help!

Maybe you can help me with one (or more) of the following things:
   - who would paint some nice icons for buttons and a cool logo?

```
  - help in network related things
```

1.6   That`s me ;)

```
Snail Mail
  Jens Tröger
  i4/182 Dornoch Tce
  Highgate Hill, QLD, 4101
  Australia

E-Mail
  savage@light-speed.de

WWW
  http://savage.light-speed.de
  http://installerng.amiga-center.de (InstallerNG support page)

IRC
  Nick:    _savage
  Channel: #amigager
```

1.7   I want to thank...

```
Special thanx for...

patience and testing the InstallerNG again and again
  Jens Langner
  Kai Hofmann
  Sven Steiniger

interesting talks about coding
  Olaf Barthel
  Michael Rock
  Sven Steiniger

additional
  James Maurice Battle - for his icon and the nice picture
  Stefan Ruppert - for help in datatype related stuff

translations
  français: Didier Giron/Philippe Bovier, Pascal Chiozzi

And last, but really not least, all those people, who have sent me so many
nice & fanatic mails and who are the important reason, that i will go on with
writing this program...

  Tino Wildenhain          Marcin Orlowski
  Robert Reiswig           Jon Peterson
  Lee Stoneman             Hartwig Tauber
  Andrea Valinotto         Oliver Fabre
  Christian Hattemer       Richard Malmgren
  Daniel Confora           John Antony Newmann
```

```
Frank Pagels            Matthias Betke
Henning Kiel            Pascal Chiozzi
Jeff Grimmet            Didier Giron
Kai Hofmann             Marco Schärfchen
Linus McCabe            Jean François Fabre
Marko Seppanen          Stefan Kost
Markus Merding
Martin Steigerwald
Oywind Falch
Philippe Bovier
Pieter Frenssen
Thomas Klein
Soyeb Aswat
Tobias Abt
Alasdair Simpson
Jens Weichert
Dobes Vandermeer
Joel Newkirk
Grzegorz Kraszewski
John Pullicino
Dirk Stöcker
Rainer Müller
Herve Dupont
```

1.8 Still not 100% perfect

The C= Installer is a mess... buggy, bad language handling and weird
type constructs. I tried to do a better job, but one aim was, to stay
compatible with the C= installer. Thus, the InstallerNG has also some
'weird' features (note: these are no bugs, these are features!), but
on the other hand, I think I built a better compiler kernel and a much
better interpreter :)

If you want to compile 'buggy' scripts, you can switch on the LAZYCOMPILE
option at startup to skip any check procedures!

1.9 What ist left to do

```
                Personal aims
- when copying whole directories: show a gauge for the file and a gauge for
  the complete work
- automatically turn off the UN!X-Dirs commodity to avoid path conflicts
- retry option for DOS errors
- reduce the memory overkill
- remove all
            known Bugs
                - new function: CREATE-ICON
- implement the delete-skript creation (maybe an option to select whether the
  InstallerNG should create an uninstall shell-script or an uninstall
  installer-script)
- variable spy, source-level debugger
```

Suggestions by others
  – a special WELCOME panel with a (timed) intro picture (Thomas Kessler)
  – background pattern for the InstallerNG window (Matthias Andre)
  – a GUI library that supports skins (like AmigaAMP) (Jens Langner)
  – reading compressed scripts would be very useful (Tobias Abt)
  – icon ressource drawer, such that a user can automatically install preferred
    icons (GlowIcons, NewIcons, MWB, ...) for several data types (e.g. *.html,
    *.doc etc) (Marco Schärfchen)
  – lowlevel function to partition and install alien file systems via special
    functions (Thomas Mache)
  – when running the installer with a *.lha file instead of a script (new ←↩
     tooltype
    ARCHIVE ?) the installer will extract a file "install" from the archive and
    uses this for installing directly from the archive (Dirk Stöcker)
  – something like a "global logfile" which holds all installed
    packages (Alasdair Simpson)
  – image buttons (Danial Canfora)
  – a function INCLUDE to read external sources (thus: writing a preprocessor?)
    (Kai Hofmann)
  – automatic creation of directories via ASKDIR (Alexander Reiffinger)
  – online registration for software (Jürgen Haage)
  – give Installer a "gauge–port" such that a command (started with the EXECUTE
    function) can signal its current working state (useful: pipe the lha–output
    to a special tool which converts it and sends working–state–signals to
    Installer) (Ignatios Sourvakis)
  – show device–list when invalid directory was typed in ASKDIR/ASKFILE ←↩
     functions
    (Jens Langner)

Language extensions
  – CLOS: new functions DEFINE–CLASS, MAKE–INSTANCE, DEFINE–METHOD,
    INVOKE–METHOD etc.
  – CATCH and THROW (or enhance the ONERROR and TRAP functions)
  – continuations: CALL–CC
  – allow guarded expressions

Does this make sense ?
  – type inferencing
  – saving the compiled program as binary for a later reloading
  – use XPK–functions for unpacking
  – add constants to the language: e.g. (SETCONST a 5)
  – shared library interface for simple libcalls:
      raw: (LIBCALL "dos" –198 "d1" 50)   ; Delay(50)
                 (LIBCALL "intuition" –78)   ; CloseWorkBench()
      FD files: (LIBCALL "dos.Delay(50)")
                 (LIBCALL "intuition.CloseWorkBench()")

Wildest dream :)
  Create executables. Running this executable has the same effect as running
  the installer and a script. This should reduce the resources in any way.

1.10 The history of this Program

```
                    1.5 pre-release (current...)
   November 1, 2000
     - both NULL and NIL are now builtin string constants representing the
       empty string
     - forgot to lock the InstallerNG windows when opening a file requester
     - added proportional gadgets to the MEDIA windows, if neccessary
     - removed a little bug in ASKBOOL which caused the gadgets to show on some
       wrong positions
   October 30, 2000
     - COPYFILE (in CONFIRM mode) allows easy change of the target directory via
       a file requester
     - pressing RMB over a file- or dir-selection panel brings up the drives
       list (same as in reqtools.library) (Holger Jeromin)
     - all the MEDIA functions should now work without any problems
       special thanks to Stefan Ruppert for his needful example sources!
   October 28, 2000
     - *MEDIA functions should work in general, but maybe not fully functional
       (SETMEDIA);
   October 1, 2000
     - the compiler did not perform semantic checks anymore, works again now
     - debugged console handling
   September 28, 2000
     - using the EFFECT (and maybe WELCOME or PROCEDURE) function as "then" or
       "else" argument to the IF function could cause enforcer hits (Steven  ←
          Norburn)
   September 10, 2000
     - added one more example script
     - added new function CURRENTDIR for changing InstallerNG's current working
       directory (this should ease the copy work!)
   August 4, 2000
     - ABORT skiped the text in NOVICE mode
   July 14, 2000
     - fixed the bug (??) caused by MCP's "Solid Window Sizing" feature
   July 9, 2000
     - created directories are also commented with the package name
     - if a function is of type STRING and if an error happens while such a  ←
        function
       evaluates its arguments, it returns now an empty string rather than a 0 to
       avoid NULL read/writes
   July 1, 2000
     - added functions SAVE-PROPERTY-OBJECT/READ-PROPERTY-OBJECT (Stefan Kost)
     - added functions CAST-INT and CAST-STRING for stronger type handling
     - several important internal changes to the interpreter to support types
       of the parameter functions (problem submitted by Stefan Kost)
   June 30, 2000
     - the scanner read ALT-SPACE not as an intertoken space, as it should do

 1.4 pre-release(June 25, 2000)
   June 25, 2000
     - removed an enforcer hit with screennotify.library (Jens Langner)
   June 24, 2000
     - you can change the "Advanced Options" (see WELCOME) while the installing
       process using a menu
     - removed a type-casting bug in COMPARE (Stefan Kost)
   June 14, 2000
     - added module support, i.e. after a successful compilation, the InstallerNG
```

        loads and executes modules (or: plugins), which may work with or modify ↩
           the
        compiled program; possible modules could be a pretty printer (in work),
        type inferencing (planed), generation of executables (planed), optimizer
        (planed), ... whatever
    - added new debug message, if the user attempts to modify a constant
      value like TRUE, FAIL, ...
    - ASKFILE/ASKDIR raised a LONG-READ from NULL, iff the user tried to
      switch to the parent dir of the volume list
June 1, 2000
  - added screennotify.library support
May 3, 2000
  - RUN now defines NIL: as std input and InstallerNG's console for
    std output for the command (Jens Langner)
March 25, 2000
  - NOP caused enforcer hits, when the optional parameter was missing
March 20, 2000
  - ABORT did not abort (Jean-François Fabre)
March 19, 2000
  - added new function FLUSHLIBS (Oliver Wagner)
March 14, 2000
  - COPYLIB now shows file size and date as additional information (thus,
    updated the installergui.library too, changed GUI-API)
March 4, 2000
  - SETENV understands now RESIDENT for writing persitent environment variable
    data (AmigaOS 3.0+)
  - COPYLIB did not recognize missing destination files
  - ASKDISK now skips the panel if the requested disk/assign is already
    available (Jean-François Fabre)
  - ASKNUMBER did not correct DEFAULT value for the integer field,
    if it was out of RANGE (Jean-François Fabre)
February 24, 2000
  - NOP can have one argument now, which is NOP's result value (useful to
    do soomething like "return (x)" in a PROCEDURE
February 14, 2000
  - GETVERSION still returned 0.0 when it found a Resident structure
February 8, 2000
  - ASKCHOICE did throw an enforce hit in special cases when using
    empty strings as arguments to CHOICES (Dirk Stöcker)
  - included new french catalog (Didier Giron/Philippe Bovier)
February 3, 2000
  - problem with window locking when using "Make new dir" within a
    ASKFILE/ASKDIR function call (builtin gui)

.oO 2 MONTH IN AUSTRALIA Oo.

December 1, 1999
  - setting "Pretend"/"Install real" had no effect (Kai Hofmann)
November 25, 1999
  - extended catalog to version 2.0
  - InstallerNG now cares for versions of the catalog files
  - OPENWBOBJECT now supports "Always confirm" mode
November 24, 1999
  - implemented OPENWBOBJECT/CLOSEWBOBJECT/SHOWWBOBJECT functions
November 17, 1999
  - MAKEASSIGN threw an enforcer hit with some special arguments
  - removed an illegal memory access, which happened when using TRACE/RETRACE

November 11, 1999
  - WELCOME did not set its help texts
November 10, 1999
  - added a CHANGES file to the "catalogs" drawer to inform the user of the
    required changes of the catalog
  - modified the german catalog
  - added a new semantic check, which marks strings/numbers/variables as
    "useless" inside of an expression list (suggested by Jens Langner)
November 9, 1999
  - fixed a bug of the compiler kernel, which crashed the syntax tree in
    very special cases (Dietmar Eilert & his buggy GoldED script)
November 4, 1999
  - ICONINFO had problems with lower case symbolnames
November 3, 1999
  - SWING ignored the @proceed-button variable
November 1, 1999
  - GETDISKSPACE is now compatible to the v44+ Installer
  - MUI-GUI: added BACK support, added "Console Log"
  - "Abort installation" turns only into "Back" button, iff more than one
    TRACE was defined
  - in error case, MESSAGE returned type NUMBER instead of type STRING
  - TRACE/RETRACE constellations did not work correctly when RETRACE'ing
    several times
October 31, 1999
  - fixed a mistake in the GUI-API includes
October 28, 1999
  - recompiled everything with SAS-C
  - COPYFILES/COPYLIB support OPTIONAL with "nofail" and "oknodelete"
October 24, 1999
  - nesting of SWING should now work fine
October 20, 1999
  - included updated french catalog (Philippe Bovier)
October 17, 1999
  - SHOWMEDIA, SETMEDIA, CLOSEMEDIA now supporting sound
October 16, 1999
  - added OPENWBOBJECT, SHOWWBOBJECT, CLOSEWBOBJECT to the InstallerNG to keep
    compatibility with the original Installer v44.7+ (currently, these are ↩
      dummies)
October 13, 1999
  - using CTRL-F lets you now raise an error ("Error in script"), which helps ↩
     you
    to correctly clean up your script environment (refer to ONERROR)
  - extended the math.installer example script with a Fibonacci implementation
  - running from shell without valid arguments now causes an error message
October 9, 1999
  - no more logging, if the created directory alrady existed

1.3 pre-release (October 8, 1999)
  October 8, 1999
    - fixed an enforcer-hit (caused by strtol of the amiga.lib)
    - fixed a silly COMPARE bug (Kai Hofmann)
    - small changes to the Install script
  October 6, 1999
    - ASKCHOICE/ASKOPTIONS did throw an error, if there were no evaluated ↩
       CHOICES
    - in case of an interpretation error: the InstallerNG executed the ONERROR
      functions before the requester, so in case of an ignore, the script worked

```
          with a cleaned-up environment
        - SYMBOLSET/SYMBOLVAL did not work case-insensitive, which could cause
          tricky errors (Carsten Scholling, Jens Langner)
      October 5, 1999
        - updated the
                Known Bugs
                  section
      October 4, 1999
        - some changes to the builtin gui (Jens "Nervensäge" Langner)
        - added new builtin variable @PROCEED-BUTTON for customizing the text of
          the "Proceed with install"-button (Kai Hofmann)
        - REBOOT supports the SAFE parameter-function
      October 1, 1999
        - REBOOT does not work in pretend mode (like C= Installer v44.7)
      September 30, 1999
        - when the InstallerNG asks for a file or dir (ASKFILE/ASKDIR functions)
          you can now drop icons into its window to change the current directory
      September 29, 1999
        - added new function to the GUI-API
        - if InstallerNG opens a custom screen (see the EFFECT function), then the
          different console windows open on that screen too
      September 28, 1999
        - added new cool example script
        - the InstallerNG should now create correct logfiles (but the content
          may differ from C= installer's logfiles!)
      September 26, 1999
        - added the logging to a custom console window (should be useful for
          programming and debugging scripts)
        - WELCOME: selecting a log destination did modify the user-mode!
      September 23, 1999
        - TOOLTYPE: if the destination icon did not contain any tooltypes, the
          InstallerNG throwed an enforcer hit
      September 21, 1999
        - made heavy changes to the confirmation behaviour of several functions,  ←
           such
          that CONFIRM can now have 0/1/2 as its arguments
        - the compiler should accept CONFIRM with no argument too
        - STARTUP now inserts the call to 's:user-startup' into the
          's:startup-sequence', if the call does not appear (currently,
          only the builtin gui!)
      September 20, 1999
        - CONFIRM evaluates to 2 (means expert), if the argument is illegal
        - when it prompted, ASKBOOL ignored the @user-level
      September 15, 1999
        - my installergui.library now supports dis-/enabling of the windows, the  ←
           BACK
          function and the HELP parameter function
      September 11, 1999
        - EXECUTE/REXX/RUN built the arguments in a wrong way
        - GETASSIGN returned a NULL instead of an empty string, if it could not
          find the related assign/volume

  1.2 pre-release (September 7, 1999)
      September 6, 1999
        - function EFFECT will fall back to the "Workbench" screen, if the custom
          screen for the InstallerNG fails
        - included the .license file (thanx to Jens Langner)
```

      - removed an enforcer hit in the builtin gui
    September 2, 1999
      - when done with the installation, the "Proceed..." button gets renamed to
        "Finish" (James Maurice Battle)
    September 1, 1999
      - fixed small problem with reading version strings (Jens Langner)
      - if started from WB, then the variable @ICON was set to the script (wrong)
        and is now set to the icon path
      - @ICON is now a constant and, thus, cannot be modified
    August 30, 1999
      - RUN also supports @EXECUTE-DIR for now
      - added the forgotten @ABORT-BUTTON support (builtin GUI only)

  1.1 pre-release (Aug 30, 1999)
    August 29, 1999
      - modified the version-string handling and the catalog files
      - builtin GUI: fixed some Enforcer-Hits in the Listview and in the makedir
                      window of the ASKFILE function
    August 27, 1999
      - COPYFILES crashed with the installergui.library (James Maurice Battle)
      - builtin GUI: the InstallerNG now opens with an optimized window size,
                      if the gui was not snapshoted (Tobias Abt)
    August 25, 1999
      - if a WORKING follows another WORKING, the last one was not correctly
        layouted (i.e. it appeared in the window frame) (Sven Steiniger)
      - sometimes the InstallerNG asked the "Really quit" question two times
        (Jens Langner, Dirk Stöcker)
      - scanner could read wrong numbers in special cases

  1.0 pre-release (August 24, 1999)
    August 23, 1999
      - if an condition (see IF, WHILE, UNTIL) evaluated to an zero-length
        string value, this is now handled as value FALSE of type NUMBER
      - moving the locked window to an EFFECT screen caused an enforcer hit
    August 22, 1999
      - every new InstallerNG process can open its own EFFECT screen
      - now cares for the return value of Intuition.CloseScreen()
      - simplified the GUI-API: igui_WakeApp(), igui_KickWakeApp() and ↩
         igui_SleepApp()
        are no longer part of the API, the gui has to care for this itself
    August 17, 1999
      - COPYLIB does nothing if soure-version equals dest-version (Jens Langner)
      - reading the version of files with resident-structures (e.g. shared-libs
        or devices) always returned version 0.0
      - sometimes the GUI was locked, although the installer waits for
        user input
    August 15, 1999
      - COMPARE evaluated an empty string to a number of value zero and, thus,
        could produce type conflicts
      - the installer now sets a return code: RETURN_OK (0) if everything was
        fine or RETURN_FAIL (20) if any error occured (??)
      - "@installer-version" now equals 44.6 (Installer version of OS3.5)
    August 14, 1999
      - new function NOP :-)
      - finished the MUI API
      - finished some new functions of the OS3.5 Installer tool:
        EFFECT/TRACE/RETRACE/BACK

```
   August 4, 1999
     - hopefully finished the new builtin BOOPSI-GUI
     - many, many, many internal fixes and rewrites and modifications and
       other work and discussions with users


0.8 (June 23, 1999)
   June 23, 1999
     - when no error occured inside of a TRAP function, then TRAP raised an
       "Unknown error"
     - pressing "Abort" inside of a TRAP function caused the "Are you sure to  ←
        quit"
       requester to pop-up
     - fixed an Enforcer-Hit in COMPARE
     - setting a variable to @EACH-NAME (see FOREACH) caused Mung-Hits outside
       of that FOREACH function (Jens Langner)
   June 18, 1999
     - the system does no longer block when the installer closes down
   June 8, 1999
     - DATABASE doesn't return "680x0/PPC" anymore; if you want to check for a
       PPC, use the (DATABASE "ppc") function
   June 7, 1999
     - EQU (= ...) raised a type conflict when first argument was a string and  ←
        the
       second one a string-encoded numer (Jens Langner)
     - SELECT evaluated (n-1)th node instead of the n-th node (Jens Langner)
   June 3, 1999
     - ported the source code from StormC to SAS-C and recompiled the
       complete projects with SAS-C
   May 29, 1999
     - removed the @system-language variable and modified the behavior
       of @language to be compatible with C= (Jens Langner)
     - COPYFILES now also shows the filename of the source (Jens Langner)
   April 9/10, 1999
     - reworked the error handling and the type system
     - added functions PUT-PROPERTY, GET-PROPERTY and REMOVE-PROPERTY to realize
       LISP-like property-lists for symbold and, thus, to implement a really  ←
          simple
       kind of OOP (let's call this SOOP)
   April 8, 1999
     - modified the interpreter kernel for better multi-threading
     - reworked CONCURRENT-DO and the stacktrace protocols
   April 7, 1999
     - CONCURRENT-DO crashed sometimes because of the stacktrace protocol; fixed  ←
        this
       bug, but, thus, the interpreter kernel is a bit slower now! (i should  ←
          remove this
       function... it's a bit superfluous, isn't it?)
   March 26, 1999
     - added new installmode NOSYSDELETE, which forbids to delete files from  ←
        system
       drawers (Alexander Reiffinger)
     - COPYFILES/COPYLIB supports now OPTIONAL/DELOPTS (thus i rewrote the  ←
        functions for
       cloning and deleting files, hope they are still correct!)
   March 24, 1999
     - sending CTRL-F to any of the slave-processes, caused the MUI gui to hang  ←
        up
```

```
    March 23, 1999
      - optimized code
      - removed possible type conflicts in some math functions
      - DELETE now supports OPTIONAL and DELOPTS
    March 22, 1999
      - TOOLTYPE now works correctly with SETTOOLTYPE (sorry, i simply forgot to
        implement this feature ;-)
    March 21, 1999 (beginning of Spring ;)
      - sending CTRL-F caused the installer to execute all the ONERROR functions
      - ALWAYSCONFIRM overwrote PROMPT and HELP strings everytime
      - by setting the tooltypes of the InstallerNG itself, you may now preset the
        working environment (Tino Wildenhain)
    March 19, 1999
      - removed/optimized some code
    March 13, 1999
      - a stacktrace is dumped in the case of a runtime error and if the SHOWDEBUG ←
          option
        is switched on
      - GETSUM is now compatible to the algorithm of the C= installer (Marcin  ←
          Orlowski)
    March 11, 1999
      - scanner/parser errors are now located correctly (Jens Langner)
    March 10, 1999
      - REXX did not support PROMPT/HELP/CONFIRM
      - added new installmode (thus, new Tooltype/Shell-Argument) ALWAYSCONFIRM,  ←
          which
        always asks the user for confirmation of every action (??)
      - added new Tooltypes/Shell-Arguments DEBUGMODE, CREATEUNINSTALL,  ←
          COPYFILECOMMENT
        (Jens Langner)
    March 2, 1999
      - added new function RANDOM
    February 23, 1999
      - added new function SWING to allow special UNDO/REDO environments
    February 22, 1999
      - DELETE failed if the destination file was nonexistent
    February 21, 1999
      - WELCOME and the other functions which use the applications name, now use  ←
          the value
        of "@APP-NAME" (which is initially set to "APPNAME") instead of the " ←
            APPNAME"
        startup argument
      - optionally set the comment for every copied file to the packages name
        (i.e. the value of "@APP-NAME") (Thomas Klein)

  0.7 (February 16, 1999)
    February 15, 1999
      - GETASSIGN now returns NULL instead of an empty string (as noted in the  ←
          original
        installer documetation), if the assign is not valid (Tobias Abt)
      - small face-liftings (Jens Langner)
      - special thanx to Jens Langner: he wrote a function to center too long
        texts inside of (buggy!) MUI Floattext objects
    February 14, 1999
      - GETASSIGN now expands the result, if this is a valid path (Jens Langner)
      - FINDBOARD now returns the number of existing boards (Tobias Abt)
    February 5, 1999
```

```
        - the german catalog contained some mistakes
        - the semantic-checker skiped the procedures (Jens Langner)
February 3, 1999
        - COPYFILES and PATTERN didn't work together
        - quitting while COPYFILES was waiting for user confirmation left
          file-locks unreleased
        - the semantic checker now reports missing user-level of CONFIRM
        - while creating a full path, MAKEDIR overwrote existing drawer-icons
January 22, 1999
        - because of ignoring runtime-errors, some enforcer hits raised when the  ←
            installer
          used NULL-vars of type string (Tino Wildenhain)
        - the builtin-variable @PRETEND was not of type number (Tino Wildenhain)
        - added gauge to show the continuation of scanning/parsing (Tino Wildenhain)
        - if debug-mode is on, then runtime-errors will also be written to the debug ←
             console
January 17, 1999
        - facelifted the gui (Tino Wildenhain)
January 16, 1999
        - variables named "ADD", "SUB", "MUL", "DIV" where scanned as function  ←
            symbols
          (Jens Langner)
December 17, 1998
        - seems that MUIA_List_Format, "P=\33c" (ver 19.8 of Floattext class) does  ←
            not
          work - there is no line wrapping! thus the InstallerNG does not center the ←
              text
        - the scanner now handles all C= Installer v42.6 escape sequences in the  ←
            same way
        - COPYLIB does nothing when source-files version equals dest-files version
        - hopefully fixed the COPYFILES bug
December 14, 1998
        - supports now binary and hex numbers
        - calling empty procedures caused enforcer hits
November 25, 1998
        - when InstallerNG runs in debug mode, uninitialized vars and pattern errors ←
             are
          reported
        - the InstallerNG uses several own console windows for debug-, uninstall-  ←
            and
          standard-output
        - REXX now works (thanx to Olaf Barthel, Andrea Vallinotto, Jeff Grimmett)
November 24, 1998
        - when InstallerNGs "Debug" option is on, every access to an uninitialized
          variable will be reported
        - OPTIONAL/DELOPTS are working correct (only as local definitions), but are  ←
            not
          yet supported by COPYFILES/COPYLIB/DELETE (Olaf Barthel)
        - DELETE always removed the .info files
        - error requester of DOS-errors was unreadable, when IoErr() delivered 0
        - forgot to unlock the target directory, if DELETE failed
        - the builtin pattern-matcher now works the same way like the original one ( ←
            removed
          Charles Bloom's matcher, sorry) (Olaf Barthel)
November 23, 1998
        - ONERROR did not execute all previous defined ONERROR functions (Olaf  ←
            Barthel)
```

```
   November 22, 1998
     - hopefully re-bugfixed lost changes from Oct 1, 1998 till my crash on
       Oct 9, 1998:
          October 9, 1998
            - the debug version deliveres much more information
            - when running from WB, the builtin variable @icon did not hold the  ←
               complete
             path to the script (Marko Seppanen)
          October 8, 1998
            - several builtin variables weren't accessable
            - started to use a custom pattern matcher, to be more compatible to  ←
               the
             C= installer (thanx to Charles Bloom for CRBLIB source)
          October 2, 1998
            - added /* and */ for multi-lined comments to the language
          October 1, 1998
            - while the semantic checks, you may optionally skip the errors/ ←
               warnings or you
             can create a dump of them (Jens Langner, Sven Steiniger)
   November 21, 1998
     - TRAP now catches only the specified error and raises an interpreter error
       for none-catched errors
   November 19, 1998
     - wrote the TRAP function (special thanx to Olaf Barthel)
   November 16, 1998
     - nesting TRAP/ONERROR/PROCEDURE confused the parser and caused weired  ←
        structured
       syntax-trees (Sven Steiniger)
     - error-handling of unknown user functions (PROCEDURE) caused an enforcer  ←
        hit
   November 10, 1998
     - debug output is ON by default
     - removed scanner error for multilined comments


On November 9, my HD crashed and I lost all changes from October 1 till now.  ←
    Thus
I have to rewrite lost parts, update some tools and so on. Special thanx to
Jens Langner for fast help and for beeing my "backup server" :)


0.6 (October 1, 1998)
   October 1, 1998
     - ASKNUMBER did show the "range" comment everytime
     - TOOLTYPE's SETPOSITION wrote zeros, although no SETPOSITION was given
   September 28, 1998
     - CONCURRENT-DO gives every new child process a specific number
     - modified the scanner, but forgot to also modify the builtin variable names ←
         :)
   September 26, 1998
     - when an error occurs, then InstallerNG also shows the name of the buggy  ←
         function
   September 25, 1998
     - COPYFILES didn't raise an error, if the SOURCE does not exist (Thomas Lenz ←
         )
   September 24, 1998
```

        – RUN, EXECUTE did not accept more than one argument to build the command, ↩
          which
          has to be started
        – new function DELAY
        – you can quit the installer everytime, by sending the CTRL-F signal
          to its process (Oliver Brunner)
      September 20, 1998
        – changed the catalog file
        – now DOS errors are also be shown
        – execution of a script can now be continued with the next function
          (please be prepared, that this may lead into new errors!)
      September 9, 1998
        – new function REBOOT
        – the scanner now removes "<ESC>[2p" sequences at the beginning of every
          string (Jens Langner)
      September 4, 1998
        – set all "@..-help" variables to their correct text values
        – localized the ASKBOOL function
      September 3, 1998
        – ASKFILE always returned the path part of the selected file
      September 1, 1998
        – DATABASE should now recognize the Picasso96 graphics system
          (thanks to "DaMato" Jens Langner)
      August 31, 1998
        – first public beta version released

  0.5 (August 28, 1998)
      August 28, 1998
        – removing of inner LET environments (LET env inside of a LET environment) ↩
           failed
        – DATABASE can now read the current system date and time
        – new function LET
      August 16, 1998
        – new function CONCURRENT-DO
        – started to make big parts of the InstallerNG reentrant, to prepare
          the implementation of a new function (see above)
      August 1, 1998
        – DELETE should be much faster, if you don't use pattern matching
        – disabling the DEBUG output also disabled the interpretation of the
          arguments of the DEBUG function
      July 31, 1998
        – SELECTing the n-th node of a list failed under different conditions
      July 30, 1998
        – switching on/off the creation of the uninstall-script did not work
        – functions, which use CONFIRM/COMMAND/SETTOOLTYPE/GETTOOLTYPE did not work ↩
           anymore
          (because i modified the environment handling yesterday...)
      July 29, 1998
        – string-format routines of several functions optimized
        – PROTECT was a bit buggy...
        – MAKEASSIGN did not work correct with SAFE removing of system assigns
        – reworked the whole environment handling
      July 28, 1998
        – some functions still overwrote the local environment of the outside- ↩
           function
          (if there was one)
        – the raw body of the uninstall-script will be printed to CON:

```
            - ASKNUMBER now corrects a DEFAULT which is out of RANGE
        July 27, 1998
            - COMPLETE reworked and optimized
            - when using CONFIRM for the COPYFILES functions, the copy failed (Falk  ←
              Zühlsdorff)


    0.4 (July 26, 1998)
        July 26, 1998
            - added keyfile support: if no keyfile is available, then the InstallerNG
              always runs in pretend mode
            - functions using CONFIRM now asking for confirmation, even in pretend mode
        July 25, 1998
            - in pretend mode, COPYFILES/COPYLIB always raised the "bad source" error ( ←
              Dirk Stöcker)
        July 24, 1998
            - updated the guide, espacially the "enhanced functions" (see
                        What's new
                        )
            - DATABASE now returns correct values and supports the checkvalue  ←
              functionality
            - if an identifier contained chars with ascii-code greater than 0x7F, then  ←
              this
              caused the scanner to interpret this char as an intertoken space
            - ASKCHOICE/ASKOPTION skipped the last choice (Dirk Stöcker)
            - "@installer-version" now equals 43.3 (as the latest C= installer version  ←
              is)
              (Dirk Stöcker)
            - new variable "@installer-ng-version" which is 0 iff the script does not  ←
              run on the
              InstallerNG, otherwise it is set to the version of the InstallerNG
              (Dirk Stöcker)
        July 23, 1998
            - MAKEASSIGN always caused an enforcer hit
            - Menu "Quit" did not work
        July 13, 1998
            - added the FINDBOARD function
        July 12, 1998
            - updated the
                        Known Bugs
                         list :(
            - optimized the lowlevel code of DATABASE
        July 10, 1998
            - dedicated to Dirk Stöcker: debug output also prints access to  ←
              uninitialized variables
            - EXISTS modified the wrong environment or caused an enforcer hit (Dirk  ←
              Stöcker)
            - ASKCHOICE/ASKOPTION returned wrong results if several CHOICES had zero  ←
              length
              argument(s) (Dirk Stöcker)
        July 9, 1998
            - DATABASE now identifies PPC processors and the CV graphics card
        July 7, 1998
            - ASKNUMBER/COPYLIB prompted weired CONFIRM message
            - mixing strings with numbers for comparison results in a infinity loop
            - added: ability to send the output of DEBUG to nil:
            - the logfile will now be created as "T:installer_log_file"
            - MAKEDIR stopped creating new directories before it reached the end of the
```

```
            destination path (Sven Steiniger)
          - the reduction of an arbitrary path reached a polling, iff the first  ←
             component
            of this path was an invalid device (Sven Steiniger)
        July 5, 1998
          - reworked the string-format routines (thanx for trick: Sven Steiniger)
          - relational functions raised type conflict error when a number was compared ←
              to a
            signed string number
        July 3, 1998
          - DELETE supports the OPTIONAL/DELOPTS settings
          - reworked the pattern-match routines to prepare custom code for the  ←
             matching
            process itself
        July 2, 1998
          - COPYLIB has had problems with DEST path (Jens Langner)
          - COPYLIB now makes correct version check even if CONFIRM is not set (Jens  ←
             Langner)
          - WELCOME now really quits when pressing the "Abort" button (Jens Langner)
        July 1, 1998
          - reworked my linker library to work with all data models (FAR, NEAR,  ←
             NEAR_A6) and
            found some small mistakes. hope i did not add new ones ;)
        June 29, 1998
          - OPTIONAL now modifies the global environment, not the local one of the  ←
             functions
            DELETE/COPYFILES/COPYLIB (Dietmar Eilert)
          - string-format without args ("string") now returns correct type (Sven  ←
             Steiniger)
          - MAKEDIR now works correct too, when the path of the directory was given  ←
             without
            a slash (MAKEDIR "ram:bla") (Sven Steiniger)
          - CONFIRM accepts no longer zero arguments (switch on LAZYCOMPILE to skip)
            (Sven Steiniger)
          - remove the "Scanning, parsing and... " message, when the installer starts  ←
             to
            interpret the functions before a WELCOME (Sven Steiniger)
        June 26, 1998
          - ASKFILE/ASKDIR should handle the SOURCE and DEST parameters correct (Falk  ←
             Zühlsdorff)
          - STARTUP now modifies "user-startup", but still does no modification to
            "startup-sequence"

    0.3 (June 26, 1998)
    - every function which has related parameter-functions now creates a dynamic
      runtime environment for the results of the parameter-functions
    - added new functions: BEEP, SETENV, SIMULATE-ERROR, COMPARE
    - added new tooltype/cli-argument: LAZYCOMPILE
    - fixed dozens of silly bugs :)

    0.2 (June 1, 1998)
    - grammar rewritten (and thus, most parts of parser/tree-evaluator)
    - bugfixing and optimisations
    - added serial output to most of the functions (debug-beta version)

    0.1 (somewhere in fall 1997)
```

Started in october 1997 this project. Earlier (august) first formal descriptions ←
.
First working parts (scanner, parser ...) in november. Added the GUI (first
version: MUI by Stefan Stunz) in november too.
Fully functional versions in january/february 1998.

1.11 What is new here???

Here you find all the things I added to the Interpreter.
Note: if you use these new features and run the script on the original
Installer you may run into errors. Thats why a version check is very important!

No restrictions
  The original installer has some terrible restrictions: maximum string-length,
  maximum size of a string value. The InstallerNG makes none of these:
  a string (and the value of a string variable too) can be as long as it fits
  into your memory.

Nice GUI
  The builtin-gui is based on a BOOPSI class-collection, which was also written
  by me; these classes allow easy font-adaption, resizing and support the ←
    MagicWB
  pens. Additionally, you may "plug-in" other gui-systems (like MUI, BGui, ...)
  via a shared library named "installergui.library".

  Furthermore, the help window can stay open, while you install your packages;
  this is a builtin feature and should be provided by every GUI

Comfortable WB-Start
  If you run the InstallerNG from WB and give it no script via tooltypes
  a requester pops up which asks you whether you want to load a script by a
  file-requester or if you want to app-iconify the installer. If you drop a
  script-file on the application icon the InstallerNG gets started.

Returncode
  The InstallerNG now returns RETURN_OK (0) if everything of the installation
  went fine, or, in case of an error, it returns RETURN_FAIL (20). This could
  be useful, if you call the InstallerNG from a script and the script wants
  to check whether the InstallerNG was successfull or not.

Flexible interpretation
  If an error raises while the interpretation process, InstallerNG provides
  to continue at the very next function. Please be careful with this option,
  because going on may lead to some other errors, but often it's really useful ←
    to
  finish the (uncomplete) installation.

New builtin variables
  @installer-ng-version
    the version of the InstallerNG
  @proceed-button
    holds the text for the "Proceed with install"-button

Constants

      – TRUE/DOSTRUE and FALSE/DOSFALSE are now constants and cannot be modified
      – NOVICE, AVERAGE and EXPERT are builtin constants, so you can use them ←
        instead
      of 0, 1 and 2 (usefull for CONFIRM and USER functions)

New Tooltypes/CLI-Arguments
  LAZYCOMPILE: if set, then the InstallerNG is as lazy as the C= installer
             is. that means, InstallerNG skips its semantic check procedures
             to be more compatible
  DEBUGMODE: if set, then InstallerNG will switch on it's debugmode
  CREATEUNINSTALL=CUI: if set, then InstallerNG creates an uninstall skript
  COPYFILECOMMENT=CFC: if set, every copied file will be commented with the ←
      package name
  ALWAYSCONFIRM: if set, every action has to be confirmed in every user-level!
  NOSYSDELETE: if set, calls to DELETE from system drawers will be ignored

Interuptable Interpretation
  The InstallerNG can be interupted everytime by sending the CTRL-F signal to ←
     its
  process. This option allows to break out of infinite loops (thanks to Oliver
  Brunner for this suggestion)

Local environments
  Everytime you want to, you are allowed to create a new environment (i.e. to ←
     declare
  several new variables). Inside this environment you can run some code, which ←
     uses
  the local variables prior the global ones. See the function LET for more ←
     details.

SOOP – Simple Object Oriented Programing
  With help of the new functions PUT-PROPERTY, GET-PROPERTY and REMOVE-PROPERTY ←
     the
  InstallerNG implements LISP-like property-lists for symbols. Imagine of a ←
     symbol
  as an object and the properties as the objects attributes. Furthermore, if you ←
     write
  PROCEDURE's, which are able to operate on an object's attributes, you just can ←
     produce
  simple OO code :)   ...without a class hierarchy, but object oriented!

UNDO-REDO environments
  Using the function SWING you are able to build an environment, in which you ←
     can
  "swing" from one (topmost) function to the next. When reaching the last one, ←
     the
  installation may proceed. This looks/works much like the MS-Setup program :)

  With v44 of the C= installer, you are able to simulate such an environment by
  special TRACE/RETRACE/BACK functions (have a look at the C= installer ←
     documentation)

Full installation control
  If you want to, the InstallerNG asks for confirmation of every action, no ←
     mattter
  what the script-programmer codes in his installer script

AppWindow
  InstallerNG can now act as an socalled "AppWindow", i.e. you may drop files ←
      into
  the window and InstallerNG uses them. This only works, when the InstallerNG ←
      asks
  for a file or directory (see ASKFILE, ASKDIR)

Compiler Modules
  After the compiler phase, the InstallerNG tries to call some modules in
  libs:installerngmodules, which may perform actions on the compiled program
  (i.e. produce executables or something like that)

Enhanced Functions
  DATABASE, EXISTS

New Functions
  BEEP, COMPARE, DELAY, FINDBOARD, LET, NOP, RANDOM, REBOOT, SETENV, SIMULATE- ←
      ERROR,
  SWING, GET-PROPERTY, PUT-PROPERTY, REMOVE-PROPERTY, SAVE-PROPERTY-OBJECT,
  READ-PROPERTY-OBJECT, CAST-INT, CAST-STRING

1.12 Known Bugs, not yet removed *sorry*

My own bugs
  - seems that the builtin gui has sometimes trouble with e.g. PAL screens and
    the user has to click 2 times or refresh the gui by resizing to show the new
    content; currently i could not locate anything (Kai Hofmann)

Thats not my fault...
  - DATABSE crashes the system if there is no ppc-processor in the system but
    the ppc.library is installed
  - trying to open "powerpc.library" without having a PPC processor or WarpOS ←
      installed
    causes lots of enforcer hits

Still there, but covered
  - Enforcer Hit: LONG-WRITE to 00000000
    when the scanner tries to read hex-values >$7fffffff, the ANSI-C function
    strtol("80000000", NULL, 16) causes this hit (because of a MOVE.L A2,(A0)
    with A0=NULL at the end of this function)
    solution: call strtol() with a dummy pointer

1.13 Trouble with other soft

UN!X-Dirs
  Some people may use this commodity. But please note: if you work
  with *X, then something like '/bla' means to be a mounted volume
  (the amiga equivalent is 'bla:'). A software package may now come
  with several subdirs and, thus, an install script would like to
  copy from '/mytools' to your destination. This collides with UN!X-
  Dirs and a "Volume not mounted" requester pops up.

```
    SOLUTION: Turn off UN!X-Dirs before installing soft!
```

1.14 How can I start the Installer

```
                Just like nearly every other Amiga tool, you can start the  ←
                    Installer either
through a
                shell
                 or from
                Workbench
                .
```

1.15 Running from Shell/CLI

The Installer can be started by simply typing its name and the script file. The
script file argument is the only one argument, which you must specify! Every
other argument is optional. This is the argument template of the InstallerNG:

```
  SCRIPT/A,APPNAME/K,MINUSER/K,DEFUSER/K,LOGFILE/K,LANGUAGE/K,
  NOPRETEND/S,NOLOG/S,NOPRINT/S,LAZYCOMPILE/S,DEBUGMODE/S,
  CREATEUNINSTALL=CUI/S,COPYFILECOMMENT=CFC/S,ALWAYSCONFIRM/S,
  NOSYSDELETE=NSD/S
```

APPNAME specifies the name of the application you want to install. Usually
this is the name of your tool. MINUSER sets the minimal operation mode for
the Installer and DEFUSER presets the operation mode. The user may change
the operation mode by selecting a mode in the first welcome panel (refer to
the WELCOME function). Use LOGFILE to set the file, which
will be handled as an installation protocol or set NOLOG, if you want to
forbid any logging actions. NOPRINT disables the logging to the standard
printer. If you set NOPRETEND then the user cannot turn on the pretend mode.
In pretend mode, the Installer just simulates an installation process. The
LANGUAGE specifies the language, which should be used in the script.

The rest of the arguments is valid only for the InstallerNG and they set
the "Advanced options". LAZYCOMPILE turns off any check procedure at startup
and the InstallerNG does not look for errors during compilation. DEBUGMODE
turns on the debug console and prints useful warnings. Use CREATEUNINSTALL
to produce an uninstall script from the current installation session. If you
run this produced script again with the Installer, it will de-install the
package. COPYFILESCOMMENT just comments every copied file with the name
of the current application name (see APPNAME argument) by appending the old
file comment to the application name. For full installation control, you should
set the ALWAYSCONFIRM argument, which forces the Installer to ask for
confirmation everytime. NOSYSDELETE avoids the deletion from system drawers
like C: or LIBS: or whatever...

1.16 Running from WB

```
                    If you run the Installer from Workbench, you can set up a  ←
                       working environment for
  it by specifying tooltypes.

    SCRIPT=<scriptfile>
    APPNAME=<name>
    MINUSER=<novice|average|expert>
    DEFUSER=<novice|average|expert>
    LOGFILE=<logfile>
    LANGUAGE=<language>
    PRETEND
    LOG
    NOPRINT
    ICONIFY {NG}
    LAZYCOMPILE {NG}
    DEBUGMODE {NG}
    CREATEUNINSTALL {NG}
    COPYFILECOMMENT {NG}
    ALWAYSCONFIRM {NG}
    NOSYSDELETE {NG}


  Except the ICONIFY tooltype, these tooltypes are equal to the
                 shell
                  arguments and,
  thus, I do not write the meaning here again.

  ICONIFY holds, if you give no SCRIPT argument. Usually, the Installer would ask,
  whether the user wants to load a script or just iconify the Installer. Using  ←
     this
  tooltype forces the Installer to immediately iconify.
```