Maintenance Update Notice:

Application Capture Option
DG/UX System Release 4.20MU05

078–600097–04

This update notice applies to the following model:
P001A

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Maintenance Update Notice:
Application Capture Option DG/UX System Release 4.20MU05
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Revision History: Effective with:

Original Release – December 1997   ACO with DG/UX Release 4.20MU01
Revision 01   – May 1998   ACO with DG/UX Release 4.20MU02
Revision 02   – August 1998   ACO with DG/UX Release 4.20MU03
Revision 03   – March 1999   ACO with DG/UX Release 4.20MU04
Revision 04   – August 1999   ACO with DG/UX Release 4.20MU05

Contents

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1   Introduction

This update notice describes the Application Capture Option package for DG/UX®
System Release 4.20MU05.

An on–line version of this update notice suitable for line printers is in the file
/usr/release/dgux.aco_R4.20MU05.un. A PostScript® version is in the file
/usr/release/dgux.aco_R4.20MU05.un.ps.

Revision bars (vertical lines in the margin) in the typeset version identify changes
that take precedence over the on–line version.

2   Product description

The Application Capture Option (ACO) package, available on DG/UX for Intel,
contains features that allow certain UnixWare and SCO applications to run on
DG/UX for Intel without recompilation. The ACO package consists of three
components:

dgux.aco   contains non–GUI application capture features

X11.aco   contains support for GUI features

dgux.aco.man   contains the manual pages for the package.

The ACO package loads by default with the DG/UX System. On rare occasions, an
existing DG/UX application might have a conflict with something in the ACO. In this
case, you will need to turn off one of the toggled features (see below) or even avoid
loading the ACO.

The ACO package contains executables, files, directories, and links that are required
to run certain UnixWare and SCO applications. There are two classes of features
shipped in or affected by the ACO package:

self–contained These features ship in the ACO package only. They add capability to
                the DG/UX System without affecting base product features.

toggled   These features affect components of the base product. ACO package
                installation and setup modify these components so that they function
                in a manner that provides more compatibility for UnixWare and SCO
                applications. These features can be disabled and enabled as needed to
                support particular applications.

The ACO package does not supply full UnixWare compatibility on the DG/UX System. UnixWare and SCO applications that depend on features that Data General chose not to include in the ACO package will not run on the DG/UX System.

2.1 dgux.aco content

The **dgux.aco** portion of the package contains executables, files, directories, and links, which support certain UnixWare and SCO applications that do not use the X Window System. Both toggled and self–contained features are included in **dgux.aco**.

2.1.1   Toggled features

The ACO package includes three toggled features, which are managed by the **admdguxaco** command. These features, listed below, are either enabled or disabled when the ACO package is installed and set up. The enabled state means that the feature is functioning in a way that is compatible with UnixWare and SCO applications. Use the **admdguxaco** command to disable or enable any of the three toggled features:

rclinks   Initially enabled. This feature controls the **init** script model used on the system. The standard DG/UX model for **init** scripts is to run only those scripts found in the target rc level when the system **init** level is changed. For example, when a DG/UX system is taken from **init** 1 to **init** 3, only the **init** scripts in rc level 3 are run.

The UnixWare model makes **init** level 3 a union of levels 1, 2, and 3. If a UnixWare system is taken from **init** 1 to **init** 3, **init** scripts in levels 2 and 3 are run.

The ACO package installs the **rclinks** feature in enabled state, which means it functions like the UnixWare model. If you disable the feature using **admdguxaco**, the DG/UX model will be used the next time you change **init** levels. UnixWare or SCO products which deliver **init** scripts in **init** level 2 may require this feature.

devlinks   Initially enabled. This feature adds to the system floppy and tape device names which are found on UnixWare or SCO, but not on standard DG/UX systems. Some UnixWare and SCO applications have dependencies on these names. The names are created as symbolic links to existing DG/UX devices. The names are removed when the **devlinks** feature is disabled.

utmp   Initially disabled. The default **utmp** and **wtmp** format for DG/UX on
                Intel is the extended format, **utmpx** and **wtmpx**. Some UnixWare and
                SCO applications may look for old–style **utmp** and **wtmp**. When enabled,
                the **utmp** feature of ACO creates old–style **utmp** and **wtmp** and
                simultaneously updates these along with Data General's default **utmpx**
                and **wtmpx**. When this feature is disabled, **utmp** and **wtmp** are
                removed, and the system manages only the **utmpx** and **wtmpx**.

2.1.2 Self–contained features

The following features, shipped in **dgux.aco**, are added to the system without
affecting the base DG/UX System:

1. Commands and related files

```
/usr/ucblib
/usr/ucblib/sendmail.cf symbolic link to ../../etc/sendmail.cf
/usr/ucblis/sendmail symbolic link to ../bin/sendmail
/usr/sbin/fixperm
/etc/fixperm symbolic link to ../usr/sbin/fixperm
/sbin/custom
/usr/lib/custom/help
/etc/default/lang.proto
/usr/bin/maplocale
/usr/lib/lang/english/us/88591/collate
/usr/lib/lang/english/us/88591/ctype
/usr/lib/lang/english/us/88591/currency
/usr/lib/lang/english/us/88591/messages
/usr/lib/lang/english/us/88591/numeric
/usr/lib/lang/english/us/88591/time
/usr/lib/lang/C/C/C/collate
/usr/lib/lang/C/C/C/ctype
/usr/lib/lang/C/C/C/currency
/usr/lib/lang/C/C/C/messages
/usr/lib/lang/C/C/C/numeric
/usr/lib/lang/C/C/C/time
```

2. SCO shared libraries

```
/usr/lib/libnsl_s
/usr/lib/libBCSnsl_s hard linked to libnsl_s
/usr/lib/libNSL_s
/usr/lib/libc_s
```

2.2 X11.aco content

The X11.aco portion of the package contains libraries, directories, links, and configuration files that are not part of standard DG/UX X11 but are required by some UnixWare and SCO GUI applications. These are all self–contained features, which are added without affecting base DG/UX features.

2.2.1   Toggled features

No toggled features are delivered in X11.aco.

2.2.2   Self–contained features

1. **/usr/opt/X11/lib** files. All links are symbolic.

```
./libXIM.so.1
./libXIM.so.5.0 – link to libXIM.so.1
./libXIM.so – link to libXIM.so.1
./libX11_s
./libX11R4sco_s
./libXimp.so.1
./libXimp.so.5.0 – link to libXimp.so.1
./libXimp.so – link to libXimp.so.1
./libXsi.so.1
./libXsi.so.5.0 – link to libXsi.so.1
./libX11.so.5.0 – link to libX11.so.2
./libXt.so.5.0 – link to libXt.so.2
./libXext.so.5.0 – link to libXext.so.2
./libXext.so.1 – link to libXext.so.2
./libXmu.so.5.0 – link to libXmu.so.2
./libXaw.so.5.0 – link to libXaw.so.2
./libXi.so.5.0 – link to libXi.so.2
./libXi.so.1 – link to libXi.so.2
/libX11.so.5.0 – link to libX11.so.2
./libXaw.so.5.0 – link to libXaw.so.2
./libXext.so.5.0 – link to libXext.so.2
./libXm.so.5.0 – link to libXm.so.2
./libXm.so.1.2 – link to libXm.so.2
```

2. **lib** links in **/usr**. All links are symbolic.

```
/lib/libXt.so.5.0 – link to /usr/opt/X11/lib/libXt.so.5.0
./lib/libXt.so.1 – link to /usr/opt/X11/lib/libXt.so.1
./lib/libXsi.so.5.0 – link to /usr/opt/X11/lib/libXsi.so.5.0
./lib/libXsi.so.1 – link to /usr/opt/X11/lib/libXsi.so.1
./lib/libXmu.so.2 – link to /usr/opt/X11/lib/libXmu.so.2
./lib/libXmu.so.1 – link to /usr/opt/X11/lib/libXmu.so.1
./lib/libXm.so.5.0 – link to /usr/opt/X11/lib/libXm.so.5.0
```

```
./lib/libXimp.so.5.0 - link to /usr/opt/X11/lib/libXimp.so.5.0
./lib/libXimp.so.1 - link to /usr/opt/X11/lib/libXimp.so.1
./lib/libXimp.so - link to /usr/opt/X11/lib/libXimp.so
./lib/libXi.so.2 - link to /usr/opt/X11/lib/libXi.so.2
./lib/libXi.so.1 - link to /usr/opt/X11/lib/libXi.so.1
./lib/libXext.so.5.0 - link to /usr/opt/X11/lib/libXext.so.5.0
./lib/libXext.so.2 - link to /usr/opt/X11/lib/ libXext.so.2
./lib/libXext.so.1 - link to /usr/opt/X11/lib/libXext.so.1
./lib/libXaw.so.5.0 - link to /usr/opt/X11/lib/libXaw.so.5.0
./lib/libXaw.so.1 - link to /usr/opt/X11/lib/libXaw.so.1
./lib/libXR4sco_s - link to /usr/opt/X11/lib/libXR4sco_s
./lib/libXIM.so.5.0 - link to /usr/opt/X11/lib/libXIM.so.5.0
./lib/libXIM.so.1 - link to /usr/opt/X11/lib/libXIM.so.1
./lib/libXIM.so - link to /usr/opt/X11/lib/libXIM.so
./lib/libX11_s - link to /usr/opt/X11/lib/libX11_s
./lib/libX11.so.5.0 - link to /usr/opt/X11/lib/libX11.so.5.0
./lib/libX11.so.1 - link to /usr/opt/X11/lib/libX11.so.1
./lib/X11/config - link to /usr/opt/X11/lib/config
```

3. **dglib** links in **/usr**. All links are symbolic.

```
./dglib/libXt.so.5.0 - link to /usr/opt/X11/lib/libXt.so.5.0
./dglib/libXt.so.1 - link to /usr/opt/X11/lib/libXt.so.1
./dglib/libXsi.so.5.0 - link to /usr/opt/X11/lib/libXsi.so.5.0
./dglib/libXsi.so.1 - link to /usr/opt/X11/lib/libXsi.so.1
./dglib/libXmu.so.2 - link to /usr/opt/X11/lib/libXmu.so.2
./dglib/libXmu.so.1 - link to /usr/opt/X11/lib/libXmu.so.1
./dglib/libXimp.so.5.0 - link to /usr/opt/X11/lib/libXimp.so.5.0
./dglib/libXimp.so.1 - link to /usr/opt/X11/lib/libXimp.so.1
./dglib/libXi.so.2 - link to /usr/opt/X11/lib/libXi.so.2
./dglib/libXi.so.1 - link to /usr/opt/X11/lib/libXi.so.1
./dglib/libXext.so.5.0 - link to /usr/opt/X11/lib/libXext.so.5.0
./dglib/libXext.so.2 - link to /usr/opt/X11/lib/libXext.so.2
./dglib/libXext.so.1 - link to /usr/opt/X11/lib/libXext.so.1
./dglib/libXaw.so.5.0 - link to /usr/opt/X11/lib/libXaw.so.5.0
./dglib/libXaw.so.1 - link to /usr/opt/X11/lib/libXaw.so.1
./dglib/libXIM.so.5.0 - link to /usr/opt/X11/lib/libXIM.so.5.0
./dglib/libXIM.so.1 - link to /usr/opt/X11/lib/libXIM.so.1
./dglib/libX11.so.5.0 - link to /usr/opt/X11/lib/libX11.so.5.0
./dglib/libX11.so.1 - link to /usr/opt/X11/lib/libX11.so.1
./dglib/libX11.so.5.0 - link to /usr/opt/X11/lib/libX11.so.5.0
./dglib/libXaw.so.5.0 - link to /usr/opt/X11/lib/libXaw.so.5.0
./dglib/libXext.so.5.0 - link to /usr/opt/X11/lib/libXext.so.5.0
./dglib/libXi.so.5.0 - link to /usr/opt/X11/lib/libXi.so.5.0
./dglib/libXm.so.5.0 - link to /usr/opt/X11/lib/libXm.so.5.0
./dglib/libXm.so.1.2 - link to /usr/opt/X11/lib/libXm.so.1.2
./dglib/libXmu.so.5.0 - link to /usr/opt/X11/lib/libXmu.so.5.0
./dglib/libXt.so.5.0 - link to /usr/opt/X11/lib/libXt.so.5.0
```

4. UnixWare X directory and link

```
/usr/X – directory
/usr/X/lib – symbolic link to /usr/opt/X11/lib
```

2.3 Kernel and library content

In addition to the self–contained and toggled features delivered in **dgux.aco** and **X11.aco**, the DG/UX kernel and libraries contain limited support for UnixWare and SCO system calls and library interfaces. This support provides binary compatibility for some UnixWare and SCO applications, and object compatibility for some UnixWare applications. The DG/UX System does not support the full set of UnixWare and SCO system calls and library interfaces, nor does it provide object support for SCO COFF objects. UnixWare and SCO applications that depend on these unsupported features will not run on the DG/UX System without porting.

2.4 Unsupported features of UnixWare and SCO

A list of known unsupported features is included below. This is not a comprehensive list; many differences between the DG/UX System and the UnixWare and SCO systems may not have been identified. The best way to determine whether your application has any additional unsupported dependencies is to install the ACO package on your system and then try your application.

Some features that the DG/UX System plus ACO does not support:

*   COFF objects

*   DDI/DKI interface for drivers

*   **/dev/cmos**

*   **/dev/kmem** access to UnixWare kernel internals

*   dynamically loadable modules

*   **libucb.a** – UnixWare's BSD support

*   **libx.a** – Xenix support

*   persistent **/dev** – **/dev** is recreated on each boot in DG/UX

*   **/proc**

*   RFS

* SCO tape ioctls MT_DSTATUS, MT_EOD, MTTENSION, MTTAPE_STATUS, MT_REPORT, MT_AMOUNT, MT_STATUS

* tape utility

* tapecntl utility

* UnixWare Asynchronous I/O interfaces – partial support is available for some UnixWare Asynchronous I/O interfaces.

* UnixWare device names that are not part of the ACO **devlinks** toggled feature

* UnixWare physical disk format

* UnixWare real–time system calls keyctl, online, priocntl, priocntllst, priocntlsys

* UnixWare system calls nfssys, sleep, uadmin

* UnixWare security

* UnixWare system administration

* UnixWare tape ioctls T_RDSTAT, T_SBF, T_RDBLKLEN, T_WRBLKLEN, T_PREVMV, T_ALLOMV, T_SBB, T_EOD, T_SSFB, T_SSFF, T_STS, T_STD

* UnixWare threads

* XTI library interfaces

A UnixWare or SCO application that contains dependencies on unsupported features will need to be ported, either on the DG/UX or UnixWare platform, in order to replace the dependency. The manual *Porting and Developing Applications on the DG/UX®️ System* (069–701059) contains suggestions for porting applications from UnixWare or SCO source.

3   Environment

This section lists the hardware and software required for the ACO package.

3.1 Software environment

This package runs on DG/UX System Release 4.20MU05 for Intel. It is delivered on the DG/UX for Intel media and is not available on 88K platforms.

3.2 Hardware environment

The ACO package runs on all Intel hardware supported by DG/UX System Release 4.20MU05. The update notice for DG/UX System Release 4.20MU05 (**/usr/release/dgux_R4.20MU05.un**) contains a list of the supported hardware.

3.3 Development environment

UnixWare and SCO applications that are development tools themselves or that compile, build, and/or link during installation require the Software Development Kit (SDK) package for DG/UX System Release 4.20MU05. The SDK package, on the DG/UX media, contains software development components such as libraries, optimizing compiler, headers, and programming tools. Although the ACO package provides links for UnixWare and SCO locations of libraries and programming tools, these links are useless if the underlying files are not in place.

4   Enhancements and changes

This section describes the enhancements and changes in Release 4.20 and subsequent maintenance updates.

4.1 sdelinks feature removed (R4.20)

The **sdelinks** feature has been removed from the ACO package. The **elink** feature of the base DG/UX product has been changed so that UnixWare and SCO applications that were previously failing now work correctly.

4.2 Installation defaults (R4.20MU01)

The DG/UX System 4.20MU01 introduced two policy changes with respect to the ACO package:

1. The ACO package is installed by default. You must perform a custom installation to avoid loading it.

2. The **utmp** feature is installed in a disabled state.

4.3 No changes in R4.20MU02

ACO R4.20 Maintenance Update 02 contains no changes.

4.4 No changes in R4.20MU03

ACO R4.20 Maintenance Update 03 contains no changes.

4.5 libstreamsocket Socket library and supporting kernel devices removed (R4.20MU04)

The file **/usr/dglib/libstreamsocket.so.1** and kernel devices supporting it are now delivered with the DG/UX System R4.20MU04. See the DG/UX System R4.20MU04 release notice for more information.

4.6 No changes in R4.20MU05

ACO R4.20 Maintenance Update 05 contains no changes.

5 Notes and warnings

This section contains notes and warnings specific to this release.

5.1 utmp

The ACO **utmp** feature may have a small affect on login performance and disk space consumption. When the feature is enabled, the DG/UX System creates UnixWare–style **utmp** and **wtmp** files in addition to the default **utmpx** and **wtmpx**. For every login, the DG/UX System simultaneously updates both the UnixWare–style and the DG/UX default files. When the **utmp** feature is disabled, the UnixWare style files are deleted, and only the extended style files are updated. The **utmp** feature is managed with the **admdguxaco** command (see the **admdguxaco**(3) on–line manual page for more information).

5.2 SCO–compatible locales

If you have locale problems when running SCO applications, **maplocale** can be used to convert DG/UX locales to SCO–compatible locales. See the **maplocale**(1M) on–line manual page for more information.

5.3 devlinks

The ACO **devlinks** feature creates UnixWare–style device names in **/dev, /dev/rmt, /dev/dsk**, and **/dev/rdsk**. These entries, defined in **/etc/aco.devlinks**, are needed by some UnixWare and SCO applications. DG/UX applications may have made assumptions about the contents of these directories and may break when this feature is enabled. Use the **admdguxaco** command to disable this feature, if necessary (see the **admdguxaco**(3) on–line manual page for more information).

5.4 Conflicts with toggled features

Since the toggled features of the ACO package operate system–wide in either enabled or disabled state, conflicts over some of these features may arise. This could happen if a UnixWare or SCO application expects a feature to be enabled, while a DG/UX application needs the feature to be disabled. If such a conflict arises, you must manage the feature in question using the **admdguxaco** command. You may not be able to run the two conflicting applications simultaneously.

6   Documentation

The ACO package on–line documentation consists of this release notice and the following manual pages:

admdguxaco(1M)
custom(1M)
fixperm(1M)
maplocale(1M)

7   Software distribution

This package is released on the DG/UX System Release 4.20MU05 media.

The following files are loaded when the ACO package is loaded on your disk:

```
/usr/release/dgux.aco_R4.20MU05.fl
```

```
/usr/release/dgux.aco.man_R4.20MU05.fl
```

```
/usr/opt/X11/release/X11.aco_R4.20MU05.fl
```

8   Installation instructions

The ACO package is installed with the DG/UX System by default as part of the "Production" package suite because it is required by a number of important third–party software products.

The ACO package can be excluded from the load or some of its individual features can be turned off if you have no dependencies on it or the specific features. To exclude it from the load, select either the "DevelopmentLessACO" or the "ProductionLessACO" package suite when prompted for packages to load during installation.

8.1 Installing ACO after the DG/UX System is installed

To install the ACO package after the system is loaded with DG/UX R4.20MU05, insert the R4.20MU05 CD–ROM in your drive, and do the following:

1. Register the CD–ROM.

2. Mount the **+release** virtual disk on **/release**.

3. Install the ACO package, with or without support for X Window applications.

4. Delete the CD–ROM file system, deregister the CD–ROM, and remove the CD–ROM from your drive.

5. Rebuild the kernel, and reboot the system with the new kernel.

8.1.1 Registering the CD–ROM

To register the CD–ROM, select this **sysadm** menu sequence: `Device -> Disk -> Physical -> Register`. **sysadm** prompts for the physical disk you wish to register (to display the devices available to be registered, enter **?** at the prompt). Enter the number of the device you want registered. For example:

```
Physical Disk(s): ? ↵
<sysadm lists devices; you wish to register device 1>
Physical Disk(s): 1 ↵
OK to perform operation? [yes] ↵
Physical disk sd(npsc(cpci(0),2,0,7),4,0) registered.
```

8.1.2 Mounting the virtual disk

To mount the **+release** virtual disk on directory **/release**, select this **sysadm** menu sequence: `File System -> Local Filesys -> Add`, and complete the following dialog:

```
File System Type: [dg/ux] ↵
Virtual Disk: +release ↵
Mount Directory: /release ↵
Write Permission: [Read/Write] Read Only ↵
Dump Frequency: [Daily] None ↵
Fsck Pass Number: [1] 0 ↵
Fsck Logging? [no] ↵
Exportable? [yes] no ↵
Mount the file system? [yes] ↵
OK to perform operation? [yes] ↵
Mount point directory /release does not exist.
Do you wish to create it? [yes] ↵
File system added: /release
File system mounted: /release
```

8.1.3 Installing the ACO package

To install the ACO package, select this **sysadm** menu sequence: `Software -> Package -> Install`. To install **dgux.aco**, **dgux.aco.man**, and **X11.aco**, complete the dialog as follows:

```
Release Medium: [/release] ↵
Release Name: [DG/UX R4.20MU05] ↵
Package Name(s): [development] aco ↵
```

To install the ACO package without support for X Window applications, complete the `Package Name(s)` line as follows:

```
Package Name(s): [development] dgux.aco dgux.aco.man ↵
```

8.1.4   Deleting the file system and deregistering the CD–ROM

After **sysadm** has installed the package, delete the CD–ROM file system and deregister the CD–ROM. To delete the file system, use this **sysadm** menu sequence: `File System -> Local Filesys -> Delete`:

```
File System(s) to Delete: /release ↵
Unmount after deleting? [yes] ↵
Delete the following file system(s)?
/release [yes] ↵
File system deleted: /release
File system unmounted: /release
```

Once the file system is deleted, deregister the CD–ROM through this **sysadm** menu sequence: `Device -> Disk -> Physical -> Deregister`:

```
Physical Disk(s): sd(npsc(cpci(0),2,0,7),4,0) ↵
OK to perform operation? [yes] ↵
Physical disk sd(npsc(cpci(0),2,0,7),4,0) deregistered.
```

Remove the CD–ROM from your drive.

8.1.5   Rebuilding the kernel

If you have custom parameters, save **/var/Build/system.parameters**.*system–id*, which contains your custom parameter definitions, to a temporary file because the parameter file needs to be regenerated. To rebuild your kernel, select this **sysadm** menu sequence: `System -> Kernel -> Config and Build`. When **sysadm** prompts you for information about whether or not it should retain your parameter configuration file, select `regenerate`.

```
Parameter configuration file: [retain] regenerate ↵
```

Then **sysadm** checks the parameters and invokes an editor, which is used to reenter any custom parameter definitions. After rebuilding the kernel, reboot the system with the new kernel.

9   Preparing a software trouble report

If you believe that you have found an error in the Application Capture Option or its documentation, consult the manual *Preventing and Fixing Problems on the DG/UX®️ System* (069–701145). This manual, which is provided in both printed and CD–ROM versions with your system, explains the procedures for filing a software trouble report (STR).

Include with your report a file or hard copy of output of the command:

```
admdguxaco-o check
```

A copy of the standard STR form suitable for printing on a line printer is in the file **/usr/release/STR_form**. Enter the name, model number, and release as follows: ACO, P001A, and 4.20MU05.

To comment on the documentation, fill out the reader comment form in **/usr/release/doc_comment_form** and send it to the address on the form.

End of Notice