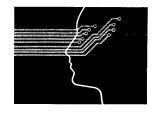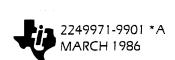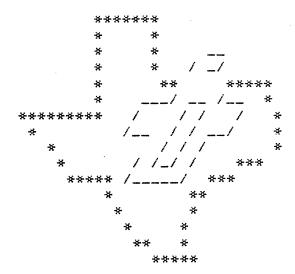# EXPLORER™ NATURAL LANGUAGE MENU SYSTEM RELEASE AND INSTALLATION INFORMATION, RELEASE 2.0

DATA SYSTEMS GROUP

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Release and Installation Information,
Explorer(TM) NLMenu Toolkit, Release 2.0
Part Number 2249971-9901*A

Last Update.....February 26, 1986

This toolkit uses one of the following:
Explorer(TM) NLMenu Object Distribution Tape — 2537113-0001
Explorer(TM) NLMenu Source Distribution Tape — 2537113-0002

The Source Distribution Tape contains both the source and object

Texas Instruments
Incorporated

Explorer is a trademark of Texas Instruments Incorporated
Unix is a trademark of AT&T
VMS is a trademark of Digital Equipment Corporation
VAX is a trademark of Digital Equipment Corporation

Contents

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Section 2 -- Distribution Tape Installation

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| |
|READ THIS DOCUMENT BEFORE ATTEMPTING TO USE THE EXPLORER|
|TOOLKIT.   IT DESCRIBES   THE DATA CARTRIDGE INSTALLATION MEDIA|
|FOR THE TOOLKIT ORDERED. |
| |
|TEXAS INSTRUMENTS ASSUMES NO RESPONSIBILITY FOR MODIFICATIONS|
|MADE TO THIS TOOLKIT. |
| |
+--+

SECTION 1

Introduction

1.1 General Information

Be sure to write protect the installation tape. Before you
attempt to install this toolkit, consult the System Requirements
paragraph below. You will also need to apply all patches to the
Explorer system software.

1.2 Product Media

If you purchased the object kit, the cartridge tape you received
should be labeled: Explorer NLMenu Object Distribution Tape.
(Refer to the cover page for the correct TI part number.)   This
tape contains object files for the toolkit, as well as source and
object files for the starter kit.

If you purchased the source kit, the cartridge tape you received
should be labeled: Explorer NLMenu Source/Object Distribution
Tape. (Refer to the cover page for the correct TI part number.)
This tape contains all of the object kit components, plus the
source files for the toolkit.

1.3 System Requirements

This installation procedure requires an Explorer system with the
following:

   *   A tape drive.

   *   Space on the SYS-host file band to accommodate this
       toolkit's files.   See the Release Information section
       for expected sizes for this release.

   *   Space on the local disk for another load band, if you
       want to save the image after your installation. See the
       Release Information section for expected sizes for this
       release.

   *   Explorer Release 2.0 system or a later revision.

*   The NlMenu toolkit uses procedures in the Graphics
    toolkit. Graphics installation must precede that of
    NLMenu. The NLMenu toolkit also can make use of
    procedures in the RTMS toolkit. If you purchased the
    RTMS toolkit, it must be installed before the NLMenu
    toolkit.

SECTION 2

Distribution Tape Installation

2.1 Introduction

This section describes how to install an Explorer software product from an Explorer Distribution Tape. This installation procedure applies to all toolkits and to any other add-on software available on Distribution Tapes.

*   You must read the INSTALLATION RESTRICTIONS paragraph to tell which file server hosts you can use.

*   You should read the INSTALLATION CHECKLIST paragraph to tell what information you need before you start. (This will save you time hunting up details during the installation.)

*   You may read the INSTALLATION OVERVIEW paragraph if you want a feeling for what is going to happen. (You will be prompted at each step and your options fully explained, so this overview is optional.)

2.2 Installation Restrictions

This paragraph itemizes the restrictions and limitations that currently apply to this installation procedure.

2.2.1 UNIX Hosts.

You cannot use any host running under any version of UNIX as a file server, as a SYS-host, or for the temporary working directory.

2.2.2 VAX VMS Hosts.

You cannot use a VAX host running under any version of VMS earlier than 4.0 as a file server or a SYS-host because it does not allow long file namestrings. It can be used for the working directory (which deliberately uses short namestrings).

You cannot use a VAX host running under VMS Version 4.0 or higher
using TCP/IP network protocol unless that TCP/IP implementation
supports   VMS   4's   long   namestrings.   Some   Version   4
implementations still restrict you to Version 3's shorter
namestrings. Symptoms of this problem include:

* The Load Distribution Tape step appears to work fine, up
  to a point.

* You set an error message to the effect that some
  particular file is "off limits" to you.

* Logging on to the VAX over TELNET or the VT100 Emulator
  will probably show that the destination directory on the
  VAX looks correct.

* Doing a Dired of that directory from your Explorer will
  probably show at least some truncated file names marked
  as being inaccessible.

2.2.3 Directory Creation.

Some operating systems, as a matter of policy, do not allow
remote software to create directories over   the   network.
Unfortunately, the installation software cannot distinguish a
simple refusal from an actual network or file system failure.
Therefore, the installation software will show you the text of
the error message it received. If you are able to use TELNET or
the VT100 Emulator to log on to that host and correct the problem
(e.g., create the directory manually), then you can return to the
Backup window and resume loading the Distribution Tape.

2.2.4 VAX Chaos Hosts.

Some VAX implementations of the Chaosnet protocol will pad out
non-character files to an integral number of blocks causing the
Explorer tape verify to fail. If this should happen, then you
must decide what to do. The installation software will warn you
about what it thinks has happened and offer you the opportunity
to quit or to accept the padded file and continue. It is known
safe for Explorer XFASLs, but what happens with other types of
files is not predictable.

2.2.5 TCP/IP Hosts.

In general, the TCP/IP network protocol offers less sophisticated
network capabilities and error handling than the Chaosnet
protocol.   Therefore, the installation software is able to do
less for you on a TCP/IP host, (e.g., cannot tell why a remote
server did not respond, etc.).

2.3 Installation Checklist

The following is a list of what you will need and what information you should gather before you start an installation.

2.3.1 Tape Cartridges.

You will need a Distribution Tape cartridge for each product you wish to install.

Some Explorer software products are sold in two versions: object and source.   These names cause some unfortunate confusion. A Distribution Tape with "object" on it contains all of the product's XFASL files that need to be loaded into memory plus any auxiliary source files that might also be needed (e.g., the product's DEFSYSTEM file). A Distribution Tape with "source"-- despite its name--contains both LISP source and XFASL object files. That is,

> *   an object tape contains everything to load and execute the product;

> *   a source tape contains everything to compile, load, and execute the product.

Regardless of whether you have an "object" tape or a "source" tape, the installation steps are the same--the source installation just takes longer. A source tape typically just has more files in its directory than the object tape has.   In particular, you do not have to perform additional steps to get the "other" set of files loaded.

2.3.2 SYS-Host.

Unless the product-specific Release Information in Section 3 of this document says otherwise, the SYS-host is required to hold only the product's SYSTEM file and the TRANSLATIONS file for any logical hosts it uses. The product's actual source and object files will be installed on the file server specified in its TRANSLATIONS file. Later in the installation, you will be given the opportunity of editing all TRANSLATIONS files.

Therefore, the product's files are not required to be installed in the SYS-host although they may be if you wish. The installation software does not actually care which SYS-host you use as long as you use the same one for both the Load Distribution Tape step and the INSTALL-NEW-PROGRAM step.

You should make sure that your SYS-host is set to the proper machine.   You can find out what the current SYS-host is by entering the form

                    (TRANSLATED-PATHNAME "SYS:")

to a Lisp Listener. You can change the SYS-host by entering the
form

                    (SI:SET-SYS-HOST <hostname>)

where <hostname> is the network name of the machine you want to
use as a SYS-host written as a string (e.g., "EXP1") or a symbol
(e.g., 'EXP1).   [Notice that there is no trailing colon in this
host name.]

When you complete the Load Distribution Tape step, it will remind
you of your temporary working directory and your SYS-host.   When
you start INSTALL-NEW-PROGRAM, it will ask you for both pieces of
information.   It has to ask because the reboot after the Load
Distribution Tape step wipes out its memory.

2.3.3 Explorer System Source Files.

Since most people will not be using the Load Distribution Tape
software most of the time, most of this software is kept on disk
in the file band (rather than the load band). The first time you
click on the LOAD DISTRIBUTION TAPE item in the Backup window
after a cold boot, you will see a message telling you there will
be a short pause while it loads the remainder of the software.
After the first time, later executions of Load Distribution Tape
start right away.

The Load Distribution Tape step is fully automatic and you should
never need be concerned about it. However, when it starts, it
looks   for   its external files on the "SYS:STREAMER-TAPE;"
directory. That is to say, it looks for the STREAMER-TAPE
directory on whatever machine is identified as SYS-host at the
time. SYS-host is normally set to the machine that holds the
Explorer system source, and the STREAMER-TAPE directory is part
of the system source. There is usually no problem unless SYS-
host is set to some other machine when you first click on LOAD
DISTRIBUTION TAPE.

If the current SYS-host does not contain the required files, the
software will explain the problem and suggest that you change
SYS-host to be a machine with the Explorer system source and try
again.   You may use different SYS-hosts for your Explorer system
source and the new software you are installing.

Therefore, when you click on the Load Distribution Tape item for
the first time and Load Distribution Tape cannot find its
external files, then:

1. Abort out of Load Distribution Tape.

2. Go to a Lisp Listener and use SI:SET-SYS-HOST as
   described above to set SYS-host to a machine that has
   the Explorer system source.

3. Return to the Backup window and once again click on the
   LOAD DISTRIBUTION TAPE item of the Backup menu (it
   should load this time).

4. Once the files are loaded, go to a Lisp Listener and
   set SYS-host to where you want your SYSTEM and
   TRANSLATIONS files to be (as explained above) then
   return to the Backup window and continue.

2.3.4 Working Directory.

In addition to the directories needed by the products you are
installing, the installation software needs a temporary working
directory. The Load Distribution Tape step leaves one file in
this directory for each product it successfully copies to the
file band. After the reboot, the Install New Program step uses
this directory to decide what is available for installation.

The installation software will create the directory for you. It
will provide a default directory name or allow you to specify a
different one. If the machine on which you are doing this
installation has a local file system, then it is simplest to
accept the default.

You need to keep this working directory around until you have
finished the Install New Program step. After that, you may
delete this directory. In particular, as long as this directory
exists, you can execute the INSTALL-NEW-PROGRAM function as many
times as you wish. Once you have deleted it, you will have to
load the Distribution Tapes again.

All of the Distribution Tapes you load during the Load
Distribution Tape step will use the same working directory you
specified at the start. However, if you execute Load
Distribution Tape more than once, it will not currently let you
add new products to those already on a previous working
directory. Instead, you must create another working directory.

Using multiple working directories causes no particular problem.
When you finish the Install New Program step for one directory,
but before you do the garbage collect step, exit the first
INSTALL-NEW-PROGRAM and execute a second Install New Program,
this time specifying a different working directory. When you
finish the Install New Program step for the last working

directory, do the garbage collect step.

2.3.5 Translations Files.

Each product has one or more TRANSLATIONS   files.   These
TRANSLATIONS files determine where the product's files will be
stored on disk. Therefore, you should know which file server(s)
you want to use before you start the installation.

You will be presented with a default TRANSLATIONS File for each
logical host the product requires (usually there is only one).
That default file assumes that

   * you want to use the current SYS-host as the file server
      for this product's files, and

   * the current SYS-host accepts Explorer pathname syntax.

However, the product's files do not have to be installed on the
SYS-host.   If you want them somewhere else, then change the
TRANSLATIONS file. You will be given an opportunity

   * to accept the TRANSLATIONS File as is,

   * to edit it manually, or

   * to have the installation software edit it for you.

The circumstances under which it can modify the file for you are
explained in the prompts at the time.

2.4 Installation Overview

The   following paragraphs describe the major steps in the
installation procedure (which includes both the Load Distribution
Tape and Install New Program steps) so that you will have some
idea of what to expect. Details are deliberately not included
here. Instead, you will be prompted at each stage for what is
needed.   Furthermore,   each of your inputs is immediately
validated to avoid later obscure errors.

2.4.1 General Prompting Sequence.

The Load Distribution Tape step (which accomplishes the tape-to-
file-band transfer described next) has a number of prompts. Each
prompt usually gives you the option of pressing RESUME to
continue or ABORT to quit.

The first few prompts about the SYS-host and working directories are done only once regardless of how many Distribution Tapes you install. The remainder of the prompts are in a large loop that starts by telling you to insert a Distribution Tape cartridge. When the tape-to-file-band transfer for the current Distribution Tape is complete, there will be a message saying whether it completed normally or abnormally.

In either case, once you acknowledge the completion message, the program returns to the earlier prompt asking you to insert a Distribution Tape cartridge (the SYS-host and working directory prompts are not repeated). At this point, you may put in a new Distribution Tape and do it again or simply end.

2.4.2 Tape to File Band.

The program automatically prepares the tape, selecting the 1/4" streaming tape, for you. You can exercise this step but it is not necessary. Now click on the LOAD DISTRIBUTION TAPE item in the menu from the SYSTEM B Backup window. This function copies the contents of the Distribution Tape to a disk (or disks) you specify.

Permanent files will be added to the SYS-host and the file server host for your machine (these may be the same or different machines). A temporary working directory will also be created on a machine of your choice.

When this Load Distribution Tape band step is complete, everything you need to complete this installation is now on your disk(s), but the product has not been loaded into memory and therefore cannot be executed yet. If you have several products to install, to save time you may load all of their Distribution Tapes before going to the COLD BOOT step.

2.4.2.1 Version Numbers.
The files on the Distribution Tape carry the version numbers that correspond to TI's master Explorer software database. It is convenient for you to maintain these same version numbers when you copy a Distribution Tape to your disk since they provide a common ground for discussing problems with the Explorer Technical Support Line.

The first time you install a product, the use of these original version numbers presents no problem. However, the correct installation of a newer release of a product you have previously installed assumes two things:

    *   a file on the Distribution Tape which has been updated
        will have version numbers higher than any version of
        that file now on your disk; and

* a file which has not been updated in this release will
  have a version number matching the highest version of
  that file now on your disk (and these two files will be
  identical).

If the version number already exists on your disk, a comment will
be printed to the effect that a "different" file already exists
by that name and that particular tape file will not be copied to
your disk. This message only means that the same version number
exists; the system did not actually compare the two files to see
if they were different.

The second assumption that identical version numbers mean
identical files will be violated if you have modified the
Explorer directories by adding new versions of some files. The
Load Distribution Tape step is supposed to be restoring files
which are as new or newer than anything already on your directory
(regardless of which version number it used). Therefore, the
verify step always verifies the tape against the newest version
of each file on your disk. This means:

* If you have not modified your Explorer directories, then
  everything will verify fine. The warning you may have
  gotten about a "different" file on disk really
  represented an identical copy of the file.

* If, however, you did modify the directory, one or more
  files will fail to verify.

So, if you restore using original version numbers and there is a
verify failure, then either

* there was a tape error during restore [which is
  unlikely]; or

* your directory has extra versions of some files on it.

If you have version number problems, you may choose to have the
files all restored as the "newest" version (i.e., the file is
copied to a version one higher than the highest version already
on your disk). You are given this choice at the beginning of the
restore step.

Choosing to restore to the newest version to avoid version number
collisions can cause other subtle problems. Many system
utilities assume that the file FOO.XFASL#4 is the compiled output
of the file FOO.LISP#4 in the same directory. If someone has
added a LISP file, say FOO.LISP#5, to the directory without
compiling it into a matching FOO.XFASL#5, then a restore of
FOO.LISP from a Distribution Tape will become FOO.LISP#6, while
the restore of the matching XFASL file will become FOO.XFASL#5.
Therefore, if you are forced to restore to newest, to avoid

version number collisions, then you may be introducing several
annoyances which you will not see until later.

2.4.2.2 Other Information.
If you want to refresh your memory about the Load Distribution
Tape step while you are at the machine, enter

        (DOCUMENTATION 'MT::LOAD-DISTRIBUTION-TAPE 'FUNCTION)

to a Lisp Listener. This documentation string mentions several
global variables which allow you to control some processing
options such as whether you want a "verbose" display of each
action as it happens (default is silent). Also, the first prompt
you receive after starting a Load Distribution Tape includes an
extensive HELP prompt for the first time user.

Remember that most of the installation software is not in your
permanent load band. Instead, the first time you click on the
LOAD DISTRIBUTION TAPE item in the Backup window after a cold
boot, there is a pause while the rest of the Load Distribution
Tape software is loaded in.

2.4.3 Cold Boot.

The initial Load Distribution Tape step caused extra installation
software to be loaded into memory which will not be needed after
Load Distribution Tape is complete. Therefore, after you have
loaded the Distribution Tapes for all the products you want to
install at this time, you should cold boot the system to get rid
of that part of the installation software that is no longer
needed.

You are not required to reboot--the installation will still work.
However, the extra installation software will become a permanent
part of the new load band you will save in the final step.

2.4.4 File Band to Memory.

Immediately after cold boot (you do not even have to log on), you
enter the INSTALL-NEW-PROGRAM function to a Lisp Listener. It
will prompt you for various information and will display a list
of products in the temporary working directory available for
installation. If you want to refresh your memory about this step
while you are at the machine, enter

        (DOCUMENTATION 'INSTALL-NEW-PROGRAM 'FUNCTION)

to a Lisp Listener.

When this step is finished, the products will now be loaded into
virtual memory and ready to execute. You now have two choices:

* You may skip the remaining steps and either

  - execute the products now as a test of the
    installation, or

  - do another INSTALL-NEW-PROGRAM if you have
    products on other working directories to install
    (then do one garbage collect and DISK-SAVE for all
    of them).

* You may continue with the remaining steps to make sure
  what you have installed is now in virtual memory
  permanently.

If you choose to skip the remaining steps, the new products you
just installed will be available to you only until you cold boot.
If you cold boot, then you will have to execute
INSTALL-NEW-PROGRAM again.

Since the products' files are permanently on the file band, you
will not have to load the Distribution Tapes again if you
reboot--unless you have deleted the temporary working directory.
If you have deleted the working directory, you will have to start
all over and reload all the Distribution Tapes (see the paragraph
on Version Numbers above).

2.4.5 Garbage Collect.

This step is an option offered to you by INSTALL-NEW-PROGRAM just
before it completes. The process of loading the products into
memory creates garbage which you will normally want to get rid of
before saving the new load band in the next step. Again, this
step is optional, but recommended. It should take 20-30 minutes,
depending upon the size of your page band and how much garbage
you have.

2.4.6 Disk-Save.

At this point, your virtual memory should contain everything you
started with in the original load band you booted under, plus
each product you had INSTALL-NEW-PROGRAM load for you--but no
garbage. This virtual memory image, however, will go away on the
next cold boot unless you use the DISK-SAVE function to copy that
memory image to a new load band on disk. DISK-SAVE is described
in Programming Concepts and Tools.

Up until this point, the installation software has tried to do
most of the work for you, but you must do the DISK-SAVE yourself.
Furthermore, an improperly done DISK-SAVE can destroy the disk to
the point that you can never boot it again. Therefore,

WARNING
You MUST know what you are doing before you
try to do a DISK-SAVE.

2.5 Cross-Machine and Multi-Machine Installation

You must use an Explorer with a tape drive to do the Load
Distribution Tape step, but the Explorer with the tape does not
have to be the one on which you are installing the product.
After the Load Distribution Tape step is complete, you may cold
boot any Explorer on the same network and do the
INSTALL-NEW-PROGRAM step from it.

All the information needed for the installation is carried in the
SYS:SITE; directory and in the temporary working directory. When
the INSTALL-NEW-PROGRAM starts, it asks for the name of the SYS-
host and for the pathname of the working directory; the Load
Distribution Tape step and the INSTALL-NEW-PROGRAM step are
independent.

If your software license allows it, a single Load Distribution
Tape step on one Explorer on the network will suffice for all
INSTALL-NEW-PROGRAM installations on other machines.

2.6 Distribution Tape Format

An Explorer Distribution Tape is written out using the ordinary
Backup File and Backup Directory commands from the SYSTEM B
Backup menu. Therefore, you can use the standard tape utilities
to examine or even to manually restore the Distribution Tape
yourself.

The first file on the tape is called the Restore File. The
remaining files and directories are typically the ordinary files
needed by the product. The Restore File defines a function
called LOAD-DISTRIBUTION-TAPE-1 whose purpose is to read the
remainder of the tape using various utilities.

If you require a custom installation of a particular Distribution
Tape, you can use the standard tape utilities to copy the first
file from the Distribution Tape (the Restore File) to disk and
look at it. From that Restore File, you should be able to decide
what the remaining files on the tape are for and how to restore
them.

SECTION 3

Release Information

This section contains product-specific release information for
the NLMenu toolkit.

3.1 Special Notes

* Before you begin installing the NLMenu toolkit, you must
   first delete the following directories.

   - NLMENU: NLMENU;

* If RTMS is to be installed on your machine, you must
   also delete

   - NLMENU: NLMENU-RTMS-INTERFACE;

* Also, before installing this toolkit, your system must
   have Streamer Tape patch 2.3 installed. If this patch
   is not in the load band, it is in the patch directory.

3.2 Space Requirements

The following are the expected sizes for this release:

* 680 pages are needed to accommodate the object version

* 1550 pages are needed to accommodate the source and
   object version

* If the image is saved after the installation, 1300
   blocks are added to your load band