

## Chapter 26 KIDS System Management: Installations

The Kernel Installation and Distribution System (KIDS) is a new module in Kernel V. 8.0. Previously, packages were exported using a utility called DIFROM, and installed by running INIT routines that the DIFROM utility created. KIDS is the replacement for DIFROM, and introduces significant revisions to the package distribution and installation processes. This chapter introduces KIDS, and describes some of the changes to the package export process.

The following definitions apply throughout the KIDS documentation:

<b>Transport Global</b>	An exported package, stored in a global. KIDS exports a package based on its definition in a build entry. The transport global also contains the build entry and the PACKAGE file entry (if any) for a given package.
<b>Build entry</b>	An entry in the BUILD file that defines the parts of a package to export. Also known as a build.
<b>Component</b>	An element of one of the following types: template (print, sort, and input); form; function; bulletin; help frame; routine; option; security key; and protocol.
<b>Distribution</b>	A host file system (HFS) file containing transport global(s). If a distribution contains multiple transport globals, KIDS treats them as a single installation when installing from the distribution.
<b>Package</b>	A cohesive set of files, data, and components that together form a set of computing activities related to a functional area.

## KIDS Options

To get to the KIDS options choose Programmer Options on the Kernel Systems Manager Menu Option (i.e., EVE):

```

Select Systems Manager Menu Option: programmer Options

    KIDS   Kernel Installation & Distribution System ...   [XPD MAIN]
           **> Locked with XUPROG
    NTEG   Build an 'NTEG' routine for a package
    PG     Programmer mode
           ALS MENU TEXT SAMPLE ...
           Calculate and Show Checksum Values
           Delete Unreferenced Options
           Error Processing ...
           Global Block Count
           List Global
           Map Pointer Relations
           Number base changer
           Routine Tools ...
           Test an option not in your menu
           Verifier Tools Menu ...

Select Programmer Options Option: kids Kernel Installation &
Distribution
System

           Edits and Distribution ...           [XPD DISTRIBUTION MENU]
           Utilities ...                       [XPD UTILITY]
           Installation ...                   [XPD INSTALLATION MENU]
           **> Locked with XUPROGMODE

```

## KIDS = Distribution and Installation

As indicated by its name, KIDS supports two major functions: distribution and installation. The distribution portion of KIDS allows developers to:

- Define the contents of a package in a build entry.
- Create transport globals from build entries.
- Export transport globals by creating distributions.

The installation portion of KIDS allows sites to:

- Load transport globals from KIDS distributions.
- Load transport globals from KIDS PackMan messages.

- Print out the contents of loaded transport globals before installing them.
- Compare the contents of loaded transport globals to the current system before installing them.
- Install loaded transport globals.

KIDS brings two new files into Kernel: the BUILD file and the INSTALL file. KIDS still makes use of the existing PACKAGE file, but its role in exporting and installing packages is diminished.

## **Build Entries and the BUILD File (#9.6)**

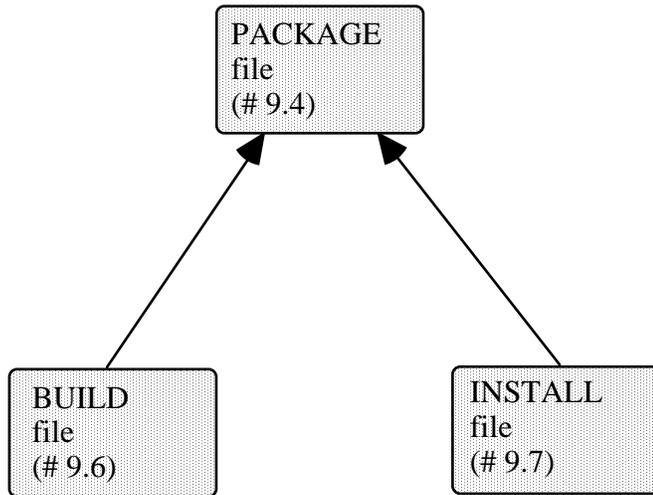
Build entries, stored in the BUILD file, are where developers define a package. This build entry defines the set of files, data, components, installation questions, national package information, pre- and post-install routines, and other settings that comprise the exported package.

Package components are no longer tied to namespace, as they were previously with DIFROM and the PACKAGE file. Developers can select any components available on the current system and include them in their build entries as package components.

The format of the .01 field of a build entry must be the package name concatenated with a space, and then a version number. This means that there is a separate entry for every version of a package that a developer exports.

Also, a package's build entry is sent to installing sites as part of the package; after an installation, the site can examine the build entry to see the package definition.

■ **KIDS File Diagram**



## **The INSTALL File (#9.7)**

The INSTALL file stores a record of each installation a site performs. The INSTALL file allows KIDS to store a separate installation entry for each installation. A new version of a package no longer overwrites the installation information of a previous version, and developers' installation history no longer overwrites the sites' installation history. The national PACKAGE file is now static at its top level.

The three main items recorded in the INSTALL file for each installation are the installing site's answers to installation questions, any installation output, and the installation's timing information.

## **Changes in the Role of the PACKAGE File (#9.4)**

The PACKAGE file still plays a role in installations with KIDS, albeit a diminished one. KIDS provides a link from the build entry of a package to the PACKAGE file, so that developers can link a package to a PACKAGE file entry.

The top level of a PACKAGE file entry for a package now stores static package information. The only part of the PACKAGE file entry that installations update automatically now is the VERSION multiple. A patch sent with KIDS does not transport the entire PACKAGE file entry. It only sends the information that is needed to update the PACKAGE file. Patch installations will update the PATCH APPLICATION HISTORY multiple, which is within the VERSION multiple. KIDS saves patch names along with their sequence numbers in this multiple. Most other fields have been designated for removal at the top level of the PACKAGE file. The PACKAGE file now stores mainly static package information that is not version specific, as well as the patch history of the package.

## The New Transport Mechanism: Distributions

Distributions are the mechanism KIDS uses to export packages. They are more flexible than the previous mechanism (INIT routines).

Distributions are usually in the form of an HFS file. The developer creates transport globals from build entries. KIDS stores transport globals in a global. KIDS can write the global (in a format readable only by KIDS) to an HFS file; the HFS file is the distribution. The HFS file can then be distributed by a variety of methods, including FTP (file transfer protocol), diskette, and tape. For example, if your system is a PC, you can also move the Transport Global to a new medium (i.e., to multiple floppy disks so you can install on other PCs):

1. Select the Load the Distribution option (*DO NOT* run the Environment Check routine).
2. Under the Utilities Menu, select the Convert Loaded Package for Redistribution option.
3. Under the Edits and Distribution Menu, select the Transport a Distribution option.
4. When you are prompted for the Host File, enter the floppy drive and file name. For example:

```
Enter a Host File: A:\KRN8.KID)
```

One advantage to using distributions over INIT routines is that there is no limit to the size of a package you can export. Another advantage is that during installations, you no longer have to overwrite a package's existing routines with the new routines before running the installation.

Alternatively, a KIDS distribution can be sent via a PackMan message in MailMan. But transporting packages as host files, especially large ones, avoids slowing down MailMan.

## Two Kinds of Distributions

KIDS supports two kinds of distributions. The first type is a standard distribution. This type of distribution contains transport globals for what are traditionally thought of as packages, including files, data, and all components. A standard distribution can contain one or more transport globals. If there is more than one transport global, KIDS treats each one as a single installation unit.

The second type of distribution is a global distribution. This type of distribution contains one transport global only, and that transport global can export M globals only.

The transport globals in both types of distributions also contain the corresponding build entry, and (if linked to a PACKAGE file entry) the corresponding PACKAGE file entry. However, a patch sent with KIDS does *not* transport the entire PACKAGE file entry. It only sends the information that is needed to update the PACKAGE file.

## **What Happens to DIFROM?**

With the release of Kernel V. 8.0 and VA FileMan V. 21.0, developers should no longer use the DIFROM entry point to export packages. Developers should now use KIDS. The DIFROM method is still supported, but only for the support of sites that use standalone VA FileMan (VA FileMan without Kernel). Refer to VA FileMan V. 21.0's Programmer Manual for more information on using DIFROM.

## Installing Standard Distributions

As noted previously, KIDS supports two types of distributions: standard and global. This section describes how KIDS installations work when installing standard distributions.

### Installation Sequence

KIDS installs standard distributions in three phases: Loading transport globals from the distribution; answering installation questions for each transport global; and installing each transport global in the distribution.

#### **Phase 1: Loading Transport Globals from a Distribution or PackMan Message**

1. Using the Load a Distribution option, the installer chooses the HFS file to load distributions from. If loading from a PackMan message, choose the message and invoke the INSTALL/CHECK MESSAGE PackMan option.
2. For each transport global, KIDS makes an entry in the INSTALL file for the transport global.
3. KIDS loads transport globals from distribution into ^XTMP.
4. KIDS prompts the user to see if they want to run the environment check for each transport global (if unsuccessful, the process quits here; the developer may or may not kill INSTALL file entries and transport globals from ^XTMP.)
5. The installer can print the contents of the transport global, compare the contents to the current system, and verify checksums of the transport global.

#### **Phase 2: Answering Installation Questions for Transport Globals in a Distribution**

1. Using the Install Package(s) option, the installer selects a distribution to install by choosing an entry from the INSTALL file.
2. KIDS runs the environment check for the first transport global; the environment check can allow KIDS to install the transport global, cancel installation of the transport global, or cancel installation of all transport globals in the distribution.

3. The installer answers pre-installation questions for the first transport global.
4. The installer answers standard KIDS questions for the first transport global.
5. The installer answers post-installation questions for the first transport global.
6. The installer repeats steps 2-5 for the remaining transport globals, if there are any more transport globals to process.
7. The installer chooses a device for the installation to run on. The installer can queue the installation or run it directly; entering an up-arrow aborts the installation.

**Phase 3: KIDS Installation of Packages**

1. KIDS disables any options and protocols the site has asked to be disabled for this install. However, KIDS does *not* disable options and protocols which have an Action of USE AS LINK FOR MENU ITEMS.
2. KIDS waits for the time period (from 0 to 60 minutes) the site specifies, if they chose to disable options and protocols.
3. KIDS suspends the running of queued options by TaskMan for this install, if the site chooses to do so.
4. The pre-install routine is run for the first transport global.
5. All components are installed for the first transport global.
6. The post-install routine is run for the first transport global.
7. KIDS repeats steps 4-6 for any remaining transport globals to install in the distribution.
8. Options and protocols that were disabled for this install (if any) are re-enabled.
9. Queued options are removed from suspense (if the site chose to suspend queued options).

## The Installation Menu

The KIDS Installation Menu contains the following options:

```

Select Kernel Installation & Distribution System Option: installation

  1      Load a Distribution                               [XPD LOAD DISTRIBUTION]
  2      Verify Checksums in Transport Global             [XPD PRINT CHECKSUM]
  3      Print Transport Global                           [XPD PRINT INSTALL]
  4      Compare Transport Global to Current System      [XPD COMPARE TO SYSTEM]
  5      Backup a Transport Global                        [XPD BACKUP]
  6      Install Package(s)                              [XPD INSTALL BUILD]
          Restart Install of Package(s)                 [XPD RESTART INSTALL]
          Unload a Distribution                          [XPD UNLOAD DISTRIBUTION]

```

The number next to the options indicates the order of the option entries you should follow when performing a KIDS installation.

## Loading a Standard Distribution

The first step in installing a standard distribution is to load the transport globals from the Distribution. The Load a Distribution option does the following:

- Lists what transport globals are contained in the distribution and asks you if you want to continue.
- Creates entries in the INSTALL file for each transport global in the distribution that passed its environment check.
- Loads transport globals from the distribution (HFS file) into the ^XTMP global (if you answer YES to continue).
- Prompts the user to see if they want to run the environment check for each transport global. If a transport global doesn't pass its environment check, KIDS may purge it from ^XTMP; otherwise, the transport global stays in ^XTMP. KIDS tells you the result of each environment check.
- Checks the version number of the incoming package against any existing package of the same name at the site. If the incoming version number is not greater than the existing version, KIDS aborts the installation for the transport global in question.
- Echoes the name of the first transport global to pass environment check (i.e., "Use transport globalname to install this Distribution"). The name

of the first transport global to pass its environment check is the name you use to install the distribution, in the next phase.

Loading a distribution is the first of three phases to install a package. The second phase is answering installation questions, including scheduling the installation; the final phase is the actual running of the installation.

When loading from a PackMan message, load the distribution using the INSTALL/CHECK MESSAGE PackMan option in MailMan. For KIDS PackMan messages, this option through MailMan is equivalent to the Load a Distribution option.

### ■ Loading from a Distribution

```
Select Installation Option: LOad a Distribution
Enter a Host File: ZXG_EXPT.DAT

Distribution saved on Oct 13, 1994@09:29:08
Comment: TEST PKGS

This Distribution contains Transport Globals for the following
Package(s):
    TEST 2.1

Want to Continue with Load? YES// <RET>
Loading Distribution...

Want to RUN the Environment Check Routine? YES// <RET>
    TEST 2.1

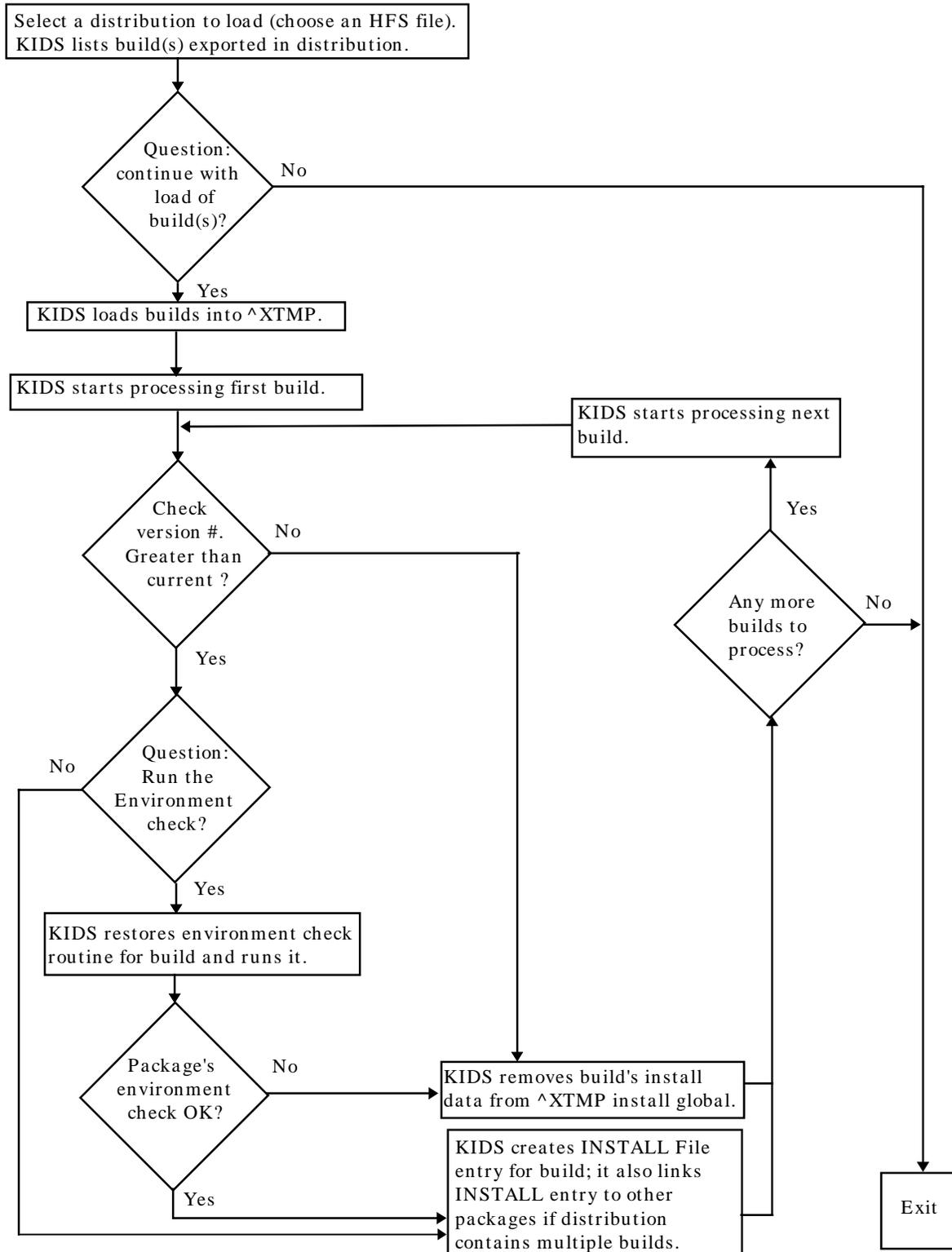
Use INSTALL NAME: TEST 2.1 to install this Distribution.

Select Installation Option:
```

### When the Distribution is Split Across Diskettes

Distributions may come in a single host file (as above); alternatively, they may come on diskettes, with the host file split up among the diskettes. If you are installing from a distribution that is spread across diskettes, the Load a Distribution option will ask you for subsequent diskettes (e.g., "Insert the next diskette, #2, and Press the return key", etc.). Insert the appropriate disk and press return, and continue until the distribution is loaded.

## ■ Loading Transport Globals from a Distribution



## Verifying Checksums in a Transport Global

You can verify the checksums for a loaded transport global in advance of installing from it, using the Verify Checksums in Transport Global option. This option verifies all checksums of routines in the transport global, reporting any discrepancies. In the future, the ability to verify checksums will be extended to other KIDS components besides routines.

## Printing Loaded Transport Globals

Once you have loaded transport globals from a standard distribution onto your system, you can print out the definitions of the transport globals, using the Print Transport Global option. This way, you can see every component exported in each transport global, before you install them.

### ■ Printed Transport Global

```

PACKAGE: ZXG DEMO 1.0                                     PAGE 1
-----
NATIONAL PACKAGE:
DESCRIPTION:

ENVIRONMENT CHECK : ZXGENV
PRE-INIT ROUTINE  : ZXGPRE
POST-INIT ROUTINE: ZXGPOS
-----

ROUTINE:
ZXGC00          SEND TO SITE
ZXGC01          SEND TO SITE
ZXGC02          SEND TO SITE
ZXGCMOVE        SEND TO SITE
ZXGCTEST        SEND TO SITE
ZXGCTW1         SEND TO SITE
ZXGCWE          SEND TO SITE
ZXGCXMP1        SEND TO SITE
ZXGCXMPL        SEND TO SITE
ZXGDEMO         SEND TO SITE
ZXGKC           SEND TO SITE
ZXGLMSG         SEND TO SITE
ZXGLOAD         SEND TO SITE
ZXGTMP          SEND TO SITE

INSTALL QUESTIONS:
SUBSCRIPT: PRE1
DIR(0)=YA^^
DIR("A")=Do you want to run the pre-install conversion?
DIR("B")=YES
DIR("?")=Answer YES to run the pre-install conversion, NO to skip it...

```

## Comparing Loaded Transport Globals to the Current System

When you have loaded transport global(s) from a standard distribution onto your system, you can also compare a transport global to the matching package already installed on your system (if any), using the Compare Transport Global to Current System option. This way, you can compare the package you're about to install with the current version of the package on your system.

When this option finds differences, it notes the change by displaying the differences between the current package and the transport global on two lines, one line labeled \* OLD \* and the other \* NEW \*.

Note that pointers are converted to free text when exporting VA FileMan entries, so these converted free pointers show up as differences when using the compare feature.

### ■ Comparison Sample

```

Compare ZXP 1.0 to current site
-----

Routine: ZUVXD

File # 3.2 Data Dictionary

File # 3.2 Data

* OLD *      ^%ZIS(2,9,8) =
$C(27)_"[A"^^$C(27)_"[B"^^$C(27)_"[C"^^$C(27)_"[D"^^3^^$C(27)_"[L"
* NEW *      ^%ZIS(2,9,8) =
$C(27)_"[A"^^$C(27)_"[B"^^$C(27)_"[C"^^$C(27)_"[D"^^3
* OLD *      ^%ZIS(2,44,13) = ^$C(26)^^^$J(" ,X)_"$C(27,93,($X+32-X))
* NEW *      ^%ZIS(2,44,13) = ^$C(26)^^^
* OLD *      ^%ZIS(2,60,8) =
$C(27)_"[A"^^$C(27)_"[B"^^$C(27)_"[C"^^$C(27)_"[D"^^3^^$C(27)_"[L"
* NEW *      ^%ZIS(2,60,8) =
$C(27)_"[A"^^$C(27)_"[B"^^$C(27)_"[C"^^$C(27)_"[D"^^3
* OLD *      ^%ZIS(2,90,0) = C-DATATREE^1
* NEW *      ^%ZIS(2,90,0) = C-DATATREE
* ADD *      ^%ZIS(2,93,21) = ^

HELP FRAME

BULLETIN

```

## Backup a Transport Global

This new option creates a MailMan message that will back up all current routines on your system that would be replaced by a KIDS patch. This option is under the Installation Menu of the KIDS menu. It works on a patch that has been loaded on your system, but not installed.

## Running the Installation

Once you've loaded the transport global(s) from a standard distribution, you can install them. Do this using the INSTALL PACKAGE(S) option.

When you load a distribution, KIDS tells you which transport global name to use to install the distribution (e.g., "Use PACKAGE 1.0 to install this Distribution"). This will always be the first transport global to successfully load from the distribution. When you use the INSTALL PACKAGE(S) option, select the transport global name reported when you loaded the original distribution. Once you've done that, you can answer the installation questions for each transport global in the distribution.

## Processing Each Transport Global

When you select a distribution to install, the INSTALL PACKAGE(S) option processes the installation questions for each transport global in the distribution. For each transport global, you're asked:

- Pre-Install questions.
- Standard KIDS Questions.
- Post-Install Questions.
- Whether to disable any options or protocols. By typing three question marks (i.e., ???) at this prompt KIDS will list all of the options and protocols it will disable. If you answer YES, all incoming options and protocols are disabled. You are also prompted to add to or delete from the list of options and protocols to disable. However, KIDS does not disable options and protocols which have an Action of USE AS LINK FOR MENU ITEMS. All scheduled options on the system are also disabled. Finally, you are asked a time period (i.e., "Delay Install(Minutes): (0-60): 0//", from 0 to 60 minutes) to delay after disabling options and protocols, but before starting the installation. This is to allow users already in (disabled) options time to exit the options before the installation starts.
- Whether to install routines on other CPUs (if you are an MSM site).

## Scheduling the Installation

The final question you're asked when using the `INSTALL PACKAGE(S)` option to load packages is what device to run the installation on. Your choices at the `DEVICE` prompt are:

- Run the installation directly by selecting a device without queueing. The installation runs immediately, on the device you specify.
- Queue the installation.
- Up-arrow out. This aborts the installation of the distribution.

## When the Installation is Queued

If you queued the installation, you can look up the installation task in TaskMan. A KIDS installation task looks like:

```
-----  
3: (Task #1179950) EN^XPDIJ, KIDS install. Device VER$LW. KRN,KDE.  
From TODAY at 16:24, By you. Scheduled for TODAY at 22:00  
-----
```

You can cancel a queued installation (before it has started) by deleting the task. KIDS also allows you to restart an install if the install is queued and you get an error during the installation.

## Re-Answering Installation Questions

If you queued an installation, you can re-answer installation questions, if you so choose, using the `Install Package(s)` option. To be able to re-answer the questions, however, you need to locate the task that was queued for the installation and delete it first. Once you delete the installation's queued task, you can re-answer the install questions. When you re-answer questions, your answers from the previous time come up as default responses.

Also, if you up-arrow out of an installation after answering its installation questions, your responses will again be used as the defaults the next time you try to install.

## Information Stored in the `INSTALL` File

KIDS exports the definition of a package in the `BUILD` file. KIDS records installations of packages in the `INSTALL` file. The installation records in the

INSTALL file provide a record of the start time, timing for each checkpoint, and completion time (if any) for an installation.

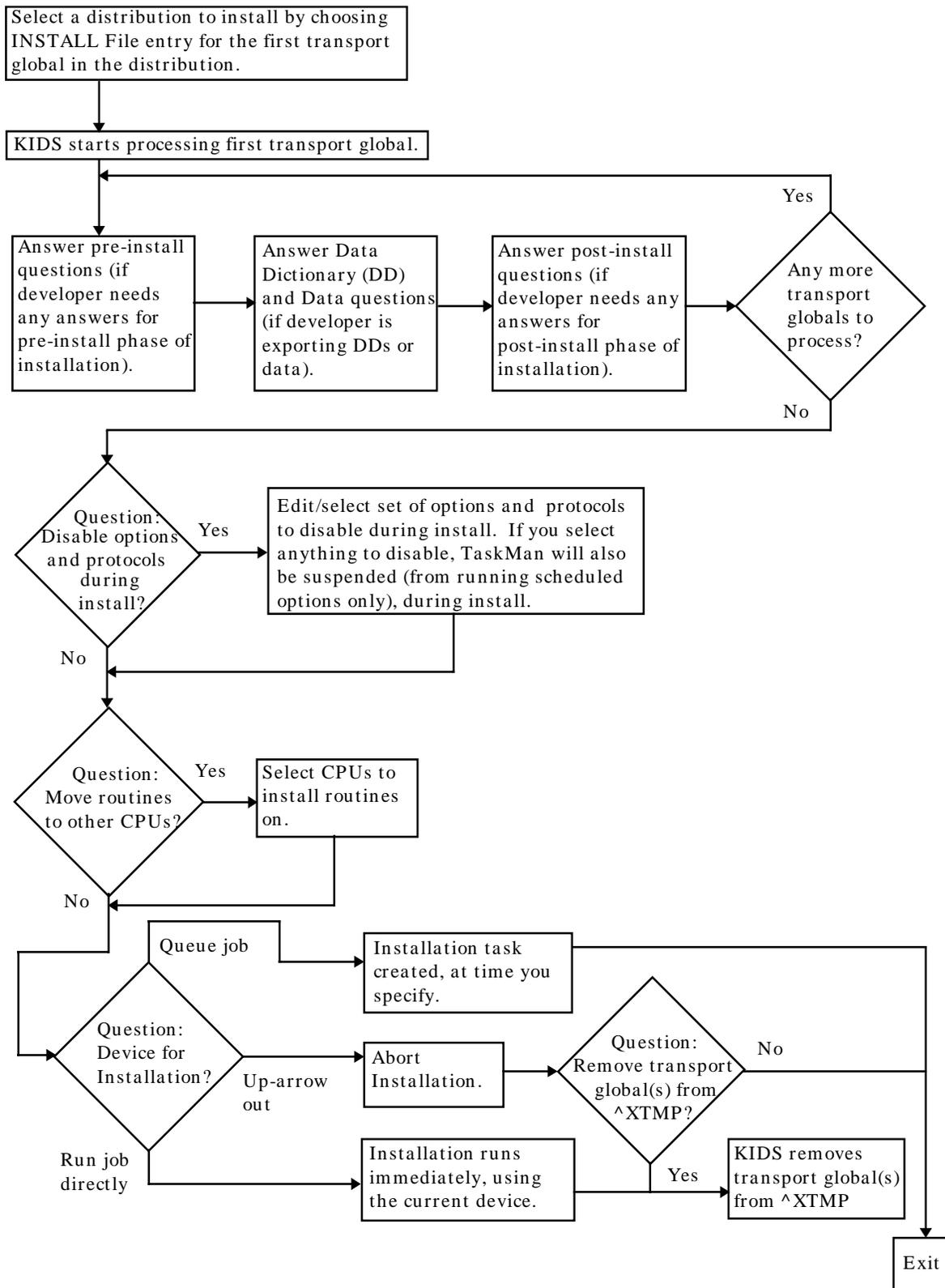
When an installation aborts, the contents of the INSTALL file determine where the install will start up again when you use the Restart Install of Package(s) option (checkpoint information is stored in the INSTALL file).

As well as being sent to the installation's principal device, all output from the installation is also stored in the INSTALL file, in the MESSAGES word processing field.

The installation questions (and your answers to them) are stored in the INSTALL ANSWERS multiple of the INSTALL file.

You can print entries from the INSTALL file with the Install File Print option.

## ■ Answering Installation Questions for a Distribution



## Installation Progress

If the device selected for output is a VT100-compatible (or higher) terminal, KIDS displays the installation output in a virtual window on the terminal. Below the virtual window, a progress bar graphically illustrates the percentage complete that the current part of the installation has reached. KIDS is able to report progress for the installation of files and for all components (print templates, forms, help frames, routines, options, etc.) KIDS will list those compiled cross-references, input templates, and print templates that were created during the install process. KIDS does not show progress for installing data, nor for pre- and post-install tasks.

On all other devices, progress is reported using dots.

### ■ Installation Progress Sample

```

                                TEST 1.1
-----
Installing Routines:
                Oct 07, 1996@15:00:02

Installing PACKAGE COMPONENTS:

Installing PRINT TEMPLATE
                Oct 07, 1996@15:00:04

Updating Routine file...

The following Routines were created during this install:
    ZZR4

Updating KIDS files...

TEST 1.1 Installed.
                Oct 07, 1996@15:00:05
-----
100%
Complete  ██████████ 25      50      75

```

## Once the Installation Finishes

When the installation runs, its output is sent to the device you specified when you answered the installation questions. If, for example, you queued the installation to a printer, the output is sent to the printer.

You can find out whether an installation finished by looking up the entry in the INSTALL file for that installation (use the Install File Print option). You should check whether an installation completed successfully or not. If the

install completed successfully, the STATUS field in the INSTALL file entry will be set to "Install Completed." If the install errored out, the STATUS field in the INSTALL file entry will still be set to "Install Started." If it errored out, you need to find out what went wrong, and restart the installation (see below).

If you disabled scheduled options, options, and protocols, KIDS should have re-enabled those (unless the install errored out).

You should refer to the instructions that came with the package you installed to see what post-installation tasks, if any, you should perform.

## Restarting an Aborted Installation

A new feature of KIDS is the ability to restart an aborted installation. KIDS uses a checkpoint system to keep track of how many phases of an installation it completed. When an installation aborts for some reason, you can restart the installation (using the Restart Install of Package(s) option). KIDS does not automatically re-run the entire installation from the beginning; instead, it re-runs the installation only from the last completed checkpoint.

As well as some standard checkpoints built into KIDS (such as completion of pre-install, completion of each component type, and completion of post-install), KIDS lets developers create checkpoints for use within their pre- and post-install routines. So depending on how the developer has designed a pre- or post-install, it is possible that, when re-started, the pre- or post-install doesn't have to be re-run in its entirety either (if the error occurred there). Instead, KIDS only re-runs the pre- or post-install from the last completed developer checkpoint (if any) within the pre- or post-install.

Before restarting an installation, you should try to determine what caused the installation to abort. If an error occurred, any error messages will be in the INSTALL file entry, in the MESSAGES word processing field. Once you've fixed the problem, you can use the Restart Install Of Package(s) option to continue with the installation. KIDS also allows you to restart an install if the install is queued and you get an error during the installation.

## Recovering from an Aborted Distribution Load

If you encounter an error while loading a distribution (using the KIDS option to load a distribution from the export medium into the ^XTMP global), you will be unable to re-load the distribution until you clear out what was stored during the aborted load attempt.

To clear out the previously loaded distribution, use the Unload a Distribution option. To unload a distribution, enter the name of the **first** transport global that was loaded when you loaded the distribution. The entries in the

INSTALL file for all transport globals in the distribution will be removed, and the transport globals themselves will be purged from the ^XTMP global.

Once you delete entries in the INSTALL file and entries in the ^XTMP global with the Unload a Distribution, you should be able to reload the distribution in question. If the install was already started and you choose to unload the distribution, you first must edit the INSTALL file and set the STATUS field to Load From Distribution (i.e., 0) prior to using the Unload a Distribution option.

## Automatically Moving Routines to Other CPUs

On MSM systems only, during the main installation, you are asked if you want to move routines to other CPUs. You are not asked this question on DSM for OpenVMS systems, which are typically configured with cluster-mounted volume sets, where routine updating only needs to occur once for all CPUs in the configuration.

On an MSM system, if you say that you would like to move routines to other CPUs, you will be asked for the names of the other systems to update. Routines in the transport global will be moved to the CPUs you specify, along with any compiled templates and compiled cross-references.

If Task Manager is running, routines will be moved to the other CPUs automatically. KIDS will display various status messages while each CPU is updated. If Task Manager is not running, however, KIDS will tell you so, and ask you to use the ^XPDCPU direct-mode utility to update other CPUs.

### > D ^XPDCPU

On MSM systems only, use this direct-mode utility to manually update CPUs (other than the one where the main installation is running) with new routines.

KIDS will ask you to use this utility if you run an installation when Task Manager is not running. The disadvantage to not having Task Manager running is that you must start ^XPDCPU running on each other CPU **before** the main installation completes. If you are not able to start ^XPDCPU on all other CPUs before the installation completes, you will need to perform a manual update for any CPUs that you didn't get to (see Manually Moving Routines to Another CPU below).

## Manually Moving Routines to Another CPU

In some situations you may need to manually update routines on a CPU (other than the CPU on which the main installation occurred). Situations where you may need to do this include:

- You answered NO to the "move routines to other CPUs" question, or, if you answered YES, you didn't list every CPU that needed updating.
- An error occurred during the updating of a CPU.
- The main installation finished before you had a chance to run ^XPDCPU on all CPUs.

In cases such as these, you can perform a manual update using two direct-mode utilities, MOVE^XPDCPU and INSTALL^XPDCPU, as described below.

1. Run the utility MOVE^XPDCPU on the system where the main installation completed.
2. On each CPU other than the one that ran the main installation, run the utility INSTALL^XPDCPU.

### > D MOVE^XPDCPU

Use this direct mode utility on MSM systems only. This utility should be used when a KIDS installation completes, but routines on a particular CPU were not updated. You must run MOVE^XPDCPU on the CPU where the main installation completed. It copies all the routines that need updating into ^XTMP, once you choose the INSTALL file entry for the package in question. Then, you can use the INSTALL^XPDCPU utility on the CPUs that need routines updated.

### > D INSTALL^XPDCPU

Use this direct mode utility on MSM systems only. Before using INSTALL^XPDCPU, you must use the MOVE^XPDCPU utility (described above) to copy routines that need updating to the ^XTMP global. Once you have done this, on each CPU that didn't have routines updated during the main installation, you can run INSTALL^XPDCPU. It loads routines from ^XTMP (where they're placed by MOVE^XPDCPU) onto the current CPU.

## Installing Global Distributions

The second type of distribution supported by KIDS is called a global distribution. This type of distribution, unlike standard distributions, is used to export one item only: globals.

You still use the Load a Distribution option to install global distributions. Unlike loading a standard distribution, however, KIDS installs global distributions immediately from the Load a Distribution option. Also, there is no queueing of the installation.

A global distribution can only contain one transport global, and the transport global can only export globals. You know that the distribution you're installing is a global distribution rather than a standard distribution, because when you load it with the Load a Distribution option, KIDS will tell you:

```
This is a Global Distribution. It contains Global(s) that will
update your system at this time. The following Global(s) will be
installed:
```

The Load a Distribution option lists each global that will be installed from the distribution. Each global in the list is marked OVERWRITE or REPLACE. OVERWRITE means load in the global without purging the site's version of the global beforehand. REPLACE means the site's version of the global is purged first, and then the global is loaded in.

You are given two chances to abort the installation of the global distribution. If you answer YES to both questions, the globals in the global distribution are installed immediately.

## Purging the BUILD and INSTALL Files

Each KIDS installation adds one entry to the BUILD and INSTALL files for every transport global installed from the distribution.

For information about purging these files, please see the discussion of the Purge Build or Install Files option, in the KIDS Utilities chapter.

## ■ Installation of a Global Distribution

```
Select Installation Option: LOAD a Distribution
Enter a Host File: [DMANAGER]XGGLOBAL.DAT

KIDS Distribution save on Jan 26, 1995@12:58:25
Comment: GLOBAL PACKAGE

This Distribution contains the following Transport global(s):
    GLOBAL PACKAGE 1.0

This is a Global Distribution. It contains Global(s) that will
update your system at this time. The following Global(s) will be
installed:
^XGRON(1)      Overwrite
^XGRON("PX")  Replace
^XGRON("TX")  Overwrite

If you continue with the Load, the Global(s) will be
Installed at this time.

Want to Continue with Load? YES// <RET>
Loading Distribution...

Globals will now be installed, OK? YES// <RET>

Installing Globals...
    Jan 26, 1995@13:04:16

GLOBAL PACKAGE 1.0 Installed.
    Jan 26, 1995@13:04:17

Select Installation Option:
```

## Alpha/Beta Tracking

```

Operations Management ... [XUSITEMGR]
Alpha/Beta Test Option Usage Menu ... [XQAB MENU]
Actual Usage of Alpha/Beta Test Options [XQAB ACTUAL OPTION USAGE]
Low Usage Alpha/Beta Test Options [XQAB LIST LOW USAGE OPTS]
Print Alpha/Beta Errors (Date/Site/Num/Rou/Err)
[XQAB ERR DATE/SITE/NUM/ROU/ERR]
Send Alpha/Beta Usage to Developers [XQAB AUTO SEND]

```

Kernel provides a mechanism for tracking of installation and option usage during the alpha and beta testing of new application packages. This tool is primarily intended for application developers to use in monitoring the testing process.

Alpha/Beta tracking provides the following services to developers:

- Notification when a new package version is installed.
- Periodic option usage reports.
- Periodic listings of errors in the package's namespace.

The tracking of option usage is transparent to users. If the option counter is turned on, it records the number of times an option is invoked within the menu system when entered in the usual way via ^XUS. Options are not counted when navigated past in the course of menu jumping. Also, the counter is not set when entering the menu system with the programmers ^XUP utility.

There are a number of options available to sites to monitor the progress of testing.

### Usage Reports for Alpha/Beta Test Options

During the testing of a package that is making use of the option counter, IRM may review the tallies with the Actual Usage of Alpha/Beta Test Options option. ADPACs may also be interested in being able to generate this information. The following example shows a printout of the actual usage of options within the XU namespace.

A similar report can be obtained of low usage options since the current version of the tracked package was installed, using the Low Usage of Alpha/Beta Test Options option.



## ■ Option Usage Report

OPTION USAGE SINCE 08-05-92			
XUSERINQ	I	44	User Inquiry
XUSERDISP	R	49	Display User Characteristics
XUFILEACCESS	M	50	File Access Management
XUSERBLK	R	51	Grant Access by Profile
XUTIME	A	53	Time
XUHALT	A	71	Halt
XUMAINT	M	83	Menu Management
XUSITEMGR	M	86	Operations Management
XUSEREDITSELF	R	87	Edit User Characteristics
XUSERTOOLS	M	129	User's Toolbox
XUSEREDIT	A	175	Edit an Existing User
XUPROG	M	191	Programmer Options
XUSER	M	265	User Edit
XUPROGMODE	R	268	Programmer mode

## Sending Alpha/Beta Usage to Developers

At any time during testing, IRM may send an interim summary message back to the developers, with the Send Alpha/Beta Usage to Developers option. It may be convenient to schedule this task to run, perhaps on a weekly basis. The developer may ask you to schedule to run at a specified frequency. The usage reports are sent to the mail group and domain specified by the national developer when they exported the package.

## Error Tracking

As well as tracking option usage and installations, Kernel also lets developers track errors that occur in the namespace of the tracked package. To report these errors to developers, the site should schedule the [XQAB ERROR LOG XMIT] option. This option cannot be run directly; it is on the [ZTMQUEUEABLE OPTIONS] menu which is not on any Kernel menu tree. This option collects error information and sends it to a server at the development domain. The developer may ask you to schedule this option to run at a specified frequency, usually nightly.

The Print Alpha/Beta Errors (Date/Site/Num/Rou/Err) option is used at the development domain, to print error information collected from sites. It does not report meaningful information when used at a site.



## Terminating Nationally Initiated Alpha/Beta Tracking

Information stored during tracking is purged each time a new version of the package is installed. A final summary report of option usage is prepared and sent to the developer's mail group just before the purge. If the new version is another test version, tracking is re-initiated with a clean slate. If the new version is the nationally released verified version, tracking ceases.

Tracked information is stored in subfiles of the KERNEL SYSTEM PARAMETERS file (#4.3), the ^XMB global. The ALPHA/BETA TEST PACKAGE multiple stores the list of package namespaces. The ALPHA/BETA TEST OPTION multiple stores pointers to entries in the OPTION file (#19). Both subfiles are purged when the verified package is installed.

## Initiating and Terminating Tracking of Local Option Usage

Tracking local to a site can be initiated by making entries in the two relevant KERNEL SYSTEM PARAMETER file multiples (ALPHA/BETA TEST OPTION and ALPHA/BETA TEST PACKAGE). If there are any entries in these multiples, the menu system's XQABTST variable is set and the options are tracked.

In the case of local tracking, it is IRM's responsibility to terminate the audit and purge the data when appropriate. There is no Kernel option to purge locally collected option counts. To stop tracking, IRM should remove any corresponding entries from the two relevant KERNEL SYSTEM PARAMETER file multiples (ALPHA/BETA TEST OPTION and ALPHA/BETA TEST PACKAGE):

```
Select Kernel Management Menu Option: ENter/Edit Kernel Site
Parameters

Note: the TaskMan site parameters have been moved out of this file.
Use the Edit TaskManParameters option to edit those values.

DEFAULT # OF ATTEMPTS: 3// ^ALPHA BETA TEST PACKAGE
Select ALPHA/BETA TEST PACKAGE: ZZLOCAL// @
    SURE YOU WANT TO DELETE THE ENTIRE ALPHA,BETA TEST PACKAGE? Y
Select ALPHA/BETA TEST PACKAGE: <RET>
Select ALPHA,BETA TEST OPTION: ZZSAMPLE// @
    SURE YOU WANT TO DELETE THE ENTIRE ALPHA,BETA TEST OPTION? Y
```



